

Clarke®



DIESEL/PARAFFIN HEATERS

MODEL NO: XR60B, XR80, XR110, XR160, XR210

PART NO: 6931003, 6931004, 6931006, 6931008, 6931012

OPERATION & MAINTENANCE INSTRUCTIONS

UK
CA | CE



ORIGINAL INSTRUCTIONS

GC1124 ISS 12

INTRODUCTION

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.

GUARANTEE

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.

FUNCTION AND OPERATING PARAMETERS

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 flat level non combustible surface during operation.
- It is not intended for warming animals or live stock.

SAFETY SYMBOLS

The following symbols appear on the heater.

	HOT SURFACE, DO NOT TOUCH		DO NOT COVER
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SAFETY WARNINGS



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.

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 suitable horizontal and stable insulating material 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 unburnt 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 2 sq. ft. (0.19 sq.m.) of air opening near the floor and 2 sq. ft. (0.19 sq. m.) near the ceiling directly to outdoors. Increase air openings for each additional heater.
20. **ALWAYS** keep combustibles, like textiles, paper and wood at least 8 ft. (2.4 m) from the front of the heater and 3 ft. (1 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.

GENERAL PRECAUTIONS

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
- dizziness
- nausea
- 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.

ELECTRICAL CONNECTIONS



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

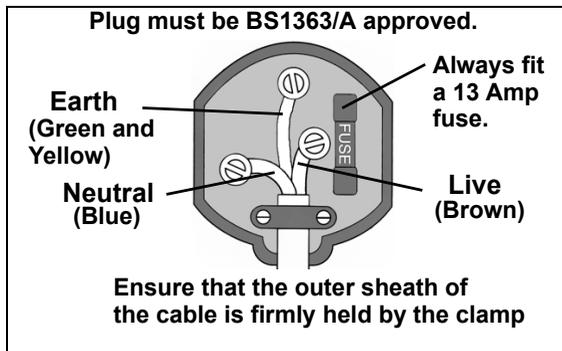
Connect the mains lead to a standard, 230 Volt (50Hz) electrical supply through an approved BS1363/A plug fitted with a BS1362 13 amp fuse.

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



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

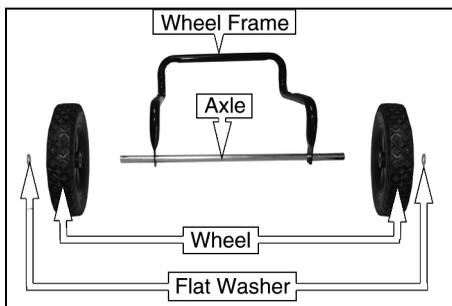
If you are not sure, consult a qualified electrician. DO NOT try to do any repairs.

UNPACKING

1. Remove heater from carton.
2. Remove all protective material which may have been applied to the heater for shipment.

ASSEMBLY

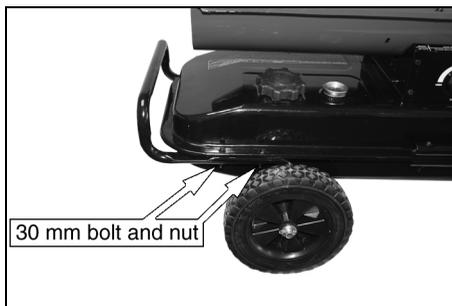
1. Pass the axle through the wheel frame as shown.
2. Fit a wheel on to each end.
3. Fit a flat washer onto each end.
4. Secure in place by inserting a split-pin into the hole at the end of the axle.



5. Fit the handle into position and secure using four 30 mm bolts and nuts provided (2 each side).



6. Place the wheel assembly into position and secure using four 30 mm bolts and nuts provided (2 each side).



PREPARATION

FUEL TYPES

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

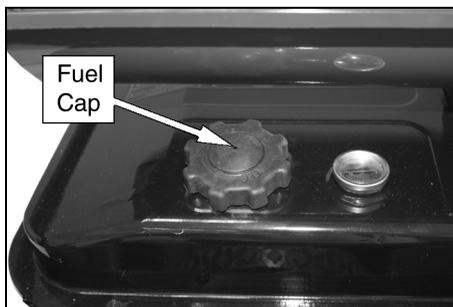
FILLING THE FUEL TANK

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 Precautions".
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 part number GF0K070000.

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 5 litres for the XR60B, 6 litres of fuel for the XR80 & XR110, or 10 litres the XR160 and XR210.

HEATER LOCATION

- Locate heater at a safe distance from combustible materials.
- When used, the heater should rest on suitable insulating material at least 1 inch thick and extending 3 ft. or more beyond the heater in all directions.
- Only operate on a flat level and stable surface.

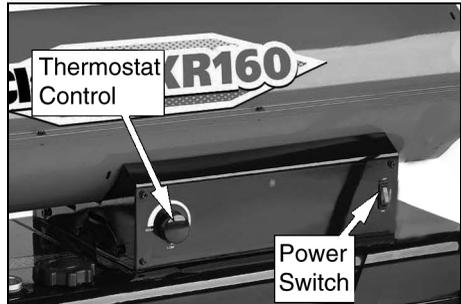
OPERATING INSTRUCTIONS

HEATER START UP



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

1. Make sure power switch is in the OFF position.
2. Turn thermostat to lowest setting.
3. Plug the heater into the mains power supply.
4. Turn the thermostat to highest setting.
5. Start heater by setting the power switch to the ON position.
 - The switch illuminates in the ON position.
6. Adjust thermostat to desired setting.



NOTE: Heater will cycle on/off as heat is required.

HEATER SHUT DOWN

1. Set the power switch to the OFF position.
2. For extended shutdown, unplug the heater from the mains supply.

BEFORE STORAGE

- Clean the heater as described in the MAINTENANCE section.

MAINTENANCE, STORAGE AND SERVICING



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

DAILY SCHEDULE

GENERAL

1. Make a general visual inspection of the heater for loose or damaged parts.
2. Check nuts and bolts are secure.
3. Damaged parts should be repaired or replaced before using the heater again.
4. 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 strong disagreeable odor, eye burning or other physical discomfort.
 - There is no smoke or soot internal or external to the heater.
 - There are no unplanned or unexplained shut downs of the heater

REMOVE DUST

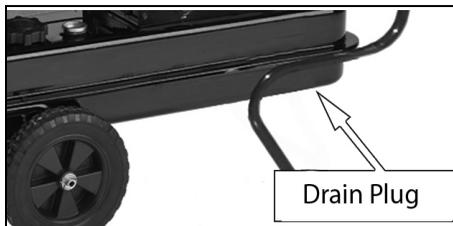
Clean the heater twice a season (more often under dusty conditions).

1. Remove accumulated dust from the transformer, burner, motor and fan blades with compressed air.
2. Wipe clean with a clean dry cloth.

FUEL TANK (EVERY 500 HOURS)

Clean twice a season (during frequently used periods, clean twice a month). Drain and flush the fuel tank with clean fuel.

The XR160 and XR210 has a rubber drain plug (part number GF125KT240000) on the bottom of the tank. Place a suitable container beneath the drain plug and pull out the plug, replace the plug before filling the tank again.



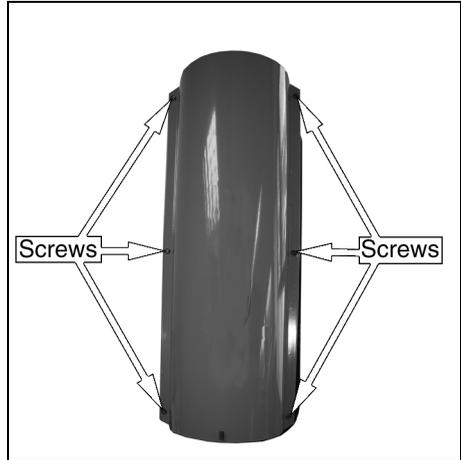
FILTERS

Dirty air filters will cause an imbalance in the air-fuel mixture. The best indication that this condition exists is an increase in odour or difficulty getting your heater to ignite. This heater should never be operated without the filters in place. If required, clean the filters as follows.

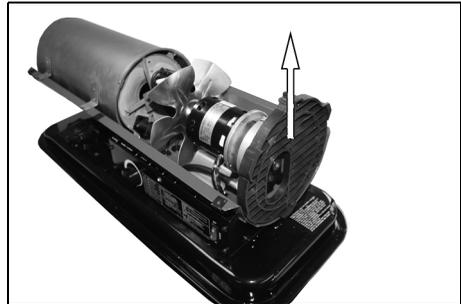
ACCESSING THE FILTERS

1. Make sure that the plug is removed from the power supply before carrying out any maintenance.
2. Remove the six screws shown and remove the top cover of the heater.

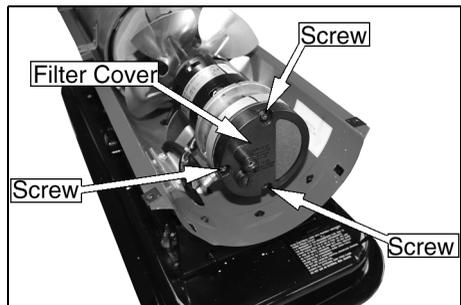
NOTE: There may be eight screws on the larger models.



3. Lift out the rear guard.



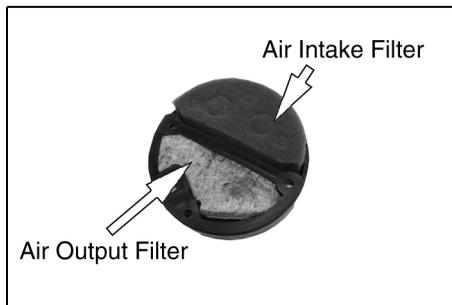
4. Remove the 3 screws securing the filter cover.
5. Pull the filter cover away from the motor.



AIR INTAKE FILTER CLEANING

6. To clean the air intake filter.

- Remove and wash the filter element with a mild detergent.
- Dry thoroughly and refit.
- Do not oil the filter element. If your heater is used where there is considerable dust or dirt.
- Clean as often as necessary (at least approximately every 500 hrs.).



NOTE: If the filter is damaged or extremely dirty, a replacement filter of the same type must be fitted, this is available from your local Clarke service department part number GF50K100406.

AIR OUTPUT FILTER CLEANING

7. To clean the air output filter (Annually or as required).

- Remove the air output filter and tap the contaminated side gently on a solid object to remove contaminates.

NOTE: Compressed air or liquids should not be used to clean this filter.

NOTE: If the filter appears damaged or extremely dirty, replace it with a new filter of the same type must be obtained and fitted this is available from your local Clarke service department part number GF50K100401.

8. Reinstall clean filter in to the filter body in the same position as it was when removed.

9. Replace the filter cover and secure using the screws removed in step 4.

NOTE: When replacing the filter cover, make sure that the gasket is firmly in place and the screws in the filter cover are tight to prevent air leaks. If the gasket is damaged a replacement must be obtained and fitted this is available from your local Clarke service department part number GF50K100407.

10. Refit the rear guard and replace the top cover.

11. Make sure all screws are replaced before use.

STORAGE

1. Drain any residual fuel / condensate from the fuel tank (see page 10).
2. Store the heater in a dry location free from fumes or dust.

TROUBLE SHOOTING

LED	OPERATION	TROUBLE SHOOTING
Steady ON	System Check	System performing self test. No action required.
Steady OFF		No action required.
2 Flashes	No flame detected	Heater fails to start. 1. Check fuel level 2. Check the mains plug is correctly fitted and that the fuse inside it has not blown. 3. Return to Clarke service department for repair.
3 Flashes	High limit switch failure (unit has overheated) Low fuel level (cut-off to avoid smoking)	Make sure heater is cooled down, 1. Make sure that the power switch is set to the OFF position. 2. Wait 5 minutes 3. Start heater by setting the power switch to the ON position. 4. Re-fuel heater
4 Flashes	Flame sensor Failure	Return to Clarke service department for repair.

ENVIRONMENTAL RECYCLING POLICY



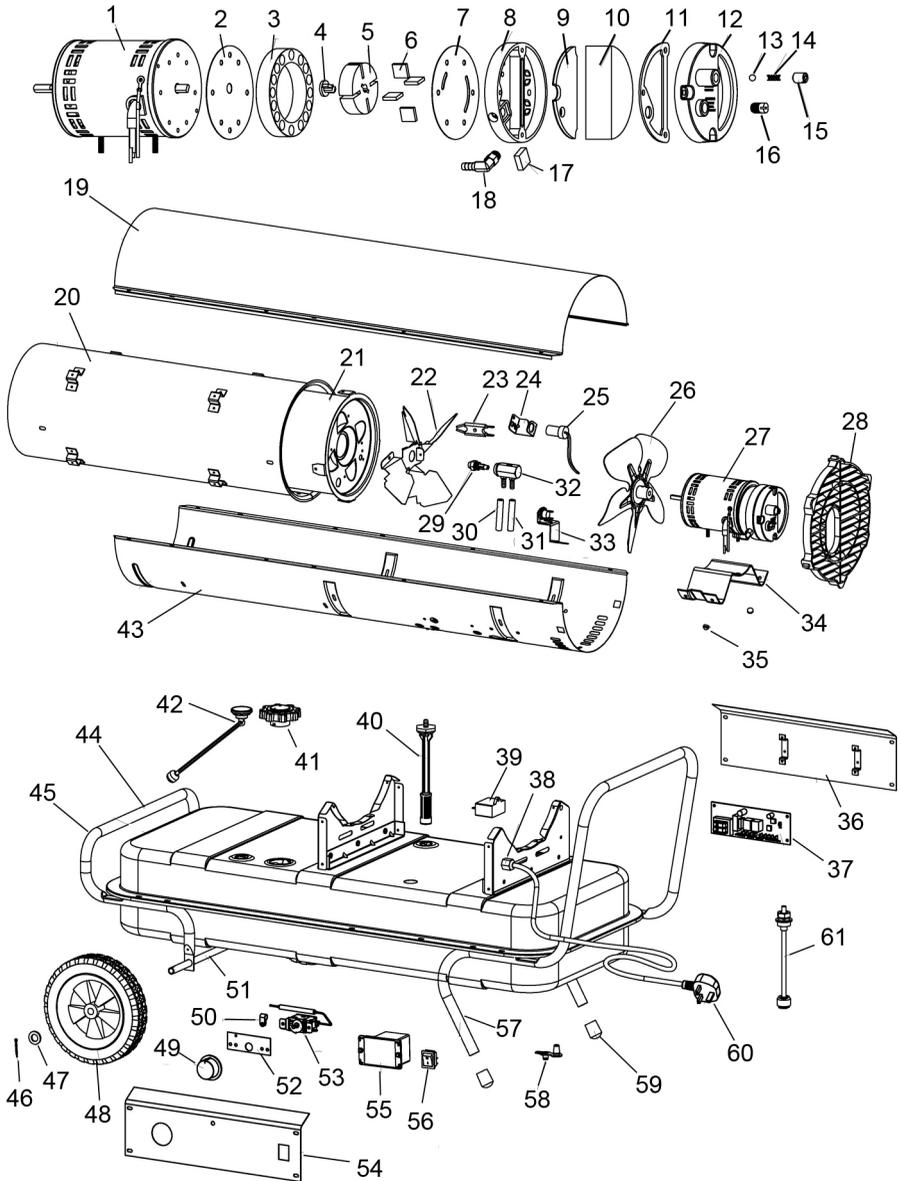
Through purchase of this product, the customer is taking on the obligation to deal with the WEEE in accordance with the WEEE regulations in relation to the treatment, recycling & recovery and environmentally sound disposal of the WEEE.

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.

PRODUCT SPECIFICATIONS

Model	XR60B	XR80	XR110	XR160	XR210
Burn Rate: (Btu/hr.)	50,000	70,000	100,000	160,000	210,000
Fuel consumption:	1.6 L/hr	1.9 L/hr	2.8 L/hr	3.91 L/hr	4.16 L/hr
Approx Running Time:	9.4 hr	11.9 hr	11.4 hr	13.5 hr	12.7 hr
Electrical input:	230V ~ 50Hz				
Power	166 W	165 W	204 W	279 W	307 W
Max.Outlet Temp:	1300°F (704°C)				
Fuel Tank Capacity:	15 L	22.7 L	32 L	53 L	53 L
Ignition system:	Electric Ignition				
Primary Safety Control:	Flame failure device				
Weight (kg)	15	15.4	18.2	24.5	24.5
Dimensions (DxWxH)mm	830 x 410 x 628	830 x 410 x 648	905 x 413 x 700	1045 x 528 x 692	1045 x 528 x 692
Minimum Fuel Level	5 L	6 L	6 L	10 L	10 L

COMPONENT PARTS

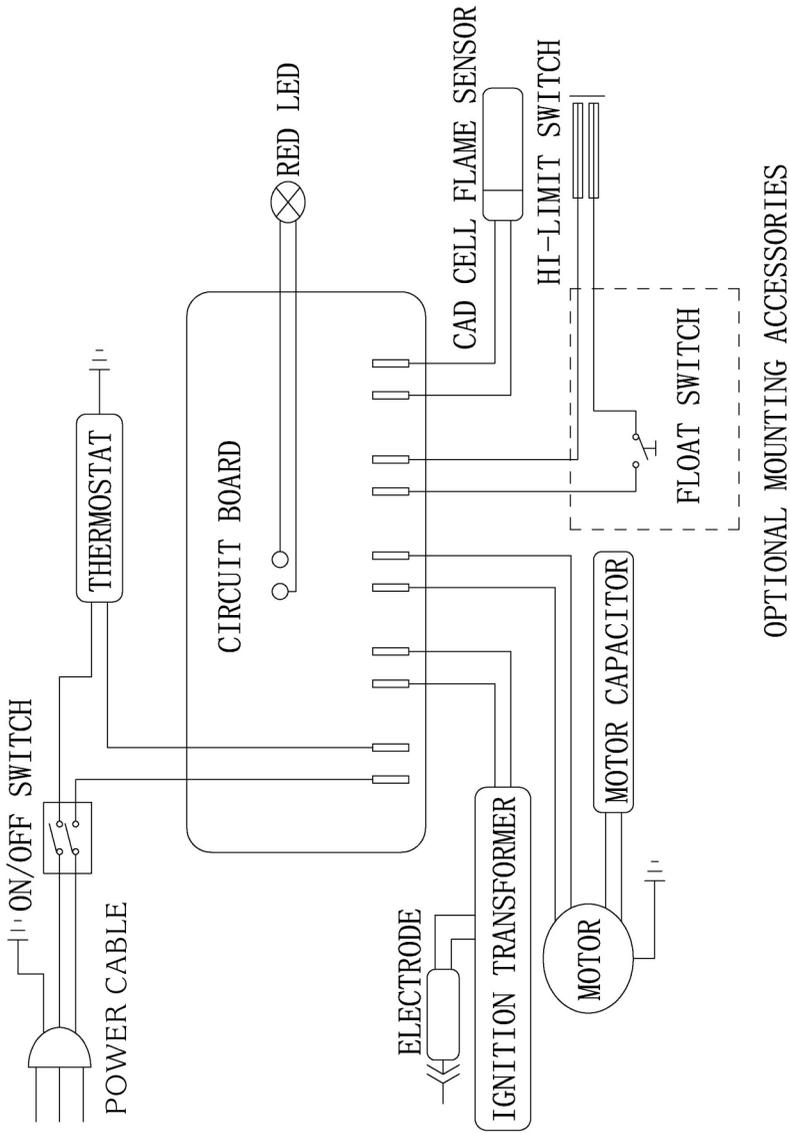


COMPONENT PARTS

PARTLIST

No.	XR60B	XR80	XR110	XR160	XR210	
1	Assembly, motor	1A	1B	1B	1C	1C
2	SS sheet A	2A	2A	2A	2B	2B
3	Air pump cylinder	3	3	3	3	3
4	Air pump insert	4	4	4	4	4
5	Rotor, air pump	5	5	5	5	5
6	Vane, air pump	6	6	6	6	6
7	SS sheet B	7	7	7	7	7
8	Outlet housing, air filter	8	8	8	8	8
9	Assembly, outlet filter	9	9	9	9	9
10	Inlet filter	10	10	10	10	10
11	Gasket, outlet filter	11	11	11	11	11
12	Inlet housing, air filter	12	12	12	12	12
13	Ball, pressure adjustment	13	13	13	13	13
14	Spring, pressure adjusting	14	14	14	14	14
15	Pump adjusting screw	15	15	15	15	15
16	Nylon pipe plug	16	16	16	16	16
17	Outlet filter	17	17	17	17	17
18	Hose barb adapter	18	18	18	18	18
19	Top shell	19A	19A	19B	19C	19C
20	Assembly, outer cylinder	20A	20B	20C	20D	20D
21	Assembly, middle cylinder	—	—	21A	21B	21B
22	Mounting plate nozzle	22A	22A	22B	22C	22C
23	Assembly, electrode	23	23	23	23	23
24	Support, cad cell	24	24	24	24	24
25	Assembly, cad cell flame sensor	25	25	25	25	25
26	Assembly, fan	26A	26A	26B	26B	26C
27	Assembly, power Pac	27A	27B	27C	27D	27D
28	grille	28A	28A	28B	28B	28B
29	nozzle	29A	29B	29C	29D	29E
30	Air tube	30A	30A	30B	30B	30B
31	Fuel tube	31A	31A	31B	31C	31C
32	Nozzle adapter	32A	32A	32B	32B	32B
33	Assembly, hi-limit switch	33A	33A	33B	33B	33B
34	Motor mounting brkt	34A	34A	34B	34C	34C
35	Anti-vibrator, motor	35	35	35	—	—
36	Right panel	36A	36A	36B	36C	36C
37	Assembly, flame control	37	37	37	37	37
38	Bushing strain relief	38	38	38	38	38
39	Capacitor	39A	39A	39A	39B	39B
40	Assembly, fuel filter	40A	40B	40C	40D	40D
41	Assembly, fuel cap	41	41	41	41	41
42	Assembly, fuel gauge	—	42A	42B	42B	42B
43	Bottom shell	43A	43A	43B	43C	43C
44	Haddle, front	44A	44B	44B	44C	44C
45	Assembly, fuel tank	45A	45B	45C	45D	45D
46	Cotter pin	46	46	46	46	46
47	Washer	47	47	47	47	47
48	Wheel	48	48	48	48	48
49	Knob	49	49	49	49	49
50	Loop clamp	50	50	50	50	50
51	Axle	51A	51A	51A	51B	51B
52	Mounting plate, Thermostat	52	52	52	52	52
53	Assembly, Thermostat	53	53	53	53	53
54	Left panel	54A	54A	54B	54C	54C
55	Assembly, igniter transformer	55	55	55	55	55
56	ON/OFF switch	56	56	56	56	56
57	Handle, Back	57A	57A	57B	57C	57C
58	Draining plug	—	—	—	58	58
59	Tube socks	59	59	59	59	59
60	Power cord	60	60	60	60	60
61	Float Switch	—	61	61	61	61

WIRING CIRCUIT DIAGRAM



DECLARATION OF CONFORMITY - UK



Clarke® INTERNATIONAL

Hemncoll 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 statutory requirement(s):

Electromagnetic Compatibility Regulations 2016

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 55014-1:2017+A11:2020, EN 55014-2:2015, EN 61000-3-2:2014, EN 61000-3-3:2013,

EN 60335-2-102:2016, EN 60335-1:2012+A11:2014+A13:2017+A1:2019+A2:2019+A14:2019,

IEC 62321-3-1:2013, IEC 62321-5:2013, IEC 62321-4:2013, IEC 62321-7-2:2017,

IEC 62321-7-1:2015, IEC 62321-6:2015, IEC 62321-8:2017.

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: 2022

Product Description:	Paraffin / Diesel Fired Space Heaters
Model number(s):	XR60B, XR80, XR110, XR160, XR210
Serial / batch Number:	N/A
Date of Issue:	17/05/2023

Signed:

J.A. Clarke
Director

DECLARATION OF CONFORMITY - CE



Clarke[®]
INTERNATIONAL

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 directive(s):

2014/30/EU *Electromagnetic Compatibility Directive*
2014/35/EU *Low Voltage Directive*
2011/65/EU *Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Directive*

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

*EN 55014-1:2017+A11:2020, EN 55014-2:2015, EN 61000-3-2:2014, EN 61000-3-3:2013,
EN 60335-2-102:2016, EN 60335-1:2012+A11:2014+A13:2017+A1:2019+A2:2019+A14:2019,
IEC 62321-3-1:2013, IEC 62321-5:2013, IEC 62321-4:2013, IEC 62321-7-2:2017,
IEC 62321-7-1:2015, IEC 62321-6:2015, IEC 62321-8:2017.*

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

The CE mark was first applied in: 2011

Product Description: Paraffin / Diesel Fired Space Heaters
Model number(s): XR60B, XR80, XR110, XR160, XR210
Serial / batch Number: N/A
Date of Issue: 17/05/2023

Signed:

J.A. Clarke
Director

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