

Clarke®



PROPANE GAS HEATER

MODEL NO: DEVIL 3000

PART NO: 6920027

OPERATION & MAINTENANCE INSTRUCTIONS

UK
CA | CE



ORIGINAL INSTRUCTIONS

GC03/23

INTRODUCTION

Thank you for purchasing this CLARKE product. Before attempting to use this product, please read this manual thoroughly and follow the instructions carefully.

FUNCTION AND OPERATING PARAMETERS

This is a forced air heater meaning that a blower or fan pushes the air through the heater. Proper combustion depends upon the 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.

This heater is intended for drying and the warming of commercial/industrial buildings where adequate ventilation is provided.

This heater is not intended;

- to be used for domestic use or for the heating of habitable areas.
- to be used to reach and maintain a certain level of human thermal comfort within an enclosed space in which the heater is situated.
- be used in enclosed areas with restricted ventilation.
- for use in areas with high levels of fluctuating drafts.
- for warming animals or livestock.

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.

SAFETY INFORMATION



WARNING: LACK OF VENTILATION CAN CAUSE CARBON MONOXIDE POISONING.

WARNING: CARBON MONOXIDE POISONING CAN KILL.

Signs of Carbon Monoxide poisoning are headaches, dizziness and/or nausea. Should anyone show these signs, they must GET FRESH AIR IMMEDIATELY. Turn off the heater and have it serviced before using again.

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.

Read, and make sure you fully understand the following precautions and the hazards associated with this type of heater.

Use ONLY liquid propane gas with this heater.

Ensure the propane gas bottle, gas hose and electric cable, are positioned behind the unit, well away from the heat.

Ensure gas hose and regulator connections are gas-tight and the hose is not kinked.

NEVER use the heater where flammable vapours or if a high dust content is present in the air.

ONLY use with the voltage specified and ensure the heater is properly earthed.

Use only in well ventilated areas. Provide ventilation of at least 3 square feet of fresh air for every 100,000 BTU/hr of rating.

ALWAYS allow the working clearances around the heater as stated on page 5.

Keep the heater as far as practical from propane bottles and never point the heater directly at any propane bottle.

Stand the heater on a stable, level surface whilst hot or operating. If the heater should overturn, a fire could occur.

Keep children and animals away from heater at all times.

Use heater in accordance with all fire regulations.

NEVER use heater for domestic heating in living or sleeping areas.

NEVER leave a heater plugged in without adult supervision if children or animals are likely to be present.

NEVER move, handle, replenish the gas supply or service the heater when it is hot, operating or plugged in.

NEVER attach the heater to any duct work, or impede air flow into or out of the heater.

Disconnect the heater from the power supply when not in use, especially at night or otherwise unattended.

Use ONLY the factory pre-set regulator supplied.

If the heater works for long periods at maximum capacity, be aware that it is possible for ice to form on the gas bottle due to excessive evaporation.

NEVER direct hot air towards the bottle in order to de-ice.

NEVER use in wet areas, basements or below ground level. Propane gas is heavier than air and will sink to the lowest possible level.

ALWAYS ensure the heater is correctly maintained in accordance with this manual.

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.

MINIMUM FRESH AIR OPENING REQUIREMENTS

- Minimum ventilation: 3.5 ft²
- DO NOT use in un-ventilated areas.
- The flow of combustion and ventilation air must not be obstructed.

MINIMUM CLEARANCES FROM COMBUSTIBLES

Outlet	8 Ft (2400mm)	Top	3 Ft (900mm)
Sides	2 Ft (600mm)	Rear	2 Ft (600mm)

RISKS OF CARBON MONOXIDE POISONING

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 the warnings in this manual.

WE RECOMMEND THE USE OF A CARBON MONOXIDE DETECTOR

ELECTRICAL CONNECTIONS



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

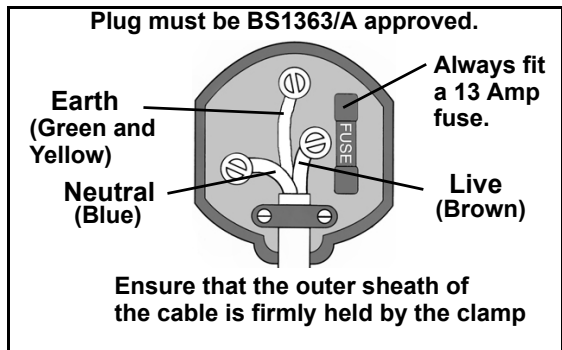
Connect the mains lead to a standard, 230 Volt (50Hz) electrical supply through an approved BS1363 plug fitted with a BS1362 13 amp fuse.

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 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 \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.

PROPANE GAS SUPPLY



WARNING: THE FITTING AND CHANGING OF THE GAS CYLINDERS MUST BE CARRIED OUT IN A FLAME FREE ATMOSPHERE.

WARNING: YOU SHOULD ONLY USE PROPANE GAS CYLINDERS AVAILABLE FROM BUILDERS MERCHANTS OR GAS SUPPLIERS.

This portable, direct-fired gas heater is designed to give safe, efficient and reliable operation, and is for use with propane gas only.

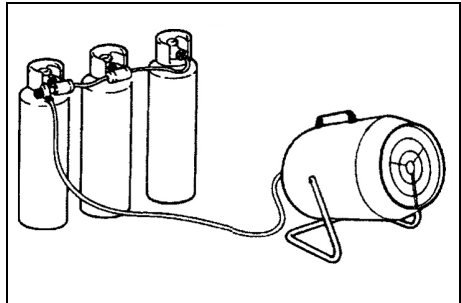
As with all mechanical equipment, optimum performance will only be achieved if the correct operation and servicing procedures are followed.



WARNING: PROPANE GAS CYLINDERS MUST BE USED AND STORED IN ACCORDANCE WITH THE 'HIGHLY FLAMMABLE LIQUIDS AND LIQUEFIED PETROLEUM GASES REGULATIONS 1972'

In order to reduce the risk of icing up when operating for long periods at maximum capacity, you should use a larger capacity gas bottle, or two/ three bottles in parallel as shown in the diagram.

Ensure the Propane gas bottle, gas hose and electric cable, are positioned behind the unit, away from the heat.



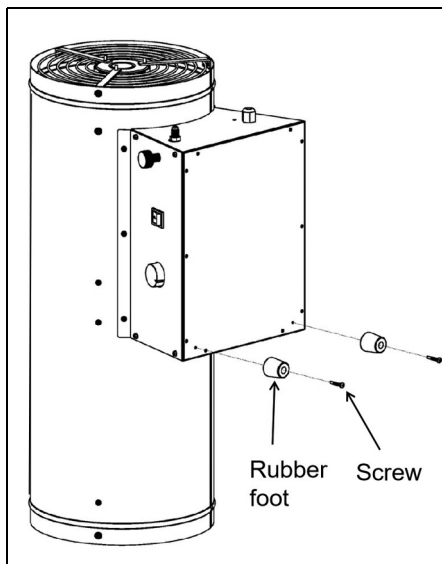
IN THE EVENT OF A GAS LEAK

1. Extinguish all smoking materials and other open flames.
2. Do NOT operate electric switches or light matches.
3. Close all supply valves on gas tank or cylinder.
4. Do NOT use your phone. USE a neighbour's phone or your mobile phone from outside the building or wherever you detected the gas leak to call the fire service.
5. Immediately get everyone out of the building or area.
6. Do NOT re-enter the building, or area until a trained service person or the fire service advises it is safe to return.

PREPARATION

ASSEMBLY

1. Check the heater for possible shipping damage. If any is found do not use the heater.
2. Stand the heater on end as shown, on a soft surface to avoid scratches. We recommend the help of an assistant to lift and steady the heater during assembly.
3. Attach the rubber feet onto the bottom panel.



LOCATION

Position the heater at a safe distance from combustible materials. (see page 5 for distances)

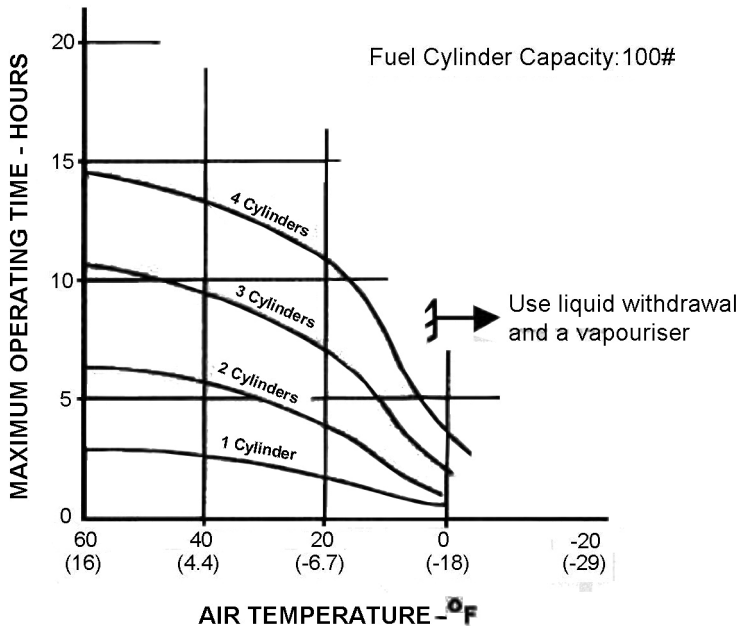
This heater must not be placed on wooden floors or other combustible materials.

When used, the heater should rest on suitable insulating material at least 1 inch thick and extending 1M (3 ft) or more beyond the heater in all directions.

SIZE AND CAPACITY OF PROPANE CYLINDERS

The chart shows the approximate size of the bottle required for these heaters. To use the chart:

1. Select the lowest air temperature expected (at the bottom of the chart).
2. Move straight up to time of operation desired (left side).
3. Read the bottle size required
4. Always use full bottles with good air circulation and no frost on the cylinders.



CONNECTING THE GAS BOTTLE

1. Follow all of the "General Safety" precautions on pages 3/4.
2. Connect a POL (Prest-o-Lite) fitting on hose/regulator assembly to the propane bottle(s).
 - Turn the POL fitting anti-clockwise into the threads on the bottle. Tighten firmly using a wrench.
3. Connect the hose to the heater by rotating the hose fitting clockwise.
 - Make sure that all gas connections are secure.
4. Open the gas valve and check all gas connections with a soap and water solution. **DO NOT USE A FLAME.**
5. Connect the power cable to a 230V, 50Hz, mains socket.

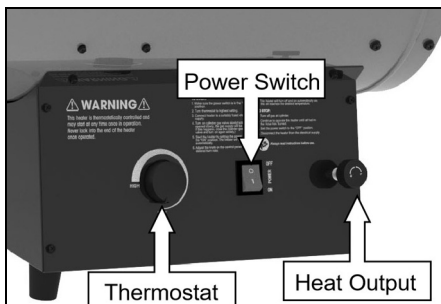
OPERATING INSTRUCTIONS



WARNING: BEFORE STARTING THE HEATER, YOU MUST ENSURE THAT THE MINIMUM VENTILATION REQUIREMENTS ARE OBSERVED TO AVOID THE RISK OF CARBON MONOXIDE POISONING.

HEATER START UP

1. Make sure the power switch is in the OFF (O) position.
2. Turn the thermostat to the highest setting.
3. Connect the heater to a suitably fused power supply.
4. Slowly turn on the cylinder gas valve.
 - If not opened slowly, the excess-flow check valve on the propane tank will stop the gas flow. If this happens close the propane supply valve and open again slowly.
5. Start the heater by setting the power switch to the "ON(I)" position. The heater will ignite automatically.
6. Adjust the knob on the control panel to the desired burn rate.
7. Set the thermostat to the desired temperature. The heater will turn off and on automatically as the air reaches the desired temperature.



HEATER SHUT DOWN

1. Securely close the valve on the propane cylinder.
2. Continue to operate the heater until all fuel in the hose has burned.
3. Set the power switch to the OFF (O) position.
4. Unplug the heater.

RESTART AFTER SAFETY SHUTDOWN

1. Securely close the valve on the propane cylinder.
2. Unplug heater.
3. Wait 5 minutes.
4. Restart, following the Heater Start Up procedure above.

MAINTENANCE, STORAGE AND SERVICING



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

MAINTENANCE AND STORAGE

1. The heater should be inspected at least annually by a qualified person.
2. Before each use, check the soft "O" ring seat at the bullnose of the POL fitting. If the "O" ring is cut, scuffed, or otherwise damaged, replace it.
3. Turn off the gas at the LP-gas supply cylinder(s) when the heater is not in use.
4. When the heater is to be stored indoors, the connection between the LP-gas supply cylinder(s) and the heater must be disconnected and the cylinder(s) removed from the heater and stored outdoors in accordance with local regulations.

SERVICING

A hazardous condition may result if a heater is used that has been modified or is not functioning properly. When the heater is working properly:

- The flame is contained within the heater.
- The flame is essentially blue with perhaps some yellow tipping.
- There is no strong disagreeable odour, 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.

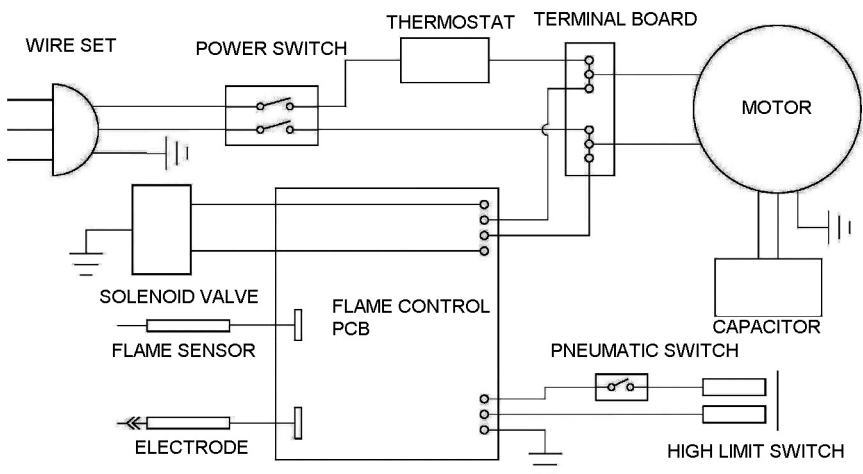
The parts lists and wiring diagram show the heater as it was constructed. DO NOT use a heater which is different from that shown. In this regard, use only the hose, regulator and cylinder connection fitting (POL fitting) supplied with the heater.

A heater which is not working correctly must be repaired, but only by a trained, experienced service person.

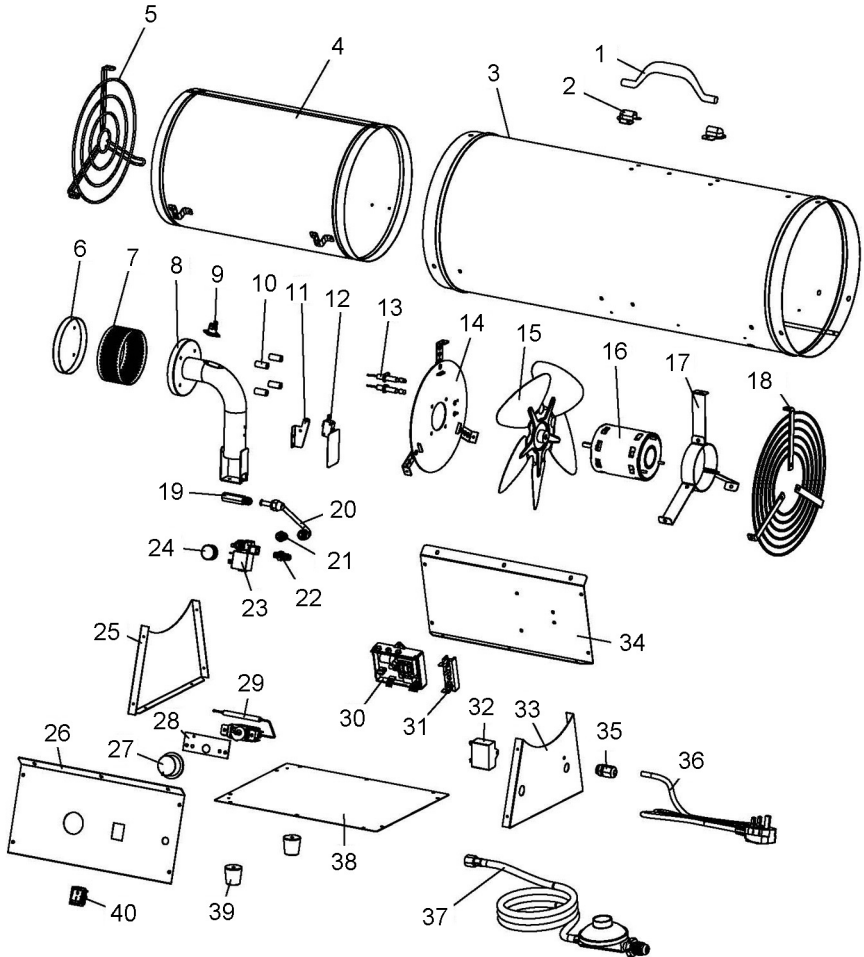
SPECIFICATIONS

Gas Type	Propane
Rated Heat Output	50-82kW(170,000-279,000 BTU/HR)
Maximum Pressure	Bottle Pressure
Minimum Pressure	1.5 Bar
Regulator Output	1.5 Bar
Electrical Input	220-240V, 50Hz
Ingress protection rating	IPx0
Ignition	Direct Spark
Primary Flame Control	Solid State 10-15 Sec timing
Thermostat Setting Temperature Range	15 °C - 35 °C
Fuel Consumption	3.6-5.2 kg/hr
Fuel Orifice Port Size	1.85 mm
Heated Air Output	1800 m ³ /hr
Weight	12.7 kg
Dimensions (L x W x H)	750 x 285 x 485 mm

WIRING DIAGRAM



COMPONENT PARTS





PARTS LIST

1	Handle
2	Handle mounting clips
3	Outer shell
4	Middle cylinder
5	Front guard
6	Burner outer plate
7	Burner grid
8	Burner mixing tube
9	High limit switch
10	Burner - SS spacer
11	Mounting bracket
12	Pneumatic switch
13	Electrode /flame sensor
14	Flame holder assembly
15	Fan
16	Motor assembly
17	Motor mounting bracket
18	Inlet grille
19	Orifice plate
20	Fuel tube assembly

21	Extension fitting
22	Inlet connector
23	Solenoid valve assembly
24	Solenoid valve knob
25	Control box front panel
26	Control box left panel
27	Thermostat knob
28	Thermostat mounting bracket
29	Thermostat assembly
30	Flame control PCB
31	Terminal board
32	Capacitor
33	Control box back panel
34	Control box right panel
35	Strain relief bush
36	Power cable assembly
37	Hose/regulator assembly
38	Control box bottom panel
39	Rubber foot
40	Power switch

DECLARATIONS OF CONFORMITY





INTERNATIONAL
Hennock Street, Epping, Essex, CM1 6 4LG

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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 Electromagnetic Compatibility Regulations 2016*
- The Gas Appliances (Enforcement) and Miscellaneous Amendments Regulations 2018*
- 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):

IEC 62321-3-1:2013, IEC 62321-4:2013, IEC 62321-5:2013, IEC 62321-6:2015, IEC 62321-7-1:2015, IEC 62321-7-2:2017, IEC 62321-8:2017, EN 1596:1998+A1:2004, EN 16129:2013, EN 62233:2008, EN 60335-1:2012+A11:2014+A13:2017+A1:2019+A2:2019+A14:2019, EN 60335-2-102:2016, EN 55014-1:2017+A11:2020, EN 55014-2:2015, EN 61000-3-2:2014, EN 61000-3-3:2013

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: 2023


Product Description:	Gas Heater
Model Number(s):	DEVIL 3000
Serial/Batch Number:	Refer to product/packaging label
Date of Issue:	01/03/2023


Signed: 

J.A. Clarke
Director

DEVIL 3000 UKCA Clarke DOC 000123

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INTERNATIONAL
Fitzwilliam Hall, Fitzwilliam Place, Dublin 2

Page 1 of 1

DECLARATION OF CONFORMITY

This is an important document and should be retained.

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

- Electromagnetic Compatibility Directive*
- Gas Appliances Regulation*
- Low Voltage Directive*
- Restriction of Hazardous Substances (RoHS) Directive*


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

IEC 62321-3-1:2013, IEC 62321-4:2013, IEC 62321-5:2013, IEC 62321-6:2015, IEC 62321-7-1:2015, IEC 62321-7-2:2017, IEC 62321-8:2017, EN 1596:1998+A1:2004, EN 16129:2013, EN 62233:2008, EN 60335-1:2012+A11:2014+A13:2017+A1:2019+A2:2019+A14:2019, EN 60335-2-102:2016, EN 55014-1:2017+A11:2020, EN 55014-2:2015, EN 61000-3-2:2014, EN 61000-3-3:2013

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: 2023

Product Description:	Gas Heater
Model Number(s):	DEVIL 3000
Serial/Batch Number:	Refer to product/packaging label
Date of Issue:	01/03/2023

Signed: 

J.A. Clarke
Director

DEVIL 3000 CE Clarke DOC 000123

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Clarke INTERNATIONAL Hemnall Street, Epping, Essex CM16 4LG
www.clarkeinternational.com