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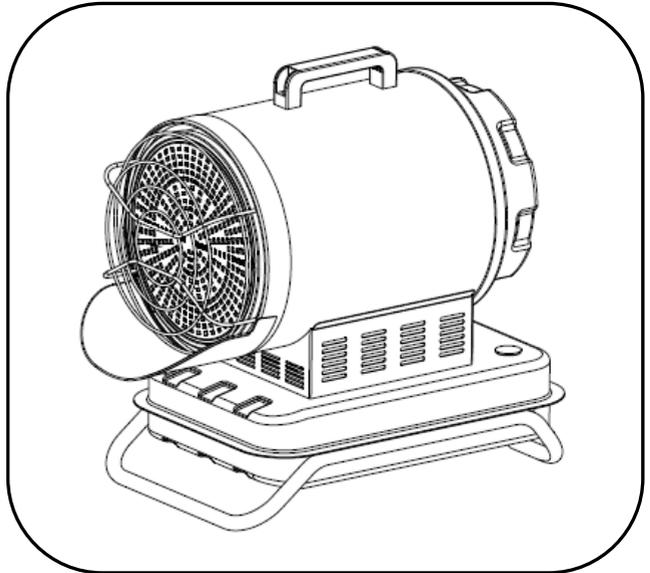
Leicestershire
LE12 9NH
United Kingdom

sip

SIP INDUSTRIAL

SIP FIREBALL ID78

Infrared Diesel Heater



09307

For help or advice please contact
your distributor, or sip directly on:

Tel.: 01509 500400

Email:

sales@sip-group.com

or

customerservice@sip-group.com

Please read and fully understand the instructions in this manual before
operation. Keep this manual safe for future reference.

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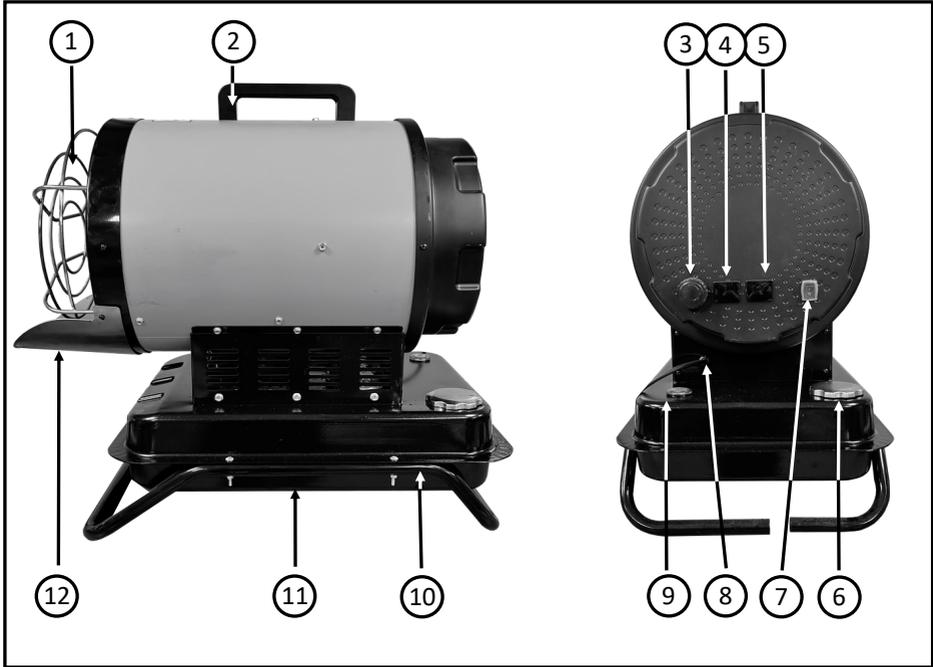


Note: Images used in this manual are for illustration purposes only, and may not be an exact representation of the product.

Technical Specification

Model No.	09307 ID78 23kW Infrared Diesel Heater
Operating Voltage	220 - 240V 50Hz
Fuse Rating (Plug)	13A
Fuse Rating (PCB)	5A
Fuel Consumption (L/hr)	2.19
Continuous Run Time (Hrs)	6.8
Fuel Tank Capacity	15L
Max Heat Output (kW/btu)	23 / 78,500
Dimensions (L x W x H)	655 x 360 x 580
Weight	17.4kg

Getting to know your Infrared Diesel Heater



<i>Item</i>	<i>Description</i>	<i>Item</i>	<i>Description</i>
1	Front Grille	7	Power Switch
2	Carry Handle	8	Power Inlet
3	Temperature Control Dial	9	Fuel Level Gauge
4	LED Temperature Setting Display	10	Floor Stand
5	LED Room Temperature Display	11	Fuel Tank
6	Fuel Filler Cap	12	Lower Heat Reflector

Safety Symbols Used Throughout This Manual



Danger / Caution: Indicates risk of personal injury and / or the possibility of damage.



Note: Supplementary Information.



Important: Please read the following instructions carefully, failure to do so could lead to serious personal injury and / or damage to the Heater.

Safety Instruction

This is a diesel powered heater. It's intended use is for drying and the Heating 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.
- **DO NOT** use for warming animals or live stock.

Safety Instructions Cont...

IMPORTANT: Please read the following instructions carefully, failure to do so could lead to serious personal injury and / or damage to the heater.

When using your heater, basic safety precautions should always be followed to reduce the risk of fire, electric shock, personal injury and / or damage to the heater. Read all these instructions before operating the heater and save this user manual for future reference. SIP recommends that this heater should not be modified or used for any application other than that for which it was designed. If you are unsure of its relative applications do not hesitate to contact us and we will be more than happy to advise you.

KNOW YOUR HEATER: Read and understand the owner's manual and labels affixed to the heater. Learn its applications and limitations, as well as the potential hazards specific to it.

DO NOT USE THE HEATER IN DANGEROUS ENVIRONMENTS: Do not use your heater in damp or wet locations, or expose it to rain. Always provide adequate space around the heater.

DO NOT OPERATE THE HEATER IN EXPLOSIVE ATMOSPHERES: Do not use the heater in the presence of flammable liquids, gases, dust or other combustible sources.

KEEP CHILDREN AND UNTRAINED PERSONNEL AWAY FROM THE WORK AREA: All visitors should be kept at a safe distance from the work area.

STORE THE HEATER SAFELY WHEN IT IS NOT IN USE: The heater should be stored in a dry, locked cupboard, or similar when not in use wherever possible and out of the reach of children.

STAY ALERT: Always watch what you are doing and use common sense. Do not operate the heater when you are tired or under the influence of alcohol or drugs.

DISCONNECT THE HEATER FROM THE MAINS SUPPLY: When not in use, before servicing and when refuelling etc.

AVOID UNINTENTIONAL STARTING: Make sure the switch is in the OFF position before connecting the heater to the mains supply.

Safety Instructions Cont...

DO NOT ABUSE THE MAINS LEAD: Never carry the heater by the mains lead or pull it to remove the plug from the mains socket. Keep the mains lead away from heat, oil and sharp edges. If the mains lead is damaged, it must be replaced by the manufacturer or its service agent or a similarly qualified person in order to avoid unwanted hazards.

HAVE YOUR HEATER REPAIRED BY A QUALIFIED PERSON: The heater is in accordance with the relevant safety requirements. Repairs should only be carried out by qualified person using original spare parts, otherwise this may result in considerable danger to the user.

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.

WE RECOMMEND THE USE OF A CARBON MONOXIDE DETECTOR

Guarantee

This item is covered by a 24 month parts and labour warranty covering failure due to manufacturers defects.

This does not cover failure due to misuse or operating the item outside the scope of this manual - any claims deemed to be outside the scope of the warranty may be subject to charges Including, but not limited to parts, labour and carriage costs.

Consumable items such Handles, Nozzles etc are not covered by the warranty.



Note: Proof of purchase will be required before any warranty can be honoured.

Electrical Connection

Plug Wiring



Warning: The wires in the power cable of this product are coloured in accordance with the following code:

Blue = Neutral

Brown = Live

Yellow and Green = Earth



As the colours of the flexible cable of this appliance may not correspond with the coloured markings identifying terminals in your plug proceed as follows:

- Connect the GREEN & YELLOW wire to terminal marked “E” - Earth or 
- Connect the BROWN wire to terminal marked “L”
- Connect the BLUE wire to terminal marked “N”

If this appliance is fitted with a plug which is moulded onto the electric cable (i.e. non-rewirable) please note:

1. The plug must be thrown away if it is cut from the electric cable. There is a danger of electric shock if it is subsequently inserted into a socket outlet.
2. Never use the plug without the fuse cover fitted.
3. Should you wish to replace a detachable fuse carrier, ensure that the correct replacement is used (as indicated by marking or colour code).
4. Replacement fuse covers can be obtained from most electrical stockists.
5. The fuse in the plug must be replaced with one of the same rating (5 Amp) and this replacement must be ASTA approved to BS1362.

Replacement fuse covers can be obtained from your local dealer or most electrical stockists.

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Operating Environment

Minimum Air Requirements

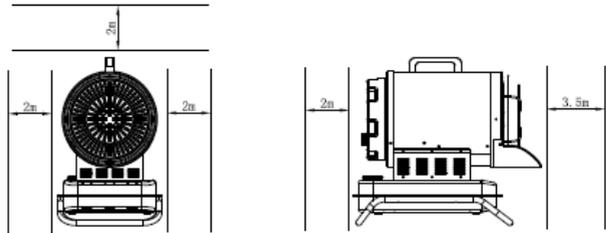
As a general rule of thumb, Ventilation of 1inch² per 1000 Btu/hr is a minimum requirement.

These heaters are specified as requiring a minimum ventilation of 3sq/ft per 100,000BTU/hr.

Environment

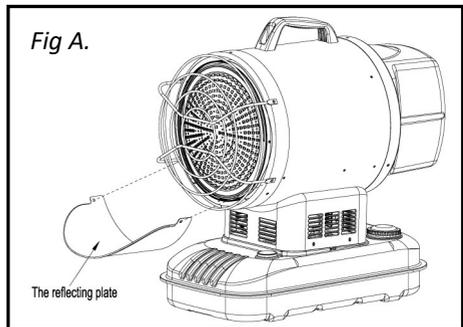
DO NOT obstruct the air intake to the heater and allow the following clearances from combustible surfaces.

- Outlet:: 3.5m
- Sides: 2.0m
- Top: 2.0m
- Rear: 2.0m



When using the heater on a non heat resistant floor (Ie. Wooden Flooring) the lower reflecting plate must be installed as shown (Fig A.)

This minimises the radiant heat projected downwards, protecting the floor below the heater



 **Danger / Caution:** The Reflective Plate, only minimises the chance of fire/damage to the flooring. It DOES NOT prevent the chance of fire/damage.

Operating Instructions

Re-fuelling Preparation

Before refuelling the heater ensure that the following checks have been completed;

- Heater is disconnected from the mains supply.
- Heater has been allowed sufficient time to fully cool.
- Ensure all combustibles have been removed from the area.
- Ensure the correct PPE is worn (Gloves, Visor etc...)
- Ensure the fuel tank is free of contaminants (Water, Dirt etc...)

Re-fuelling

- Place the Heater on a level and stable surface
- Unscrew the fuel tank cap
- Add fuel, ensure to leave a sufficient air gap at the top of the tank.
- Re-install the fuel cap, and ensure it is correctly tightened.

Operating Instructions Cont...

Starting The Heater

1. Ensure the heater has a sufficient volume of fuel in the tank.
2. Plug the power cord into a 220v wall socket, and switch the power “ON” ensure that the wall socket is correctly earthed.
3. Turn the Temperature Control Dial to the desired room temperature, the temperate range is from 0°C - 65°C
4. Turn the Power Switch on the rear of the product to the “ON” position

If the product does not start immediately, check that the temperature shown on the digital display is lower than the temperature set on the dial.

5. To increase the room temperature, simply increase the setting on the dial by rotating clockwise.

During use the heater will cut in and out as it reaches the temperature set on the dial, do not attempt to force the heater to restart manually.

If the heater is cutting out, and the room is not at a desired temperature. Increase the setting on the Temperature Control Dial



Danger / Caution: Indicates risk of personal injury and / or the possibility of damage.



Important: Please read these instructions carefully, failure to do so could lead to serious personal injury and / or damage to the Heater.

Stopping The Heater

1. Switch the heater power switch to the “OFF” position, this will turn the power to the igniter, and the fuel pump off. But leave the power to the fan “ON”
2. The fan will automatically stop 3 minutes after combustion

DO NOT SWITCH OFF THE MAINS POWER PRIOR TO THE FAN AUTOMATICALLY SWITCHING OFF

3. ONLY after the fan has automatically stopped, can the mains power supply be disconnected.
4. Unplug from the socket when not in use.

Maintenance



Warning: Disconnect the heater from the mains power supply before carrying out maintenance.

It is essential that the heater is correctly maintained and kept in top condition at all times.

All models are similar, in that access to the control components is gained by removing the access panel under the base of the heater which is secured by screws around the edge.

Monthly

- Check the igniter for cleanliness and correct operation.
- Ensure that all connections are clean and secure.
- When necessary, clean the fan and the inside of the heater thoroughly, using a non abrasive cloth, and non flammable cleaning solution.

Storage

- Drain all fuel from the fuel tank.
- Wipe product clean using a damp cloth, and allow to air dry.
- Return product to its original packaging .
- Store in a cool dry area, away from damp and raised off of the floor

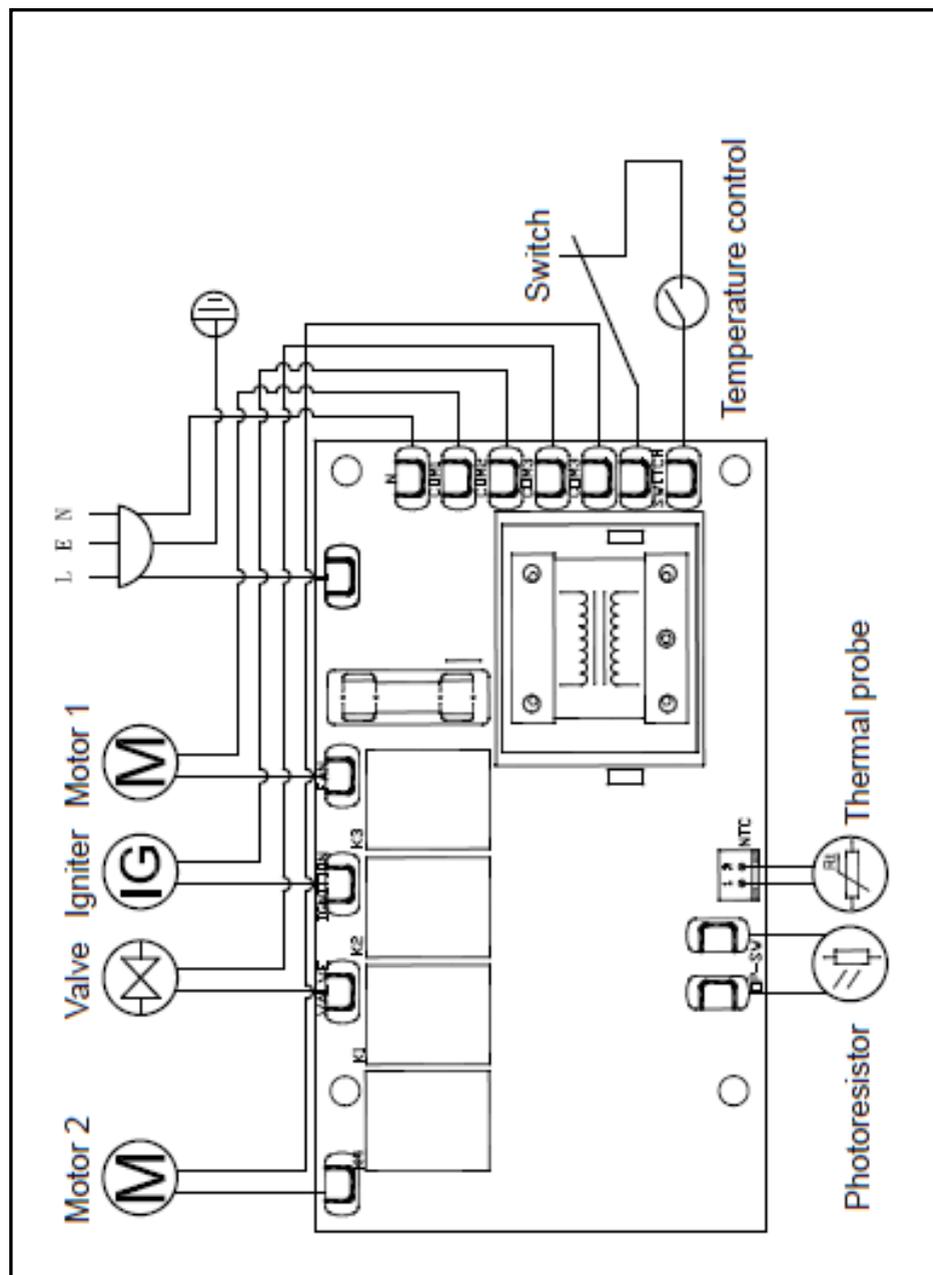
Troubleshooting

Problem	Possible Cause	Solution
Heater fires, but Main PCB shuts heater off after a short period of time.	<ol style="list-style-type: none"> 1. Dirty Fuel Filter 2. Nozzle is Dirty 3. Photocell lens is Dirty 4. Photocell not installed properly 5. Photocell Defective 6. Improper electrical connection between Main PCB and Photocell. 	<ol style="list-style-type: none"> 1. Clean/replace Fuel Filter 2. Clean/replace Nozzle 3. Clean/replace Photocell 4. Adjust Photocell position 5. Replace Photocell 6. Check wiring connections
Heater will not operate for short time.	<ol style="list-style-type: none"> 1. No fuel in fuel tank 2. Corroded Spark Plug or incorrect plug gap. 3. Dirty Fuel Filter 4. Dirty Nozzle 5. Moisture in Fuel/Fuel Tank 6. Improper electrical connection between Transformer and Circuit Board 7. Igniter Wire not connected to Spark Plug 8. Defective Igniter 	<ol style="list-style-type: none"> 1. Fill tank with fresh fuel 2. Clean/replace Spark Plug 3. Clean/replace Fuel Filter 4. Clean/replace Nozzle 5. Rinse out fuel tank with clean fresh fuel . 6. Inspect all electrical connections. 7. Re-attach Igniter wire to Spark Plug 8. Replace Igniter
Fan does not operate when heater is plugged in and Power Switch is in the "ON" position.	<ol style="list-style-type: none"> 1. Thermostat is set too low 2. Broken electrical connection between Main PCB and motor 	<ol style="list-style-type: none"> 1. Rotate thermostat to a higher setting 2. Inspect all electrical connections.
Poor Combustion and / or excess soot production	<ol style="list-style-type: none"> 1. Dirty Fuel Filter 2. Poor quality of fuel 	<ol style="list-style-type: none"> 1. Clean/replace Fuel Filter 2. Be sure fuel is not contaminated or old
Heater does not turn on, and the lamp is not illuminated	<ol style="list-style-type: none"> 1. Temperature limit sensor has overheated 2. No electrical power 3. Fuse Blown 4. Improper electrical connection between Temperature Limit Sensor and Circuit Board 	<ol style="list-style-type: none"> 1. Push Power Switch to "OFF" and allow heater to cool for 10 minutes. Push Power Switch to back to "ON" 2. Check power cord and extension cord to insure of proper connection. Test power supply 3. Check/replace Fuse 4. Inspect all electrical connections.

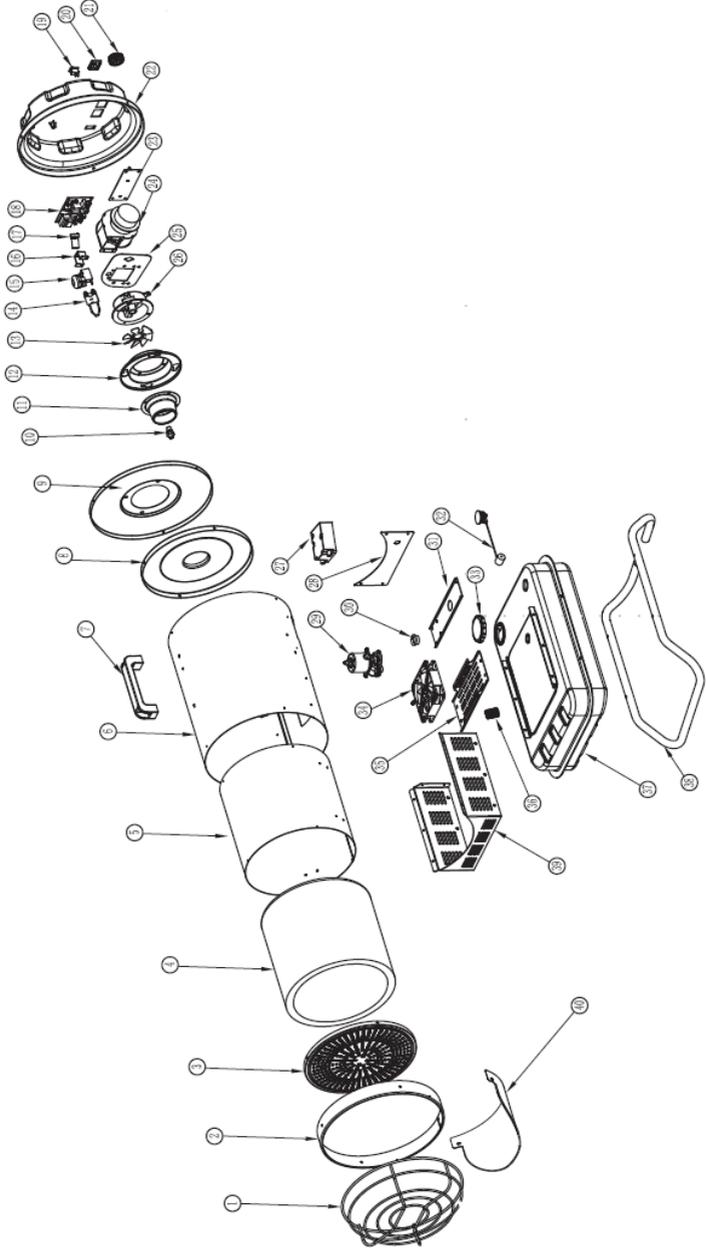
Troubleshooting Cont...

Error Code	Cause				Processing Method
E1	Lack of fuel in the tank				Switch off heater , and refill the fuel tank.
	Electric eye trouble				Remove the dust on the photocell, or replace.
	Insufficient burning				Replace fuel or clean fuel filter
	The ignition pin is not arcing				Clean the igniter, and check connections
E2	Temperature sensor fault				Check the connections, or replace sensor
Fault Symptom	No Power	No Ignition	Flame Cuts Out	Smoke Emission	Resolution
No Electricity	●				Check Power Supply
Power Cut	●				Turn Off/On using the heater switch
Low Voltage				●	Check supply voltage
Incorrect Frequency				●	Check Supply Frequency
Clogged Fuel Filter			●	●	Replace Filter
Fuel Empty		●	●		Re-fill Fuel Tank
Poor Quality Fuel		●	●	●	Replace Fuel

Wiring Diagram



Parts Drawing



03907 SIP FIREBALL ID78

Parts List

09307 SIP FIREBALL ID78 23kW Infrared Diesel Heater		
Ref. No	Description	Ref. No Description
1	Front Grille	21 Rotatory Knob
2	Cover Ring	22 Plastic Rear Cover
3	Heating Plate	23 Sub PCB Display
4	Insulator	24 Fan Motor Assembly
5	Insulated Barrel	25 Fan Mounting Plate
6	Main Casing	26 Burner Head
7	Handle	27 Ignition Transformer
8	Air Guard	28 Lower Housing Rear Panel
9	Rear Cover Plate	29 Fuel Pump
10	Injection Nozzle	30 Fuel Outlet Plug
11	Inner Body Gasket	31 Fuel Pump Mounting Bracket
12	Air Outlet Gasket	32 Fuel Gauge
13	Stabilizing Plate	33 Fuel Filler Cap
14	Ignition Electrode	34 Fan
15	Tilt Switch	35 Motor Bracket
16	Photocell Bracket	36 Fuel Filter
17	Photocell	37 Fuel Tank Assembly
18	PCB	38 Stand
19	On/Off Switch	39 Lower Housing Support
20	LED Display Cover	40 Reflecting Plate

UK - DECLARATION OF CONFORMITY

We
SIP (Industrial Products) Ltd
Gelders Hall Road
Shepshed
Loughborough
Leicestershire
LE12 9NH
England

As the manufacturer within the UK, England, Scotland & Wales, declare that the

SIP FIREBALL ID78 23kw Infrared Diesel Heater Item Code - 09307

Conforms to the requirements of the following regulation(s), as indicated.

Electric Equipment (Safety) Regulations 2006

Electromagnetic Compatibility Regulations 2016

**The restriction of the use of certain Hazardous Substances in Electrical
and Electronic Equipment Regulations 2012**

And the relevant harmonised standard(s), including

BS EN 60335-2-102

BS EN IEC 55014-1:2021

BS EN IEC 55014-2:2021

BS EN IEC 61000-3-2:2019+A1:2021

BS EN 61000-3-3:2013+A1:2019+A2:2021



Mr P. Ippaso - Managing Director

SIP (Industrial Products) Ltd

Date: 11/06/2024



EU - DECLARATION OF CONFORMITY

We

**SIP (Machinery Europe) Ltd
Quayside Business Park
Dundalk
County Louth
Republic of Ireland**

As the manufacturers authorised representative within the EC declare that the

SIP FIREBALL ID78 23kw Infrared Diesel Heater Item Code - 09307

Conforms to the requirements of the following directive(s), as indicated.

2014/35/EU	Low Voltage Equipment Directive
2014/30/EU	Electromagnetic Compatibility Directive
2011/65/EU	Restriction Of Hazardous Substances

And the relevant harmonised standard(s), including

EN 60335-2-102
EN IEC 55014-1:2021
EN IEC 55014-2:2021
EN IEC 61000-3-2:2019+A1:2021
EN 61000-3-3:2013+A1:2019+A2:2021



Mr P. Ippaso - Managing Director
SIP (Machinery Europe) Ltd
Date: 11/06/2024



Please dispose of packaging for the product in a responsible manner. It is suitable for recycling. Help to protect the environment, take the packaging to the local amenity tip and place into the appropriate recycling bin.

Never dispose of electrical equipment or batteries in with your domestic waste. If your supplier offers a disposal facility please use it or alternatively use a recognised recycling agent. This will allow the recycling of raw materials and help protect the environment.



FOR HELP OR ADVICE ON THIS PRODUCT
PLEASE CONTACT YOUR DISTRIBUTOR,
OR SIP

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