



SPACE WARMER PARAFFIN / KEROSENE / DIESEL HEATERS

MODEL NO: **AB458.V3**

Thank you for purchasing a Sealey product. Manufactured to a high standard, this product will, if used according to these instructions, and properly maintained, give you years of trouble free performance.

IMPORTANT: PLEASE READ THESE INSTRUCTIONS CAREFULLY. NOTE THE SAFE OPERATIONAL REQUIREMENTS, WARNINGS & CAUTIONS. USE THE PRODUCT CORRECTLY AND WITH CARE FOR THE PURPOSE FOR WHICH IT IS INTENDED. FAILURE TO DO SO MAY CAUSE DAMAGE AND/OR PERSONAL INJURY AND WILL INVALIDATE THE WARRANTY. KEEP THESE INSTRUCTIONS SAFE FOR FUTURE USE.



Refer to instructions



Warning!
automatic start-up



Warning!
Hot surfaces



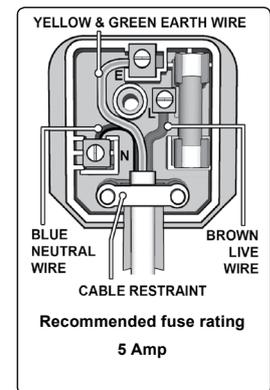
Warning!

THIS PRODUCT IS NOT SUITABLE FOR PRIMARY HEATING PURPOSES

1. SAFETY

1.1. ELECTRICAL SAFETY

- WARNING!** It is the responsibility of the owner and the operator to read, understand and comply with the following:
You must check all electrical products, before use, to ensure that they are safe. You must inspect power cables, plugs, sockets and any other connectors for wear or damage. You must ensure that the risk of electric shock is minimised by the installation of appropriate safety devices. A Residual Current Circuit Breaker (RCCB) should be incorporated in the main distribution board. You must also read and understand the following instructions concerning electrical safety.
- ✓ Ensure that cables are always protected against short circuit and overload.
- ✓ Regularly inspect power supply cables and plugs for wear or damage and check all connections to ensure that none are loose.
- ✓ Ensure that the voltage marked on the appliance matches the power supply to be used and that the plug is fitted with the correct fuse - see fuse rating at right.
- ✗ **DO NOT** use worn or damaged cables, plugs or connectors. Have any faulty item repaired or replaced immediately by a competent electrician.
- ✓ It is recommended that this heater is wired directly to a fused isolator switch. If, however, a plug is fitted, the following applies:
- ✓ Fit a new plug according to the following instructions (UK only).
 - a) Connect the GREEN/YELLOW earth wire to the earth terminal 'E'.
 - b) Connect the BROWN live wire to the live terminal 'L'.
 - c) Connect the BLUE neutral wire to the neutral terminal 'N'.
- d) After wiring, check that there are no bare wires, that all wires have been correctly connected, that the cable restraint is tight.



1.2. GENERAL SAFETY

- ▲ **DANGER!** Risk of carbon monoxide poisoning. Failure to provide proper ventilation could result in serious illness or death.
- ✓ Check that the heater is in sound condition and good working order. *Take immediate action to repair or replace damaged parts.*
- ✓ Use recommended parts only. *Unapproved parts may be dangerous and will invalidate the warranty.*
- ✓ Only use clean paraffin, kerosene or diesel (**NOT BIO-DIESEL**) to fuel your heater, in accordance with instructions contained in this manual
- WARNING!** Only use heater in well ventilated areas. Ensure continuous ventilation from outside of the building is provided to the heater operating area. Allow at least 3ft² opening/100000Btu/hr output.
- ✓ Keep the front of the heater a minimum of 2.4 metres and the rear and sides 1.2 metres from any combustible materials (i.e. wooden items, cloth, plastics, paper, tarpaulins or similar enclosure materials).
- ✓ Only operate on a level and stable surface.
- WARNING! DO NOT** use the heater near flammable material, liquids, solids, gases or compressed gas cylinders.
- ✗ **DO NOT** use the heater in closed rooms, living areas, basements or below ground level.
- ✗ **DO NOT** allow untrained persons to operate the heater and **DO NOT** operate the heater without the cover.
- ✗ **DO NOT** move or handle the heater when hot.
- ✗ **DO NOT** leave the heater unattended when in use. Switch the heater off and unplug from the mains before leaving work area.
- ✗ **DO NOT** fill the fuel tank whilst the heater is running or still hot.
- ✗ **DO NOT** overfill the fuel container. Wipe up any spilt fuel immediately.
- ✗ **DO NOT** obstruct the air inlet (rear) and air outlet (front) of the heater. **DO NOT** use duct work in front or at the rear of the heater.
- ✗ **DO NOT** look into the exhaust end of the heater.
- ✗ **DO NOT** allow children or animals near the heater when in use, or while hot.
- WARNING! RISK OF ELECTRIC SHOCK. DO NOT** expose the heater to water spray, rain, dripping water or wind.
- ✗ **DO NOT** operate the heater when you are tired or under the influence of alcohol, drugs or intoxicating medication.
- ✗ **DO NOT** touch the heater outlet or dome when first switched off as these are very hot and will take time to cool.
- ✓ Ensure that the heater is correctly turned off when not in use and store in a safe, dry area, out of reach of children.
- ✗ **DO NOT** unplug the heater to switch it off. Use the ON/OFF switch.
- WARNING!** Improper maintenance can lead to poor combustion and soot production

NOTE: This appliance is not intended for persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

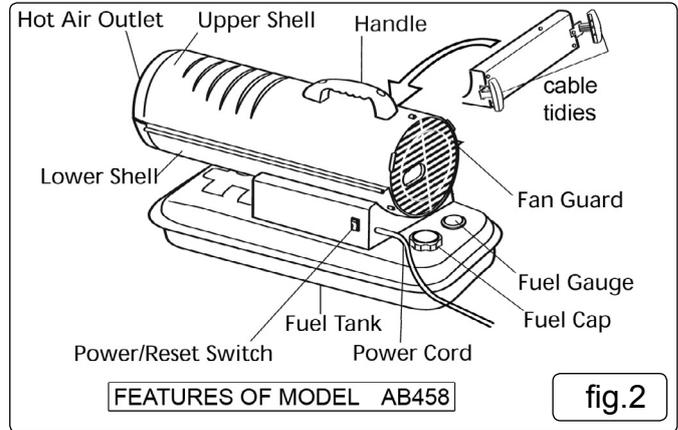
2. INTRODUCTION

Our range of Paraffin/Kerosene/Diesel Heaters represents excellent value. Workshop tried and tested. The range includes two economy portable units, Model No's AB458 and AB708, which are both supplied without wheels. All except Model No. AB458 have an adjustable thermostat (°C). Model No. AB1008 and above are fitted with digital room temperature (°C) display/error code readout and spare parts storage compartment. Proven pump systems handle either paraffin, kerosene or diesel with only minor adjustment of air compressor. All models are fitted with fuel tank gauge and heavy-duty fuel cap. Model No's AB1008, AB1258, AB1758 and AB2158 feature cable storage on handle.

- ❑ **WARNING! This heater is not suitable for use with Bio-Diesel; use of Bio-Diesel will damage the filter and seals. Damage caused by use of Bio-Diesel will not be covered by warranty.**



fig.1



FEATURES OF MODEL AB458

fig.2

3. SPECIFICATION

Model No:.....	AB458
Airflow:.....	170cfm
Automatic Shut-Off:.....	Yes
Fuel Tank:.....	19ltr
Fuel:.....	Paraffin/Kerosene/Diesel
Heated Area:.....	8,800ft ³ (249mtr ³)
Nett Weight:.....	12.7kg
Output:.....	45,000Btu/hr(13.2kW)
Running Time per Filling (Maximum):.....	14hr
Supply:.....	230V - 5A
Transport Wheels:.....	No

4. ASSEMBLY

4.1. ASSEMBLING TOP HANDLE

- 4.1.1. Align the holes in the handle with the holes in the upper housing. Insert and tighten the screws provided with a cross headed screwdriver as shown in fig.3.

4.2. ASSEMBLING THE CABLE TIDIES

- 4.2.1. Mount the cable ties onto either end of the panel on the other side of the heater from the main control panel, as shown in fig.1. Hook the two tabs on each moulding into the holes at either end of the panel. The tongue on each moulding should now be lying on the face of the panel. Secure each moulding in place with a screw through the tongue and into the ready made holes in the panel.

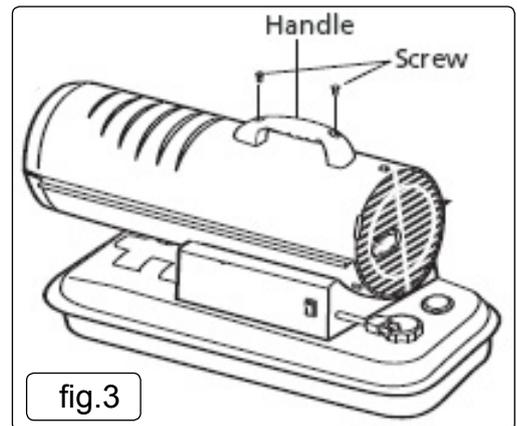


fig.3

5. OPERATING CONDITIONS

5.1. PARAFFIN, KEROSENE AND DIESEL FUEL USAGE

These AB heaters are factory adjusted to give the most efficient burn on paraffin and kerosene but will also burn diesel. Note that paraffin and kerosene will tend to burn more cleanly than diesel. Care should be taken to provide at least the minimum amount of ventilation recommended when burning diesel.

- ❑ **WARNING! Never use any other fuel such as petrol, benzene, alcohol, camping stove fuel, paint thinners or other oil compounds. USE OF THESE VOLATILE FUELS MAY CAUSE A FIRE OR EXPLOSION.**

5.2. STORAGE OF FUEL

Always store paraffin, kerosene and diesel in a well ventilated area well away from general living space. Do not store in direct sunlight or near a source of heat or other source of ignition such as a torch or a portable generator. Do not use fuel that has been stored from one season to the next as it may have deteriorated and will not burn properly in the heater. Store the fuel in a suitable container which complies with requirements set out in local authority regulations.

5.3. FILLING THE FUEL TANK

Never fill the fuel tank indoors. Always fill the fuel tank outdoors on a level surface. Take note of the position of the fuel gauge whilst filling the tank and do not overfill it. **Never refill the tank whilst the heater is operating or is still hot.**

5.4. VENTILATION REQUIREMENTS

Use this heater only in a well ventilated area. You should provide an opening to the outside air of at least a 3 square feet (0.9M²) for every 100,000 BTU/hr of heat output. Provide a larger opening if more than one heater is being used.

5.5. SIGHTING THE HEATER

Always install the heater so that it will not be directly exposed to water spray, rain, dripping water or wind. The heater should not be placed near to any combustible materials. The minimum clearance from combustibles is **1.2m** from the top of the heater, **1.2m** from the sides of the heater and **2.4m** from the front of the heater. Never use the heater in spaces which contain products such as petrol, solvents, paint thinners, dust particles, volatile or airborne combustibles, or any unknown chemicals.

- ❑ **WARNING! Air contaminants taken into the heater may affect the heat output, damage the unit and may cause health problems. Example: Bodysshop filler dust / paint overspray will damage the motor bearing, clog the filter and pump and contaminate the combustion chamber causing flame flutter and health hazards. Please note that any parts damaged by filler dust / paint overspray will not be covered by warranty. Additionally, a cleaning charge will be made for any heaters damaged by filler dust.**

6. THEORY OF OPERATION

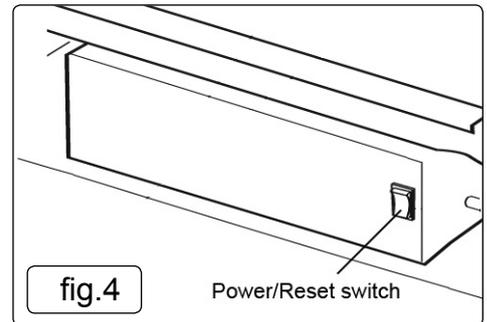
- 6.1. FUEL SYSTEM.** The heater is equipped with an air pump that operates off the electric motor. The pump forces air through the air line connected to the fuel tank, drawing fuel to the nozzle in the burning head. Air also passes through the nozzle where it mixes with the fuel and is sprayed into the combustion chamber in a fine mist.
- 6.2. QUICK FIRE IGNITION.** A transformer sends high voltage to a two pronged spark plug. The resultant spark ignites the fuel air mixture as it is sprayed into the combustion chamber.
- 6.3. AIR SYSTEM.** A fan is turned by the heavy duty motor which forces air around and into the combustion chamber, where it is super heated and forced out of the front of the chamber.
- 6.4. TEMPERATURE LIMIT CONTROL.** The heater is equipped with a temperature limit control designed to turn the heater off should the internal temperature rise to an unsafe level. If this device activates and turns your heater off, it may require servicing. Once the temperature falls below the reset temperature, you will be able to restart the heater.
- 6.5. ELECTRICAL SYSTEM PROTECTION.** The heater's electrical system is protected by a circuit breaker that protects the systems components from damage. If the heater ceases to work, check the fuse first and replace if necessary. See maintenance section 8.9.
- 6.6. FLAME SENSOR.** The heater uses a photocell to 'see' the flame in the combustion chamber. Should the flame extinguish, the sensor will cut off the electrical current and the heater will shut down.

7. OPERATION

- 7.1. TO START THE HEATER.**
 - 7.1.1. Fill the tank with fuel until the fuel gauge points to "F". Do not overfill.
 - 7.1.2. Ensure that the fuel cap is replaced and fully tightened down.
 - 7.1.3. Unwind the mains cable from cable tidies and plug the heater into the mains power supply.
 - 7.1.4. Push the power switch to the ON position and the heater will start. The heater will run up to temperature and then maintain an output of 13.2kW (45,000 Btu/hr) with an airflow of 170cfm.

NOTE: The electrical components of these heaters are protected by a fuse mounted on the PC board. If the heater will not fire, check this fuse first and replace if necessary. Also check that the proper voltage is being supplied to the heater.

- 7.2. TO STOP THE HEATER.**
 - 7.2.1. Turn the power switch to OFF and disconnect the mains power supply. NEVER SHUT DOWN THE HEATER BY PULLING OUT THE PLUG. DO NOT touch the heater outlet as this will remain hot for some time. Store in a dry, safe, childproof area.
- 7.3. TO RESTART THE HEATER.**
 - 7.3.1. Wait ten seconds after shutting off the heater.
 - 7.3.2. Turn the power switch to ON.

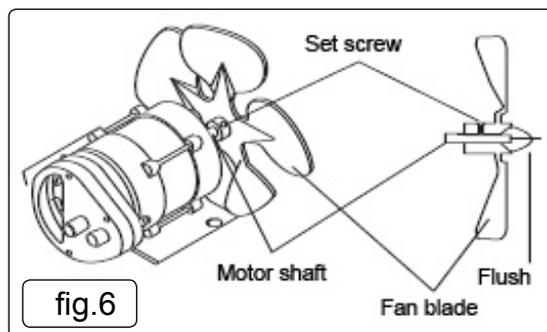
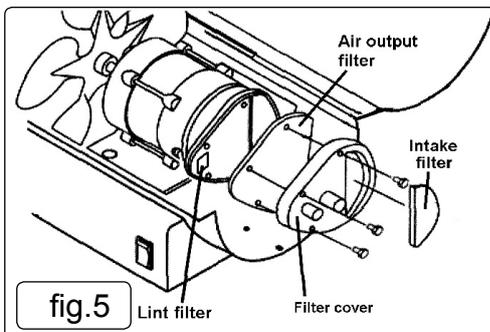


8. MAINTENANCE

- 8.1. MAINTENANCE SCHEDULE**
 - ❑ **WARNING! Never attempt to service the heater whilst it is still hot, wait until it has cooled enough to touch. Unplug the heater from the mains supply before servicing.** Use only genuine Sealey replacement parts. Use of alternative/third party components will cause unsafe operation and will invalidate your warranty.
- 8.2. FUEL TANK**

Clean out the fuel tank every 200 hours of operation or as needed. Flush out with paraffin, kerosene or diesel fuel depending on which fuel you are using. Do not use any other liquid for this operation.
- 8.3. AIR FILTERS (See fig.5)**

The **air intake filter** should be replaced or washed with soap and water and thoroughly dried every 500 hours of operation or less, depending on the conditions of operation.
The **air output filter** and **lint filter** should be replaced every 500 hours or more frequently depending on conditions of use.

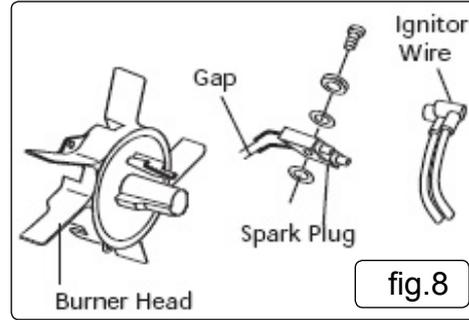
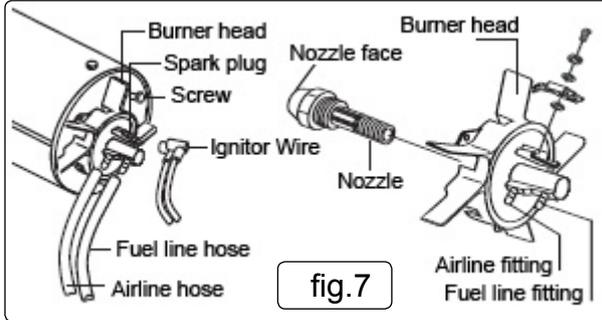


- 8.4. FAN BLADES (See fig.6)**

The fan blades should be cleaned at least once per heating season, depending on conditions in the area of use. Remove all accumulated dust and dirt with a damp cloth, taking care not to bend any of the fan blades. Dry the fan blades thoroughly before restarting the heater. For fan removal see fig.6.

8.5. NOZZLE (See fig.7)

The nozzle should be cleaned at least once per heating season. Use of contaminated fuel will make it necessary to clean the nozzle more frequently. To clean dirt from the nozzle, blow compressed air through the front of the nozzle. It may be necessary to soak the nozzle in paraffin, kerosene first in order to loosen any dirt particles.



8.6. SPARK PLUG (See fig.8)

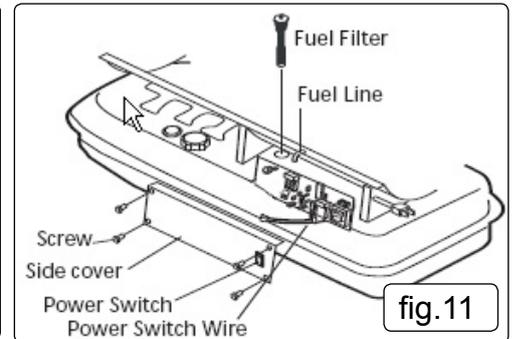
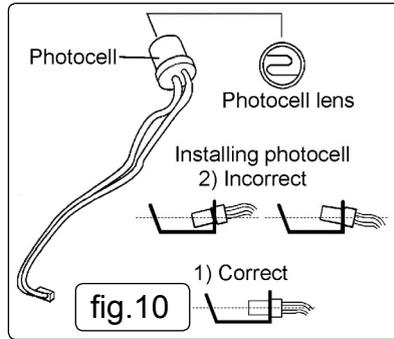
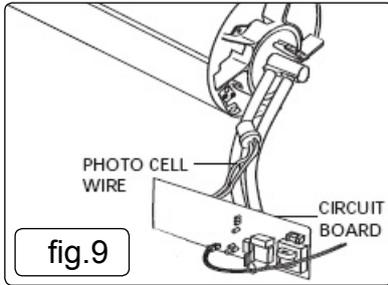
Clean and re-gap the spark plug every 600 hours of operation, or replace if needed. After removing the spark plug, clean the terminals with a wire brush. Re-gap the terminals to 3.5mm (0.140”).

8.7. PHOTO CELL (See figs.9&10)

The photocell should be cleaned at least once per heating season or more depending on conditions of use. Use a cotton swab dipped in water or alcohol to clean the lens of the photocell. The positioning of the photocell is critical to its correct operation. See fig.10 for the correct installation.

8.8. FUEL FILTER (See fig.11)

The fuel filter should be cleaned at least twice per heating season by rinsing it in clean paraffin or kerosene. Use of contaminated fuel will make it necessary to clean the filter more frequently. To remove the filter first squeeze the legs of the fuel line clip and move it up the fuel line. Ease the fuel line from off the filter head. Turn the hexagonal head of the filter 90° anti-clockwise and ease it upwards and out of the tank.



8.9. FUSE REPLACEMENT (See fig.12)

NOTE: This is a fuse protected heater.

If your heater fails to ignite check the fuse as shown in fig.12 before contacting your local service agent.

❑ **WARNING!** Unplug the heater from the mains power supply before attempting any maintenance work.

8.9.1. Remove the control panel screws using a medium phillips screwdriver and lift off the side panel to reveal the printed circuit board.

8.9.2. Remove fuse from holder as shown below.

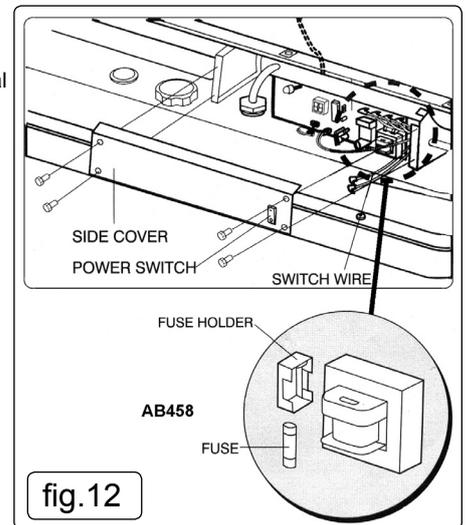
8.9.3. Replace fuse with one of the same specification.

❑ **WARNING!** Do not substitute the fuse with one of a higher or lower current rating as this may result in a fire hazard.

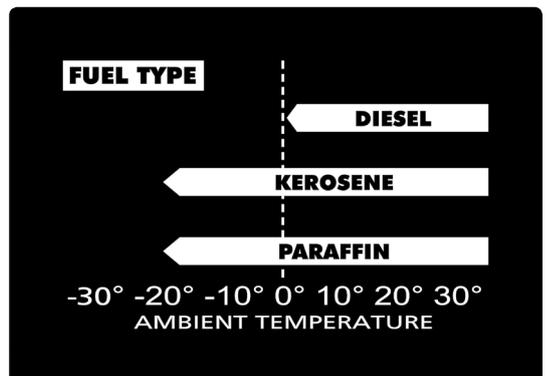
8.9.4. Replace side panel.

8.10. LONG TERM STORAGE

If the heater is to be stored for a long period of time, drain the fuel through the fuel cap opening. Rinse and swirl a small amount of fuel within the tank and then empty it fully. When you come to use the heater again do not use old fuel which has been stored from the previous season. Use of old fuel can damage your heater.



Although our heaters operate with diesel fuel, when the temperature is below 0°C diesel additives are required to maintain the diesel's viscosity. Typically diesel can cloud in freezing conditions and will start to gel. You will need additives for your fuel in these conditions. Kerosene/Paraffin does not start to gel until the ambient temperature is around -40°C.



9. TROUBLESHOOTING

Problem	Possible Cause	Solution
Heater fires, but main PCB shuts heater off after a short period of time. Lamp is flickering.	1. Incorrect pump pressure	1. Adjust pump pressure
	2. Dirty input, output or lint filter	2. Clean/replace Air Filter
	3. Dirty Fuel Filter	3. Clean/replace Fuel Filter
	4. Nozzle is dirty	4. Clean/replace Nozzle
	5. Photocell lens is dirty	5. Clean/replace Photocell
	6. Photocell not installed properly	6. Adjust Photocell position
	7. Photocell Defective	7. Replace Photocell
	8. Improper electrical connection between Main PCB and Photocell	8. Check wiring connections (See Wiring Diagram)
	9. Ambient temperature too low for fuel type	9. Change fuel type
Heater will not operate or motor runs for a short time. Lamp flickers.	1. No paraffin in fuel tank	1. Fill tank with fresh paraffin
	2. Incorrect pump pressure	2. Adjust pump pressure
	3. Corroded Spark Plug or incorrect gap	3. Clean/adjust/replace spark plug
	4. Dirty Fuel Filter	4. Clean/replace Fuel Filter
	5. Dirty Nozzle	5. Clean/replace Nozzle
	6. Moisture in Fuel/Fuel Tank	6. Rinse out fuel tank with fresh paraffin
	7. Faulty electrical connection	7. Inspect all electrical connections
	8. Ignitor Wire not connected to Spark Plug	8. Re-attach Ignitor Wire to Spark Plug
	9. Defective Ignitor	9. Replace Ignitor
Fan does not operate when heater is plugged in and Power Switch is in the "ON" position. The lamp is flickering or on.	1. Thermostat is set too low	1. Rotate Thermostat to a higher setting
	2. Broken electrical connection between Main PCB and motor	2. Inspect all electrical connections
Lamp flickering.	1. Thermostat Switch has failed	1. Replace Thermostat Switch
Poor Combustion.	1. Flames extending beyond heater	1. Decrease Pump Pressure
	2. Low heat output	2. Increase Pump Pressure
Heater does not turn on and the lamp is not lit.	1. Temperature limit sensor has overheated	1. Push Power Switch to "OFF" and allow heater to cool for 10 minutes. Push Power Switch back "ON"
	2. No electrical power	2. Check power cable and extension cable connections. Test power supply.
	3. Fuse Blown	3. Check/replace Fuse
	4. Faulty connection between Temperature Limit Sensor and PCB	4. Inspect all electrical connections



ENVIRONMENT PROTECTION

Recycle unwanted materials instead of disposing of them as waste. All tools, accessories and packaging should be sorted, taken to a recycling centre and disposed of in a manner which is compatible with the environment. When the product becomes completely unserviceable and requires disposal, drain any fluids (if applicable) into approved containers and dispose of the product and fluids according to local regulations.

Note: It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts without prior notice.

Important: No Liability is accepted for incorrect use of this product.

Warranty: Guarantee is 12 months from purchase date, proof of which is required for any claim.

Sealey Group, Kempson Way, Suffolk Business Park, Bury St Edmunds, Suffolk. IP32 7AR



01284 757500



01284 703534



sales@sealey.co.uk



www.sealey.co.uk



Information requirements for gaseous/liquid fuel local space heaters

Model identifier(s): AB458.V3										
Indirect heating functionality: Yes No <input checked="" type="checkbox"/>										
Direct heat output: 13.0 (kW)				Indirect heat output: N/A (kW)						
Fuel						Space heating emissions NO _x nitrogen oxides				
Select fuel type:	Gaseous	Liquid <input checked="" type="checkbox"/>	Specify: Diesel			110.73 [mg/kWh _{input}] (GCV)				
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit			
Heat output				Useful efficiency (NCV)						
Nominal heat output	P_{nom}	12.7	kW	Useful efficiency at nominal heat output	$\eta_{th,nom}$	90	%			
Minimum heat output (indicative)*	P_{min}	N/A	kW	Useful efficiency at minimum heat output (indicative)*	$\eta_{th,min}$	N/A	%			
Auxiliary electricity consumption				Type of heat output/room temperature control (select one)						
At nominal heat output	$e_{l,max}$	0.104	kW	Single stage heat output, no room temperature control	Yes	No <input checked="" type="checkbox"/>				
At minimum heat output	$e_{l,min}$	N/A	kW	Two or more manual stages, no room temperature control	Yes	No <input checked="" type="checkbox"/>				
In standby mode	$e_{l,SB}$	N/A	kW	With mechanical thermostat room temperature control	Yes	No <input checked="" type="checkbox"/>				
* Enter figure or NA				With electronic room temperature control	Yes	No <input checked="" type="checkbox"/>				
				With electronic room temperature control plus day timer	Yes	No <input checked="" type="checkbox"/>				
				With electronic room temperature control plus week timer	Yes	No <input checked="" type="checkbox"/>				
				Other control options (multiple selections possible)						
				Room temperature control, with presence detection	Yes	No <input checked="" type="checkbox"/>				
				Room temperature control, with open window detection	Yes	No <input checked="" type="checkbox"/>				
				With distance control option	Yes	No <input checked="" type="checkbox"/>				
				With adaptive start control	Yes	No <input checked="" type="checkbox"/>				
Permanent pilot flame power requirement				With working time limitation	Yes	No <input checked="" type="checkbox"/>				
Pilot flame power required (if applicable)*	P_{pilot}	N/A	kW	With black bulb sensor	Yes	No <input checked="" type="checkbox"/>				
The seasonal space heating energy efficiency η_s										
Item				Symbol		Value		Unit		
The seasonal space heating Energy efficiency in active mode				$\eta_{s,on}$		100		%		
The seasonal space heating energy efficiency η_s				η_s		88.0		%		
Energy efficiency classes				A						
Contact details: Sealey Group, Kempson Way, Suffolk Business Park, Bury St Edmunds, Suffolk, IP32 7AR. www.sealey.co.uk										
v1						ERP Table 1				