

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 AND 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. PLEASE KEEP INSTRUCTIONS SAFE FOR FUTURE USE.**

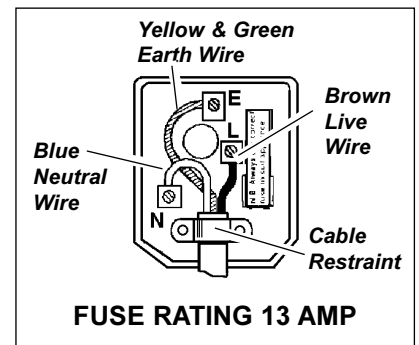
## 1. SAFETY INSTRUCTIONS

### 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. We also recommend that a Residual Current Device (RCD) is used. It is particularly important to use an RCD with portable products that are plugged into a supply which is not protected by an RCCB. If in any doubt consult a qualified electrician. You may obtain a Residual Current Device by contacting your Sealey dealer. **You must** also read and understand the following instructions concerning electrical safety.

- 1.1.1. The **Electricity at Work Act 1989** requires all portable electrical appliances, if used on business premises, to be tested by a qualified electrician, using a Portable Appliance Tester (PAT), at least once a year.
- 1.1.2. The **Health & Safety at Work Act 1974** makes owners of electrical appliances responsible for the safe condition of those appliances and the safety of the appliance operators. **If in any doubt about electrical safety, contact a qualified electrician.**
- 1.1.3. Ensure that the insulation on all cables and on the appliance is safe before connecting it to the power supply. See 1.1.1. and 1.1.2. and use a Portable Appliance Tester.
- 1.1.4. Ensure that cables are always protected against short circuit and overload.
- 1.1.5. Regularly inspect power supply cables and plugs for wear or damage and check all connections to ensure that none are loose.
- 1.1.6. **Important:** 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.
- 1.1.7. **DO NOT** pull or carry the appliance by the power cable.
- 1.1.8. **DO NOT** pull the plug from the socket by the cable.
- 1.1.9. **DO NOT** use worn or damaged cables, plugs or connectors. Immediately have any faulty item repaired or replaced by a qualified electrician. When an ASTA/BS approved UK 3 pin plug is damaged, cut the cable just above the plug and **dispose of the plug safely.** 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 outer insulation extends beyond the cable restraint and that the restraint is tight.**




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 outer insulation extends beyond the cable restraint and that the restraint is tight.**

Double insulated products, which are always marked with this symbol , are fitted with live (brown) and neutral (blue) wires only. To rewire, connect the wires as indicated above - **DO NOT** connect either wire to the earth terminal.

- 1.1.10. If an extension reel is used it should be fully unwound before connection. A reel with an RCD fitted is preferred since any appliance plugged into it will be protected. The cable core section is important and should be at least 1.5mm<sup>2</sup>, but to be absolutely sure that the capacity of the reel is suitable for this product and for others which may be used in the other output sockets, we recommend the use of 2.5mm<sup>2</sup> section cable.

### 1.2. GENERAL SAFETY

- ✓ 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 paraffin or diesel to fuel your heater, in accordance with instructions contained in this manual.
- **WARNING!** Only use heater in well ventilated areas. Ensure continuous ventilation is provided to the heater operating area. Allow at least 0.03ft<sup>2</sup> opening/1000Btu/h output (0.01m<sup>2</sup>/kW). This should be divided equally between floor and high level. Ventilation must be to the outside of the premises in which the heater is to be operated. If your operating area has no direct access to clean fresh air we recommend that you run a large gauge duct from the outside of the building to the back of the heater in order to provide a clean air intake. For more details see Section 4.
- ✓ Keep the heater a minimum of 3 metres from any combustible materials (i.e. wooden items, cloth, plastics, paper, etc).
- ✓ Maintain a minimum distance of 50cm from non-combustible materials (i.e. brick, steel, concrete, etc).
- **WARNING! DO NOT** use the heater near flammable material, liquids, solids, gases or compressed gas cylinders and the like.
- x **DO NOT** use the heater in closed rooms, living areas, basements or below ground level.
- x **DO NOT** allow untrained persons to operate the heater and **DO NOT** operate the heater without the cover.
- x **DO NOT** use an external fuel tank. Only use that which is part of the heater.
- x **DO NOT** leave the heater unattended when in use. Switch the heater off and unplug from the mains before leaving work area.
- x **DO NOT** stand or place *any* object less than 3 metres from the heater output.
- x **DO NOT** obstruct the air inlet and outlet sections of the heater.
- x **DO NOT** operate the heater when you are tired or under the influence of alcohol, drugs or intoxicating medication.
- x **DO NOT** over-fill the fuel container. Wipe up any spilt fuel immediately.
- x **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.
- x **DO NOT** unplug the heater to switch it off. Use the ON/OFF switch. This will allow the aftercooling fan to run for 2 mins after shutdown.

## 2. INTRODUCTION & SPECIFICATIONS

**NOTE: Your heater is set to be used with paraffin, to adjust for diesel use refer to Section 4.**

The Sealey AB heaters are made to DIN30697 standard and built to survive the rigor of bodyshops, workshops and large work areas (these heaters are not for domestic use). A sensor will automatically cut off the motor and fuel supply if the flame is inadvertently extinguished. The heater can be fuelled with paraffin or (with minor adjustments to air pressure systems) diesel. Diesel, however, will not burn as cleanly as paraffin. **DO NOT** use any other type of fuel. A specially constructed stainless steel combustion chamber is vertically vented through a flue, dramatically reducing the amount of fume emitted through the hot air nozzle. The cast alloy compressor unit is protected by a large filter element and the fuel line is fitted with an in-line filter to ensure trouble free operation. These AB heaters will operate for between 15 and 25 hours on a single tank of fuel.

### 2.1. Specifications

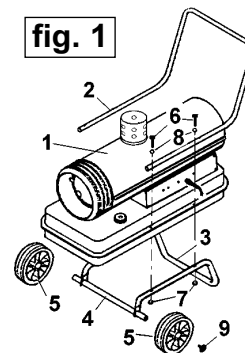
Model:	AB502	AB902.V2	AB1452
Output (Btu/h/kW):	50,000/14.5	90,000/26.5	143,500/41.7
Tank capacity (litres):	30	46	51
Fuel oil:	.Paraffin/Diesel	.Paraffin/Diesel	.Paraffin/Diesel
Electrical input:	230V 1.7A	230V 5A	230V 3.8A
Approx. hours operation per filling:	25	18	15
Transport wheels:	Standard	Standard	Standard
Air flow (cfm):	380	530	885
Automatic shut-off:	Yes	Yes	Yes
Heated volume (ft <sup>3</sup> ):	12500	17865	35874
Heated volume (m <sup>3</sup> ):	355	525	1015
Flue diameter (mm):	100	140	150
Net weight (kg):	35	40	60
Quality standard:	.CE Norm	.CE Norm	.CE Norm



## 3. ASSEMBLY

Unpack the heater and check contents. Should there be any damaged or missing parts contact your supplier immediately. If your model is supplied with wheels refer to fig.1 for assembly as follows:

- 3.1. Slide axle (4) through wheel support frame (3).
- 3.2. Install wheels (5) then cap nuts (9) on axle ends and tap lightly into place.
- 3.3. Place heater on wheel support frame and line up holes on the fuel tank flange with holes on the wheel support frame.
- 3.4. Place handle on fuel tank flange and line up with the wheel support frame fixing holes. Insert bolts (6) through the fuel tank flange and both frames and secure finger tight only with nuts (7) and washers (8).
- 3.5. When assembly is complete, securely tighten all nuts.



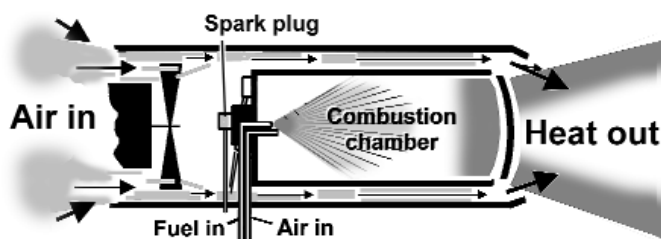
These heaters are supplied with an exhaust hood to link the heater to an exhaust for indoor use.

**NEVER** operate the heater without this part fitted, even if not connected to a flue.

## 4. OPERATING CONDITIONS

### 4.1. Principles of heat generation

When the heater is switched on the air compressor draws in air, pressurises it and passes it through an air line to the burner head nozzle. The air flow causes fuel to be drawn from the tank. The fuel and air mix is then sprayed into the combustion chamber. The mixture is automatically ignited by the spark plug and a high temperature heat stream is generated in the combustion chamber. Air is drawn into the unit by a fan and is pushed around the cool chamber situated between combustion chamber and outer casing. This fast flowing air sucks the heat stream out of the combustion chamber, providing the required heat. If the system malfunctions a "flame-out" control will operate and automatically cut off the motor and fuel supply. Should this happen, switch off machine and unplug from mains supply. Refer to trouble shooting chart in Section 7 and/or return unit to supplier for maintenance.



This heater is indirectly fired which means that the warm air and the exhaust gases are not mixed. Warm clean air is blown out of the heater outlet and the exhaust gases are expelled through the flue pipe. On these heaters the front dome does not glow as on the other direct fired AB heaters.

### 4.2. Fuel

The AB series will operate with two types of fuel, paraffin or diesel. Before operating the heater you must determine which type of fuel you will use in order to effect the correct heater settings. The following information must be understood before use.

#### 4.2.1. Paraffin

The heat output is governed by the compressor - the higher the air pressure the hotter the flame. The AB series heaters have had the air pressure pre-set at the factory to accommodate paraffin (because it will burn more cleanly than diesel). When the heater is new however (or when the unit has been returned from service) the settings may require minor adjustment to accommodate reductions in air flow through a new air filter. Incorrect settings will cause flame problems and may emit fuel odours resulting in damage to the unit and an uncomfortable working environment. Paraffin will sometimes cause condensation. If the unit is stored unused (i.e. during the summer) such condensation will cause the fuel tank to corrode and, when next used, the flame to pulsate due to water in the tank. To overcome the problem, paraffin must be drained off and replaced if the heater is to be unused for a long periods.

#### 4.2.2. Diesel

AB series heaters are pre-set at the factory to accommodate paraffin. If diesel is used without changing the setting the air pressure will be greater than is required resulting in an excessively hot flame which will damage the unit. Before using diesel the system must be adjusted by decreasing the air pressure to the point at which the diesel will burn to generate the correct heat output.

**WARNING!** Failure to adjust to the correct air pressure will damage the combustion chamber and invalidate your warranty.

The spark plug will require cleaning every 50 hours of use in order to remove carbon deposits (see Maintenance Section 6). We recommend cleaning the plug at least once every standard working week if less than 50 hours.

- 4.3. When used in the construction or agricultural industries ensure that the safety regulations in force are adhered to with regard to distances from flammable materials and any other specified substances. Refer to General Safety in Section 1 for recommended clearances.
- ☐ **WARNING!** Air contaminants taken into the heater may affect the heat output, damage the unit and may cause health problems. Example: Bodyshop filler dust will damage the motor bearing, clog the filter and compressor and contaminate the combustion chamber causing flame flutter and health hazards. If contaminants are present the heater must be supplied with ducted clean air, see 4.4. **Please note that any parts damaged by filler dust will not be covered by warranty. Additionally, a cleaning charge will be made for any heaters damaged by filler dust.**
- 4.4. **VENTILATION.** Minimum recommended opening for fresh air intake, AB502 = 0.17m<sup>2</sup>, AB902.V2 = 0.27m<sup>2</sup>, AB1452 = 0.42m<sup>2</sup>,  
 ☐ **WARNING!** Only use the heater in well ventilated areas. Careful consideration must be given to the placing of the heater to provide safe and comfortable heating. Ensure continuous ventilation is provided to the heater operating area. Allow at least 0.01m<sup>2</sup>/kW heater output. This should be divided equally between floor and high level. A ventilation opening must run to the outside of the premises in which the heater is to be operated. If the operating area has no direct access to clean fresh air we recommend you run a large gauge duct from the outside of the building to the inlet of the heater in order to provide a clean air intake. Ensure that the duct is laid so as to not compromise safety.
- 4.5. **Flue connection**  
**For indoor use this heater must be connected to a flue pipe to vent exhaust gases outside.** The heater can only be operated without a flue when it is outside. To obtain a good draught, the flue gases must rise as much as possible vertically. Ensure that there is a minimum 2 metre vertical flue length without any bends. Avoid horizontal sections and ensure that any bends are smooth.

## 5. OPERATING INSTRUCTIONS

### 5.1. Running the heater on paraffin

The heater has been factory pre-set for paraffin and will produce the correct heat output when first used from new. You should run the heater at the pre-set output in order to ensure the long life, safety and reliability of the unit. Minor adjustments to heat output may be required during the first 60 hours of use. These adjustments are made to the air pressure valve (see fig.4.A). Once the unit has completed the running-in period it should not be necessary to alter the air pressure again until a new air filter is fitted or a change of fuel takes place.

- 5.1.1. Ensure that the unit is unplugged from the mains supply.
- 5.1.2. Fill the fuel tank with paraffin. **Do not** over-fill. Wipe away any spillage before use.
- 5.1.3. Plug into the main power supply and switch on the heater. The heater will ignite and will build to its maximum heat in approximately two minutes.
- 5.1.4. **Always shut down the heater using the ON/OFF switch. Leave the heater plugged into the mains supply for at least 3 minutes.** ( The heater is fitted with an aftercooling timer that allows the fan to rotate for approximately 2 minutes after shutdown, to cool the combustion chamber and release residual heat.) **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.

### 5.2. Running the heater on diesel

The heater has been pre-set in the factory for the use of paraffin. Because diesel burns hotter than paraffin it will be necessary to **decrease** the air pressure to give out the correct heat output. **Failure to make this adjustment will damage the combustion chamber and invalidate your warranty.**

- 5.2.1. Ensure that the unit is unplugged from the mains supply.
- 5.2.2. Fill the fuel tank with diesel. **Do not** over-fill and wipe away any spillage before use.
- 5.2.3. To ensure correct combustion set the air pressure using an accurate pressure gauge.
- 5.2.4. Use a pressure gauge which will measure up to 10 p.s.i. and has a 1/8" BSP thread. With the heater turned off and unplugged from the mains, remove the threaded plug from below the air pressure valve and attach the gauge, see fig.4.B. Start the heater and compare the pressure reading with the pressure chart shown on the right.
- 5.2.5. To adjust, locate the air pressure valve (fig.4.A), which is in the centre portion of the air inlet grill at the back of the unit. Hold the adjusting screw steady with a screw driver and loosen the locking nut. Turn the screw anticlockwise to decrease the pressure until it compares with the diesel figures in the pressure chart.
- 5.2.6. To adjust the heater back to paraffin follow the process in section 5.2.5, but turn air pressure valve screw clockwise until the pressure compares with the paraffin figures in the pressure chart.
- 5.2.7. **Shut down the heater using the ON/OFF switch. Leave the heater plugged into the mains supply for at least 3 minutes. NEVER SHUT DOWN THE HEATER BY PULLING OUT THE PLUG.** Remove the gauge and replace the plug before turning on the heater again.
- 5.2.8. **DO NOT** touch the heater outlet as this will remain hot for some time. Store in a dry, safe, childproof area.

**IMPORTANT!** This heater can be connected to a remote room thermostat ABT04 (not supplied) via the socket situated in the side panel. If no thermostat is connected then the grey socket cover supplied **MUST** be inserted into the socket or else the heater will not operate. Note that the heaters have a pre-purge time and an after cooling time. This means that a) the burner will ignite approximately ten seconds after motor start and b) the fan will run for approximately two minutes after shut down. This is normal and correct operation.

### 5.3. Monitoring the heat output

- 5.3.1. If, after a period of time, the heat output begins to fall this indicates that either the unit requires maintenance, as laid out in Section 6, or that the environmental conditions the unit is operating in are not correct, see Section 4.  
**DO NOT ATTEMPT TO TURN UP THE AIR PRESSURE TO COMPENSATE FOR HEAT LOSS** as this could result in damage to the combustion chamber and would invalidate the warranty.

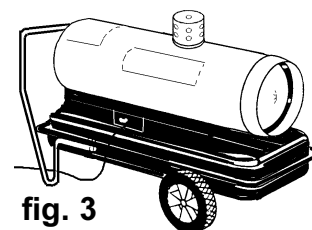
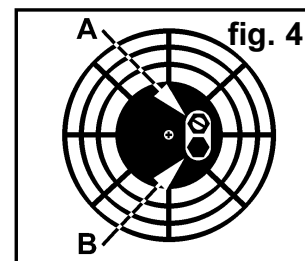


fig. 3



	Working Pressures bar/psi	
	Diesel	Paraffin
AB502	0.30/4.35	0.32/4.64
AB902.V2	0.31/4.50	0.33/4.78
AB1452	0.34/4.90	0.34/4.90

## 6. MAINTENANCE



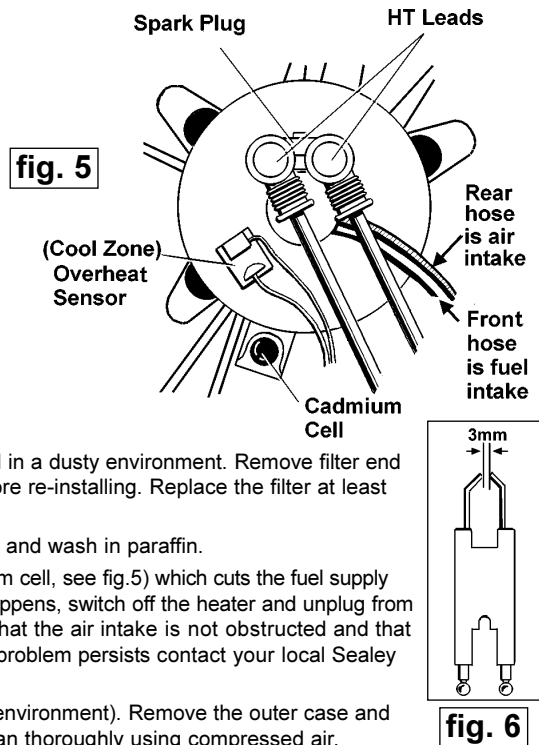
**WARNING! MAINTENANCE MUST ONLY BE UNDERTAKEN BY A QUALIFIED PERSON. WE STRONGLY RECOMMEND THAT ALL SERVICING IS DONE BY YOUR LOCAL SERVICE AGENT.**

Looking after your AB heater will pay dividends, ensuring heat as and when you need it and avoiding frustrating operational problems.

**IMPORTANT! We strongly recommend that you arrange for heater servicing during the summer months to avoid being left without heat during the winter.**

**WARNING! Unplug unit from mains power supply before opening or servicing heater. See Section 1 regarding electrical safety and maintenance.**

- 6.1. **General.** Keep the heater clean; wipe outer case with a damp, clean cloth. Do not use abrasives. Clean fuel tank with a dry cloth. Oil wheels if necessary. Check heater for damage and immediately repair or replace with authorised parts. Contact your Sealey Service Agent.
- 6.2. **Spark plug (electrode).** Remove, clean and check that the plug gap is 3mm (fig.6). For paraffin check the plug on a monthly basis (or if you have starting problems). If using diesel clean plug every 50 hours (or once every working week if less than 50 hours).
- 6.3. **Air filter.** The cast alloy compressor unit is protected by an extra large filter element. The filter should be cleaned regularly, especially if the appliance is used in a dusty environment. Remove filter end cover, take out the filter, wash it using a light detergent and dry thoroughly before re-installing. Replace the filter at least once a year.
- 6.4. **Fuel filter.** The fuel line is fitted with an in-line filter. To clean the filter, remove and wash in paraffin.
- 6.5. **Flame-out device.** The AB heaters are fitted with a flame-out device (a cadmium cell, see fig.5) which cuts the fuel supply should the flame be inadvertently extinguished, or if the unit overheats. If this happens, switch off the heater and unplug from the mains supply. Check the heater to determine the fault. In particular check that the air intake is not obstructed and that the internal fan is rotating freely. Wait a few minutes and restart the unit. If the problem persists contact your local Sealey Service Agent.
- 6.6. **Fan.** Fan blades should be cleaned every 500 operating hours (depending on environment). Remove the outer case and clean the fan blades with a paraffin moistened cloth or very light solvent. Dry fan thoroughly using compressed air.



## 7. TROUBLESHOOTING

THE PROBLEM	THE CAUSE	THE SOLUTION
1. Pulsation or uneven firing.	1.1. Low fuel level or unit not level. 1.2. Air leak. 1.3. Water in fuel.      1.4. Low air pressure.	1.1. Fill tank, level unit.      1.2. Check air and fuel lines for air leaks. 1.3. Drain, flush and refill with clean fuel. 1.4. Adjust air pressure, Clean air filter.
2. Motor does not start.	2.1. No power to unit, low voltage. 2.2. Defective motor. 2.3. Flame out device activated. 2.4. Fan jammed on outer case.	2.1. Check outlet and fuse. Check power lead, check fan not fouling on outer case. 2.2. Replace motor or motor parts (contact service agent). 2.3. Check reason, wait three minutes and restart. 2.4. Switch off mains, open case and check fan clearance.
3. Motor runs slowly.	3.1. Low voltage. 3.2. Tight compressor. 3.3. Motor defective.	3.1. Check length and size of extension cord. 3.2. With unit unplugged turn fan by hand. If fan does not turn freely adjust compressor ring. Also check to ensure the outer cover is not fouling on the fan. 3.3. With unit unplugged fan turns freely. Replace motor (contact service agent).
4. Motor starts, but heater does not ignite and after a short time locks out.	4.1. Low fuel level.      4.2. Leak in fuel line. 4.3. Burner nozzle blocked.      4.4. Diesel viscosity high. 4.5. Fuel filter blocked.      4.6. Defective spark plug. 4.7. Dirty fuel.      4.8. Fault in flame-out system.	4.1. Check fuel and fill tank if required.      4.2. Tighten or replace      4.3. Clean nozzle. 4.2. Low temperature, mix 10-20% paraffin to the diesel. 4.5. Clean or replace filter.      4.6. Check for wear or adjust properly. 4.7. Drain, flush and refill tank.      4.8. Contact local service agent.
5. Flames come out of the heater mouth.	5.1. Wrong fuel.      5.2. Excess air pressure. 5.3. Improper air flow.      5.4. Air leak in air line.	5.1. Use correct fuel only,      5.2. Adjust pressure to nominal. 5.3. Dirty or loose fan, air entrance blocked.      5.4. Replace.
6. Motor starts, heater ignites but flame-out system shuts off the appliance.	6.1. Dirty flame-out cadmium cell. 6.2. Fault with flame-out cadmium cell. 6.3. Defective connection between cell and flame-out control. 6.4. Faulty flame-out control.	6.1. Clean and check "Cad Cell" to ensure that it responds to light. 6.2. Check as in 6.1. and replace if necessary. 6.3. Check that connection is correct. 6.4. Check and replace if necessary.

## 8. DECLARATION OF CONFORMITY

### Declaration of Conformity

#### PARAFFIN/DIESEL HEATERS AB502, AB902.V2, AB1452

98/37/EC Machinery Directive  
73/23/EEC Low Voltage Directive  
89/336/EEC EMC Directive  
93/68/EEC CE Marking Directive

We, the sole importer into the UK, declare that the products listed below are in conformity with the following standards and directives.

The construction files for these products are held by the manufacturer and may be inspected, by a national authority, upon request to Jack Sealey Ltd.



Signed by Mark Sweetman

20th September 2004

For Jack Sealey Ltd. Sole importer into the UK of Sealey Power Products.

**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 product.

**WARRANTY:** Guarantee is 12 months from purchase date, proof of which will be required for any claim.

**INFORMATION:** For a copy of our latest catalogue and promotions call us on 01284 757525 and leave your full name and address, including postcode.

**SEALEY POWER PRODUCTS** Sole UK Distributor  
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