



INSTRUCTIONS FOR:

# POWERSTART EMERGENCY HEAVY-DUTY POWER PACK 1000HP START 12/24V

MODEL NO: **PSTART1000HD**

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.

## 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. 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 that all portable electrical appliances, if used on business premises, are 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 is 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 a BS 1363/A 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. 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. Products which require more than 13amps are supplied without a plug. In this case you must contact a qualified electrician to ensure that a suitably rated supply is available. We recommend that you discuss the installation of an industrial round pin plug and socket with your electrician.

1.1.11. 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. If an extension reel is to be used outdoors, ensure it is marked for outdoor use.

### **⚠ DANGER! RISK OF EXPLOSIVE GASES.**

**WORKING IN VICINITY OF A LEAD-ACID BATTERY IS DANGEROUS. BATTERIES GENERATE EXPLOSIVE GASES DURING NORMAL OPERATION. FOR THIS REASON, IT IS VERY IMPORTANT TO READ AND FOLLOW THESE INSTRUCTIONS EXACTLY EACH TIME YOU USE THE POWERSTART.**

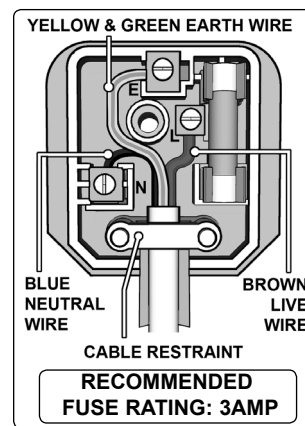
**IMPORTANT:** To reduce risk of battery explosion, follow these instructions and those published by the battery manufacturer and the manufacturer of any equipment you intend to use in vicinity of the battery. Remember to review warning marks on all products and on engines.

### 1.2. PERSONAL PRECAUTIONS

- ✓ Ensure that there is another person within hearing distance and close enough to come to your aid should a problem arise when working near a lead-acid battery.
- ✓ Have fresh water and soap nearby in case battery acid contacts skin, clothing or eyes.
- ✓ Wear safety eye protection and protective clothing. Avoid touching eyes while working near battery.
- ✓ Wash immediately with soap and water if battery acid contacts skin or clothing. If acid enters eye, flush eye immediately with cool, clean running water for at least 15 minutes and seek immediate medical attention.
- ✓ Remove personal metallic items such as rings, bracelets, necklaces and watches. A lead-acid battery can produce a short-circuit current high enough to melt or weld a ring, which would cause severe burns.

### 1.3. OTHER IMPORTANT SAFETY INSTRUCTIONS

- ✓ Familiarise yourself with the application, limitations and potential hazards of the unit.
- ✓ Keep the unit in good working condition. Take immediate action to repair or replace damaged parts.
- ✓ Only use recommended attachments and parts. To use unapproved items may be dangerous and will invalidate your warranty.
- ✓ The Powerstart must only be opened and checked by qualified service personnel. **DO NOT** disassemble for any reason.
- ✓ Keep children and unauthorised persons away from the work area.
- ✓ Keep work area clean and tidy and free from unrelated materials and ensure that there is adequate lighting.
- ✓ If the unit receives a sharp knock or blow, it must be checked by a qualified service agent before being used.
- x **DO NOT** smoke or allow a spark or flame in the vicinity of the battery, engine or Powerstart.
- x **DO NOT** drop any metal tool onto the battery as it may produce a spark or short circuit, which could cause an explosion.



- x **DO NOT** use the unit to recharge dry cell batteries (commonly used in home appliances). These batteries may burst and cause injury to persons and/or damage to property.
- x **DO NOT** charge or boost a frozen battery.
- x **DO NOT** allow the power lead clamps to touch each other, or to contact the same piece of metal, as this will result in a damaging short circuit.
- x **DO NOT** pull or carry the unit by its cables or wires and do not pull the negative and positive clamps from the battery terminals.
- x **DO NOT** operate in vicinity of flammable liquids or gases.
- x **DO NOT** recharge the unit with plugs, cables or attachments that are damaged. Replace such items immediately.
- x **DO NOT** use this product to perform a task for which it is not designed.
- x **DO NOT** store the unit in damp or wet locations or where temperature may exceed 50°C.
- x **DO NOT** submerge the unit in water.
- x **DO NOT** use whilst under the influence of drugs, alcohol or intoxicating medication.
- x **DO NOT** leave the unit in a totally discharged state for an extended period of time as this will result in permanent damage.
- x **DO NOT** cross-connect the power leads from the Powerstart to the battery. Ensure that positive is to positive and negative is to negative.
- ✓ The Powerstarts may be used under any weather conditions - rain, snow, hot or cold
- **WARNING! The warnings, cautions and instructions in this manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be applied by the operator.**

**NOTE:** This appliance is not intended for use by 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 the 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

Heavy steel case, high power US manufactured battery and industrial quality switchgear make this model suitable for starting most vehicles. Positive action power switch reduces risk of inadvertent damage by over-voltage. Heavy-duty copper cables provide efficient power transfer. Twin trips prevent damage to battery or internal circuitry. Easy to read LED battery indicator to IEC 51 provides fast indication of battery's state of charge. Surge and spike suppressing circuitry reduces risk of damaging vehicle's on-board electronics. Fitted with charge balance circuitry to provide even charge to integral batteries. Supplied with mains voltage recharge unit.

## 3. SPECIFICATION

Model No:.....	PSTART1000HD
Output Voltage:.....	12V/24V
Maximum Engine Size:.....	1000hp
Peak Amps 12V:.....	7000A
Peak Amps 24V:.....	3500A
Cranking Current (20°C 5 seconds) 12V:.....	1900A
Cranking Current (20°C 5 seconds) 24V:.....	950A
Cold Cranking Current (-18°C 30 seconds) 12V:.....	800A
Cold Cranking Current (-18°C 30 seconds) 24V:.....	400A
Cable Size:.....	35mm <sup>2</sup>
Cable & Clamp Length:.....	2m
Weight:.....	26kg

### GENERAL FEATURES

- ✓ Test switch and status meter.
- ✓ Automatic mains powered charger unit.
- ✓ Latest battery technology.

### SAFETY FEATURES

- ✓ HT Lead LED cross-connection indicators
- ✓ Circuit breakers prevent cross-connection and overload hazards when charging.
- ✓ The Powerstarts contain sealed lead-acid batteries. This means that the PSTART1000HD can be stored in any position without fear of leakage.

## 4. CHARGING

**WARNING! YOU MUST FOLLOW THE SAFETY INSTRUCTIONS**

**IMPORTANT! Only recharge Powerstarts with the AC charger provided. The charger is automatic and does not require the user to monitor the progress of the charge. Furthermore, whenever the Powerstart is not in use, it should be connected to the charger, failure to do this will invalidate the warranty.**

### 4.1. Charging and Recharging

The unit should be fully charged before initial use. When partially discharged the unit should be recharged before further use.

- **WARNING! Use the supplied charger, cable and connector. Unauthorised parts may damage the unit and will invalidate the warranty. Ensure that you strictly apply the safety instructions as stated in Section 1.**

- 4.1.1. Ensure that the Powerstart selector switch is in the 'Off' position (fig.1).
- 4.1.2. Plug the charger mains cable into a 230 volt supply. The red 'On' LED will illuminate.
- 4.1.3. Plug the charger cable into the charge input socket of the unit. The unit will now charge automatically and the charger LED will indicate the level of charge. When the LED changes to green, charging is complete but the charger should not be disconnected or switched off. Leave it connected to the Powerstart to ensure that the unit is fully charged when next required.
- 4.1.4. Press the test button and hold to read the percentage charge at any time; situated in the top face, marked "**BATTERY CONDITION**".
- 4.1.5. To disconnect the charger from the Powerstart, first switch off the charger, then press and hold the latch immediately above the socket and pull out the plug.

**Note:** The Powerstart charging circuits are protected against short circuit by thermal breakers. The breakers in the PSTART1000HD (one per 12V circuit and one per 24V circuit) have manual reset buttons on the front panel, clearly marked "**FUSE**" (10A).

## 5. OPERATION

**WARNING! YOU MUST FOLLOW SAFETY INSTRUCTIONS AND ENSURE THAT THE POWERSTART AND VEHICLE VOLTAGES ARE THE SAME.**

- 5.1. Before use, press the test button to confirm that the Powerstart is fully charged (see 4.1.4).
- 5.2. Disconnect the charger as in 4.1.5. Remember to reinstate after use of the Powerstart.
- 5.3. Apply the vehicle hand brake and select neutral gear (or 'Park' if automatic transmission). Turn the ignition and electrical accessories off.
- 5.4. Use in a well ventilated area and wear protective eye shields and clothing.



- **WARNING! Do not allow the red and black clamps to touch each other once the leads are connected to the Powerstart. Ensure that the correct clamps are placed on the correct battery terminals.**

5.5. With the HT leads **disconnected** from the Powerstart attach the positive RED (+) clamp to the positive terminal on the vehicle battery. Ensure that the terminal is clean.

**Note:** On vehicles with multiple batteries connect the positive clamp to positive battery terminal which is connected to vehicle electrical system.

5.6. Attach the negative BLACK (-) clamp to the (ground) engine block or frame of the vehicle. Ensure that the cables are not in the path of moving engine parts, and are away from the carburettor/injection system, fuel lines etc.

- 5.7. Observe the LED status on the plug end of the HT leads. The green LED should illuminate, if the red LED illuminates cross-connection has occurred. This must be remedied before moving to 5.8.
- 5.8. With the Powerstart selector switch to 'Off' plug the leads into the socket situated beneath the switch.
- Note:** The connector will only fit the socket one way round, to prevent cross-connection.
- 5.9. Turn the selector switch to select 12V or 24V to match the vehicle voltage.
- 5.10. Make sure that no one is standing near the battery. When all criteria is met, start the engine.
- 5.11. Once the vehicle has started, turn the selector switch to 'Off' and then disconnect the leads from the vehicle, see 5.12 for sequence.

**IMPORTANT:**

If the vehicle does not start within **FIVE** seconds, **DO NOT** continue cranking. Let the Powerstart's internal battery(ies) cool for **FIFTEEN** minutes before attempting to start the vehicle again. Failure to do so may damage the unit.

- 5.12. To remove the lead clamps, firstly disconnect the **BLACK** (-) negative clamp followed by the **RED** (+) clamp.
- 5.13. After use, immediately recharge the Powerstart as described in 4.1.

- WARNING! BEFORE CHARGING THIS UNIT, DISCONNECT THE OUTPUT HT LEADS FROM THE UNIT AS THEY WILL REMAIN "LIVE" WHILE CHARGING.**
- WARNING! NEVER CLAMP THE OUTPUT HT LEADS TO THE CARRY HANDLE AS THIS COULD RESULT IN A SHORT CIRCUIT.**

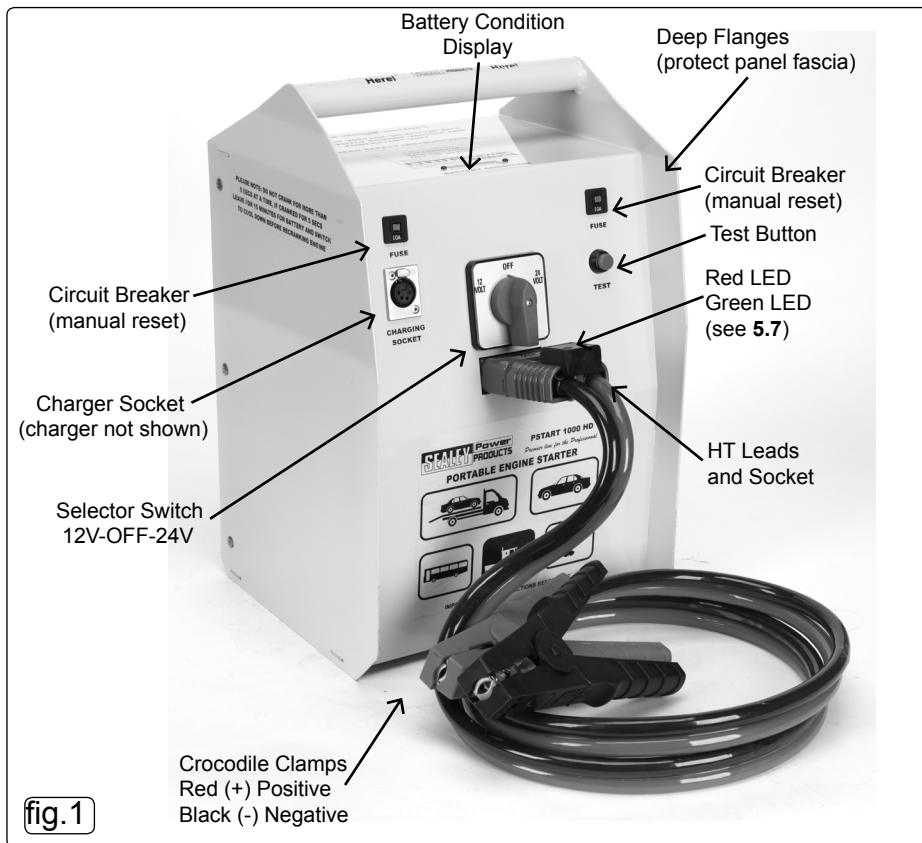





fig.1

**6. MAINTENANCE**

- 6.1. The unit has no customer serviceable components. All repairs inside or outside the warranty period to be directed to your Sealer dealer.
- 6.2. Remove the HT leads plug and charger plug before cleaning the outer casing and all leads with a dry cloth. Replace the charger as explained in section 4.
- 6.3. Store the HT leads and Powerstart indoors separately.

 Under the Waste Batteries and Accumulators Regulations 2009, Jack Sealey Ltd are required to inform purchasers of products containing batteries (as defined with these regulations), that they are registered with Valpak's registered compliance scheme. Jack Sealey Ltd's Batteries Producer Registration Number (BPRN) is BPRN00705.

 **Environmental 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 off any fluids (if applicable) into approved containers and dispose of the product and the fluids according to local regulations.

 **WEEE Regulations**  
 Dispose of this product at the end of its working life in compliance with the EU Directive on Waste Electrical and Electronic Equipment (WEEE). When the product is no longer required, it must be disposed of in an environmentally protective way. Contact your local solid waste authority for recycling information.

**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 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.



	Sole UK Distributor, Sealey Group, Kempson Way, Suffolk Business Park, Bury St. Edmunds, Suffolk, IP32 7AR	 01284 757500	 www.sealey.co.uk
		 01284 703534	 sales@sealey.co.uk