



# INSTRUCTIONS FOR PORTABLE JUMP START UNITS

**MODELS: POWERSTART200 POWERSTART500.V2 POWERSTART900**

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 instruction manual



Warning: corrosive substance



Use in well ventilated areas



Keep away from sources of ignition; battery could explode



Wear eye protection

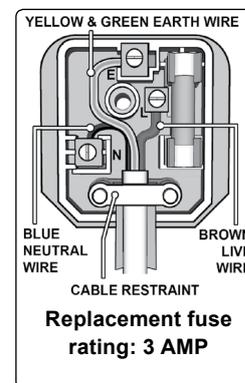


Wear protective gloves

## 1. SAFETY

### 1.1. ELECTRICAL SAFETY

- IMPORTANT:** To reduce the risk of a battery explosion, follow these instructions and those published by the battery manufacturer and the manufacturer of any equipment you intend to use in the vicinity of the battery. Remember to review warning marks on all products and on engines.
  - Modern vehicles contain extensive electronic systems. You are required to check with the vehicle manufacturer, for any specific instructions regarding the use of this type of equipment on each vehicle. No liability will be accepted for damage / injury, where this product is not used in accordance with all instructions.
  - 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.
  - 1.1.1. You must also read and understand the following instructions concerning electrical safety.
  - 1.1.2. 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.
  - 1.1.3. 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.**
  - 1.1.4. 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.
  - 1.1.5. Ensure that cables are always protected against short circuit and overload.
  - 1.1.6. Regularly inspect power supply leads, plugs for wear and damage and power connections, to ensure that none is loose or damaged.
  - 1.1.7. **IMPORTANT:** Ensure that the voltage rating on the appliance suits the power supply to be used and that the plug is fitted with the correct fuse - see fuse rating in these instructions.
    - \* **DO NOT** pull or carry the appliance by the power cable.
    - \* **DO NOT** pull the plug from the socket by the cable.
    - \* **DO NOT** use worn or damaged cables, plugs or connectors. Ensure that any faulty item is repaired or replaced immediately by a qualified electrician.
  - 1.1.8. This product is fitted with a BS1363/A 13 Amp 3 pin plug.  
If the cable or plug is damaged during use, switch the electricity supply and remove from use.  
Ensure that repairs are carried out by a qualified electrician.  
Replace a damaged plug with a BS1363/A 13 Amp 3 pin plug. If in doubt contact a qualified electrician.
    - 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.  
Sealey recommend that repairs are carried out by a qualified electrician.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 extension reel is to be used outdoors, ensure it is marked for outdoor use.
- 1.2. **ELECTRICAL SAFETY IN RELATION TO BATTERY CHARGERS**
- ▲ **DANGER! BE AWARE, LEAD-ACID BATTERIES GENERATE EXPLOSIVE GASES DURING NORMAL BATTERY OPERATION. FOR THIS REASON, IT VERY IMPORTANT TO READ AND FOLLOW THESE INSTRUCTIONS CAREFULLY, EACH TIME YOU USE THE EQUIPMENT.**
  - ✓ Follow these instructions and those published by the battery and vehicle manufacturers, and the maker of any equipment you intend to



use in the vicinity of the battery. Remember to review warning marks on all products and on engines.

- WARNING!** Modern vehicles contain extensive electronic systems. You are required to check with the vehicle Manufacturer, for any specific instructions regarding the use of this type of equipment on each vehicle.
- ✓ No liability will be accepted for damage / injury, where this product is not used in accordance with all instructions.

### 1.3. PERSONAL PRECAUTIONS

- ✓ Ensure there is another person within hearing range of your voice and close enough to come to your aid, should a problem arise when working near a lead-acid battery.
- ✓ Wear safety eye protection and protective clothing. Avoid touching eyes while working near battery.
- ✓ Have fresh water and soap nearby in case battery acid contacts skin, clothing or eyes.
- ✓ 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 which is high enough to weld a ring or the like to metal, which would cause severe burns.
- ✓ Ensure hands, clothing (especially belts) are clear of fan blades and other moving or hot parts of engine, remove ties and contain long hair.
- ✗ **DO NOT** smoke or allow a spark or flame in the vicinity of battery or engine.

### 1.4. CHARGING SAFETY INSTRUCTIONS

- ✓ Familiarise yourself with the application and limitations of the starter as well as the potential hazards. Also refer to the vehicle manufacturer's handbook. **IF IN ANY DOUBT CONSULT A QUALIFIED ELECTRICIAN.**
- ✓ Ensure the starter is in good order and condition before use. If in any doubt do not use the unit, contact your Sealey stockist.
- ✓ Use the starter in the upright position only and ensure it is placed on a stable surface which will adequately support its weight.
- ✓ Ensure the starter is disconnected from the mains supply before attaching/detaching the power clamps to/from the battery.
- ✓ Keep tools and other items away from the engine and ensure you can see the battery and working parts of engine clearly.
- ✓ Ensure the output of the starter is the same voltage as the battery.
- ✓ If battery has caps to access the battery fluid, remove the caps and check the fluid level before connecting the power clamps.
- ✓ If necessary top-up the battery with distilled water by referring to the battery manufacturer's instructions (Apply the personal safety precautions described in part 1.3).
- ✓ If the starter receives a sharp knock or blow the unit must be checked by a qualified service agent before using.
- ✓ If the battery terminals are corroded or dirty clean them before attaching the power clamps.
- ✓ Keep children and unauthorised persons away from the working area.
- ✗ **DO NOT** dis-assemble the starter for any reason. The starter must only be checked by qualified service personnel.
- ✗ **DO NOT** try to boost or charge battery if battery fluid is frozen.
- WARNING!** To prevent the risk of sparking, short circuit and possible explosion **DO NOT** drop metal tools in the battery area, or allow them to touch the battery terminals.
- ✗ **DO NOT** allow power clamps to touch each other or to make contact with any metallic part of the vehicle.
- ✗ **DO NOT** cross connect power leads from starter to battery. Ensure positive (+/RED) is to positive and negative (-/BLACK) is to negative.
- ✗ **DO NOT** pull the cables or clamps from the battery terminals.
- ✗ **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.
- ✗ **DO NOT** store the unit in damp or wet locations or where temperature may exceed 50°C.
- ✗ **DO NOT** submerge the unit in water.
- ✗ **DO NOT** use starter inside vehicle or inside engine compartment.
- ✗ **DO NOT** leave the unit in a totally discharged state for an extended period of time as this will result in permanent damage.
- ✗ **DO NOT** use the starter for a task for which it is not designed.
- WARNING!** If a fuse blows, ensure it is replaced with an identical fuse type and rating. Use only Sealey genuine parts.
- ✓ When not in use, store the starter carefully in a safe, dry, childproof location.

This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

## 2. INTRODUCTION

Heavy duty jump starters designed for the professional technician. Housed in heavy steel cases, the units are rugged enough for the toughest environments and can be used on a variety of vehicle applications: Trucks, Buses, Coaches, Construction Machines and Vehicles, Towing and Rescue Vehicles, Fire Appliances, Airport Service Vehicles, Light Aircraft, Marine, Farming and Forestry Vehicles. Designed and made to the highest standards, these machines offer serious performance for the serious user.

## 3. SPECIFICATION

	Powerstart 200	Powerstart 500.V2	Powerstart 900
Voltage:	12v	12V/24V	12V/24V
Maximum Engine Size:	200hp	500hp	900hp
Peak Amps 12V:	1600A	4400A	5000A
Peak Amps 24V:	-	2200A	2500A
Cranking Current (20°C 5secs) 12V:	680A	1700A	1900A
Cranking Current (20°C 5secs) 24V:	-	850A	950A
Cold Cranking Current (-18°C 30secs) 12V:	280A	700A	760A
Cold Cranking Current (-18°C 30secs) 24V:	-	350A	380A
Cable Section:	35mm <sup>2</sup>	35mm <sup>2</sup>	35mm <sup>2</sup>
Cable & Clamp Length:	2mtr	2mtr	2mtr
Weight:	15.2kg	22kg	31.6kg

## 4. CHARGING

### IMPORTANT WARRANTY INFORMATION:

The battery pack fitted to this cordless tool is considered to be a consumable item and its ability to accept charge will reduce over time. We will warranty it against mechanical and electrical defect for a period of one year - this does not cover fair wear and tear.

If the battery is not properly charged before first use, or regularly conditioned, its capacity will diminish. Under these circumstances we will not replace the battery pack even if it is less than one year old.

- ❑ **WARNING!** Before charging this unit disconnect the output leads as they will remain live whilst charging.

- ❑ **WARNING!** Never clamp the output leads from the unit to the carry handle as this could result in a short circuit.

**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. READING THE POWER LEVEL INDICATORS

The charge level of the POWERSTART200 can be seen at any time by pressing the test button (fig.1.A) and noting the meter (fig.1.E) reading.

When the needle is in the green sector the unit is fully charged and is ready to be used.

The red sector indicates that immediate charging is required and the yellow sector indicates that recharging is advisable.

- 4.1.1. For the POWERSTART500 and 900 models press and hold the test button, the LED's (fig.2.E) from left to right, four orange (low power) and six green will light up one by one and stop at the level of charge, the further to the right the higher the charge.

#### 4.2. RECHARGING

When new the unit should be charged before use until the charger display indicates "Full".

- ❑ **WARNING!** Use the supplied charger, cable and connector. Unauthorised parts may damage the unit and will invalidate the warranty.

- 4.2.1. Ensure that you strictly apply the safety instructions as stated in Section 3.

- 4.2.2. Ensure that the POWERSTART control switch (fig.1.D) is in the 'Off' position.

- 4.2.3. Plug the charger mains cable into a 230 volt supply. The green 'On' LED will illuminate.

- 4.2.4. Plug the charger cable into the charge input socket (fig.1.B) of the unit. The unit will now charge automatically and the charger LED's will indicate the level of charge. When the green 'Full' LED comes on, 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.

- 4.2.5. 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.

**IMPORTANT!** If the 'Fault' LED on the charger illuminates, switch off the charger, disconnect it from the POWERSTART and contact your Sealey stockist.

**NOTE:** The POWERSTART charging circuits are protected against short circuit by thermal breakers.

The breaker in the POWERSTART200 has automatic reset whilst those in the POWERSTART500 and POWERSTART900 (two in each - one per battery) have manual reset buttons on the front panel.

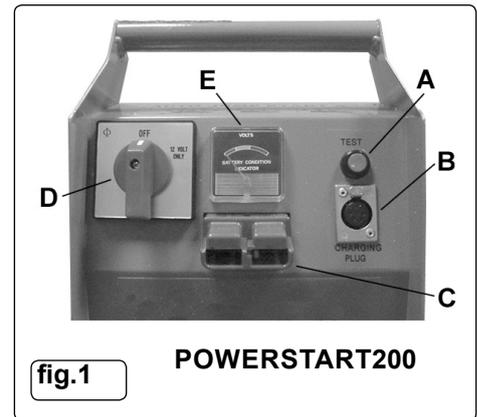


fig.1 POWERSTART200

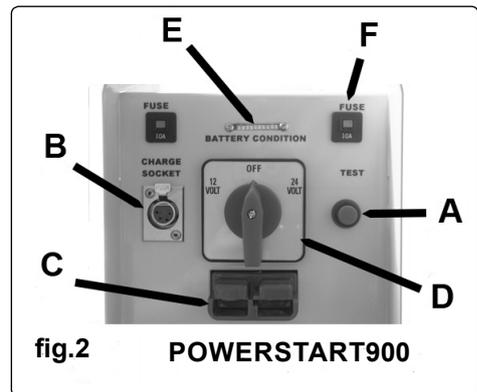


fig.2 POWERSTART900

## 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 charged (see 4.1.).

- 5.2. Apply the vehicle hand brake and select neutral gear (or 'Park' if automatic transmission). Turn ignition and electrical accessories off.

- 5.3. 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.

- 5.4. With the 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 positive clamp to positive battery terminal which is connected to vehicle electrical system.

- 5.5. 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, such as the fan and are away from the carburettor/injection system, fuel lines etc.

- 5.6. The lead plug on the POWERSTART200 is fitted with a polarity indicator. Confirm that the green LED is illuminated.

If the red LED is illuminated then the clamps are cross-connected and **MUST** be reversed.

- 5.7. With the POWERSTART control switch (fig.1.D & fig.2.D) set to 'Off' plug the leads into the socket (fig.1.C or fig.2.C).

**NOTE:** The connector will only fit the socket one way round, to prevent cross-connection.

- 5.8. On models POWERSTART500 AND POWERSTART900 turn the control switch (fig.2.D) to select 12 or 24V to match the vehicle voltage. On model POWERSTART200 turn the switch (fig.1.D) to select 12V.

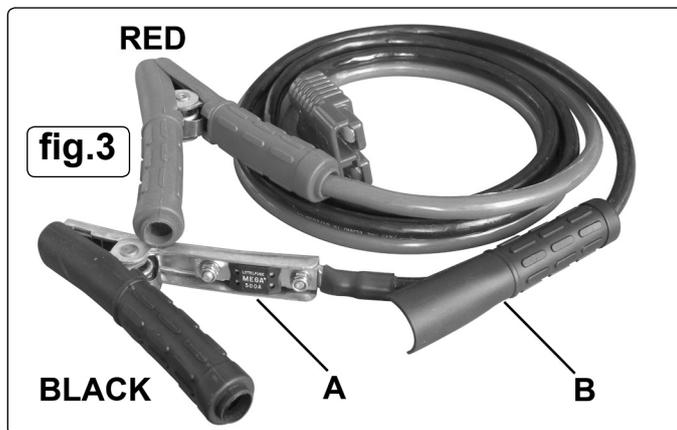
- 5.9. Make sure that no one is standing near the battery. When all is OK, start the engine.

- 5.10. Once the vehicle has started, turn the control switch to 'Off' and then disconnect the leads from the POWERSTART.

- 5.11. When removing lead clamps firstly disconnect the **BLACK** (-) negative clamp followed by the **RED** (+) positive clamp.

- 5.12. **IMPORTANT:** If the vehicle does not start within six seconds, **DO NOT** continue cranking. Let the POWERSTART's internal battery(ies) cool for three minutes before attempting to start the vehicle again. Failure to do so may damage the unit.

- 5.13. After use, immediately recharge the POWERSTART as described in 4.2.
- ❑ **WARNING!** BEFORE CHARGING THIS UNIT, DISCONNECT THE OUTPUT LEADS FROM THE UNIT AS THEY WILL REMAIN “LIVE” WHILE CHARGING.
  - ❑ **WARNING!** NEVER CLAMP THE OUTPUT LEADS TO THE CARRY HANDLE AS THIS COULD RESULT IN SHORT CIRCUIT.
  - ❑ **WARNING!** The warnings, cautions and instructions discussed in this manual cannot cover all possible conditions and situations that may occur. It must be understood that common sense and caution are factors which cannot be built into this product, but must be applied by the operator.
- 5.14. **On POWERSTART500.V2 and 900 models, the negative BLACK clamp is fitted with a 500A fuse within the black sleeve. (fig.3A).** Before accessing this fuse, turn the switch knob to OFF and unplug the power leads from the unit. Work the black sleeve down into the black lead. See fig.3B. After replacing the fuse ensure the black sleeve fully covers the clamp.



## 6. TROUBLESHOOTING

QUESTION:	ANSWER:
Can the POWERSTART be recycled?	Yes, in accordance with local authority regulations.
What is the ideal in-use storage temperature of the POWERSTART?	Room temperature. The POWERSTART will also operate at temperatures below zero, however power will be lessened. Intense heat will activate self-discharge.
I have a regular battery charger, can I use it to recharge the POWERSTART?	No, only the supplied charger can be used.
Is the POWERSTART fool proof?	No. All jump starting instructions must be followed carefully.
Can the POWERSTART battery(ies) be replaced?	Yes, through your Sealey dealer, but note: Batteries are not covered by warranty as they are consumable items.
Can the POWERSTART be used continuously?	No. The electronic trip will operate if cranked for too long. Do not exceed duty cycle as stated in section 5.12
Powerstart will not work even when the electronic trip has been reset.	Check fuse within the black sleeve on the black clamp. See fig 3A and Section 5.14 (POWERSTART500.V2 and 900 only)



### 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.

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