



# AUTOMATIC SMART BATTERY CHARGER & MAINTAINER WITH 12V LITHIUM CHARGING AND 12V DC POWER SUPPLY

MODELS: SPBC8.V2, SPBC12.V2, SPBC16.V2

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



Wear eye protection



Warning



Electrical shock hazard



Indoor use only



Keep in dry area protect from rain



Keep away from sources of ignition



Use in well ventilated areas

## 1. SAFETY

### 1.1. ELECTRICAL SAFETY

- WARNING!** It is the user's responsibility to check the following:
  - ✓ Check all electrical equipment and appliances to ensure that they are safe before using.
  - ✓ Inspect power supply leads, plugs and all electrical connections for wear and damage.
  - ✓ Ensure that the insulation on all cables and on the appliance is safe before connecting it to the power supply.
  - ✗ **DO NOT** use worn or damaged cables, plugs or connectors.
  - ✓ Ensure that any faulty item is repaired or replaced immediately by a Sealey qualified technician.
  - ✓ If the cable or plug is damaged during use, switch off the electricity supply and remove from use.
  - ✓ Sealey recommend that an RCD (Residual Current Device) is used with all electrical products.
- Important:** Ensure that the voltage rating on the appliance suits the mains power supply.
- ✗ **DO NOT** pull or carry the appliance by the power cable.
- ✗ **DO NOT** pull the plug from the socket by the cable.

### 1.2. GENERAL SAFETY

- ▲ **DANGER! BE AWARE, LEAD-ACID BATTERIES GENERATE EXPLOSIVE GASES DURING NORMAL BATTERY OPERATION. FOR THIS REASON, IT IS VERY IMPORTANT TO READ AND FOLLOW THESE INSTRUCTIONS CAREFULLY, EACH TIME YOU USE THE CHARGING EQUIPMENT.**
- ✓ Follow these instructions and those published by the battery and vehicle manufacturer, 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

#### **NOTE: CHARGING OF LITHIUM BATTERIES IS RESTRICTED TO 12V**

- ✓ Familiarise yourself with the application and limitations of the charger as well as the potential hazards. Also refer to the vehicle manufacturer's hand book. **IF IN ANY DOUBT CONSULT A QUALIFIED ELECTRICIAN.**
- ✓ Ensure the charger is in good order and condition before use. If in any doubt **DO NOT** use the unit, contact your Sealey stockist.
- ✓ Use the starter/charger in the upright position only and ensure it is placed on a stable surface which will adequately support its weight.
- ✓ Ensure the charger 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 charger 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 as above.
- ✓ If the charger 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 charger for any reason. The charger must only be checked by qualified service personnel.
  - ✘ **DO NOT** try to charge a non-rechargeable battery.
  - ✘ **DO NOT** try to 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 charger 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 charger outdoors, or in damp, or wet locations and **DO NOT** operate within the vicinity of flammable liquids or gases.
  - ✘ **DO NOT** use charger inside vehicle or inside engine compartment.
  - ✓ Ensure there is effective ventilation to prevent a build-up of explosive gases, and **DO NOT** cover or obstruct charger ventilation louvres.
  - ✘ **DO NOT** use the charger for a task for which it is not designed.
  - ☐ **WARNING! DO NOT** simultaneously charge batteries of different capacities or discharge levels.
  - ☐ **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 charger carefully in a safe, dry, childproof location.
  - ✓ An extension cord should not be used unless absolutely necessary. Use of an improper extension cord could result in a risk of fire and electric shock. If an extension cord must be used, make sure:
    - That the pins on the plug of the extension cord are the same number, size and shape as those of the plug on the charger.
    - That the extension cord is properly wired and in good electrical condition.
    - That the wire size is large enough for the AC ampere rating of the charger as specified.
  - ✓ To reduce the risk of electric shock, unplug the charger from the outlet before attempting any maintenance or cleaning. Simply turning off the controls will not reduce this risk.
  - ✓ A marine (boat) battery must be removed and charged on shore. To charge it on-board requires equipment specially designed for marine use.
- CAUTION:** Only allow children at least 8 years old to use the battery charger. Give sufficient instruction so that the child is able to use the battery charger in a safe way and explain that it is not a toy and must not be played with. Instruct the child not to try and recharge non-rechargeable batteries because of the risk of eruption. Examine the battery charger regularly for damage, it must not be used until it has been repaired. 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

Fully automatic 7-stage battery charger, designed for trickle charging and maintaining a variety of EFB and AGM (stop/start), GEL, lead acid and lithium batteries with auto chemistry selection. Zero volt battery charging, enabling recovery and charging of a completely discharged battery (providing any load removed from the rechargeable battery). Old battery sulfation repair function. Reverse polarity, short circuit, over temperature and overcharging protection. Intuitive LED screen displays illuminated charging stages, volts and amps output and battery capacity. Compact design with unique retractable hanging hook, and cable management system which allows the clips to be stored neatly away when not in use. 13.5V DC power supply mode for battery support during prolonged electrical and diagnostic checks.

## 3. SPECIFICATION

MODEL:	SPBC8.V2	SPBC12.V2	SPBC16.V2
Supply:	230V	230V	230V
Output:	6/12/24V	6/12/24V	6/12/24V
Output Charge:	8A @ 6/12V (4A @24V)	12A @ 6/12V ( 6A @ 24V)	16A @ 6/12V (8A @ 24V)
Battery Range:	40Ah to 100Ah	40Ah to 160Ah	40Ah to 200Ah
Cable Length:	1.2m	1.2m	1.2m
IP Rating:	IP33	IP33	IP33
Dimensions:	193 x 183 x 80mm	193 x 183 x 80mm	193 x 183 x 80mm
Battery Support Mode:	13.5V DC - 8A	13.5V DC - 12A	13.5V DC - 16A
Weight:	1.18kg	1.18kg	1.27kg
Electrical Class:	II	II	II
Plug Type:	3-Pin BS	3-Pin BS	3-Pin BS
Fuse Rating:	13A	13A	13A

Additional specification detailing the number of cells and rated capacity of batteries that can be charged.

**8A:** 6 Cell(12V): 40 - 100Ah, 3 Cell (6V): 40 - 100Ah, 12 Cell (24V): 40 - 80Ah  
**12A:** 6 Cell(12V): 40 - 160Ah, 3 Cell (6V): 40 - 160Ah, 12 Cell (24V): 40 - 120Ah  
**16A:** 6 Cell(12V): 40 - 200Ah, 3 Cell (6V): 40 - 200Ah, 12 Cell (24V): 40 -140Ah

## 4. OPERATION

- ❑ **WARNING!** The charger does not have an on/off switch. The on and off commands are controlled by plugging the SPBC8.V2, SPBC12.V2, & SPBC16.V2 with power supply into an AC electrical wall socket only after the battery connections have been made.

### 4.1. CHARGING PROCESS:

4.1.1. Fully automatic 7 stage charging system:

- 4.1.2. **Analysis / Desulfation (Charging stage 1 illuminated)** – A small voltage pulse is applied to the battery to ensure it can effectively and safely accept a charge. Desulfation uses pulse reconditioning to gently remove any sulfation build up on the battery plates and prevents oxidization. Stabilises electrolyte consistency and minimises the battery temperature rising by charging, recovers battery capacity and can help extend battery life.
- 4.1.3. **Soft Start (Charging stage 2 illuminated)** – The soft start function improves the batteries charging capability, reduces gas and heat build-up and can improve electrolyte consistency which can become uneven in the battery cells from day to day use. A steadily increasing current is applied over a set time so as not to initially overload the battery. This stage prepares the battery for the more intense charging stages to follow.
- 4.1.4. **Bulk Charge (Charging stage 3 illuminated)** – Maximum charge current is delivered to the battery to minimise charge times.
- 4.1.5. **Absorption (Charging stage 4 illuminated)** – Reduces the current supplied to the battery and ensures that the battery has been completely charged without the risk of being overcharged.
- 4.1.6. **Analysis (Charging stage 5 illuminated)** – The charger shuts off power and measures voltage drop over a set time. If unacceptable readings are measured, this may indicate an internal short or other issue inside the battery. If the battery has a fault the charger will illuminate the Battery Error LED indicator. The charger will cut output and not continue to charge until it is either switched off, or the battery is removed.
- 4.1.7. **Boost / Equalisation charge (Charging stage 6 illuminated)** – Once the battery is fully charged, the charger will equalise all the battery cells by providing a steady set voltage over a programmed period, at low current.
- 4.1.8. **Float Stage (Charging stage 7 illuminated)** – Once the battery is fully charged, the charger will provide a constant voltage of 6.85V/13.7V/27.4V to maintain the battery at a full level without damaging the battery.

4.2. **TEMPERATURE COMPENSATION** – This charger has a temperature compensation feature that will reduce the output current of the charger if the charger internal temperature exceeds its set limit. This protection feature will prevent the battery and charger from damage if the bulk stage takes an extended time – particularly if a larger than recommended battery has been connected. There is no indicator to show temperature compensation.

**NOTE:** The 6V/12V/24V, 8A/12A/16A fully automatic 7 stage battery charger is designed to effectively charge most automotive battery types including lead acid, calcium, maintenance free, Gel and AGM. They are manufactured to the latest design parameters and highest quality levels. There are no buttons to decipher - the specially designed microprocessor charging system automatically selects the correct voltage and current setting and output levels for the size and type of the battery, greatly assisting prolonged battery life and user safety.

Please adhere to all safety directions in this manual and retain for later use.

### 4.3. IMPORTANT SAFETY INSTRUCTIONS:

- 4.3.1. Battery chargers contain hazardous voltages. There are no user serviceable components inside the charger. **DO NOT** disassemble this product.
- 4.3.2. If the mains cable is broken or damaged, it must be replaced a qualified person only.
- 4.3.3. This battery charger is for use with 6, 12 and 24V electrical systems only. Care should still be taken to correctly identify the correct voltage on vehicles and light trucks BEFORE the battery charger is connected and switched on.

### 4.4. BATTERY CHARGER OPERATION

4.4.1. This charger has been designed to be as simple to use as possible. As a result, there are no input buttons or any other selections to make. The charger has an advanced on board micro-processor that will take care of every setting required.

### 4.5. TO COMMENCE BATTERY CHARGING:

- 4.5.1. Unwind both 230V and 12V power leads from the rear of the charger.
- 4.5.2. Connect the Red POSITIVE (+) clamp to the battery Red POSITIVE (+) terminal.
- 4.5.3. Connect the Black NEGATIVE (-) clamp to the Black NEGATIVE (-) terminal.
- 4.5.4. Plug in the mains power cable, and switch on the power.
- 4.5.5. The charger will take approximately 1 minute to complete its voltage diagnostics to detect the correct battery voltage, once complete the correct LED will illuminate for 6, 12 or 24V operation.
- 4.5.6. Charging will now commence automatically.
- 4.5.7. View the status LED indicators on the front panel to see progress.
- 4.5.8. Once the **TOP** GREEN LED bar in the display indicator illuminates, the battery is fully charged, and may be disconnected from the battery charger clamps.

### 4.6. TO DISCONNECT:

- 4.6.1. Switch off mains power and unplug power cable.
- 4.6.2. Disconnect the Black NEGATIVE (-) clamp from the Black NEGATIVE (-) terminal.
- 4.6.3. Disconnect the Red POSITIVE (+) clamp from the battery Red POSITIVE (+) terminal\*\*
- 4.6.4. Re-attach battery terminal protective covers if previously removed.
- 4.6.5. Rewind both 230V and 12V power cables back into the rear of the charger for storage.
- 4.6.6. **Lithium battery only** - Press and hold MODE button for 3 seconds until Lithium LED indicator lights up. Lithium Mode will automatically turn off when charger power is disconnected. **Note:** the battery charger will commence working automatically without the need for any further user input. Once the battery is fully charged turn the power switch on the rear of the unit OFF and disconnect from the mains supply source. Disconnect the BLACK lead (Battery Clip) from the Negative Terminal (-/negative). Disconnect the RED lead (Battery Clip) from the Positive Terminal (+/positive). Refit battery into vehicle and correctly reconnect using the vehicle manufacturer's recommendations, or if required, replace or tighten the vent caps on the battery.

## 5. MAINTENANCE

- ❑ **WARNING!** After use and before performing maintenance, unplug and disconnect the battery charger.
  - 5.1. Cleaning and user maintenance should be carried out by competent persons.
  - 5.2. Use a dry cloth to wipe all battery corrosion and other dirt or oil from the battery connectors, cords, and the charger case.
  - 5.3. Ensure that all of the charger components are in place and in good working condition, for example, the plastic boots on the battery clips.
  - 5.4. Servicing does not require opening the unit, as there are no serviceable parts.
  - 5.5. All other servicing should be performed by qualified service personnel.
  - 5.6. If the mains cable is damaged, **DO NOT** use until repaired.
  - 5.7. Store the charger unplugged, in an upright position. The cord will still conduct electricity until it is unplugged from the mains.
  - 5.8. Store inside, in a cool, dry place.
  - ✖ **DO NOT** store the connectors clipped together, on or around metal, or clipped to cables. If the charger is moved around the shop or transported to another location, take care to avoid/prevent damage to the cables, connectors and charger. Failure to do so could result in personal injury or property damage.
- 5.9. POWER SUPPLY MODE:** This battery charger is fitted with a DC power supply mode. This mode will deliver a constant 13.5 Volts at 8/12/16 Amps and can be used for powering 12V DC appliances, lighting or used for testing 12V devices. The DC power supply also has overload and short circuit protection.
- TO ENTER THE DC POWER SUPPLY MODE:**
- Connect unit to 230V AC and switch the 230V AC ON.
  - Press the button twice until the DC SUPPLY LED indicator is illuminated.
  - Connect the RED lead (Battery Clip) to the positive input on the device.
  - Connect the Black lead (Battery Clip) to the negative input on the device.
  - To switch off power supply; unplug the AC power.
  - Disconnect the DC power leads from the device.
  - The DC power mode will automatically turn off and revert to Battery Charging when the charger is turned off and powered back on.
- ❑ **WARNING! DO NOT** ENABLE DC POWER SUPPLY MODE WHEN CONNECTED TO A BATTERY IN ORDER TO PREVENT SEVERE BATTERY FAILURE.



### 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.



### 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.



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**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. Please note that other versions of this product are available. If you require documentation for alternative versions, please email or call our technical team on [technical@sealey.co.uk](mailto:technical@sealey.co.uk) or 01284 757505.

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

**Warranty:** Guarantee is 60 months from purchase date, proof of which is required for any claim.

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