



# 100A 12V AUTOMATIC SMART BATTERY SUPPORT UNIT & CHARGER

MODEL NO's: **BSCU170**

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



Wear protective gloves



Electrical shock hazard



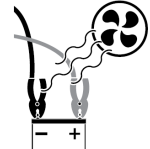
Warning: corrosive substance



Warning: explosive material



Keep away from sources of ignition



Use in well ventilated areas



Keep in dry area protect from rain

## 1. SAFETY

### 1.1. ELECTRICAL SAFETY FOR USE OF CHARGER

- WARNING!** It is the user's responsibility to read, understand and comply with the following electrical instructions:
  - You must ensure the risk of electric shock is minimised by the installation of appropriate safety devices. An RCCB (Residual Current Circuit Breaker) should be incorporated in the main distribution board. We also recommend that an RCD (Residual Current Device) is used with all electrical products, particularly portable equipment which is plugged into an electrical supply not protected by an RCCB.
- ✓ You must also read and understand the following instructions concerning electrical safety.
  - 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).
  - The Health & Safety at Work Act 1974 makes owners of electrical appliances responsible for the safe condition of the appliance and the safety of the appliance operator. If in any doubt about electrical safety, contact a qualified electrician. You must ensure that you:
- ✓ Inspect the Road Starter®, charger plug, cable and connector for wear and damage to ensure items are safe before connecting to the mains power supply. If worn or damaged **DO NOT** use.
- ✓ Uncoil the cable between charger and the Road Starter®.
- ✗ **DO NOT** pull the charger plug from the mains socket by the lead.
- WARNING! DO NOT** use any other type of charger with this product, other than the supplied mains or car charger. Failure to observe this warning could result in injury and or fire and will invalidate the warranty.
- ✗ **DO NOT** try to take the charger plug apart.
- ✗ **DO NOT** use the charger plug to charge or power any other electrical item.
- ✗ **DO NOT** get the charger wet, or use in wet, damp conditions (for indoor use only).

### 1.2. BATTERY SAFETY

- WARNING!** To reduce the risk of burns or fire:
  - ✗ **DO NOT** attempt to open, disassemble, modify or service the battery pack.
  - ✗ **DO NOT** crush, puncture, short external contacts or dispose of in fire or water.
  - ✗ **DO NOT** expose to temperatures above 60°C (140°).
- ✓ Replace only with the battery pack designated for this product.
- ✓ Recycle or dispose of used battery as stipulated by local regulation.
- ✓ If the electrolyte in the cells gets on your skin, thoroughly wash with soap and water. If it gets in your eyes, rinse thoroughly with cool water and seek immediate medical attention.
- ✓ Ensure the internal battery is fully charged before initial use.
- ✗ **DO NOT** move/handle/use the Road Starter® when it is being charged.
- ✗ **DO NOT** leave battery in a discharged state, recharge battery immediately. Only use charger supplied. Before storage, fully recharge the battery, subsequently recharge the battery at least once every six months of non-use.
- ▲ **DANGER! RISK OF EXPLOSIVE GASES. PREVENT FLAMES AND SPARKS. PROVIDE ADEQUATE VENTILATION DURING CHARGING. WORKING IN THE VICINITY OF A LEAD-ACID BATTERY IS DANGEROUS. BATTERIES GENERATE EXPLOSIVE GASES DURING NORMAL OPERATION. FOR THIS REASON, IT IS IMPORTANT THAT YOU FOLLOW THESE INSTRUCTIONS EACH TIME YOU USE THE ROADSTART®.**

It is very important to read and follow these instructions carefully, each time you use the Roadstart®.

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. GENERAL SAFETY INSTRUCTIONS

- ✓ **SAVE THESE INSTRUCTIONS** – Charge the Roadstart®'s internal battery. Only use supplied charger immediately after purchase, after each use and as often as possible. It is highly recommended to leave the Roadstart® permanently connected to the automatic charger. This manual will show you how to use your Roadstart® safely and effectively. Please read, understand and follow these instructions and precautions carefully, as this manual contains important safety and operating instructions.
  - ✓ Use the Road Starter® in the upright position only and ensure it is placed on a stable surface which will adequately support its weight.
  - ✓ Keep tools and other items away from the engine and ensure you can see the battery and working parts of engine clearly.
  - ✓ Keep children and unauthorised persons away from the working area.
  - ✗ **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 Road 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 charger outdoors, or in damp, or wet locations and **DO NOT** operate within the vicinity of flammable liquids or gases.
  - ✗ **DO NOT** use for a task for which it is not designed.
  - ✓ When not in use, store carefully in a safe, dry, childproof location.
  - ✓ Only use for starting vehicles with 12/24V systems. **DO NOT** use for other vehicles such as aircraft, ships etc.
  - ✗ **DO NOT** use in place of a vehicle battery or as a battery charger.
  - ✓ Use the jumper cable provided with this unit only.
  - ✗ **DO NOT** Jump Start more than 3 times in a row. It could damage the unit by overheating. Give two minutes between attempts.
  - ✓ **Remove the product from the vehicle battery within 30 seconds of jump starting. If not, it could lead to damage.**
  - ✗ **DO NOT** modify or disassemble Road Starter®. Only a repair technician may repair this unit.
  - ✗ **DO NOT** drop unit. If unit receives a sharp blow or is otherwise damaged in any way have it checked by a qualified technician.
  - ✗ **DO NOT** use the unit to jump start a vehicle while charging the internal battery.
- NOTE:** 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 microprocessor controlled unit designed to both charge a battery and provide support for the battery during prolonged electronic diagnostic checks. Up to 100A power supply maintains stable voltage under varying loads during major vehicle ECU reprogramming and diagnostic work. Voltage settings between 13-14.8V for programming. 5m Heavy-duty cable, clamps and Anderson plug. Recovery/Desulfation mode will recover a discharged battery (>2V) to almost 100% of its original capacity. 70A Continuous output current or up to 100A maximum for up to 3mins as required. Patent-Pending “thermal runaway” protection and algorithms allow fast and safe charging. Designed for use with vehicle batteries including VRLA (Lead Acid), GEL, AGM/EFB and Leisure on 12V systems. Dual temperature controlled cooling fans. Once fully charged, battery may be left connected to be automatically conditioned and maintained. Mounting brackets for installation on vehicle lifts. Durable aluminium case.

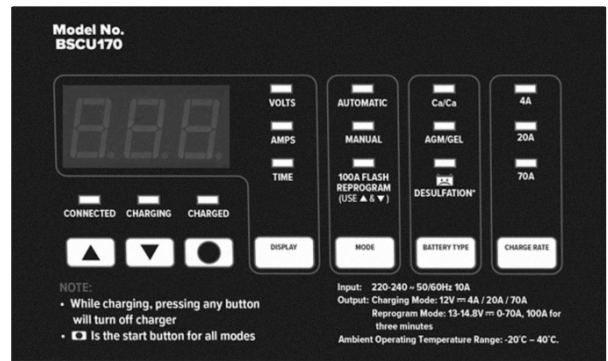
## 3. SPECIFICATIONS

<b>Model No:</b>	<b>BSCU170</b>
Cable & Clamp Length:	3m
Fuse Rating:	13A
Nett Weight:	9.56kg
Plug Type:	3-Pin
Power Supply Cable Length:	2.6m
Type:	Microprocessor Controlled
Supply:	230V
Output:	12V
Output Charge:	12V - 4A/20A/70A
Battery Range:	5 - 1,000Ah
Battery Support Mode:	100A - 3mins maximum. 70A continuous (13-14.8V selectable)
Power Supply Cable Length:	2.6m
Cable & Clamp Length:	3m



## 4. CONTROL PANEL

- **CONNECTED (yellow/orange) LED.** The CONNECTED LED will light when the battery is properly connected.
- **CHARGING (yellow/orange) LED.** When charging begins, the CHARGING LED will light.
- **CHARGED (green) LED.** The CHARGED LED will light when the charger has gone into maintain mode.
- **▲ and ▼ (UP and DOWN) Buttons.** Use these buttons to select the amount of time or voltage, depending on the display function selected.
- **⏻ (Start/Stop) Button.** This is the start and stop button for all modes.
- **DIGITAL DISPLAY.** The Digital Display gives a digital indication of voltage, amperes or time, depending on the display function chosen.
- **DISPLAY BUTTON.** Use this button to set the function of the digital display to one of the following:
  - **VOLTS (Voltmeter).** The voltmeter indicates the voltage at the battery terminals. If the reading is 12.8 volts or more, the battery is charged.
  - **AMPS (Ammeter).** The ammeter indicates the amount of current, measured in amps, that is being drawn by the battery ( $\pm 2$  amps).  
**NOTE:** The 70 amp charge rate cycles between 20 amps and 70 amps during the charging process and the ammeter will show this. This is a normal condition.
  - **TIME (Timer – Range: 10 minutes to 120 minutes)** Used only in manual mode, the main function of the timer is to prevent overcharging while allowing a battery time to obtain a satisfactory charge. To properly set the timer, you must know the size of the battery in ampere hours or reserve capacity in minutes and the state of charge.
  - **HOLD:** This position defeats the timer function, allowing for continuous operation. Use when you want to charge more than 2 hours. Be sure to monitor the charging procedure and stop when the battery is charged. Not doing so may cause damage to your battery or may cause other personal property damage or personal injury.
- **MODE BUTTON:**  
Use this button to select between the AUTOMATIC CHARGE, MANUAL CHARGE and FLASH REPROGRAM function.  
See Operating Instructions for details of these functions.
- **BATTERY TYPE/DESULFATION MODE BUTTON:**  
Set the type of battery to be charged, or Desulfation Mode.
  - **Ca/Ca (Calcium)** – Calcium batteries are acid batteries impregnated with calcium.
  - **AGM/GEL** (Absorbed Glass Mat/Gel Cell) – AGM batteries have electrolyte absorbed in separators consisting of a sponge-like mass of matted glass fibre. Gel batteries contain gelled electrolytes. These batteries are sealed with valves and should not be opened.
  - **DESULFATION MODE** – If the battery is left discharged for an extended period of time, it could become sulfated and not accept normal charge. If you select , the charger will switch to a special mode of operation designed for sulfated batteries.  
**NOTE:** When charging a battery that is not marked, check the manual of the item which uses the battery for the correct battery type. Make sure the battery complies with the safety instructions section.
- **CHARGE RATE BUTTON** Use this button to set the maximum charge rate to one of the following:
  - **4A Charge Rate** – For charging small batteries, such as those commonly used in garden tractors, snowmobiles and motorcycles.
  - **20A and 70A Charge Rate** – For charging automotive and marine batteries.**NOTE:** Charge rate cannot be selected while using Desulfation Mode.



## 5. PREPARATION

- ❑ **WARNING! RISK OF CONTACT WITH BATTERY ACID. BATTERY ACID IS A HIGHLY CORROSIVE SULFURIC ACID.**
  - 5.1. Remove all cord wraps and uncoil the cables prior to using the battery charger.
  - 5.2. If it is necessary to remove the battery from the vehicle to charge it, always remove the grounded terminal first. Make sure all of the accessories in the vehicle are off, to prevent arcing.
  - 5.3. Clean the battery terminals before charging the battery. During cleaning, keep airborne corrosion from coming into contact with your eyes, nose and mouth. Use baking soda and water to neutralize the battery acid and help eliminate airborne corrosion. **DO NOT** touch your eyes, nose or mouth.
  - 5.4. Add distilled water to each cell until the battery acid reaches the level specified by the battery manufacturer. **DO NOT** overfill. For a battery without removable cell caps, such as valve regulated lead acid batteries (VRLA), carefully follow the manufacturer's recharging instructions.
  - 5.5. Read, understand and follow all instructions for the charger, battery, vehicle and any equipment used near the battery and charger. Study all of the battery manufacturer's specific precautions while charging and recommended rates of charge.
  - 5.6. Determine the voltage of the battery by referring to the vehicle owner's manual.
  - 5.7. Make sure that the charger cable clips make tight connections.

## 6. CHARGER LOCATION

- ❑ **WARNING! RISK OF EXPLOSION AND CONTACT WITH BATTERY ACID.**  
**NOTE:** This is a Class A product for industrial use only, for use with professional equipment with a total rated power greater than 1 kW. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.
  - 6.1. Locate the charger as far away from the battery as the DC cables permit.
  - 6.2. **NEVER** place the charger directly above the battery being charged; gases from the battery will corrode and damage the charger.
    - × **DO NOT** set the battery on top of the charger.
  - 6.3. **NEVER** allow battery acid to drip onto the charger when reading the electrolyte specific gravity or filling the battery.

## 7. BATTERY IN VEHICLE

- 7.1. **FOLLOW THESE STEPS WHEN BATTERY IS INSTALLED IN VEHICLE**
  - ❑ **WARNING! A SPARK NEAR THE BATTERY MAY CAUSE A BATTERY EXPLOSION. TO REDUCE THE RISK OF A SPARK NEAR THE BATTERY:**
- 7.2. Position the AC and DC cables to reduce the risk of damage by the bonnet, door and moving or hot engine parts.

**NOTE:** If it is necessary to close the bonnet during the charging process, ensure that the bonnet does not touch the metal part of the battery clips or cut the insulation of the cables.

- 7.3. Stay clear of fan blades, belts, pulleys and other parts that can cause injury.
- 7.4. Check the polarity of the battery posts. The POSITIVE (POS, P, +) battery post usually has a larger diameter than the NEGATIVE (NEG, N, -) post.
- 7.5. Determine which post of the battery is grounded (connected) to the chassis.
- 7.6. For a negative-grounded vehicle, connect the POSITIVE (RED) clip from the battery charger to the POSITIVE (POS, P, +) ungrounded post of the battery. Connect the NEGATIVE (BLACK) clip to the vehicle chassis or engine block away from the battery. **DO NOT** connect the clip to the carburettor, fuel lines or sheet-metal body parts. Connect to a heavy gauge metal part of the frame or engine block.
- 7.7. For a positive-grounded vehicle, connect the NEGATIVE (BLACK) clip from the battery charger to the NEGATIVE (NEG, N, -) ungrounded post of the battery. Connect the POSITIVE (RED) clip to the vehicle chassis or engine block away from the battery.
  - ✘ **DO NOT** connect the clip to the carburettor, fuel lines or sheet-metal body parts. Connect to a heavy gauge metal part of the frame or engine block.
- 7.8. Connect charger AC supply cord to electrical outlet and press to turn the output on.
- 7.9. When disconnecting the charger, press to turn the output off, disconnect the AC cord, remove the clip from the vehicle chassis and then remove the clip from the battery terminal.

## 8. BATTERY IS OUTSIDE VEHICLE

### 8.1. FOLLOW THESE STEPS WHEN BATTERY IS OUTSIDE VEHICLE

☐ **WARNING!** A SPARK NEAR THE BATTERY MAY CAUSE A BATTERY EXPLOSION.

### 8.2. TO REDUCE THE RISK OF A SPARK NEAR THE BATTERY :

- 8.3. Check the polarity of the battery posts. The POSITIVE (POS, P, +) battery post usually has a larger diameter than the NEGATIVE (NEG, N, -) post.
- 8.4. Attach at least a 24-inch long 4 gauge (AWG) insulated battery cable to the NEGATIVE (NEG, N, -) battery post.
- 8.5. Connect the POSITIVE (RED) charger clip to the POSITIVE (POS, P, +) post of the battery.
- 8.6. Position yourself and the free end of the cable you previously attached to the NEGATIVE (NEG, N, -) battery post as far away from the battery as possible – then connect the NEGATIVE (BLACK) charger clip to the free end of the cable.
  - ✘ **DO NOT** face the battery when making the final connection.
- 8.7. Connect charger AC supply cord to electrical outlet and press to turn the output on.
- 8.8. When disconnecting the charger, press to turn the output off, disconnect the AC cord, remove the clip from the cable attached to the negative battery terminal and then remove the clip from the positive battery terminal.
- 8.9. A marine (boat) battery must be removed and charged on shore. To charge it onboard requires equipment specially designed for marine use.

## 9. AC POWER CORD CONNECTIONS

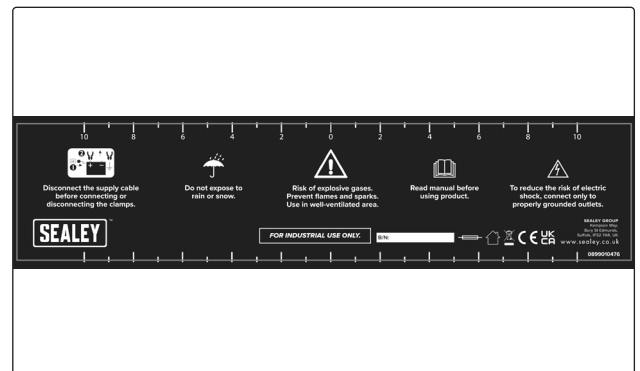
### 9.1. GROUNDING AND AC POWER CORD CONNECTIONS

☐ **WARNING!** RISK OF ELECTRIC SHOCK OR FIRE.

- 9.2. This battery charger is for use on a nominal 220-240V, 50/60Hz circuit. (See the warning label on the charger for the correct input voltage.) The plug must be plugged into an outlet that is properly installed and grounded in accordance with all local codes and ordinances. The plug pins must fit the receptacle (outlet). **DO NOT** use with an ungrounded system.

▲ **DANGER:**

- 9.3. NEVER alter the AC cord or plug provided – if it does not fit the outlet, have a proper grounded outlet installed by a qualified electrician. An improper connection can result in a risk of an electric shock or electrocution.
- 9.4. Recommended minimum AWG size for extension cord: 100 feet (30.5 meters) long or less – use a 12 gauge (3.31 mm<sup>2</sup>) extension cord. Over 100 feet (30.5 meters) long – use an 8 gauge (8.36 mm<sup>2</sup>) extension cord.



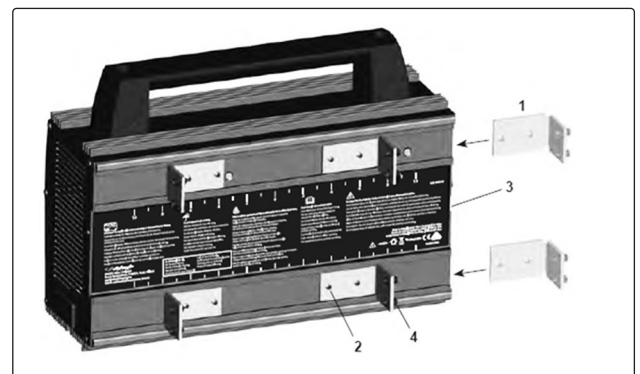
## 10. MOUNTING INSTRUCTIONS

**NOTE:** The BSCU170 is non-portable equipment.

Suitable for mounting only on concrete or other non-combustible surfaces.

To permanently mount the charger, use the following instructions:

- 10.1. Slide all 4 brackets (Item 1) into the track on the back, from the right side, as shown above. Make sure the set screws (Item 2) are unscrewed enough so they do not scratch the surface of the housing.
- 10.2. Measure what you are mounting the charger to before deciding where to locate the brackets (add an additional ¼ to ½ inch). Use the ruler on the label (Item 3) to mount the brackets (Item 1) in the correct position (position each bracket an equal distance from the centre of the charger). Note that the inches shown are for both bracket dimensions combined (meaning the dimensions are doubled), this is for easier reference. Make sure the ¼-28 set screws (Item 4) are unscrewed enough so the pointed end is almost flush with the bracket. Mount the brackets (Item 1) by tightening all 8 set screws (Item 2) to 14 in/lb (1.6 n/m) of torque.
- 10.3. Lift the charger by its handle and set it against your mounting location, tighten the set screws (Item 4) to 66 in/lb (7.5 n/m) of torque to secure the brackets (Item 1), starting with the top two brackets first.




## 11. OPERATING INSTRUCTIONS


### 11.1. BATTERY INFORMATION

This charger can be used with 12V batteries with rated capacities of 12 Ah to 111 Ah.

### 11.2. CHARGER OPERATION

**NOTE:** Once automatic charging or flash reprogramming has started, the buttons will not work until you turn off the output, with the exception of  (In MANUAL mode, ▲ and ▼ also still operate normally.) When the display shows "OFF", no buttons will work for five seconds as the charger automatically goes back to the default settings.


### 11.3. AUTOMATIC CHARGING

1. Connect the battery and AC power, following the precautions listed in sections 5, 6 and 7.
2. Set the BATTERY TYPE to Ca/Ca, AGM/GEL or Desulfation.
3. Set the MODE to AUTOMATIC CHARGE.
4. Set the CHARGE RATE to 4A, 20A or 70A. **NOTE:** Charge rate cannot be selected while using Desulfation Mode.
5. Press  when you are ready to start charging.
6. The CHARGING (yellow/orange) LED will light.

**NOTE:** Automatic charging starts only if the CONNECTED LED is lit and the battery has at least a 1V charge. If the battery is less than 1V, press and hold for five seconds to start Automatic Charging, or charge it in Manual mode for five minutes then switch back to Automatic Charge.

7. The CHARGED (green) LED will light when charging is complete and the charger has gone into maintain mode.

### 11.4. MANUAL CHARGING

1. Connect the battery and AC power following the precautions listed in sections 7, 8 and 9.
2. Set the BATTERY TYPE to Ca/Ca, AGM/GEL or Desulfation.
3. Set the MODE to MANUAL CHARGE. (The TIME LED will start blinking.)
4. Use ▲ and ▼ to set the time (shown in minutes) you want the charger to charge the battery. Set to "HLd" to run the charger without a time limit.
5. Set the CHARGE RATE to 4A, 20A or 70A. **NOTE:** Charge rate cannot be selected while using Desulfation Mode.
6. Press  when you are ready to start charging.

**NOTE:** Be sure to monitor the charging procedure and stop when the battery is charged. Failure to do so may cause damage to your battery or may cause other personal property damage or personal injury.


### 11.5. CHARGING



If the charger does not detect a properly connected battery, the CONNECTED (yellow/orange) LED will not light until such a battery is detected. Charging will not begin while the CONNECTED LED is not on. When charging begins, the CHARGING (yellow/orange) LED will light.

### 11.6. BATTERY PERCENT AND CHARGE TIME


This charger adjusts the charging time in order to charge the battery completely, efficiently and safely. The microprocessor automatically performs the necessary functions.

**Charge Rate** – The charge rate is measured in amps. This charger provides charge rates of 4A, 20A and 70A. The 4A rate is for charging smaller batteries, such as those used for motorcycles and garden tractors. Such batteries should not be charged using the 20A or 70A rate. The 20A and 70A rates are for charging larger batteries. In the 20A and 70A mode, the charger begins at a low-charge rate and increases the charge rate if it is determined that the battery can accept the higher rate. All charging modes will decrease the charge current as the battery approaches maximum charge.

**Automatic Charging Mode** – When an automatic charge is performed, the charger switches to the maintain mode automatically after the battery is charged. For a battery with a starting voltage under 1 volt, press  and hold for five seconds to start Automatic Charging, or use manual mode to pre-charge the battery for five minutes to get additional voltage into the battery for the charger to analyze.

**Aborted Charge** – If charging cannot be completed normally, charging will abort. When charging aborts, the charger's output is shut off, the CHARGING (yellow/orange) LED will go out and the digital display will show « bAd bAt ». The charger ignores all buttons except  in that state. Press  to reset after an aborted charge.

### 11.7. DESULFATION MODE

If the battery is left discharged for an extended period of time, it could become sulfated and not accept normal charge. If you select, the  charger will switch to a special mode of operation designed for sulfated batteries. For the best performance, AUTOMATIC CHARGE Mode is recommended for Desulfation Mode. If successful, the charger will fully desulfate and charge the battery, and then the green LED will light. Desulfation could take up to 10 hours in AUTOMATIC CHARGE mode. If desulfation fails, charging will abort and the charger will go into Abort Mode. If MANUAL CHARGE mode is selected and the timer is set to between 10-120 minutes, desulfation will stop at the specified time. If the timer is set to HOLD, the maximum time for desulfation will be 10 hours.

### 11.8. COMPLETION OF CHARGE

Charge completion is indicated by the CHARGED (green) LED. When lit, the charger has stopped charging and switched to the Maintain Mode of operation. If you are charging a deep cycle battery, the CHARGED LED comes on when the battery is charged enough for normal use.

### 11.9. MAINTAIN MODE



When the CHARGED (green) LED is lit, the charger has started Maintain Mode. In this mode, the charger keeps the battery fully charged by delivering a small current when necessary. The voltage is maintained at 13.2V.

### 11.10. 100A FLASH REPROGRAMMING

**NOTE: DO NOT** attempt to Flash Reprogram a vehicle that has a discharged or defective battery. Make sure that the vehicle battery is in good condition and fully charged before proceeding. In Flash Reprogramming Mode, the charger is able to deliver 70A charging current continuously, and to deliver up to 100A for three minutes.

1. Set MODE to FLASH REPROGRAM. (The VOLTS LED will start blinking.)
2. Use ▲ and ▼ to adjust voltage to the voltage needed for the vehicle being programmed (refer to OEM specifications). Voltage selected is shown on the digital display. The unit has a voltage range of 13 to 14.8, with a default of 14.2.

**NOTE:** When the VOLTS LED stops blinking, the display shows the selected voltage.

3. Press  to turn on the output.
4. When finished with Flash Reprogramming, press  to exit this mode.

## 11.11. USING THE BATTERY VOLTAGE TESTER

### Overview

This battery charger has a built-in voltmeter to measure your battery's voltage. The charger does not have a built in load tester. As such, a recently charged battery could have a temporarily high voltage due to what is known as "surface charge". The voltage of such a battery will gradually drop during the period immediately after the charging system is disengaged. Consequently, the tester could display inconsistent values for such a battery. For a more accurate reading, the surface charge should be removed by temporarily creating a load on the battery, such as by turning on lights or other accessories for a couple of minutes before you read the display. Read it a couple of minutes after you have turned the headlights off.

**Testing Sequence:** There are seven basic steps required to test the battery state of charge:

**NOTE:** You cannot test the battery voltage while charging.

1. With the charger unplugged from the AC outlet, connect the charger to the battery following the instructions given in Sections 8 & 9.
2. Plug the charger AC power cord into the AC outlet.
3. The CONNECTED (yellow) LED will light if a properly connected battery is detected.
4. Confirm the CHARGING (yellow) LED is off.
5. Set the DISPLAY to VOLTS.
6. If the output is on, press . If the output is already off, do not press .
7. Read the voltage on the digital display.

## 11.12. GENERAL CHARGING NOTES

**Fans:** The charger is designed to control its cooling fans for efficient operation. Consequentially, it is normal for the fans to start and stop when maintaining a fully charged battery. Keep the area near the charger clear of obstructions to allow the fans to operate efficiently. **NOTE:** The charger has thermal protection, and it will shut down if it gets too hot.

**Voltage:** The voltage displayed during charging is the charging voltage and is usually higher than the battery's resting voltage.

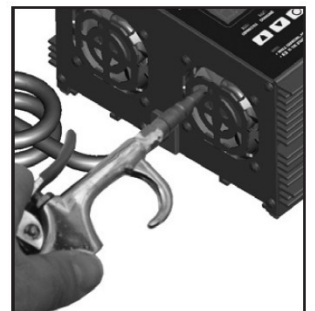
## 12. CALCULATE CHARGE TIME

- 12.1. Use the following table to more accurately determine the time it will take to bring a battery to full charge. First, identify where your battery fits into the chart.
- 12.2. NR means that the charger setting is NOT RECOMMENDED.
- 12.3. Find your battery's rating on the following chart and note the charge time given for each charger setting. The times given are for batteries with a 50 percent charge prior to recharging. Add more time for severely discharged batteries.

BATTERY SIZE/RATING			CHARGE RATE/CHARGING TIME		
			4 AMP	20AMP	70AMP
SMALL BATTERIES	Motorcycle, Garden tractor, Etc.	6-12 AH	1-2hrs	NR	NR
		12-32 AH	2-5hrs	NR	NR
CARS/ TRUCKS	200-315 CCA	40-60 RC	5 3/4-7 1/4 hrs	1 1/4-1 1/2 hrs	20-25 min
	315-550 CCA	60-85 RC	7 1/4-9 1/4 hrs	1 1/2-2 hrs	25-30 min
	550-1000 CCA	85-190 RC	9 1/4-17 1/2 hrs	2-3 1/2 hrs	30 min-1 hr
MARINE/DEEP-CYCLE		80 RC	8 3/4 hrs	1 3/4 hrs	30 min
		140 RC	13 1/2 hrs	2 3/4 hrs	45 min
		160 RC	15 hrs	3 hrs	1 hr
		180 RC	16 1/2 hrs	3 1/2 hrs	1 1/4 hrs

## 13. MAINTENANCE

- 13.1. Before performing maintenance, unplug and disconnect the battery charger (see sections 7.9 and 8.9).
- 13.2. After use, unplug the charger and use a dry cloth to wipe all battery corrosion and other dirt or oil from the terminals, cords, and the charger case.
- 13.3. After every 100 hours or whenever you see dust accumulating on the fan blades, you should clean both fans using compressed air (as shown).  
**NOTE:** Use the compressed air on the fan blades only. Do not blow dirt into the fan shaft or bearing. These fans push a lot of air and are precision balanced. Excessive dirt and grime build up will cause the fan to be unbalanced and wear out quickly. If the fans fail, the charger may overheat and the thermal protection of the charger will shut it down.
- 13.4. Ensure that all of the charger components are in place and in good working condition, including the plastic boots on the battery clips.
- 13.5. Servicing does not require opening the unit, as there are no user-serviceable parts.



## 14. MOVING AND STORAGE

- 14.1. If the charger is moved around the shop or transported to another location, take care to avoid/prevent damage to the cords, clips and charger. Failure to do so could result in personal injury or property damage. **DO NOT** store the clips on the handle, clipped together, on or around metal, or clipped to cables.
- 14.2. Store the charger unplugged. The cord will still conduct electricity until it is unplugged from the outlet.

## 15. TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
No display and the LEDs are not lit.	Charger is not plugged in. No power at the receptacle.	Plug the charger into an AC outlet. Check for open fuse or circuit breaker supplying AC outlet.
Display reads 0.0 volts.	Clamps are not making a good connection to the battery. Connections are reversed. Battery is defective (will not accept a charge).	Check for poor connection to battery and frame. Make sure connection points are clean. Rock clamps back and forth for a better connection. Unplug the charger and reverse the clips. Have battery checked.
Amps reading on display reads less than selected charge rate when charging a discharged battery.	Extension cord is too long or wire gauge is too small. Weak cell or sulphated plate in battery. The charger reached the maximum voltage and is reducing the current.	Use a shorter or heavier gauge extension cord. A sulphated battery will eventually take a normal charge if left connected. If the battery will not take a charge, have it checked. NO PROBLEM; This is a normal condition. Continue to charge the battery and see Battery percent and charge time section, charge rate subsection.
The battery is connected and the charger is on, but is not charging.	Battery is severely discharged (automatic mode only).	If your battery does not have 1 volt, you must press and hold for five seconds.
Charger has shut down or will not turn on when properly connected.	The charger has become too hot and it has shut down.	The charger has thermal protection, and it will shut down if it gets too hot. unplug the AC cord and let the charger cool down. Make sure there is nothing obstructing the air flow to the fans, clean them as shown in maintenance instructions
The cooling fan is making a rattling noise.	The fan has a build up of dirt and grime, causing it to be unbalanced.	Blow the dirt and grime off the fan blades using compressed air as described in maintenance instructions.
The voltmeter reading is less than 10.5 volts.		Have the battery checked.
The voltmeter reading is between 10.5 and 12.7v.	The battery is low.	Recharge the battery.



### 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.



REGISTER YOUR PURCHASE HERE



### 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.



### BATTERY REMOVAL SEE SECTION 10.9

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

**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



sales@sealey.co.uk



www.sealey.co.uk