

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: BEFORE USING THIS PRODUCT, PLEASE READ THE INSTRUCTIONS CAREFULLY. MAKE CAREFUL NOTE OF SAFETY INSTRUCTIONS, WARNINGS AND CAUTIONS. THIS PRODUCT SHOULD ONLY BE USED FOR ITS INTENDED PURPOSE. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY CAUSE DAMAGE AND/OR PERSONAL INJURY AND WILL INVALIDATE THE WARRANTY. RETAIN THESE INSTRUCTIONS FOR FUTURE USE.**

## 1. SAFETY INSTRUCTIONS



**WARNING! RISK OF EXPLOSIVE GASES.** Working in the vicinity of a lead acid battery is dangerous because they can generate explosive gases. It is important to remember that batteries generate explosive gases during normal operation.



**WARNING!** This equipment contains a sealed, non-spillable lead acid battery. This must be disposed of in accordance with local regulations.

### IMPORTANT WARRANTY INFORMATION: KEEP YOUR ROADSTART HEALTHY

Read and understand the general safety and operating instructions before use. The following information is intended to help you keep the product in top working order.

**NOTE – The battery in this unit is 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 even if it is less than one year old.

**You can help prolong the lifecycle of the battery by following a few simple guidelines.**

- Plug in your new Roadstart to the mains transformer and make an INITIAL charge lasting 38 hours.
- Ensure the unit is fully charged before storage.
- **DO NOT** leave the Roadstart for longer than 2 months without putting it on charge.
- **DO NOT** attempt to start a vehicle when the Roadstart battery voltage is reduced to less than 7Volts.
- **DO NOT** drop or roughly handle the Roadstart – this will break or disjoin the battery terminals rendering the battery useless and the warranty void.
- **DO NOT** use any other charger, other than the one supplied, to recharge the battery.
- **DO NOT** obstruct the ventilation grilles and protect against water ingress - this RoadStart unit is fitted with ventilation grilles to help disperse any gases produced during the charging procedure.

**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.

### 1.1. PERSONAL PRECAUTIONS

- ✓ Ensure there is another person within hearing range, or 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 with a 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 weld a ring or the like to metal, which may cause severe burns.

### 1.2. IMPORTANT SAFETY INSTRUCTIONS

- ✓ Familiarise yourself with the applications, limitations and potential hazards of the RoadStart.
- ✓ Keep the unit in good working order and condition. Replace damaged parts immediately.
- ✓ Use only recommended parts. To use unapproved parts may be dangerous and will invalidate your warranty.
- ✓ The RoadStart must only be opened and checked by qualified service personnel. **DO NOT** disassemble the unit for any reason.
- ✓ Keep children and unauthorised persons away from the work area.
- ✓ Keep work area clean and tidy and free from unrelated materials. Ensure that there is adequate lighting.
- ✓ If the RoadStart receives a sharp knock or blow, it must be checked by a qualified service agent before being used.
- ✓ When not in use re-charge every two months.
- x **DO NOT** smoke or allow a spark, or flame in the vicinity of the battery or engine.
- x **DO NOT** drop any metal item onto the battery as it may spark or short circuit the battery, which could cause an explosion.

- x **DO NOT** use RoadStart to recharge dry cell batteries that are commonly used with home appliances. These batteries may explode and cause personal injury and damage to property.
- x **DO NOT** charge or boost a frozen battery.
- x **DO NOT** use attachments other than those recommended. To do so may risk damage to the unit and other equipment and possible personal injury.
- x **DO NOT** pull or carry the unit by its cables 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 the 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 may result in permanent damage.
- x **DO NOT** cross-connect the power leads from the RoadStart to the battery. Ensure that positive is to positive and negative is to negative.
- ✓ Ensure that the unit is fully charged before storage.

### 1.3. ELECTRICAL SAFETY (with respect to mains chargers)

- WARNING!** It is the user's responsibility to check the following: You must check the AC adaptor to ensure that it is safe before using. You must inspect the power supply lead, plugs and all electrical connections for wear and damage. 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 recommend that an RCD (Residual Current Device) is used with all electrical products. It is particularly important to use an RCD with portable products that plug into an electrical supply not protected by an RCCB. If in doubt consult a qualified electrician. You can obtain a Residual Current Device through your Sealey dealer. You must read and understand instructions concerning electrical safety.

- 1.3.1. The **Electricity At Work Act 1989** requires all portable electrical appliances, if used on business premises, to be tested by a qualified person, using a Portable Appliance Tester (PAT), at least once a year.
- 1.3.2. 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.
- 1.3.3. **DO** ensure that the insulation on all cables and the product itself is safe before connecting to the mains power supply.
- 1.3.4. **DO** ensure that cables are always protected against short circuit and overload.
- 1.3.5. **DO** regularly inspect power supply, leads, plugs for wear and damage and power connections to ensure that none is loose.
- 1.3.6. **DO** check product voltage is the same as power supply to be used and check that all fused plugs are fitted with the correct capacity fuses.

## 2. INTRODUCTION

### 2.1. Introduction

Composite case with integral battery clip storage and carry handle. Twin batteries, connected in either parallel or series to suit the output voltage, give high peak and cranking currents. Fitted with low voltage switch for use when on 24Volt system recharge, connecting unit to battery producing less than 1Volt. LED battery condition indicators. Test button gives indication of battery condition. Fitted with 12Volt power socket that will accept any 12Volt device with a 12V accessory plug. Supplied with mains charger and double plug cable for in-car charging.

### 2.2. Specification

Model .....	RS105.V4
Cold Cranking Amps.....	1000/500A
Peak Amps .....	3200/1600A
Voltage.....	12/24V
Auxiliary Output .....	12V
Cable and Clamp Length .....	1.8mtr
Weight .....	17.5kg

## 3. CHARGING INSTRUCTIONS

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



### 3.1. Recharging the Roadstart's internal batteries

The preferred method for recharging the Roadstart unit is using the supplied AC power adaptor supplied. This method is automatic and does not require the user to monitor the progress of the charge. The unit may also be recharged using the in-car DC adaptor plugged into the vehicle's 12V accessory socket. The unit may not be recharged using a 24V supply. This method is not automatic and could result in the unit being overcharged if the user fails to monitor the charge and disconnect the power source when full charge is reached. Overcharging could result in permanent damage to the unit.

### 3.2. Reading the power level indicators (See fig.2)

The charge level of each unit can be seen at any time by pressing the test button and noting the number of red power level lights that are illuminated. When all three power level lights are illuminated the unit is fully charged and is ready to be used. If only two red lights are illuminated the unit is in a 50% charge status and could be used to operate most 12 volt accessories. If the unit is required for starting it should be charged until all three red lights are illuminated. If there is only one red light illuminated the unit is low and must be recharged.

### 3.3. Initial Charging Procedure

Before first use, this Roadstart unit should be charged for a minimum of 72 hours.

**WARNING!** Use supplied adaptor, cables and connectors. Unauthorised parts may damage the unit and will invalidate the warranty. Ensure you strictly apply the safety regulations as stated in Section 1.

### 3.4. To recharge with the AC charging adaptor Only charge with the adaptor supplied.

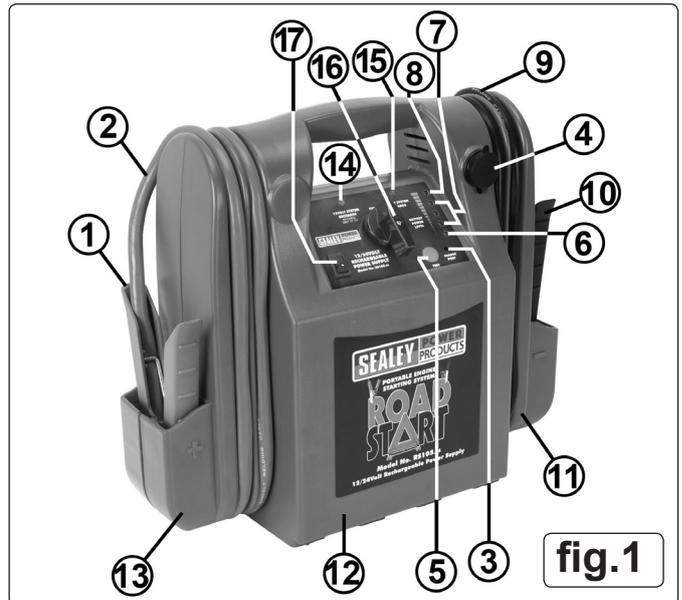
**IMPORTANT:** When recharging this 12V/24V version the **VOLTAGE** switch must be set at the 12V position. The unit may be recharged with either the AC power adaptor or the in-car adaptor plugged into a 12V accessory socket. Refer to figs 3 & 4.

#### 3.4.1. Ensure the power clamps are in their designated holsters.

3.4.2. Plug the AC power adaptor into the 230 Volt AC wall outlet. The amber 'Charging' indicator will illuminate, see fig.2. The unit will now charge automatically and the power level lights will indicate the level of charge. When the green 'Charged' LED comes on (see fig.2) charge for a further 3 to 6 hours to achieve full capacity. When not in use the Roadstart can be left connected to the charger.

### 3.5. To recharge with the 2-pin European adaptor.

When using the Roadstart in a European country remove the 3-pin UK plug by pushing the button on the AC power adaptor and turning anti-clockwise, replace with the 2-pin plug, placing it on the transformer and turning clockwise until fully home. See fig.4.



### 2.3 Product Features

#### (Key to fig.1)

- 1) POSITIVE BATTERY CLAMP
- 2) FLEXIBLE HEAVY DUTY COPPER CABLE
- 3) CHARGING PORT
- 4) 12VDC OUTPUT/CHARGING SOCKET
- 5) TEST BUTTON
- 6) AMBER LED CHARGING INDICATOR
- 7) RED POWER LEVEL LED INDICATORS
- 8) GREEN FULLY CHARGED LED INDICATOR
- 9) FLEXIBLE HEAVY DUTY COPPER CABLE
- 10) NEGATIVE BATTERY CLAMP
- 11) SAFETY STORAGE HOLSTER
- 12) HEAVY DUTY PLASTIC CASE
- 13) SAFETY STORAGE HOLSTER
- 14) 12VOLT SYSTEM RECHARGE INDICATOR
- 15) 24VOLT SYSTEM RECHARGE INDICATOR
- 16) 3 POSITION SELECTOR SWITCH 12V/OFF/24V
- 17) RELAY SWITCH

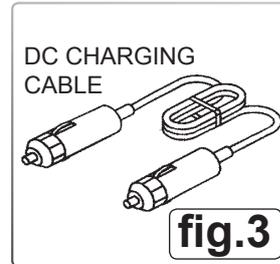
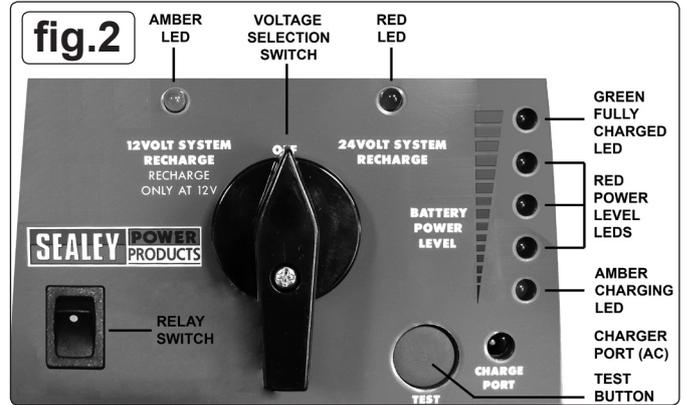
**3.6. To recharge with the in-car DC charging adaptor.**

**Note:** This method of charging is not automatically protected against overcharging and must be constantly monitored by the user as described below. **IMPORTANT:** Ensure that the vehicle's accessory socket is rated at 12V.

3.6.1 Ensure that the power clamps are in the designated holsters.

3.6.2 With the vehicle's engine running, plug the in-car DC charging cable into the charge input socket on the front of the Roadstart (Refer to 4 in fig.1) and then the other end into the vehicle's accessory socket. The unit will be charged by the alternator. It will be necessary to press the test button once every hour to monitor the level of charge. When all of the red lights are illuminated plus the green 'charged' light, continue to charge for another 1 to 2 hours and then disconnect the unit from the vehicle lighter socket to avoid overcharging which could damage the unit.

**Note:** If the amber charging light begins to flash or the battery becomes completely flat, then a 72 hour charge will be necessary using the AC power adaptor.



**4. OPERATION**

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

**Preparation and precautions**

**WARNING! ENSURE THAT YOU ARE FAMILIAR WITH THE VEHICLE'S BATTERY VOLTAGE AND THE VOLTAGE PRESENT IN THE VEHICLES ACCESSORY POWER SOCKET (CIGARETTE LIGHTER SOCKET). THESE SHOULD BE EITHER 12V OR 24V DC**



Apply the vehicle hand brake and place in neutral gear (or "Park" if automatic transmission).

Turn ignition and electrical accessories off. **NOTE:** Some vehicle ignition systems must be turned to "Accessory" to activate the accessory socket.

Use in a well ventilated area and wear protective eye shields and clothing.

**NOTE:** A defective battery may not accept a charge from the portable power source.

**4.1 Roadstart Safety Features**

This Roadstart unit is fitted with a number of safety devices which ensure that the operator does not damage the vehicle's battery or the Roadstart unit. The Roadstart is fitted with an override switch which should be used only in a pre-described set of circumstances. In the event of misconnection, The safety devices will cut power to the clamps and will also sound a buzzer and flash the LED charging lights. The circumstances of operation are as follows:

Roadstart Switch Position	Connection to Battery	Vehicle Battery Power	Lights and Buzzer	Power at Clamps
OFF	None		None	None/Safe
12V	Wrong Polarity	12V or 24V	Blinking & Buzzing	None/Safe
12V	Correct Polarity	24V	Blinking & Buzzing	None/Safe
12V	Correct Polarity	12V		Power to Clamps at 12V
24V	Wrong Polarity	12V or 24V	Blinking & Buzzing	None/Safe
24V	Correct Polarity	12V	Blinking & Buzzing	None/Safe
24V	Correct Polarity	24V		Power to Clamps at 24V

The Roadstart determines the battery voltage of the circuit to which it is attached by reading the voltage in the vehicle's system. In the event that the Roadstart is correctly connected to a 24V volt vehicle with a badly discharged battery (below 16V), it is possible that the Roadstart may interpret the vehicle's battery voltage as 12V causing the safety function to prevent the unit from working properly. Using the same format to describe the circumstances as above;

Roadstart Switch Position	Connection to Battery	Vehicle Battery Power	Lights and Buzzer	Power at Clamps
24V	Correct Polarity	24V - But discharged below 16V	None	None/Safe

**Under these circumstances only AND ONLY having verified the battery on the vehicle has a voltage of 24V**, briefly press the manual override button on the front panel to bypass the safety function. This will manually close and hold closed the circuit until the clamps are removed from the vehicle's battery. If the override switch is accidentally pressed, then breaking the connection to the vehicle's battery by removing the battery clamp will reset the safety circuit.

**WARNING! DO NOT ACTIVATE THE OVERRIDE IF THE ROADSTART IS SWITCHED TO 24V AND THE VEHICLE'S BATTERY CIRCUIT IS 12V**

If the vehicle's battery is below 0.7V then the circuit cannot be closed – even using the override. In this case, recharge the vehicle's battery using conventional means.

**4.2. Boosting/Re-Charge vehicle battery**

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

- 4.2.1. Site Roadstart on level surface.
- 4.2.2. Ensure power switch is in the OFF position.
- 4.2.3. Connect RED positive clamp (+) to the positive (+) battery terminal on the vehicle and BLACK negative (-) clamp to a good earth on the vehicle bodywork. Only connect BLACK negative (-) clamp directly to battery negative (-) terminal if no other alternative is available.
- 4.2.4. Allow the vehicle battery to charge for thirty minutes.
- 4.2.5. Turn off the Roadstart, remove the battery clips (negative(-) first) and start the vehicle.

**4.3. 12V System only**

- 4.3.1. It is possible to recharge the vehicle battery using the Roadstart's own in-car charger cable.
- 4.3.2. Site Roadstart on level surface.
- 4.3.3. Ensure power switch is in the OFF position.
- 4.3.4. Plug one end of the charging lead into the Roadstart unit. Plug the other end into the vehicle's 12V accessory socket. NOTE: Some vehicle ignition systems must be turned to "**Accessory**" to activate the accessory socket.
- 4.3.5. Allow the vehicle battery to charge for thirty minutes.
- 4.3.6. Turn off the Roadstart, remove the charging lead and start the vehicle.

**IMPORTANT! It is not possible to charge 24V battery systems using the in-car adaptor lead. The accessory socket on the front of the unit is rated at 12V only.**

**IMPORTANT!** If the voltage in the vehicle's battery is between 0.7V and 16V when boosting a 24V system, press the relay switch (fig.1.17) or the Roadstart will not charge the battery.

If the voltage is below 0.7V it is not possible to deliver any charge to the battery. Charge the battery using conventional means.

**4.4. Emergency Jump Starter**

**IMPORTANT:** Do not use the Roadstart to jump start an vehicle if only the amber Battery Power Level light is illuminated. This denotes the internal voltage is less than 7V. Permanent damage to the Roadstart's internal batteries will be made if you attempt to jump start a vehicle with only the amber Battery Power Level light illuminated.

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

**NOTE:** If the clamps are connected incorrectly to vehicle's battery, the Roadstart will not operate, the charging LED's will flash and the Roadstart will buzz. See section 4.1

**NOTE:** For optimum performance, the unit should not be stored below 10°C when using the unit as a jump starter.

- 4.4.1. Turn off the vehicle ignition.
  - 4.4.2. Site Roadstart on level surface.
  - 4.4.3. Ensure power switch is in the OFF position.
  - 4.4.4. Attach the RED (positive +) clamp to the positive terminal of the battery.
- NOTE:** On vehicles with multiple batteries, ensure the battery to which you are connecting the Roadstart is the battery which provides power to the starting system and is not an auxiliary power battery.
- 4.4.5. Attach the BLACK (negative -) clamp to the vehicle chassis. Only connect BLACK negative (-) clamp directly to battery negative (-) terminal if no other alternative is available.
  - 4.4.6. Turn the Roadstart power control to 12V or 24V depending on the battery circuit voltage of the vehicle you are jump starting.

**NOTE:** **IN the case of incorrect connection, the unit will emit a buzzing sound and the LED's on the Battery Power Level will flash – Check connection to vehicle, Roadstart power switch position and vehicle's battery voltage. Refer to the table in 4.1 for safety circuit characteristics and reconnect/configure as appropriate.**

**IMPORTANT!** If the voltage in the vehicle's battery is between 0.7V and 16V when jump starting a 24V system, press the relay switch (fig.1.17) or the Roadstart will not operate.

If the voltage is below 0.7V it is not possible to deliver any power to the battery. Charge the battery using conventional means.

Ensure that all cables are clear of moving belts and rotating fans. Maintain a safe distance from the battery whilst jump starting.

- 4.4.7. Turn the ignition to start the vehicle.
- NOTE:** If the vehicle does not start after 6 seconds, allow the Roadstart unit to cool for 3 minutes, before attempting to jump start the vehicle again. If this is not done, the unit could sustain damage.
- 4.4.8. When the vehicle has started, disconnect the BLACK (negative -) clamp first from the vehicle chassis.
  - 4.4.9. Remove the RED (positive +) clamp from the battery terminal.
  - 4.4.10. Return the clamps to the designated holsters.

**4.5. Alternative Vehicle Power Supply**

When a vehicle battery is disconnected, the memory systems in radios, electronic ignition systems and alarms are frequently lost. When replacing a battery the Roadstart unit can be used as an alternative power supply by connecting the unit's in-car power adaptor DC adaptor lead from the 12V socket on the front of the unit into the vehicle's accessory socket. This will prevent loss of memory.

**NOTE:** Some vehicle ignition systems must be turned to "**Accessory**" to activate the accessory socket.

**WARNING!** Do not attempt to start the vehicle when using the Roadstart in this way.

**WARNING!** The vehicle's positive battery cable will be live and **MUST** be insulated (e.g. in a heavy duty plastic bag) to prevent it creating a short circuit on the vehicle's chassis.

**NOTE:** The Roadstart is only suitable for supporting a 12V circuit in this way.

#### 4.6. **Multipurpose Power Supply**

This Roadstart unit can be used as a multipurpose power supply to power up any equipment with a built-in 12V DC male adaptor. The DC outlet on the Roadstart unit is equipped with overload protection.

When used with an inverter, can operate equipment usually powered by either 110VAC or 230VAC.

**NOTE:** The inverter power draw must not exceed 300 Watts.

### 5. TROUBLESHOOTING

THE PROBLEM	THE SOLUTION
Unit works well but no change in light status when the adaptor is connected to the RoadStart unit.	- Possible defective battery or faulty breaker. Use a device such as a light with a dc plug to check that it works. If the light works, the power source breaker is serviceable and the battery is defective.
When the adaptor is plugged into the RoadStart unit all LEDs light. When the adaptor is unplugged and the test button depressed, no LEDs light.	- Roadstart unit battery defective which could have been caused by intense use without a cool-down period.
Roadstart unit is fully charged but delivers no power.	- Check where the wires meets the jaw on the unit clamps. Ensure they are well crimped. - If the unit has a power switch, ensure that it is in the ON position. - Press relay switch, the vehicles battery may be below 1V.
When trying to use an accessory via the dc outlet, a clicking sound is heard inside the RoadStart unit.	- The accessory is drawing too much current, resulting in the internal circuit breaker switching between ON and OFF.

### 6. QUESTIONS & ANSWERS

QUESTION	ANSWER
How many jump starts can a fully charged RoadStart do before needing to be recharged?	- Between 1 and 20 depending upon operating factors such as temperature, general condition of the vehicle, engine type and size.
Can the RoadStart be recycled?	- Yes, in accordance with national and local authority regulations.
What is the ideal in-use storage temperature of the RoadStart?	- Room temperature. The RoadStart will also operate at temperatures below zero, its power however will be lessened. Intense heat will activate self-discharge.
I have a regular 10 amp battery charger, can I use it to recharge the RoadStart?	- No. Only the supplied adaptor and charger can be used.
Is the RoadStart fool proof?	- No. All jump starting instructions must be followed carefully.
Can I replace the internal batteries?	- Yes, but note that the batteries are not covered by warranty as they are consumable

#### **Environmental Protection**



Recycle unwanted materials instead of disposing of them as waste.

All tools, accessories and packaging should be sorted, taken to a recycle centre and disposed of in a manner which is compatible with the environment.



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**

##### **Removal**

1. Place the RoadStart unit front side down.
2. Remove the 14 screws holding the casing together and lift off the back half of the unit.
3. Disconnect the wires from the two battery terminals, taking care to avoid accidental arcing of the terminals.
4. Lift the batteries out of the front half of the casing.

##### **Disposal**

1. Take the battery to a recycling centre that handles sealed, lead-acid batteries.
2. If there is no recycling centre in the area, contact the local environmental agency for disposal instructions.

**Dispose of batteries according to local authority guidelines.**

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's Batteries Producer Registration Number (BPRN) is BPRN00705

Parts support is available for this product. To obtain a parts listing and diagram, please log on to [www.sealey.co.uk](http://www.sealey.co.uk), email [sales@sealey.co.uk](mailto:sales@sealey.co.uk) or phone 01284 757500.

**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.



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