

# SEALEY

## SCHUMACHER® AUTOMATIC SMART BATTERY CHARGER & MAINTAINER 10A 12V

MODEL NO: SPI10S

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: Explosive Material



Wear eye Protection



Warning: Corrosive substance



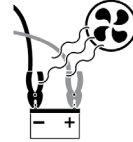
Wear Protective Gloves



Warning: Electricity



Protect From Rain



Use in Well Ventilated Areas



Keep away from sources of ignition: Battery could explode

### 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. Sealey recommend that an RCD (Residual Current Device) is used with all electrical products.

If the product is used in the course of business duties, it must be maintained in a safe condition and routinely PAT (Portable Appliance Test) tested.

Electrical safety information, it is important that the following information is read and understood.

- 1.1.1. Ensure that the insulation on all cables and on the appliance is safe before connecting it to the power supply.
- 1.1.2. Regularly inspect power supply cables and plugs for wear or damage and check all connections to ensure that they are secure.
- 1.1.3. **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. Remove the plug from the socket by maintaining a firm grip on the plug.
  - × **DO NOT** use worn or damaged cables, plugs or connectors. Ensure that any faulty item is repaired or replaced immediately by a qualified electrician.
- 1.1.4. This product is fitted with a BS1363/A 3 pin plug.  
If the cable or plug is damaged during use, switch the electricity supply and remove from use.  
Replace a damaged plug with a BS1363/A 3 pin plug. If in doubt contact a qualified electrician.

Class II products are wired with live (brown) and neutral (blue) only are marked with the Class II symbol;

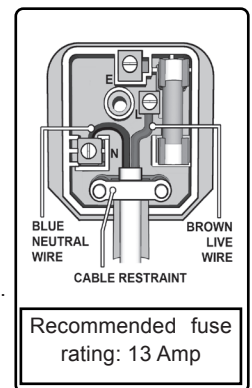


- A) Connect the BROWN live wire to the live terminal 'L'.
- B) Connect the BLUE neutral wire to the neutral terminal 'N'.
- C) After wiring, check that there are no bare wires and ensure that all wires have been correctly connected.

Ensure that the cable outer sheath extends inside the cable restraint and that the restraint is tight.

**DO NOT** connect either wire to the earth terminal.

Sealey recommend that repairs are carried out by a qualified electrician.



#### 1.2. 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.

#### 1.3. GENERAL SAFETY INSTRUCTIONS

- ✓ 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 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.
  - ✓ Ensure that during charging, the charger is placed in a location where there is sufficient ventilation to prevent the build up of explosive gases from a lead acid battery, and DO NOT cover or obstruct the charger ventilation louvres.
  - ✓ 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 1.2).
  - ✓ 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 start engine when charger is connected to 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.
- 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 battery charger and maintainer, featuring patented Speed Charge technology. Charges the battery up to three times faster than conventional battery chargers without damaging the battery. Heavy-duty sturdy case with no-nonsense controls and LED status indicators. Battery presets include conventional lead acid, calcium, AGM/GEL, leisure and stop/start batteries. Fully automatic float mode ensures the battery is kept fully charged, maintained and ready to use.

## 3. SPECIFICATION

Model No:.....SPI10S  
 Battery Range:....Lead Acid 10-230Ah  
 Cable & Clamp Length:.....2m  
 Fuse Rating:.....13A  
 IP Rating:..... IP20  
 Output:..... 12V  
 Output Charge:..... 10A  
 Plug Type:..... 3-Pin  
 Power Supply Cable Length:..... 2m  
 Supply:..... 230V

## 4. PREPARATION

- ☐ **WARNING!** Battery acid is a highly corrosive sulphuric acid avoid contact.
  - ☐ **WARNING!** It is not intended to supply power to a low voltage electrical system other than in a starter-motor application. do not use this charger for charging dry-cell batteries that are commonly used with home appliances or lithium ion batteries used in mobile phones, laptops, power tools etc. these batteries may burst and cause injury to persons and damage to property. Remove all cord wraps and uncoil the cables prior to using the battery charger.
- 4.1. 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.
  - 4.2. 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.
  - 4.3. 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.
  - 4.4. 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.
  - 4.5. Determine the voltage of the battery by referring to the vehicle owner's manual.
  - 4.6. Make sure that the charger cable clips make tight connections.
- 4.7. CHARGER LOCATION**
- ☐ **WARNING!** Risk of explosion and contact with battery acid.
- 4.7.1. Locate the charger as far away from the battery as the DC cables permit.
  - 4.7.2. Never place the charger directly above the battery being charged; gases from the battery will corrode and damage the charger.
  - 4.7.3. **DO NOT** set the battery on top of the charger.
  - 4.7.4. Never allow battery acid to drip onto the charger when reading the electrolyte specific gravity or filling the battery.

- 4.8. Follow these instructions when the battery is installed in a vehicle.  
 **WARNING!** A spark near the battery may cause a battery explosion.
- 4.9. **BATTERY CHARGING**
- 4.9.1. Position the mains 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.
- 4.9.2. Stay clear of fan blades, belts, pulleys and other parts that can cause injury.
- 4.9.3. Check the polarity of the battery posts. The Positive (POS, P, +) battery post usually has a larger diameter than the negative (NEG, N, -) post.
- 4.9.4. Determine which post of the battery is earthed (connected) to the chassis. The battery terminal not connected to the chassis has to be connected first. The other connection is to be made to the chassis, remote from the battery and fuel line. The battery charger is then to be connected to the mains. See sections 4.9.5. and 4.9.6.
- 4.9.5. For a negative-earthed vehicle, connect the positive (RED) clip from the battery charger to the positive (POS, P, +) non earthed 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.
- 4.9.6. For a positive-earthed vehicle, connect the NEGATIVE (BLACK) clip from the battery charger to the NEGATIVE (NEG, N, -) non earthed 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 chassis or engine block.
- 4.9.7. Connect charger mains cable to electrical outlet.
- 4.9.8. After charging, disconnect the battery charger from the mains. Then remove the chassis connection and then the battery connection
- 4.9.9. The ring connectors permanently attach to the battery, providing easy access to quickly charge your battery. This application is appropriate for motorcycles, lawn tractors, ATVs and snowmobiles.
- 4.10. **FOLLOW THESE STEPS WHEN THE BATTERY IS OUTSIDE THE VEHICLE.**
- 4.10.1. Check the polarity of the battery posts. The positive (POS, P, +) battery post usually has a larger diameter than the negative (NEG, N, -) post.
- 4.10.2. Attach at least a 24-inch (61 cm) long 6-gauge (AWG) insulated battery cable to the negative (NEG, N, -) battery post.
- 4.10.3. Connect the positive (RED) charger clip to the positive (POS, P, +) post of the battery.
- 4.10.4. 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.
- 4.10.5. **DO NOT** face the battery when making the final connection.
- 4.10.6. Connect charger mains cable to an electrical outlet.
- 4.10.7. When disconnecting the charger, always do so in the reverse order of the connecting procedure and break the first connection while as far away from the battery as practical.
- 4.10.8. A marine (boat) battery must be removed and charged on shore. To charge it inboard requires equipment specially designed for marine use.

## 5. CONTROL PANEL

1. Digital display
2. Hook attachment (on back)
3. Language button
4. Charging status LED indicator.
5. Battery clamps (Quick connect)

Fig 1



- 5.1. **DIGITAL DISPLAY**
- 5.1.1. The digital display indicates the status of the battery and charger. See Display Messages, section 8, for a complete list of messages.
- 5.1.2. **NOTE** During charging, the display will go into sleep mode and will not display any messages. To turn the display back on, press the display button.
- 5.2. **LANGUAGE BUTTON**
- 5.2.1. The digital display will show the battery's voltage and percentage of charge. Press the button for 5 seconds to select the language on the display.
- 5.3. **LED INDICATOR**
- 5.3.1. GREEN LED solid: (Display shows Charging) The charger is connected and is charging a battery.
- 5.3.2. GREEN LED pulsing: (Display shows Charged/Maintaining) The battery is fully charged and the charger is in Maintain Mode.
- 5.3.3. GREEN LED flashing: The charge has aborted.

## 6. OPERATION

- 6.1. **NOTE** Remove all cable ties and uncoil the cables prior to using the battery charger.
- 6.2. **BATTERY INFORMATION**
- 6.2.1. **NOTE** This charger is equipped with an auto-start feature. Current will not be supplied to the battery clamps until a battery is properly connected. The clamps will not spark if touched together. Refer to 4.9. for charging a battery inside a vehicle and 4.10. for charging a

battery outside a vehicle.

### 6.3. BATTERY CLAMP QUICK CONNECT

6.3.1. Connect the end of the charger output cable to the end of the battery clamp quick-connect.

6.3.2. Follow the steps in sections 4.9. and 4.10. to connect the clamps to the battery.

6.3.3. After a good electrical connection is made to the battery, plug the power cord into an mains outlet. Make sure to place the charger on a dry, non-flammable surface.

6.3.4. When the charger starts, the Green LED will be solid and the display will show Analyzing Battery while the charger determines that the battery is properly connected and the condition of the battery.

6.3.5. When charging is complete, the Green LED will pulse disconnect from the mains, remove the negative clamp, and finally the positive clamp.

### 6.4. RING TERMINAL QUICK CONNECT

6.4.1. The ring connectors permanently attach to the battery, providing easy access to quickly charge your battery. This application is appropriate for motorcycles, lawn tractors, ATVs and snowmobiles.

6.4.2. To permanently attach to a battery, loosen and remove each nut from the bolts at the battery terminals.

6.4.3. Connect the red positive connector ring to the positive (POS, P, +) battery terminal.

6.4.4. Connect the negative connector ring to the negative (NEG, N, -) battery terminal.

6.4.5. Replace and tighten the nuts to secure them.

6.4.6. Connect the ring connector cable assembly to the charger. Take care to keep both wires and plug away from hot and moving parts.

6.4.7. Plug the charger power cable into a mains outlet. Make sure to place the charger on a dry, non-flammable surface.

6.4.8. When the charger starts, the Green LED will be solid and the display will show Analyzing Battery while the charger determines that the battery is properly connected and the condition of the battery.

6.4.9. When charging is complete, the Green LED will pulse disconnect the mains cord from the supply mains, remove the negative connector, and finally the positive connector.

### 6.5. BATTERY CONNECTION INDICATOR

6.5.1. If the charger does not detect a properly connected battery, charging will not start and the digital display will show one of two messages.

If the display shows connect clamps, make sure the charger is connected to the battery and the connection points are clean and making a good connection. If the display shows WARNING CLAMPS REVERSED, unplug the charger from the mains, reverse the connections at the battery, and then plug the charger back in.

### 6.6. AUTOMATIC CHARGING MODE

6.6.1. 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, use a manual charger to pre-charge the battery for five minutes, to get additional voltage into the battery.

### 6.7. ABORTED CHARGE

6.7.1. If charging cannot be completed normally, charging will abort. When charging aborts, the charger's output is shut off, the green LED will flash, and the display will show CHARGE ABORTED-BAD BATTERY. Do not continue attempting to charge this battery. Check the battery and replace if necessary.

### 6.8. COMPLETION OF CHARGE

6.8.1. Charge completion is indicated by the pulsing green LED and the digital display showing FULLY CHARGED AUTO MAINTAINING. This indicates the charger has switched to the Maintain Mode of operation.

### 6.9. MAINTAIN MODE (FLOAT MODE MONITORING)

6.9.1. When the green LED is pulsing, the charger has started Maintain Mode. In this mode, the charger keeps the battery fully charged by delivering a small current when necessary.

**NOTE** If the charger has to provide its maximum maintain current for a continuous 12 hour period, it will go into Abort Mode (see Aborted Charge section). This is usually caused by a drain on the battery, or the battery could be bad. Make sure there are no loads on the battery. If there are, remove them. If there are none, have the battery checked or replaced.

### 6.10. MAINTAINING A BATTERY

6.10.1. The SPI10S maintains 12 volt batteries, keeping them at full charge.

**NOTE** The maintain mode technology allows you to safely charge and maintain a healthy battery for extended periods of time.

However, problems with the battery, electrical problems in the vehicle, improper connections or other unanticipated conditions could cause excessive current draws. As such, occasionally monitoring your battery and the charging process is recommended.

## 7. CHARGE TIME

### 7.1. BATTERY PERCENTAGE AND CHARGE TIME

7.1.1.1. This charger adjusts the charging time in order to charge the battery completely, efficiently and safely. The microprocessor automatically performs the necessary functions. This section includes guidelines that can be used to estimate charging times. Use the following table to determine the time it will take to bring a battery to full charge.

First, identify where your battery fits into the chart.

CCA = Cold Cranking Amps    Ah = Amp Hour

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% charge prior to recharging. Add more time for severely discharged batteries.

Battery Size/Rating			Charge Rate/ Charging Time
			10 AMP
Small Batteries	Motorcycle, garden tractor, etc.	10-20Ah	0.55 - 1 hrs
		20-32 Ah	1.5 - 2.5 hrs
Cars/ Trucks	200-315 CCA	40-60 Ah	2.5 - 3.5 hrs
	315-550 CCA	60-85 Ah	3.5 - 4.5 hrs
	550-1200 CCA	85-230 Ah	5 - 8.5hrs
Marine/Deep-Cycle		80 Ah	5hrs
		140 Ah	7.5hrs
		160 Ah	8.5hrs
		200 Ah	10hrs

## 8. DISPLAY MESSAGES

- 8.1. CONNECT CLAMPS (No LED lit) – Plugged into the mains supply without the clamps connected to a battery.
- 8.2. WARNING CLAMPS REVERSED (No LED lit) – Plugged into the mains supply and the clamps are connected backwards to a 12V battery.
- 8.3. ANALYSING BATTERY (Green LED lit) – Plugged into the mains supply, and when first connected to a 12V battery correctly.
- 8.4. CHARGING 12V – XX% (Green LED lit) – Plugged into the mains supply and correctly connected to a discharged 12V battery.
- 8.5. FULLY CHARGED AUTO MAINTAINING (Green LED pulsing) – Plugged into the mains supply and correctly connected to a fully charged 12V battery.
- 8.6. CHARGE ABORTED-BAD BATTERY (Green LED flashing) – Circumstances that could cause an Abort situation during charging:
- The battery is severely sulphated or has a shorted cell and can't reach a full charge.
  - The battery is too large or there is a bank of batteries and it doesn't reach full charge within a set time period.
- CIRCUMSTANCES THAT COULD CAUSE AN ABORT SITUATION DURING MAINTAIN
- The battery is severely sulfated or has a weak cell and will not hold a charge.
  - There is a large draw on the battery and the charger has to supply its maximum maintain current for a 12 hour period to keep the battery at full charge.
- 8.7. BATTERY DISCONNECTED (No LED lit) Clamps were removed during charging.

## 9. MAINTENANCE

- 9.1. Cleaning and user maintenance should be carried out by competent persons.
- 9.2. After use and before performing maintenance, unplug and disconnect the battery charger.
- 9.3. Use a dry cloth to wipe all battery corrosion and other dirt or oil from the battery connectors, cords, and the charger case.
- 9.4. Ensure that all of the charger components are in place and in good working condition, for example, the plastic boots on the battery clips.
- 9.5. Servicing does not require opening the unit, as there are no serviceable parts.
- 9.6. All other servicing should be performed by qualified service personnel.
- 9.7. If the mains cable is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons, in order to avoid a hazard.
- 9.8. Store the charger unplugged, in an upright position. The cord will still conduct electricity until it is unplugged from the mains.
- 9.9. 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

## 10. TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Battery connectors do not spark when touched together.	The charger is equipped with an auto-start feature. It will not supply current to the battery connectors until a battery is properly connected. The connectors will not spark when touched together.	Not a problem; this is a normal condition.
The charger will not turn on when properly connected.	Mains outlet is dead. Poor electrical connection.	Check for open fuse or circuit breaker supplying mains outlet. Check mains cable and extension cord for loose fitting plug.
I cannot select a language on the display	Press the button for 5 seconds to select a language (EN-DE-FR-NL-ES-IT)	No problem; this is a normal condition.
Green LED is lit and the display shows <b>ANALYSING BATTERY.</b>	The charger needs to check the condition of the battery.	The green LED will be lit when the charger is checking the condition of the battery. This is normal.



PROBLEM	POSSIBLE CAUSE	SOLUTION
Green LED is flashing and display shows <b>CHARGE ABORTED-BAD BATTERY.</b>	The battery is too large for the charger. The battery voltage is still below 10V after 2 hours of charging.	You need a charger with a higher amp rate. Have the battery checked.
The display shows <b>CONNECT CLAMPS</b>	The clamps are not making a good connection. The in-line fuse has blown.	You need a charger with a higher amp rate. Replace the in-line fuse for the ring terminals.



**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.

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

**Warranty:** Guarantee is 24 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**