

# INSTRUCTION MANUAL FOR: STARTER/CHARGERS

MODEL No's	<b>BOOST120</b>	<b>BOOST140</b>	<b>BOOST160</b>	<b>BOOST180</b>
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**IMPORTANT: PLEASE READ THESE INSTRUCTIONS CAREFULLY. NOTE THE SAFE OPERATIONAL REQUIREMENTS, WARNINGS AND CAUTIONS. USE THIS 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. PLEASE RETAIN THESE INSTRUCTIONS FOR FUTURE USE.**

## 1. SAFETY INSTRUCTIONS

- 1.1. **IMPORTANT:** Small battery chargers are supplied with plugs fitted. Boost chargers and starter/chargers however can draw more than 13Amps from the mains supply whilst cranking large engines. For this reason, boost chargers are not supplied with plugs fitted. We recommend that for maximum performance your boost charger is plugged into a 30Amp supply and we further recommend that you consult an electrician in order to fit an appropriate plug.

The following Electrical Safety Section must also be read and understood when using this equipment.

### 1.2. Electrical Safety


- WARNING!** It is the responsibility of the owner and the operator to read, understand and comply with the following:  
You must check all electrical products, before use, to ensure that they are safe. You must inspect power cables, plugs, sockets and any other connectors for wear or damage. You must ensure that the risk of electric shock is minimised by the installation of appropriate safety devices. A Residual Current Circuit Breaker (RCCB) should be incorporated in the main distribution board. We also recommend that a Residual Current Device (RCD) is used. It is particularly important to use an RCD with portable products that are plugged into a supply which is not protected by an RCCB. If in any doubt consult a qualified electrician. You may obtain a Residual Current Device by contacting your Sealey dealer.

**You must** also read and understand the following instructions concerning electrical safety:

- 1.2.1. The **Electricity at Work Act 1989** requires that all portable electrical appliances, if used on business premises, are tested by a qualified electrician, using a Portable Appliance Tester (PAT), at least once a year.
- 1.2.2. The **Health & Safety at Work Act 1974** makes owners of electrical appliances responsible for the safe condition of those appliances and the safety of the appliance operators. **If in any doubt about electrical safety, contact a qualified electrician.**
- 1.2.3. Ensure that the insulation on all cables and on the appliance is safe before connecting it to the power supply. See 1.2.1. and 1.2.2. and use a Portable Appliance Tester.
- 1.2.4. Ensure that cables are always protected against short circuit and overload.
- 1.2.5. Regularly inspect power supply cables and plugs for wear or damage and check all connections to ensure that none are loose.
- 1.2.6. **Important:** Ensure that the voltage marked on the appliance matches the power supply to be used and that the plug is fitted with the correct fuse - see fuse rating at right.
- 1.2.7. **DO NOT** pull or carry the appliance by the power cable.
- 1.2.8. **DO NOT** pull the plug from the socket by the cable.
- 1.2.9. **DO NOT** use worn or damaged cables, plugs or connectors. Immediately have any faulty item repaired or replaced by a qualified electrician. When a BS 1363/A UK 3 pin plug is damaged, cut the cable just above the plug and **dispose of the plug safely**. Fit a new plug according to the following instructions (UK only) and see right.

Subject to 1.1. above, the following details the fitting of a 13Amp plug since a 13Amp supply will be adequate when charging and when starting small engines. No responsibility is accepted in the event that the product is misused and/or used on a 13Amp supply when a 30Amp supply is required.

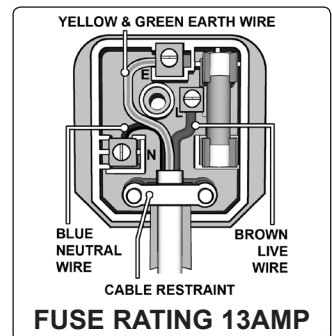
- Connect the **GREEN/YELLOW earth wire to the earth terminal 'E'**.
- Connect the **BROWN live wire to the live terminal 'L'**.
- Connect the **BLUE neutral wire to the neutral terminal 'N'**.
- After wiring, check that there are no bare wires, that all wires have been correctly connected, that the cable outer insulation extends beyond the cable restraint and that the restraint is tight.

Double insulated products, which are always marked with this symbol , are fitted with live (brown) and neutral (blue) wires only. To rewire, connect the wires as indicated above - **DO NOT** connect either wire to the earth terminal.

- 1.2.10. Products which require more than 13Amps are supplied without a plug. In this case you must contact a qualified electrician to ensure that a suitably rated supply is available. We recommend that you discuss the installation of an industrial round pin plug and socket with your electrician.
- 1.2.11. If an extension reel is used it should be fully unwound before connection. A reel with an RCD fitted is preferred since any appliance plugged into it will be protected. The cable core section is important and should be at least 1.5mm<sup>2</sup>, but to be absolutely sure that the capacity of the reel is suitable for this product and for others which may be used in the other output sockets, we recommend the use of 2.5mm<sup>2</sup> section cable.

### 1.3. General Safety

- WARNING!** Disconnect the charger from the mains power before servicing or performing any maintenance.
- ✓ Disconnect the charger from the mains power before connecting to, or disconnecting from, the battery.
- ✓ Maintain the charger in good condition (use an authorised service agent only).
- WARNING!** This starter/charger has components such as switches and relays which may cause sparks or arcs. When using this machine in a garage or workshop, make sure it is in a safe location.
- ✓ Keep the charger clean for best and safest performance.
- WARNING!** Ensure that there are no sources of flammable ignition near the work area i.e. naked flames, cigarettes, flame heaters, etc., because the charging process produces explosive gases.
- WARNING!** Ensure that the work area is well ventilated as the gases produced are flammable.
- ✓ Locate the starter/charger in a suitable work area and keep the area clean and tidy and free from unrelated materials. Ensure there is adequate lighting.
- ✓ Wear approved safety eye protection (standard spectacles are not adequate).
- ✓ Remove ill fitting clothing. Remove ties, watches, rings and other loose jewellery and contain long hair.



- ✓ Read the vehicle handbook to check for any specific battery charging information.
- ✓ Disconnect the battery from the vehicle and move it to a safe, dry, level area for charging. If the battery can not be removed from the vehicle refer to manufacturer's handbook.
- ✓ Check the electrolyte fluid level in the battery is above the plates. If not, add distilled water to cover them by 5-10mm. **DO NOT** touch the battery fluid as it is corrosive.
- ✓ Clean the charger clamps and battery terminals, removing any oxidation before connecting the charger to the battery.
- ✓ Ensure that the correct polarity clamp is attached to the correct terminal of the battery. POSITIVE is indicated by (+) and may be red, NEGATIVE is indicated by (-) and may be black. If there are no identifiable symbols, you can distinguish the NEGATIVE battery terminal as the one which is connected from the battery directly to the vehicle body.
- ✓ Remove the battery electrolyte cover or caps to allow the gases produced by charging to escape.
- ✓ Keep children and unauthorised persons away from the work area.
- x **DO NOT** attempt to charge a non-rechargeable battery.
- x **DO NOT** use the charger for any purpose other than that for which it is designed.
- x **DO NOT** allow untrained persons to operate the charger.
- x **DO NOT** allow the charger terminal clamps to touch each other when the power is on or the charger fuse will blow. Remember that gases are produced which may ignite if sparks occur.
- x **DO NOT** place the charger inside the vehicle. Remove the battery to a safe distance for charging.
- x **DO NOT** get the charger wet or use in damp or wet locations or areas where there is condensation.
- x **DO NOT** operate the charger if it is damaged.
- x **DO NOT** attempt to open or modify the charger.
- ✓ When not in use, unplug from the mains power supply and store in a safe, dry, child proof area.
- ☐ **WARNING!** Be vigilant and cautious during battery charging as the electrolyte is highly corrosive and the gases emitted are flammable and harmful to health.



**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 CHARGER.** Follow these instructions and those published by the battery and vehicle manufacturers 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.

#### 1.4. PERSONAL PRECAUTIONS

- ✓ Ensure that there is another person within hearing 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 high enough to weld a ring to metal, which would cause severe burns.
- ✓ Ensure that hands, clothing (especially belts) are clear of fan blades and other moving or hot parts of the engine. Remove ties and contain long hair.
- x **DO NOT** smoke or allow a spark or flame in the vicinity of battery or engine.



This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities or lack of experience and knowledge, unless they have been given supervision or instruction concerning the use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

## 2. INTRODUCTION & SPECIFICATIONS

2.1 Combination units capable of both charging batteries and providing boost power to help start vehicles with flat batteries. Models feature easy-to-read ammeters and illuminated power switches. All models have dual output (12/24V) and circuitry is protected by a panel mounted fuse. Model No. BOOST120 is suitable for fleet operators running cars. Model No's BOOST140 & BOOST160 are suitable for fleet operators with both cars and van derivatives. Model No. BOOST180 is suitable for heavier garage use for engines up to 3ltr capacity.

2.2 MODEL:	BOOST120	BOOST140	BOOST160	BOOST180
Volts Input:	230V	230V	230V	230V
Watts Input:	800W	900W	1000W	1200W
Volts Output:	12/24V	12/24V	12/24V	12/24V
Rated Charging Current:	16A	21A	26A	36A
Maximum Charging Current:	20A	25A	30A	40A
Output Start Peak (EN):	120A (70A)	140A (80A)	160A (110A)	180A (120A)
Charge Capacity:	20-250Ah	20-280Ah	25-320Ah	30-400Ah
Polarity Protection:	Fuse (2 x 50A)	Fuse (2 x 50A)	Fuse (2 x 50A)	Fuse (1 x 110A)
Fuse:	120/802259 Pack of 20	120/802259 Pack of 20	120/802259 Pack of 20	START360.F10 Pack of 10



### 3. CHARGING INSTRUCTIONS

#### 3.1. Preparation

It is important to correctly prepare for charging, ensuring that you follow Section 1 safety instructions carefully. Check that the capacity of the battery is compatible with the charger output.

- 3.1.1. Follow any vehicle manufacturer's instructions regarding battery charging. Note special instructions for in-vehicle charging.
- 3.1.2. Check the battery to ensure that the NEGATIVE and POSITIVE terminals are clearly identifiable before removing the battery from the vehicle.
- 3.1.3. Subject to 3.1.1. above, disconnect and remove the battery from the vehicle and place in an appropriate safe area ready for charging.
- 3.1.4. Remove the battery electrolyte cover or caps to allow the gases produced by charging to escape.
- 3.1.5. Check that the electrolyte is covering the plates inside. If not, add distilled water so that the plates are covered by 5-10mm.
- 3.1.6. The correct charging status of the battery may be determined by use of a hydrometer which will measure the specific gravity of the electrolyte.

The following figures (kg/ltr) apply at 20°C: **1.28 = Fully charged, 1.21 = Half charged, 1.14 = Fully discharged.**

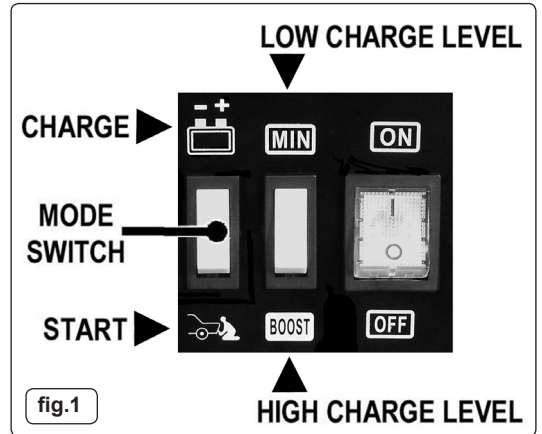
- ❑ **WARNING! Be cautious and vigilant as the electrolyte is a highly corrosive acid.**



#### 3.2. Connecting to the Battery

Ensure that the battery charger is unplugged from the mains power supply before connecting the clamps to the battery.

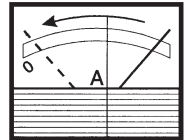
- 3.2.1. Set the charger voltage to match that of the battery voltage (i.e. 12 or 24Volts) by connecting the positive (red) clamp lead to either the 12Volt output terminal or the 24Volt output terminal as appropriate.
- 3.2.2. Set the mode switch to "CHARGE", indicated by the battery symbol (fig.1).
- 3.2.3. Select the required rate of charge 'MIN / BOOST' (fig.1).
- 3.2.4. Check that the charger clamps and battery terminals are clean and free from oxidation.
- 3.2.5. Connect the POSITIVE (Red or +) lead to the POSITIVE (+) terminal on the battery and the NEGATIVE (Black or -) lead to the NEGATIVE (-) terminal on the battery.



#### 3.3. Charging the Battery

- 3.3.1. Connect the charger to the mains power supply and switch 'ON' (fig.1).
- 3.3.2. Check the current delivery to the battery by reading the ammeter on the front of the battery charger. During charging the pointer on the ammeter will slowly decrease (move to the left) according to the capacity and condition of the battery (see fig.2, dial face may vary according to model of charger).
- 3.3.3. When the battery is fully charged the reading on the ammeter should be at the "0" output indicator. At this point the electrolyte in the battery will begin to bubble. Stop charging at this point in order to protect the battery plates from oxidation and to keep the battery in good condition.
- 3.3.4. Switch the charger 'OFF' and unplug from the mains power supply. Disconnect the power clamps, clean and store the charger in a safe, dry area.
- 3.3.5. Replace the battery electrolyte cover or caps. Wipe up any splashes or spillage (remember that the electrolyte is a corrosive acid). Return the battery to the vehicle and secure according to the manufacturer's instructions. Reconnect the power leads. Check to ensure all tools etc. are removed before closing the bonnet or boot.

fig.2



#### 3.4. LOW or NO MAINTENANCE batteries

- 3.4.1. When charging a low, or no maintenance battery take special care to use only the 'MIN' low charge setting. Use a battery tester to continually check the voltage across the clamps. When 14.4Volts is reached stop the charging process.

### 4. STARTING INSTRUCTIONS

BOOST chargers are combination units capable of both charging batteries and providing boost power to start vehicles with flat batteries.

- 4.1 Before starting, it is advisable to give the battery a short charge (Approx. 10mins). Refer to section 3 'CHARGING INSTRUCTIONS' to charge the battery.
- 4.2. **Connecting to the Battery.**
  - 4.2.1 Check the vehicle manufacturer's handbook and follow any specific instructions that may need to be followed for you vehicle and check that the battery is in good condition.
  - 4.2.2. These chargers have dual voltage output. Connect the positive (red) clamp lead to either the 12Volt output terminal or the 24Volt output terminal on the starter/charger, ensuring same voltage as the battery.
  - 4.2.3. Ensure the charger is disconnected from the mains power supply and set the mode switch to "START" (fig.1).
  - 4.2.4. Check the charger clamps and battery terminals to ensure they are clean and free from oxidation.
  - 4.2.5 Connect the POSITIVE (Red or +) lead to the POSITIVE (+) terminal on the battery and the NEGATIVE (Black or -) lead to a good earth on the vehicle bodywork or engine.
  - 4.2.6. Plug the charger into the mains power supply and turn it 'ON'.
  - 4.2.7. Turn on the vehicle ignition and crank the engine for 3 seconds then wait 120 seconds. Repeat this for 5 cycles (Unless engine starts).
- ❑ **WARNING!** If the vehicle does not start within this time **DO NOT** continue as vehicle battery and electrical circuit may be damaged and the fuse in the charger will blow. If the vehicle fails to start, disconnect the charger and investigate.
- 4.2.8. When the engine is running, turn the machine 'OFF', unplug from the mains power and disconnect the clamps, removing the NEGATIVE (Black or -) lead first.

## 5. SIMULTANEOUS CHARGING

- 5.1. A number of batteries may be charged at the same time. To do so we recommend parallel connection as shown in fig.3A.
- 5.2. Two 12Volt batteries may be charged simultaneously in series using a 24Volt output charger as shown in fig.3B. This is only recommended if both batteries are of similar capacity and in a similar state of discharge.

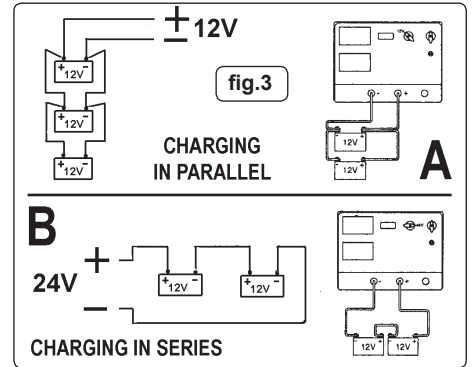
## 6. SAFETY FUSE

The charger is equipped with a fuse which will protect the unit in the following circumstances:

- a) Overload: Too high a current to the battery.
- b) Short circuit: Clamps touch, or cross-connection to battery.
- c) Prolonged starting attempts.

If the fuse blows take the following action:

- 6.1. Turn the unit off and disconnect from the mains power supply.
- 6.2. Allow the unit to cool down, establish the reason for failure and correct the situation.
- 6.3. Replace the fuse (behind cover below ammeter), using only Sealey replacement parts.  
**DO NOT** use a fuse with a copper bridge or similar as this will damage the equipment. Refer to Section 2 for fuse part numbers.



### 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 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.

**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.

