

Clarke®



STARTER/CHARGER

MODEL NO: BC520P

PART NO: 6261082

OPERATION & MAINTENANCE INSTRUCTIONS



ORIGINAL INSTRUCTIONS

GC01/18 REV 5

INTRODUCTION

Thank you for purchasing this CLARKE Starter/ Charger.

Please read this manual thoroughly, before attempting to operate, and carefully follow all instructions given.

It is vitally important that ALL precautions are taken, as specified, which will not only provide protection for yourself and that of others around you, but will also ensure that the Charger will give you long and satisfactory service.

GUARANTEE

This CLARKE product is guaranteed against faulty manufacture for a period of 12 months from the date of purchase. Please keep your receipt as proof of purchase.

This guarantee is invalid if the product is found to have been abused or tampered with in any way, or not used for the purpose for which it was intended.

Faulty goods should be returned to their place of purchase, no product can be returned to us without prior permission.

This guarantee does not effect your statutory rights.

ENVIRONMENTAL RECYCLING POLICY



Through purchase of this product, the customer is taking on the obligation to deal with the WEEE in accordance with the WEEE regulations in relation to the treatment, recycling & recovery and environmentally sound disposal of the WEEE.

In effect, this means that this product must not be disposed of with general household waste. It must be disposed of according to the laws governing Waste Electrical and Electronic Equipment (WEEE) at a recognised disposal facility.

If disposing of this product or any damaged components, do not dispose of with general waste. This product contains valuable raw materials. Metal products should be taken to your local civic amenity site for recycling of metal products.

SPECIFICATIONS

Model Number	BC520P
Dimensions (D x W x H)	320 x 490 x 730
Weight	24 kg
Open circuit protection	200A Lamellar Fuse
IP Rating	IP20
Operating Temperature Range	0 to 40°C
Input Voltage @50Hz	230 V AC
Duty Cycle (Starting)	10 sec On / 30 sec Off
Max Rated Input current	
Starting @ 12V/24V	33A
Charging @ 12V/24V	33A
Max Output Current	
Starting @12V/24V	50A
Charging @12V/24V	50A

SAFETY PRECAUTIONS



WARNING: HIGHLY INFLAMMABLE HYDROGEN GAS IS RELEASED IN THE PROCESS OF BATTERY CHARGING. ALWAYS REMEMBER TO SWITCH OFF THE CHARGER/STARTER FIRST TO AVOID SPARKING.

PLEASE READ BEFORE USING THIS UNIT

1. Battery acid is very corrosive. If spilled, clean the area immediately and wash with water. If battery acid comes into contact with the eyes, get medical help immediately.
 2. Do not expose this charger/starter to rain.
 3. Never touch the negative and positive leads on this unit together while the unit is switched on.
 4. Never attempt any electrical or mechanical repair, other than replacement of fuses. If you have a problem with your machine contact your local stockist for service information.
-



WARNING: CERTAIN TYPES OF SEALED OR MAINTENANCE-FREE BATTERIES NEED EXTRA CARE WHEN CHARGING. PLEASE CONSULT THE BATTERY MANUFACTURERS INSTRUCTIONS BEFORE USING THIS CHARGER/STARTER



WARNING: TOXIC FUMES MAY BE RELEASED DURING BATTERY CHARGING. ONLY USE THIS CHARGER/STARTER IN A WELL VENTILATED AREA.

5. Before charging, make sure that the battery terminals are clean, and that the cells are filled to the correct level by adding distilled water where necessary.
 6. This appliance is not intended for use by persons with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the charger/starter by a person responsible for their safety. Keep children well away from the charger/starter.
 7. After charging, secure the vehicle battery leads to the correct terminals which should be clean, and lightly smeared with petroleum jelly to prevent corrosion. Finally, re-check the battery electrolyte level.
 8. Do not use this charger/starter unless you are aware of vehicle electrical systems, and battery charging techniques.
-

9. Always consult the vehicle manufacturers instructions for disconnecting / charging the vehicle battery.



CAUTION: SOME ELECTRONIC EQUIPMENT CAN BE DAMAGED BY BOOST CHARGING OR USE OF START FACILITY. CHECK YOUR VEHICLE HANDBOOK BEFORE USING YOUR STARTER/CHARGER. IF IN DOUBT CONSULT THE VEHICLE MANUFACTURER.

ELECTRICAL CONNECTIONS



WARNING: READ THE ELECTRICAL SAFETY INSTRUCTIONS THOROUGHLY.

WARNING: A 13 AMP (BS1363) PLUG IS NOT SUITABLE.

WARNING: THIS APPLIANCE MUST BE EARTHED.

Connect the three core mains cable to a suitable industrial supply isolator, or heavy duty plug meeting the requirements of BS EN 60309. This charger must be connected to a supply having a rated capacity of greater than 16 Amps.

Connect the three core mains lead to a suitable industrial supply isolator, or heavy duty plug. This charger must be connected to a supply having a rated capacity of greater than 13 Amps. A normal 13 Amp (BS1363) plug must NOT be used.


NOTE: The maximum input current for this unit is 33 amps.

WARNING: THIS APPLIANCE MUST BE EARTHED.

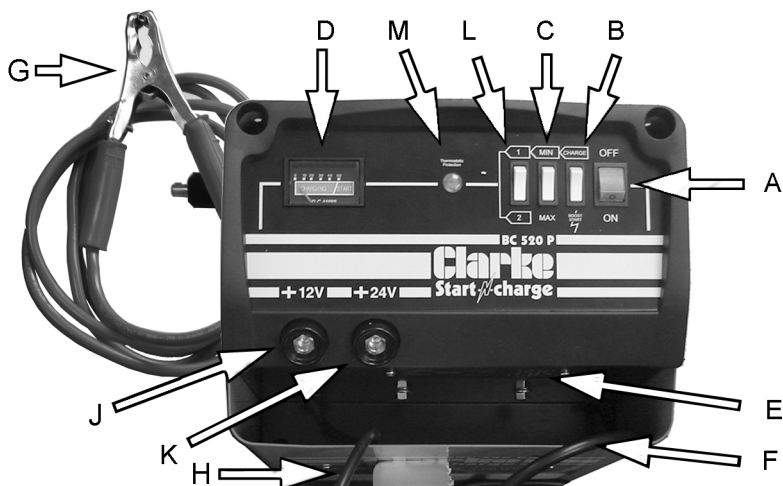
IMPORTANT: The wires in this mains lead are coloured in accordance with the following code:

GREEN AND YELLOW	-	EARTH E 
BLUE	-	NEUTRAL (N)
BROWN	-	LIVE (L)

As the colours of the flexible cord of this appliance may not correspond with the coloured markings identifying terminals in your plug, proceed as follows:

- Connect GREEN AND YELLOW coloured cord to plug terminal marked letter "E" or Earth Symbol  or coloured or Green and Yellow.
- Connect BROWN cord to plug terminal marked letter 'L' or coloured Red.
- Connect BLUE cord to plug terminal marked letter "N" or coloured Black.

OVERVIEW



A	ON/OFF Switch	G	RED positive lead with clamp
B	Boost Start/Charger Switch	H	BLACK negative Lead with clamp
C	MAX/MIN Switch	J	12V Output
D	Ammeter	K	24V Output
E	Fuse Cover	L	Power Setting Switch
F	Mains Lead with Plug	M	Thermal Overload Indicator

The illustration above identifies the various components and controls.

The charger is provided with a pair of leads complete with clamps for connection to a battery. It is provided with appropriate outlet connections - 12V and 24V, as shown above. A Boost Start/ Charge Switch allows for switching between functions.

A MAX/MIN switch allows for charging at two different rates and the unit is provided with a two position Power Setting switch, which allows for even greater control of charge rates as displayed on the Ammeter.

The main fuse is mounted on the front panel, as shown.

A Thermal Overload indicator fitted, see below. Please read thermal overload notes on page 9.

ASSEMBLY

The handle and wheels need to be assembled before use.

Locate the handle at the back of the upper panel and secure with the four self tapping screws provided.

Pass the axle into its housings at the bottom of the unit, then slide a wheel on to each end. Retain in position by tapping on the retaining star washers supplied, ensuring the tines of the washers point outwards.

PROCEDURE FOR NORMAL CHARGING

NOTE: *Before charging or boosting, ensure that, where applicable, the cells are filled with electrolyte to the correct level, by adding distilled water.*

1. When charging a car battery in situ, we recommend that the non earthed lead on the battery is disconnected prior to charging (On most vehicles, this would be the RED, Positive lead - but check the vehicle handbook if you are unsure).

This precaution is necessary as it is possible that damage could occur to any electronically controlled system fitted to the vehicle, such as engine management system, anti-theft alarm, alternator etc.

2. Check that the ON/OFF switch on the unit is in the OFF position.
3. Connect the RED, positive lead to either the 12V or 24V output on the charger, as appropriate.
4. Connect the appropriate clamp to the unearthed battery terminal. On most modern cars this is the RED, positive clamp connected to the RED, positive terminal of the battery, but check your handbook if unsure. Then connect the other clamp to the chassis (or a suitable engine bolt) away from the battery and fuel line.
5. Remove the battery filler caps, where applicable, during charging, in order to prevent the build up of dangerous gases within the battery.
6. Switch the CHARGE/BOOST START switch to the CHARGE position.

NOTE: *Set the Power switch to position '1'.*

7. Set the MIN (minimum charge) MAX (maximum charge) switch to the MIN position. This is suitable for charging most normal car batteries (having an ampere hour rating of approximately 40 A.H.).
8. Switch the ON/OFF switch to ON, and charging will commence. Adjustments may be made to the charging rate by switching to MAX, and

on larger models by also switching the Power Setting switch to the 1 or 2 position as appropriate. i.e. 4 charging rates are possible - MIN-1, MIN-2, MAX-1 and MAX-2.

9. Keep the battery on charge until the Ammeter gauge reads zero (or 0-2 amps) or has stopped moving down. Then switch off at the machine.



WARNING: IF THE FIXED POSITIVE LEAD AND THE FIXED NEGATIVE LEAD ARE CONNECTED TO THE WRONG TERMINALS, THEN A FLASH WILL OCCUR WHEN THE 2ND. CLAMP IS ATTACHED. DAMAGE TO THE CHARGING UNIT AND THE BATTERY WILL BE AVOIDED AS YOUR START N CHARGE IS FITTED WITH A POLARITY PROTECTION FEATURE. IT WILL HOWEVER BE NECESSARY TO REPLACE THE INTERNAL FUSE. REMOVE THE BLACK PLASTIC COVER ON THE FRONT PANEL (MARKED FUSE) AND REPLACE THE BURNT FUSE.

NOTES ON CHARGING PROCEDURE

- A complete charge is best done slowly in order to protect your battery, so we recommend the MIN setting as described above.
- A complete charge may take up to 10 hours.
- If a low amperage reading (2 amps or less) is seen on the gauge at either the MIN or MAX setting. This may indicate that the battery is either (a) already fully charged or (b) at the end of its useful life and in need of replacement.
- Do not charge the battery for longer than is necessary.

WARNING: NEVER ATTEMPT TO RE-CHARGE NON-RECHARGEABLE BATTERIES

PROCEDURE FOR ENGINE STARTING

NOTE: We recommend that before attempting to boost start, you charge the battery for 10-15 minutes. This will improve the chance of a first time start, particularly with bigger engines. When the battery is completely flat, you must charge the battery for 10-15 minutes before attempting to start, otherwise you may cause damage to the vehicle electronic systems.

1. Check that the ON/OFF switch is in the OFF position.
2. Connect the cables as for normal charging - see para c and d, page 6.
3. Check that the CHARGE/BOOST START switch is in the CHARGE position.
4. Switch the ON/OFF switch to the ON position.
5. Turn the key in the vehicle's ignition to 'START', and get an assistant to switch the CHARGE/BOOST START switch to BOOST START position.

IMPORTANT: If the engine fails to start almost immediately, you *MUST* return the CHARGE/BOOST START switch to CHARGE position after a maximum period according to the BOOST START DUTY CYCLE - i.e. 10 secs ON followed by 30 secs before retrying.

IMPORTANT: Failure to do this could damage some vehicle electronic equipment, the battery, and possibly the Start 'N' Charge unit which may invalidate your guarantee.

THERMAL OVERLOAD

This Booster/Charger is provided with a Thermal Overload cut-out.

Should the Duty Cycle be exceeded or should the unit overheat for any reason, the thermal overload will intervene, shutting down the charger.

If this occurs, wait for 15 - 20 minutes, depending upon ambient temperature, before attempting to re-use.

An amber indicator lamp is found on the top panel, which will illuminate when the overload has intervened. It will extinguish once it has reset and the unit is ready for use once again.

MAINTANENCE

This charger requires minimal maintenance. As with any appliance or tool, a few common sense rules will prolong the life of the battery charger.



WARNING: ALWAYS BE SURE THE CHARGER IS UNPLUGGED FROM THE MAINS AND ANY BATTERY BEFORE PERFORMING ANY MAINTENANCE OR CLEANING.

1. Clean the case and leads with a moist cloth.
 2. Clean corrosion from the clamps with a solution of water and baking soda.
 3. Examine the leads at regular intervals for damage and have them replaced if necessary
-



WARNING: ALL OTHER SERVICING/REPAIRS SHOULD BE DONE BY QUALIFIED SERVICE PERSONNEL ONLY.

STORAGE

1. Wind up the connecting leads and power cable when not in use and store in the compartment when not being used.
2. Store in a clean, dry area.

DECLARATION OF CONFORMITY



Clarke[®]
INTERNATIONAL

Hemnal Street, Epping, Essex CM16 4LG

DECLARATION OF CONFORMITY

This is an important document and should be retained.

We hereby declare that this product(s) complies with the following directive(s):

2014/30/EU *Electromagnetic Compatibility Directive.*

2104/35/EU *Low Voltage Equipment Directive.*

2011/65/EU *Restriction of Hazardous substances*

The following standards have been applied to the product(s):

EN 60335-2-29:2004+A2:2010, EN 60335-1:2012+A11:2014, EN 55014-1, EN 55014-2,

EN 61000-3-2, EN 61000-3-3.

The technical documentation required to demonstrate that the product(s) meet(s) the requirement(s) of the aforementioned directive(s) has been compiled and is available for inspection by the relevant enforcement authorities.

The CE mark was first applied in: 2013

Product Description: Battery Charger

Model number(s): 520P

Serial / batch Number: n/a

Date of Issue: 14/09/2017

Signed:

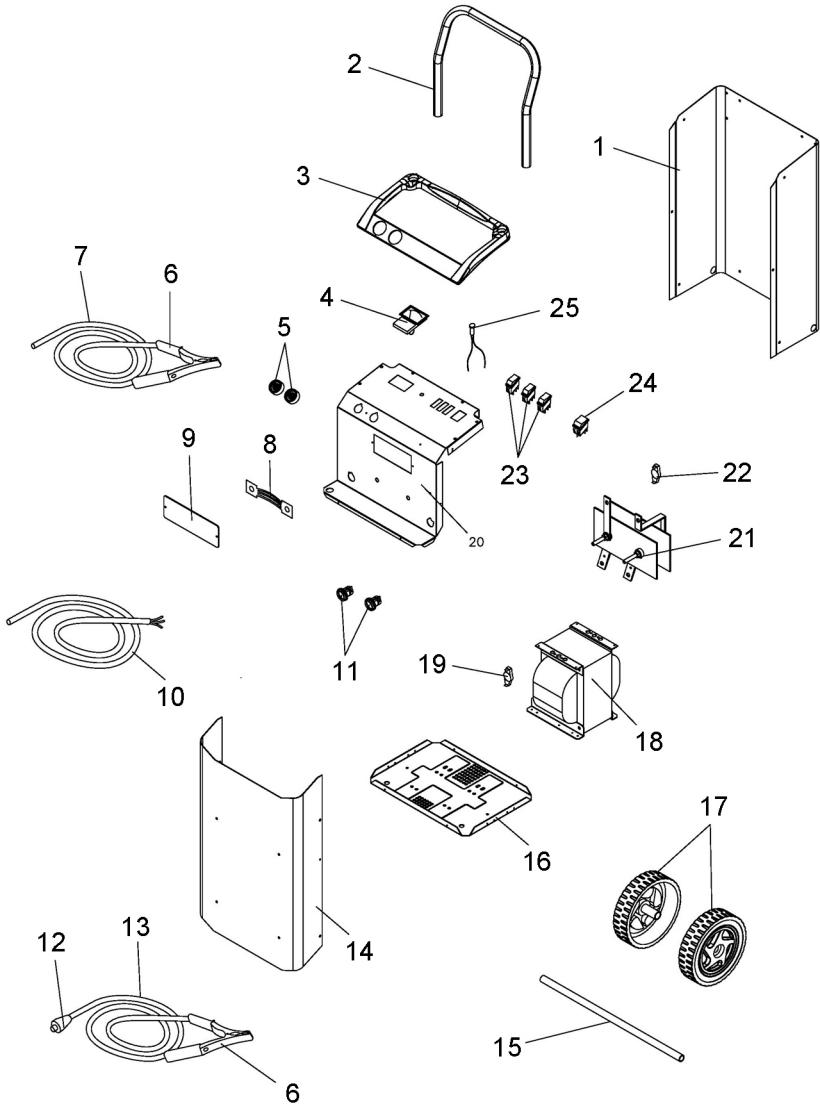
J.A. Clarke
Director

PARTS LIST

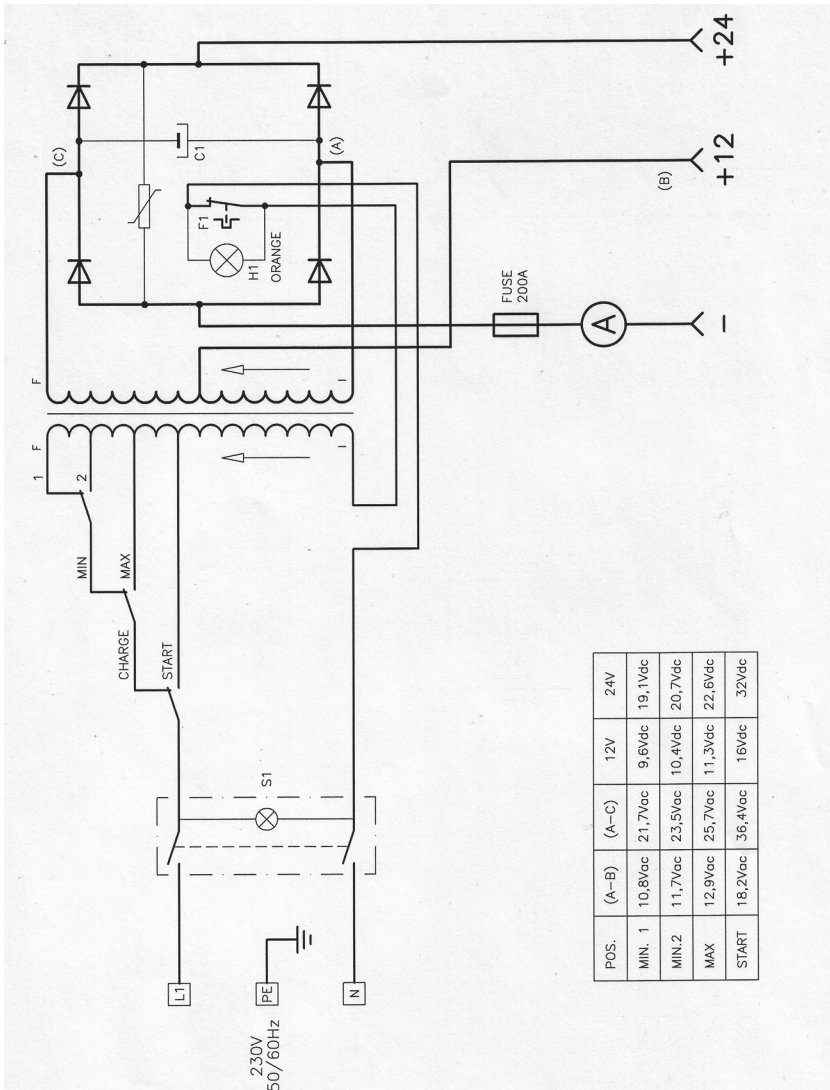
No	Description
1	Cover Panel
2	Handle
3	Front Frame
4	Ammeter 50A/Start
5	Female Dinse Plug
6	Clamps 120A
7	Black Charge Cable
8	Fuse 200A
9	Small Fuse Cover
10	PVC Input cable
11	Cable Clamp
12	Dinse Plug
13	Red Charge Cable

No	Description
14	Front panel
15	Axle L=415
16	Lower Panel
17	Wheel
18	Transformer Starter
19	n/a
20	Front Control Panel
21	Rectifier
22	Thermostat
23	High/Low Power Switch
24	On/OFF Switch
25	Orange Pilot Lamp

PARTS DIAGRAM



CIRCUIT DIAGRAM



A SELECTION FROM THE VAST RANGE OF

Clarke®

QUALITY PRODUCTS

AIR COMPRESSORS

From DIY to industrial, Plus air tools, spray guns and accessories.

GENERATORS

Prime duty or emergency standby for business, home and leisure.

POWER WASHERS

Hot and cold, electric and engine driven - we have what you need

WELDERS

Mig, Arc, Tig and Spot. From DIY to auto/industrial.

METALWORKING

Drills, grinders and saws for DIY and professional use.

WOODWORKING

Saws, sanders, lathes, mortisers and dust extraction.

HYDRAULICS

Cranes, body repair kits, transmission jacks for all types of workshop use.

WATER PUMPS

Submersible, electric and engine driven for DIY, agriculture and industry.

POWERTOOLS

Angle grinders, cordless drill sets, saws and sanders.

STARTERS/CHARGERS

All sizes for car and commercial use.



PARTS & SERVICE: 0208 988 7400
E-mail: Parts@clarkeinternational.com or Service@clarkeinternational.com
SALES: UK 01992 565333 or Export 00 44 (0)1992 565335

Clarke INTERNATIONAL Hemnall Street, Epping, Essex CM16 4LG
www.clarkeinternational.com