

CLARKE®

Start·N·charge



STARTER/CHARGER

MODEL NO: BC430N

PART NO: 6261067

OPERATION & MAINTENANCE INSTRUCTIONS



ORIGINAL INSTRUCTIONS

GC11/18

INTRODUCTION

Thank you for purchasing this CLARKE Starter/ Charger. This unit is suitable for charging and boosting 12 or 24 Volt lead acid batteries.

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.

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



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

ELECTRICAL CONNECTIONS

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 13 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 48 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 cable of this appliance may not correspond with the coloured markings identifying terminals in your plug, proceed as follows:

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

OVERVIEW

The unit is provided with a pair of leads complete with clamps for connection to a car battery and is provided with appropriate outlet connections - 12V and 24V as shown below.

A single Start/ Charge switch allows for switching between functions and for charging at different rates with different charge rates as displayed on the ammeter.

The main fuse is mounted behind a cover on the front panel.

The Timer control knob allows charging time durations from zero to 2 hours.

The 430N has a Thermal Overload indicator fitted, see below. Please read Thermal Overload notes on page 9.

The illustration below identifies the various control components.

- A - Mains Indicator Lamp
- B - Current Control Knob
- C - Timer Control Knob
- D - 12V Positive Terminal
- E - 24V Positive Terminal
- F - Thermal Overload Indicator (yellow)
- G - Boost Start Indicator (red)
- H - Battery Charge Indicator (green)



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 mains supply is OFF and that the Current Control Knob (B) is in the 'O' OFF position.
3. 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.
 - NOTE: Ensure the lead is plugged into the 12V or 24V socket, depending upon the voltage of the battery to be charged.
4. Remove the battery filler caps if applicable during charging, in order to prevent the build up of dangerous gases within the battery.
5. Switch ON the mains supply.
6. Turn the Current Control Knob (B) to the position necessary to obtain the required charge rate, as indicated on the ammeter.
7. Keep the battery on charge until the Ammeter reads zero (or 0-2 amps) or has stopped moving down, then turn the Current Control Knob (B) to the OFF position.
8. When disconnecting the charger, disconnect :-1) Supply, 2) Chassis Conductor and 3) Battery Conductor, in that order.



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

CHARGING WITH TIMER

1. Follow the same instructions as for Normal Charging up to and including para. 5.
2. Turn the timer control knob (C) clockwise to the desired charging time setting.
3. Switch ON the mains supply.
4. Turn the Current Control Knob (B) clockwise to position 5 or 6, to obtain the desired charging rate as indicated on the ammeter.

NOTES ON CHARGING PROCEDURE

*A complete charge is best done slowly in order to protect your battery We recommend the charging rate be no more than 10% of the battery capacity rating (AH). eg. a typical battery has a rating of 40 Ampere Hours, therefore the charging rate should be 4 amps, and a complete charge will take 10 hours.

**If a low current reading (2 amps or less) is seen on the gauge, 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.

Check the Specific Gravity of the battery with a hydrometer.

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 and current control switch are in the OFF position.
2. Connect the cables as for normal charging.
3. Switch ON the mains supply - the green lamp will illuminate.
4. Turn the Current Control Knob to the 'START' position.
5. Turn the key in the vehicles ignition to 'start'.

This equipment is provided with an automatic boost start function. The current required to start an engine will be detected by the systems' electronics and supplied to the starter motor. As the load reduces, the system will compensate accordingly.

Once the engine has started, the system will automatically shut down the boost start function.

6. At this point, switch the Current Control Knob to the OFF (O) position, and disconnect the leads from the battery in the same manner as that for normal charging.

NOTE: If the Start and Charge unit is overloaded at any time, a thermal cut out will automatically come into operation, rendering it inoperative. These models are equipped with a thermal overload indicator (yellow indicator light) which will illuminate. Allow approximately 5-10 minutes, or wait for the indicator light to go out before using the unit again.

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.

The amber indicator lamp on the panel 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
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WARNING: ALL OTHER SERVICING/REPAIRS SHOULD BE DONE BY QUALIFIED SERVICE PERSONNEL ONLY.

REPLACEMENT FUSES

MODEL	PART NO	AMPS	QTY REQUIRED
BC430N	EM22220011	60	1

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

Hemnoll 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.*

2014/35/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 55014-1:2006+A1:2009+A2:2011,

EN 55014-2:2015, EN 61000-3-2:2014, EN 61000-3-3:2013.

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.

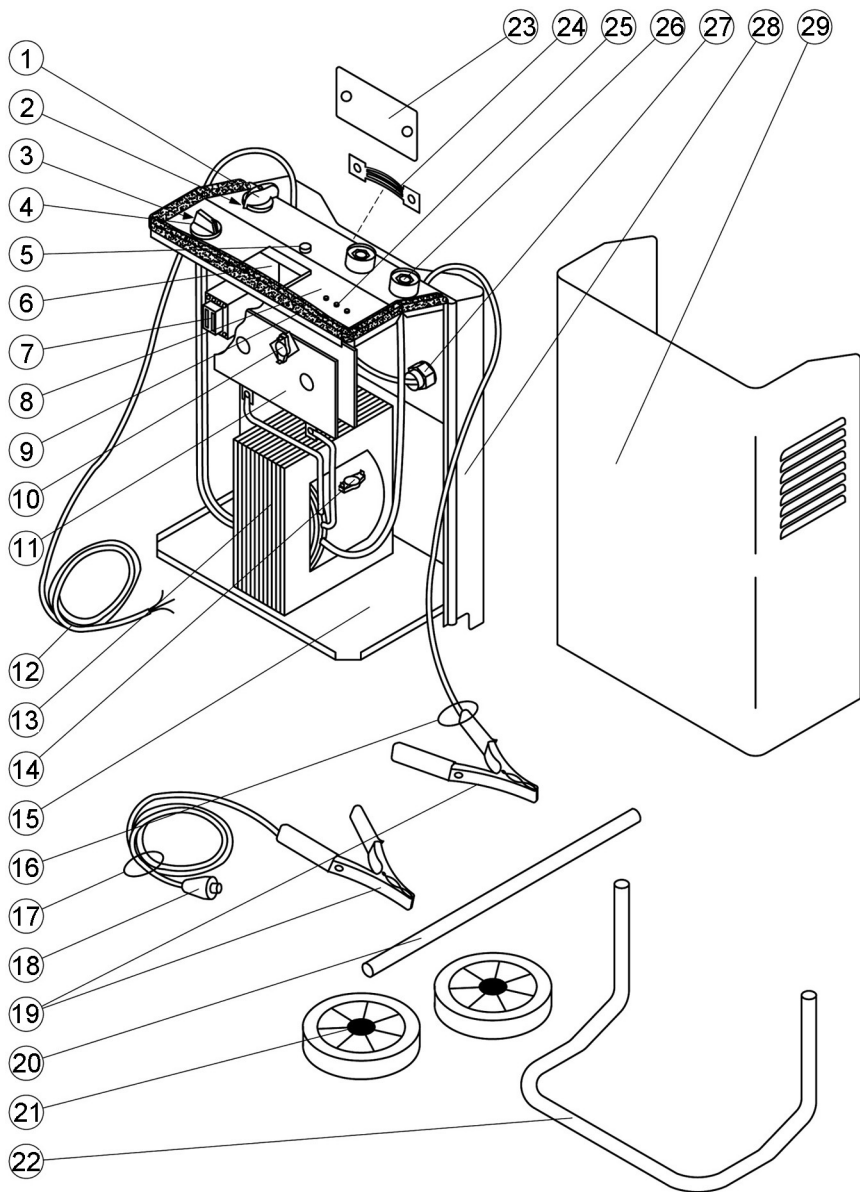
The CE mark was first applied in: 2017

Product Description: Battery Chargers
Model number(s): BC205N, BC410E, BC430N.
Serial / batch Number: n/a
Date of Issue: 19/10/2017

Signed:

J.A. Clarke
Director

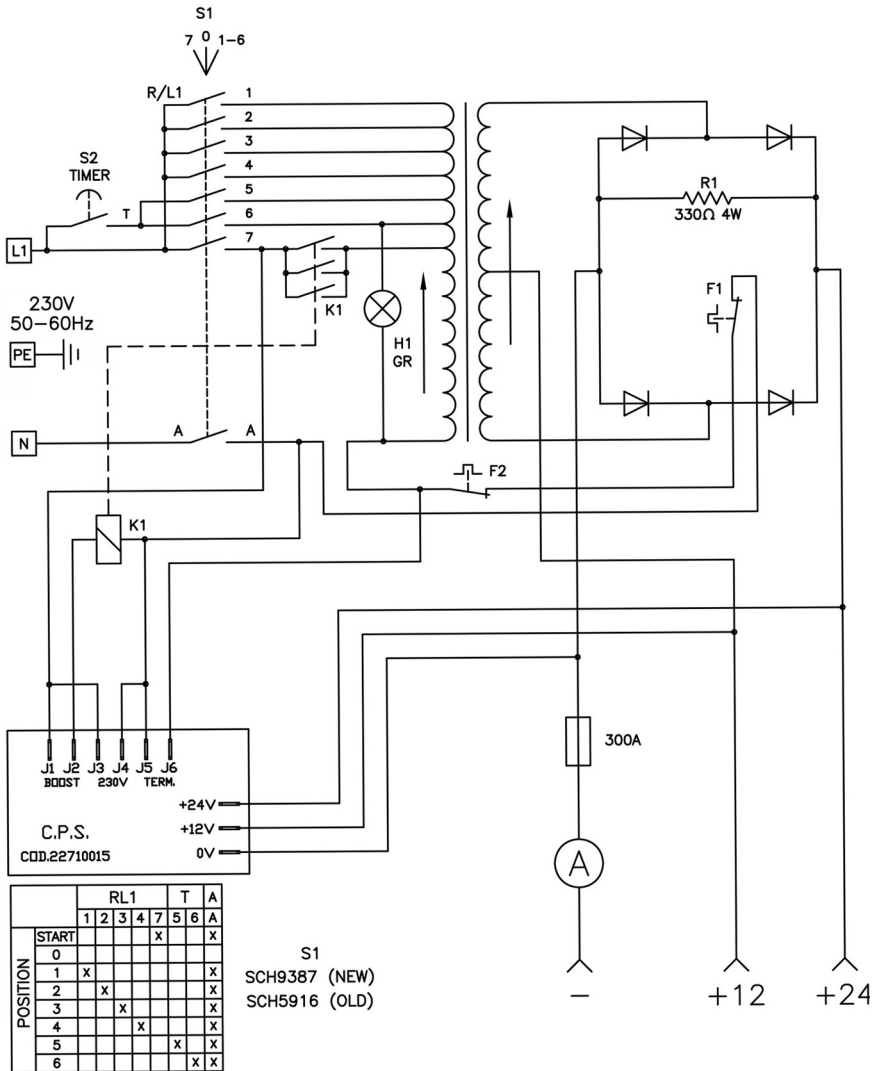
PARTS LIST - BC430N



PARTS LIST BC430N

No	Description	Part No	No	Description	Part No
1	Knob D38	04600270	16	Black Cable 25sqmm W/Clamp 120	43200025
2	Switch	22205133	17	Red Cable 25sqmm 2,5M	43200024
3	Timer 16A / 250V	22215001	18	Dinse Plug 25sqmm Cx20	22100001
4	Timer Knob	21690034	19	Clamps 120A Red- black	04600067
5	Green Pilot-lamp	22610008	20	Axle (L=488mm)	55200001
6	Ammeter	22600050	21	Wheel D.175. Hole D.20	21625009
7	Contactora 220V 10A	22225006	22	Handle	33725080
8	LED	33710624	23	Fuse Box Cover	21690110
9	Front Frame	21690322	24	Fuse 300A	22220011
10	Thermostat 1001 c/w Support	04600113	25	C.P.S. Control PCB	22700040
11	Rectifier PMS 20/2/ 2 CB	22400011	26	Female Dinse Plug 25sqmm	22100002
12	Supply Cable 3x2,5 M.2,5	20220020	27	Cable Clamp D.10 + Screw	04600234
13	Transformer	44105075	28	Front Panel	33700722
14	Thermostat Vebe 1301	04600261	29	Cover Panel	33705346
15	Lower Panel	33700028	30	Ampererometric Shunt	22600047

WIRING CIRCUIT DIAGRAMS



SPECIFICATIONS

Model Number	BC430N
Part No	6261067
Dimensions (DxWxH)	330 x 490 x 730 mm
Weight	38 kg
Supply Voltage @50Hz	230 V AC
Max charge	60A (continuous)
Max Boost	400A
Boost/Charge	12V/24V

NOTES

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