



BBCE12-10



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BBCE12-10_M

Model: BBCE12-10

Automatic Battery Charger

OWNER'S MANUAL

Markings and symbols



Read manual
before using.



Warning



Caution, risk of
electric shock.



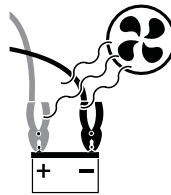
Do not expose
to rain.



For indoor
use only.



Contact the equipment supplier
for details on how to properly
dispose of this product within
a specific country, per WEEE
requirements.



Use in a
well-ventilated
area.



Keep away from sparks and
flame – battery could emit
explosive gases.

⚠️ WARNING READ THE ENTIRE MANUAL BEFORE USING THIS PRODUCT.
FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY OR DEATH.

IMPORTANT: READ AND SAVE THIS SAFETY AND INSTRUCTION MANUAL.

SAVE THESE INSTRUCTIONS – This manual will show you how to use your charger safely and effectively. Please read, understand and follow these instructions and precautions carefully, as this manual contains important safety and operating instructions. The safety messages used throughout this manual contain a signal word, a message and an icon.

The signal word indicates the level of the hazard in a situation.

- ⚠️ DANGER** Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury to the operator or bystanders.
- ⚠️ WARNING** Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury to the operator or bystanders.
- ⚠️ CAUTION** Indicates a potentially hazardous situation which, if not avoided, could result in moderate or minor injury to the operator or bystanders.
- IMPORTANT** Indicates a potentially hazardous situation which, if not avoided, could result in damage to the equipment or vehicle or property damage.

1. IMPORTANT SAFETY INSTRUCTIONS – SAVE THESE INSTRUCTIONS.
This manual contains important safety and operating instructions.



RISK OF ELECTRIC SHOCK OR FIRE.

1.1 Read the entire manual before using this product. Failure to do so could result in serious injury or death.

1.2 Children should be supervised to ensure that they do not play with the appliance. 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.

- 1.3** This charger 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 charger by a person responsible for their safety. Children should be supervised to ensure they do not play with the charger.
- 1.4** Do not expose the charger to rain or snow.
- 1.5** Use only recommended attachments. Use of an attachment not recommended or sold by SNA Europe may result in a risk of fire, electric shock or injury to persons or damage to property.
- 1.6** To reduce the risk of damage to the electric plug or cord, pull by the plug rather than the cord when disconnecting the charger.
- 1.7** An extension cord should not be used unless absolutely necessary. Use of an improper extension cord could result in a risk of fire and electric shock. If an extension cord must be used, make sure:
- That the pins on the plug of the extension cord are the same number, size and shape as those of the plug on the charger.
 - That the extension cord is properly wired and in good electrical condition.
 - That the wire size is large enough for the AC ampere rating of the charger as specified in section 8.
- 1.8** To reduce the risk of electric shock, unplug the charger from the outlet before attempting any maintenance or cleaning. Simply turning off the controls will not reduce this risk.
- 1.9** Do not operate the charger with a damaged cord or plug. If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
- 1.10** Do not operate the charger if it has received a sharp blow, been dropped or otherwise damaged in any way; take it to a qualified service person.

- 1.11** Do not disassemble the charger; take it to a qualified service person when service or repair is required. Incorrect reassembly may result in a risk of fire or electric shock.



▲WARNING RISK OF EXPLOSIVE GASES.

1.12 WORKING IN THE VICINITY OF A LEAD-ACID BATTERY IS DANGEROUS. BATTERIES GENERATE EXPLOSIVE GASES DURING NORMAL BATTERY OPERATION. FOR THIS REASON, IT IS OF UTMOST IMPORTANCE THAT YOU FOLLOW THE INSTRUCTIONS EACH TIME YOU USE THE CHARGER.

- 1.13** 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. Review the cautionary markings on these products and on the engine.
- 1.14** This charger employs parts, such as switches and circuit breakers, that tend to produce arcs and sparks. If used in a garage, locate this charger 46 cm (18 inches) or more above floor level.

▲WARNING Do not use with non-rechargeable batteries.
Use only with lead-acid rechargeable batteries.

IMPORTANT Do not start the vehicle with the charger connected to the AC outlet, or it may damage the charger and your vehicle.

2. PERSONAL PRECAUTIONS



▲WARNING RISK OF EXPLOSIVE GASES.

2.1 NEVER smoke or allow a spark or flame in the vicinity of a battery or engine.

2.2 Remove personal metal items such as rings, bracelets, necklaces and watches when working with a lead-acid or lithium ion battery. These batteries can produce a short-circuit current high enough to weld a ring or the like to metal, causing a severe burn.

- 2.3** Be extra cautious, to reduce the risk of dropping a metal tool onto the battery. It might spark or short-circuit the battery or other electrical part that may cause an explosion.
- 2.4** Use this charger for charging only 12V lead-acid, calcium, gel and AGM-type rechargeable batteries with rated capacities of 10-230 Ah. It is not intended to supply power to a low voltage electrical system other than in a starter-motor application. Do not use this battery charger for charging dry-cell batteries that are commonly used with home appliances or lithium ion batteries used in cell phones, laptops, power tools, etc. These batteries may burst and cause injury to persons and damage to property.
- 2.5** NEVER charge a frozen battery.
- 2.6** Consider having someone nearby to come to your aid when you work near a lead-acid battery.

- 2.7 Have plenty of fresh water and soap nearby, in case battery acid contacts your skin, clothing or eyes.
- 2.8 Wear complete eye and body protection, including safety goggles and protective clothing. Avoid touching your eyes while working near the battery.
- 2.9 If battery acid contacts your skin or clothing, immediately wash the area with soap and water. If acid enters your eye, immediately flood the eye with cold running water for at least 10 minutes and get medical attention right away.
- 2.10 If battery acid is accidentally swallowed, drink milk, the whites of eggs or water. DO NOT induce vomiting. Seek medical attention immediately.

3. PREPARING TO CHARGE



RISK OF CONTACT WITH BATTERY ACID. BATTERY ACID IS A HIGHLY CORROSIVE SULFURIC ACID.

- 3.1 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.
- 3.2 Be sure the area around the battery is well ventilated while the battery is being charged.
- 3.3 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.
- 3.4 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.
- 3.5 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.
- 3.6 Determine the voltage of the battery by referring to the vehicle owner's manual and make sure that the output voltage selector switch is set to the correct voltage. If the charger has an adjustable charge rate, charge the battery in the lowest rate first.
- 3.7 Make sure that the charger cable clips make tight connections.

4. CHARGER LOCATION



RISK OF EXPLOSION AND CONTACT WITH BATTERY ACID.

- 4.1 Locate the charger as far away from the battery as the DC cables permit.
- 4.2 NEVER place the charger directly above the battery being charged; gases from the battery will corrode and damage the charger.
- 4.3 Do not set the battery on top of the charger.
- 4.4 NEVER allow battery acid to drip onto the charger when reading the electrolyte specific gravity or filling the battery.
- 4.5 Do not operate the charger in a closed-in area or restrict the ventilation in any way.

5. DC CONNECTION PRECAUTIONS

- 5.1 Connect and disconnect the DC output connectors only after removing the AC plug from the electrical outlet. NEVER allow the connectors to touch each other.
- 5.2 Attach the connectors to the battery and chassis, as indicated in sections 6 and 7.

6. FOLLOW THESE STEPS WHEN BATTERY IS INSTALLED IN THE VEHICLE



A SPARK NEAR THE BATTERY MAY CAUSE A BATTERY EXPLOSION. TO REDUCE THE RISK OF A SPARK NEAR THE BATTERY:

IMPORTANT

Do not start the vehicle with the charger connected to the AC outlet, or it may damage the charger and your vehicle.

- 6.1 Position the AC and DC cables to reduce the risk of damage by the hood, door and moving or hot engine parts. **NOTE:** If it is necessary to close the hood during the charging process, ensure that the hood does not touch the metal part of the battery connectors or cut the insulation of the cables.
- 6.2 Stay clear of fan blades, belts, pulleys and other parts that can cause injury.
- 6.3 Check the polarity of the battery posts. The POSITIVE (POS, P, +) battery post usually has a larger diameter than the NEGATIVE (NEG, N, -) post.
- 6.4 Determine which post of the battery is grounded (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. See steps 6.5 and 6.6. The battery charger is then to be connected to the supply mains. The connection to the supply mains is to be in accordance with the national wiring rules.
- 6.5 For a negative-grounded vehicle, connect the POSITIVE (RED) connector from the battery charger to the POSITIVE (POS, P, +) ungrounded post of the battery. Connect the NEGATIVE (BLACK) connector to the vehicle chassis or engine block away from the battery. Do not connect the connector to the carburetor, fuel lines or sheet-metal body parts. Connect to a heavy gauge metal part of the frame or engine block.
- 6.6 For a positive-grounded vehicle, connect the NEGATIVE (BLACK) connector from the battery charger to the NEGATIVE (NEG, N, -) ungrounded post of the battery. Connect the POSITIVE (RED) connector to the vehicle chassis or engine block away from the battery. Do not connect the connector to the carburetor, fuel lines or sheet-metal body parts. Connect to a heavy gauge metal part of the frame or engine block.
- 6.7 Connect charger AC supply cord to electrical outlet.
- 6.8 After charging, disconnect the battery charger from the supply mains. Then remove the chassis connection and then the battery connection.
- 6.9 See *Operating Instructions* for length of charge information.

7. FOLLOW THESE STEPS WHEN BATTERY IS OUTSIDE OF THE VEHICLE



A SPARK NEAR THE BATTERY MAY CAUSE A BATTERY EXPLOSION. TO REDUCE THE RISK OF A SPARK NEAR THE BATTERY:

7.1 Check the polarity of the battery posts. The POSITIVE (POS, P, +) battery post usually has a larger diameter than the NEGATIVE (NEG, N, -) post.

- 7.2 Attach at least a 61 cm (24-inch) long 7 AWG (10 mm²) insulated battery cable to the NEGATIVE (NEG, N, -) battery post.
- 7.3 Connect the POSITIVE (RED) charger connector to the POSITIVE (POS, P, +) post of the battery.
- 7.4 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 connector to the free end of the cable.
- 7.5 Do not face the battery when making the final connection.
- 7.6 Connect charger AC supply cord to electrical outlet.
- 7.7 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.
- 7.8 A marine (boat) battery must be removed and charged on shore. To charge it onboard requires equipment specially designed for marine use.

8. GROUNDING AND AC POWER CORD CONNECTIONS



RISK OF ELECTRIC SHOCK OR FIRE.

8.1 This battery charger is for use on a nominal 230V, 50Hz circuit. The plug must be plugged into an outlet that is properly installed and grounded in accordance with all local codes and ordinances. The plug pins must fit the receptacle (outlet). Do not use with an ungrounded system.

8.2 **▲DANGER** NEVER alter the AC cord or plug provided – if it does not fit the outlet, have a proper outlet installed by a qualified electrician. An improper connection can result in a risk of an electric shock or electrocution.

8.3 USING AN EXTENSION CORD

The use of an extension cord is not recommended. If you must use an extension cord, follow these guidelines:

- Pins on plug of extension cord must be the same number, size, and shape as those of plug on charger.
- Ensure that the extension cord is properly wired and in good electrical condition.
- Wire size must be large enough for the AC ampere rating of charger.

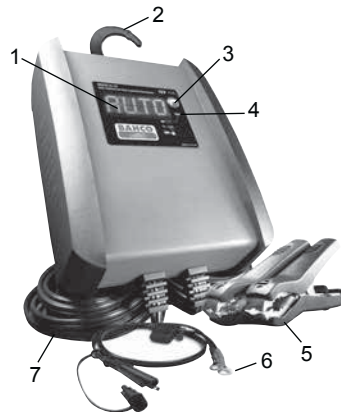
Recommended minimum AWG size for extension cord:

- 30.5 meters (100 feet) long or less – use a 1.10 mm² (18 gauge) extension cord.
- Over 30.5 meters (100 feet) long – use a 1.25 mm² (16 gauge) extension cord.

9. ASSEMBLY INSTRUCTIONS

9.1 Remove all cord wraps and uncoil the cables prior to using the battery charger.

10. FEATURES



1. Digital display
2. Hook attachment
3. Language button
4. Charging status LED indicator
5. Battery clamp quick-connect
6. Ring terminal quick-connect
7. AC Power cord

11. CONTROL PANEL

DIGITAL DISPLAY

The digital display indicates the status of the battery and charger. See *Display Messages* for a complete list of messages.

LANGUAGE BUTTON

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. (EN-FR-ES-DE-SE-ITA).

LED INDICATOR

GREEN LED solid (CHARGING): The charger is connected and is charging a battery.

GREEN LED pulsing (CHARGED/MAINTAINING): The battery is fully charged and the charger is in Maintain Mode.

GREEN LED flashing: The charge has aborted. (See *Aborted Charge* section).

NOTE: See *Operating Instructions* for a complete description of the charger modes.

12. OPERATING INSTRUCTIONS

⚠WARNING This battery charger must be properly assembled in accordance with the assembly instructions before it is used.

The charger does not have an ON/OFF switch. The On and Off commands are controlled by plugging the BBCE12-10 into an AC electrical wall outlet only after the battery connections have been made.

IMPORTANT Do not start the vehicle with the charger connected to the AC outlet, or it may damage the charger and your vehicle.

BATTERY INFORMATION

This charger can charge 6-celled lead-acid batteries with rated capacities of 10-230 Ah.

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.

See *instructions for charging a battery inside a vehicle (Section 6) or outside of the vehicle (Section 7)*.

USING THE QUICK-CONNECT CABLE CONNECTORS

Connect any of the output cable assemblies to the charger in seconds.

IMPORTANT NEVER connect the clip and ring terminal connectors together for use in other applications, such as external battery or other power source charging, or to extend the output cable length, as reverse polarity and/or overcharge conditions will occur.

BATTERY CLAMP QUICK-CONNECT

1. Connect the end of the charger output cable to the end of the battery clamp quick-connect.
2. Follow the steps in sections 6 and 7 to connect the clamps to the battery.
3. After a good electrical connection is made to the battery, plug the power cord into an AC electrical wall outlet. Make sure to place the charger on a dry, non-flammable surface.
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.
5. When the battery is fully charged, the **GREEN LED** will pulse.
6. When charging is complete, disconnect the AC cord from the supply mains, remove the clamp from the vehicle's chassis, and then remove the clamp from the battery terminal.

RING TERMINAL QUICK-CONNECT

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.

1. To permanently attach to a battery, loosen and remove each nut from the bolts at the battery terminals.
2. Connect the red positive connector ring to the positive (POS, P, +) battery terminal.
3. Connect the negative connector ring to the negative (NEG, N, -) battery terminal.
4. Replace and tighten the nuts to secure them.
5. Connect the ring connector cable assembly to the charger. Take care to keep both wires and plug away from hot and moving parts.
6. Plug the charger power cord into an AC electrical wall outlet. Make sure to place the charger on a dry, non-flammable surface.

7. 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.
8. When the battery is fully charged, the **GREEN LED** will pulse.
9. When charging is complete, disconnect the AC cord from the supply mains, remove the negative connector, and finally the positive connector.

BATTERY CONNECTION INDICATOR

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 AC outlet, reverse the connections at the battery, and then plug the charger back in.

BATTERY CHARGING TIMES

CCA = Cold Cranking Amps Ah = Amp Hour

Battery Size / Rating		Charging time (10 A)	
Small batteries		10-20 Ah	1/2 - 1 1/2 h
Motorcycle, garden tractor, etc.		20-32 Ah	1 1/2 - 2 1/2 h
Cars and Trucks	200-315 CCA	40-60 Ah	2 1/2 - 3 1/2 h
	315-550 CCA	60-85 Ah	3 1/2 - 4 1/2 h
	550-1000 CCA	85-230 Ah	5 - 8 1/2 h
Marine / Deep-cycle		80 Ah	5 h
		140 Ah	7 1/2 h
		160 Ah	8 1/2 h
		200 Ah	10 h

Times are based on a 50% discharged battery and may change, depending on age and condition of battery.

AUTOMATIC CHARGING MODE

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.

ABORTED CHARGE

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.

CHARGE COMPLETION AND MAINTAIN MODE (FLOAT MODE MONITORING)

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. 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.

MAINTAINING A BATTERY

The BBCE12-10 maintains 12 volt batteries, keeping them at full charge.

It is not recommended for industrial applications.

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.

FAN

Your charger is equipped with a fan. It is normal for the fan to run while the charger is charging. Keep the area near the charger free of obstructions, to allow the fan to operate efficiently.

13. DISPLAY MESSAGES

CONNECT CLAMPS (No LED lit) – Plugged into the AC outlet without the clamps connected to a battery.

WARNING-CLAMPS REVERSED (No LED lit) – Plugged into the AC outlet and the clamps are connected backwards to a battery.

ANALYZING BATTERY (Green LED lit) – Plugged into the AC outlet, and when first correctly connected to battery.

CHARGING – xx% (Green LED lit) – Plugged into the AC outlet and correctly connected to a discharged battery.

FULLY CHARGED-AUTO MAINTAINING (Green LED pulsing) – Plugged into the AC outlet and correctly connected to a fully charged battery.

CHARGE ABORTED-BAD BATTERY (Green LED flashing) –

Circumstances that could cause an Abort situation during charging:

- The battery is severely sulfated 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.

BATTERY DISCONNECTED (No LED lit) – Clamps were unplugged during charging.

14. MAINTENANCE INSTRUCTIONS

- 14.1 Cleaning and user maintenance should not be done by children without supervision.
- 14.2 After use and before performing maintenance, unplug and disconnect the battery charger (see sections 6, 7 and 8).
- 14.3 Use a dry cloth to wipe all battery corrosion and other dirt or oil from the battery connectors, cords, and the charger case.
- 14.4 Ensure that all of the charger components are in place and in good working condition, for example, the plastic boots on the battery clips.
- 14.5 Servicing does not require opening the unit, as there are no user-serviceable parts.
- 14.6 All other servicing should be performed by qualified service personnel.
- 14.7 If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons, in order to avoid a hazard.

15. MOVING AND STORAGE INSTRUCTIONS

- 15.1 Store the charger unplugged, in an upright position. The cord will still conduct electricity until it is unplugged from the outlet.
- 15.2 Store inside, in a cool, dry place.
- 15.3 Do not store the connectors clipped together, on or around metal, or clipped to cables.
- 15.4 If the charger is moved around the shop or transported to another location, take care to avoid/prevent damage to the cords, connectors and charger. Failure to do so could result in personal injury or property damage.

16. DISPOSAL INFORMATION



Do not dispose of this product with other household waste. To prevent possible harm to the environment or human health from uncontrolled waste disposal, and to promote the sustainable reuse of material resources, recycle it responsibly. To discard your used device, please use the return and collection systems or contact the retailer where the product was purchased, for environmentally-safe recycling.

17. TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	REASON/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 if touched together.	No problem; this is a normal condition.
The charger will not turn on when properly connected.	AC outlet is dead. Poor electrical connection.	Check for open fuse or circuit breaker supplying AC outlet. Check power cord 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-FR-ES-DE-SE-ITA).	No problem; this is normal.
Green LED is lit and the display shows ANALYZING BATTERY .	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.
Green LED is flashing and the display shows CHARGE ABORTED-BAD BATTERY .	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 CONNECT CLAMPS .	The clamps are not making a good connection. The fuse is bad.	Check for poor connection at battery and frame. Replace the in-line fuse for the ring connector.

18. SPECIFICATIONS

Input..... 230V AC~50Hz, 2.0A
 Output..... 12V $\overline{\text{---}}$ 10A
 Ingress Protection rating.....IP20

19. REPLACEMENT PARTS

Battery clamps (quick-connect).....BBCEC2
 Ring connectors (quick-connect).....BBCER2