

# DRAPER<sup>®</sup>

## INSTRUCTIONS FOR **6V/12V Battery Charger**

Stock No's.20486, 20487, 20492 Part No's.BCD5, BCD6, BCD9

**IMPORTANT:** PLEASE READ THESE INSTRUCTIONS CAREFULLY TO ENSURE THE SAFE AND EFFECTIVE USE OF THIS PRODUCT.



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### GENERAL INFORMATION

These instructions accompanying the product are the original instructions. This document is part of the product, keep it for the life of the product passing it on to any subsequent holder of the product. Read all these instructions before assembling, operating or maintaining this product.

This manual has been compiled by Draper Tools describing the purpose for which the product has been designed, and contains all the necessary information to ensure its correct and safe use. By following all the general safety instructions contained in this manual, it will ensure both product and operator safety, together with longer life of the product itself.

All photographs and drawings in this manual are supplied by Draper Tools to help illustrate the operation of the product. Whilst every effort has been made to ensure the accuracy of information contained in this manual, the Draper Tools policy of continuous improvement determines the right to make modifications without prior warning.

# 1. TITLE PAGE

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## **1.1 INTRODUCTION:**

USER MANUAL FOR:

## **6V/12V BATTERY CHARGER**

Stock no's. 20468, 20487, 20492

Part no's. BCD5, BCD6, BCD9

## **1.2 REVISIONS:**

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Date first published January 2012

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As our user manuals are continually updated, users should make sure that they use the very latest version.

Downloads are available from: <http://www.drapertools.com/b2c/b2cmanuals.pgm>

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## **1.3 UNDERSTANDING THIS MANUALS SAFETY CONTENT:**

**WARNING!** Information that draws attention to the risk of injury or death.

**CAUTION!** Information that draws attention to the risk of damage to the product or surroundings.

## **1.4 COPYRIGHT © NOTICE:**

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### 2.1 CONTENTS

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## 3. GUARANTEE

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### **3.1 GUARANTEE**

Draper tools have been carefully tested and inspected before shipment and are guaranteed to be free from defective materials and workmanship.

Should the tool develop a fault, please return the complete tool to your nearest distributor or contact Draper Tools Limited, Chandler's Ford, Eastleigh, Hampshire, SO53 1YF. England.

Telephone Sales Desk: (023) 8049 4333 or Product Helpline (023) 8049 4344.

A proof of purchase must be provided with the tool.

If upon inspection it is found that the fault occurring is due to defective materials or workmanship, repairs will be carried out free of charge. This guarantee period covering parts/labour is 12 months from the date of purchase except where tools are hired out when the guarantee period is ninety days from the date of purchase. The guarantee is extended to 24 months for parts only. This guarantee does not apply to normal wear and tear, nor does it cover any damage caused by misuse, careless or unsafe handling, alterations, accidents, or repairs attempted or made by any personnel other than the authorised Draper warranty repair agent.

Note: If the tool is found not to be within the terms of warranty, repairs and carriage charges will be quoted and made accordingly.

This guarantee applies in lieu of any other guarantee expressed or implied and variations of its terms are not authorised.

Your Draper guarantee is not effective unless you can produce upon request a dated receipt or invoice to verify your proof of purchase within the guarantee period.

Please note that this guarantee is an additional benefit and does not affect your statutory rights.

Draper Tools Limited.

# 4. INTRODUCTION

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## 4.1 SCOPE

This manual is intended to give the user an overview of the function and controls of this product to aid its safe and effective use.

## 4.2 SPECIFICATION

Stock no .....	20486 .....	20487 .....	20492 .....
Part no .....	BCD5 .....	BCD6 .....	BCD9 .....
Supply voltage.....	230V~50Hz.....	230V~50Hz .....	230V~50Hz .....
Input power.....	6V=65W/12V=100W .....	6V=80W/12V=130W .....	6V=120W/12V=210W .....
Charging voltage.....	6V/12V .....	6V/12V.....	6V/12V .....
Effective charging current .....	4.2A .....	5.6A.....	8.4A .....
Rated input.....	101W .....	135W.....	202W .....
Charging steps.....	1 .....	1 .....	1 .....
Dimensions .....	240 × 210 × 140mm.....	240 × 210 × 140mm .....	270 × 270 × 150mm .....
Weight .....	2.5kg .....	3kg.....	4.2kg .....

## 4.3 HANDLING & STORAGE

When handling the charger, be sure to use the carry handle provided. Never carry the charger by its cable or leads, as this will cause damage to the charger that will not be covered by the guarantee.

When not in use, store the charger in a dry location away from dust and liquids. Always store the charger in its original carton to best protect the charger when not in use.

# 5. HEALTH & SAFETY INFORMATION

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## 5.1 GENERAL SAFETY INSTRUCTIONS FOR BATTERY CHARGERS

**Warning!** Please read the following instructions carefully, failure to do so could lead to serious personal injury.

**Important** Draper Tools Limited recommends that this machine should not be modified or used for any application other than that for which it was designed. If you are unsure of its relative applications do not hesitate to contact us in writing and we will advise you.

### 1. Warning – Risk of explosive gasses

- a. **Working in the vicinity of a lead-acid battery is dangerous, batteries generate explosive gasses during normal battery operation. For this reason, it is of utmost importance, if you have any doubt, that each time before using the charger, you read this manual and follow the instructions.**
- b. To reduce risk of battery explosion, follow these instructions and those published by the battery manufacturer and manufacturer of any equipment you intend to use in the vicinity of the battery. Review warning marks on all these products and on the engine.

### 2. Personal precautions

- a. When working near a lead-acid battery, someone should be within range of your voice, close enough to come to your aid.
- b. Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing or eyes.
- c. Wear complete eye, hand and clothing protection. Avoid touching eyes when working with batteries.
- d. If battery acid contacts skin or clothing, wash immediately with soap and water. If acid enters eyes, immediately flood eye with cool, clean running water for at least 15 minutes and get medical attention immediately.
- e. **NEVER** smoke or allow a spark or flame in vicinity of battery or engine.
- f. Be extra cautious to reduce risk of dropping a metal tool onto a battery. It could spark or short circuit the battery or, any other electrical part possibly causing an explosion.
- g. When working with a lead-acid battery, 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, or the like to metal, which may cause severe burns.
- h. Use the battery charger for charging **“lead-acid batteries only”**. Do not use for charging dry-cell or Ni-Cad batteries that are commonly used with home appliances. For example, radios, torches etc. These batteries may explode and cause injury to persons and damage property. **For gel filled and other sealed batteries use BCI model only.**
- i. **NEVER** charge or boost a frozen battery.
- j. **NEVER** allow clamps to touch one another or to contact the same piece of metal to prevent arcing.

### 3. Other important safety instructions

- a. Do not use the charger in damp or wet conditions.
- b. Keep out of the reach of children.
- c. Do not submerge in water.
- d. Do not operate near flammables such as petrol, paraffin, or thinners etc.
- e. If the charger receives a sharp blow or is otherwise damaged in any way, do not disassemble. Have it checked by a qualified service person. Return to source.

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## 5. HEALTH & SAFETY INFORMATION

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### **5.2 SAFETY FEATURES**

All battery chargers covered by this manual are fitted with the following safety features:

1. **Short circuit protection.**
2. **Thermal overload protection.**

### **5.3 CONNECTION TO THE POWER SUPPLY**

Make sure the power supply information on the machine's rating plate are compatible with the power supply you intend to connect it to.

This charger comes supplied with a UK standard 3 pin plug fitted. It is designed for connection to a domestic power supply rated at 230V AC.

Because it is constructed mostly of metal parts, it is a Class 1 machine; meaning, it must have an earth connection in the power supply. This is to prevent electrocution in the event of a failure.

Apart from replacing the fuse in the plug, no other electrical work is recommended on this charger.



# 6. TECHNICAL DESCRIPTION

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## 6.1 IDENTIFICATION



- ① Ammeter
- ② On/off switch
- ③ 6V/12V switch
- ④ Protection reset button
- ⑤ Mains lead and plug
- ⑥ Battery terminal positive (RED) clamp
- ⑦ Battery terminal negative (BLACK) clamp
- ⑧ Folding carry handle

## 6. TECHNICAL DESCRIPTION

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### 6.2 MAIN COMPONENT DESCRIPTIONS

- ① **Ammeter:**  
Used to display the charging current during the charging process.
- ② **On/off switch:**  
Used to turn on the machine and commence charging.
- ③ **6V/12V switch:**  
Used to select either the 6V or 12V charging function depending on the battery type.
- ④ **Protection reset button:**  
When the charger's protection feature activates, this button will pop out and charging will stop. Press this button in to re-set the protection feature and re-commence charging only after correcting the cause of the activation.
- ⑤ **Mains lead and plug:**  
Used to supply the charger with power from a domestic 13A socket.
- ⑥ **Battery terminal positive (RED) clamp:**  
Used to connect the charger to the battery.
- ⑦ **Battery terminal Negative (BLACK) clamp:**  
Used to connect the charger to the battery.
- ⑧ **Folding carry handle:**  
Folding carry handle for ease of carrying. Folds flat for storage.

## 7. UNPACKING & CHECKING

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### 7.1 PACKAGING

Carefully remove the charger from the packaging and examine it for any sign of damage that may have happened during shipping. Lay the contents out and check them against the parts shown below. If any part is damaged or missing; please contact the Draper Helpline (the telephone number appears on the Title page) and do not attempt to use the charger.

The packaging material should be retained at least during the guarantee period: in case the machine needs to be returned for repair.

Warning! Some of the packaging materials used may be harmful to children. Do not leave any of these materials in the reach of children.

If any of the packaging is to be thrown away, make sure they are disposed of correctly; according to local regulations.

### 7.2 WHAT'S IN THE BOX?



- ⑨ Battery charger.
- ⑩ Instruction manual.

## 8. OPERATION AND USE

### 8.1 BEFORE CHARGING YOUR BATTERY

We recommend that the battery is disconnected from the vehicle, this will avoid any possible damage to the alternator. Loss of codes for audio and security etc, can be prevented by connecting a Draper Memory Saver – Stock No. 22277 12V socket type (Fig.1), or Stock No. 22231 EOBD 16pin diagnostic socket type (Fig.2) before disconnecting the battery. Check that the voltage of the battery matches that of the charger.

Before connecting the battery to the charger ensure that both are stable and on a level surface. If the battery has cell filler caps, loosen or remove them to aid in the escape of charging gasses (if the battery is a Gel or maintenance free/sealed type, please refer to the appropriate section below). Once the cell caps have been loosened or removed it is advisable to check the level of electrolyte in each cell and top up with distilled water only to the recommended fill level.

**Caution!** Never top up your battery with tap water.

#### Maintenance free batteries (low maintenance batteries)

These batteries often have cells with no filler caps and therefore cannot be topped up with distilled water so we strongly recommend the use of a Draper Automatic Charger (BC8A or BCI) for charging these types of batteries. However, if using Part No.BC5, BC6 or BC12 for charging these batteries, it is important that during the charging they are not allowed to "gas" because this will reduce the level of electrolyte which cannot be replaced. You should take extra care when the battery reaches "full" during charging and do not use the "fast" charge option on such batteries.

#### Gel filled and other sealed batteries (Use BCI model only)

This type of battery normally contains gel electrolyte and may be referred to as "dry fit". They are most commonly used in applications such as, electric golf trolleys, mobility wheelchairs, camping, caravanning and marine activities etc. To charge this type of battery we strongly advise you only to use the Draper Intelligent Charger (BCI), which is fitted with temperature sensor compensation which allows continuous adjustment of the unsupervised charge to avoid overcharging and loss of electrolyte by "gassing" which can shorten the life of the battery.

FIG. 1



FIG. 2



Stock No's.22277 & 22231  
(available separately)

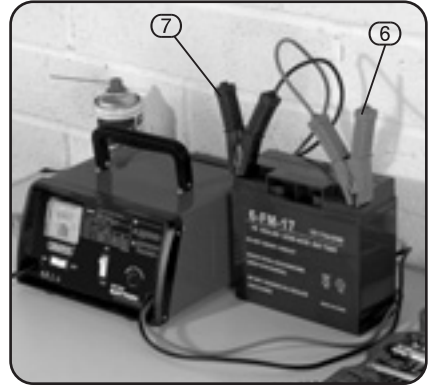
## 8. OPERATION AND USE

### 8.2 CHARGING A BATTERY

**With a battery removed from vehicle:**

1. Connect the RED positive charger lead (6) to the positive (+) terminal on your battery.
2. Connect the BLACK negative charger lead (7) to the negative (-) terminal on your battery.
3. Set the charger's 6V/12V switch (3) to the correct voltage for the battery to be charged.
4. Plug in the mains power lead and set the charger's on/off switch (2) to 'on'. Charging will now commence.

**NOTE:** Refer to the section titled "charging times" to determine the correct charging time for your battery/charger combination.



**With a battery connected to vehicle:**

**NOTE:** All loads in the vehicle must be switched off during charging.

1. Connect the RED positive charger lead (6) to the positive (+) terminal on your battery.
2. Connect the BLACK negative charger lead (7) to your vehicles ground connection on either the engine or chassis, away from any fuel lines or the battery vents.
3. Set the charger's 6V/12V switch (3) to the correct voltage for the battery to be charged.
4. Plug in the mains power lead and set the charger's on/off switch (2) to 'on'. Charging will now commence.

**NOTE:** Refer to the section titled "charging times" to determine the correct charging time for your battery/charger combination.








## 8. OPERATION AND USE

### 8.3 BATTERY INFORMATION

Before proceeding with the charging of the battery ensure that the battery to be charged is within the recommended amperage range for the charger (see table below).

PART No.	RECOMMENDED MIN. Ah.		RECOMMENDED MAX. Ah.	
	6V	12V	6V	12V
BCD5	5Ah	5Ah	45Ah	45Ah
BCD6	7Ah	7Ah	55Ah	55Ah
BCD9	10Ah	10Ah	85Ah	85Ah

If the battery amperage rating is not stated or you are unsure about the rating please see the table below for some typical readings.

Engine Capacity					
<1300cc	5 - 15Ah	15 - 30Ah	35 - 45Ah	-	60 - 110Ah
>1300cc	-	-	45 - 65Ah	45 - 65Ah	60 - 110Ah
Diesel	-	-	60 - 90Ah	60 - 90Ah	60 - 110Ah

### 8.4 CHARGING TIMES

The charging time depends on the batteries charge condition. A partially charged battery will take less time to charge than a fully discharged battery. The approximate charging time for a battery can be calculated using the following equation:-

$$\text{Charging time/hours} = \frac{\text{Capacity in Ah (battery)}}{\text{Charger output (Amps)}}$$

For example, a 45Ah battery would require approximately 11 hours to charge from a 4.2A battery charger. As your battery nears fully charged status, the ammeter indication needle will return to near the '0' position in the green area of the ammeter display to indicate the battery is fully charged.

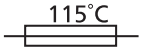
## 9. EXPLANATION OF SYMBOLS

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### 9.1 EXPLANATION OF SYMBOLS FEATURED ON THE RATING LABEL



This symbol indicates that this machine is for domestic indoor use only!



This symbol indicates that this machine is fitted with automatic overload protection.



This symbol indicates that this machine is a class 1 device and must be connected to an earth/neutral to avoid the risk of electrocution in the event of any malfunction/misuse.



Warning!



Danger! explosive gases.



Read instruction manual before use.



Positive.



Negative.



Do not dispose of WEEE\* as unsorted municipal waste. (General household rubbish).



Note: After an extended period of charging the back of this machine can become warm. This machine must be used on a non flammable surface.

\*Waste Electrical & Electronic Equipment.

## 10. MAINTENANCE

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### **10.1 MAINTENANCE**

After use, the machine should be cleaned of any dirt or grease before coiling up the leads and storing it away in a dry, clean environment out of the reach of children.



# 11. DISPOSAL

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## 11.1 DISPOSAL

- At the end of the machine's working life, or when it can no longer be repaired, ensure that it is disposed of according to national regulations.
- Contact your local authority for details of collection schemes in your area.

In all circumstances:

- Do not dispose of power tools with domestic waste.
- Do not incinerate.
- Do not abandon in the environment.
- Do not dispose of WEEE\* as unsorted municipal waste.



\* Waste Electrical & Electronic Equipment.









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