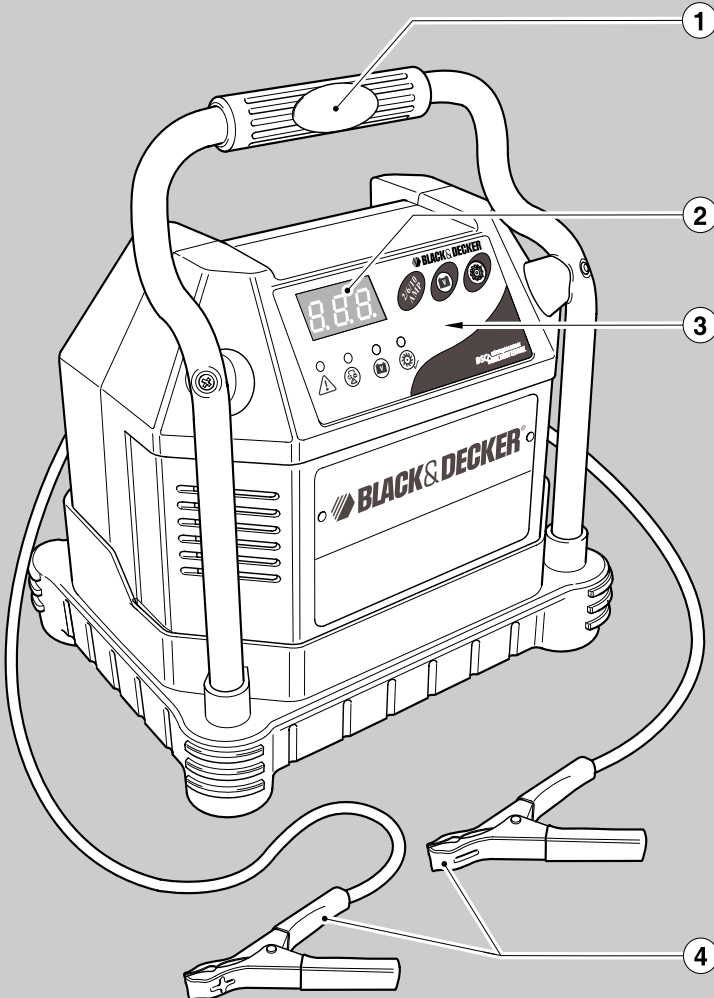


# **BLACK & DECKER®**

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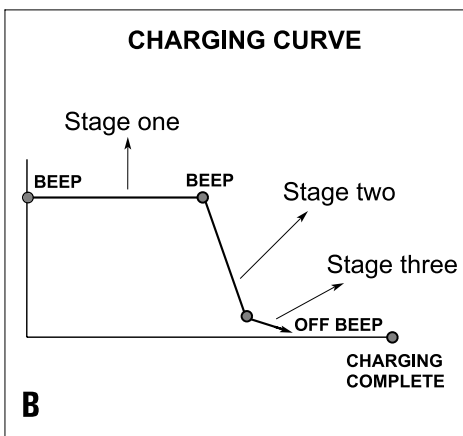
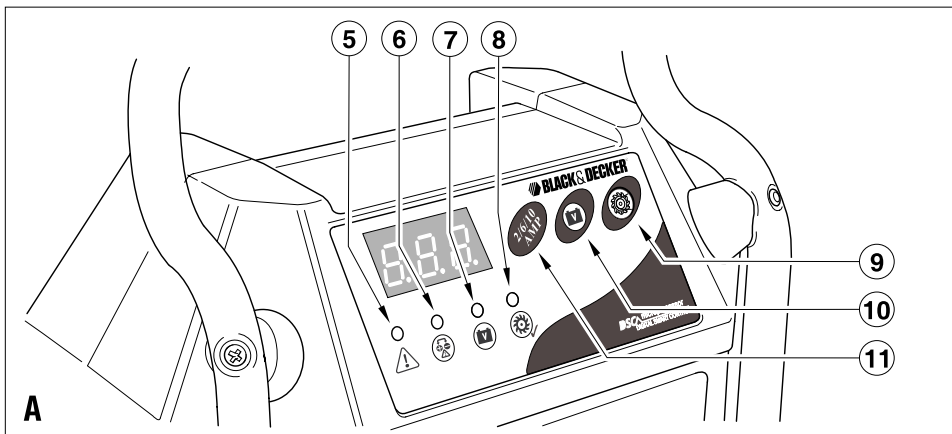


**UK**

**Ireland**

**Australia**

**New Zealand**



## Intended use

Your Black & Decker battery charger is designed to charge lead-acid batteries. This product is intended for household, consumer use only.

## Safety instructions

**Warning!** When using mains-powered appliances, basic safety precautions, including the following, should always be followed to reduce the risk of fire, electric shock, personal injury and material damage.

- ◆ Read all of this manual carefully before using the appliance.
- ◆ The intended use is described in this manual. The use of any accessory or attachment or the performance of any operation with this appliance other than those recommended in this instruction manual may present a risk of personal injury.
- ◆ Retain this manual for future reference.

## Using your appliance

Always take care when using the appliance.

- ◆ This appliance is not intended for use by young or infirm persons without supervision.
- ◆ The appliance is not to be used as a toy.
- ◆ Use in a dry location only. Do not allow the appliance to become wet.
- ◆ Do not immerse the appliance in water.
- ◆ Do not open body casing. There are no user-serviceable parts inside.
- ◆ Do not operate the appliance in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.
- ◆ To reduce the risk of damage to plugs and cords never pull the cable to remove the plug from a socket outlet.

## After use

- ◆ When not in use, the appliance should be stored in a dry, well ventilated place out of the reach of children.
- ◆ Children should not have access to stored appliances.
- ◆ When the appliance is stored or transported in a vehicle it should be placed in the boot or restrained to prevent movement following sudden changes in speed or direction.

## Inspection and repairs

- ◆ Before use, check the appliance for damaged or defective parts. Check for breakage of parts, damage to switches and any other conditions that may affect its operation.
- ◆ Do not use the appliance if any part is damaged or defective.
- ◆ Have any damaged or defective parts repaired or replaced by an authorised repair agent.
- ◆ Never attempt to remove or replace any parts other than those specified in this manual.

## Power cord safety

**Warning!** Never alter the ac power cord or plug. If it will not fit, have a proper outlet installed by a qualified electrician. Improper connection may result in an electric shock.

## Specific safety instructions for battery chargers

The following symbols are marked on the appliance:



This appliance is double insulated; therefore no earth wire is required. Always check that the power supply corresponds to the voltage on the rating plate.

Read these instructions before use:

- ◆ If the supply cord is damaged, it must be replaced by the manufacturer or an authorised Black & Decker Service Centre in order to avoid a hazard.
- ◆ Never attempt to charge non-rechargeable batteries.
- ◆ Have defective cords replaced immediately.
- ◆ Do not expose the battery charger to water.
- ◆ Do not open the battery charger.
- ◆ Do not probe the battery charger.
- ◆ Never allow the red and black battery clamps (4) to touch each other or another common metal conductor. This could cause damage to the appliance and/or create a spark/explosion hazard.
- ◆ Always store the battery clamps (4) in the storage provided when not in use.

## Batteries

**Warning!** Never attempt to charge a frozen battery.

- ◆ Under extreme conditions, battery leakage may occur. When you notice liquid on the batteries, carefully wipe the liquid off using a cloth. Avoid skin contact.
- ◆ In case of skin or eye contact, follow the instructions below.

**Warning!** Battery fluid is a diluted sulphuric acid and may cause personal injury or damage to property. In case of skin contact, immediately rinse with water. If redness, pain or irritation occurs seek medical attention. In case of eye contact, rinse immediately with clean water and seek immediate medical attention.

- ◆ When disposing of batteries, follow the instructions given in the section "Protecting the environment".
- ◆ Add distilled water in each cell until the battery acid reaches the level specified by the battery manufacturer. This helps to purge excess gas from the cells. Do not overfill. For a battery without cell caps (maintenance free), carefully follow the manufacturer's charging instructions.
- ◆ Study all the battery manufacturer's specific precautions, such as removing or not removing cell caps while charging, and the recommended charging rates.
- ◆ Make sure that the initial charging rate does not exceed the battery manufacturer's requirement.

**Warning!** Risk of explosive gas mixtures. 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 each time, before using your battery charger, you read this manual and follow the instructions exactly.

- ◆ Use of an attachment not recommended or sold by Black & Decker may result in a risk of fire, electric shock, or injury to persons.
- ◆ 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, and will void the warranty.

### Personal safety

Wear complete eye protection and suitable clothing to give protection from contact with battery fluid.

Avoid touching the eyes while working with a battery. Acid, acid particles or corrosion may get into the eyes.

Remove personal metal items such as rings, bracelets, necklaces and watches when working with a lead-acid battery. A lead-acid battery can produce a short circuit current high enough to cause a severe burn.

Be extra cautious to reduce the risk of dropping a metal object onto the battery. This might cause sparks or short-circuit the battery or other electrical part, which can cause an explosion.

### Preparation before charging

The appliance must only be connected to a 12 V lead-acid battery. Before charging, confirm that the voltage of the battery is 12 V by referring to the label on the battery or from the information available relating to its application e.g. car user manual.

Do not use the appliance for charging dry-cell batteries that are commonly used with home appliances. These batteries may burst and cause injury to persons and damage to property.

**Warning!** Explosive gas may be vented from lead acid batteries when charging. Make sure that the area is well ventilated and remove any sources of ignition when conducting charging procedures.

- ◆ Position the battery charger as far away from the battery as the leads will allow. The battery charger contains switches that may create a spark.
- ◆ Do not place the battery charger above or stand the battery charger on top of the battery.
- ◆ Explosive gases may collect near the ground. Locate the battery charger as high as possible above ground level.
- ◆ Do not use power tools in the charging area.
- ◆ Do not smoke or have naked flames in the charging area.

- ◆ Follow the instructions for connecting and disconnecting the battery charger leads or battery terminals.

A marine (boat) battery must be removed and charged on shore. To charge it on board requires equipment specially designed for marine use. This appliance is NOT designed for such use.

Vehicles may have electrical and electronic systems (e.g. engine management systems, mobile phones) that may be damaged if subjected to high starting voltages and voltage peaks. Before connecting the appliance to the vehicle, read the vehicle's owner's manual to confirm that external charging is allowed.

- ◆ Follow these instructions and those published by the battery manufacturer and vehicle manufacturer.
- ◆ Only connect and disconnect the dc output clamps after removing the supply cord from the electric outlet. Never allow clamps to touch each other.
- ◆ Check the polarity of the vehicle battery terminals before connecting the appliance. Always disconnect the negative (black) cable first: followed by the positive (red) cable.

When charging a battery installed in the circuit follow the manufacturers instructions for accessing the battery and the following:

- ◆ Do not charge the battery while the engine is operating.
- ◆ Be aware that engine components e.g. the coolant fan may start automatically. Keep hands and body away from engine components and position the battery charger and cables to prevent contact.
- ◆ Make sure that the battery charger and the cables are located to prevent damage from closure of doors and engine compartment covers.
- ◆ Make sure that the connections can be made without touching the metal body or components adjacent to the battery.
- ◆ When using this appliance in proximity to the vehicle's battery and engine, stand the appliance on a flat, stable surface and be sure to keep all clamps, cords, clothing and body parts away from moving parts of the vehicle.
- ◆ If it is necessary to remove the battery from the vehicle to charge or to clean the terminals, make sure that all accessories in the vehicle are switched off, so as not to cause a spark.
- ◆ To reduce the risk of electric shock, disconnect the appliance from any power source before attempting maintenance or cleaning. Turning off controls without disconnecting the appliance will not reduce this risk.

### Connecting the battery charger

When all the preparations for charging and personal safety have been completed, proceed as follows:

- ◆ For most automotive and similar applications the battery charger may be connected to the battery while it is connected to the dc circuit. If this is acceptable follow the instructions given in "Charging a battery installed in the circuit".
- ◆ If the battery must be disconnected from the circuit before charging, follow the instructions given in "Charging a battery disconnected from the circuit".

**Warning!** A marine (boat) battery must be removed and charged on shore. To charge it on-board requires equipment specially designed for marine use.

### Charging a battery installed in the circuit.

Incorrect connection, battery short circuit, location of battery and location of the battery charger may create a hazard. Make sure that adequate preparation has been made before proceeding.

**Warning!** If the battery posts cannot be accessed or the battery charger clamps will contact the bodywork or components adjacent to the battery, the battery must be removed before charging. Follow the manufacturer's instructions to remove the battery.

Check the polarity of the battery posts. A positive (POS, P, +) battery post usually has a larger diameter than the negative (NEG, N, -) battery post.

Follow the manufacturers' instructions to remove any insulating covers from the battery posts.

Connect the positive (red) clamp from the battery charger to the positive (POS, P, +) post of the battery.

Connect the negative (black) clamp from the battery charger to the negative (NEG, N, -) post of the battery.

When disconnecting the battery charger from the battery, always:

- ◆ Switch off and unplug the battery charger.
- ◆ Remove the negative clamp first.
- ◆ Remove the positive clamp last.
- ◆ Refit any insulating covers to the battery posts.

### Charging a battery disconnected from the circuit.

**Warning!** Incorrect connection, battery short circuit, location of battery and location of the battery charger may create a hazard. Make sure that adequate preparation has been made before proceeding.

If the battery is not already removed from the circuit, follow the manufacturers' instructions to remove the battery before charging.

Check the polarity of the battery posts. A positive (POS,P, +) battery post usually has a larger diameter than the negative (NEG, N, -) battery post.

Connect the positive (red) clamp from the battery charger to the positive (POS, P, +) post of the battery.

Connect the negative (black) clamp from the battery charger to the negative (NEG, N, -) post of the battery.

When disconnecting the battery charger from the battery, always:

- ◆ Switch off and unplug the battery charger.
- ◆ Remove the negative clamp first.
- ◆ Remove the positive clamp last.
- ◆ Refit any insulating covers to the battery posts.

## Features

1. Carry handle
2. Digital display
3. Control panel
4. Battery clamps

## Use

### Overview of the battery charger (fig. B)

The Black & Decker battery charger has a high-charge rate of up to 10 A, and a low-charge rate of 2 A. It is designed for charging 12 V lead-acid batteries only, i.e. conventional automotive, maintenance-free, marine deep cycle and gel batteries as used in cars, trucks, farm equipment, boats, lawn mowers/garden tractors, motorcycles and various other applications.

The battery charger features 3-stage high-efficiency charging technology using built-in microprocessor control which ensures fast, safe and complete charging of serviceable batteries.

### Stage 1 - rapid start charge

Stage 1 is a rapid start charge at 10 A to deliver maximum charging amperage to "wake up" any serviceable 12 V battery and allows for quick engine starting. When the battery reaches a maximum safe predetermined voltage, the battery charger will beep and begin stage 2 of the charging process.

### Stage 2 - absorption charge

Stage 2 is an absorption charge which maintains the maximum possible charge at a constant, safe, predetermined voltage. During this phase, the charging voltage remains constant, while the charging current is reduced to allow for the maximum proper internal chemical energy transfer.

At the end of stage 2, the battery charger will automatically begin stage 3 of the charging process.

### Stage 3 - top-off charge

Stage 3 is a top-off charge. The voltage is automatically regulated and is reduced to a predetermined level while the current is adjusted for a safe, effective battery charge. At the conclusion of stage 3, the appliance will beep, signalling the completion of the charging cycle.

### Function pushbuttons (fig. A)

The function pushbuttons on the control panel (3), from left to right, are:



**2/6/10A pushbutton (11)** (charge rate selector step 2). This pushbutton allows the user to select the charge rate based on the battery size. This selection and the actual battery charge rate are monitored by the microprocessor. The battery charger will stop charging if the rate is too fast or too slow for the battery size or condition.



**Battery voltage pushbutton (10).** This pushbutton enables a check to measure the battery voltage.



**Alternator check pushbutton (9).** This pushbutton enables a five-second check that measures the battery voltage. This check is repeated at various electrical load levels and the tests allow the user to determine if the alternator can keep up with the loads. It can indicate whether an alternator service may be required.

### Control panel LEDs (fig. A)

The following icons are shown on your battery charger:



**Fault LED (5).** Lights when any of several faults are detected, see **F01** through **F05** Codes as described in the "Troubleshooting" section, later in this manual.



**Reverse polarity LED (6)** - lights when the battery clamps (4) are incorrectly connected to the battery terminals.



**Battery voltage LED (7)** - lights when the battery voltage pushbutton (10) is pressed.



**Alternator good LED (8)** - lights when load or no load checks show that the alternator is keeping up with the electrical load.

### Charge rate selection (fig. A)

- ◆ This appliance has three charge rate settings, accessed by the 2/6/10A pushbutton (11):
  - 2 amps: smaller batteries, as in lawn mowers, motorcycles, etc.
  - 6 amps: mid-sized batteries, as in small cars.
  - 10 amps: automobiles and light trucks.

- ◆ After the battery clamps (4) are correctly connected, plug in the battery charger to a 230 Vac outlet. The battery charger will show a circulating pattern on the digital display (2), to indicate that power has been applied. Select the proper charge current rate based on battery size.

### Charging the battery (fig. A)

- ◆ Press the 2/6/10A pushbutton (11), the appliance sounds a beep and displays the charging current. The battery charger starts charging at 2 amps automatically if the 2/6/10A pushbutton (11) is not pressed within 3 minutes after applying AC power.
- ◆ The battery charger will occasionally sound a beep and display **0.0** during self-test or during the charging stage changes.
- ◆ Pressing the 2/6/10A pushbutton (11) again will advance the charge rate to 6 A, and again to 10 A. Pressing the pushbutton (11) again will turn OFF the battery charger output and the digital display (2) will show **000**.

**Note:** This selection and the actual battery charge rate are monitored by the microprocessor and the unit will stop charging if the selected rate is too fast or too slow for battery size or condition.

- ◆ As the battery nears full charge capacity, the unit's output will automatically drop to a lower charge rate.
- ◆ The digital display (2) shows the charge current. To view the battery voltage, press the battery voltage pushbutton (10). The battery charger will sound a beep and display the battery voltage.
- ◆ Press the battery voltage pushbutton (10) again to display the charge current.
- ◆ The digital display (2) shows **FUL** when the battery is fully charged.
- ◆ Disconnect the ac power cord first, then the negative clamp, and finally the positive clamp.

### Automatic float charging (fig. A)

The automatic float charge feature is ideal for maintaining a battery. It automatically tops off the battery as required to keep the battery fully charged all the time.

- ◆ Keep the ac power and battery connected when the battery has been fully charged.
- ◆ The battery charger monitors the battery and tops it off as needed.
- ◆ The digital display (2) shows **FLO** when topping off the battery and returns to **FUL** when completed.
- ◆ To view the battery voltage, press the battery voltage pushbutton (10).

**Warning!** If the battery size is not known, charge at the 2 A rate. DO NOT overcharge batteries.

## Alternator check (fig. A)

**Warning!** Check only 12 Vdc systems.

### Part 1 (no load)

- ◆ Make sure that there is no load on the alternator by turning off all the vehicle's accessories.
- ◆ The battery must be fully charged before testing the alternator.
- ◆ Run the engine long enough to achieve normal idle speed and verify that there is a no-load voltage.
- ◆ Press the alternator check pushbutton (9) to start the check.
- ◆ The alternator good LED (8) will light to indicate that the alternator is good, or the fault LED (5) will display to indicate that the alternator is out of typical voltage range.
- ◆ Press the alternator check pushbutton (9) again to stop the test.

### Part 2 (under load)

- ◆ Load the alternator by turning on as many accessories as possible, except for air-conditioning and defrost.
- ◆ Press the alternator check pushbutton (9) to start the test.
- ◆ The alternator good LED (8) will light to indicate that the alternator is good, or the fault LED (5) will light to indicate that the alternator is out of typical voltage range.
- ◆ Press the alternator check pushbutton (9) again to stop the test.

If the first alternator check indicates a good alternator and the second indicates the alternator is not good, the problem could be caused by any of the following:

- ◆ Loose fan belts.
- ◆ An intermittent diode failure.
- ◆ Bad connections between the battery and alternator and/or ground.

**Note:** The battery voltage pushbutton (10) is disabled in the alternator check mode.

**Note:** The fault LED (5) may display because a number of extra accessory loads have been added to the charging system, thereby increasing current demand from the alternator. Make sure that the alternator is rated to support the application.

**Note:** This check may not be accurate for every make, manufacturer and model of vehicle.

### Approximate charging times

The battery charger will automatically adjust the charge rate as the battery becomes charged and stop charging when the battery is fully charged. Deep cycle batteries may require longer charging times.

For estimates of the time it takes to charge a battery, refer to the following table:

Rate	% of charge in the battery			
	75%	50%	25%	0%
2A	7 hrs	14 hrs	NR*	NR*
6A	2.5 hrs	4.7 hrs	7 hrs	9.2 hrs
10A	1.4 hrs	2.8 hrs	4.2 hrs	5.5 hrs

\*NR = Not recommended at 2 A - use a higher charge rate.

The times shown in the table above are approximate and refer to a 50 Ah automotive battery.

### Example

A 50 Ah, 12 Vdc battery is discharged (50%). To determine the time it takes to charge at the 10 A rate, see the chart above under "50%" and "at 10 A rate".

The battery charging times will vary depending on the size, age and condition of the battery. Smaller batteries should be charged at a lower rate (2 A) and an extra hour added to the charge time.

## Maintenance

Your Black & Decker tool has been designed to operate over a long period of time with a minimum of maintenance. Continuous satisfactory operation depends upon proper tool care and regular cleaning.

**Warning!** Before performing any maintenance or cleaning on the appliance, unplug the appliance.

- ◆ From time to time wipe the appliance with a damp cloth. Do not use any abrasive or solvent-based cleaner. Do not immerse the appliance in water.
- ◆ After each use, clean the battery clamps (4) and be sure to remove any battery fluid that will cause corrosion of the clamps (4).
- ◆ Clean the outside case of the battery charger with a soft cloth and, if necessary, mild soap solution.
- ◆ Do not allow liquid to enter the battery charger. Do not operate when the battery charger is wet.
- ◆ Keep the battery charger cords loosely coiled during storage to prevent damage to the cords.

## Troubleshooting

Display indications, common problems and possible solutions:

### No Functions

- ◆ Make sure that the battery charger is plugged into a live 230 Vac outlet.
- ◆ Follow the steps outlined in the "Connecting the battery charger" at the front of this manual.

### F01 - Internal shorted cell battery

If the battery being charged has an internal shorted cell, **F01** will be displayed. We recommend taking your battery to a certified automotive service centre for evaluation.

### F02 - Bad battery connection or battery voltage too low to accept a charge

When **F02** is displayed, the most common cause is a poor connection to the battery.

- ◆ Follow the steps outlined in "Safety instructions" at the front of this manual to disconnect the ac power cord and the battery clamps (4), clean the battery terminals and reconnect the battery charger.
- ◆ If the situation persists, we recommend taking your battery to a certified automotive service centre for evaluation.

### F03 - Internal open cell

- ◆ Have the battery checked by a certified automotive service center.

### F04 - Overtime condition

F04 is displayed when the charging time exceeds 18 hours. You may be using a charging rate that is too low for the size of the battery. Select a higher charging rate to charge the battery.

### F05 - Overheated condition

F05 is displayed to indicate that the battery charger is overheating. The ventilation grill of the battery charger may be blocked.

- ◆ Follow the steps outlined in "Safety instructions" at the front of this manual to disconnect the ac power cord and the battery clamps (4), allow the appliance to cool for 30 minutes and reconnect.
- ◆ Make sure that there is ample ventilation before resuming operation.

### Charging a very cold battery

If the battery to be charged is very cold i.e., in temperatures below freezing (0°C/ 32°F), it cannot accept a high rate of charge. The initial charge rate will be low. The charge rate will increase as the battery warms. Never attempt to charge a frozen battery.

### Mains plug replacement (U.K. & Ireland only)

If a new mains plug needs to be fitted:

- ◆ Safely dispose of the old plug.
- ◆ Connect the brown lead to the live terminal in the new plug.
- ◆ Connect the blue lead to the neutral terminal.

**Warning!** No connection is to be made to the earth terminal. Follow the fitting instructions supplied with good quality plugs. Recommended fuse: 3 A.

## Protecting the environment



Should you find one day that your appliance needs replacement, or if it is of no further use to you, think of the protection of the environment. Black & Decker repair agents will accept old Black & Decker tools and ensure that they are disposed of in an environmentally safe way.



Separate collection of used products and packaging allows materials to be recycled and used again. Re-use of recycled materials helps prevent environmental pollution and reduces the demand for raw materials.

Local regulations may provide for separate collection of electrical products from the household, at municipal waste sites or by the retailer when you purchase a new product.

Black & Decker provides a facility for the collection and recycling of Black & Decker products once they have reached the end of their working life. To take advantage of this service please return your product to any authorised repair agent who will collect them on our behalf.

You can check the location of your nearest authorised repair agent by contacting your local Black & Decker office at the address indicated in this manual. Alternatively, a list of authorised Black & Decker repair agents and full details of our after-sales service and contacts are available on the Internet at: [www.2helpU.com](http://www.2helpU.com).



Lead acid batteries can be recharged many times. At the end of their useful life, discard batteries with due care for our environment:

- ◆ Do not dispose of the battery in fire, as this may result in an explosion.
- ◆ Lead acid (Pb) batteries are recyclable. They must not be disposed of with household waste. The battery must be removed and disposed of in accordance with local regulations.
- ◆ Do not short-circuit the battery terminals.
- ◆ Be aware that the battery is heavy.
- ◆ If possible, operate the appliance to run the battery down completely.

Place the battery in a suitable packaging to ensure that the terminals cannot be short-circuited.

Take the battery to your service agent or a local recycling station. Collected batteries will be recycled or disposed of properly.



## Technical data

	BDV1084	
Input voltage	Vac	230
Rated input	W	180
Output voltage	Vdc	12
Output current	A	2/6/10
Weight	kg	1.93

## EC declaration of conformity

BDV1084

Black & Decker declares that these products conform to:  
Standards & Legislation.

EN60335-2-29, EN60598-2-4, EN55014-1, EN55014-2,  
EN61000-3-2, EN61000-3-3



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Black & Decker repair agents and full details of our after-sales service and contacts are available on the Internet at:

**[www.2helpU.com](http://www.2helpU.com)**

Please visit our website **[www.blackanddecker.co.uk](http://www.blackanddecker.co.uk)** to register your new Black & Decker product and to be kept up to date on new products and special offers. Further information on the Black & Decker brand and our range of products is available at **[www.blackanddecker.co.uk](http://www.blackanddecker.co.uk)**.

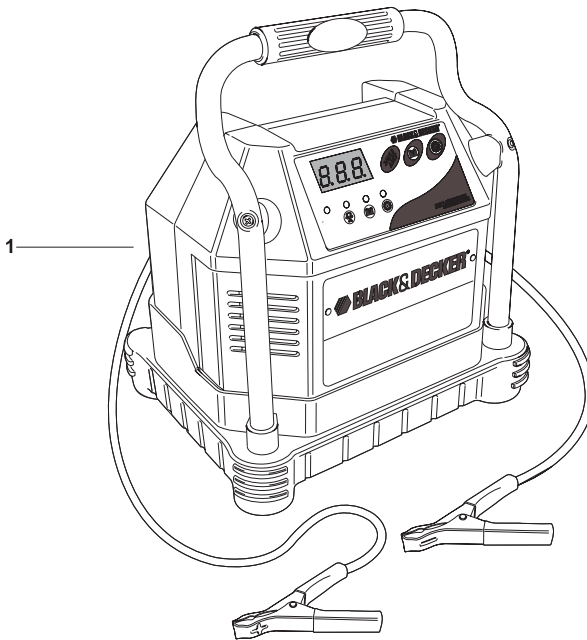
## Guarantee

Black & Decker is confident of the quality of its products and offers an outstanding guarantee. This guarantee statement is in addition to and in no way prejudices your statutory rights. The guarantee is valid within the territories of the Member States of the European Union and the European Free Trade Area.

If a Black & Decker product becomes defective due to faulty materials, workmanship or lack of conformity, within 24 months from the date of purchase, Black & Decker guarantees to replace defective parts, repair products subjected to fair wear and tear or replace such products to make sure of the minimum inconvenience to the customer unless:

- ◆ The product has been used for trade, professional or hire purposes.
- ◆ The product has been subjected to misuse or neglect.
- ◆ The product has sustained damage through foreign objects, substances or accidents.
- ◆ Repairs have been attempted by persons other than authorised repair agents or Black & Decker service staff.

To claim on the guarantee, you will need to submit proof of purchase to the seller or an authorised repair agent. You can check the location of your nearest authorised repair agent by contacting your local Black & Decker office at the address indicated in this manual. Alternatively, a list of authorised





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