

PROJECTA

**WORKSHOP
BATTERY CHARGER**



HDBC33

P/No HDBC21 & HDBC33

IMPORTANT SAFETY INFORMATION

Please read this manual thoroughly before use and store in a safe place for future reference.

WARNING

- Explosive gases. Prevent flames and sparks. Provide adequate ventilation during charging.
- Before charging, read the instructions.
- For indoor use. Do not expose to rain.
- For charging lead acid batteries ONLY (of the size & voltage specified in the specifications table).
- Always charge the battery on the correct voltage setting. Never set the charger to a higher voltage than the battery.
- Disconnect the 240V mains supply before making or breaking the connections to the battery.
- The battery charger must be plugged into an earthed socket-outlet.
- Connection to supply mains is to be in accordance with National wiring rules.
- Do not attempt to charge non-rechargeable batteries.
- Never charge a frozen battery.
- If the AC cord is damaged do not attempt to use. It must be replaced or repaired by a qualified person.
- Corrosive substances may escape from the battery during charging and damage delicate surfaces. Store and charge in a suitable area.
- Ensure all vehicle accessories including lights, heaters, appliances etc are turned off prior to charging.
- 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 use of the appliance by a person responsible for their safety.
- Young children should be supervised to ensure that they do not play with the appliance.

FEATURES

CHARGE METER

Clearly displays the rate of charge in Amps to ensure an accurate and thorough charge.

ENGINE START FUNCTION

Starts vehicles with a flat battery after a controlled 5 minute charge.

BOOST CHARGE

Increases charge rate for a short, powerful charge.

12/24V OPERATION (HDBC33 only)

Can be used to charge 12 or 24V batteries.

POLARITY PROTECTION

Fuse protection prevents damage to the charger in the event of reverse polarity and short circuit.

CHARGING & ENGINE START INSTRUCTIONS

STEP 1 – CHECK THE ELECTROLYTE LEVEL

Prior to charging the battery, remove the vent caps and check the electrolyte level. (Not required on sealed & maintenance free batteries). The electrolyte should be 6mm (1/4") above the battery's plates. If low, top up the electrolyte with distilled water to the correct level and refit the vent caps.

STEP 2 – SET BATTERY VOLTAGE (HDBC33 only)

The positive DC charging lead is fitted with a ring terminal. To select or change the battery voltage, connect the positive DC charging lead to the terminal labelled +12V or +24V as required. Always ensure the terminal is firmly secured by tightening the plastic knob by hand.

STEP 3 – CONNECT TO BATTERY

There are two options for connecting to battery.

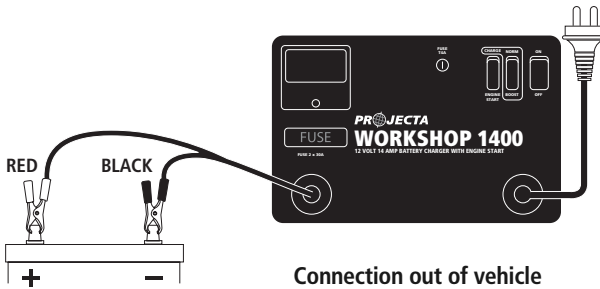
Step 3A – Connecting to a battery that is out of the vehicle

Step 3B – Connecting to a battery fitted to a vehicle

STEP 3A – BATTERY OUT OF VEHICLE

Connect the RED lead (battery clip) from the charger to the Positive (+) battery post.

Connect the BLACK lead (battery clip) from the charger to the Negative (-) battery post.



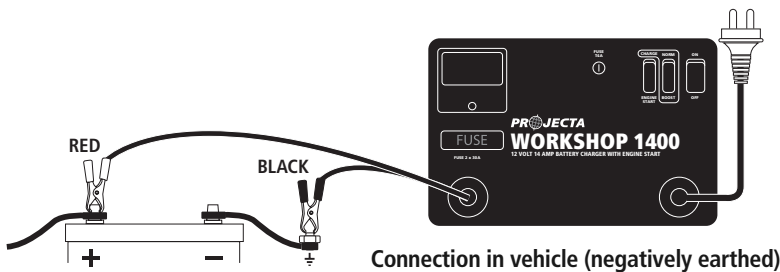
STEP 3B – BATTERY IN VEHICLE

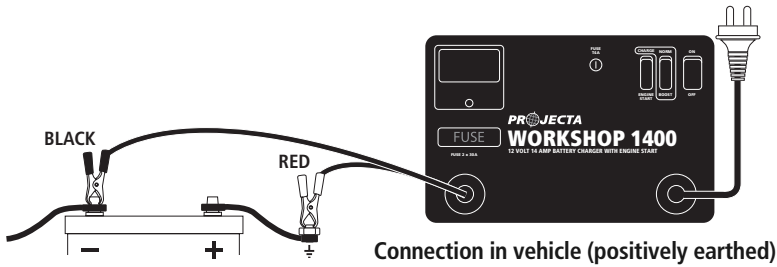
Determine if the vehicle is Positively (+) or Negatively (-) earthed. Negatively earthed vehicles have a cable (usually black) from the Negative battery terminal to the vehicle's chassis.

Negatively earthed (Most Vehicles)

Connect the RED lead (battery clip) from the charger to the Positive (+) battery terminal.

Connect the BLACK lead (battery clip) from the charger to the vehicle's chassis away from the fuel line or moving parts.





Positively earthed

Connect the BLACK lead (battery clip) from the charger to the Negative (-) battery terminal.

Connect the RED lead (battery clip) from the charger to the vehicle's chassis away from the fuel line or moving parts.

STEP 4 – SET CHARGE MODE

NORMAL (recommended)

Switch the Charge/Engine Start switch to CHARGE.

Switch the Norm (Normal)/Boost switch to NORM.

BOOST (increases charge rate for a short powerful charge)

Switch the Charge/Engine Start switch to CHARGE.

Switch the Norm (Normal)/Boost switch to BOOST

Note: Boost mode is intended for short periods of use only. If left on, the charger will automatically cut out to prevent over-heating and possible damage to the battery. The charger will restart once it has cooled down. During cut out the charge meter will read 'zero'. Monitor the battery closely to ensure the battery is not overcharged.

STEP 5 – CONNECT TO MAINS POWER AND TURN ON

Connect the battery charger to 240V mains power and turn on; switch the charger's On/Off switch to ON.

STEP 6A – CHARGING

During charging, the Charge Meter's needle will decrease towards the left. A fully charged battery is indicated by a very low reading according to the battery's capacity and condition.

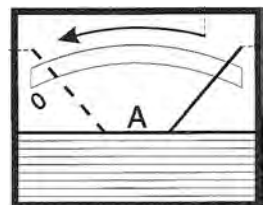
Once this point has been reached, proceed to disconnect the battery (Refer STEP 7 "DISCONNECTION").

Important:

Charging will continue until the On/Off switch is turned to OFF.

The battery and charger must be monitored to ensure the battery is not overcharged.

Once charged, the liquid inside the battery may start to boil. It is recommended to stop charging when this occurs to prevent damage to the battery.



Charge Meter

STEP 6B – ENGINE START

- Allow the charger to boost charge the battery for 5 minutes (refer Step 4 "BOOST").
- Switch the Charge/Engine Start switch to ENGINE START and turn the ignition key to start the engine.
- If the engine fails to start after 3 seconds, wait 2 minutes before attempting to start the engine again.

Note: Do not repeat this operation more than 5 times.

STEP 7 – DISCONNECTION

Turn the charger's On/Off switch to OFF.

Turn the 240V mains switch to OFF and disconnect the charger from the 240V mains power.

Battery out of vehicle

Remove the BLACK lead (battery clip) from the battery.

Remove the RED lead (battery clip) from the battery.

Battery in vehicle

Remove the chassis connection.

Remove the battery terminal connection.

SPECIFICATIONS

P/No:	HDBC21	HDBC33	
Type	Manual	Manual	
Input (Nominal)	240VAC, 50Hz	240VAC, 50Hz	
Input Power	300W	800W	
Output Voltage	12V	12V & 24V	
Output Current	11.0A at 12V (normal) 14.0A at 12V (boost)	12.0A at 12V (normal) 20.0A at 12V (boost)	12.0A at 24V (normal) 20.0A at 24V (boost)
Engine Start	3 sec on, 2 min off 80A at 6V	3 sec on, 2 min off 12V 120A at 6V 24V 120A at 12V	
Minimum Start Voltage	0.0V	0.0V	
Back Drain	5mA	12V 5mA	24V 11mA
TYPES OF BATTERIES	12V lead acid batteries	12V & 24V lead acid batteries	
Fuses			
Input (small glass fuse)	1 x 4A	1 x 6.3A	
Output	1 x 30A	2 x 30A	
Size (mm)	290 x 220 x 200	290 x 220 x 200	
Weight	7.0kg	9.5kg	
Approvals	Electrical Safety, EMC	Electrical Safety, EMC	

To order output fuses, use P/No. HDBC30A (20 pieces)

Battery Range	HDBC21	HDBC33	Charge Time (hrs)
Automotive	300–1000CCA	450–1500CCA	6–15
Marine	550–1300MCA	600–1800MCA	8–18

PRODUCT OVERVIEW



FREQUENTLY ASKED QUESTIONS

Q. How do I know if the battery is fully charged?

A. A. The Charge Meter's needle will decrease towards the left. A fully charged battery is indicated by a very low reading. Refer to STEP 6A for an illustration of the Charge Meter.

Alternatively use a Battery Hydrometer (Projecta Part No. BH100). A reading of 1.250 or more in each cell indicates a fully charged battery.

Q. Why does the Charge Meter indicate a fully charged battery straight away?

A. There are four possible reasons why the Charge Meter may indicate a fully charged battery straight away.

1. The battery is fully charged.
2. The battery has taken a surface charge.
3. The battery has a faulty cell.
4. The BATTERY VOLTAGE setting on the charger is set lower than the battery voltage (HDBC33 only).

Q. What is Surface Charge?

A. Batteries unused or left flat for some time build up a resistance to being recharged. When the charger is first connected, these batteries will take a surface charge, and the Charge Meter will indicate a fully charged battery within a short while. The battery however is not fully charged, the charger is voltage sensitive and cannot differentiate between a surface charge and a fully charged battery. After a few hours the battery may start to accept some charge but most batteries with this condition will not recover.

Q. What is a Faulty Cell?

A. 12 Volt batteries contain 6 cells and one faulty cell is enough to ruin your battery. If after eight hours of charging your battery is still flat, you should test the cells using a hydrometer. If one reading is lower than the rest it indicates a faulty cell. It is pointless to continue charging, as the battery needs replacing.

Q. Why does the charger cut out when in Boost Mode?

A. Boost mode is intended for short periods of use only. It increases the charge rate for a short, powerful charge. This can create increased operating temperature. When the charger reaches a predefined temperature it will automatically cut out to protect the charger and the battery. Once it has cooled down it will restart.

Q. Can I use the charger as a power supply?

A. No. The HDBC21 and HDBC33 cannot be used as a power supply. Do not attempt to connect the clamps to anything other than a suitable battery.

Q. What are Volts and Amps?

VOLTS

The term voltage refers to the electrical force or electric potential to do work between two terminals or a good analogy is water pressure in a pipe. For example a battery has 12 Volts between the positive and negative terminals, or a 6 Volt battery has 6 Volts between the positive and negative terminals.

AMPS

The term AMPS is the unit of measure used for current. This can be described as the flow of electric charge in a circuit. Again if you use the water analogy this would refer to how much water is flowing through the pipe.

For example if the current is reading 12 Amps then this is the amount of energy going into the battery.

Q. How does a typical battery charge?

A. A typical flat battery has a low internal resistance, when first connected to a charger the battery will accept a high current. As the battery slowly charges, the voltage and internal resistance will rise causing the battery to accept less and less current.

Distributed by

AUSTRALIA

Brown & Watson International Pty Ltd

Knoxfield, Victoria 3180

Telephone (03) 9730 6000

Facsimile (03) 9730 6050

National Toll Free 1800 113 443

NEW ZEALAND

Narva New Zealand Ltd

22–24 Olive Road

PO Box 12556 Penrose

Auckland, New Zealand

Telephone (09) 525 4575

Facsimile (09) 579 1192