



Battery Charger User Guide

MODEL: DHP-200

INPUT: AC 230V 50-60Hz, 1500W Max.(for charger mode),6000W Max.(for starter mode).

OUTPUT:

Charge: DC 12V, 5A/15A/30A/40A or DC 24V, 5A/15A/30A/40A

Engine Start: DC 12V, 200Am, 5s ON 240s OFF

or DC 24V, 200Am, 5s ON 240s OFF(for starter mode).



Please read and understand all important safety and operating instructions before using this charger. In addition, please read and follow all battery and vehicle manufacturer's instructions and cautionary markings.

SAFETY

SAFETY PRECAUTIONS FOR WORKING IN THE VICINITY OF A BATTERY

- 1) Batteries generate explosive gases during normal operation. Use in well-ventilated area.
- 2) Consider having someone close enough or within the range of your voice to come to your aid when you work near a battery.
- 3) Do NOT smoke, strike a match, or cause a spark in vicinity of battery or engine. Avoid explosive gas, flames and sparks.
- 4) Remove all personal jewelry, such as rings, bracelets, necklaces, and watches while working with a vehicle battery. These items may produce a short-circuit that could cause severe burns.
- 5) Be extra cautious to reduce risk of dropping a metal tool onto the battery. It might spark or short-circuit a battery or other electrical hardware which may cause an explosion or fire.
- 6) Wear complete eye protection, hand and clothing protection. Avoid touching eyes while working near a battery.
- 7) Study all battery manufacturer ' s specific precautions such as removing or not removing cell caps while charging and recommended rates of charge.
- 8) Clean battery terminals before connected with the charger. Be careful to keep corrosion from coming in contact with eyes.
- 9) When it is necessary to remove a battery from vehicle to charge, always remove grounded terminal from battery first. Make sure all accessories in the vehicle are off in order to prevent an arc.
- 10) It is NOT intended to supply power to an extra-low-voltage electrical system or to charge dry-cell batteries. Charging dry-cell batteries may burst and cause injury to persons and property.
- 11) NEVER charge a frozen, damaged, leaking or non-rechargeable battery.
- 12) If battery electrolyte contacts skin or clothing, wash immediately with soap and water. If electrolyte enters eye, immediately flood eye with running clean cold water for at least 15 minutes and get medical attention immediately.

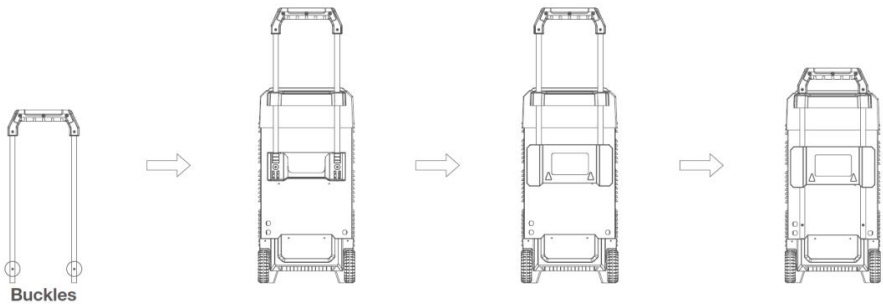
SAFETY PRECAUTIONS FOR USING THE CHARGER

- 1) Do NOT place the charger in the engine compartment or near moving parts or near the battery; place as far away from them as DC cable permits. NEVER place a charger directly above a battery being charged; gases or fluids from battery will corrode and damage charger.
- 2) Do NOT cover the charger while charging.
- 3) Do NOT expose to rain or wet conditions.
- 4) Connect and disconnect DC output only after setting AC cord from electric outlet.
- 5) Use of an attachment not recommended or sold by the manufacturer may result in a risk of fire, electric shock or injury to persons.
- 6) Do not overcharge batteries by selecting the wrong charge mode.
- 7) To reduce the risk of damage to electric plug and cord, pull by the plug rather than the cord when disconnecting charger.
- 8) To reduce risk of electric shock, unplug charger from outlet before attempting any maintenance or cleaning.
- 9) Operate with caution if the charger has received direct hit of force or been dropped. Have it checked and repaired if damaged.
- 10) Any repair must be carried out by the manufacturer or an authorized repair agent in order to avoid danger.
- 11) This battery charger is for use on a nominal 220-240 volt circuit and has a grounded plug. The charger must be grounded, to reduce the risk of electric shock.

ABOUT DHP-200

- 1) DHP-200 is designed for charging all types of 12V lead-acid and 24V lead-acid batteries, including WET (Flooded), MF (Maintenance-Free), EFB (Enhanced Flooded Battery), GEL, AGM (Absorbed Glass Mat) batteries.
- 2) Built-in intelligent microprocessor makes charging faster, easier and safer.
- 3) This charger has safety features, including spark proof, protection for reverse polarity, short circuit, overheat, overcharge and overcurrent.
- 4) Charging start-up threshold is 1V.

- 5) It has the clamp storage panel on the back and as well as two wheels.
- 6) How to install the handle? Please follow the instructions. When you take the charger out from the package, the handle is uninstalled. To install the handle, first pull the clamp storage panel upwards and remove it, then a tool (e.g. screwdriver) is needed to help make springback for the buckle until the buckles are in the right position (showed in following second image). Remember to put on the clamp storage panel. If you want to store the charger, just keep the handle pulled upwards in the right position. If you insist to pull the handle down, first pull the clamp storage panel upwards and remove it, then use the tool to make springback for the buckle and pull the handle down (remember to put on the clamp storage panel at last).



AC Input	AC 230V 50-60Hz, 1500W Max.(for charger mode),6000W Max.(for starter mode).
DC Output	Charge: DC 12V, 5A/15A/30A/40A or DC 24V, 5A/15A/30A/40A Engine Start: DC 12V, 200Am, 5s ON 240s OFF or DC 24V, 200Am, 5s ON 240s OFF(for starter mode).
Charge Type	10 Steps, Full-automatic Charging Cycle
Accessories Included	Cable Clamps
Other Feature(s)	Independent STD/GEL/AGM Battery Type Selection, Dedicated Repair Mode, Alternator Check Function

OPERATING INSTRUCTIONS

Before charging, make sure the capacity of the battery to be charged is not lower than Cmin (4Ah). On the rear of the charger you will find separate connector for 12V and 24V, and connect the cable to the correct one.

CONNECTING TO THE BATTERY

- 1) Identify polarity of battery posts. The positive battery terminal is typically marked by these letters or symbol (POS,P,+). The negative battery terminal is typically marked by these letters or symbol (NEG,N,-).
- 2) Do not make any connections to the carburetor, fuel lines, or thin metal parts.
- 3) Identify if you have a negative or positive grounded vehicle. This can be done by identifying which battery post (NEG or POS) is connected to the chassis.
- 4) For a negative grounded vehicle (most common): connect the RED POSITIVE clamp first to the positive battery terminal, then connect the BLACK NEGATIVE clamp to the negative battery terminal or vehicle chassis.
- 5) For a positive grounded vehicle (very uncommon): connect the BLACK NEGATIVE clamp first to the negative battery terminal, then connect the RED POSITIVE clamp to the positive battery terminal or vehicle chassis.
- 6) When disconnecting, disconnect in the reverse sequence, removing the negative first (or positive first for positive ground systems).
- 7) A marine (boat) battery must be removed and charged on shore. To charge it on board requires equipment specially designed for marine use.

DISPLAY BUTTON

Press DISPLAY button until following LED is lit.

Voltage – When the charger is NOT charging a battery, the display will show the battery VOLTAGE.

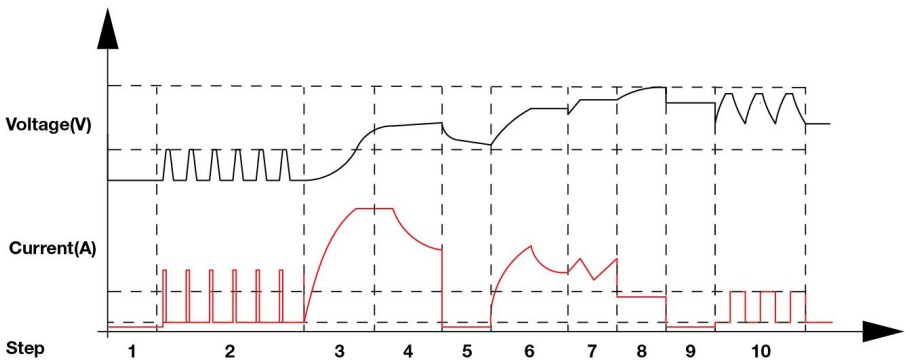
Battery % – When in charging, the digital display shows an estimated charge percentage of the battery connected to the charger's battery clamps.

Alternator % – The digital display shows an estimated output percentage of the vehicle's charging system connected to the charger's battery clamps, compared to a properly functioning system.

CHARGE

Press BATTERY TYPE button to choose first, then press RATE SELECTION button to choose the charging current. After that, press FUNCTION button until the CHARGE LED is lit to enter this mode (digital display shows CHARGE-ON). When in charging, pressing BATTERY TYPE button does NOT work. To stop charging, press FUNCTION button again and CHARGE LED will be off (digital display shows CHARGE-OFF).

Following is the detailed explanation for charging steps.



STEP 1: ANALYSING 1 (Checks if battery has connected with the charger)

STEP 2: DESULPHATION (Pulsing charging to remove sulphate)

STEP 3: SOFT START (Charges with gradually increasing charging current)

STEP 4: CONTROLLED CURRENT CHARGE (Adjusts the charging current)

intelligently)

STEP 5: ANALYSING 2 (Tests if the battery can absorb charge)

STEP 6: CONSTANT OUTPUT CHARGE (Charges with constant voltage and compensates fake full charge caused by high current charging)

STEP 7: RECOVERY CYCLE CHARGE (Absorbs more charge and compensates side effect of reduced charging current)

STEP 8: ABSORPTION (Charges with constant trickle current for maximum battery voltage)

STEP 9: ANALYSING 3 (Tests if the battery can hold charge)

STEP 10: MAINTENANCE (Continuously monitors the battery, and charges with trickle current once the voltage is lower than threshold)

START

Your battery charger can be used to jump start your car if the battery is low. Follow all safety instructions and precautions for charging your battery. Wear complete eye protection and protective clothing. The procedures are as follows.

WARNING: WARNING: Using the ENGINE START feature WITHOUT a battery installed in the vehicle will damage the vehicle's electrical system.

1. Connect the charger to the battery following the instructions given in the CONNECTING TO THE BATTERY section.
2. With the charger plugged in and connected to the battery and chassis, press FUNCTION button until the START LED is lit.
3. Crank the engine until it starts or 3 seconds pass. If the engine does not start, wait 4 minutes before cranking again. This allows the charger and battery to cool down.
4. If the engine fails to start, use the CHARGE maximum rate (40A) to charge for some minutes before attempting to crank the engine again.
5. After the engine starts, unplug the AC power cord before disconnecting the battery clamps from the vehicle.

NOTE: If the engine does turn over but never starts, there is not a problem with the starting system; there is a problem

somewhere else with the vehicle. STOP cranking the engine until the other problem has been diagnosed and corrected.

During the starting sequence listed above, the charger is set to one of three states:

Wait for cranking – While waiting for cranking, the digital display shows **START-READY**. The charger waits until the engine is actually being cranked before delivering the amps for engine start.

Cranking – When cranking is detected, the charger will automatically deliver up to its maximum output as required by the starting system for up to 5 seconds.

Cool Down – After cranking, the charger enters a mandatory 240 seconds cool down state (Pressing any button does NOT work). The digital display indicates the remaining cool down time in seconds. It starts at 240 and counts down to 0. After 4 minutes, the digital display will change from displaying the countdown to displaying **START-READY**.

REPAIR

Press **FUNCTION** button until the **REPAIR LED** is lit to enter this mode (digital display shows **REPAIR-ON**). It is an advanced battery recovery mode for repairing old, idle, stratified or sulfated batteries. NOT all batteries can be recovered. For optimal results, take the battery through a full charge cycle, bringing the battery to full charge, before using this mode. This mode uses a high charging voltage and may cause some water loss in **WET** cell batteries. Plus, some batteries and electronics may be sensitive to high charging voltages. To minimize risks, disconnect the battery from the vehicle before using this mode.

To stop repairing, press **FUNCTION** button again and **REPAIR LED** will be off (digital display shows **REPAIROFF**).

ALTERNATOR CHECK

Before the charger is connected with the battery which is well settled in the vehicle and Alternator % LED is lit (press DISPLAY button), start the vehicle and turn on the vehicle's headlights. The alternator percent range is from 0% to 100%. Readings below 0% will read LO and readings above 100% will read HI. If you get a HI or LO reading, have the electrical system checked by a qualified technician.

ERROR MESSAGES

- 1) **E01 Display + ERROR LED** lit: reverse connection
- 2) **E02 Display + ERROR LED** lit: temperature in charger is too high
- 3) **E03 Display + ERROR LED** lit: the battery cannot store electric charge (dead battery)
- 4) **E04 Display + ERROR LED** lit: no battery connected / battery voltage is lower than 1 volt (dead battery)
- 5) **REPAIR-ON Display + REPAIR LED** flashing: charger automatically enters repairing mode
- 6) **REPAIR-ON Display + REPAIR LED** solid lit: manually choose repairing mode