



## Portable Battery Chargers

Designed for six cell lead-acid batteries

# IMPORTANT SAFETY INSTRUCTIONS

CAREFULLY READ AND  
SAVE THESE INSTRUCTIONS

### DOWNLOAD MANUAL

This manual can be read or downloaded from the BATTERY TENDER® website @ [www.batterytender.com](http://www.batterytender.com)

### WARNING AND CAUTION LABEL DEFINITIONS:

#### **⚠ WARNING**

WARNING indicates a potentially hazardous situation which, if not avoided, could result in serious injury or death.

#### **⚠ CAUTION**

CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

#### **CAUTION**

CAUTION used without the safety alert symbol indicates a potentially hazardous situation, which if not avoided, may result in property damage.

### GENERAL PRECAUTIONS

#### **⚠ WARNING**

Always charge the battery in a well ventilated area. Explosive hydrogen gas may escape from the battery during charging. Keep open flames, electrical sparks and smoking materials away from the battery at all times. Failure to do so could result in serious injury or death.

#### *NOTE :*

*Gas hot water heaters are a source of open flame to be avoided.*

#### **CAUTION**

Locate the charger as far away from the battery as is allowed by the length of the output cable harness. NEVER set the charger above or below the battery. Gasses or fluids from the battery may corrode and damage the charger.

#### **CAUTION**

Do not set the charger on a combustible surface. Locate in a well ventilated area to dissipate heat generated by the charger.

#### **CAUTION**

NEVER use a battery charger unless the battery voltage matches the output voltage rating of the charger. For example, do not use a 12-volt charger with a 6-volt battery and vice versa.

#### **⚠ WARNING**

Do not expose the charger to rain or snow to avoid risk of electric shock or fire.

#### **⚠ WARNING**

Do not use attachments or accessories that are not recommended or sold by the battery charger manufacturer. Doing so may cause electric shock, fire, or other unforeseen situations resulting in serious injury or death.

#### **⚠ CAUTION**

When handling electric power cords, always pull by the plug rather than by the cord. This reduces the risk of damage to both the plug and cord, and minimizes the likelihood of electric shock.

#### **CAUTION**

Make sure all electric power cords are located so that they cannot be stepped on, tripped over, or otherwise subjected to damage or stress.

#### **CAUTION**

Study all of the battery manufacturer's precautions and specific recommendations for safe operation such as not removing cell caps while charging and the recommended rates of charge (charger output current). This is important to avoid damage to the battery.

#### **CAUTION**

When leaving a battery charger connected to a non-sealed, flooded battery for extended periods of time (weeks, months, etc.), periodically check individual cell fluid levels against manufacturer's recommendations for safe operation.

#### **CAUTION**

If the battery releases an excessive amount of gas or if the battery gets hotter than 130°F (55°C) during charging, disconnect the charger and allow the battery to cool. Overheating may result in plate distortion, internal shorting, drying out or other damage.

## **⚠ WARNING**

**NEVER** disassemble the charger or attempt to do internal repairs. Take it to a qualified service technician. Assembling the charger incorrectly may result in the risk of electric shock or create a fire hazard. 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.

## **PERSONAL PRECAUTIONS**

### **⚠ WARNING**

**Battery posts, terminals and related accessories contain lead and lead components, chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Wash hands after handling.**

1. Someone should be within range of your voice or close enough to come to your aid when you work near a lead-acid battery;
2. Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing, or eyes;
3. Wear complete eye protection and clothing protection. Avoid touching eyes while working near battery;
4. If battery acid contacts skin or clothing, wash immediately with soap and water. If acid enters an eye, immediately flood eye with running cold water for at least 10 minutes and get medical attention immediately;
5. **NEVER** smoke or allow a spark or flame in vicinity of battery or engine.
6. Be extra cautious to reduce risk of dropping a metal tool onto battery. It might spark or short-circuit battery or other electrical part that may cause an explosion;
7. 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-circuited current high enough to weld a ring or the like to metal, causing a severe burn;
8. Use the charger for charging a lead-acid battery only. 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 cause them to burst and cause injury to persons and damage to property;

### **NOTE**

There are some wet, non-spillable, lead acid batteries on the market whose manufacturers' make the claim that they are dry-cell batteries. These batteries are sealed, gas-recombinant, starved electrolyte, possibly with AGM (Absorbed Glass Matte) type construction. It is perfectly safe to use the INTERNATIONAL BATTERY TENDER® to charge these types of batteries. The dry-cell battery warning is intended for non-rechargeable, alkaline and other similar types of batteries. If you have any doubt about the type of battery that you have, please contact the battery manufacturer before attempting to charge the battery.

9. **NEVER** charge a visibly damaged or frozen battery.
10. Do not recharge non-rechargeable batteries.

## **PREPARING TO CHARGE**

1. If it is necessary to remove battery from vehicle to charge it, always remove grounded terminal from battery first. Make sure all accessories in the vehicle are off in order to prevent an arc;
2. Be sure area around battery is well ventilated while battery is being charged. Gas can be forcefully blown away by using a piece of cardboard or other nonmetallic material as a fan;
3. Clean battery terminals. Be careful to keep corrosion from coming in contact with eyes;
4. Add distilled water in each cell until battery acid reaches level specified by battery manufacturer. This helps purge excessive gas from cells. Do not overfill. For a battery without cell caps, carefully follow manufacturers' recharging instructions;
5. Study all battery manufacturers' specific precautions such as removing or not removing cell caps while charging and recommended rates of charge;
6. Determine voltage of battery by referring to owner's manual and make sure it matches output rating of the battery charger.
7. Locate charger:
  - a. Locate the charger as far away from battery as the DC cables permit;
  - b. Never place the charger directly above or below the battery being charged. Gases or fluids from the battery will corrode and damage the charger;
  - c. Never allow battery acid to drip on the charger when reading gravity or filling battery;
  - d. Do not operate the charger in a closed-in area or restrict ventilation in any way.
  - e. Do not set a battery on top of the charger.
8. Connect and disconnect DC output clips only after setting any charger switches to the off position and removing AC cord from the electric outlet. Never allow clips to touch each other.
9. Follow these steps when battery is installed in a vehicle. A spark near battery may cause a battery explosion. To reduce risk of a spark near battery:
  - a. Position AC and DC cords to reduce risk of damage by hood, door, or moving engine parts like fan blades, belts, and pulleys.
  - b. Check polarity of battery posts. A positive (pos, p, +) battery post may have a larger diameter than a negative (neg, n, -) post;
  - c. Determine which post of battery is grounded (connected) to the chassis. If negative post is grounded to the chassis (as in most vehicles), see item (d). If positive post is grounded to the chassis, see item (e);
  - d. For a negative-grounded vehicle, connect the positive (red) clip from the battery charger to the positive (pos, p, +) ungrounded post of battery. Connect the negative (black) clip to the vehicle chassis or engine block away from battery. Do not connect the clip to carburetor, fuel lines, or sheet-metal parts. Connect to a heavy gauge metal part of the frame or engine block;

- e. For a positive-grounded vehicle, connect the negative (black) clip from battery charger to negative (neg, n, -) ungrounded post of battery'. Connect the positive (red) clip to the vehicle chassis or engine block away from battery. Do not connect clip to carburetor, fuel lines, or sheet-metal parts. Connect to a heavy gauge metal part of the frame or engine block;
  - f. Connect charger AC supply cord to an electric outlet;
  - g. When disconnecting the charger, turn switches to off, disconnect AC cord, remove clip from vehicle chassis, and then remove clip from battery terminal.
10. Follow these steps when battery is outside the vehicle. A spark near the battery may cause a battery explosion. To reduce risk of a spark near battery:
- a. Check polarity of battery posts. A positive (pos, p, +) battery post may have a larger diameter than a negative (neg, n, -) post;
  - b. Attach at least a 24 inch long 6-gauge (AWG) insulated battery cable to the negative (neg, n, -) battery post;
  - c. Connect the positive (red) charger clip to the positive (pos, p, +) post of battery;
  - d. Position yourself and the free end of cable as far away from battery as possible, then connect negative (black) charger clip to free end of cable;
  - e. Do not face battery when making final connection;
  - f. Connect charger AC supply cord to an electric outlet;
  - g. When disconnecting the charger, always do so in reverse sequence of connecting procedure and break first connection while standing as far away from the battery as is practical.

## USER INSTRUCTIONS

**AUTOMATIC CHARGING AND BATTERY STATUS MONITORING:** All BATTERY TENDER® chargers are completely automatic and may be left connected to both AC power and to the battery that it is charging for long periods of time. The charger output power, voltage, and current depends on the condition of the battery it is charging. BATTERY TENDER® chargers have 2 status indicator lights that provide a visual means to determine the operating mode of the charger and hence the condition of the battery connected to the charger.

The two-colored status indicator lights are available to determine whether the charger is operating in one of the 3 primary charge modes: the bulk mode (full charge, constant current, battery is 0% to 85% charged), the absorption mode (high constant voltage, battery is 85% to 100% charged), or the storage/float maintenance mode (low constant voltage, battery is 100% to 103% charged).

When the battery is fully charged, the green status indicator light will turn on and the charger will switch to a storage/maintenance charge mode. The BATTERY TENDER® charger will automatically monitor and maintain the battery at full charge.

**ELECTRICAL CONNECTIONS BETWEEN THE CHARGER AND THE BATTERY:** Before charging, connect the alligator clips or ring terminals to the battery terminals. Then connect the charger AC power cord to the AC power outlet. When you want to disconnect the charger from the battery, first disconnect the charger AC power cord from the AC power outlet. Then disconnect the charger leads from the battery terminals.

### **⚠ WARNING**

**Always unplug or turn OFF the battery charger before connecting or disconnecting the charger clamps to the battery. Connecting or disconnecting clamps with the charger on could cause a spark resulting in a battery explosion. A battery explosion may rupture the battery case causing a discharge or spray of sulfuric acid which could result in serious injury or death.**

**CONNECTIONS FOR ALL LEAD-ACID BATTERY TYPE:** (See item 10 under General Precautions.)

- < In General: First connect the red positive (+) charger output lead to the positive terminal of the battery. Then connect the black negative (-) charger output lead to the negative terminal of the battery. However, pay particular attention to the next two items and the instructions under item 18 under General Precautions.
- < As an added measure of safety, particularly when working with standard, flooded, lead acid batteries, UL recommends that the second, negative (-) charger output lead connection be made to the grounded equipment chassis rather than directly to the negative battery post.
- < In similar fashion, for positive ground systems, the positive post of the battery is now at the same electrical potential as the grounded equipment chassis. Therefore UL recommends that the positive (+) charger output lead connection be made at the grounded equipment chassis rather than directly to the positive battery post.

**ATTENTION: BATTERY TENDER® CHARGERS HAVE A SPARK FREE CIRCUITRY.** The output alligator clips or ring terminals will not spark when they are touched together. The BATTERY TENDER® chargers will not produce an output voltage until it senses at least 3 volts from the battery. It must be connected to a battery with the correct polarity before it will start charging a battery. Therefore, if you plug the AC power cord into an AC power outlet, and if the output alligator clips or ring terminals are not connected to a battery, and if you touch the alligator clips or ring terminals together, there will be no electrical spark.

**NOTE:**  
**THE OUTPUT CLIPS OR RING TERMINALS MUST BE CONNECTED TO A BATTERY BEFORE THE CHARGER CAN PRODUCE AN OUTPUT VOLTAGE.**

If the charger is hooked up backwards, the amber light will continue flashing (International Plus and EURO400), indicating that a charge has not been initiated (WP800 does not show any light at all). The alligator clips or accessory ring terminals must be connected to the battery, with the proper polarity, Red to Positive (+ output to + battery post) and Black to Negative (- output to - battery post), before the charger will generate any output voltage.

## **WORKING WITH A DEAD BATTERY OR A BATTERY WITH A VERY LOW VOLTAGE:**

If you try to charge a dead battery having a voltage below 3 Volts, BATTERY TENDER® chargers will not start. An internal safety circuit prevents the BATTERY TENDER® chargers from generating any output voltage unless it senses at least 3 Volts at the charger output. In this situation, the amber light will continue to flash (International Plus and EURO400), indicating that a charge has not been initiated (WP800 does not show any light at all).

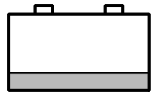
### **NOTE:**

If a 12 Volt, Lead-Acid battery has an output voltage of less than 9 volts when it is at rest, when it is neither being charged nor supplying electrical current to an external load, there is a good chance that the battery is defective. As a frame of reference, a fully charged 12-Volt, Lead-Acid battery will have a rest-state, no-load voltage of approximately 12.9 volts. A fully discharged 12-Volt, Lead-Acid battery will have a rest-state, no-load voltage of approximately 11.4 volts. That means that a voltage change of only 1.5 volts represents the full range of charge 0% to 100% on a 12-Volt, Lead-Acid battery. Depending on the manufacturer, and the age of the battery, the specific voltages will vary by a few tenths of a volt, but the 1.5-volt range will still be a good indicator of the battery charge %.

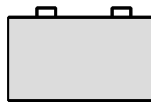
**STATUS INDICATING LIGHTS:** If neither light is lit, then the battery is not properly connected and/or the charger is not plugged into AC power. The following describes light operation:

- < **AMBER LIGHT FLASHING** – The amber light flashing indicates that the battery charger (International Plus and EURO400) has AC power available and that the microprocessor is functioning properly. If the amber light continues to flash, then either the battery voltage is too low (less than 3 volts) or the output alligator clips or ring terminals are not connected correctly.
- < **AMBER LIGHT ON STEADY** – Whenever the amber light is on steady, a battery is connected properly and the charger is charging the battery. The amber light will remain on until the charger completes the charging stage.
- < **GREEN LIGHT FLASHING** – (International Plus and EURO400 only) When EURO400 shows a green light flashing, the battery is 80% charged and may be used if necessary. When the green light is flashing, and the amber light is on (International Plus), the battery is greater than 80% charged and may be removed from the charger and used if necessary. Whenever possible, leave the battery on charge until the green light is solid.
- < **GREEN LIGHT ON STEADY** – All chargers: When the green light stops flashing and burns steady, the charge is complete and the battery can be returned to service if necessary. It can also stay connected to maintain the battery for an indefinite period of time

**STATUS INDICATING SYMBOLS:** The following symbols are located next to the status indicator lights.



The symbol next to the AMBER light represents a partially charged battery. The solid band across the bottom is green in color. The background is yellow. The green area indicates the charged portion of the battery and the yellow area represents the uncharged portion.



The symbol next to the GREEN light represents a fully charged battery. The entire area inside the battery outline is green.

## **TROUBLESHOOTING CHECK LIST:**

1. **CHARGER LIGHTS DO NOT TURN ON:**
  - a. Remove the charger from the AC outlet and recheck that the battery charger clamps are connected to the correct terminals and are making a clean tight connection.
  - b. Check to make sure AC outlet is supplying power by plugging in a lamp, an appliance, or a voltage meter.
2. **THE GREEN LIGHT GOES ON IMMEDIATELY WHEN CHARGING A DISCHARGED BATTERY:**
  - a. The battery may be defective, take battery to the dealer to be tested.
3. **CHARGER IS CHARGING BUT THE GREEN LIGHT DOES NOT GO ON:**
  - a. The battery may be defective, take battery to the dealer to be tested.
  - b. The battery has an excessive current draw, remove battery from equipment.
4. **THE AMBER LIGHT COMES ON WHEN STORAGE CHARGING BATTERIES:**
  - a. The battery may be defective, take battery to the dealer to be tested.
  - b. The battery has an excessive current draw, remove battery from equipment.

- *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 hazard involved.*
- Children shall not play with the appliance. Cleaning and user maintenance shall not be mad by children without supervision.
- The supply cord cannot be replaced. If the cord is damaged the appliance should be scrapped.
- Examine the battery charger regularly for damage, especially the cord, plug and enclosure, if the battery charger is damaged, it must not be used until it has been repaired.



**This symbol indicates separate collection for electrical and electronic equipment**

## FCC Warning

Title 47 Subpart, 15.105(b)

Note: This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio television reception, which can be determined by tuning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## ICES-001: Industrial, Scientific, and Medical (ISM) Radio Frequency Generators

This product has been tested with the listed standards and found to be compliant with the Code of Industry Canada ES-001 and the measurement Procedure according to CISPR 11.

### **CAN ICES-001(B)/NMB-001(B)**

## WARRANTY

The Battery Tender® comes with a TWENTY-FOUR (24) month limited warranty against defects or failure (within TWO (2) years of purchase).

THIS LIMITED WARRANTY IS VOID under the following conditions:

- 1) The product is misused, subjected to careless handling, or operated under conditions of extreme temperature, shock, or vibration beyond our recommendations for safe and effective use.
- 2) The product is disassembled or repaired by anyone who is not an authorized service representative of Battery Tender®
- 3) The product was purchased from an unauthorized source. Warranty is not transferable from the original purchaser.
- 4) Any physical damage to any of components or any accessory after purchase.
- 5) Any modifications to any of the components.  
Any corrosion including salt water