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› [TowerTop](#) /

› TowerTop 3/15/25 Amp Car Battery Charger, 12V Fully Automatic Smart Battery Maintainer with Engine Start, Auto Desulfator, Battery Repair, for All Lead-Acid and LiFePO4 Batteries 25A Pro

TowerTop BC-025-US13

TowerTop 3/15/25 Amp Car Battery Charger User Manual

Model: BC-025-US13 | Brand: TowerTop

INTRODUCTION

This manual provides detailed instructions for the safe and effective operation, maintenance, and troubleshooting of your TowerTop 3/15/25 Amp Car Battery Charger. Designed for versatility and intelligence, this charger is suitable for a wide range of 12V batteries, including STD, AGM, Gel, Wet, MF, EFB, Calcium, Deep Cycle, and LiFePO4 types. Please read this manual thoroughly before first use to ensure optimal performance and safety.



Image: The TowerTop 3/15/25 Amp Car Battery Charger, showcasing its compact design and attached battery clamps.

KEY FEATURES

- **Quick Charger:** Offers 4-level adjustable current (3A/15A/25A/AUTO) for efficient charging. Achieves 85% high efficiency, surpassing the industry average of 75%. Ideal for various 12V battery types including STD, AGM, Gel, Wet, MF, EFB, Calcium, Deep Cycle, and LiFePO4 batteries.



Image: The charger's display showing the 25 Amp charging mode, highlighting its efficiency compared to the industry average.

- Fully-automatic Charging:** Features auto-identification and charging, automatic shutdown upon 100% charge, auto-start within 30 seconds if the start button is forgotten, and auto-restart for trickle maintenance when battery voltage drops. The charger retains previous settings, ensuring convenience even after AC power interruptions.
- 8-Stage Charging Program:** Incorporates an intelligent 8-stage charging process: Desulfation, Soft Start, Bulk Charge, Absorption, Analysis, Recondition, Float, and Pulse Maintenance. The Microcontroller Unit (MCU) monitors the entire process, enhancing charging precision, optimizing battery power, and extending battery life.

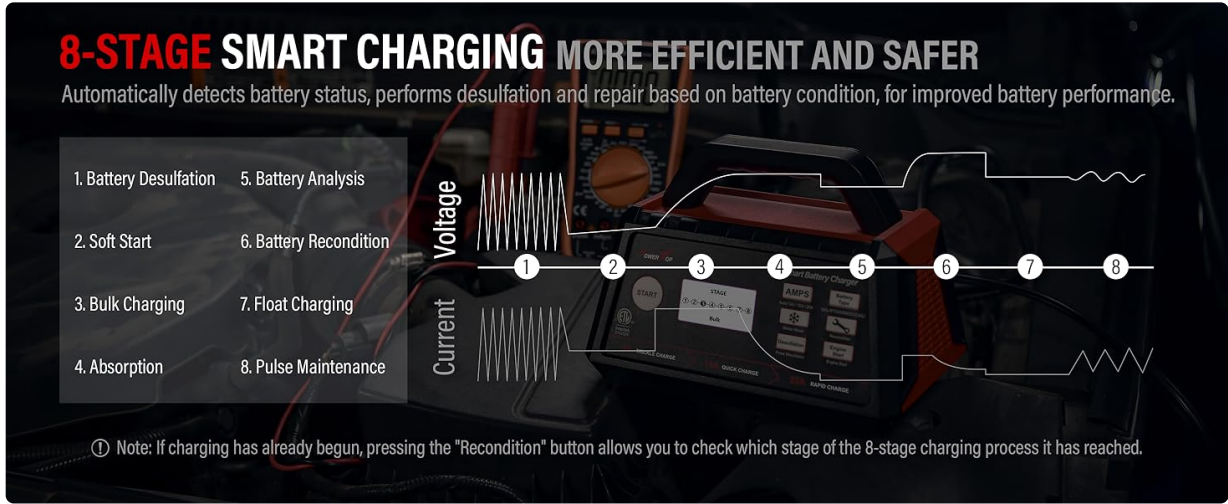


Image: A visual representation of the 8-stage smart charging process, detailing each phase from desulfation to pulse maintenance.

- Engine Start and Winter Mode:** The Engine Start function provides a 100A current to assist in starting your vehicle within 100 seconds (requires 120V AC power connection). Winter Mode adds 0.2V to the base charging voltage, improving battery activity and ensuring thorough charging in low-temperature conditions.



WINTER MODE

Adds 0.2v to the base charging voltage, enhancing battery performance and ensuring thorough charging in cold weather.

Desulfation Function & Repair Function

Independent pulse desulfation mode and repair mode support separate buttons for manual control.

Image: The TowerTop charger connected to a car battery in a winter setting, illustrating the Winter Mode feature.

- **Battery Repair:** An advanced Recondition mode utilizes slow pulse reconditioner technology to detect and address battery sulfation and acid stratification, aiming to restore lost battery performance and extend life. This mode can help repair old or idle batteries, though it cannot revive completely dead batteries.

Image: The charger connected to a battery, visually representing the battery repair process.

- **Multi Safety Protection & ETL Certification:** Equipped with multiple safety features including protection against sparks, reverse polarity, overcharge/discharge, over voltage, over current, overload, overheat, current backflow, and short circuits. Reliable cooling systems enhance performance. ETL certification ensures safe operation.

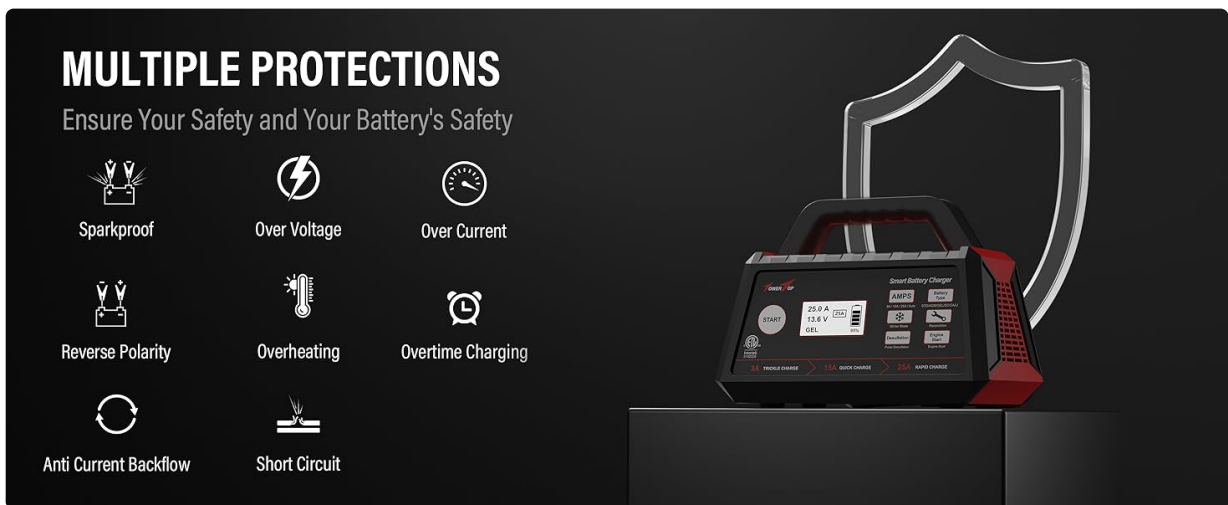


Image: A graphic detailing the comprehensive safety protections built into the TowerTop battery charger, including spark-proof, over-voltage, and reverse polarity protection.

SETUP AND INITIAL CONNECTION

Automatic Charging

For automatic charging, the charger will detect the battery type and condition and begin charging automatically. It will remember your last charging settings.

1. Connect the red positive (+) clamp to the positive battery terminal and the black negative (-) clamp to the negative battery terminal.
2. Connect the charger's AC power plug to a 120V AC power outlet.
3. No further action is needed; the charger will automatically begin charging. You can press the "START" button for an immediate start if desired.

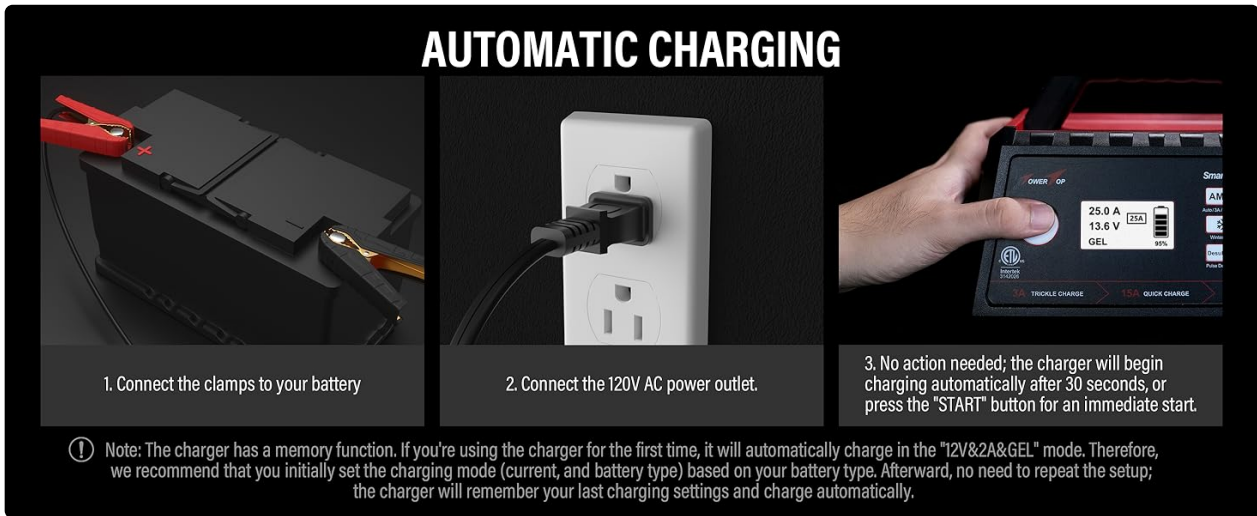


Image: A three-step visual guide demonstrating how to connect the charger for automatic charging.

Manual Charging (Selecting Battery Type and Amperage)

If you prefer to manually select the battery type and charging current, follow these steps:

1. Connect the red positive (+) clamp to the positive battery terminal and the black negative (-) clamp to the negative battery terminal.
2. Connect the charger's AC power plug to a 120V AC power outlet.
3. Press the "Battery Type" button to cycle through and choose your specific battery type (e.g., STD, AGM, Gel, LiFePO4).
4. Press the "AMPS" button to select your desired charging rate (3A, 15A, 25A, or AUTO). Note: In AUTO mode, the current is 2A.
5. Finally, press the "START" button to initiate the charging process.

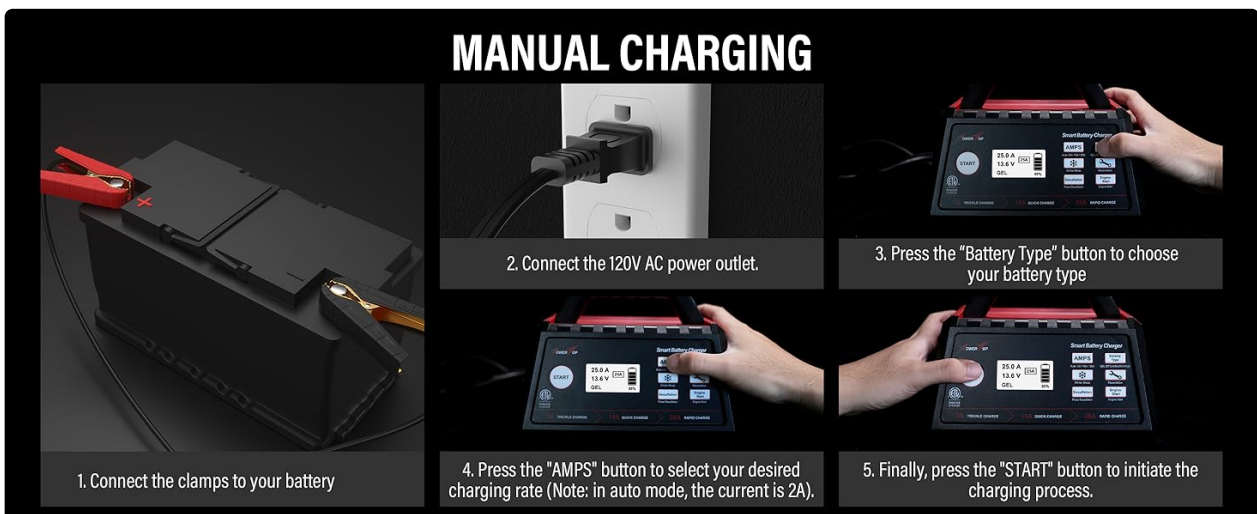


Image: A visual guide illustrating the steps for manually selecting battery type and charging current.

OPERATING INSTRUCTIONS

The TowerTop battery charger features an intuitive LCD display and various modes to optimize battery charging and maintenance.

Understanding the LCD Display

The large HD LCD display provides real-time information about your battery's charging status, including selected charging rate, charging voltage, battery type, and battery power percentage.



Image: A detailed breakdown of the information presented on the charger's LCD display, including current, voltage, battery type, and charge level.

Charging Modes and Functions

- **Standard Charging:** Select 3A for trickle charging, 15A for quick charging, or 25A for rapid charging based on your battery's needs and capacity.
- **AUTO Mode:** The charger automatically identifies the battery and applies an optimal 2A charging current.
- **Engine Start:** Press the "Engine Start" button to deliver a 100A current for up to 100 seconds to assist in starting a vehicle with a low battery. Ensure the charger is connected to AC power.
- **Winter Mode:** Activate this mode in cold environments (below 0°C / 32°F) to increase the charging voltage by 0.2V, ensuring a more complete charge.
- **Recondition Mode:** Use this mode to attempt to restore the capacity of sulfated or stratified batteries. This process involves slow pulse reconditioning.
- **Desulfation Function:** An independent pulse desulfation mode is available to remove sulfate deposits from lead plates, improving battery health.

MAINTENANCE AND CARE

Proper maintenance ensures the longevity and optimal performance of your TowerTop battery charger and your vehicle's batteries.

- **Cleaning:** Disconnect the charger from both the AC outlet and the battery before cleaning. Use a dry, soft cloth to wipe the casing. Do not use abrasive cleaners or solvents.

- **Storage:** Store the charger in a cool, dry place when not in use. Ensure the cables are neatly coiled and the clamps are clean and free of corrosion.
- **Battery Maintainer Function:** The charger automatically switches to trickle maintenance mode once the battery is fully charged or if the voltage drops during long-term connection. This prevents overcharging and keeps the battery optimally maintained.
- **Cooling System:** The charger features an upgraded cooling system with a larger heat sink and cooling fan. Ensure the vents are not obstructed during operation to prevent overheating.



BATTERY MAINTAINER

ZERO OVERCHARGE

Auto shuts off at 100% charge and restarts for trickle maintenance when voltage drops, perfect for long-term charging.

MEMORY FUNCTION

TowerTop battery charger will automatically remember the last charging settings, so there's no need to reconfigure them.

Image: The TowerTop charger connected to a car battery, illustrating its battery maintainer function which prevents overcharge and remembers settings.

TROUBLESHOOTING

Refer to this section for common issues and their solutions. The charger's multi-safety protection system is designed to prevent damage and indicate problems.

Problem	Possible Cause	Solution
Charger does not turn on.	No AC power; faulty connection.	Check AC outlet and power cord connection. Ensure clamps are properly connected to battery terminals.
Battery not charging.	Incorrect battery type selected; battery is completely dead; poor clamp connection.	Verify battery type setting. Ensure clamps have good contact. Try "Recondition" mode for old/idle batteries (cannot repair totally dead batteries).
Error message on display (e.g., Reverse Polarity, Overheat).	Safety protection activated.	Reverse Polarity: Disconnect and reconnect clamps correctly (red to positive, black to negative). Overheat: Disconnect charger, allow to cool down. Ensure vents are clear. Over Voltage/Current: Disconnect and check battery condition.
Engine Start function not working.	Not connected to AC power; battery too low.	Ensure charger is plugged into a 120V AC outlet. The battery must have some residual voltage for the engine start function to work.

The charger's display will indicate various protection warnings such as Overtime Charging, Over Current, Over Voltage, Overheating, Reverse Polarity, and Battery Failure. Consult the display for specific error codes or indicators.



Image: The charger's LCD display illustrating different protection warnings, such as over-voltage and reverse polarity, to alert the user of potential issues.

SPECIFICATIONS

Attribute	Value
Brand	TowerTop
Model Number	BC-025-US13
Input Voltage	120V AC
Output Voltage	12 Volts
Charging Current	3A / 15A / 25A / AUTO (2A)
Engine Start Current	100 Amps
Compatible Battery Types	STD, AGM, Gel, Wet, MF, EFB, Calcium, Deep Cycle, LiFePO4
Item Weight	4.96 pounds
Product Dimensions	5.83 x 8.58 x 6.1 inches
Certifications	ETL Certified
First Available Date	October 31, 2021

WARRANTY AND SUPPORT

TowerTop products are manufactured to high-quality standards. This product typically comes with an 18-month

warranty from the date of purchase, covering defects in materials and workmanship under normal use. For warranty claims, technical support, or any inquiries regarding your TowerTop battery charger, please contact TowerTop customer service through their official website or the retailer from whom you purchased the product. Please have your model number (BC-025-US13) and proof of purchase ready when contacting support.



Image: The TowerTop company logo, representing the brand's commitment to quality and customer satisfaction.