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TOPDON T90000

TOPDON USA - 90A Stable Power Supply Smart Charger

Model: T90000

1. INTRODUCTION

The TOPDON Tornado90000 is a flagship smart charger and voltage stabilizer designed for professional and commercial applications. This versatile device supports both 12V and 24V lead-acid and lithium batteries, accommodating a wide capacity range from 5Ah to 2800Ah. It features 6 programmable charging modes, adjustable current and voltage settings, and a sophisticated 9-step smart charging process to ensure safe, efficient, and customizable battery maintenance. Additionally, its dedicated SUPPLY mode provides a stable DC output, making it ideal for sensitive operations such as ECU programming and powering automotive appliances.



Figure 1.1: Front view of the TOPDON Tornado90000 Smart Charger, showcasing its robust design, clear display, and connected battery clamps.

2. IMPORTANT SAFETY INSTRUCTIONS

Please read and understand all safety information before using this product. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- **Electrical Safety:** Always ensure the charger is connected to a properly grounded outlet. Do not operate the charger if the power cord or clamps are damaged.
- **Battery Safety:** Batteries can produce explosive gases. Work in a well-ventilated area. Avoid sparks and flames near the battery. Wear eye protection and gloves.
- **Personal Safety:** Keep children and unauthorized persons away from the work area. Do not touch uninsulated battery terminals or wires.

- **Product Use:** Use the charger only for its intended purpose. Do not attempt to charge frozen or damaged batteries.
- **Ventilation:** Ensure adequate ventilation around the charger during operation to prevent overheating.

3. PACKAGE CONTENTS

Verify that all items are present in the package:

- TOPDON USA - 90A Stable Power Supply Smart Charger (Tornado90000)
- User Manual (this document)
- Battery Clamps (Red and Black)
- Power Cord

4. PRODUCT OVERVIEW

The Tornado90000 features a robust design with an intuitive interface for easy operation. Key components include the main display, control buttons, and various connection ports.



Figure 4.1: Close-up of the Tornado90000's control panel, showing the digital display, mode selection buttons, and power switch.

4.1. Main Display

The digital display provides real-time information on charging status, voltage, current, and battery capacity. It also

indicates the selected charging mode and any error codes.

4.2. Control Buttons

- **MODE Button:** Cycles through available charging modes (Supply, Repair, Norm, AGM, Cold, Boost).
- **SET Button:** Confirms selections or enters settings menus.
- **+/- Buttons:** Adjusts voltage and current settings in programmable modes.
- **Start/Stop Button:** Initiates or pauses the charging process.

4.3. Connection Ports

- **AC Power Input:** For connecting the charger to a wall outlet.
- **Battery Clamp Output:** For connecting the red (+) and black (-) clamps to the battery terminals.
- **USB Port:** (If applicable) For firmware updates or powering small devices.

5. SETUP AND INITIAL CONNECTION

Follow these steps to set up your Tornado90000 charger:

1. **Prepare the Battery:** Ensure the battery terminals are clean and free of corrosion. If charging an automotive battery, ensure the vehicle's ignition is off and all accessories are disconnected.
2. **Connect Battery Clamps:**
 - Connect the **red (+)** positive clamp to the positive battery terminal.
 - Connect the **black (-)** negative clamp to the negative battery terminal.
 - Ensure a secure connection.
3. **Connect to Power:** Plug the AC power cord into the charger's input port, then plug the other end into a grounded electrical outlet.
4. **Power On:** Flip the main power switch on the charger to the "ON" position. The display will illuminate.

FOR ALL 12/24V LEAD-ACID BATTERY



Figure 5.1: The Tornado90000 connected to a battery, illustrating its application across different vehicle types, including cars, trucks, and motorcycles.

6. OPERATING MODES

The Tornado90000 offers 6 distinct operating modes, each optimized for specific battery types or charging scenarios. Use the **MODE** button to cycle through them.



Figure 6.1: User interacting with the mode selection buttons on the Tornado90000, highlighting the available charging modes.

- **SUPPLY Mode:** Provides a stable DC output (11-15.8V for 12V systems, 22-31.6V for 24V systems) with adjustable current (5-90A for 12V, 5-45A for 24V). Ideal for ECU programming, diagnostic work, or powering automotive accessories without draining the vehicle's battery.

90A MAX POWER SUPPLY

Wide battery capacity range from 5A - 90A
ECU Programming Voltage Stablizer



Figure 6.2: The Tornado90000 providing stable power for ECU programming, demonstrating its high current output capability.

- **REPAIR Mode:** Designed to desulfate and recondition deeply discharged or sulfated lead-acid batteries, potentially extending their lifespan.
- **NORM Mode:** Standard charging mode for most 12V and 24V lead-acid batteries (WET, MF, CAL, EFB).
- **AGM Mode:** Optimized charging profile for AGM (Absorbed Glass Mat) batteries, which require a slightly different charging voltage.
- **COLD Mode:** Suitable for charging batteries in cold environments (below 10°C / 50°F). This mode adjusts the charging voltage to compensate for temperature effects.
- **BOOST Mode:** Provides a quick charge to bring a deeply discharged battery back to a usable state before switching to a standard charging cycle.

ENABLE YOU TO DIY

Voltage ranges from 11-15.8V & 22-31.6V

Currents ranges from 5-90A and 5-45A



Figure 6.3: Illustration of the adjustable voltage and current ranges, enabling customization for various DIY and professional applications.

7. OPERATION GUIDE

7.1. Charging a Battery

1. Ensure the charger is properly connected to the battery and power source as described in Section 5.
2. Press the **MODE** button repeatedly until the desired charging mode (NORM, AGM, COLD, BOOST) is selected based on your battery type and condition.
3. For certain modes, you may be able to adjust current or voltage using the **+/** buttons. Press **SET** to confirm.
4. Press the **Start/Stop** button to begin the charging process. The display will show charging progress.
5. The charger utilizes a 9-step smart charging process to optimize battery health and prevent overcharging.

INTELLIGENT 9-STEP CHARGING

Eliminating Risk of Over-charging

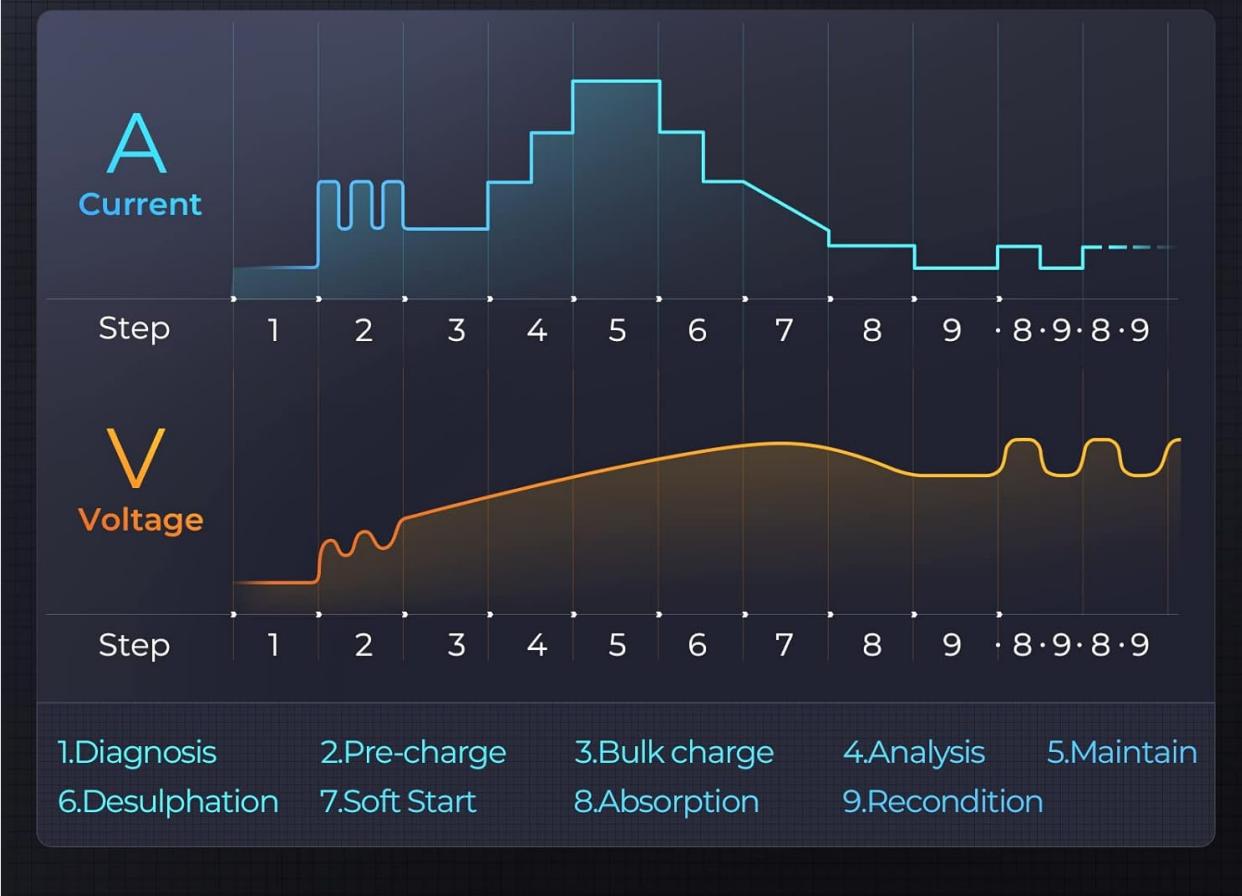


Figure 7.1: Visual representation of the 9-step intelligent charging process, illustrating how current and voltage are managed to prevent overcharging and optimize battery life.

- Once charging is complete, the charger will indicate a full charge or switch to maintenance mode. Press **Start/Stop** to end the process, then disconnect the power cord, followed by the battery clamps (black first, then red).

7.2. Using SUPPLY Mode for ECU Programming / Stable Power

- Connect the charger to the vehicle's battery terminals and to AC power.
- Press the **MODE** button until **SUPPLY** mode is selected.
- Use the **+-** buttons to set the desired stable voltage and current output for your application (e.g., ECU programming requires a specific stable voltage). Press **SET** to confirm.
- Press the **Start/Stop** button to activate the stable power supply.
- Monitor the display to ensure stable output during your operation.
- When finished, press **Start/Stop**, then disconnect power and battery clamps.

7.3. Temperature Monitoring

The Tornado90000 features advanced temperature monitoring with a built-in sensor and support for an external probe (if included). This ensures optimal charging performance and safety by adjusting parameters based on

ambient and battery temperature.

ADVANCED TEMP. MONITORING

Built-in Temperature sensor
External Probe

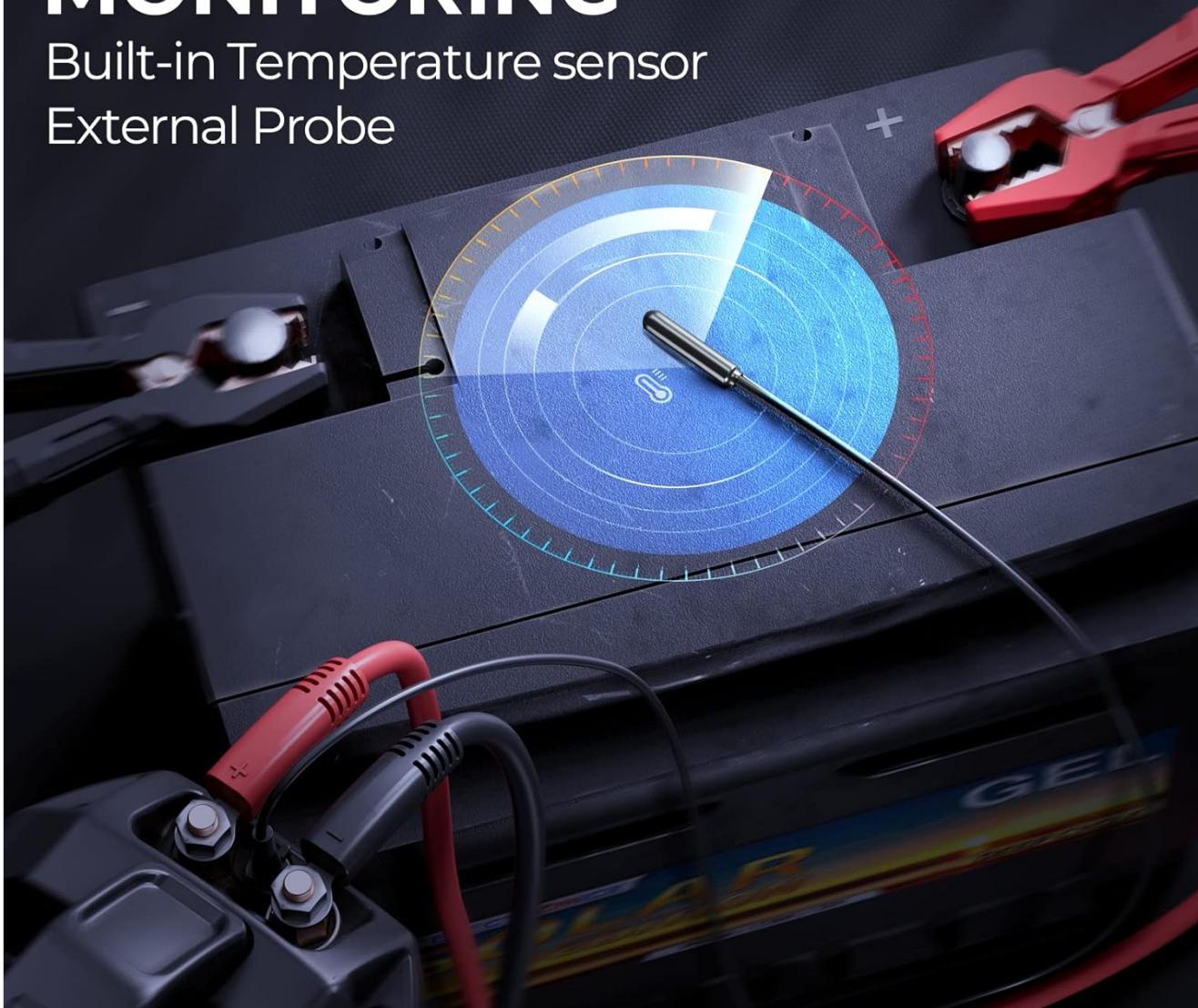


Figure 7.2: Illustration of the advanced temperature monitoring system, including both internal and external temperature sensing capabilities for enhanced safety and charging efficiency.

8. MAINTENANCE AND STORAGE

8.1. Cleaning

- Always disconnect the charger from power before cleaning.
- Wipe the exterior of the charger with a soft, damp cloth. Do not use harsh chemicals or abrasive cleaners.
- Keep the ventilation openings clear of dust and debris.

8.2. Storage

- Store the charger in a cool, dry place, away from direct sunlight and extreme temperatures.

- Ensure the cables are neatly coiled and not kinked.
- Keep the charger out of reach of children.

9. TROUBLESHOOTING

If you encounter issues with your Tornado90000, refer to the table below for common problems and solutions.

Problem	Possible Cause	Solution
Charger does not power on.	No AC power; Power switch off; Damaged power cord.	Check power outlet; Ensure power switch is ON; Inspect power cord for damage.
Charging does not start.	Incorrect battery connection; Battery voltage too low; Incorrect mode selected.	Verify correct polarity (+ to +, - to -); Ensure battery voltage is above minimum threshold for selected mode; Select appropriate mode.
Display shows an error code.	Internal fault; Over-temperature; Short circuit.	Refer to the full manual for specific error code meanings; Allow unit to cool down; Check for short circuits in connections.
Charger gets hot during operation.	Normal operation; Insufficient ventilation; Overload.	Ensure adequate ventilation; Reduce load if possible. The unit has built-in thermal protection.

If the problem persists after trying these solutions, please contact TOPDON customer support.

10. TECHNICAL SPECIFICATIONS

Feature	Specification
Model	T90000
Voltage Support	12V (5–90A), 24V (5–45A)
Battery Types	AGM, WET, GEL, MF, CAL, EFB, Lithium
Charging Process	9-step smart charging
Use Case	Battery charging, ECU programming, stable power supply for automotive appliances
Dimensions (L x W x H)	~419 x 275 x 140 mm (16.54 x 10.83 x 6.3 inches)
Item Weight	~15.54 pounds
Manufacturer	TOPDON USA

11. WARRANTY AND CUSTOMER SUPPORT

11.1. Warranty Information

TOPDON products are manufactured to the highest quality standards. For detailed warranty terms and conditions, please refer to the warranty card included with your product or visit the official TOPDON website. Keep your purchase receipt as proof of purchase for warranty claims.

11.2. Customer Support

If you have any questions, require technical assistance, or need to report an issue, please contact TOPDON customer support:

- **Official Website:** www.topdon.com
- **Amazon Store:** [Visit the TOPDON Store on Amazon](#)
- Refer to your product packaging or the official website for specific contact numbers or email addresses.

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Related Documents

 TORNADO 90000 12V/24V Battery Charger & Stable Power Supply USER MANUAL	TOPDON Tornado90000 12V/24V Battery Charger User Manual User manual for the TOPDON Tornado90000, a 12V/24V smart battery charger and stable power supply. Learn about its features, modes, safety precautions, and specifications.
 TORNADO 1200 Portable Lithium-ion Battery Charger USER MANUAL	TOPDON Tornado1200 Portable Lithium-ion Battery Charger User Manual User manual for the TOPDON Tornado1200, a portable lithium-ion battery charger designed for 12V cars and trucks. Learn about its features, how to use it, safety warnings, and technical specifications.
 TB8000 6V/12V Battery Charger USER MANUAL	TOPDON TB8000 6V/12V Battery Charger User Manual User manual for the TOPDON TB8000 smart battery charger, covering features, safety precautions, charging modes, specifications, and troubleshooting for 6V and 12V lead-acid and lithium-ion batteries.



[TOPDON Tornado1200: 6V/12V All-In-One Battery Charger](#)

Discover the TOPDON Tornado1200, a versatile 6V and 12V Lead-Acid and Lithium-Ion battery charger. Features include battery maintenance, trickle charging, desulfation, 5 charging modes, and a rugged, water-resistant design for reliable performance in all conditions.

Documents - TOPDON – T90000



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TOPDON

DIAGNOSI E RIPROGRAMMAZIONE CENTRALINE

Tornado90000

LA GUARDIA DEL CORPO DELLA TUA BATTERIA

Tornado 90000 (T90A) è il nuovo caricatore intelligente di TOPDON, realizzato per proteggere e riprogrammare le centraline di stazioni di servizio, camioncini, gommisti. Offre una protezione completa delle batterie al piombo addestra da 12v a 24v, con capacità di batteria da 20Ah a 2600Ah.

Tornado90000 dispone di una serie di moduli di protezione che proteggono, agli utenti, la protezione necessaria per le batterie attraverso una funzione di risarcita intelligente in 9 fasi e 8 modalità di ricarica.

Il dispositivo funziona anche da stabilizzatore di tensione e dispone di un menu di programmazione delle centraline.

Molto importante ed utile è la funzione "Hyper-Bal" che permette di ricaricare le batterie più forti per tutte le applicazioni automotive e non, quali gonfiaggio, fognaggio, fognaggio.

La sua "ricarica intelligente in 9 fasi" fornisce forte protezione per la batteria e l'automatico.

Sistema di riancia e disconnessione, elimina ogni rischio di sovaccarico.

Con il T90000 si ottiene un multi-funzione: ricarica, monitoraggio, controllo, inversione, polarità, inversioni di sovratensione, sovraccarico, funzionalità e sovraccarico.

Prevede anche una funzione di monitoraggio della doppia temperatura.

Il T90000 dispone di un sensore di temperatura che costantemente protegge il dispositivo.

È dotato di un sensore integrato per rilevare la temperatura del dispositivo e della temperatura esterna.

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SPEC SHEET Topdon power station EV RESCUE 5K Triad Diagnostic Solutions Sell Sheet Download
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EV Rescue 5K Power Station UL1973, UL 2271, and IEC 62133 certified battery
Special inspection SPE ... endor Part Number U.S. MSRP Price U.S. MAP Price
Warranty HTS Code HS Code TD52130061 850028162453 **T90000** 750.00 699.00 3
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Recommended storage temperature: 50F to 86F 80 SOC User Interface Neuron OS enabled wireless monitoring platform for real-time data, ||| EV Rescue 5K Power Station UL1973, UL 2271, and IEC 62133 certified battery Special inspection SPE1000 CSA Recommended storage temperature: 50F to 86F 80 SOC User Interface Neuron OS enabled wireless monitoring platform for real-time data,

EV Rescue 5K Power Station UL1973, UL 2271, and IEC 62133 certified battery

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