

NEXPEAK NC101 PRO

NEXPEAK 12V 6A Car Battery Charger User Manual

MODEL: NC101 PRO

1. Introduction

This manual provides detailed instructions for the safe and effective use of your NEXPEAK 12V 6A Car Battery Charger, Model NC101 PRO. This intelligent charger is designed to charge and maintain 12-volt lead-acid batteries, including AGM, GEL, SLA, and Flooded types, commonly found in cars, trucks, motorcycles, lawnmowers, and marine vehicles. Please read this manual thoroughly before operation and retain it for future reference.

2. Safety Information

Always prioritize safety when operating electrical equipment. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- **Ventilation:** Ensure adequate ventilation when charging batteries. Batteries can produce explosive gases.
- **Eye and Skin Protection:** Always wear eye protection and protective clothing when working with batteries. Battery acid is corrosive.
- **Spark Prevention:** Avoid creating sparks near the battery. Connect and disconnect the charger clamps only when the charger is unplugged from the AC outlet.
- **Polarity:** Connect the positive (+) red clamp to the positive (+) battery terminal and the negative (-) black clamp to the negative (-) battery terminal or vehicle chassis away from the battery. Reverse polarity protection is built-in, but correct connection is crucial.
- **Overcharge Protection:** The charger features automatic overcharge protection, switching to float mode once the battery is fully charged.
- **Damaged Batteries:** Do not attempt to charge frozen, damaged, or completely discharged batteries (below 3V). The pulse repair function cannot activate or charge batteries that are completely dead.
- **Water Exposure:** Do not expose the charger to rain or excessive moisture.
- **Children:** Keep the charger and battery out of reach of children.

3. Package Contents

Verify that all items are present in the package:

- NEXPEAK 12V 6A Car Battery Charger Unit
- AC Power Cable (1.4m length)
- Battery Clamps (Red for positive, Black for negative)
- User Manual

Figure 3.1: Contents of the NEXPEAK battery charger package. Includes the charger unit, power cable, and battery clamps.

4. Product Features

The NEXPEAK NC101 PRO charger offers advanced features for efficient and safe battery management:

- **12V 6A Fast Charging:** Capable of rapidly charging 12V lead-acid batteries.
- **Automatic Pulse Repair:** Detects battery sulfation and acid stratification, using pulse technology to restore lost battery performance.
- **Multi-Protection System:** Built-in safeguards against reverse polarity, sparks, overcharge, overcurrent, open circuits, short circuits, and overheating.
- **Automatic Float/Maintenance Charge:** Automatically enters float mode after full charge, maintaining battery voltage with a small 1A current to prevent discharge.
- **Large LED Display:** Provides real-time information on charging status, battery voltage, current, internal temperature, charge percentage, and selected mode (summer/winter).
- **8-Stage Intelligent Charging:** A comprehensive charging process for optimal battery health and longevity.
- **Temperature Compensation:** Automatically adjusts charging parameters based on ambient temperature, switching between Summer Mode (above 28°C) and Winter Mode (below 10°C).
- **Wide Application Compatibility:** Suitable for various 12V lead-acid batteries in cars, trucks, motorcycles, lawnmowers, boats, and more.



Figure 4.1: The NEXPEAK charger functions as both a fast charger and a battery maintainer.



Figure 4.2: Super large color LED display with mode selection and touch switch.

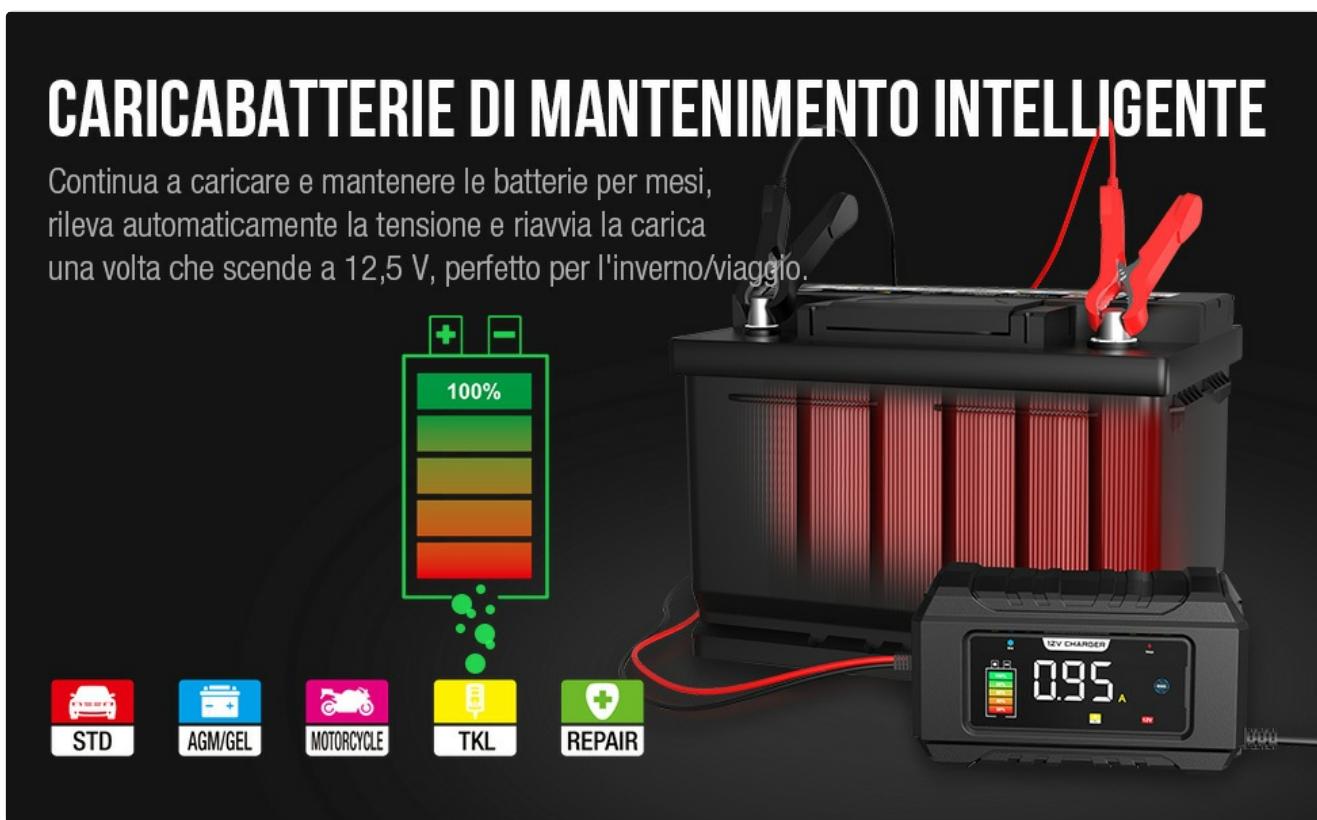


Figure 4.3: Wide range of applications for the NEXPEAK battery charger.

5. Setup

- Initial Inspection:** Before use, inspect the charger, cables, and clamps for any damage. Do not use if damaged.

2. **Prepare the Battery:** Ensure the battery terminals are clean and free of corrosion. If necessary, clean them with a wire brush.
3. **Connect Battery Clamps:**
 - Connect the **RED (+)** clamp to the **positive (+)** terminal of the battery.
 - Connect the **BLACK (-)** clamp to the **negative (-)** terminal of the battery. If charging a battery installed in a vehicle, connect the black clamp to the vehicle chassis away from the battery and fuel line.
4. **Connect to Power:** Plug the AC power cable into a standard 220-240V AC wall outlet. The charger will power on and display the current battery status.



Figure 5.1: Correct connection of battery clamps to a car battery.

6. Operating Instructions

Once connected, the charger operates largely automatically. The LED display provides essential information.

6.1. Understanding the LED Display

The large LED display shows:

- **Charging Status:** Indicated by a battery icon with charge percentage.
- **Voltage (V):** Current battery voltage.
- **Current (A):** Charging current.
- **Temperature (°C):** Internal ambient temperature, used for temperature compensation.
- **Mode:** Displays 'Summer Mode' or 'Winter Mode' as automatically selected.

6.2. Automatic Charging Process (8 Stages)

The charger employs an 8-stage intelligent charging process to optimize battery performance and lifespan:

1. **Battery Desulfation:** Uses high-frequency pulse current to break down lead sulfate crystals.
2. **Soft Start:** Gradually increases current to protect the battery.
3. **Bulk Charge:** Charges the battery at maximum current until it reaches approximately 80% capacity.
4. **Absorption:** Charges at a decreasing current to bring the battery to 100% capacity.
5. **Battery Analysis:** Tests the battery's ability to hold a charge.
6. **Battery Reconditioning:** Applies a controlled overcharge to equalize cell voltages and improve performance.
7. **Float Charge:** Maintains the battery at a full charge with a low, constant voltage.
8. **Intelligent Monitoring:** Continuously monitors the battery and restarts charging if voltage drops.



Figure 6.1: The 8-phase intelligent charging process.

6.3. Temperature Compensation (Summer/Winter Mode)

The charger automatically detects ambient temperature and adjusts the charging profile:

- **Summer Mode:** Activated automatically when the temperature is above 28°C for safe charging in warmer conditions.
- **Winter Mode:** Activated automatically when the temperature is below 10°C for powerful charging in colder conditions.

CARICABATTERIE ALL IN ONE

Mantenere la batteria durante l'inverno e molto altro ancora.

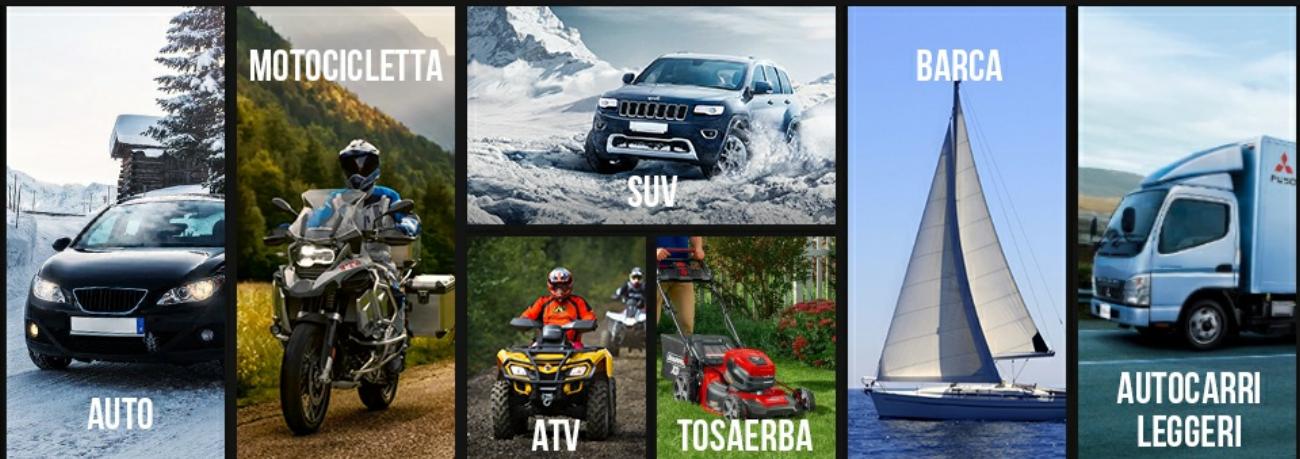


Figure 6.2: Automatic temperature compensation for optimal charging in any climate.

6.4. Pulse Repair Function

The pulse repair function is designed to restore sulfated or acid-stratified batteries. This mode is automatically engaged when the charger detects such conditions. It is important to note that this function cannot revive completely dead or severely damaged batteries.

7. Maintenance

Proper maintenance ensures the longevity of your charger and batteries.

- Cleaning:** Disconnect the charger from power and the battery before cleaning. Wipe the exterior with a soft, dry cloth. Do not use solvents or abrasive cleaners.
- Cable and Clamp Inspection:** Regularly check cables and clamps for wear, cuts, or damage. Replace if necessary.
- Storage:** Store the charger in a cool, dry place when not in use. Ensure cables are neatly coiled to prevent damage.
- Battery Maintenance:** For vehicles stored for extended periods, connect the charger in float mode to maintain optimal battery charge and prevent self-discharge.

8. Troubleshooting

If you encounter issues, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Charger does not turn on.	No power from AC outlet; loose connection.	Check AC power source; ensure power cable is securely plugged in.

Problem	Possible Cause	Solution
Battery not charging.	Incorrect clamp connection; battery is severely discharged/damaged; charger fault.	Verify correct polarity (+ to +, - to -); ensure battery voltage is above 3V; if battery is severely damaged, it may not be chargeable. Contact support if problem persists.
Display shows error or warning.	Reverse polarity; short circuit; over-temperature.	Check clamp connections; ensure no short circuits; allow charger to cool down if overheated. The charger's multi-protection system will indicate issues.
Pulse repair function not activating.	Battery is not sulfated; battery is completely dead.	The function activates automatically when needed. It cannot revive batteries below 3V.

Figure 8.1: General protections integrated into the NEXPEAK charger for safe operation.

9. Specifications

Specification	Value
Brand	NEXPEAK
Model	NC101 PRO
Product Dimensions	22 x 11.7 x 6.8 cm
Item Weight	490 grams
Input Voltage	13 Volts (AC)
Output Voltage	12 Volts (DC)
Output Current	6 Amps
Battery Types	12V Lead-Acid (AGM, GEL, SLA, Flooded)
Compliance	CE

10. Warranty and Support

NEXPEAK products are manufactured to high-quality standards. For warranty information or technical support, please refer to the documentation included with your purchase or contact your retailer. Keep your proof of purchase for warranty claims.