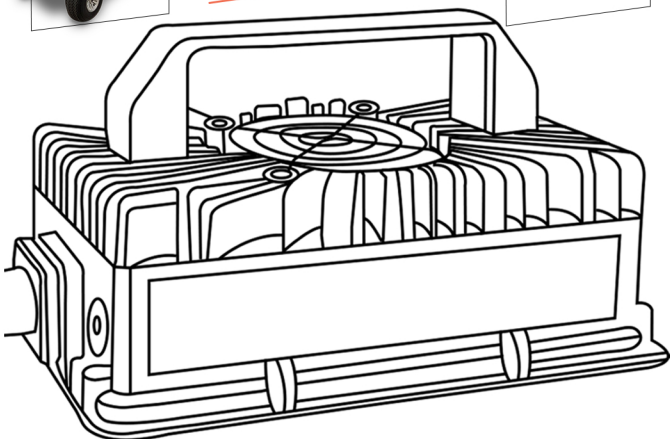


# SMART CHARGER

Reliable. Efficient.  
Built to Last.





## Product Description

The **Parts World USA Smart Battery Charger** is a high-quality and reliable charger designed specifically for lead-acid batteries. Featuring a heat-dissipating aluminium shell, durable input & output plugs, portable and lightweight design, this charger ensures secure and efficient charging for your Golf cart while prioritizing convenience.

### Enhanced Features:

**VoltRevive™ Repair:** If the battery is seriously over-discharged (e.g. if it is only supplying 8V), our VoltRevive™ repairing kicks in with small currents to slowly repair the battery. This can revive dead batteries and make old batteries feel like new ones!

**TrickleFlow™ Charging:** Once the battery is almost full during charging, our TrickleFlow™ kicks in with small currents to ensure the battery reaches a complete 100% stably. TrickleFlow ensures that your battery will be smartly maintained.

**Temperature Compensated Charging:** By automatically adjusting the voltage and current based on our temperature sensors, our temperature-compensated charging technology ensures that your battery charges faster, lasts longer, and stays healthier in any climate, hot or cold!

**Set-and-Forget Protection:** Equipped with intelligent automatic shutoff and overcharge prevention, this charger allows you to safely leave it connected without constant monitoring for up to 7 days.

**Note:** *We do not recommend leaving the charger plugged in over 7 days.*

**Advanced Microcontroller Chip Design:** The charger utilizes advanced switching power supply technology, incorporating a high-frequency transformer, temperature sensors and an advanced topology with PFC + LLC circuits to support convenient & safe charging of your vehicle.

**Smart Battery Maintenance for Longevity:** Our advanced charging algorithms provide smart maintenance to reduce battery wear and enhance longevity, keeping your batteries in peak condition for years.

**Rugged Lightweight Aluminium Shell:** Made from heavy-duty, high-grade aluminum, this shell ensures superior heat dissipation, rust resistance, and corrosion protection. Built for rugged use, it offers long-lasting durability in tough environments.

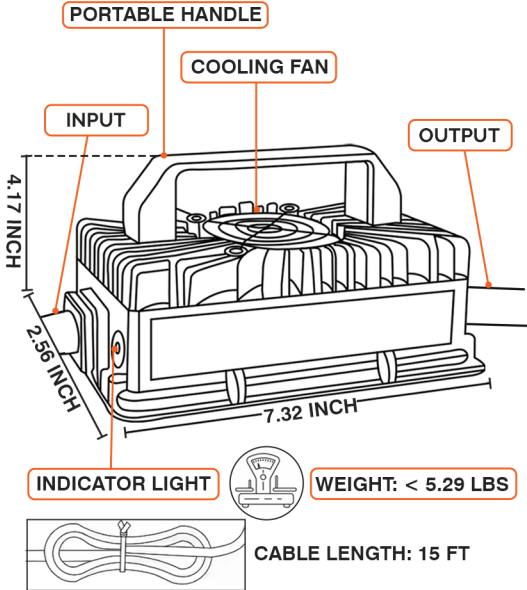
**Active Cooling with Fan:** Ideal for long charging cycles and hot environments, our built-in fan prevents overheating, enhances efficiency, extends the lifespan of internal components, and ensures safe operation.





# Technical Specification

Specification	36 Volt Charger	48 Volt Charger
Maximum Power Output	800 W	800 W
Input Voltage	90 ~ 300 VAC	90 ~ 300 VAC
Nominal Output Voltage	36 V	48 V
Output Voltage Range	27.9 ~ 44.1 V	37.2 ~ 58.8 V
Maximum Output Current	18 A	15 A
Nominal Power Efficiency	>90%	
Size (inches)	7.32 X 4.17 X 2.56	
Cooling	Convection Cooling with Fans	
IP Rating	IP67	
VoltRevive™	All our chargers come with our unique VoltRevive™ technology to revive your dead or deeply discharged batteries and keep them going!	
TrickeFlow™	All our chargers come with our unique TrickeFlow™ technology to maintain your battery health and even improve it!	
Working Temperature	14°F to 113°F	
Storage Temperature	-40°F to 158°F	
Operating Humidity	5~95%	
Cable Length	15 ft	
Temperature Sensor	Internal	
Weight	< 5.29 lbs	
Compatible with	36V Lead-Acid/ AGM/ Gel Batteries	48V Lead-Acid/ AGM/ Gel Batteries





# Quick Start Charging

## Step 1: Connection

- ✔ Ensure that the voltage and type of the battery matches the charger you have chosen (36V/ 48V Lead Acid/AGM/Gel Battery).
- ✔ Ensure the charger plug and socket on the golf cart are clean, free of debris and have no rust or corrosion on them.
- ✔ Confirm that the electrical outlet and power supply is compatible with the charger's input requirements (AC 110V/220V 10A).
- ✔ To ensure optimal charging speed and conditions, please use the charger in a cool & well-ventilated area where the charger is not placed under sunlight.

## 2. Charging Process

### Connect the Charger:

Plug the 3-prong connector of the input power cord into a compatible electrical outlet. The CHARGE STATUS light will start flashing Red / Green.



Connect the output plug to the battery charging receptacle on your vehicle. The CHARGE STATUS light should now begin flashing Red. If the light continues to flash Red / Green red, the cart is not being detected.





When the output plug has made a successful connection, the CHARGE STATUS light will illuminate based on the battery charging needs. Please look at the table below for how you can monitor your charging.



### Monitor Charging:

- ✔ The charger's indicator light will display the charging status:

Color	Description	Battery
	Alternating Red/ Green Repeatedly	Cart Not Detected
	Flashing Red	<80%
	Flashing Yellow	>80%
	Solid Green	100%

### Disconnect the Charger:

- ✔ Once the battery is fully charged (solid green light), unplug the charger from the AC outlet.
- ✔ Remove the plug from the golf cart.

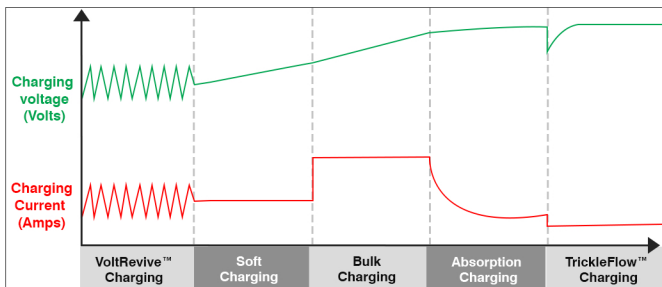
*Note: We do not recommend leaving the charger plugged in for over 7 days.*





# Charging Stages

This graph illustrates the charging curve of our lead-acid battery charger, highlighting the key stages of the charging cycle:



## VoltRevive™ Charging

At the start of the charging process, the charger checks if the battery voltage is below a safe threshold. If detected, it enters VoltRevive™ Repair, delivering a low current to gradually raise the voltage to a recoverable level and then starting high-frequency pulses to desulphate & rejuvenate the batteries. This process safely revives deeply discharged or dead batteries, preparing them for efficient charging in the next phase.



## Soft Charging

Once the battery has been restored & repaired, the charger begins gently introducing power to the battery. Charging begins with a low constant current at a low voltage, and the charger slowly increases voltage while monitoring the battery.



## Bulk Charging

Once the battery reaches a stable voltage, the charger transitions to the bulk charging stage. During this stage, a constant high current is supplied to the battery, conducting rapid and efficient energy transfer. As the battery charges, the voltage steadily increases while maintaining the fixed current.



## Absorption Charging

Absorption charging begins when the battery reaches approximately 80% capacity. At this stage, the charger intelligently adjusts the charge rate based on the battery's temperature and power level. Once the optimal charging voltage is determined, the charger maintains a steady voltage while gradually reducing the current, ensuring a safe and efficient charge without overloading the battery.



## TrickleFlow™ Charging

Once the battery is approximately 98% charged, the charger enters the final phase of TrickleFlow™ Charging. During this stage, the charger continuously monitors the battery's health, temperature, and power level to determine the optimal voltage and current. Both remain stable as trickle charging begins, delivering a gentle, low-current charge to safely bring the battery to 100% capacity. This crucial phase prevents overheating, minimizes stress on the battery, and enhances its overall lifespan, ensuring long-term reliability and performance.



# Advanced Safety Mechanisms

Our charger is designed and manufactured using the ISO 9001 Quality Management System, and we provide a detailed End of Line Testing Report with each charger, therefore you can have peace of mind that our charger will be highly reliable with a long service life. The PartsWorldUSA charger is equipped with the following advanced safety mechanisms:

- ✔ **CE Compliant:** Our chargers are CE compliant, meeting the highest standards of safety and performance.
- ✔ **FCC Certified:** Enjoy peace of mind knowing you're using a dependable product certified by the FCC specifically for your safety and satisfaction.
- ✔ **Over-Voltage Protection:** Ensures the battery is not exposed to voltages beyond its rated capacity, with automated shutoff during unsafe conditions.
- ✔ **Short-Circuit Protection:** Immediately disconnects power in the event of a short circuit, ensuring safety for devices and users.
- ✔ **Fan Failure Fail-Safe:** Monitors the cooling fan's operation and reduces power output or shuts down the charger in case of fan malfunction, preventing overheating.
- ✔ **IP67 Waterproof Enclosure:** Offers exceptional resistance to water ingress, ensuring reliable performance in wet conditions.
- ✔ **Shockproof and Quakeproof Design:** Enhances durability and stability, making the charger suitable for rugged and high-vibration environments.

## ***Thermally Adaptive Design:***

Our Smart Battery Charger uses a strong aluminum shell which has excellent thermal conductivity and helps dissipate heat effectively. We also have a rugged external fan to ensure that our charger can function at high temperatures & in different environments. However, to ensure the health of the charger and the battery, we employ a number of over-temperature protections to improve long-term reliability and provide safety.

- ✔ **Temperature Sensors:** We integrate temperature sensors (thermistors) on the heatsink & near critical components to provide continuous monitoring.
- ✔ **Thermal Shutdown Circuits:** These circuits automatically turn off or reduce the power to a device if it detects a temperature above a certain threshold.
- ✔ **Heat Spreaders:** In addition to the heatsink, we use heat spreaders (which distribute heat more evenly across the surface) to improve cooling efficiency and prevent localized hotspots.
- ✔ **Optimal Ventilation:** Our casing has an external fan, around which we have created an optimal design of fins to ensure that the fan's airflow is improved & unobstructed.

Whether you're maintaining your golf cart, reviving a depleted battery or just upgrading from your old charger, the Parts World USA Smart Battery Charger offers exceptional efficiency, reliability, and safety. It's the ultimate solution for all your lead-acid battery charging needs.



## Maintenance

- ✔ Clean the charger with a soft, dry cloth. Do not use water or solvents.
- ✔ Inspect the cables and plug for signs of wear or damage before each use.
- ✔ Store the charger in a cool, dry place when not in use.



## Safety Warnings

**Before using your battery charger, please read the following safety precautions:**

- ✔ Always operate the charger in well-ventilated areas.
- ✔ Due to the high current, sparking is normal when connecting the charger to the battery.
- ✔ To ensure optimal charging conditions, please use the charger in a cool & well-ventilated area where the charger is not placed under sunlight.
- ✔ Ensure you are charging the correct type of battery.
- ✔ Never cover the aluminum casing, as this can cause the charger to overheat during operation.
- ✔ Do not attempt to disassemble the charger.
- ✔ Batteries release hydrogen gas, which is highly explosive. Never smoke, use an open flame, or create sparks near the battery. Always ensure proper ventilation when charging.
- ✔ There is a risk of electrical shock. Never touch the uninsulated parts of the AC or DC connectors, or the exposed battery terminals.
- ✔ To prevent electrical shock, ensure all electrical connectors are in good condition. Do not use connectors that are cracked, corroded, or fail to make a proper connection. Damaged connectors can lead to overheating or electrical shock.
- ✔ Danger: Never alter the AC cord or force the plug if it does not fit your outlet. Improper connections can lead to electric shock.
- ✔ Danger: Do not attempt to repair or service the charger yourself. Opening the charger may expose you to high voltages and other hazards.
- ✔ Danger: Never splice the AC power cord.
- ✔ Danger: Damaged cords or plugs pose a risk of electric shock or electrocution.
- ✔ Caution: When using an extension cord, connect the AC to the charger outside of the battery compartment, as far away as possible, to minimize the risk of igniting gases in the compartment.
- ✔ Caution: Although our charger can operate in high-temperature environments, ensure there is at least six inches of unobstructed space around all sides of the unit for proper ventilation and cooling. This will help maintain peak efficiency.



## Customer Support

If you encounter any issues or need further assistance, please contact Parts World USA:



[support@partsworldusa.com](mailto:support@partsworldusa.com)



[www.partsworldusa.com](http://www.partsworldusa.com)



# Troubleshooting & FAQs

ISSUE	POSSIBLE REASON	SOLUTION
Charger not powering on	⦿ Faulty power supply ⦿ Loose connection	Check the power outlet and connections
Battery not charging	⦿ Incorrect connection ⦿ Damaged battery	Ensure proper connection and check battery.
Overheating	⦿ Prolonged use ⦿ Poor ventilation	Allow the charger to cool and ensure ventilation.
Indicator light not working	⦿ Internal issue ⦿ with charger	Contact PartsWorldUSA customer support.
Fan Not Working	⦿ User mishandling ⦿ Large pressures applied ⦿ Natural failure 4-5 years after charger purchase	No solution is needed. The charger has temperature sensors that will allow it to recalibrate charging speeds when the fan isn't working.

## Q. Charger not detecting cart and status light flashing Red/Green:

- ✔ Ensure the output plug is securely connected to the golf cart.
- ✔ Check for loose or corroded connections on the battery terminals.
- ✔ Batteries may be too dead to charge. Our VoltRevive technology does its best. The charger needs at least 18V to start charging and in some cases, can be unable to rescue the batteries under 8V. Use a multimeter to check battery voltage or charge each battery individually using an Automotive Trickle Charger.

## Q. Charger hasn't turned green after several hours

- ✔ A 36V or 48V cart with 50% depleted batteries typically requires 7-10 hours to charge fully. Charging time varies depending on battery type, age, and condition. Avoid draining batteries below 50% to protect them.

## Q. Vehicle Battery meter shows full but charger is still running

- ✔ Aftermarket battery meters often read resting voltage, which isn't accurate until 12-24 hours after removing the cart from the charger. Allow the charger to complete the cycle.

## Q. Batteries making a "boiling" sound

- ✔ The sound is the release of hydrogen gas during the bulk recharge phase and is normal. However, if fluid is spilling from the batteries, disconnect the charger immediately—this may indicate overfilling.

## Q. Charger noise

- ✔ A noticeable rushing air sound is normal; it's the fan cooling the charger.

## Q. Charger temperature

- ✔ Our chargers can reach 140°F. Ensure the charging environment is under 105°F to prevent overheating. If the charger gets too hot, it will reduce output automatically to protect both the charger and the batteries.

## Q. Leaving charger plugged in during storage

- ✔ Our charger is equipped with safeguards that ensure it is safe to leave plugged in for up to 7 days
- ✔ Avoid leaving the charger plugged in for more than 30 days. This can lead to battery damage. Before storing:
  - Fill batteries.
  - Switch the cart to tow mode.
  - Disconnect charger from Golf Cart.

## Q. LED stays on after unplugging the charger

- ✔ This is normal and ensures the charger is fully disconnected before completing the cycle.

## Q. Warranty

- ✔ The charger comes with an 18-month warranty. Returns are accepted within 30 days of delivery.