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› Haofy Smart Battery Charger Maintainer User Manual

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Haofy Smart Battery Charger Maintainer User Manual

Model: 1
Brand: Haofy

1. INTRODUCTION

This manual provides detailed instructions for the safe and effective operation of your Haofy Smart Battery Charger Maintainer. This device is designed to charge and maintain 12V and 24V lead-acid batteries, including those found in cars, trucks, motorcycles, and AGM/Gel batteries. It features an automatic charging cycle, multiple protection mechanisms, an LCD screen for status display, and a pulse repair function.



Image 1.1: The Haofy Smart Battery Charger Maintainer, showing its main unit, red and black alligator clips, and power plug.

2. SAFETY INFORMATION

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

- Always connect the charger to the battery terminals correctly: red clamp to positive (+), black clamp to negative (-).
- Ensure the charger is disconnected from the power outlet before making or breaking connections to the battery.
- Do not charge frozen batteries.
- Do not expose the charger to rain or excessive moisture.
- Operate the charger in a well-ventilated area.
- Keep out of reach of children.
- The charger is equipped with built-in protections against reverse polarity, sparks, overcharging, over-current, open-circuits, short-circuits, and overheating. However, always exercise caution.



 MODE	Charge Mode Select Button
 CAR/TRUCK	For Big Batteries(Fast Charge)(Battery Capacity: 30Ah-150Ah) 12V Batteries: Charge Current Max.8A (Output:12V 8A) 24V Batteries: Charge Current Max.4A (Output:12V 4A)
 AGM	For AGM, Calcium batteries
 MOTORCYCLE	For Small Batteries(Small Charge)(Battery Capacity:6Ah-30Ah) Charge Current Max. 1.5A(Output:12V/24V 1.5A)

TIPS: If you want to maintain or trickle charge a big battery, you can select the MOTORCYCLE mode to charge the battery instead of the CAR.TRUCK mode.

Image 2.1: The charger connected to a vehicle battery, illustrating its multiple safety protections including over-current, over-voltage, reverse polarity, short-circuit, and over-heat protection.

3. PRODUCT FEATURES

- **Universal Compatibility:** Suitable for 12V/8A and 24V/4A charging of car, truck, motorcycle, and AGM batteries.
- **Automatic Charging Cycle:** Features an automatic charging cycle from fast charge to top-off to trickle charge, ensuring safe and efficient charging.
- **Advanced Safety Protections:** Includes protection against reverse polarity, sparks, overcharging, over-current, open-circuits, short-circuits, and overheating.
- **LCD Digital Display:** Clearly shows charging status, battery status, charge voltage, charge current, internal temperature, and selected mode.
- **Pulse Repair Function:** Helps to recondition and extend the life of certain depleted batteries. Note: This function cannot activate a completely dead battery or repair severely damaged batteries.
- **Temperature Compensation:** Automatically adjusts charging parameters for optimal performance in summer (>28°C) and winter (<10°C) conditions.
- **Efficient Cooling:** Equipped with a silent cooling fan and aluminum heat sink for extended charger lifespan.

Ideal for 12V and 24V Lead-Acid Batteries



Image 3.1: Illustration of the charger's broad compatibility with various 12V and 24V lead-acid batteries found in different vehicles.

4. COMPONENTS AND CONTROLS

The Haofy Smart Battery Charger Maintainer consists of the main charging unit, power cord, and battery clamps.

- **Main Unit:** Houses the charging circuitry, LCD display, and mode selection button.
- **LCD Display:** Provides real-time charging information.
- **Mode Selection Button:** Used to switch between charging modes (Car/Truck, AGM, Motorcycle, Repair).
- **Battery Clamps:** Heavy-duty alligator clips (red for positive, black for negative) for secure connection to battery terminals.
- **Power Cord:** Connects the charger to a standard 110-240V AC power outlet.

LCD Screen



Real-Time
Charging



Battery



Diagnostic
Information



Backlit Screen
For Night

Image 4.1: Detailed view of the charger's LCD screen, showing battery status, charging indicators, and mode selection options.



Image 4.2: Illustration highlighting the robust, insulated design of the charger's alligator clips for enhanced safety and durability.

5. SETUP AND CONNECTION

1. **Prepare the Battery:** Ensure the battery terminals are clean and free of corrosion. If necessary, clean them with a wire brush.

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 charger's power cord into a standard 110-240V AC electrical outlet. The LCD screen will illuminate.

4. **Select Charging Mode:** Press the "MODE SELECTION" button to choose the appropriate charging mode for your battery type.

6. OPERATING INSTRUCTIONS

6.1 Mode Selection

After connecting the charger and plugging it in, use the "MODE SELECTION" button (often indicated by a fingerprint icon) to cycle through the available charging modes. The selected mode will be displayed on the LCD screen.



Image 6.1: The mode selection button and its corresponding charging options.

Charging Mode Details

Mode Icon	Mode Name	Description
/	Car/Truck Mode	For large batteries (30Ah-150Ah). Provides fast charging: 12V/8A or 24V/4A.
	AGM Mode	Specifically for AGM and Calcium batteries.
	Motorcycle Mode	For small batteries (6Ah-30Ah). Provides a slower charge: 12V/1.5A or 24V/1.5A. <i>Tip: For maintaining or trickle charging a large battery, you can select Motorcycle Mode.</i>

Mode Icon	Mode Name	Description
PUL	Repair Mode	Uses pulse technology to help recondition and extend the life of certain depleted batteries.

6.2 Charging Process

Once a mode is selected, the charger will automatically begin the charging process. The LCD screen will display real-time information about the charging status.



Image 6.2: The intelligent digital display showing various charging parameters and status indicators.

- The charger will automatically adjust the charging current based on the battery's needs.
- The LCD will show the current voltage, amperage, and internal temperature.
- When charging is complete, the display will indicate "FULL" or a similar completion message.
- The charger will then switch to a trickle charge mode to maintain the battery.

6.3 Pulse Repair Function

The Pulse Repair function (PUL mode) uses high and low frequency pulse technology to help refresh and restore certain types of batteries that have lost capacity due to sulfation. This can extend the battery's lifespan.

- **Important Note:** This function cannot activate a completely dead battery (0V) or repair a battery that is severely damaged internally. It also cannot restore a battery to 100% of its original new condition.
- Select "PUL" mode using the mode selection button to initiate the repair process.



Image 6.3: The Pulse Repair function display, indicating its use for refreshing long-idle, starting power, and old batteries.

6.4 Temperature Compensation

The charger automatically detects ambient temperature and adjusts charging parameters accordingly to optimize performance and prevent overcharging or undercharging.

- **Summer Mode:** Activated automatically above 28°C to prevent overcharge.
- **Winter Mode:** Activated automatically below 10°C to ensure adequate charging in cold conditions.

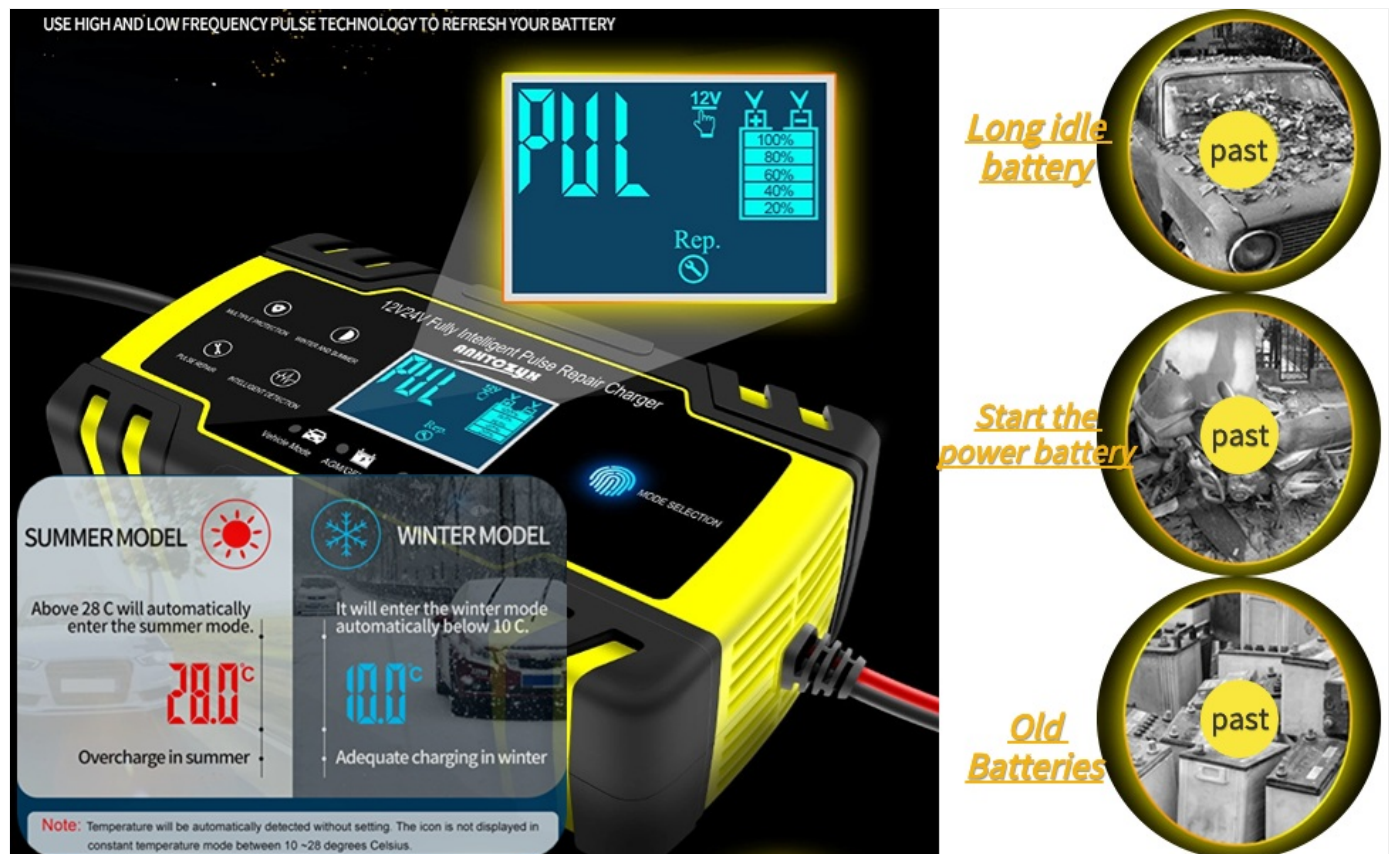


Image 6.4: The charger's automatic temperature compensation feature, displaying summer and winter modes.

7. MAINTENANCE

- **Cleaning:** Disconnect the charger from power and battery before cleaning. Wipe the exterior with a soft, dry cloth. Do not use solvents or abrasive cleaners.
- **Storage:** Store the charger in a cool, dry place when not in use. Ensure cables are neatly coiled and not kinked.
- **Inspection:** Periodically inspect the power cord and battery clamps for any signs of damage. Do not use if damaged.
- **Cooling Fan:** The built-in cooling fan helps dissipate heat. Ensure the fan vents are not obstructed during operation.

Automatic adjustment of charging current 140W gold power, faster charging



Image 7.1: The charger's heat dissipation system, featuring a silent fan for efficient cooling and extended product life.

8. TROUBLESHOOTING

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

- **Charger Not Turning On:**
 - Ensure the power cord is securely plugged into a live electrical outlet.
 - Check if the outlet is functioning correctly by plugging in another device.

- **No Charging Indication:**

- Verify that the battery clamps are securely connected to the correct battery terminals (red to positive, black to negative).
- Ensure the battery voltage is within the charger's operating range (12V or 24V).
- The battery might be severely discharged or damaged beyond repair by this unit.

- **Error Message on LCD:**

- Refer to the LCD display for specific error codes or messages (e.g., "Flt" for fault).
- Common errors relate to reverse polarity, short circuits, or over-temperature. Disconnect, check connections, and allow to cool if necessary.

- **Pulse Repair Not Working:**

- The pulse repair function is designed for specific battery conditions and cannot revive completely dead or severely damaged batteries.

9. SPECIFICATIONS

Feature	Specification
Model Number	1
Input Voltage	110-240V AC
Output Voltage	12V / 24V DC (Auto-detect)
Output Current (12V)	Max 8A
Output Current (24V)	Max 4A
Minimum Start Voltage	2.0V
Battery Range (12V)	6Ah - 150Ah
Battery Range (24V)	6Ah - 150Ah
Thermal Protect	65°C +/- 5°C
Cooling	Fan
Product Dimensions	2.4 x 3.7 x 6.7 inches
Item Weight	1.39 pounds

10. WARRANTY AND SUPPORT

For warranty information or technical support, please refer to the retailer where the product was purchased or visit the official Haofy website. Keep your purchase receipt as proof of purchase.

For further assistance, you may contact Haofy customer service through their official channels.

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