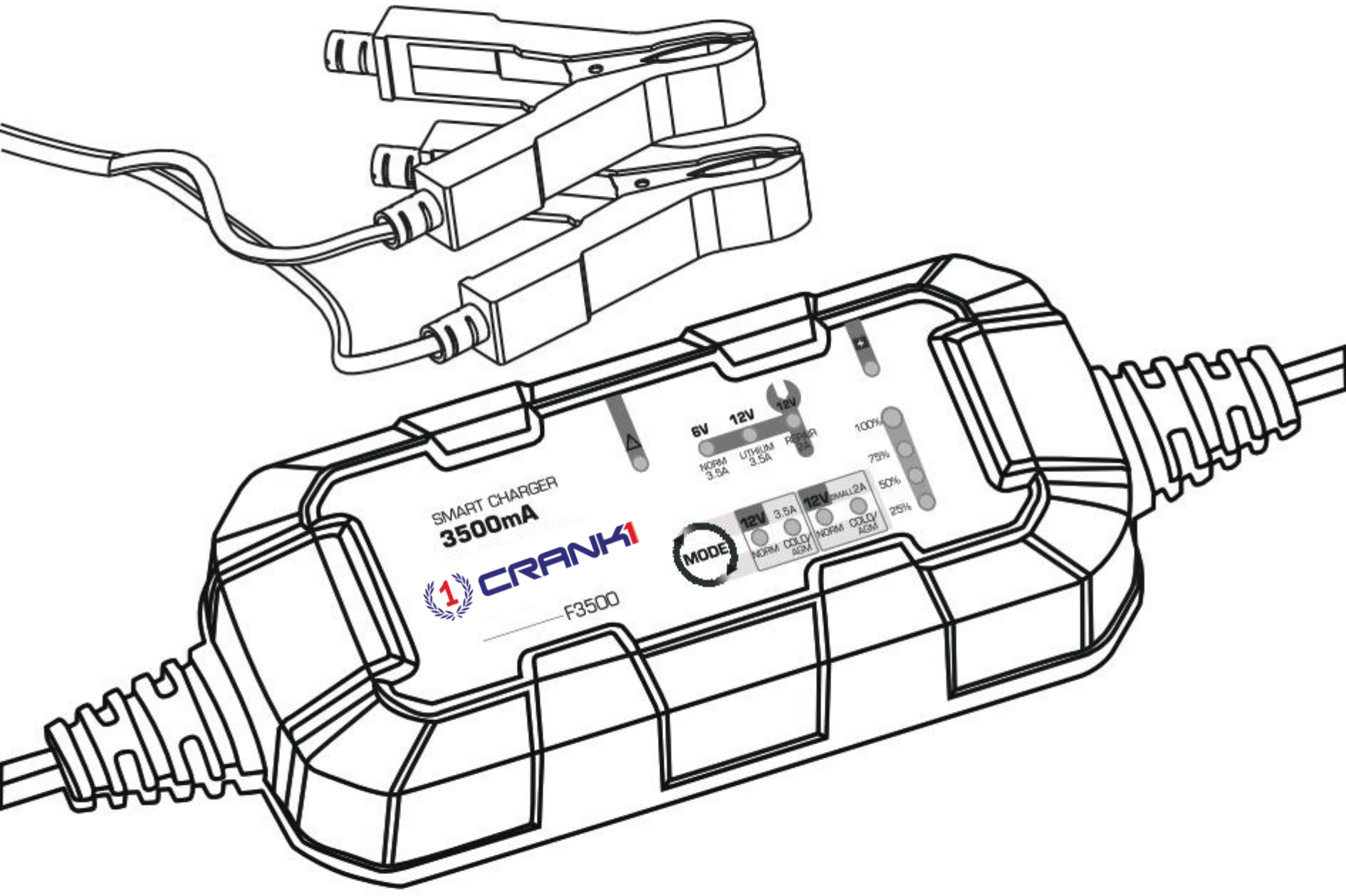
CRANK1 F3500 USER MANUAL



About F3500

The F3500 represents some of the most innovative and advanced technologies on the market, making every charge simple and easy. This is most likely the safest and most effective charger you will use. The F3500 is designed to charge related types of 6V and 12V lead-acid batteries, AGM batteries and lithium batteries. And support all battery sizes.

Warning:

- Before using the product, please read and understand the following safety information carefully!
- Before using this charger, please check the battery manufacturer's specifications.
- During charging, explosive gas may escape from the battery.
- Provide ventilation to prevent flames and sparks.
- Do not expose the charger to sunlight and high temperature.
- Battery acid is corrosive. If the acid comes in contact with skin or eyes, rinse immediately with water.
- Do not charge frozen or damaged batteries.
- Do not charge non-rechargeable batteries.
- Do not place the charger on the battery while charging.
- Be especially careful to reduce the risk of dropping metal tools onto the battery. It may cause or short circuit.
- When using lead-acid batteries, remove personal

metal items such as rings, bracelets, necklaces, and watches.

• Do not smoke or generate sparks or flames while charging.

• To reduce the risk of electric shock, unplug the charger from the AC outlet before performing any maintenance or cleaning.

• It must not be used by children or anyone who does not follow the instructions in this manual unless they are supervised by an adult to ensure the correct use of the charger.

What's in the box?

1. F3500 smart battery charger
2. Battery clip cable
3. Terminal cable
4. User manual

Start using:

Before using the charger, please carefully read the special precautions of the battery manufacturer and the recommended battery type and whether the voltage matches. Before charging, make sure to refer to the battery manual to determine the battery voltage and chemical properties.

Installation:

F3500 is an intelligent multi-function charger, please pay attention to the distance between the charger and the battery. Consider the length of the DC cable of the charger, the length of the connection cable

with battery clamp or terminal connection cable.

Charging mode:

The F3500 has eight modes: standby, 12V lead-acid battery, 12V AGM battery/winter mode, 12V lead-acid battery low-current mode, 12V AGM battery/winter low-current mode, 6V lead-acid battery, 12V lithium battery and battery repair mode. Some charging modes must restart the charger and reconnect the battery. Use the MODE button to switch the mode to change the battery type. Before choosing, first understand the differences between each rechargeable battery mode. Do not operate the charger before confirming whether the battery charging mode is suitable.

The following is a brief description:

Mode	Explanation
Standby	In standby mode, the charger does not charge or power the battery. In this mode, the energy saving function is activated, and standby power is obtained from the power outlet. The orange LED will light up after 2 automatic cycles.
12V NORM	Used for 12-volt lead-acid batteries. When selected, the white LED will light up
12V AGM/COLD	Used to charge 12V AGM batteries or to charge 12V batteries in winter mode. When selected, the white LED will light up
12V NORM SMALL	It is used to charge 12A lead-acid battery with low current 2A. When selected, the white LED will light up
12V COLD/ AGM SMALL	It is used to charge 12A AGM battery with low current 2A. Or charge the 12V battery in winter mode, the white LED will light up when selected
6V NORM	Used for 6 volt lead-acid battery, white LED will light up when selected
12V Lithium	Used for 12 volt lead lithium battery, white LED will light up when selected
REPAIR	Used for battery repair mode, used when the battery cannot be charged normally.

Use 6V NORM and 12V Lithium and REPAIR [respectively need to press and hold the mode button for 3 seconds to switch]

Connect to battery:

Make sure the correct polarity of the battery terminals on the battery before connecting the battery. The positive battery terminals are usually marked with these letters or symbols (POS, P+). Battery negatives are usually marked with these letters or symbols (NEG, N-).

1) Insert the AC power plug of the battery charger into a suitable power socket. Select the battery mode.

2) Connect the positive (red) battery clip or terminal to the positive (POS, P +) battery terminal of the battery.

3) Connect the negative (black) battery clip or terminal to the negative battery (NEG. N-) battery terminal.

4) When disconnecting the battery charge, first disconnect the power plug, and then remove the negative and positive poles of the battery cable.

Start charging:

1) Confirm the battery voltage and chemical properties.

2) The AC power plug has been inserted into the power socket, press the mode button to switch to the charging mode suitable for the battery voltage

and chemical properties.
3) The charger will start in standby mode with a green LED indication. In this state, the charger does not provide any power.
4) Confirm that the positive and negative terminals of the battery and the terminal connecting wire or clip wire are correctly connected.
5) The mode LED will light up the selected charging mode, and the charging LED display will light up (depending on the health of the battery), indicating that the charging process has started.

Learn about charging LEDs:
The charger has some charging LEDs. The charging LED indicates the charging status of the connected battery. Please refer to the following instructions:

LED	Explanation
Red LED flashes	1. When the DC output is connected in reverse, the charging red LED flashes once and goes off once. 2. When the AC output is short-circuited, the charging red LED flashes twice and goes out once. When the charging is in the overheat protection state, the charging red LED flashes three times and goes out once.
Red LED is always on	The battery is damaged when the charger is connected.
Red LED is always on	No AC input, DC output from charger connected to battery
Green LED is always on	After the maintenance indicator turns twice, the power indicator (green) is always on.
Charging percentage LED light	During the charging process, the 25% or 50% or 75% charging LED will flash slowly. Indicates the charging status and displays the current battery capacity. When the battery is about to be fully charged, the 100% charge LED will slowly flash. When the battery is fully charged, the 100% charge LED will turn solid green. The charger can be connected to the battery indefinitely.

Problem diagnosis:

Use "Problem Diagnosis" when an error is displayed, it will display a series of flashing phenomena to help you determine the error.

And the red LED flashes with an error. The number of flashes indicates the corresponding fault.

(See list for details)

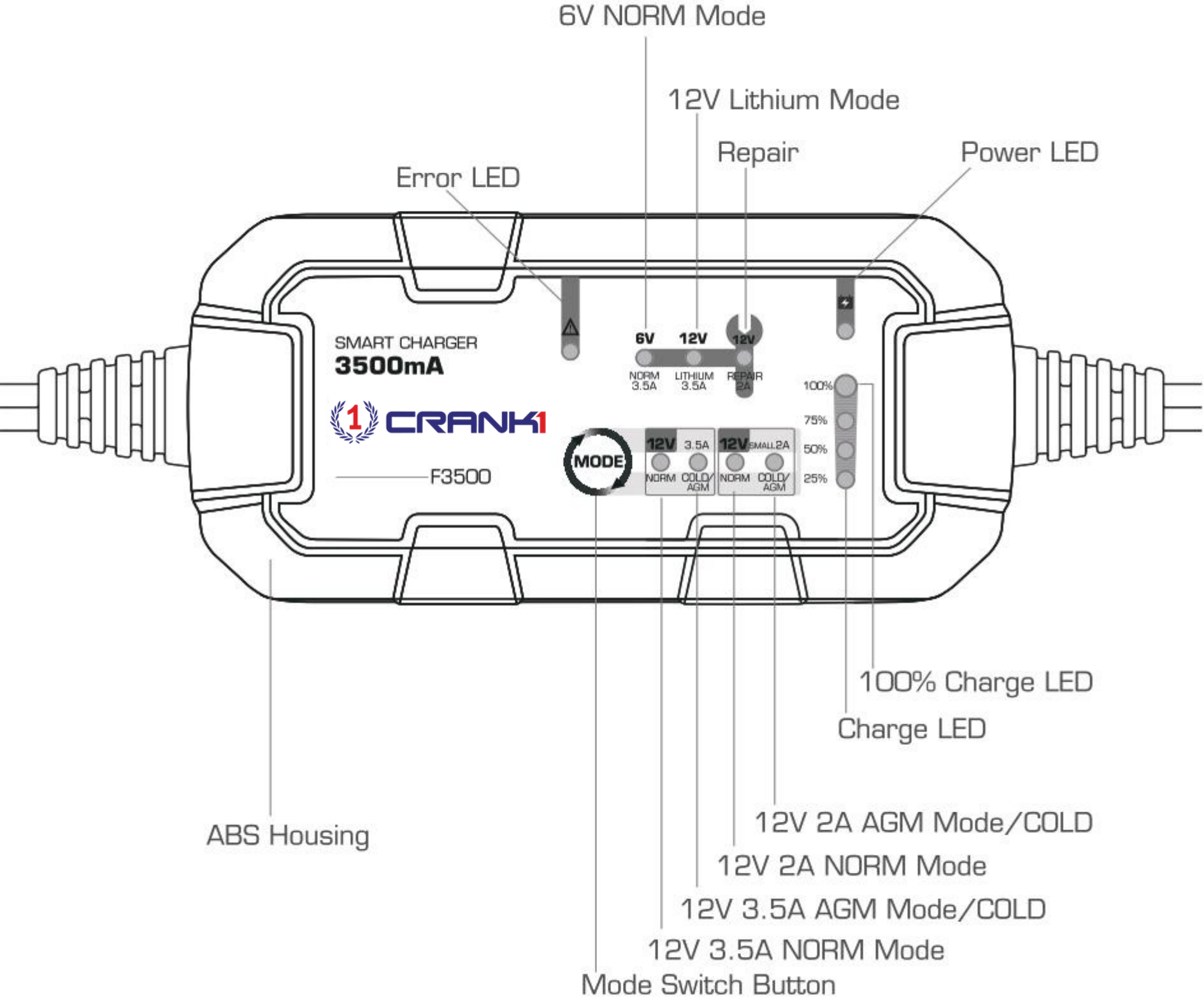
Malfunction	**Cause/Solution**
Single flash	When the DC output is connected in reverse, the charging red LED flashes once and goes off once.
Double flash	When the AC output is short-circuited, the charging red LED flashes twice and goes out once.
Triple flash	When the charging is in the overheat protection state, the charging red LED flashes three times and goes out once.
Red light always on	The charger is connected to an uncorrected battery or the battery is damaged. Have the battery checked by a professional.

Battery charging time

The battery charging time is estimated as shown below. The size of the battery (Ah) and its depth of discharge (DOD) greatly affect its charging time. The charging time is based on the average depth of discharge of a fully charged battery and is for reference only. Actual data may vary depending on battery conditions. The time to charge a normally discharged battery is based on 50% DOD.

Battery Size (Ah)	Approx. Time to Charge in hours	
	6V	12V
8	2.5	2.5
12	3.5	3.5
18	5.2	5.2
24	7.0	7.0
30	8.6	8.6
40	11.5	11.5
50	14.2	14.2
60	17.0	17.0

Product Introduction



Technical Specifications

Input Voltage AC	100V-120VAC 60Hz±2	220V-240VAC 50Hz±2
Working Voltage AC	100V-120VAC 60Hz±2	220V-240VAC 50Hz±2
Efficiency:	80%	
Watt:	45W Max	
Charging Voltage	Various	
Charging Current	3500mA(6V) 3500mA(12V)	
Low-voltage Detection	2V(6V) 2V(12V)	
No-load current:	≦0.5mA	
Ambient Temperature	0°C to+40°C	
Charger type:	8-Segment, Smart Charger	
type of battery Chemistries:	6V & 12V	
Battery Chemistries	Wet, Gel, MF , CA, EFB, AGM, Lithium	
Battery Capacity	Less Than 60Ah, Can Support all Battery Sizes	
Shell protection:	IP60	
Cooling Method:	Natural Cooling	
Size(L x Wx H):	153*72*43mm	
N.W:	0.31kg	

Operatin.g temperature range: 0'C to + 45'C.
Operating humidity range: 0 ~ 70% RH Max.

CRANK1 PERFORMANCE