VESHAI BATTERY

VST SERIES
BATTERY CHARGER
USER MANUAL

Zhaoqing Veshai Handling Equipment Co., LTD

- Please read this entire manual before using the charger
- Make sure this manual is available for future reference

⚠ WARNING

- Install an external circuit protection to prevent system failure. In order to prevent such damage, protect the power lines (input & output) from high currents by using fuses with appropriate ratings
- Only use power supply with the same rating.
- Do not turn on the power supply until all wiring is complete.
- In order to prevent explosion or other damage, never use the charger where flammable or explosive materials are present.
- Never touch the inside of the charger. High voltage and high temperature exist. Only qualified service technicians should work on the charger.
- Do not modify the charger
- Some parts on this unit have limited service life and may deteriorate over time. Only authorized service engineers should replace these parts or perform any periodic maintenance.

Introduction

Ningbo Yangming M & E Co., LTD specializes in the study and production of battery charger technology. The company has passed ISO 9001:2000 quality system.

The VST series battery charger is based on MCU technology with built-in temperature regulation. While charging, the battery may experience a minimal temperature increase.

Features

- This fully-functioning battery charger is small, lightweight, and highly efficient
- Suitable for 6V, 12V, 24V, 36V, 48V and 72V batteries
- Adjustable output currents ranging from 1A to 100A depending on your battery
- Onboard MCU technology makes sure the charging process is complete and the battery is fully charged
- Protects against battery overheating and short-circuiting while charging
- Automatically adjusts voltage according to external temperature
- User-designed charging curve
- Fully adjustable bulk or cyclic voltage

Technical Specifications

Input voltage	110VAC, 220VAC, 380VAC
Power frequency	47-63Hz
Used battery voltage	6V, 12V, 24V, 36V, 48V, 72V
Output current	1.8, 3, 5, 8, 10, 15, 20, 25, 30, 40, 50, 100A
Efficiency	70-93%
Charge time	5 hours (discharge depth 50%)
Insulate voltage	I/P-O/P1.5KVAC, I/P-FG 1.5KVAC, O/P-FG 1.5 KVAC
Insulate Resistance	Input-Output ≤ 500M Ω

Model Code Definitions

1. "VESHAI BATTERY" – trademark abbreviation
2. Battery Charger
3. Used battery voltage (v): 6, 12, 24, 36, 48, 72
4. Max output current (a): 1.8, 2, 3, 5, 10, 15, 20, 30, 100
5. Input voltage:

    a. 110VAC
    b. 220VAC
    c. 380VAC
6. NO symbol: for Pb-Acid battery

    n. For MH-Ni battery
    l. for Li-ion battery

Model and Application table

Model	Application	Size	Weight	Power
VST 12-10	Electric Forklift Electric Stacker	205*150*90	2.5Kg	150W
VST 12-15		300*155*75	3Kg	250W
VST 12-30		300*155*90	3Kg	450W
VST 24-3	e-scooter, e-bike	158*95*55	1Kg	100W
VST 24-15	Electric Forklift Electric Stacker	300*155*90	3Kg	450W
VST 24-25		300*200*160	5Kg	100W
VST 24-40		330*210*160	6.5Kg	1300W
VST 24-80		360*280*180	7.5Kg	2500W
VST 36-1.8	e-bike	160*90*55	0.5Kg	90W
VST 36-25	Electric golf car, electric vehicle	345*180*115	5Kg	1200W
VST 48-3	e-motor	210*120*75	1.5Kg	200W
VST 48-9		205*150*90	2.5Kg	600W
VST 48-20	Electric golf car, electric bus, electric car, electric vehicle	345*180*115	5Kg	1300W
VST 48-30		345*180*115	5.5Kg	2000W
VST 48-60		360*280*180	8Kg	4000W
VST 72-40		360*280*180	8Kg	4000W

Instructions for use

1. Make sure the charger output voltage is set to the correct voltage on the battery.
2. Connect the battery to the charger, making sure the polarity is correct: Positive DC output pole on charger connected to positive pole on the battery, negative DC output connected to negative DC battery pole. **Do not connect positive pole to negative pole**.
3. If the model of charger you are using has a switch, you may turn on the DC output switch.
4. Confirm that the AC input voltage is the same as the charger voltage.
5. The unit will begin charging after a 1-minute auto-test. If connection is correct, the LED will turn green. If the LED is red, connection is incorrect.
6. If the LED is red *during* the charge, it means the output line has been interrupted. Turn off the unit, check all connections, and try charging again.
7. When the battery begins charging, the LED will be red. When the battery is 90% full, the LED will turn orange, and when it is done charging, the LED will be green.
8. **When charging is complete, or if you want to turn off the charge at any time, you must *first* turn off power supply to the charger, then disconnect the battery from the charger.**

Ideal Operating Conditions

6,500 feet above sea level
Ambient temperature 14 – 122 degrees F
Ambient humidity: 5% - 70% relative humidity
Storage temperature: 14 – 140 degrees F
Store away from explosive, flammable, and corrosive materials
Keep away from moisture, rain, snow
Mount on slope ≤5 degrees

Mounting

If you are mounting the charger on a piece of mobile equipment, make sure there is at least 4 inches of space between the inside and outside. Do not block the air outlet or heat sink, or charging capacity will diminish and cause possible damage to the charger or battery.

Maintenance and Service

Store the charger in an area that is well-ventilated, dry, and dust-free to keep the unit in good working condition. If you find the charger is not working, check for incorrect battery connection, evidence of a short circuit or overheating. Also check that the voltage of the charger matches the battery, and try again.