



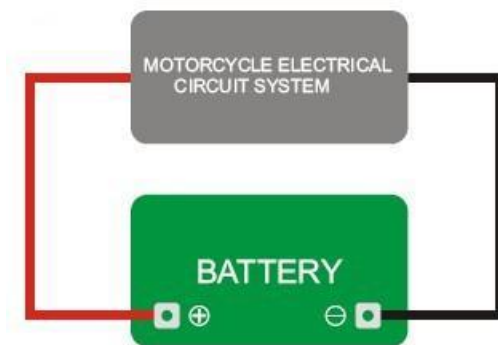
## Lithium (LiFePo4) Motorcycle Starting Battery

### Operation Instruction

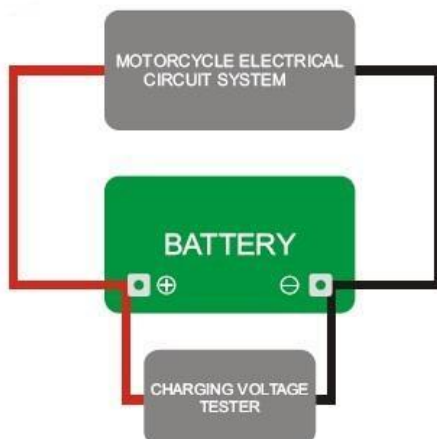
#### INSTALLATION

- 1 Install the battery according to instruction of the motorcycle manufacturer
- 2 Check the motorcycle electrical circuit system by dedicated charging tester before installation (following below step 1,2,3,4,5)

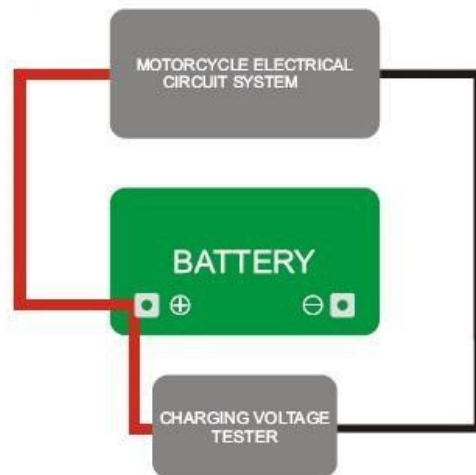
Step 1: Connect the battery terminal with the motorcycle's wire, red wire connect positive, black wire connect negative, then start the motorcycle.



Step 2: Connect the charging voltage tester with the motorcycle's wire. Red wire connect positive, black wire connect negative, the tester indicate the battery open circuit voltage.



Step3: Disconnect battery terminal with motorcycle negative wire, then the tester will indicate the motorcycle output charging voltage, please control the motorcycle rotate speed at 2000 rpm and 5000 rpm, and check the charging voltage. The charging voltage is ok if it is between 14.0-15.0V, and the battery can work normally. The battery cannot be full charged if the charging voltage less than 14.0V, or the battery would be overcharged if the charging voltage above 15.0V. These two status will damage the battery accordingly, the motorcycle charging system shall be repaired before battery installation.

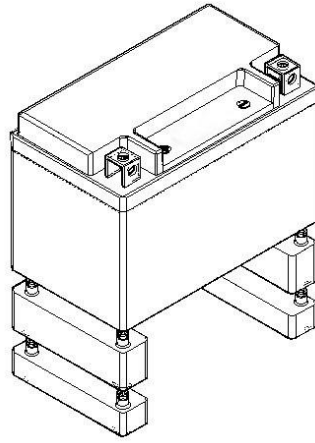


Step 4: Stall the motorcycle and take off the key, connect the multimeter (milliamperes mode function) with battery and motorcycle output wire (positive terminal or negative terminal) in series. Then check the motorcycle power consumption by Milliampere model. To make sure the current deliver less than 1mA during motorcycle storage.

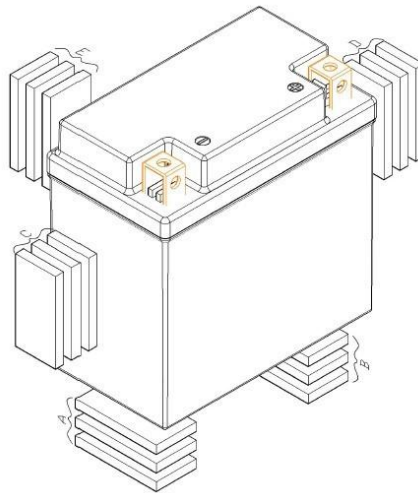
Step 5: If the motorcycle passes the above test, the Landport lithium motorcycle starting battery can be installed on the motorcycle.

- 3 Choose correct corresponding engine start lithium ion batteries accordingly to motorcycle model or lead acid model.
- 4 Check the battery voltage before installation, please recharge the battery first if battery voltage less than 12.8V( follow the charging instruction).
- 5 Take out the lead acid battery according to motorcycle guide, please make sure disconnect the negative screw and wire, then positive, which avoids the short circuit.
- 6 Our lithium ion battery will be same as original battery or smaller, you can install the battery directly if same dimension. If smaller dimension, we adopt following two methods to adjust the battery dimension.

Method 1: When the lithium ion battery is lower than the original battery, we have supplied spacers in the box. You can install one or several spacers at the bottom of the battery to fit the height of battery. (see picture)



Method 2: We supply some stick foam sheets separately in the box, you can stick them on the sides or bottom to fit the original battery size. (see picture)



- 7 Please make sure motorcycle positive and negative wire connect the battery terminal correctly and firm, positive first, then negative, which avoids short circuit.
- 8 The max. operating temperature of the battery is 60°C. Make sure the battery will not be overheated by external heat sources during the use of the battery.



### CHARGING LANDPORT LITHIUM STARTER BATTERIES

- 1 Both vehicle and battery charger need to limit voltage between 14.0-15.0 volts when charging. The battery cannot be full charged if charging voltage less than 14.0 Volts, and the battery would be damaged if the charging voltage over 15.0 Volts.
- 2 Always remove the battery from the vehicle before charging separately.
- 3 Charge the battery with a lower current than the MAX. charging current found on the charging label on the battery.
- 4 After charging, leave the battery for 1 to 2 hours before checking the voltage. If the voltage is less than 12.8 volts, additional charging is necessary.
- 5 If the battery becomes hot to the touch, stop charging. Allow battery to cool before resuming.
- 6 A lead-acid battery charger can be used for charging the Lithium batteries. However, do not use a charger without voltage limitation function. The voltage should be limited to be below 15V.

CAUTION: A de-sulfatation, reconditioning or similar charging program should never be used on Landport Lithium Motorcycle Starting Batteries.

### STORAGE

- 1 The battery should be stored with 70% charge state (approx.).
- 2 The battery should be stored in a clean, dry and ventilated environment (-20 – +40 Cells), not in contact with any corrosive substance and away from heat and fire.
- 3 The battery should be checked once every 180 days when in storage. We advise to charge the battery every 6 months. In any case, don't let the voltage drop below 13.0V for the max. lifetime.

State of charge table:

NO-LOAD VOLTAGE (V)	CAPACITY REMAINING
13.340	100%
13.300	90%
13.270	80%
13.160	70%
13.130	60%
13.116	50%
13.104	40%
12.996	30%
12.866	20%
12.730	10%
9.200	0%

## **TRANSPORTATION**

- 1 The battery should be transported with 70% charge state (approx).
- 2 The battery should be packed with insulation and shockproof material to avoid damage from sudden jolts and collision.
- 3 The battery should be handled with care when loading and unloading during transport. Do not throw the batteries and avoid collision.
- 4 Do not transport the batteries together with flammable, explosive objects, or sharp metal goods.

## **MAINTENANCE**

- 1 Disconnect the battery cable always is the best choice if the vehicle is in storage or used infrequently. Or use a standard maintainer or charger to maintain the battery, or regular charge the battery.
- 2 If the battery stands by for any period of time, check the voltage in case lower 12.8V, recharge as described on the charging label.
- 3 Keep the connecting poles clean and securely fastened.
- 4 The battery is factory sealed and requires no topping up of any fluid. Never attempt to open the battery.

## **CAUTIONS**

- 1 Do not immerse the battery in water.
- 2 Do not use or store the battery near sources of fire or heat source.
- 3 Do not reverse the positive (+) or negative (-) terminals.
- 4 Do not connect the battery directly to wall outlets.
- 5 Do not put the battery into a fire or apply direct heat to it.
- 6 Do not short-circuit the battery by connecting wires or other metal objects to the positive (+) and negative (-) terminals.
- 7 Do not leave terminals unprotected
- 8 Do not pierce the battery casing with a nail or other sharp objects. Do not break it open, do not or step on it.
- 9 Do not strike, throw, or subject the battery to sever physical shock.
- 10 Do not directly solder the battery terminals.
- 11 Do not attempt to disassemble or modify the battery in any way.
- 12 Do not place the battery in a microwave oven or pressurized container.
- 13 Do not use the battery in combination with primary batteries (such as dry cell batteries) or batteries of different capacity, type, or brand.
- 14 Do not use the battery if it gives off an odor, generates heat, becomes discolored or deformed, or appears abnormal in any way. If the battery is in use or being recharged, remove it from the device or charger immediately and discontinue use.
- 15 Do not fit extra audio, anti-theft lock and other electro-device on vehicle by yourself.
- 16 Do not use more than one battery in parallel or in series.
- 17 Do not dispose the battery before completely discharge.
- 18 Do not charge the battery by charging voltage over 15,0V.
- 19 Do not charge the battery by charger with an automatic "de-sulfatation mode" function.
- 20 Please fix the battery terminal with original screws and nuts securely. Battery and even vehicle may be damaged by the sparks because of a loose connection.
- 21 The cranking performance will be affected when environment temperature is lower than -10°C.
- 22 Keep out of reach of children and pets.

**OTHERS:**

If the problem caused by wrong operation, Landport won't take responsibility for that. Please fill in the warranty card completely and stick on the battery surface, send the battery back to your supplier. Otherwise Landport won't be attend to or serve.

**Warning:**

Electrolyte inside the battery is harmful to the skin and eyes. If the battery leaks and electrolyte gets in your eyes, do not rub them, instead, rinse them with clean running water and immediately seek medical attention. If left untreated, electrolyte can cause eye permanent injury.