



# FourStar Cruiser

## Smart Charger Guide

This guide will help you operate and install the Power Focusing Smart Charger designed specially for the FourStar Cruiser range of vehicles.

The smart charger has been made to replace older charger designs that were not reliable and if not used properly, caused damage to the batteries that they were designed to charge. The smart charger has built in circuitry designed to optimise battery life and condition whilst safely charging your batteries to the correct level and preventing overcharging.

This charger has been designed to work with all FourStar Cruisers that are fitted with the sealed lead acid gel batteries in a 36 volt configuration. Regardless of the age of the cruiser, it will be necessary to install an additional wiring loom to enable the charger to work, without this loom, the charger will not charge the batteries and may damage the charger or the vehicles controller unit. The additional wiring loom can be purchased from any authorised FourStar distributor. It is very simple to install the additional wiring loom and instructions are included in this document below.

## The Smart Charger

The smart charger operation is simple and is identical to all other chargers that have been supplied previously with the FourStar Cruiser range.

This charger should only be connected to a regular 240V AC 50Hz Australian/New Zealand power outlet. Connecting to portable generators/power supplies is not recommended unless the supplied power is a fully rectified sine wave type (suitable for computer equipment).

**To operate the charger**, connect the mains supply plug to the mains power, then turn the mains power on. Then connect the charger cord to the charging port on your FourStar Cruiser. Normal charging should commence automatically.

## Notes on operating:

There is a multi-colour/function LED on the charger that will display the state of the charger as follows:

LED Status	Charger Status
LED always green	Fully charged or not connected.
LED always red	Battery is being charged.
LED flashes red	Charger under protection (over temperature protection, output short-circuit protection, reverse polarity protection, output over-voltage protection, battery failure protection).
LED yellow	CC/CV condition

Normal operation of the charger will show the LED as red, yellow or green.

Should the LED flash red, disconnect the charger from the cruiser, and turn off from the mains. After 5 minutes, turn back on and reconnect the charger and check the LED for normal operation. Should the LED continue to flash red, please contact your nearest FourStar retailer.

**During charging, always keep the charger uncovered and in a space with good ventilation. There is an in built cooling fan that needs a clean air supply at all times whilst the charger is operating. It is recommended to keep the charger off the ground to avoid dust and dirt being ingested into the fan.**

**Always keep the charger away from liquids and moisture as these will damage the charger.**

**Never use the charger near flammable liquids and or gasses.**

**Do not drop or damage the charger as this may cause it to fail.**

## Charging times:

The smart charger will automatically charge the batteries to the correct level and the charging times will vary dependant on duration of cruiser use, battery age and condition, environmental conditions. It is best for the charger to be left on until charging is complete (the LED has changed from red/yellow to green). This process may take up to 12 hours.

**Once charging has completed, always disconnect the charger from the cruiser within 24 hours.**

For best life from your batteries always:

- Allow the charger to complete the charging cycle
- Charge the batteries immediately after using your cruiser (keep batteries in a maintained state).
- Perform a maintenance charge every 3 to 4 weeks if the cruiser is not being used (allow the charger to complete a charging cycle).

# Installing the wiring loom.

The smart charger will require an additional wiring loom to enable operation.



Smart charger and wiring (bottom) with additional wiring loom (top).

Installation:

## Step 1:

Remove the golf bag holder (if fitted) and tilt the body forward.

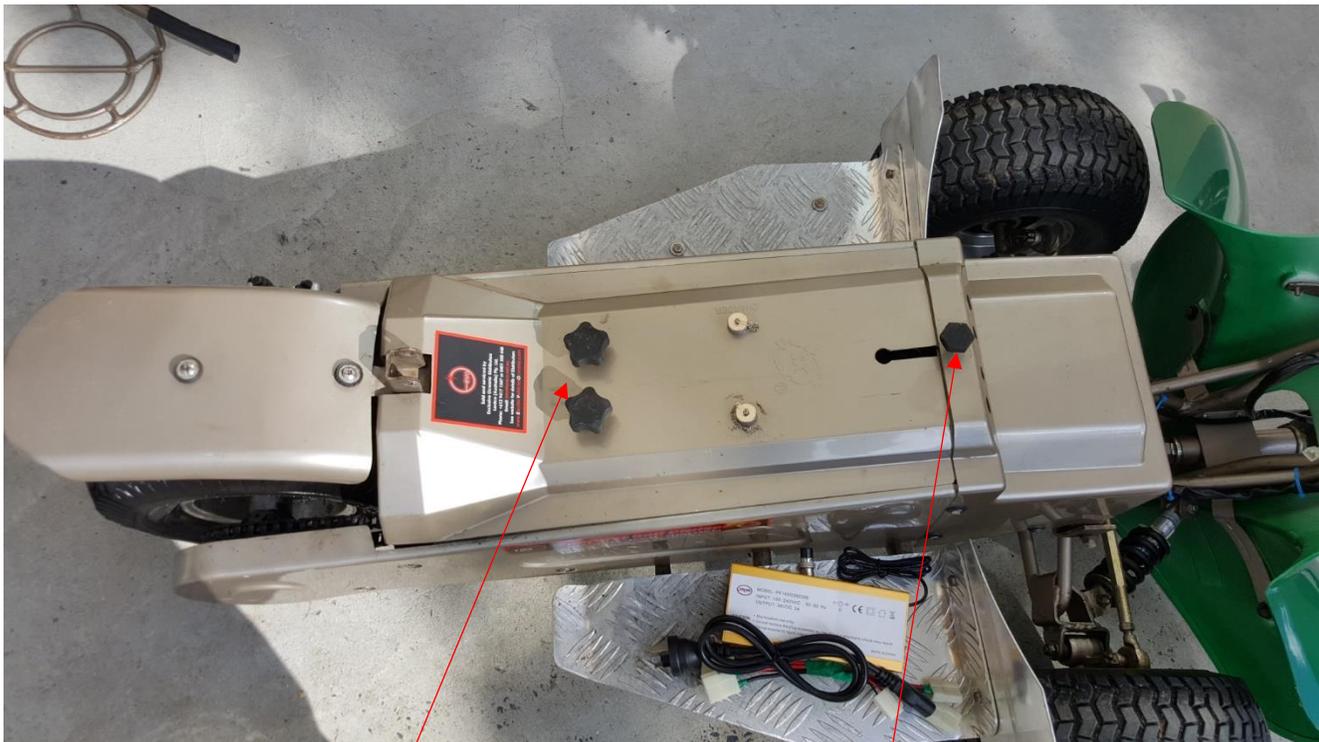


-Remove green hand nut to undo rear shock absorber.

-Tilt body forward to allow access to battery compartment.

**Step 2:**

Remove the battery box lid.



-Undo the two rear hand nuts

- Partially undo the front hand nut.

-Lift up lid from the rear and slide backwards when clear of the mud guard.

**Step 3:**

Identify and disconnect existing wiring clips.



In the battery compartment you will find 3 or 4 pairs of wires joined together by white plastic clips. Older models will have 4 pairs (2 large clips and 2 small) whereas new models may only have 3 pairs (2 large clips and 1 small)

The clips correspond to the following:

- Large clips are for battery connections
- Small clips are for charging connections.

These clips are male/female type and cannot be connected the wrong way.

Charging female clip (connected to battery compartment lid)

Battery female clips (supplies main power to vehicle)

Charging male clip (will be made redundant with new smart charger wiring)

N.B. there will be 2 of these on older vehicles and only 1 on newer vehicles.

Battery male clip (connected to the batteries)

N.B. Charging clips are the smaller in size than the battery clips.



#### Step 4:

Install the wiring loom.

The wiring loom simply connects in place where the wires were already connected.

**Before proceeding, make sure that the vehicles ignition key is switched off and the handbrake has been applied.**

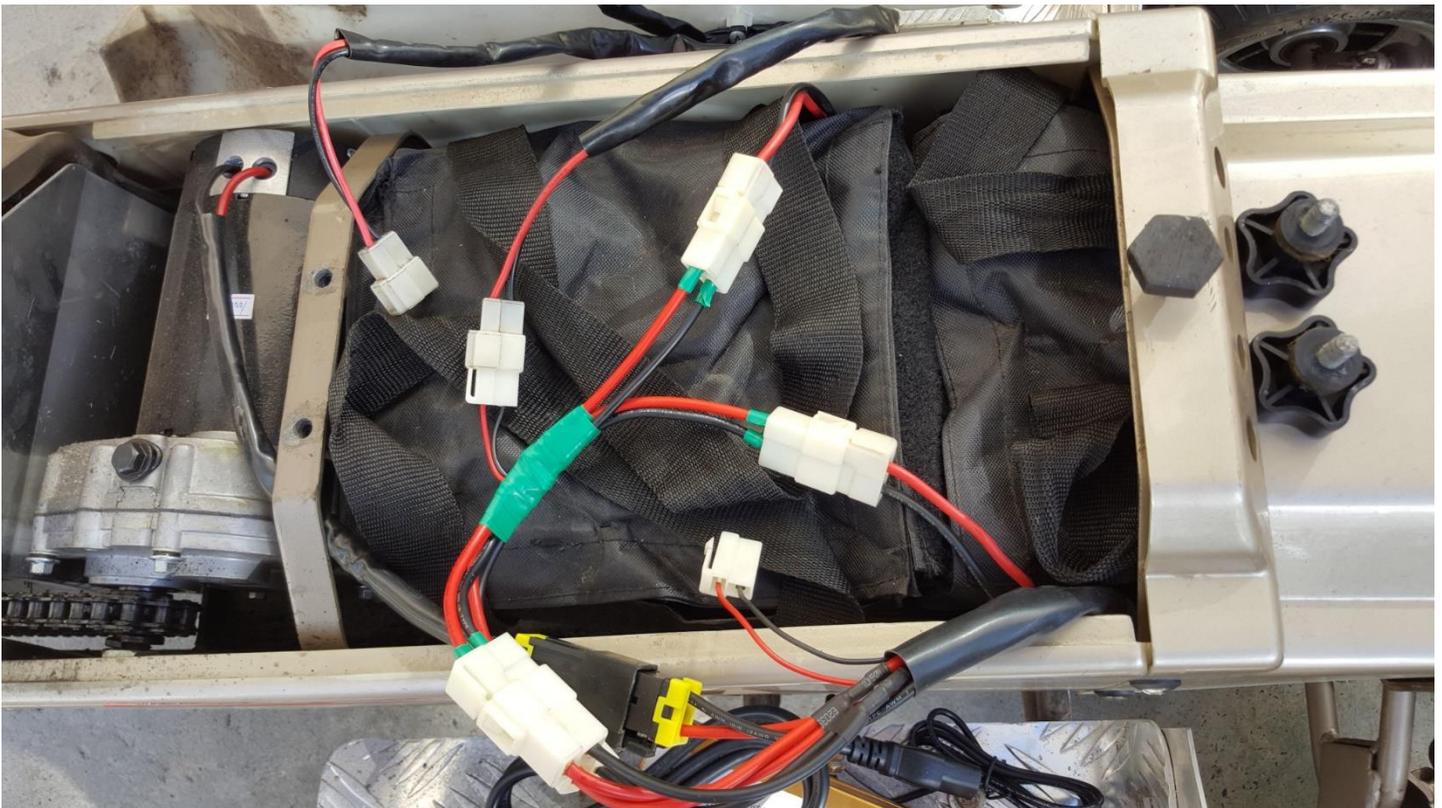
-Connect the loom female clips (larger size) to the battery male clips.

-Connect the loom male clips to the vehicle female clips.

\*\*\*Important\*\*\* There may be a blue spark when connecting these together, this is normal.

-Connect the loom male charging clip (smaller size) to the charging female clip (this is connected to the battery compartment lid). If the vehicle has two charging clips coming from the battery compartment lid, you will have to note which one it is (left or right charging port) and label it for use later, please see step 5.

When finished, the wiring will look similar to this:



Once all the wires have been connected, test the power going to the vehicle. Turn the ignition on and then check to see if the lights on the throttle illuminate. If the lights come on, the connections have been made successfully. The charging circuit will also have to be checked, see below.

Step 5:

Check the charging circuit.

Once the wiring loom has been installed, the battery cover can now be replaced.

If the vehicle is an older type and has two charging clips in the battery compartment, you should make note of which port of the two is the connected one and label it.



You can also double check the connection by connecting the charger as described above and see if the connections/charging port are working.

If connected and working, the charger should start up and display a red light. If not, the charger will only show a green light.



This will complete the installation of the smart charger wiring loom.

Should you have any questions, please contact your nearest FourStar supplier.

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