

<b>PID</b>	<b>HVLV</b>
description of issue	modification of PRE150722 scooters to accept POST batteries
solution created on	07.07.2018
language	EN

Scooters and batteries produced before July 22, 2015 (unu-internal classifications: “PRE-150722” or “HV”) do not have an active enable line (or anti-spark function), which causes sparks around the battery connector (on both scooter and battery side). This causes for an increased rate of failure to turn on the scooter or provide a steady connection in all driving conditions, causing an overheating of the connector and over time showing signs of melting plastic and metal oxidation on the connectors on the battery and/or scooter side.

To allow scooters built before July 22, 2015 to run on batteries of the later type (unu-internal classifications: “POST-150722” or “LV”) the following steps need to be taken.

1. Preparation of equipment

- 1 vampire clip (see picture below)
- 10mm hex wrench
- Phillips / Cross-head screwdriver
- Knife
- Contact cleaning spray (Alternatively WD-40)
- Cloth

**IMPORTANT: Please remove the battery from the scooter, and turn the scooter on for 5 seconds without battery to remove all remaining charge in the capacitors!**



2. Removing all spark marks / oxidation residue

With a cloth and contact spray for electrical connections, please clean out the 2 main (the 2 big) connectors. Please do not use direct metal on the plugs, applying the spray and a cloth or a pushed into the opening has been proven to work.



3. Take off the front light cover (see unu Repair guide)



4. Locate enable line signal on main cable

Even though it is not used in PRE-150722 scooters, a cable for the enable-signal is present on the main cable. The cable you are looking for is red. Attention: Do not confuse it with another cable that is striped red/white.



Depending on the production year the red cable is located slightly differently:

- If the scooter VIN is: WUNURBLFTxxxxx (prod. Year 2015): The red cable is loose. You can pull the cable out from below the rubber cover. (Left image below)

- If the VIN is WUNURBLETxxxxx (prod. Year 2014): Red cable is on speedometer connection. You need to open the rubber bag and cut the cable loose. Then pull it out from below of rubber cover. (Right image below)



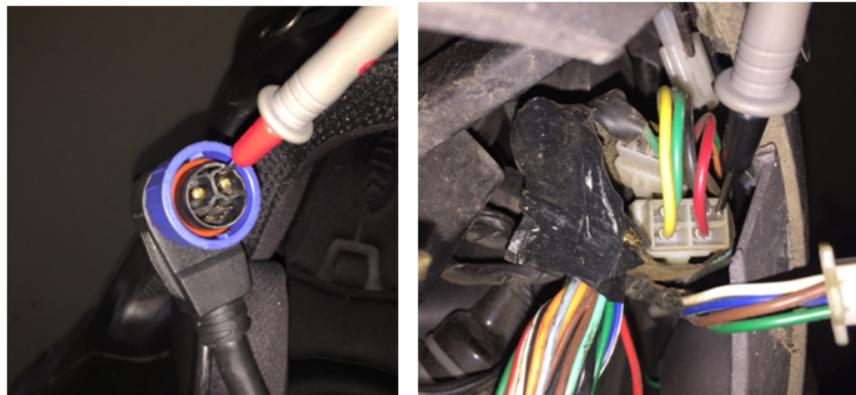
#### 5. Ensure the enable line is connected to the Chogori enable pin

Use a multimeter to ensure the correct pin on the battery connector (see image below) aligns with the red enable line.



#### 6. Locate key high voltage signals on key-lock

Use multimeter to ensure the correct pin on the battery connector (see image below) aligns with the key lock signals.



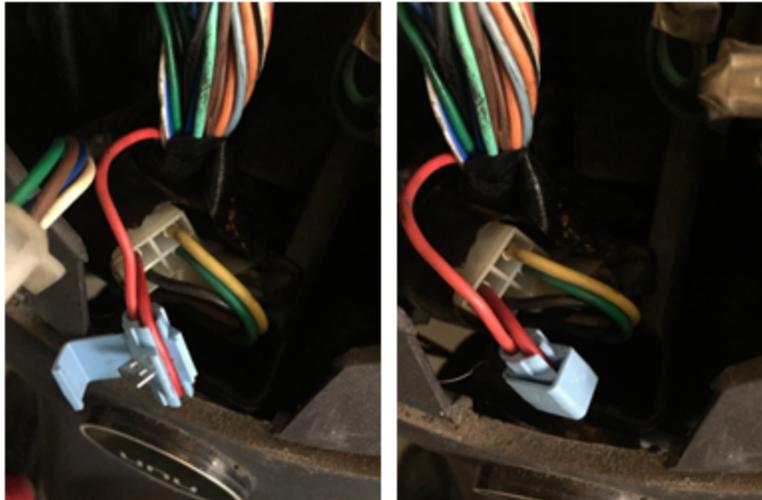
On the battery connector shown above, the pin on the multimeter carries the high-voltage signal that will later be connected to the enable line.

On the connector for the key-lock, the red and the black cable are responsible for turning the unu on. The red cable should always be electrically connected to the pin on the battery connector shown above, while the black cable is only electrically connected when the key is turned. Again, make sure there is no battery connected while you perform these tests!

The cable that is always connected to the key signal (the red one) is the cable that will now be connected to the enable signal cable which was made free in step 4.

## 7. Connect the enable line to key signal line

Connect the enable signal cable to the key signal line by using the vampire clamp. Close the clamp as seen in the image below and cover the clamp with isolation tape.



If you removed any cable ties during the process, please add cable ties at the same positions where they were. No additional cable ties are necessary.

## 8. Testing

- Ensure the key-lock is turned off
- Place a POST-150722 battery in the seatbox, and connect it to the scooter with the battery connection cable
- Turn the scooter on
- See if the speedometer and lights turn up, and if the SOC is measured on the speedometer
- Try to accelerate with the wheel in the air (put scooter on main stand)
- Stop the motor, turn the scooter off, remove the battery connector, turn the key on to discharge all electronics
- Repeat all 3 times
- Test drive the scooter for 2 minutes