Gen 2 Prius: Hybrid battery re-build with Gen 4-modules

== Warning ==

Working on hybrid battery systems requires sufficient experience and knowledge especially with high voltages of up to 240V DC. That's the reason why this description is pretty short. Experienced people should come along with it. Whoever thinks this is not detailed enough is recommended to ask for professional support. In case of doubt better have a workshop doing this task. Mistakes can cause serious injuries. All attempts to do the work described are performed on own risk!
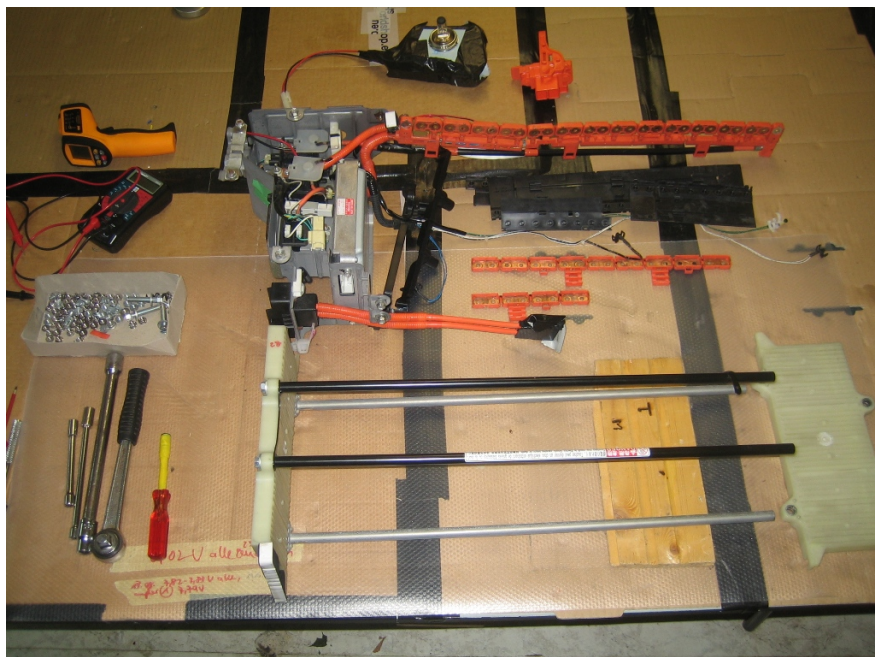
This description shows how to change battery modules of a Gen 2 battery pack. For a Gen 3 the procedure is comparable, but not exactly the same.
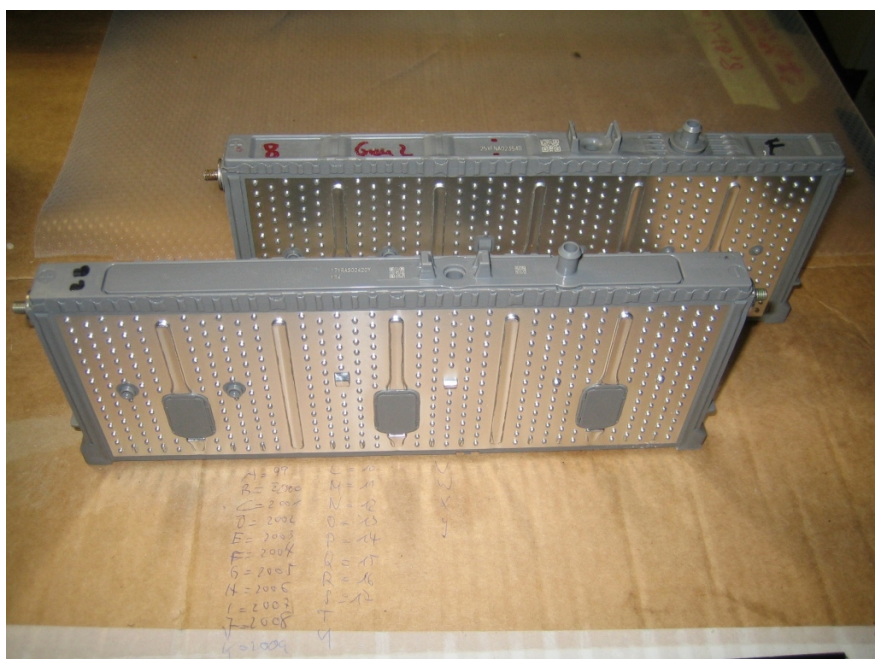

== Introduction ==

* The modules used are from a crashed Gen 4 Prius (2017) from the UK. Production date is 2016-11-16.

* Thanks to Toyota for having the same mechanical and electrical design (voltage, capacity) for the Gen 2, Gen 3 and Gen 4 NiMH-modules. The Gen 4 modules should due to improved cell chemistry have a better capability of energy recuperation.

* Changing the modules is not really difficult. Due to the voltage of up to 240V DC it is highly recommended to use insulating gloves (for electricians) while dis-/mounting the contact bars.

== How to step by step ==

* Preparation: cleaning the copper plates, using new (stainless steel) nuts for the contacts, replacing the ventilation hoses (if still the old "smelling ones)
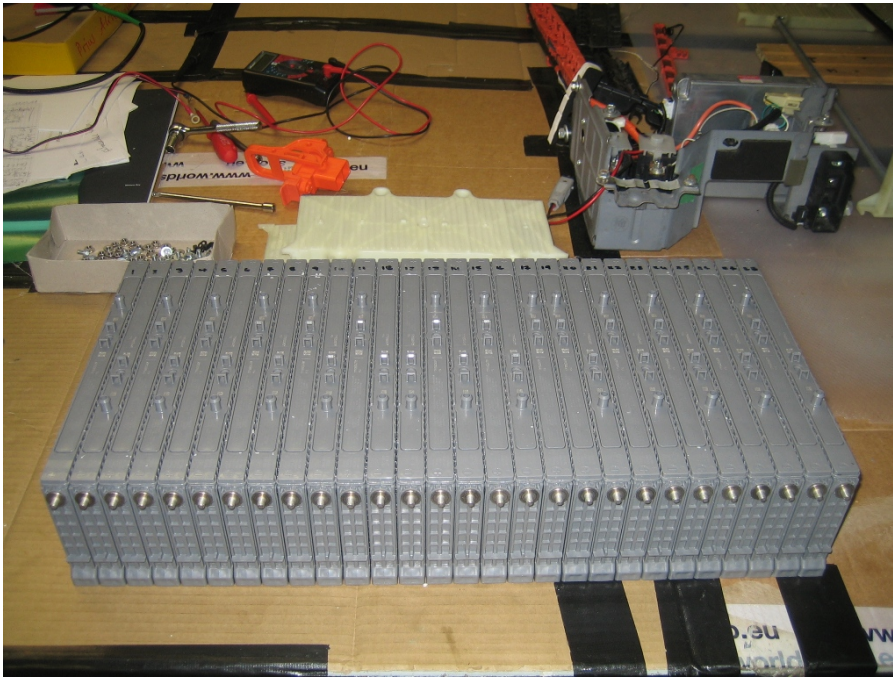

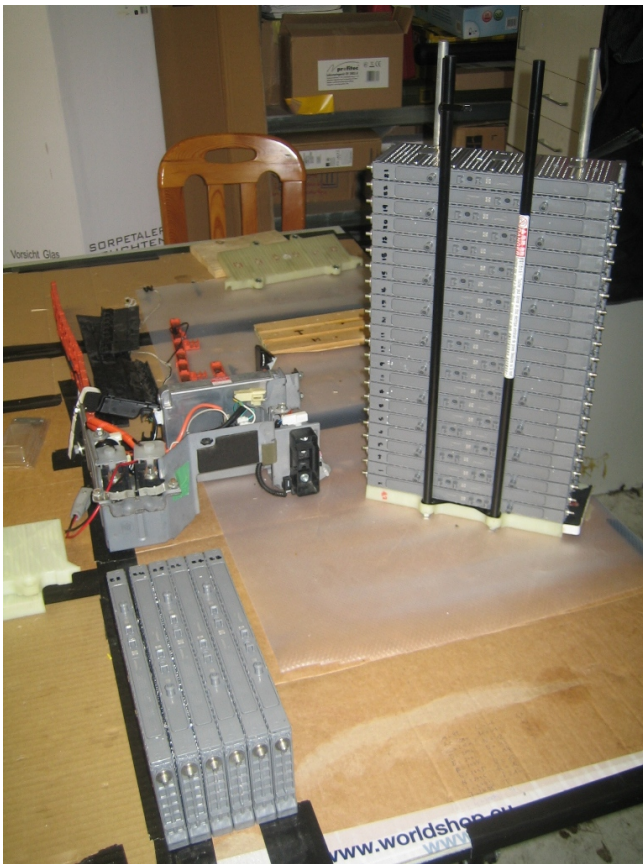* Comparison: Gen 4 modules with Gen 2: The main difference is the top cover design

* New modules really look great::

* Assembling the pack in an up right position makes is much easier as the modules are packed closely to each other due to their own weight.

* Don't forget the temperature sensors at the bottom

* Pack ready to be mounted:

* Prius w/o battery pack:

* The new pack installed:

=== Conclusion ===

Assembly: The mechanical fit of the Gen 4 modules is perfect.

Driving: I don't see a significant difference.

Fuel consumption: Let's see; update will follow.

=== Remark ===

Having installed the pack and re-connected the 12V-battery, the Prius might show some errors lights on the displays. A complete restart usually fixes that problem.