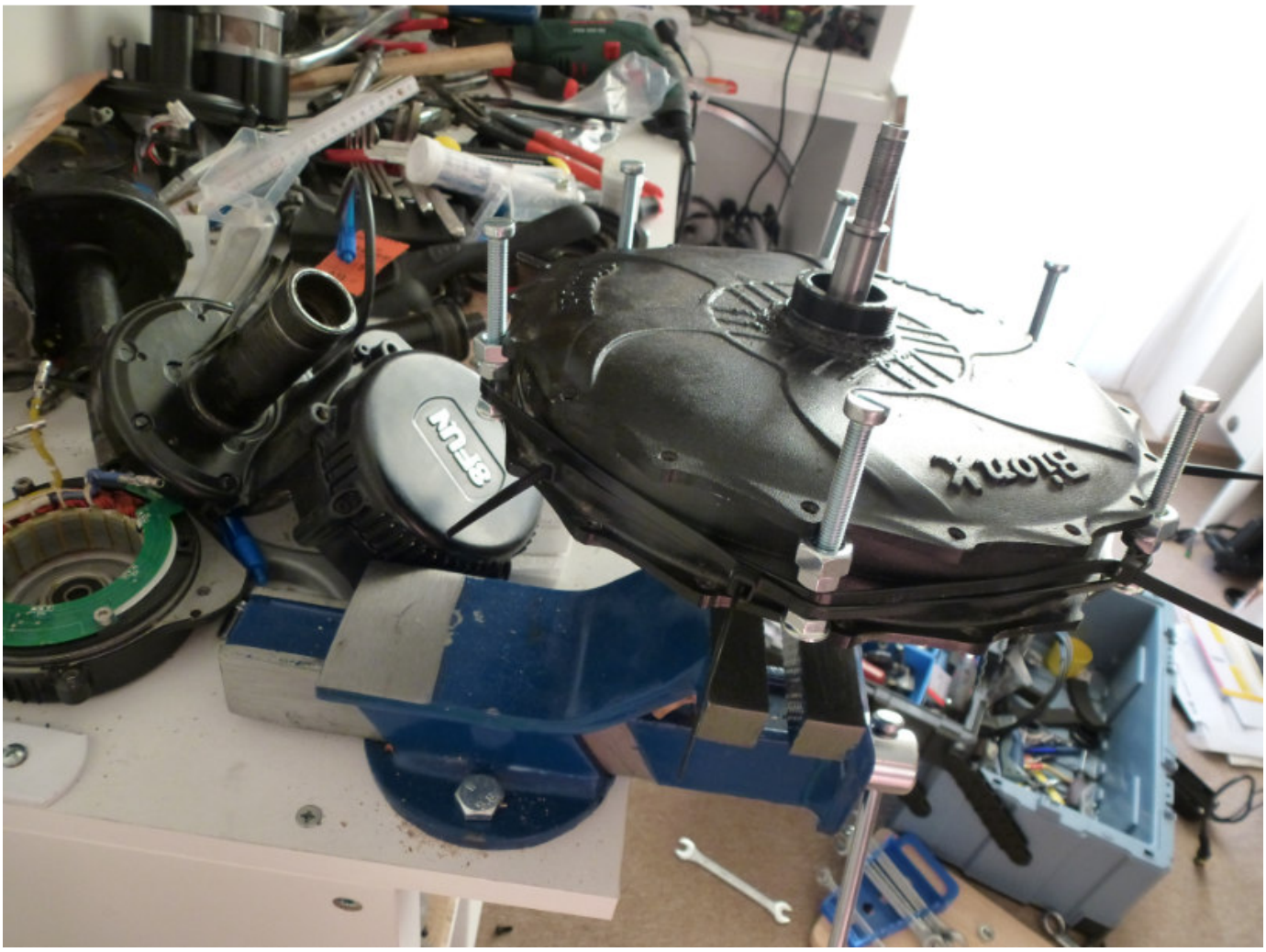
How to open Bionx SL Motor:

You can use professional tool´s but this is very expensive and not easy to get so I decide to show you the easy and cheap way of opening the bionx-SL. Maybe it need ten minute more but all you need is:

6pcs screw M6x60
6psc nut M6
6pcs flange-nut M6
6washer M6
6ocs nut M8

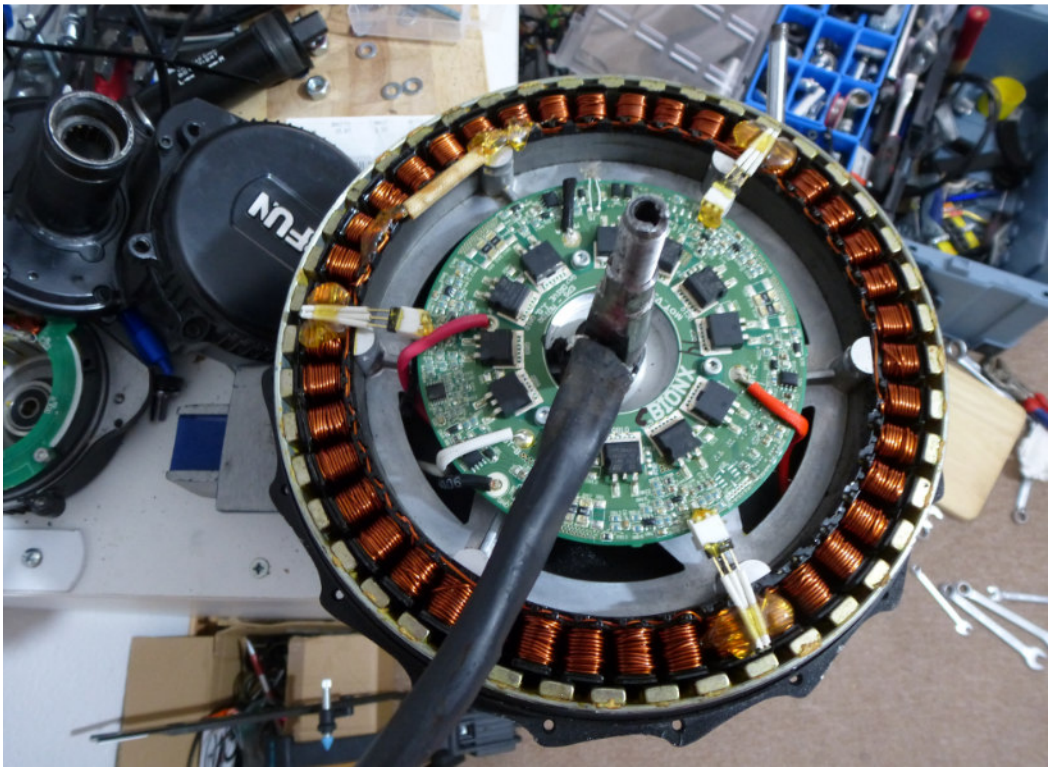
Btw, sorry clean up my desk is not my favorite thing so please excuse the mess on my desk ;-)

First you place all the screw's around the motor with slight pressure to the motor house and then put two cable-ties around to keep the screw´s in position:

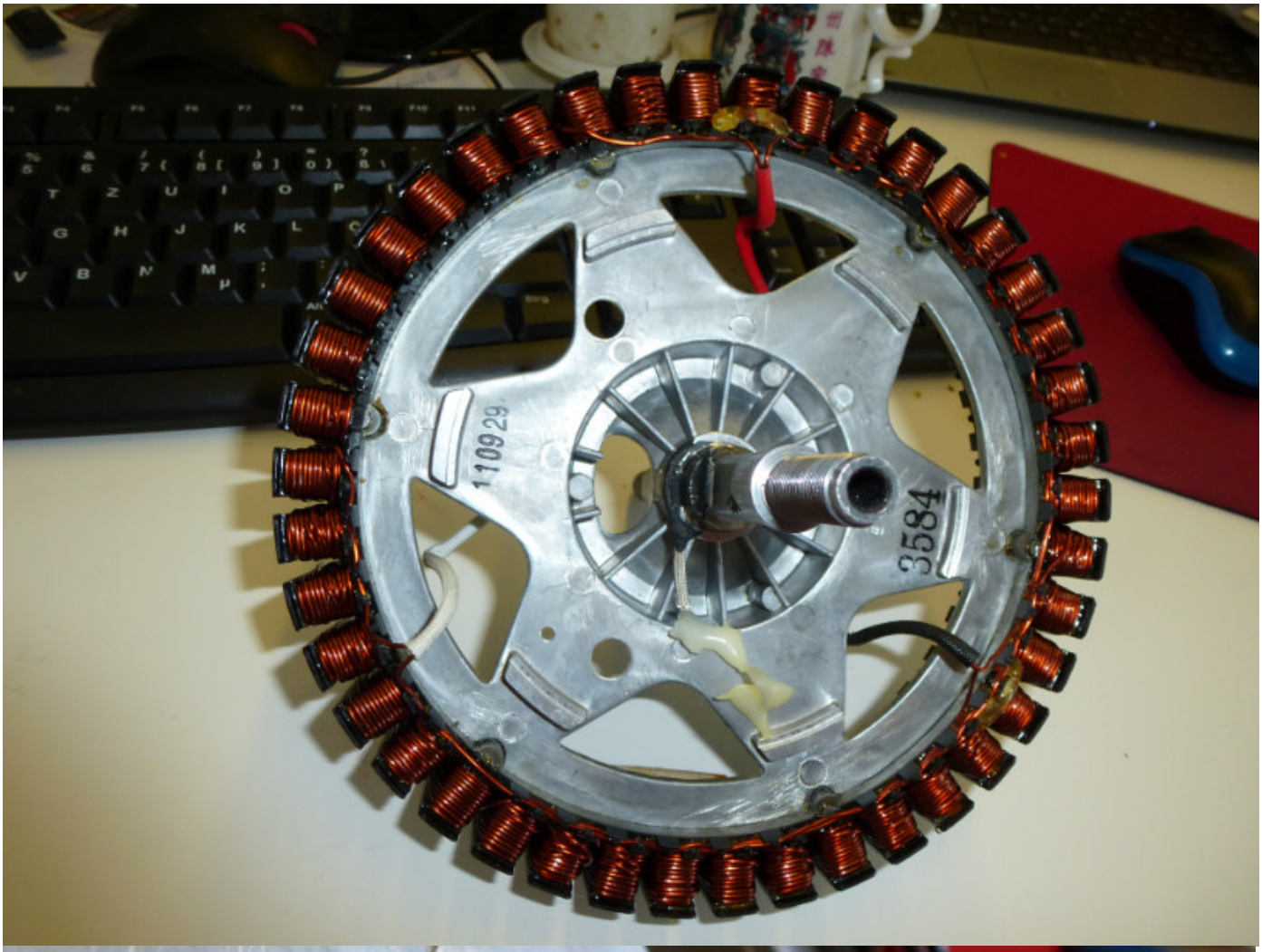


Then be patient and rise up the power on each screw step by step and please do it equably because otherwise the house become an angle and can destroy the Motor, You can see how the cover go apart:

After ten minute you come to the point where you can separate the cover (cable-side) from the rest and now you have one Motor-cover in your hand and the motor with controller in your other hand:



Now you can remove the controller by cutting the wires , we don´t need the controller anymore because in our workshop we want build up a Bionx without Bionx electronic: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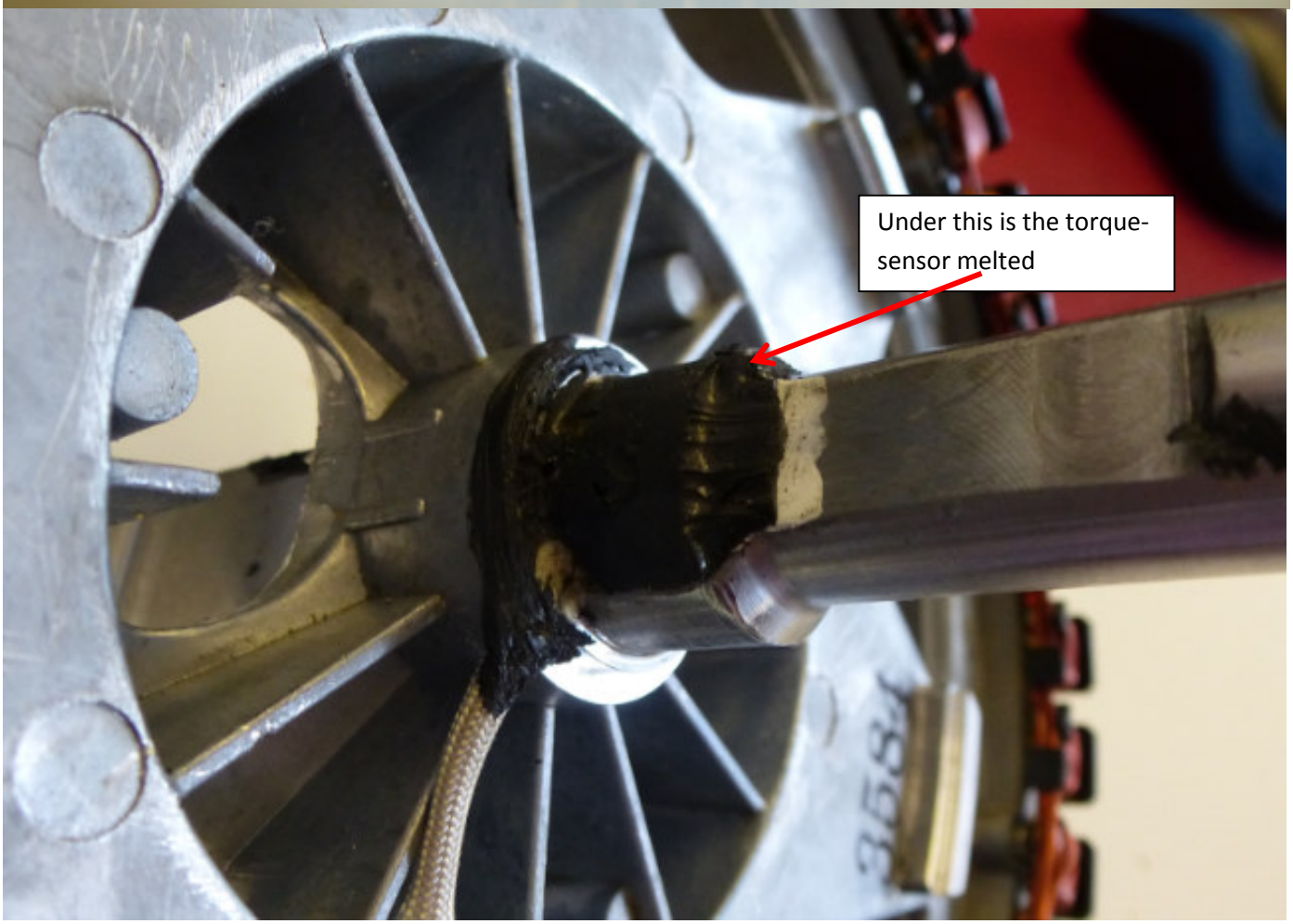
Under this is the torque-sensor melted

If you open the motor I think it´s good idea to check the bearing and if you have a bad feeling then replace them it´s not expensive. The bearing is 17x35x10mm

The Motor has 42pole and 43magnet

You can let the stator inside the rotor because it is a bit tricky to remove the stator from the rotor. Sometime when you want push the stator out of the rotor it´s possible that you just push out the axle with the controller plate but not the stator himself because the controller plate is just melted to the stator and if this happen then you maybe destroy the stator. You can prevent it but first I show you the normal way. You need a 22cm cooking-pot ;-)

Now you can push out the stator by pushing the axle with some wood or something else into the pot. If you feel much resistant then follow the steep´s in the appendix. Appendix is coming soon

Connecting a Controller to the Motor:

If you just want connect a sensor-less controller to the Motor then all you have to do is connecting the phase-wire´s to a cable and bring them outside of the Motor. Then close the motor, connect the motor and ready is a DD-Hub with very light weight fast and powerful.

We can do it better as with a sensor less-controller.

Next step I´ll show how to connect a sine-wave controller to the bionx-SL Motor
Now you have to make a cable not just for the phase-wire you need also a cable for the three hall-senor´s and to connect the three hall-sensor´s you need to bring a five-wire cable into the motor from the outside. Three wires is for the sensor-signal and two wire is the power-source to make the hall-senor work.