

EM3a Assembly of the frame bag, cables and test ride

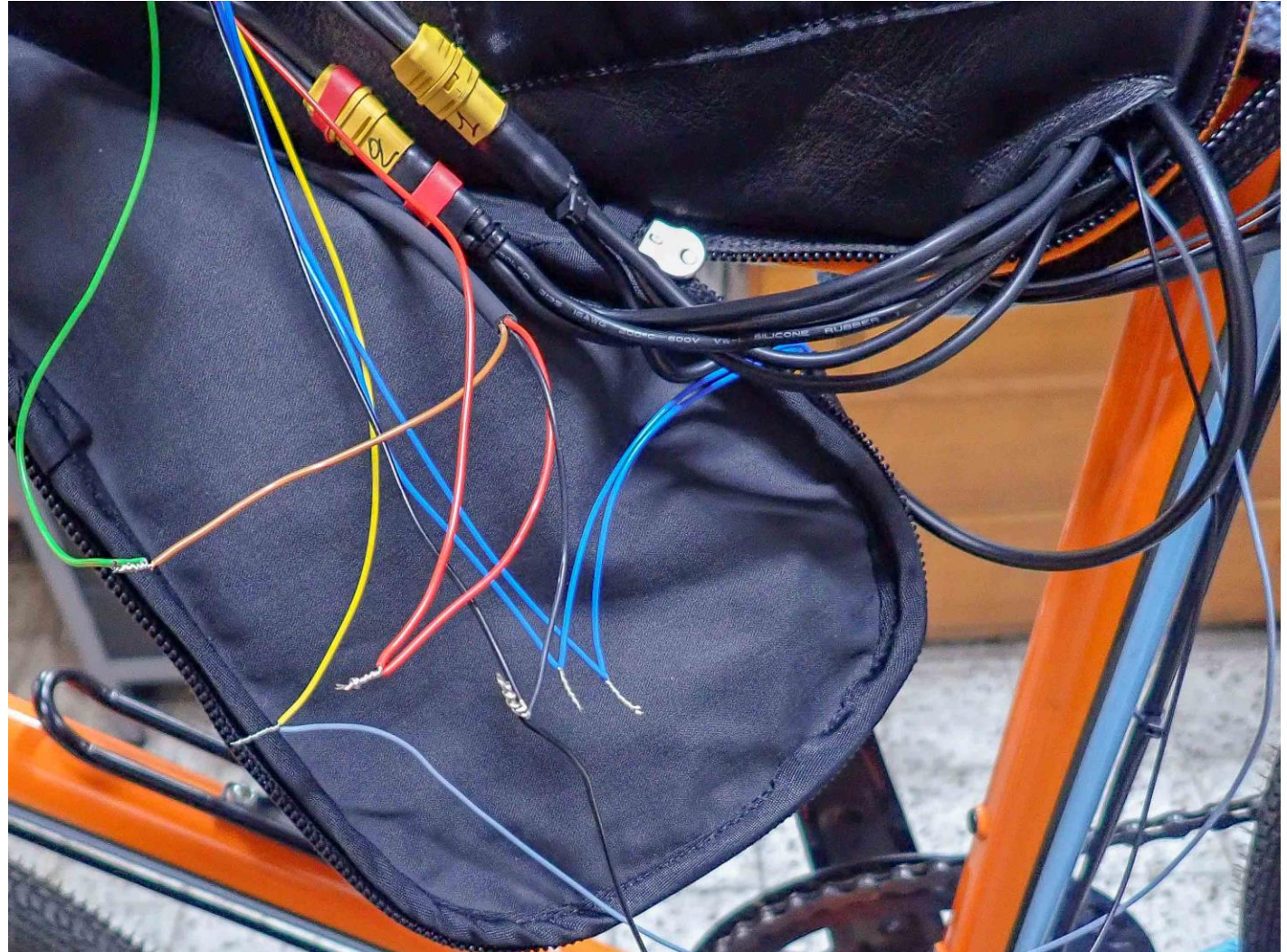
- There are different types of bags to position the battery on the bike. There are also several options for routing the various cables. You can see examples of the assembly on our website or on our Flickr account. In the frame bag version for diamond frames, the motor cables are attached along the seat stays and then routed down the seat tube before entering the frame bag. With the frame bag in a mixte frame, it is best to attach the cables to the mudguards and lead them into the bag further down by the shortest route. Make sure that the length of the motor cables is sufficient. When setting up with a pannier bag, the controller sits in a small black box, excess cables and all connections are also housed here. Usually the box is located on the bars of the rear rack. It is important that all cables are always inserted into the bag or box from below so that no water can get in. If you use a black box, you should always drill a hole for water drainage at the lowest point on both sides.



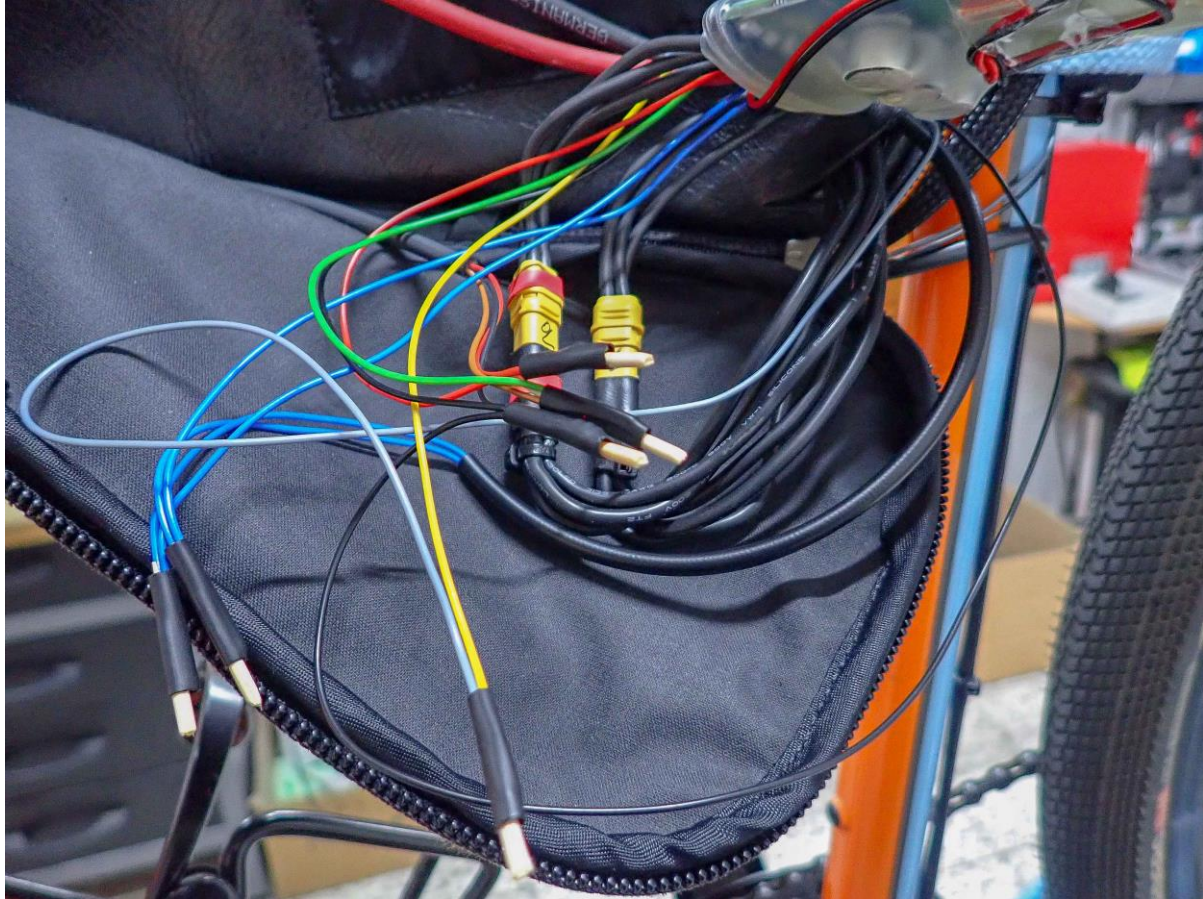


- Motor cables: choose the best possible route to accommodate, protect and hide the motor cables. A braided hose holds the three cables together and protects them additionally. Secure with several cable ties (160x2.6) so that no contact with moving or rotating parts is possible. The free pendulum movement of the motor, the cables and the rim brake must not be impaired.

- The cable coming from the pedal sensor with the 2 blue (or blue marked) wire, as well as the black and grey wire from the switch box are also inserted from below into the bag/box. The cable of an optionally installed potentiometer is either inserted along the shortest route at the front end of the bag or together with all other cables at the rear end of the bag.
- When using the frame bag, route all cables from the left-hand battery compartment to the separate right-hand compartment. To do this, use the opening at the bottom of the rear part of the separating wall. If the black box is used, a 17 mm hole must be cut in the base. All cables are fed in from below, the battery cable coming from the controller is fed out.
- Connect the yellow controller wire to the grey cable of the micro switch, the black one from the controller to the black one from the micro switch (see wiring diagram on the back).



□ When installing the optional potentiometer, its black cable is connected together with the other two black cables to form a 3-way node, then red to red, green to brown. (Tip: All connection points must be completely insulated - bare wire are absolutely not allowed. Permanently fix the joints by heating the shrink tubing. Temporary fixation: Twist the bare wire ends, fold them over, cover the heat-shrink tubing and secure it against slipping by pushing the tip of a toothpick under the heat-shrink tubing and then breaking it off).



Potentiometer cable from battery compartment to controller side



Potentiometer cable S-shaped through the front loops for strain relief



- Connect the two blue (or blue marked) cables of the pedal sensor to the two blue ones of the controller.
- Insert the red three-pin plug of the left motor into the red mating plug of the controller as far as it will go, insert the black motor plug into the remaining (yellow) controller plug. The plug-in position/twist is arbitrary.
- In the frame bag, lead the battery cable coming from the controller through the front opening in into the battery compartment. In pannier bags, an opening must be cut out in the bottom at a suitable point through which the battery cable coming from the controller can be inserted.
- Test: Set the shift lever to the off position, connect the battery, set the shift lever to the on position (motors in contact with the rim). Now you should hear 1 to 4 beeps depending on the charge level (see operating manual). Lift the rear wheel, shift into the lowest (1st) gear and operate the pedal crank:
After one turn of the crank at the latest, both motors must accelerate the rear wheel.
- Always position the controller so that the waterproof top side faces upwards. The underside with the cable exits is not sealed so that any condensed moisture can evaporate and thus the inside is kept permanently dry.



Final check

All items listed in the bike passport under "Final check" must be checked.
Hinterachse definiert ausgerichtet : Rear axle aligned in a defined manner.

Seitenversatz Felge : Lateral offset Rim

Seitenschlag Felge : Lateral run-out Rim

Alle acht M3-Schrauben mit 1,0Nm angezogen : All eight M3 bolts tightened to 1.0Nm

Alle vier M5-Schrauben an Pendelachse mit 7Nm angezogen : All 4xM5 screw on swing axle tightened to 7Nm

Motor : Höhenjustage, Einstellwinkel, Achsflucht : Motor : Height adjustment, setting angle, axle alignment

Nylonseile : Auslauf, Reibring Abstand : Nylon strings : Curved tube position, friction ring spacing to rim

Tretsensor : Pedal sensor

Vollast prüfung : Full load test

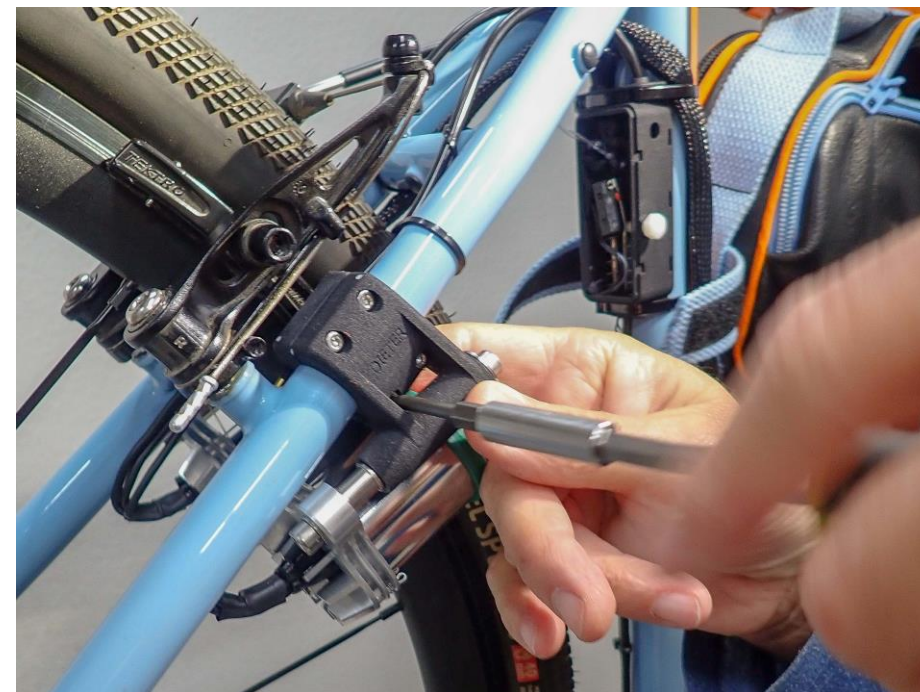
Ein/Aus Schaltpunkt : On/Off switch point

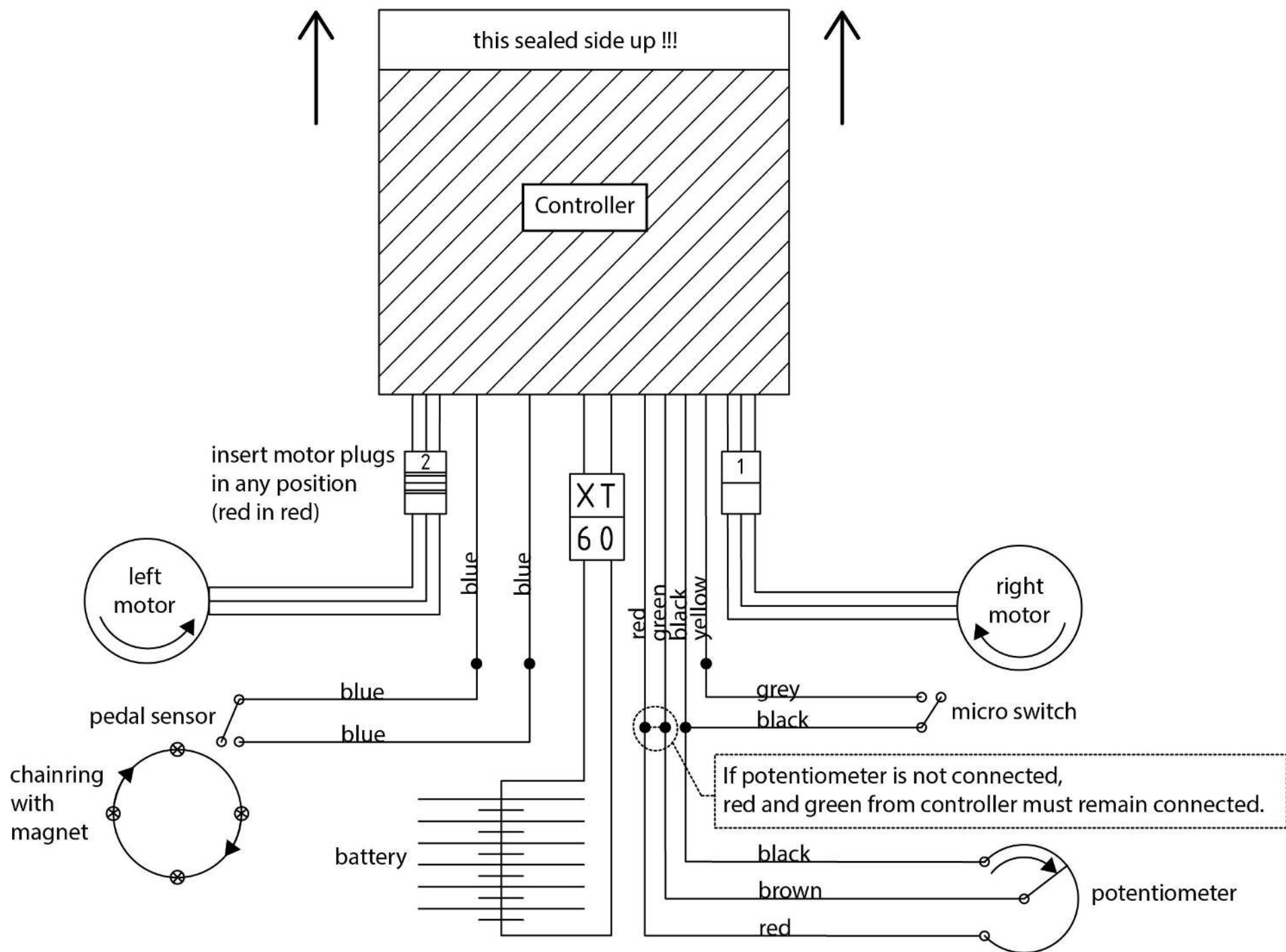
Probefahr : Test ride

Test ride

Fully charge the battery for the test ride, inflate the tyres, check the brakes.

If you start off in a low gear and do not shift up, but continue pedalling in neutral without power, just to activate the pedal sensor, the drive should accelerate the bike to just under 25km/h. Condition: Flat road without incline, no wind, vehicle weight < 110kg. The procedure for changing the driving parameters can be found in the operating manual.





Packing list

- Left and right motor, swing axis, curved tubes, nylon strings
- 3D motor bracket for left and right motor incl. 8 x M3x20 Allen screws + nuts
- Shift lever or 3-click lever with stainless steel shift cable
- 1,9m + 2 x 0,32m shift cable housing (with one housing end cap only for Sturmey Archer)
- Battery bag and optional controller box
- Controller
- Switch box (alternatively: Bowden cable switch, stop, spring tension bridge) with spare nylon strings
- Pedal sensor with connection wires
- 5xinbus magnet + 5xadhesive magnet for pedal sensor
- 10xIndustrial cable ties 186x4,5/400N for pedal sensor, switch box, potentiometer etc.
- 12xcable ties 160x2,6 for cable guides
- Battery with plug
- Charger with charging cable

Spare parts, accessories

- 125° template for angle adjustment, 55° template for Brompton angle adjustment
- 3mm wooden stick for axle alignment test, 5x toothpick
- Heat shrink tubing 2,5x100mm, Heat shrink tubing 3x100mm, Heat shrink tubing 3,5x100mm
- M3 stainless steel nut, M3x20 Allen screw, 1x grub screw M4, M2.5x8 Allen screw
- 4xcotter pins for nylon strings
- 2xbraided hose 380mm
- Washer for Magura + note
- Packing list and instructions for Brompton
- Accessories: potentiometer, light system, light switch, USB socket, spare battery,...