

## EM3a Final assembly of frame bag, cables and test ride

File: EM3a\_Rahmentasche\_Elektrik\_2019.11\_EN

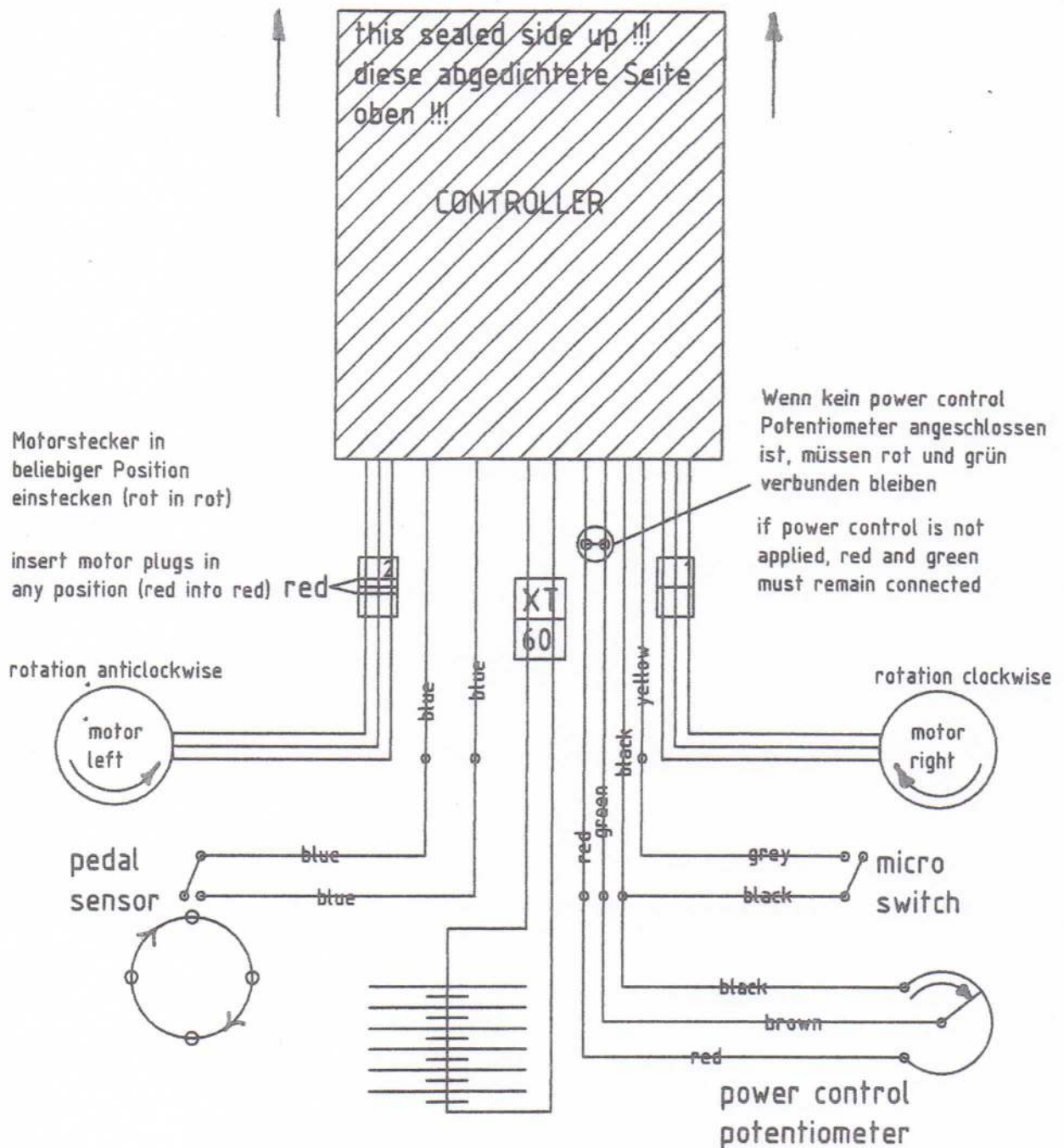
- Attach the frame bag: There are two slits on the underside in which to feed the cables. First attach the bag to the top tube with two Velcro strips so that the slits face backwards towards the seat tube.
- Cable connections: All the cables coming from the motor are fed down by approx. 50 mm and then aligned upwards in a loop along the seatstay.
- Fix the motor cables with 2 to 3 cable ties (160x2.6) per side to the seatstays so that there is no possibility of them making contact with moving or rotating parts. There must be no interference with the free swinging motion of the motor, the cables and the rim brake.
- At the joint between the seat tube/seatstay all the motor cables bend downwards, run along the seat tube and are fed into the frame bag from underneath. The blue cables of the pedal sensor as well as the grey and black cable of the microswitch are similarly fed in from underneath.
- Place all the cables from the left-hand battery compartment into the separate right-hand compartment. Use the opening in the rear section of the partition for this.
- Connect the yellow controller cable with the grey cable of the microswitch, and the black cable from the controller with the black cable from the switch.  
When you install a potentiometer for the ride current, you join the black cable from the potentiometer to the two other black cables to form a triple junction, then connect red to red, green to brown. (Tip: All connection points have to be fully covered – any bare sections of wire are an absolute taboo. The connection points are bonded permanently by heating the shrink tubes. Provisional securing: Twist the bare wire ends, bend them over, cover with a shrink tube and prevent from slipping by pushing the tip of a toothpick under the shrink tube and then breaking it off.)
- Connect the two blue cables of the pedal sensor with the blue cable of the controller.
- Insert the three-way plug with a red marking from the left-hand motor firmly into the red mating socket of the controller as far as it will go, insert the black motor plug into the remaining (yellow) controller socket. The position/rotation at which you insert it is not important.
- Feed the yellow battery plug with an approx. 200 mm connecting lead through the front opening in the partition back into the battery compartment. Insert the battery.
- Test: Move the handlebar switch to the Off position, connect the battery, move the handlebar switch to the On position (motors folded into position). Now you should hear 1 to 4 beeps. Raise the rear wheel, switch to the lowest (1<sup>st</sup>) gear and turn the crank.  
As soon as the second magnet has passed over the pedal sensor, the two motors should rapidly accelerate the rear wheel to its final speed within one second and without any jolting.
- Position the controller inside the frame bag to that the waterproof upper side always points upwards. The lower side with the cable outlets is not sealed so that any condensed residual moisture can evaporate and thus keep the inside permanently dry.

### Practice test.

Fully charge the battery for the test ride, pump up the tyres.

If you ride in a low gear and do not shift up the gears, but instead continue to pedal without exerting any power, in order to activate the pedal sensor, the drive should accelerate the bike to just under 25 km/h. Proviso: level carriageway without gradient, no wind, total weight of vehicle (bicycle + cyclist + load) <110 kg. Please consult the Operating Manual for the procedure to change the ride parameters.





#### Packing list

- Left-hand and right-hand motor, swing axis, brass tube with outlet, nylon cord
- 3D motor holder for left-hand and right-hand motor incl. 8 x M3x20 Allen bolts + nuts
- Handlebar switch or 3-click switch with stainless steel inner cable
- 1.9m protective casing for shift cable (with end sleeve on one end, only for 3-click switch)
- Frame bag ready to install
- Controller
- Pre-assembled roller switching bridge or Bowden cable switch, cable limit stop, spring-loaded clamping bridge
- Pedal sensor with connecting leads
- 5x magnets for pedal sensor
- 8x industrial cable ties 186x4.5/400N for pedal sensor and roller switching bridge or Bowden cable switch
- 12x cable ties 160x2.6 for cabling
- Battery with plug
- Charging device with cable

#### Spare parts, accessories

- 125° gauge for angular adjustment, 2x wooden plates 3 mm thick for adjusting the cables
- 3 mm wooden rod for checking perpendicularity of axes, 5x tooth picks
- 2x spare nylon cords + spare brass tubes
- Shrink tubing 2.4/1.2 x 100 mm, Shrink tubing 3.2/1.6 x 100 mm
- M3 stainless steel nut, M3x20 Allen bolts, 1x grub screw M4, 4x cotter pins for nylon cord