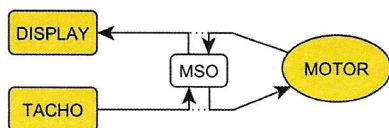


PearTune MSO „Max Speed Off“ 25

Functional description

PearTune MSO-xx2 is an e-bike „chiptuning“ set (followed „MSO“) used for removing the speed limiter of electric assisted bicycles with centerdrives Bosch, Yamaha and Brose. The MSO is not stand alone functional. Installation should be carried out by a qualified personell only. The MSO does not need to be configured manually. The entire configuration and adaptation to the paticular e-bike is done automatically. The MSO is connected in between the magnetic speed sensor and the motor unit, and in between the display and the motor unit. MSO is powered from the display connector. All readings are correctly displayed (if there is not an exception stated within a given variant). The MSO can be activated or deactivated anytime during the ride by pressing one of the control keys on the display, depending on the factory configuration and particular e-bie system. The device state is indicated by a certain element on the display, so the rider always know whether the device is active or not.



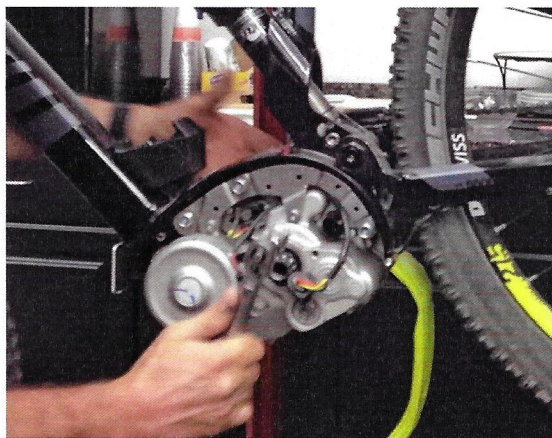
Variants according to the e-bike system

- "PearTune MSO-B2" for Bosch Active, Performance, CX5
- "PearTune MSO-Y2" for Yamaha Syncdrive
- "PearTune MSO-BR2" for Brose

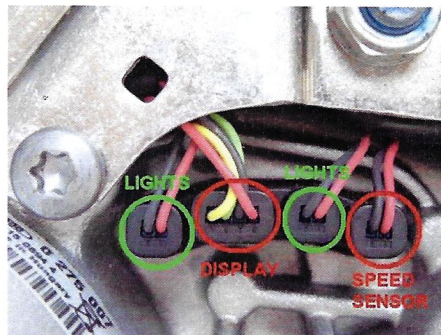
Installation procedure



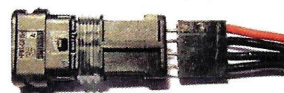
MSO-B2: ① remove the pedal arm using a proper equipment and the plastic cover of the centerdrive (using TORX screws) on the other side than the sprocket is located. All the needed cables and connectors are hidden under this cover.



② Disconnect the 4-position connector in between the display unit and motor unit (marked as DISPLAY on the picture) as well as the 2-position connector in between the tacho sensor and motor unit (marked as SPEED SENSOR).



③ Connect both appropriate connectors from the MSO instead of the original connectors into the the motor unit and, the original, previously disconnected connectors into the MSO according to the color coding (red wire side onto the red wire side).



④ To keep the system waterproof, it is reccomended to use the heat shrinkable tubing on the both male MSO connectors connected into the original connectors from the tacho sensor and display unit. Place the MSO in a proper position and optionally, fasten the wiring using the electrical ties. Re-attach the plastic cover and pedal arm and the bike is ready to go.



MSO-Y2: ① remove the plastic cover under the centerdrive. Loosen the two of the INBUS screws (those which are closer to the front wheel) and tilt the motor unit towards the rear wheel. Cables and connectors are placed in the space between the motor and bike frame.



② Disconnect the 4-position connector in between the display unit and motor unit and the 3-position connector in between the tacho sensor and the motor unit.



③ Connect all four appropriate connectors on the MSO into the four, previously disconnected, mating connectors on the e-bike. All the conectors have a keying which prevents wrong connection, there is only one way all of them can be connected.

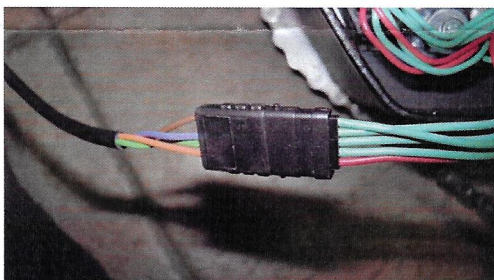


- ④ Place the MSO in a proper position (we recommend into the e-bike frame, if possible) and optionally, fasten the wiring using the electrical ties. Fold back the motor and fasten the previously removed INBUS screws. Re-attach the plastic cover and the bike is ready to go.

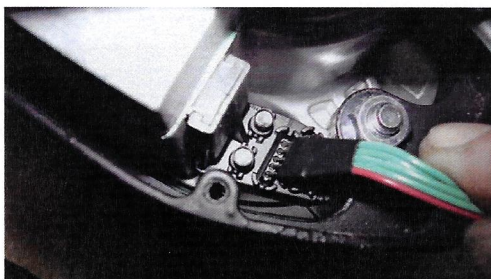


MSO-BR2: ① Unscrew the screws and remove the plastic cover, or plastic „cap“, on the other side than the sprocket is located. **Bikes without the separated plastic „cap“ in the bottom part will require removing of the pedal arm using a proper equipment.** Needed cables and connectors are hidden under this cover.

- ② **Disconnect the 5-position connector** in between the display unit and motor unit **and the 2-position connector** in between the tachometer sensor and the motor unit.



- ③ Connect both appropriate connectors from the MSO instead of the original connectors into the motor unit and, firmly press the original, previously disconnected connectors into the MSO according to the color coding (red wire side onto the red/orange wire side, or down-facing at the motor body).



- ④ To keep the system waterproof, it is recommended to use the heat shrinkable tubing on the both MSO connectors connected into the original connectors from the tachometer sensor and display unit. Optionally, use glue gun to secure the connectors in the motor body. Place the MSO in a proper position and optionally, fasten the wiring using the electrical ties. Re-attach the plastic cover and pedal arm and the bike is ready to go.

Usage

MSO-B2: the MSO can be activated or deactivated anytime by short-pressing the walk assist button (walk). Original function of this button remains unchanged with a long-press and the walk assist function can be used like before. MSO activity is indicated on the display by blinking the motor power indicator each 5 seconds. The device is fully functional with both Intuvia and Nyon displays.

MSO-Y2: the MSO can be activated or deactivated anytime by short-pressing the lights button. Original function of this button remains unchanged. MSO activity is indicated on the display by blinking the chosen assist level indicator.

MSO-BR2: the MSO can be activated or deactivated anytime by short-pressing the lights button. Original function of this button remains unchanged. MSO activity is indicated one-time upon initialization by either blinking the speed gauge, or displaying a high value (e.g. 90 kph).

It is possible that, during a long ride at the speeds of over 25km/h with motor assist, some readings on the display may not immediately respond to their true values. After a certain amount of time without motor assist or at speeds below the 25km/h, these values should always get corrected. After a long trip at higher speeds, we recommend not to turn off the e bike immediately. The easiest way is to let the e-bike switch off itself automatically.

Manufacturer

PearControl s.r.o.
Ke Křížku 340
394 03 Horní Cerekev
Vysočina, CZ

Technical parameters

Dimension without wiring: 21 x 40 x 12mm
Supply voltage range: 5 - 15 V
Maximum current consumption: 100 mA
Maximum power usage: 1.5W
Mass: cca. 30g

Legislation

The manufacturer reserves the right to make changes. This manual is an integral part of the equipment sold. By using the equipment PearTune MSO its user agrees that he will use the modified e bike in accordance with the applicable legislation of the target country and so does even off-road; therefore, he is free to use it only on his own land or on land designated for that purpose. The user also acknowledges that the operation of bicycles outside their own land or land designated for this purpose with deactivated, but installed equipment PearTune MSO may not be in compliance with legislation. The manufacturer does not warrant non-infringement of bicycle warranties or impossibility of damage or blockage of the e-bike system. The manufacturer disclaims liability for any damages, whether in health or property associated with installing or using this product.

The manufacturer holds the certificate of electromagnetic compatibility testing - Compliance with EU regulations (CE marking) as well as the certificate of restriction of the use of Hazardous Substances (RoHS label).

