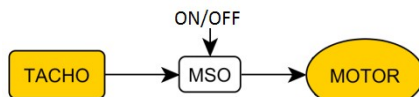


PearTune MSO „Max Speed Off“

Functional description

PearTune MSO SHIMANO 3.0, PANASONIC 3.0 and BAFANG 3.0 are an e-bike „chiptuning“ sets (followed „MSO“) for shift the speed limit of electric assisted bicycles with centerdrives Shimano and Panasonic from 25km/h to 99km/h. The MSO is not standalone functional. Installation should be carried out by a qualified personell. The MSO does not need to be configured manually. The entire configuration and adaptation to the particular e-bike is done automatically. The PearTune MSO is connected between the magnetic speed sensor and the motor unit. PearTune MSO is powered from the lights connector or speed sensor. This MSO version can be activated or deactivated by selecting lights control function in bicycle control menu. When the chip is active a displayed speed values are stopped at 20-25km/h. In Bosch, Yamaha, Giant, TQ, Specialized and Brose variant, the right values are displayed and the speed limiter is disabled completely.



Variants according to the e-bike system

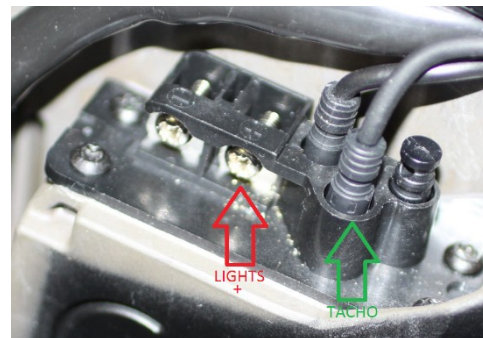
- **"PearTune MSO-SH1"** for Shimano Steps E8000, E7000, E6001, E6002, E6100, E6012, E6010, E5000
- **„PearTune MSO-SH-EP8“** for Shimano Steps EP8
- **"PearTune MSO-PN1"** for PANASONIC GX a GX Ultimate
- **"PearTune MSO-BF-UART"** for BAFANG M300, M400, and M420 with UART

Installation procedure

MSO-SH1, MSO-SH-EP8, MSO-PN1 and MSO-BF-UART ① Unscrew three screws marked by red ring and **remove the plastic cover** of the centerdrive. All necessary cables and connectors are placed under this cover. Covers are provided in various shapes and colours and the cover may differ from the picture.



② Disconnect the connector between the motor unit and tachometer sensor (marked by green arrow in the picture). Release the screw of positive (+) light clamp (marked by red arrow in the picture).



③ Connect the speed sensor to the MSO unit and the MSO unit to the motor unit using corresponding connectors. Connect red power cable to positive light clamp. Tighten the screw of the clamp.

④ Place the MSO in a proper position and optionally, fasten the wiring using the electrical ties. Re-attach the plastic cover and the bike is ready to go.

NOTE: If you would prefer to your PearTune MSO will be switched ON/OFF automatically when the e-bike is switched ON/OFF, then connect the PearTune MSO device just to the speed sensor connectors and the red power cable leave unconnected.

Usage

The MSO can be activated or deactivated anytime by light control function of the bike menu or LIGHT button on the display or handlebar controller. Refer to the bike manual. If the lights are ON, PearTune MSO is OFF. When the lights are OFF, PearTune MSO is ON. If you disconnect the red power cable the PearTune MSO will be „Still ON“ (it will be activated automatically when you switch ON your bike). In the case of PANASONIC, PearTune MSO is always in „Still ON“ version. If you are planning to install PearTune MSO on

new e-bike, make sure that you ride it for at least 1km before the PearTune MSO is installed.

Note 2: the space under the plastic cover and the position of the speed sensor may differ slightly depending on the engine model:

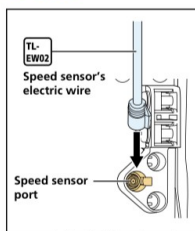


Connecting the Speed Sensor

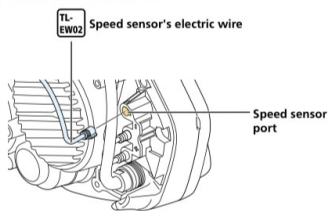
Connect the speed sensor's electric wire to the drive unit's terminal block.

1. Connect the electric wire to the drive unit's speed sensor port.

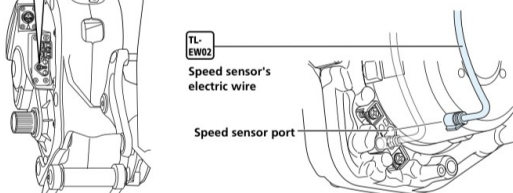
DU-E8000



DU-E7000 / DU-E6100



DU-E5000



NOTICE

- When routing wires, take care to ensure that the electric wires are not twisted.

EP8:



Note 3: in the case of special version PearTune MSO SHIMANO Di2: the ODO value is being added with a 2-10 value times higher value.

Manufacturer

PearControl s.r.o.
Příkopy 1889
393 01 Pelhřimov
CZECH REPUBLIC
info@pear-control.com

Technical parameters

Dimension without wiring: 18 mm x 5mm x 3 mm
Supply voltage range: 5 - 15 V
Maximum current consumption: 100 mA
Maximum power usage: 1.5W
Mass: cca. 4-10g

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.

Don't upgrade the software after installing the PearTune MSO, the manufacturer is not responsible if the chip does not work properly after the software upgrade.

The installation manuals and videos for all PearTunes products are available also on our websites: www.pear-control.com and on our YouTube channel: **PearTune MSO**.

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).

