

gearsensor.com

gearsensor.com assembly instructions

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Gearsensor.com certifications:

Gearsensor.com is RoHS Compliant, based on information provided by our suppliers, this product does NOT contain the substances restricted by the RoHS legislation at levels over the maximum concentration values.

Gearsensor.com is fully CE certified, it also includes EMC certification.



General description

It's a unique patent pending system, developed and made in Czech Republic. It's based on intelligent shifting sensor fixed on shifting cable, which is reducing or cutting off motor drive when the rider activates gear shifting. This market-proven device allows smooth shifting for both derailleurs and internal gear hubs. It also provides longer lifetime to whole shifting system.

Gearsensor.com is made in Czech Republic.

Gearsensor.com are marked on housing using laser technology. Sample shown below.

gearsensor.com

made in Czech Republic

GS - 16.33 - 00053

Character position	Description
1+2	letter GS (permanently)
3+4+5	space+dash+space
6+7	year of production
8	dot
9+10	week of production
11+12+13	space+dash+space
14+15+16+17+18	Production batch number

gearsensor.com assembling to the e-bike

Do not open the gearsensor.com housing for assembly!

First step – position choosing

Gearsensor.com position on shifting cable is chosen by the customer, mainly with respect to the gearsensor.com cable length related to drive unit connector position.

For choosing the ideal position we recommend to follow these main instructions:

- place **gearsensor.com** to the straight or minimum bended part of the shifting cable
- do not place **gearsensor.com** to the place which is directly splashed by water and mud (for example from the wheels/tires)
- when preparing the cable routing, avoid places which could cause damage of **gearsensor.com** electric cable.
- examples shown on our webpage www.gearsensor.com

Second step -outer cable cutting

Cut 50mm of the outer casing, and place cap ends on the both ends of cutted outer casing.

Third step – inner cable routing via housing

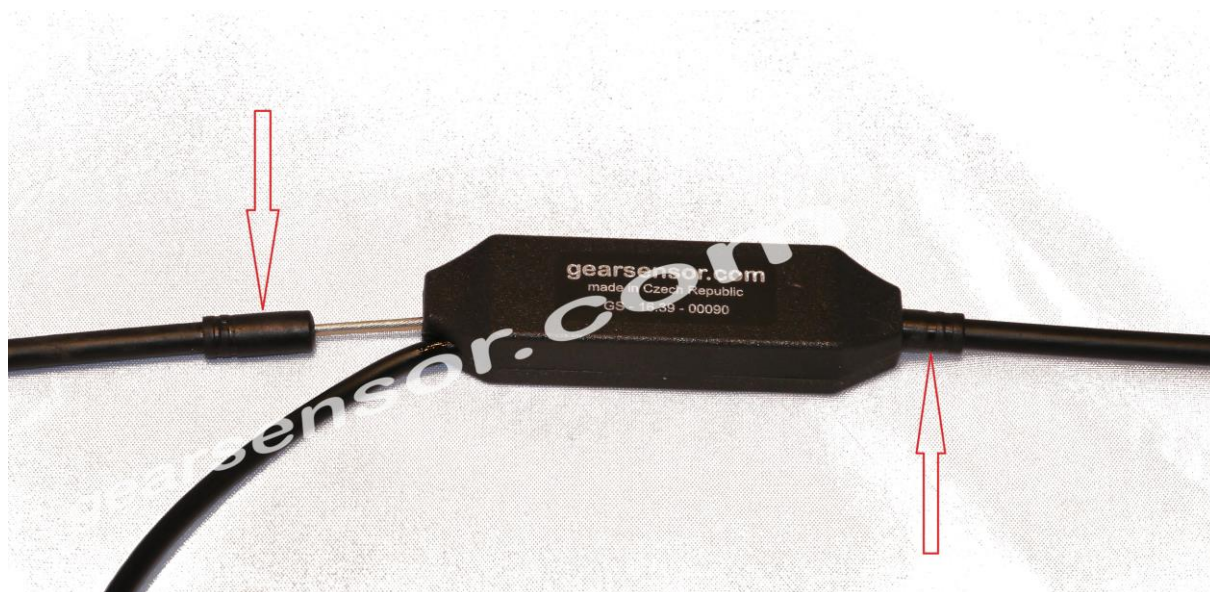
Start pushing the inner cable into the plastic housing from any of **gearsensor.com** sides to fit cable direction to the controller input. When pushing inner cable into the housing, keep inner cable as much as possible parallel with both axis of the housing.



Now that you have the shifting cable inside of the housing and you have to push harder until the shifting cable goes out of the housing on the other side of **gearsensor.com**. When pushing inner cable into the housing, keep inner cable as much as possible parallel with both axis of the housing.



In below picture the inner cable is correctly fixed into the housing. Then adjust shifting system properly, and connect gearsensor.com to drive unit input.



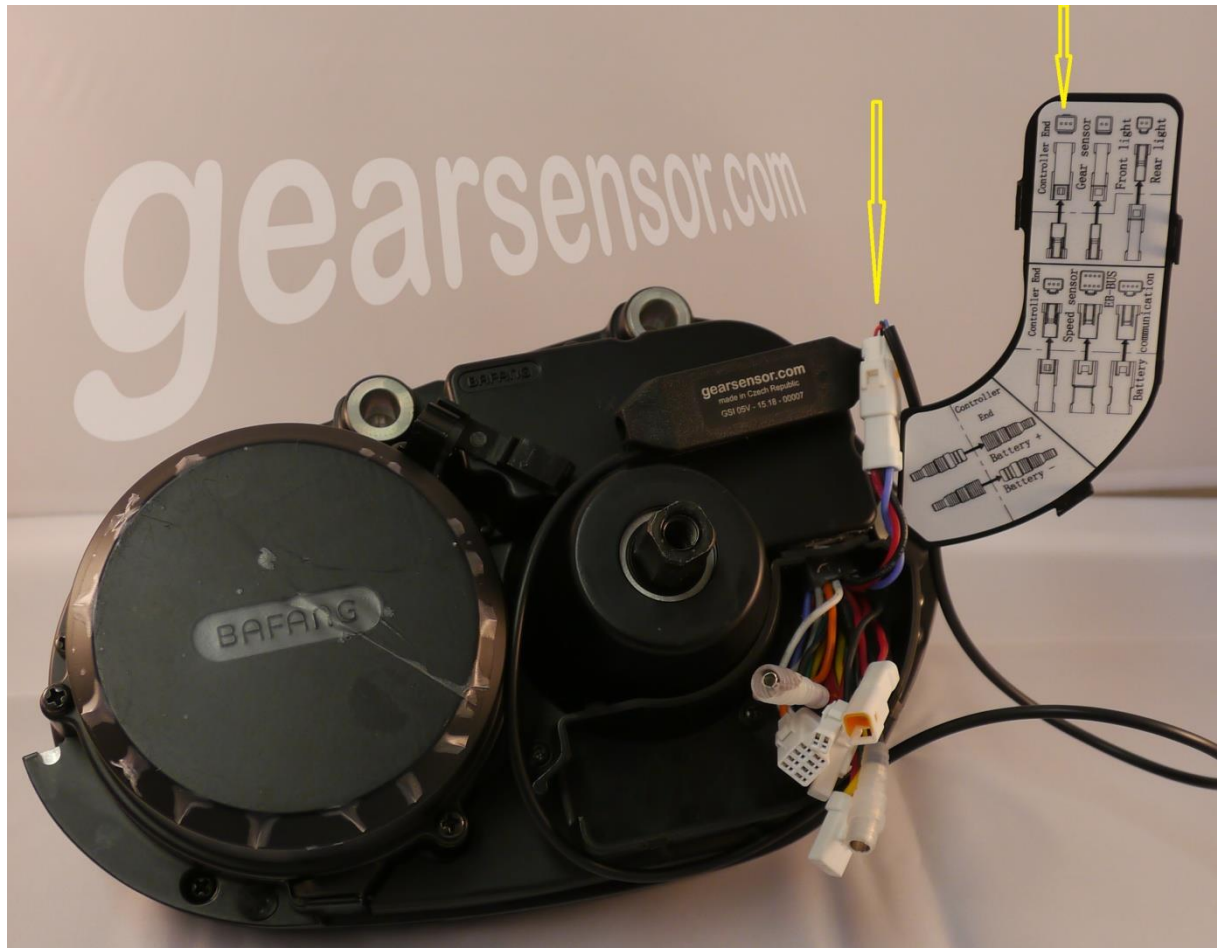
Last step – test

How do you know that **gearsensor.com** is working properly? If the **gearsensor.com** is connected correctly, after turning on the control unit on your e-bike the **gearsensor.com** LED indicator will flash 3 times. Also when the shifting process is activated, then LED indicator blinks once.

gearsensor.com connectivity to the Bafang drive units

1. Bafang MAX drive system:

All the Bafang MAX drive systems are equipped by special connector just for **gearsensor.com**. This is a KST connector. When you order **gearsensor.com** for the MAX drive system, you will receive from us **gearsensor.com** with the KST connector. It is a simple plug and play connection.



2. Bafang BBS01 and BBS02 system:

Every Bafang BBS motor is equipped with two connectors for brake sensors (HIGO, yellow 3-pin). **gearsensor.com** which is compatible with BBS motors are also supplied with the same HIGO connectors. First option is to connect the **gearsensor.com** directly to one of these connectors for brakes. Please note that if you do connect **gearsensor.com** in to this connector, then the restart of the motor could be possibly little longer than it should be, because this connector was programmed for brake sensors. The other option is to order directly from Bafang BBS motors with a connector especially programmed for **gearsensor.com**, so the restart of the motor will be faster. For further details please contact us by e-mail and we will help you with the specification of this order.



3. Bafang BBSHD systems

Bafang BBSHD system is equipped by special connector just for **gearsensor.com**. This is a HIGO connector.

Maintenance Notice:

If E-BIKE is stored for longer time period (1 month and more with no shifting cable movement), it is essential to store bike in dry storage and once a month change gears (change at least 5x gears at one time) and continue in changing gears once a month for all storage period in order to obtain full lifetime of gearsensor.com! Breaching of this instructions, could lead to severe malfunction of gearsensor.com.

For this maintenance operation is no need to power up E-BIKE system, because it is just mechanical operation. Explanation in this case: combination of seated dirt (salty conditions around seaside) and dampness could lead to oxidation and oxidation could cause jam between peg and pulley.

Notice just for e-bikes equipped by internal gear hub:

Pedaling is accompanied with torque on the cranks. When rider activates shifting, internal gear hub doesn't change gear until torque on cranks is reduced to some required level which allows to internal gear hub system change the gear. This is typical situation when rider changes the gear (motor is cutted off because of gearsensor.com function) but rider still continue with pedaling with higher torque than marginal allowed value of IGH system. In this situation the shifter has already released the inner cable, but the internal gear hub mechanism could not tighten on the shifting cable, because the torque on cranks is over the limit. This situation causes temporary release of the shifting cable. Solution is that during gear shifting rider has to apply standard pedaling style. Means rider's legs has to reduce force when changing gear, same as on standard bike without central drive system. There is nothing joined with gearsensor.com products proper functionality, therefore warranty will not be covered.

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