



Operating instructions



MBIQ-P / MBIQ-S

Compatible with Shimano:

- Steps E5xxx - 8xxx

June 2024

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1 Important safety instructions

Use the interchangeable "tuning module" only for the purpose described in these instructions. Otherwise, you risk endangering yourself or damaging parts of your e-bike mountain bike.

You endanger yourself and others if you install or operate the interchangeable equipment incorrectly, or if you disregard the safety or warning instructions. Serious injuries or significant property damage may result.

1.1 Signal words used

All safety and warning information in this manual has been clearly highlighted. The following symbols and signal words have been used for warnings.

WARNING

It warns you of dangers that could lead to fatal or serious injury if you do not heed these instructions.

CAUTION

It warns you of dangers that could result in minor, usually reversible, injury to people if you do not heed these instructions.

DANGER

It warns you of situations that could lead to property damage and malfunctions during use if you do not follow these instructions.

IMPORTANT **for your safety**

Indicates safety-relevant descriptions and instruction sections.

1.2 Used characters and symbols

Mandatory symbols used in this operating manual:



Refer to the operating instructions.



Use safety goggles



Wear protective gloves

Other symbols used in this operating manual:



Tip

Note on useful information regarding the handling of interchangeable equipment.



Cross-references

Cross-references in this operating manual or references to other applicable documents are marked with this symbol or by italics.



Request to make entries

This symbol is always used when the operator or user is required to enter or document the results obtained in the operating instructions.

► Call to action

Individual calls to action, e.g. in safety and warning notices, are marked with this symbol.

- a) **Action step**
- b) **Action step**
- c) ...

Step-by-step instructions are listed in lowercase letters according to the sequence of actions.

✓ Intermediate or final result of an action or a series of actions

This information makes it easier to recognize whether the step-by-step procedure has been successfully completed.

■ bullet points

Identify lists in descriptive as well as instructive sections of the operating manual.

2 Adhere to the requirements for safe use

To ensure safe use of the tuning module in your pedelec mountain bike, it is essential to first read and understand these operating instructions completely.

This operating manual

- informs you about the intended use,
- the installation and operating requirements,
- important operational restrictions,
- Obligations of the owner and the user,
- Warranty and liability conditions and
- guides you step by step to correct installation and safe use and
- It warns you with conspicuous safety and warning notices of potentially unsafe or dangerous situations and uses.

IMPORTANT

Know and follow all the contents of the operating instructions

- ▶ Be sure to take the time to read these operating instructions carefully before you begin installing the tuning module.
- ▶ Keep these operating instructions in a safe place, yet within easy reach, so that you always have access to the important and safety-related information for use, even after installation.
- ▶ Make these operating instructions available to anyone else who is allowed to ride your tuned e-bike mountain bike.
- ▶ Ensure that every person who is allowed to operate your tuned e-bike mountain bike has read and understood these operating instructions before any use.
- ▶ Instruct the user in the safe use of the tuned e-bike mountain bike using these operating instructions before you give your tuned e-bike mountain bike to other people.
- ▶ Be sure to pass these operating instructions on to the future owner if you ever wish to sell the tuning module or your tuned pedelec mountain bike.

2.1 Know the intended use

The tuning module shifts the cut-off threshold of the motor assistance on your pedelec mountain bike.

Installing the tuning module allows for higher speeds to be achieved with electric motor assistance.

However, proper use also includes strict compliance with all of the following.

- Deployment restrictions and
- Installation requirements and the
- Obligations of the owner and the user.

Intended use of the "interchangeable equipment"

In accordance with the product regulations of the European Union, the tuning module is placed on the market as "interchangeable equipment" within the meaning of Directive 2006/42/EC on machinery, Article 2 b).

Know the meaning

The tuned e-mountain bike remains unchanged even after the installation of the Tuning module. This falls within the scope of the European Machinery Directive. Provided the intended use is strictly adhered to, a "non-essential modification" of the "machine" can be assumed.

This means that the applicable safety requirements of the "machine" pedelec mountain bike were reviewed by the manufacturer of the tuning module within a risk assessment and were deemed to continue to be met even with the use of the tuning module.

Safety and protective devices

The safety and protective features of the pedelec mountain bike remain unaffected by the installation of the tuning module.

2.2 Know and comply with operational restrictions

IMPORTANT Strictly adhere to operational restrictions.

Installing the tuning module in your pedelec mountain bike comes with usage restrictions.

The "machine" that is the electrically assisted bicycle is being modified. While there is no increase in power output, the achievable speed of more than 25 km/h means that...

- its use in public road traffic or on public roads is no longer permitted,
- Using the equipment without appropriate protective clothing and a helmet may release accident insurance companies from their obligation to pay benefits after a fall resulting in injury.
- The permissible group of users, taking into account physical and mental suitability, must be further restricted by the owner of the vehicle before the pedelec mountain bike is handed over to other persons.
- The owner of the tuned pedelec must always prevent misuse and abuse, including by other persons, as well as
- This can significantly shorten necessary maintenance and inspection intervals according to the original manufacturer's specifications and usual or manufacturer-specified battery charging cycles.
- Due to the operating principle, the displayed speed at speeds above 25 km/h will not correspond to the actual speed. For this reason, the total mileage displayed by your system will also not reflect the actual distance traveled at speeds above this limit. Diagnostics and calculated values based on this will follow accordingly.

2.2.1 Do not use in public areas anymore

Pedelecs intended for use in public road traffic or on public paths with a permissible speed of > 25 km/h are subject in Europe to Regulation 168/2013/EU, the vehicle regulation.

Additional licensing requirements may apply in non-European countries.

Purchasing the tuning module does not grant any authorization for use in public areas. Therefore, participation in public road traffic and driving on public roads after installing the tuning module is prohibited.

This also applies despite the "non-essential change" to the "machine" pedelec mountain bike, as recognized by the tuning module manufacturer, when used as intended.

IMPORTANT

Prevent misuse and abuse

Due to the higher speeds with electric motor assistance, you lose the permission to use the tuned pedelec in public road traffic or on public paths without further legal approval.

2.2.2 Use only with protective clothing and helmet

After the installation of the tuning module, a pedelec mountain bike can reach electrically assisted speeds of up to 45 km/h.

⚠ WARNING

Reduce the increased risk of accidents

Reaching such speeds increases the risk of a fall, even with suitable strength and design of the vehicle.

Using a tuned e-bike mountain bike without appropriate protective clothing and a helmet can release accident insurance companies from their obligation to pay benefits after a fall resulting in injury.

- ▶ Always wear suitable protective clothing and a helmet while using your tuned e-bike mountain bike to protect yourself from increased accident risks.
- ▶ Insist that every user of your tuned e-bike mountain bike always wears appropriate protective clothing and a helmet while using it.

2.2.3 Restrict user group

After the installation of the tuning module, a pedelec mountain bike can reach electrically assisted speeds of up to 45 km/h. Reaching such speeds may necessitate a further restriction of the permissible user group determined by the pedelec manufacturer. Such a restriction must be determined independently by the owner of the tuned pedelec, taking into account the physical and mental suitability of the persons to whom the tuned pedelec is made available for use.

IMPORTANT

Also consider the terrain to be traversed.

A key factor in determining the permissible users should also be the consideration of the terrain to be traversed.

- ▶ Clearly define the permission for use before transferring it to any other person.
- ▶ Always lock your tuned e-bike mountain bike when you park it.

This is how you prevent misuse and abuse by other people.

2.2.4 Prevent abuse and misuse

IMPORTANT

Using it in public road traffic constitutes misuse

Due to the higher speeds with electric motor assistance, you lose the permission to use the tuned pedelec in public road traffic or on public paths without further legal approval.

- ▶ Only use your tuned e-bike mountain bike on private, secured properties or race tracks.
- ▶ Never drive on public roads or areas that you have not been able to securely block off from other people beforehand.
- ▶ Also prevent another person from using your tuned e-bike mountain bike in public traffic or on public paths.
- ▶ Always lock your tuned e-bike mountain bike when you park it.

This will prevent misuse and abuse, including by other people.

2.2.5 Observe shortened maintenance and inspection intervals.

Due to the higher speeds with electric motor assistance, higher loads and forces will act on all vehicle parts.

Reaching higher speeds increases the wear and tear on all vehicle parts, especially the braking system and all parts of the drive system, even with suitable strength and design of the vehicle.

IMPORTANT

Establish and implement shortened inspection and maintenance cycles.

Shortened inspection and maintenance cycles must be determined independently by the owner of the tuned pedelec, taking into account the operating conditions.

- ▶ Perform a thorough inspection of your tuned e-mountain bike before each use.
- ▶ Be sure to check the condition and function.
 - the brakes and their functional components,
 - of the vehicle frame,
 - the steering system and its functional components,
 - of the drive and its functional components as well as
 - of the saddle and its functional components.
- ▶ Please also observe all inspections not mentioned here that are prescribed by the manufacturer of your e-bike mountain bike before each use. This list does not replace the original operating instructions from the e-bike manufacturer.
- ▶ Determine further inspection and maintenance cycles according to the manufacturer's specifications for your e-bike mountain bike.
- ▶ Shorten these according to your operating conditions.
- ▶ If necessary, coordinate these points with your specialist company that will be carrying out the inspection and maintenance work.

This is how you ensure that the shortened inspection and maintenance intervals are adhered to.

2.2.6 Note the reduced battery charging cycles

The "machine" of the bicycle with electric motor assistance is modified. Although there is no increase in performance, the achievable speed of more than 25 km/h means that the maximum possible power is regularly drawn from the battery over extended periods.

This leads to an earlier discharge of the available battery capacity than you are used to from your pedelec or as specified by the manufacturer of the pedelec mountain bike in the operating instructions.

- ▶ Please take this into account when planning your journeys.

2.3 Know and comply with the installation requirements.

Meet requirements for strength, design, and drive system

For the tuning module to be used safely in your pedelec mountain bike, your vehicle must also meet certain requirements.

City or trekking bikes are generally not compatible with this equipment.

City or tracking bikes often do not meet the requirements for strength and design, or the requirements cannot be checked due to a lack of manufacturer information.

IMPORTANT

Prevent abuse and misuse

Furthermore, it cannot be assumed that tuned city or trekking bikes are actually only used on private, secured properties or racetracks. Abuse and misuse contrary to the provisions under point 2. The aforementioned intended use and limitations would be a cause for concern. For these reasons, the installation of the tuning module is only permitted for pedelec mountain bikes that demonstrably meet the following requirements according to their manufacturer's specifications.

2.3.1 Check and confirm requirements for strength and design

Requirements for strength and design are regulated by EN 15194 and EN ISO 4210-2 and must be confirmed as applied by the manufacturer of your pedelec mountain bike.

! WARNING

Prevent increased accident risks due to insufficient strength

Due to the higher speeds with electric motor assistance, higher loads and forces will act on all vehicle parts. Increased accident risks due to part breakage and part failure in the entire vehicle can only be largely ruled out in vehicles that are demonstrably designed and built in accordance with both product standards.

- ▶ Check the EC Declaration of Conformity from the manufacturer of your pedelec mountain bike.
- ▶ Only install the tuning module in your pedelec mountain bike if the manufacturer of your pedelec mountain bike states that the two product standards EN 15194 and EN ISO 4210-2 are applied.

This ensures that the necessary requirements for strength and design are met.



Are the normative requirements met?

- ▶ Before installation, confirm the relevant sections in the EC Declaration of Conformity from the manufacturer of your pedelec mountain bike:
 - Does the EC declaration of conformity demonstrably apply to the vehicle to be equipped?
 - EN 15194 mentioned in the declaration of conformity?
 - EN ISO 4210-2 mentioned in the declaration of conformity?
- ✓ Only if both standards are listed as applied can it be assumed that the requirements for strength and design have been met.
 - ▶ Never install the tuning module in vehicles for which you cannot clearly establish these requirements and prove them through the EC declaration of conformity from the pedelec manufacturer.

2.3.2 Check and confirm requirements for the drive system

DANGER Prevent damage and malfunctions

The tuning module is designed for specific drive systems. Using it in vehicles with unsuitable drive systems will lead to malfunctions or damage to the e-bike or the tuning module.

- ▶ Check the equipment on your e-bike mountain bike.
- ▶ Only install the tuning module in your pedelec mountain bike if you can verify that your pedelec equipment is compatible with the drive systems listed below.

Drive system:	Remark:
Shimano – Steps E5xxx -E8xxx	xxx - all derivatives



Do they meet the requirements for the drive system and display?

- ▶ Confirm the equipment of your e-bike mountain bike before installation.

The e-bike mountain bike to be equipped is fitted with a

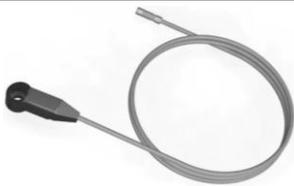
- equipped with the above drive systems as well as
- equipped with a display type that is compatible with the drive system?

✓ Only if you can confirm both prerequisites can a functioning and safe operation be assumed.

- ▶ Never install the tuning module in vehicles for which you cannot clearly determine and prove that both prerequisites are met.

This operating manual describes three products for use with the drive system described. The MBIQ-P module can be used independently of the system's speed sensor. For the sensor solutions, it is necessary to check beforehand which type is installed.

- ▶ Use the illustrations to check which type of sensor is used in your system.

Tuning:	Variant:	Picture:	Description:
MBIQ-P	-		Module for integration into the power path of the existing speed sensor.
MBIQ-S	DUE10		It is installed in place of the existing speed sensor and mounted in the same way.
MBIQ-S	DUE11		It is installed in place of the existing speed sensor and mounted in the same way.

2.4 Owner's obligation

Every user must be instructed accordingly by the owner of the tuned pedelec mountain bike using these operating instructions, and must be informed about the special usage restrictions and increased risks due to the increased speed.

The owner of the tuned e-bike mountain bike ensures that

- all prerequisites for safe use
- and must be adhered to for intended use and
- This operating manual is always readily available to every user.

The owner of the tuned e-bike mountain bike undertakes to

to make the tuned e-bike mountain bike available only to people who

- have read and understood these operating instructions and
- They were instructed in the safe and proper use of the tuned pedelec mountain bike.

2.5 Obligation of each user

Every user is required to

- to read and follow these operating instructions in full, and
- All safety and warning instructions must be followed without exception.
- The tuned pedelec mountain bike must only be used in technically perfect condition and as intended, in a safe and hazard-conscious manner, observing these operating instructions.
- Any identified damage or malfunctions that could compromise safety must be rectified immediately, or, if necessary, have rectified.

3 Warranty and liability

Warranty and liability of the tuning module manufacturer

Warranty and liability claims are excluded by the manufacturer of the tuning module in the case of direct or indirect personal injury or property damage if they are attributable to one or more of the following causes:

- Increased wear or breakage of components of the pedelec mountain bike, especially parts of the braking system and/or the drive system,
- Failure to comply with these operating instructions or
- improper use of the tuning module or the pedelec mountain bike with integrated tuning module or
- Failure to comply with the usage restrictions of these operating instructions or
- Use or operation with operating conditions that do not correspond to these operating instructions or
- improper installation, commissioning, maintenance or repair, or installation not specified in these operating instructions, or
- after unauthorized structural, hardware-related or software-related changes to the tuning module itself or to the pedelec approved for the tuning module or its equipment.

IMPORTANT

The installation and operation of the tuning module is at your own risk.

The manufacturer of the tuning module accepts no liability whatsoever for damages related to the operation or installation of the tuning module.

The technical and legal consequences mentioned may be incomplete.

In addition to the technical and legal consequences mentioned in these operating instructions, further requirements may apply depending on the operating location.

- ▶ Before installing the device, inform yourself about possible further technical and legal consequences and requirements that you must comply with for the operation of the tuned pedelec mountain bike.

Warranty, guarantee and liability by the manufacturer of pedelec mountain bikes

Due to the higher speeds with electric motor assistance, higher loads and forces will act on all vehicle parts.

Reaching higher speeds increases the wear and tear on all vehicle parts, especially the braking system and all parts of the drive system, even with suitable strength and design of the vehicle.

For this reason, liability, warranty and guarantee claims against the dealer or manufacturer of the pedelec mountain bike will be voided or severely limited by the use of the tuning module.

3.1 Personal injury – Further exclusions of liability to be considered

After the installation of the tuning module, a pedelec mountain bike can reach electrically assisted speeds of up to 45 km/h.

WARNING Reduce increased risks of danger

Reaching such speeds increases the risk of a fall and resulting injury to people, even with suitable strength and design of the vehicle.

Using a tuned e-bike mountain bike without appropriate protective clothing and a helmet can release accident insurance companies from their obligation to pay benefits after a fall resulting in injury, or significantly reduce these benefits.

- ▶ Always wear suitable protective clothing and a helmet while using your tuned e-bike mountain bike to protect yourself from increased accident risks.
- ▶ Insist that every user of your tuned e-bike mountain bike wears appropriate protective clothing and a helmet at all times during its use.

Reduce the risk of accidents in monetary terms

- ▶ Define your operating conditions and the user groups to be insured precisely.
- ▶ Take out insurance that is appropriate to the operating conditions and user group for the use of your tuned e-bike mountain bike.

This is how you prevent monetary risks from injuries caused by falls.

3.2 Property damage – Further exclusions of liability to be considered

After the installation of the tuning module, a pedelec mountain bike can reach electrically assisted speeds of up to 45 km/h.

Damage caused in connection with the operation of a modified e-bike may no longer be covered by private liability insurance. It is therefore advisable to take out insurance specifically designed for this purpose.

DANGER Reduce increased liability risks

Reaching such speeds increases the risk of causing property damage.

Monetarily reduce the risk of property damage

- ▶ Define your operating conditions and the user groups to be insured precisely.
- ▶ Take out liability insurance that is appropriate to the operating conditions and user group for the use of your tuned pedelec mountain bike.

This is how you prevent monetary risks in the event of damage to other people's property during the operation of the tuned pedelec mountain bike.

4 Functional description

After installation in pedelec mountain bikes with Shimano drive systems, the tuning module offers the following operating modes:

- Tuning permanently activated
- Tuning permanently disabled
- Tuning based on power-on condition

Other adjustable functions:

- Speed limiter ("v-max") adjustable



Settings

All settings are made via the display in combination with wheel movements on the e-bike. (see chapter 8)
No smartphone or notebook is required.

Protected electronics

The electronics are encased in the housing and thus safely protected from moisture.

Safety and protective devices

The safety and protective features of the pedelec mountain bike remain unaffected by the installation of the tuning module.

The device is in the following mode when delivered:

**"Tuning permanently active"
with the highest support speed limit.**

5 Technical data and connection values

Dimensions and weight	
Housing dimensions:	<p>MBIQ-P:</p> <ul style="list-style-type: none"> • approx. 30 mm x 10 mm x 10 mm <p>MBIQ-S:</p> <ul style="list-style-type: none"> • approx. 47 mm x 15 mm x 13 mm (SS300) • approx. 40mm x 21mm x 7mm (SS301)
Cable length:	<p>MBIQ-P:</p> <ul style="list-style-type: none"> • approx. 80 mm <p>MBIQ-S:</p> <ul style="list-style-type: none"> • approx. 750 mm (SS300) • approx. 750 mm (SS300)
Weight:	<p>MBIQ-P:</p> <ul style="list-style-type: none"> • approx. 5 g <p>MBIQ-S:</p> <ul style="list-style-type: none"> • approx. 15 g (SS300) • approx. 15 g (SS300)

Electrical data	
Supply voltage:	No separate power supply required
Protection class of the housing:	IPX4 according to EN 60529
Display	Manipulated values from approximately 22 km/h (Display remains below 25km/h until v-max)

6 Install

IMPORTANT

Before you begin the installation

- ▶ Before you begin the installation, please ensure that you have carefully and completely read and understood all previous chapters of this instruction manual.

This is the only way to ensure that you use the interchangeable "tuning module" equipment exclusively for the purpose and intended use described in these instructions.



Have you read and understood all previous chapters and their sub-sections?

- *1 Important safety instructions*
- *2 Adhere to the requirements for safe use*
- *2.1 Know the intended use*
- *2.2 Know and comply with operational restrictions*
- *2.3 Know and comply with the installation requirements.*
- *3 Warranty and liability*
- *4 Functional description*
- *5 Technical data and connection values*

- ▶ Do not begin the installation until you have read and understood all chapters and sub-sections.

6.1 Installation example

This instruction manual can only demonstrate the installation using an example vehicle and its equipment.

The installation described below and all associated instructions refer to the installation example:

Shimano DU-EP800

6.2 Know the tools you need

- Phillips screwdriver PH0
- Hex socket T10

For models in the 6000 series, it is usually necessary to remove the crank and chainring. Special tools are required for this.

- Crank puller
- Chainring mounting tool (e.g.: TL-FC38 + TL-FC32)



Additional tools may be needed.

Depending on the vehicle model, the engine cover may also be equipped with

- Torx or
- It should be attached to another Allen key.

6.3 Remove engine protection cover

⚠ WARNING Prevent unexpected start-up

If the drive starts unexpectedly, hands and fingers can be sheared, crushed, or pulled in.

- ▶ Switch off the e-bike mountain bike and remove the battery.

This will prevent any electrically assisted movement.

Parts may have sharp edges; protective particles may be ejected.

- ▶ Wear protective gloves and safety glasses when removing the engine guard.



For models in the 6000 series, the installation side is on the right-hand side in the direction of travel!



illustration1: Screw position of the engine cover

Remove engine protection cover

- Ensure your e-bike mountain bike is stable and secure.
 - Remove the battery.
 - Loosen the Phillips screws (see illustration) of the engine cover.
 - Remove the engine cover.
- ✓ The cover provides a clear view of the wiring.

6.4 Unplug the cable

- Pull the front, marked plug out of the marked socket.



illustration2: Connector position of the speed sensor

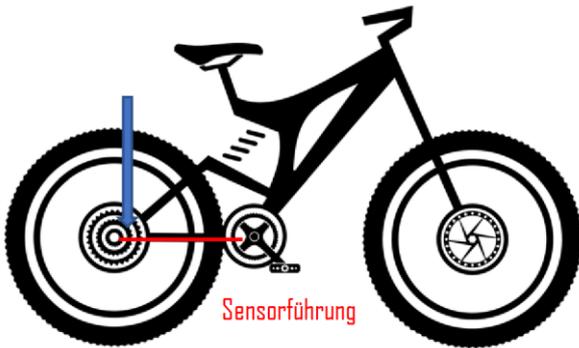
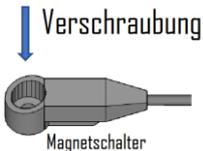


illustration 3: Sensor position

Remove sensor (MBIQ-S only)

- b) Loosen the mounting screws of the speed sensor.

DUE10	DUE11
	



Cable routing (MBIQ-S only)

It can be helpful to pull a suitable pull wire through while removing the old sensor, so you can thread the tuning part along it!

6.5 Plug in the tuning module

MBIQ-P:

- a) Insert the end of the speed sensor (1) into the socket (2) of the tuning.
- b) The cable end (3) goes into the socket in the engine compartment.

MBIQ-S:

- a) Thread the MBIQ-S cable in the same way as the previously removed sensor.
- b) The cable end (3) goes into the socket in the engine compartment.



illustration4Connect tuning module

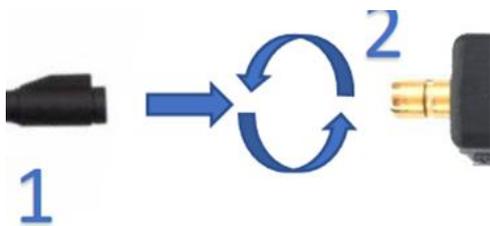


illustration5: Connector fully inserted

Check connectors (MBIQ-P)

- c) Push the plug (1) fully into the socket (2) and then rotate it slightly back and forth as shown to initially establish a clean connection.



Properly inserting

Some pressure is required; the plugs usually click into place in the motor socket!

⚠ WARNING

Cable routing MBIQ-S

Improper cable routing/fastening can cause the cable to get caught in rotating parts. This can lead to accidents.

- ▶ Attach/route the cable of the MBIQ-S in the same way as that of the previously installed, original sensor.

6.6 Complete installation

Position the tuning module and route the cables (MBIQ-P)

- Find a suitable place to house the module.
- Place the tuning module in a suitable location.
- Route the cables so that the motor protection cover can be reinstalled without obstruction.



A uniform installation location cannot be defined.

Due to the large number of different drive systems and covers, it is not possible to define a uniform installation location.

It is often possible to place the module directly in the connection area of the motor.

It is also possible to mount it inside the frame tube, although this usually requires detaching the engine from the frame.



illustration6Engine guard reinstalled

Reinstall the engine guard cover

- Reinstall the engine guard cover.
- Make sure that no cables rub against it or are even pinched.
- Screw the engine guard back on.

7 commissioning

IMPORTANT

Initial commissioning

It is recommended to check the correct functioning of the module before first use.

- ▶ Ensure a secure footing
- ▶ Reinsert the battery into the system and start it up.
- ▶ If the rear wheel is now set in motion (without pedaling!), a speed reading should appear on the display.



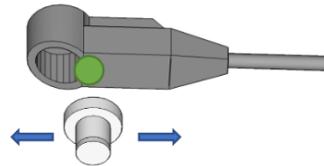
If the display remains at 0.0:

If the display remains at 0.0, the module's wiring is faulty, or the magnet position is not optimally aligned with the MBIQ-S.



Is this the case:

- ▶ Check your wiring.
- ▶ To do this, follow the instructions in the chapter below. *6 Install* this operating manual.
- ▶ Then repeat the setup process.
- ▶ For MBIQ-S: Check the magnet position:



The module can only function correctly if a speedometer is present. Do not start driving beforehand. Otherwise, your system will diagnose an error.

8 Operating modes

You have the option to choose between three operating modes:

1. Permanent tuning enabled

In this operating mode, the speed limit is permanently removed. The actual speed driven no longer corresponds to the displayed speed above approximately 25 km/h. Manipulated values ≤ 25 km/h are generated for the engine firmware.

2. Permanent tuning disabled

The speed limiter cannot be removed. The actual speed corresponds to the displayed speed. Assistance is provided up to 25 km/h.

3. Tuning according to the switch-on condition

To activate the tuning, the magnet must be in front of the sensor for at least 4 seconds during startup. Otherwise, the tuning is deactivated. (This time is approximately the time it takes for the display to be ready.)

**In its factory default state, the device is in the mode: "Tuning permanently active"
with the highest support speed limit.**



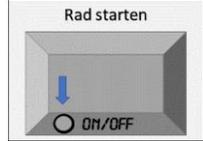
Have you chapters 7 Successfully completed?

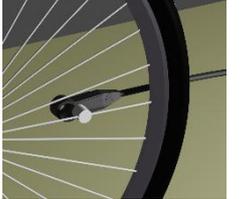
- *Speed indicator available for rotary movement.*
- ▶ Only then can the operating mode be reprogrammed if necessary.

8.1 Programming the operating mode

To enter programming mode, you must follow these steps:

Turn off the bike before starting and wait a moment...

<p>Ensure that the spoke magnet is at the same height as the sensor before switching on the system.</p>	
<p>Then turn on the system. Important: For the further process, what counts is the start of the system (e.g., the LED turns on), not the complete boot-up of the display!</p>	
<p>Leave the magnet positioned in front of the sensor for approximately 4 seconds.</p>	

<p>Remove the magnet from the sensor for approximately 1 second.</p>	
<p>To access the operating mode menu, hold the magnet in front of the sensor again for at least 4 seconds. If you want to change the maximum supported speed, please wait at least 8 seconds!</p>	
<p>If the magnet is now removed, the tuning sensor switches to programming mode.</p>	
<p>If the process was carried out correctly, the display will now show the set operating mode or v-max by outputting different speeds (explanation follows on the next page) on the respective display of your bike.</p> <p>To navigate through the different operating modes or adjust speeds, simply turn the wheel once. Each turn (moving the magnet past the sensor) advances the setting by one point/level.</p> <p style="text-align: center;">Make sure that the magnet is not in front of the sensor after the rotation!</p>	



Displayed values

The decisive factor for setting the operating mode is not the exact value (which varies depending on the wheel circumference), but the sequence!



Systems with immobilizer

- ▶ If your system has an immobilizer using a transponder, it must be deactivated for the duration of the programming.

8.2 Choice of operating mode

	Tuning permanently activated
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	Tuning permanently disabled
---	------------------------------------

	Tuning based on power-on condition
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Displayed values

The decisive factor for setting the operating mode is not the exact value (which varies depending on the wheel circumference), but the sequence!

If you do not wish to save any changes, simply switch off your system; the last selected operating mode/v-max will then be retained.

To save a change, hold the magnet in front of the sensor for at least 4 seconds.

After saving, the display shows 0 km/h and remains in this state.

Then restart the system!

8.3 Selection of maximum support speed

Setting the speed limit, up to which support is desired, is done using the same procedure as setting the operating mode. The displayed values correspond to the speed limit.

The tuning will provide support up to approximately this displayed speed and will increment the displayed speed.



If the limit is not lifted despite the activated speed mode:

In this case, the wrong bicycle type was selected in the setup. For e-bikes that provide assistance up to 25 km/h from the factory, "25" must also be selected under bicycle type.

- ▶ In such a case, repeat the setup according to the instructions in the chapter. **Fehler! Verweisquelle konnte nicht gefunden werden. Fehler! Verweisquelle konnte nicht gefunden werden.**this operating manual.

9 Check before each use

Due to the higher speeds with electric motor assistance, higher loads and forces will act on all vehicle parts.

Reaching higher speeds increases the wear and tear on all vehicle parts, especially the braking system and all parts of the drive system, even with suitable strength and design of the vehicle.

IMPORTANT

Before each use

- ▶ Perform a thorough inspection of your tuned e-mountain bike before each use.
- ▶ Be sure to check the condition and function.
 - the brakes and their functional components,
 - of the vehicle frame,
 - the steering system and its functional components,
 - of the drive and its functional components as well as
 - of the saddle and its functional components.
- ▶ Please also observe all inspections not mentioned here that are prescribed by the manufacturer of your e-bike mountain bike before each use. This list does not replace the original operating instructions from the e-bike manufacturer.
- ▶ Only use your tuned e-bike mountain bike if you can ascertain and confirm that it is in perfect working order.

10 Riding the tuned e-bike mountain bike

To ensure safe use of the tuning module in your pedelec mountain bike, it is essential to first read and understand these operating instructions completely.

This operating manual

- informs you about the intended use,
- important operational restrictions,
- Obligations of the owner and the user,
- Warranty and liability conditions and
- It warns you with conspicuous safety and warning notices of potentially unsafe or dangerous situations and uses.

IMPORTANT

Know and follow all the contents of the operating instructions

- ▶ Be sure to take the time to read these operating instructions carefully before setting off with your tuned e-bike mountain bike.
- ▶ Make these operating instructions available to anyone else who is allowed to ride your tuned e-bike mountain bike.
- ▶ Ensure that every person who is allowed to operate your tuned e-bike mountain bike has read and understood these operating instructions before any use.
- ▶ Instruct the user in the safe use of the tuned e-bike mountain bike using these operating instructions before you give your tuned e-bike mountain bike to other people.



Strictly adhere to intended use and usage restrictions.

- ▶ Strictly adhere to the intended use and usage restrictions.
- ▶ Pay particular attention to the following points
 - 2.1 Know the intended uses as well as
 - 2.2 Know and comply with operational restrictions and its sub-points of this operating manual.

11 Dispose



Know the rules and regulations for disposal

- ▶ In any case, comply with the regionally and company-specific regulations regarding waste disposal.
- ▶ If in doubt, ask the waste management officer of your municipality where you can properly dispose of electronic waste.



Disposal instructions

- ▶ Never throw electronic components into the household waste.
- ▶ Dispose of electronic waste only in designated collection containers provided by a waste disposal company or your local municipality.

This device must not be disposed of with household waste. This device is marked in accordance with European Directive 2002/96/EC on waste electrical and electronic equipment (WEEE). This directive provides the framework for the EU-wide take-back and recycling of waste electrical and electronic equipment. Please use the available return and collection systems to return your old device.

You can also return the tuning kit to your specialist dealer after use.

12 EC/EU Declaration of Conformity

in the sense of

EC Directive on Machinery 2006/42/EC, Annex II I A for interchangeable equipment according to Articles 1(b) and 2(b) as well as

EU official L 157/24 from June 9, 2006

EMC Directive 2014/30/EU,

EU official L 96/79 of February 26, 2014

RoHS RL 2011/65/EU,

EU official L 174/88 from July 1, 2011

We, as the manufacturer and under our sole responsibility, hereby declare that the interchangeable equipment listed below, in its design and construction as well as in the version we have placed on the market, complies with the relevant provisions and harmonization legislation of the above-mentioned directives.

Product name

Tuning module, Shimano Steps E5xxx-8xxx compatible

Article number

MBIQ-P / 7141236536925

MBIQ-S (DUE10) / 0767523733999

MBIQ-S (DUE11) / 0767523734040

Date of manufacture

from 11/2022

Interchangeable equipment exclusively for

Pedelec mountain bikes

with the standards mentioned in the declaration of conformity of the pedelec manufacturer

EN 15194 EN ISO 4210-2(Mountain bikes)

Manufacturer and address



Dipl.-Ing. (FH)

FS Eng. TÜV Rheinland

Markus Bender

Langgasse 20

D-35435 Wettenberg

Documentation Officer

Markus Bender

Applied harmonized standards, in particular:

EN ISO 12100:2010

Risk assessment and risk reduction

EN 15194:2017

Bicycles - electrically assisted bicycles - EPAC

EN ISO 4210-2:2015

Bicycles - Safety requirements for bicycles Part 2: Requirements for city and trekking bicycles, youth bicycles, off-road bicycles (mountain bikes) and racing bicycles

Other applied sets of rules:

UNECE Regulation No. 78

Brake requirements

Location and date of the exhibition:

Wettenberg, November 28, 2022



Legally binding signature, Markus Bender

