

**Instructions for the installation and description
of the functions for *Yamaha* PW-X, PW-X2,
PW-SE, PW-ST, PW-TE mid-motor design
year 2017 to 2020 with Yamaha PW-X, LCD-X, SideSwitch-
or Multi Switch TFT-display**



... for further information visit... www.BIKESPEED.DE



Product description

The bikespeed-RS is a simple and compact kit to bypass the speed limit of 25 km/h of Yamaha PW-X, PW-X2, PW-SE, PW-ST or PW-TE mid-design drives from year 2017 to 2019 with PW-X, LCD-X, SideSwitch or Multi Switch TFT display. The installation is completely invisible.

In contrast to other commercial tuning kits for pedelecs the bikespeed-RS displays the "real" speed on the tachometer instead of the half value. The data of the cycled distance, average/maximum speed, calculated range, ... are usable without any limitations. The levels of support as well as any special profile will be certainly maintained. Light activation is also unnecessary and you can use the tuning if you have an additional lighting system powered by the battery.

The tuning makes the final speed void, that means the terminal velocity is only limited by the power of the drive and the muscular strength invested.

We designed the installation as simple as we could. All the necessary connections are pluggable and consequently they can be removed without any traces.

Deactivation of the speed limit at 25 km/h is possible with the help of a key sequence on the actuator (see page 3, paragraph 'description of the functions').

The tuning will adapt to your pedelec when it is activated. During this process the drive, the display and the size of the tires will be recognized automatically. The tuning is thus universally applicable and you don't have to adjust anything.

Description of functions

After activating your pedelec the display will show an animation of the battery's capacity. If the capacity runs from empty to full your pedelec will support you with motor power even if you exceed 25 km/h. If the capacity runs from full to empty the support will end at 25 km/h.

In order to switch on or off the support above 25 km/h please change the level of support down, up, down and up again. If the procedure was successful you will see the animation of the battery's capacity once more just like when you activate your pedelec and this way you are informed about the current setting.

Here is an example beginning on the 'Std' level:

Pushbutton down (new level: 'Eco')

Pushbutton up (neue Stufe: 'Std')

Pushbutton down (new level: 'Eco')

Pushbutton up (new level: 'Std')

If you have a bikespeed-RSc you use the combination you chose beforehand. (see page 6, paragraph 'Hint for the *custom-variant*')

Please enter the combination quickly without a pause of 3 seconds between two keys. Repeat the procedure if necessary in order to obtain the desired setting.

Hint: A switched off bikespeed-RS can not be switched on with the combination for service-mode (see on page 4)!

Important hint when visiting the repair-shop or software-updates on your pedelec

If you have in mind to update your pedelec software or you wish to perform the Yamaha system with a customer service, please have a look on bikespeed and check on our website www.bikespeed.de, whether the tuning continues to work with a later software or not.

For a software-update to your Yamaha-system you have to uninstall the bikespeed-RS. Alternatively there is the service mode on the bikespeed-RS that needs to be activated at your retailer.

Therefore change the level of support 3x down and then 3x up. Please enter the combination continuous without a pause of 3 seconds between two keys. Begin on the highest level. In case of success the entire battery index will blink 3x and meanwhile the software state of the bikespeed-RS will be shown on the speed indicator. Now the tuning is in service mode and maintenance as well as software updating can be executed.

If you have a bikespeed-RSc you use the combination you chose beforehand. (see page 6, paragraph 'Hint for the *custom*-variant')

This state is maintained even after deactivating the system. That is why there will not be an animation of the battery's capacity informing about the state of the tuning.

For the deactivation of the service-mode please use the same key-combination as for the activation or the combination you chose for activating and deactivating the tuning. Please keep in mind that in service-mode the support of the drive ends at 25 km/h.

Hint: If you are not sure, whether the service-mode is activated, please uninstall the bikespeed-RS before you update!

After activating the service mode, we recommend to switch off the bike without moving it again. If a speed is displayed it could change the trip, avg- or max-speed.

Hint for the automatic mode

The newer models of the PW-motors have an automatic mode that automatically adjusts the support levels according to the driving situation. This can cause your bikespeed-RS or -RSc to be switched off or on while riding, or the service mode (just described) to be switched on or off.

Description of the *custom-variant* (bikespeed-RSc)

After many requests of our customers we offer a new feature of the bikespeed-RS additionally. The individual customer configuration gives you the opportunity with you selectable personal setting to protect your tuning for discovering.

With your individual key combination you can decide if the tuning should be displayed its status with an animation above the battery indicator or not. The tuning can be switched on/off at anytime and you can control the behavior (tuning on/off) after on switching your bike.

The configuration options can be found in the shop on our website. There all possibilities are described with many tips and videos.

If you are interested to upgrade your standard bikespeed RS on a custom version, you can feel free to contact us.

Hint for the odometer

Please note that after the deinstallation of the bikespeed-RS your odometer may show a lower value under certain circumstances like you're actually traveled with your bike. This behavior is caused by the design and not a fault.

Please note this primarily when selling your bike.

Product liability / exclusion of liability

We were not able to figure out whether running a pedelec with an installed but deactivated bikespeed-RS is permitted on public roads. That is why we expressly point out that the mere existence of the tuning on your pedelec may be an offence against Road Traffic Regulations or it violates §6 of the obligatory insurance law, driving without insurance.

Modified bicycles may only be used on private property. Running a modified pedelec on public roads is expressly prohibited by Road Traffic Regulations!

Installing and running a bikespeed-tuning is done in personal responsibility; liabilities for damages or subsequent damages as well as legal consequences for bikespeed are excluded in every case.

Please inquire about legal consequences that may result for you from installing and using the tuning before you use it.

We expressly point out that using the bikespeed-RS leads to a loss of warranty by the manufacturer. Furthermore there are no claims to product liability for your pedelec/e-bike viable for the manufacturer and bikespeed.

bikespeed especially cannot guarantee that brakes, frames, running gears, tires etc. are designed for the use of the tuning-component.

Help in case of problems

If your bikespeed-RS doesn't work correctly at any given time please check the following steps in order to help yourself.

Should you still have problems please write an email before sending back the bikespeed-RS.

Cause	Solution
- bicyce doesn't start or deactivates itself immediately	Please check whether the battery is properly engaged in the bracket. - Please check the 5-pole connector from the tuning to the motor and to the display.
- no animation visible when starting the bicycle	- Please check if the service-mode is activated as by entering the combination. - Check the 3-pole connector from the tuning to the motor.
- no support or rather only briefly when starting - no speed-indication (0 km/h)	- Please check the 3-pole connector from the tuning to the motor and to the speed-sensor - Check the magnet on the sensor and align it anew - Test the magnet by holding another magnet in front of the sensor for a second and take it away again several times.
- support only until up to 25 km/h are reached - miles are missing	- Check if the tuning is activated and service-mode is off.

Continue on next page.

- bikespeed-RS (c) can not switched on or off	- Keep in mind you have to switch the stages to enter the combination. Please start in a sufficient high or low stage.
Tuning or Service-Mode is activated or deactivated during cycling.	Please deactivate automatic mode on your bike (see chapter "Hint for the automatic mode")

In our experience, the cause for problems most often are connectors which are not correctly plugged in. Therefore please always check if they are set correctly and plugged in the correct socket. Please insert the connectors as far as you cannot see the seals any more. If that is not possible please apply some Vaseline onto the seals for greasing. The plugs are coded and only fit in one direction. Please do not use force!

Example installation on a Haibike SDURO Fullseven 8.0

In order to get to the necessary connectors for the connection of the bikespeed-RS the gravel deflector of your motor has to be removed and the motor folded down. To do this you have to dismount the treadle on the opposite side of the chain guide. Please follow our pictured instruction manual for this procedure.

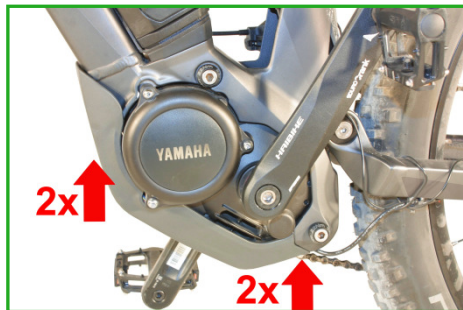
Required tools: - Allen key set (different sizes, ball head recommended)

The installation may only be carried out by an expert!

All statements without guarantee!

1. Please remove the battery before working on your bicycle!

Remove the lower anti-skid cover. This is held by 4 Allen screw (size 4) and remove the cover.



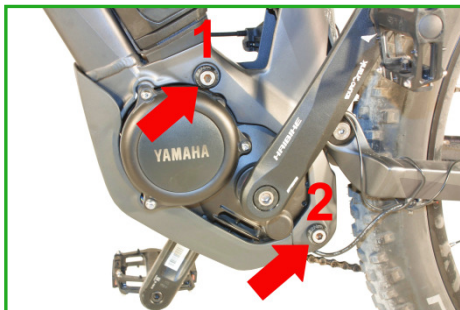
2. On the side with the chainring, loosen and remove the shown fastening screw with a size 5 Allen key.



- 3.** Unscrew the shown screw with an Allen key size 5. There is a recess in the chainring, with which the screw can be reached with a ball-head. Loosen the screw only slightly, it serves as a hinge!



- 4.** Loosen and remove the screw 1 with an Allen key size 6. Loosen the screw 2 slightly. This also serves as a hinge to lower the motor.



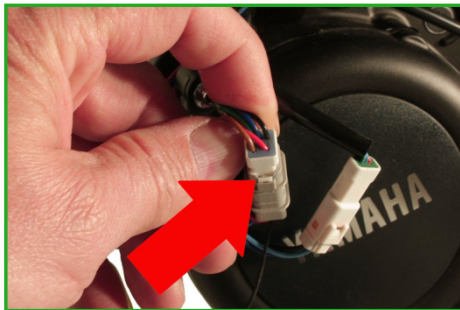
5. Fold the motor down. Be careful when doing this. It may be that it is a little tense. Please do not tear or crush cables.



6. Disconnect the 5-pin connector (1). This is stowed in the frame tube upwards. The white lock can be opened with the fingernail or a small slotted screwdriver. This remains then in the open position (see next picture)



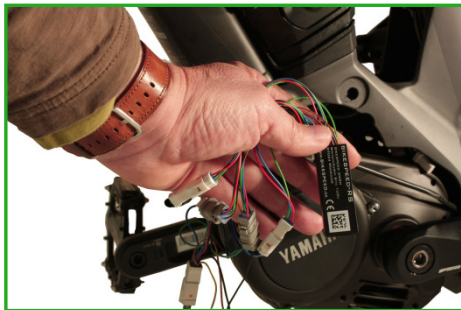
- 7.** The open lock. In this position, the plugs can now be easily separated.



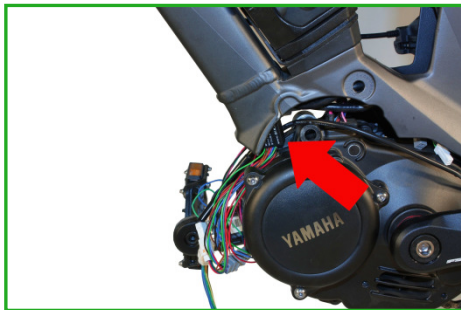
- 8.** Disconnect the 3-pin connector (2). This is stowed in the frame tube upwards. The lock can also be released at the arrow with the fingernail or a small slotted screwdriver.



9. Connect the 4 connectors of the bikespeed-RS to the newly released connectors on your bike.



10. Stow the bikespeed-RS as well as all connectors and cables in the frame tube.



- 11.** Fold the motor carefully back up into its position. Be careful not to squeeze or hurt cables. The motor can then be held in position with the screw previously removed.

Re-tighten the motor in the reverse order. When tightening the motor screws, make sure that the motor screws are tightened as prescribed manufacturer's torque.

All statements without guarantee!

Hint for water protection

The opening in the housing is by design, so that any water can quickly drain and dry. Of course the electronic is protected with a splash proof sealing.

For the succes of drying the opening should be placed downwards. If this is not possible, we recommend additional water protection. (e.g. finger of a one-way-glove)

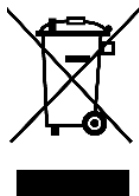
Hint for disposal

Electric and electronic devices that have become waste are called old devices. Owners of such old devices have to bring these to recycling facilities, where these are handled and recorded separately from urban solid waste. Old devices must not end up in the household refuse. In fact they have to be collected in special collecting and recycling systems.

Owners of old devices from private households can dispose these at the public waste disposal authorities or bring them to producer or seller related disposal locations. You can find these disposal locations online:

<https://www.ear-system.de/ear-verzeichnis/sammel-und-ruecknahmestellen.jsf>

The labelled symbol showing the „crossed out waste container“ on electric and electronic equipment indicates that the concerning equipment has to be disposed separately from urban solid waste.



As a producer in terms of the German ElektroG we are registered with the German registration authority Stiftung Elektro-Altgeräte-Register (Benno-Strauß-Str. 1, 90763 Fürth), having been granted the following WEEE registration number: **DE 87104747**

As well at the Elektro Recycling Austria (ERA) GmbH with contract number: **40624**

EU declaration of conformity

The manufacturer bikespeed GmbH
 Huberstr. 17
 97084 Wuerzburg

hereby declares that the following product:

Name of the product: bikespeed-RS
Year of construction: 2014-2020

is in accordance with all appropriate regulations of the EMV-guideline (EMC) 2004/108/EU, the disposal-guideline 2012/19/EU as well as the RoHS-guideline 2011/65/EU.

Name of the documentation plenipotentiary: Matthias Braun
Address of the documentation plenipotentiary: see address of the manufacturer

Wuerzburg,

11/12/2019 Matthias Braun, manager

Date Signatory



Signature