

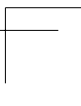
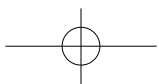
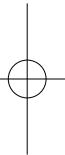
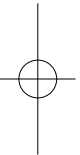
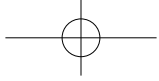
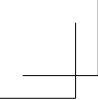


 **Read this manual carefully before operating the system.**
This manual should stay with this system if it is sold.

OWNER'S MANUAL

PW-LINK Drive Unit

- * This owner's manual is original instruction.
- * Product and specifications are subject to change without notice.



Introduction

These original instructions have been prepared for your Drive Unit.

TIP

This manual is not intended as a comprehensive use, service, repair or maintenance manual. Please see your dealer for all service, repairs or maintenance. Your dealer may also be able to refer you to classes, clinics or books on bicycle use, service, repair or maintenance.

**PW-LINK Drive Unit
OWNER'S MANUAL
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General warning

FAILURE TO FOLLOW THE WARNINGS CONTAINED IN THIS MANUAL CAN RESULT IN SERIOUS INJURY OR DEATH.

Particularly important information is distinguished in this manual by the following notations:

	This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.
 WARNING	A WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.
NOTICE	A NOTICE indicates special precautions that must be taken to avoid damage to the vehicle or other property.
TIP	A TIP provides key information to make procedures easier or clearer.

A. Use of your data

This is a brief summary of how Yamaha Motor (Yamaha Motor Co., Ltd., and Yamaha Motor Europe N.V.) uses your data from e-Bike Systems (Drive Unit, Battery Pack, Display Unit). For details for the use of your personal data, please go to the specific URL below for the Privacy Policy:

Country	Language	URL
Austria	German	https://www.yamaha-motor.eu/at/de/privacy/privacy-policy/
Belgium	Dutch	https://www.yamaha-motor.eu/be/nl/privacy/privacy-policy/
Belgium	French	https://www.yamaha-motor.eu/be/fr/privacy/privacy-policy/
Bulgaria	Bulgarian	https://www.yamaha-motor.eu/bg/bg/privacy/privacy-policy/
Czech Republic	Czech	https://www.yamaha-motor.eu/cz/cs/privacy/privacy-policy/
Denmark	Danish	https://www.yamaha-motor.eu/dk/da/privacy/privacy-policy/
Finland	Finnish	https://www.yamaha-motor.eu/fi/fi/privacy/privacy-policy/
France	French	https://www.yamaha-motor.eu/fr/fr/privacy/privacy-policy/
Germany	German	https://www.yamaha-motor.eu/de/de/privacy/privacy-policy/
Greece	Greek	https://www.yamaha-motor.eu/gr/el/privacy/privacy-policy/
Hungary	Hungarian	https://www.yamaha-motor.eu/hu/hu/privacy/privacy-policy/
Italy	Italian	https://www.yamaha-motor.eu/it/it/privacy/privacy-policy/
Ireland	English	https://www.yamaha-motor.eu/ie/en/privacy/privacy-policy/
Netherlands	Dutch	https://www.yamaha-motor.eu/nl/nl/privacy/Privacybeleid/
Norway	Norwegian	https://www.yamaha-motor.eu/no/nb/privacy/privacy-policy/
Poland	Polish	https://www.yamaha-motor.eu/pl/pl/privatnosc/polityka-prywatnosci/
Portugal	Portuguese	https://www.yamaha-motor.eu/pt/pt/privacy/privacy-policy/
Romania	Romanian	https://www.yamaha-motor.eu/ro/ro/privacy/privacy-policy/
Spain	Spanish	https://www.yamaha-motor.eu/es/es/privacy/privacy-policy/
Sweden	Swedish	https://www.yamaha-motor.eu/se/sv/privacy/privacy-policy/
Switzerland	German	https://www.yamaha-motor.eu/ch/de/privacy/privacy-policy/
Switzerland	French	https://www.yamaha-motor.eu/ch/fr/privacy/privacy-policy/
Turkey	Turkish	https://www.yamaha-motor.eu/tr/tr/privacy/privacy-policy/
U.K.	English	https://www.yamaha-motor.eu/gb/en/privacy/privacy-policy/

What data Yamaha Motor collect? and how?

The Drive Unit collects following data:

- (1) Component identification number
- (2) live data showing the performance of the bicycle such as Drive Unit operating state, mileage and
- (3) other data showing the status of the bicycle such as Drive Unit error code

The collected data will be uploaded to server at Yamaha Motor Co., Ltd. only when special Yamaha diagnostic tool is connected to the bicycle at the time of maintenance check or service.

How will Yamaha Motor use your data?

Yamaha Motor use collected data from your Drive Unit for the following purpose:

- (1) to conduct adequate maintenance service including diagnostics
- (2) to implement proper warranty claim judgement
- (3) to conduct research and development
- (4) to provide and improve quality of products, features, and services
- (5) to ensure our business purpose and
- (6) to comply with requirements of laws and regulations

How Yamaha Motor share your data?

Yamaha Motor may share your data with: (1) our subsidiaries, affiliates, and business partners; (2) dealers in your country or region, and (3) contractors within the scope necessary to achieve the purpose of use described above.

How to contact us

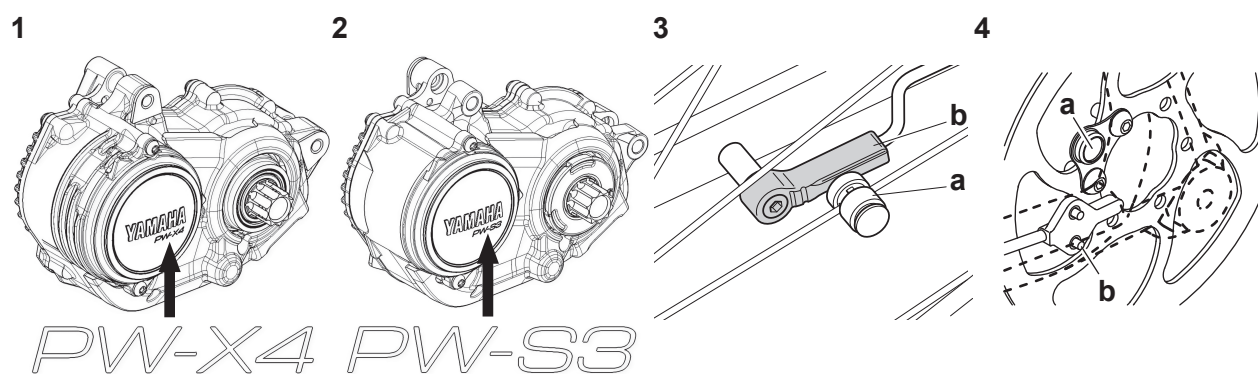
Yamaha Motor Co., Ltd., and Yamaha Motor Europe N.V. are joint data controller regarding your data collected. Any questions or complaints regarding the processing of your Personal Data can be submitted in writing to:

Yamaha Motor Europe N.V./Digital Marketing & CRM
– PO Box 75033 – 1117 ZN Schiphol – The Netherlands.

Email: dpo@yamaha-motor.nl

The SOLE PURPOSE of above provided contact information is TO RESPOND DATA PROCESSING INQUIRY AND OTHER KINDS OF INQUIRIES WILL NOT BE RESPONDED. Please provide the following information for the proper handling of your inquiry: **(1) Your Name; (2) Your Email Address; (3) Your Country of Residence; and (4) Your component identification number.** Yamaha Motor will use your personal information provided only for the purpose of supporting your data processing inquiry.

B. Description



- 1. Drive Unit (PW-X4)
- 2. Drive Unit (PW-S3, PW-S3 Cargo)
- 3. Speed Sensor Set
 - a) Spoke magnet
 - b) Speed sensor
- 4. Speed Sensor Set
 - a) Rotor magnet
 - b) Speed sensor

C. e-Bike Systems

The e-Bike Systems are designed to give you the optimal amount of power assist.

It assists you within a standard range based on factors such as your pedaling strength, bicycle speed, and current gear.

The e-Bike Systems do not assist in the following situations:

- When the display unit's power is off.
- When you are moving 25 km/h or faster.
- When you are not pedaling.
- When walk assist is not operated.
- When there is no residual battery capacity.
- When the automatic power off function works.
- When the assist mode is set to Off Mode.
- When installing batteries that has been certified for theft prevention on another vehicle.
- When owner authentication is enabled, if you don't perform owner authentication.
- When you are performing software update.
- When switching between multiple batteries to determine which one to use.
- When you are performing battery charge.

Multiple power assist modes are available.

When you use e-Bike for the first time, the higher the assist mode number, the stronger the assist power.

Automatic Support Mode is available.

The Automatic Support Mode, which enables automatic change to the optimal assist mode according to the riding conditions, can also be used. The Automatic Support Mode automatically changes to weak assist on flat roads and stronger assist on steep slopes.

Conditions that could decrease remaining assist distance

The remaining assist distance will decrease when riding in the following conditions:

- Frequent starts and stops
- Numerous steep inclines
- Poor road surface conditions
- When riding together with children
- Riding into a strong head wind
- Low air temperature
- Worn-out battery pack
- When using the headlight (applies only to models equipped with lights powered by the battery pack)
- Frequent acceleration
- Heavier rider and luggage weight
- Higher assist mode
- Higher riding speed
- When using the auxiliary devices

Remaining assist distance will also decrease if the bicycle is not maintained properly.

Examples of inadequate maintenance that could decrease remaining assist distance:

- Low tire pressure
- Chain not turning smoothly
- Brake engaged constantly

Temperature range

Operating temperature range	-5–40 °C (23–104 °F)
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D. ⚠ Safety information

Do not modify or disassemble the e-Bike Systems. Do not install anything other than genuine parts and accessories. Doing so could result in product damage, malfunction, or increase your risk of injury.

When stopped, be sure to apply the front and rear brakes and keep both feet on the ground. Placing one's foot on the pedal when stopped may unintentionally engage the power assist function, which could result in loss of control and serious injury.

Do not ride the bicycle if there is any irregularity with the battery pack or e-Bike Systems. Doing so could lead to loss of control and serious injury.

Be sure to check the residual battery capacity before riding at night. The headlight powered by the battery pack will turn off soon after the residual battery capacity has decreased to where power assisted riding is no longer possible. Riding without an operating headlight can increase your risk of injury.

Do not start off by running with one foot on a pedal and one foot on the ground and then mounting the bicycle after it has reached a certain speed. Doing so could result in loss of control or serious injury. Be sure to start riding only after you are seated properly on the bicycle seat.

Do not use the walk assist if the rear tire is off the ground. Otherwise, the tire will turn at high speed in the air and you could be injured.

E. Pre-operation check

WARNING

Be sure to perform the inspection before riding the bicycle.
If there is anything you do not understand or find difficult, please consult a bicycle dealer.

NOTICE

- If you confirm there is a fault, have your bicycle inspected at a dealer as soon as possible.
- The power assist mechanism consists of precision parts. Do not disassemble it.

Along with performing the regular inspection before riding the bicycle, also perform the following inspections.

No.	Inspection item	Inspection contents
1	Residual battery capacity	Is enough capacity left in the battery?
2	Installation status of the battery pack	Is it properly installed?
3	Operation of the e-Bike Systems	Do the e-Bike Systems operate when you begin moving?

F. Cleaning, maintenance and storage

NOTICE

Do not use high-pressure washers or steam jet cleaners since they can cause water seepage, resulting in property damage or malfunction of the Drive Unit. Should water get inside one of these units, have a bicycle dealer inspect your bicycle.

Maintenance for the Drive Unit

NOTICE

- Because a Drive Unit is a precision machinery, do not disassemble or exert any strong force on it (for example, do NOT hit this product with a hammer).
Especially since the crank axle is directly connected to the inside of the Drive Unit, any large damages inflicted on the crank axle may lead to failures.
- To avoid damaging the PW-X4, PW-S3, and PW-S3 Cargo Drive Unit, do not use chain devices with a lower guide.
Strong impacts will be directly transmitted to the Drive Unit and cause damage.
- Regularly inspect the PW-X4 Drive Unit for nicks and scratches.
If scratches are found, touch-up paint should be used to prevent premature corrosion.
- For the PW-X4 Drive Unit, when using the chain device or re-fixing the screw of the cover, etc., be sure to apply sealant around the screw hole to prevent the Drive Unit from early rusting.

Storage

Store the system in a place that is:

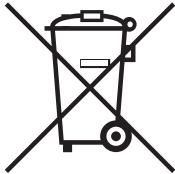
- Flat and stable
- Well ventilated and free from moisture
- Sheltered from the elements and from direct sunlight

G. Disposal

The Drive Unit, Speed Sensor Set, accessories and packaging should be sorted for environmental-friendly recycling.

Do not dispose of the bicycle or its components as household waste.

According to the European Directive 2012/19/EU and related national laws, electrical devices/tools that are no longer usable must be collected separately and disposed of in an environmentally correct manner.



H. Troubleshooting

e-Bike Systems

Symptom	Check	Action
Pedaling is difficult.	Is the Display Unit's power on?	Press the power switch on the Display Unit to turn the power on.
	Is the Battery Pack installed?	Install a charged Battery Pack.
	Is the Battery Pack charged?	Charge the Battery Pack.
	Has the bicycle remained not operated for 5 minutes or longer?	Turn the power on again.
	Are you riding on a long inclined road or carrying a heavy load during summertime?	This is not a malfunction. It is a safeguard engaged when the temperature of the Battery Pack or the Drive Unit is too high. Power assist will be restored once the temperature of the Battery Pack or the Drive Unit has decreased. Also, you can make this less likely to occur by shifting to a lower gear than you would usually use (for example, by shifting from second to first gear).
	Is the air temperature low (roughly 10 °C or below)?	During the wintertime, store the Battery Pack indoors before use.
	Are you charging the Battery Pack while it is mounted on the bicycle?	Stop charging the Battery Pack.
The Drive Unit turns on and off while riding.	Is the Battery Pack correctly installed?	Check to make sure the Battery Pack is locked in place. If this problem still occurs with the Battery Pack firmly locked in place, there may be a loose connection with the Battery Pack terminals or wires. Have a bicycle dealer inspect your bicycle.

Symptom	Check	Action
Strange rumbling or crunching noises come from the Drive Unit.		There could be a problem inside the Drive Unit. Have a bicycle dealer inspect your bicycle.
Smoke or unusual odor comes from the Drive Unit.		There could be a problem inside the Drive Unit. Have a bicycle dealer inspect your bicycle.

I. Specifications

PW-X4	Range of assist speed	0 to less than 25 km/h
	Motor type	Permanent Magnet Synchronous Motor
	Rated output	250 W
	Assist power control method	Control method depends on pedaling torque and bicycle speed
	Number of assist modes	5
	Boost function	On demand
PW-S3	Range of assist speed	0 to less than 25 km/h
	Motor type	Permanent Magnet Synchronous Motor
	Rated output	250 W
	Assist power control method	Control method depends on pedaling torque and bicycle speed
	Number of assist modes	4
	Boost function	On demand
PW-S3 Cargo	Range of assist speed	0 to less than 25 km/h
	Motor type	Permanent Magnet Synchronous Motor
	Rated output	250 W
	Assist power control method	Control method depends on pedaling torque and bicycle speed
	Number of assist modes	4
	Boost function	Start-up

