MANUAL
YAMAHA PW SYSTEM

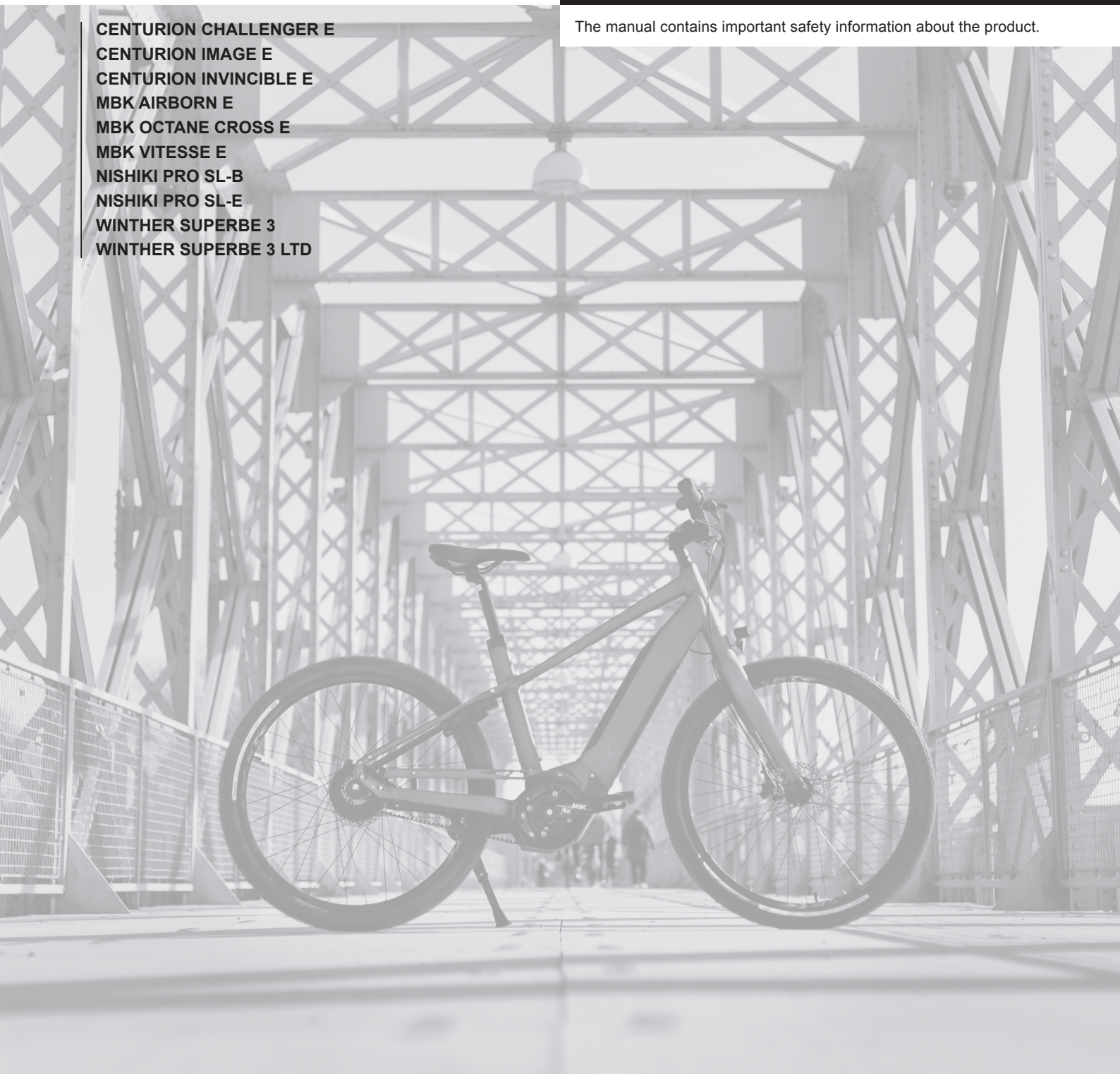
DRIVE UNIT
DISPLAY UNIT
BATTERY PACK
BATTERY CHARGER

This manual is relevant for the following models:

CENTURION CHALLENGER E
CENTURION IMAGE E
CENTURION INVINCIBLE E
MBK AIRBORN E
MBK OCTANE CROSS E
MBK VITESSE E
NISHIKI PRO SL-B
NISHIKI PRO SL-E
WINTHER SUPERBE 3
WINTHER SUPERBE 3 LTD

PLEASE READ THIS MANUAL CAREFULLY!

The manual contains important safety information about the product.



Important information

IMPORTANT
Always read the safety procedures carefully before using the product.
If the security measures are not followed, the warranty is void.
Always save the receipt and delivery note for a minimum of 5 years, as all important information is written here.

Battery charging may only be handled by persons aged 8 and over and persons with reduced physical, sensory or mental capabilities or a lack of experience and knowledge, if they are supervised or have been instructed in the use of the battery and charge in a safe manner so that they understand the danger.
Children must not play with the battery and charger!
Cleaning and user maintenance must not be carried out by children without supervision.

For battery warnings and handling of the battery, please view page xx

For battery disposal, please view page xx

For bike transport, please view page xx
The manual describes several different Yamaha E-Bike systems. It is therefore important that you find out which motor, display and battery your particular bike is fitted with. You can see this in the chart below:

Model	Drive Unit	Display Unit	Battery Pack
CENTURION CHALLENGER E	PW-CE (ill. no 1*)	A (ill. no. 9*)	Downtube (ill. no. 17*)
CENTURION IMAGE E	PW-ST (ill. no. 3*)	A (ill. no. 9*) or B (ill. no. 10)	Downtube (ill. no. 17*)
CENTURION INVINCIBLE E	PW-ST (ill. no. 3*)	A (ill. no. 9*) or B (ill. no. 10)	Downtube (ill. no. 17*)
MBK AIRBORN E	PW-CE (ill. no 1*)	A (ill. no. 9*)	Downtube (ill. no. 17*)
MBK OCTANE CROSS E	PW-ST (ill. no. 3*)	A (ill. no. 9*) or B (ill. no. 10)	Downtube (ill. no. 17*)
MBK VITESSE E	PW-ST (ill. no. 3*)	A (ill. no. 9*) or B (ill. no. 10)	Downtube (ill. no. 17*)
NISHIKI PRO SL-B	PW-ST (ill. no. 3*)	A (ill. no. 9*) or B (ill. no. 10)	Downtube (ill. no. 17*)
NISHIKI PRO SL-E	PW-ST (ill. no. 3*)	A (ill. no. 9*) or B (ill. no. 10)	Downtube (ill. no. 17*)
WINTHER SUPERBE 3	PW-CE (ill. no. 1*)	A (ill. no. 9*)	Rear Carrier (ill. no. 9*)
WINTHER SUPERBE 3 LTD	PW-CE (ill. no. 1*)	A (ill. no. 9*) or B (ill. no. 10)	Rear Carrier (ill. no. 9*)

*View illustrations on page 20

Contents

Introduction

Congratulations on your new E-Bike.

This is a whole new generation of E-bikes, designed and developed on the basis of our many years of experience in the field of E-Bikes.

Before using the E-Bike, please read this instruction manual, as it contains a number of important information regarding the use and maintenance of the E-Bike.

Your E-Bike is manufactured according to the most advanced production technology. Through testing, a high quality standard is ensured. The E-Bike has a strong frame and great performance. You will achieve an easier and more enjoyable way of transporting yourself.

If you have any further questions, you are welcome to contact your local dealer.

Frame number:_____

Controlled by: _____

Delivery date: _____

Manufacturer:

HF Christiansen A/S

Hvidemøllevej 9-11
DK - 8920 Randers NV.

+45 86 42 33 33
info@hfchristiansen.com

www.hfchristiansen.com

Introduction

This original instructions are made for your drive unit, display unit, battery pack and battery charger.

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.

⃠ **Indicates forbidden actions, which you for safety reasons can not do.**

* Product and specifications may change without notice.

Please make sure you understand locals laws and directions for bikes, before you ride this E-bike.

**Drive Unit, Display Unit,
Battery Pack, Battery Charger
OWNER'S MANUAL**

1st edition, January 2022

Product description

This E-Bike is a perfect choice if you desire a versatile riding experience suitable for riding both flat and hilly terrain.

The frame is made from aluminium, which ensures a stiff, robust, and lightweight construction.
The drive unit is centrally placed by the bike's crank, and the battery is either integrated into the downtube or the rear carrier depending on the model. This way the weight is distributed optimally.
The E-Bike also works as a regular bike.

The buttons for the electronic system have been designed and developed ergonomically to ensure ease of use.

○ Get started

After the battery is installed, switch on the on/off button. You step on the pedals and the drive unit starts to help you, depending on which assist level you have chosen.

See further details under section 4.

⚠ WARNING

The bike, or its components, can be destroyed or damaged if you ride in a way that is more stressful than the way the bike was designed for. If the bike is damaged, you may lose control and crash. Do not exceed the limitations of the bike's design. If you are not sure about the bike restrictions, please ask your dealer.

As with all mechanical components, the bike is exposed. Different materials and components can react in different ways. If a component's lifespan is exceeded or overloaded, it can suddenly cause injury to the cyclist. If some kind of cracks, scratches or changes in color appear, it may be a sign that the component is overloaded and therefore needs to be replaced.

Adjustments before use

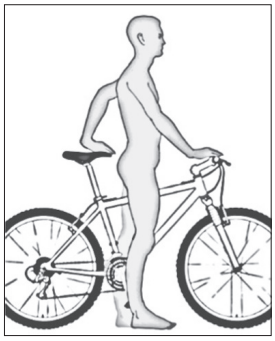
○ Handlebar

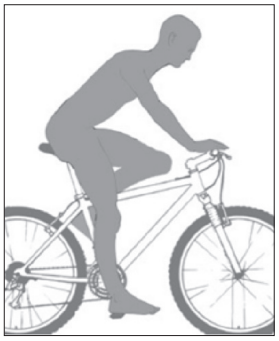
The angle and height of the handlebars are adjusted as follows:

Change the angle and height by opening the handle on the stem, then adjust the handlebar to the desired position. Lock the setting by pressing the lever down again.

○ Saddle

The saddle height must suit the rider of the bike. The saddle must not be set higher than the maximum marking on the seat post.





○ Brakes

It is important that you learn how the brakes work. Make sure you can reach the brake lever to the front brake, which is activated by the left brake lever. Use both brakes moderately for optimum braking effect.

○ Gearing

The gearing is controlled by using the shifters on the right and left side of the handlebar (on some models). Remember to stop pedaling, when you shift gears.

NOTICE

- Change gears as you would on a normal bike. By setting off in a lower gear, the chain and sprocket will last significantly longer than if, for example, you set off in a high gear.

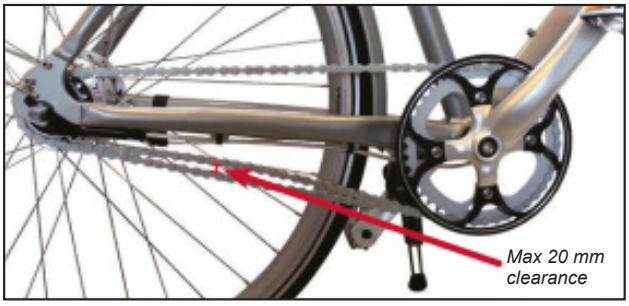
Guide to maintaining your E-bike

For your own safety and to maintain the right to claim, it is important that the bicycle is maintained. Good maintenance makes cycling more enjoyable, and the bike will last longer. We therefore recommend reading the instructions thoroughly.
Many people can handle most of the maintenance themselves, but bicycles are often equipped with complicated fine mechanics, which we would advise to have serviced and maintained at the bicycle dealer.

This manual provides tips and guidance on components and parts that require special attention.

The chain
All chains - also stainless - must be regularly wiped, lubricated and adjusted. A clean and well-maintained chain provides greater riding joy, the risk of breakage is reduced and the load on the gear and hub is minimized.

Chains on bicycles with internal gears (hub gears)
It is important to ensure that the chain is correctly tensioned. At the center of the free length of the chain, the clearance up and down must be a maximum of 20 mm. On the other hand, the chain must not be too tight, as a chain that is too tight can cause damage to the rear wheel bearings.



To adjust the chain, loosen the hub nuts and the bolt in the rear hub brake arm. Then move the rear wheel forward or backward so that the chain gets the desired clearance. Remember to tighten the hub nuts and the brake arm bolt and check that the wheel sits right in the middle of the rear fork.

Chains on bicycles with external gears (derailleur gear)
The chain is automatically tensioned by the chain guide arm of the gear. If the chain needs to be changed, it is recommended to contact your bicycle dealer, as the chain must have the correct length and often the chain and sprocket must be changed at the same time.

Useful links:
www.shimano.com
www.support.enviolo.com

Bolts and screws
When riding the bicycle, vibrations occur, which can loosen bolts and screws. Therefore, the bicycle should be regularly checked and loose parts tightened.
Do not use excessive torques. The tightening torque must be adapted to the dimension of the screw assembly. If it is too tight, there is a risk that the screw will come off or the thread will be damaged.
The following tightening torques are indicative for standard bicycles, but can vary greatly depending on the material the frame and component are made of:

Crankshaft pin	35 - 55 Nm
Lock nut on steering bearing	25-35 Nm
Front wheel hub nuts	20-30 Nm
Rear wheel hub nuts	30-45Nm
Expander bolt in stem	15 Nm
Seat post	7 Nm
Saddle	20 Nm

If in doubt, you should leave the work to your bicycle dealer, as incorrect tightening torque can cause damage to the frame and components and, in the worst case, lead to accidents.

Cables
All cables should be kept well lubricated. Regularly check the cables for breaks or wear on the wire, so that bursting of the cable is prevented.

Important: It is important for safety to have the bike dealer blow all cables clean of condensation and lubricate them before the winter period with a silicone-based grease. This minimizes the risk of the cables freezing.

Brakes

Brakes are an important part of the safety of a bicycle. Therefore, all types of brakes must be regularly checked and adjusted to ensure that they work optimally. Be aware that most of the braking power comes from the front wheel. Therefore, use the front brake with caution and preferably together with the rear brake to avoid accidents.

On **fully hydraulic disc brakes**, it is important to check the durability of the fluid/oil in the brake system. Condensation can occur in the system, which means reduced braking performance. In this case, the fluid/oil must be changed. For safety reasons, service is therefore recommended once a year or according to the manufacturer's instructions. As it requires great insight and professional ability to carry out the necessary service, it must be carried out by the bicycle dealer.

Links:
www.shimano.com
www.sram.com

Gearing

There are basically two types of gears. Hub gears (internal) and derailleur gears (external). Common to both gear types is that they require correct adjustment, lubrication and regular maintenance in order to function optimally.

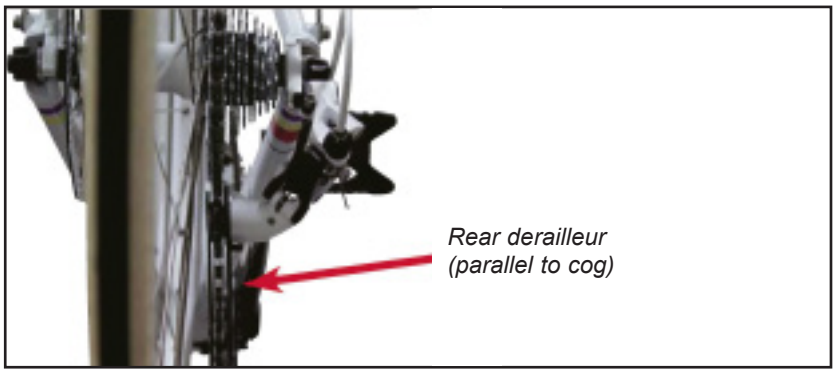
Hub gears
It is important for the life of the gear that the gears are adjusted correctly. Contact the bicycle dealer immediately if it is found that the gear does not work perfectly. Driving for too long with an incorrectly adjusted gear can damage the hub.

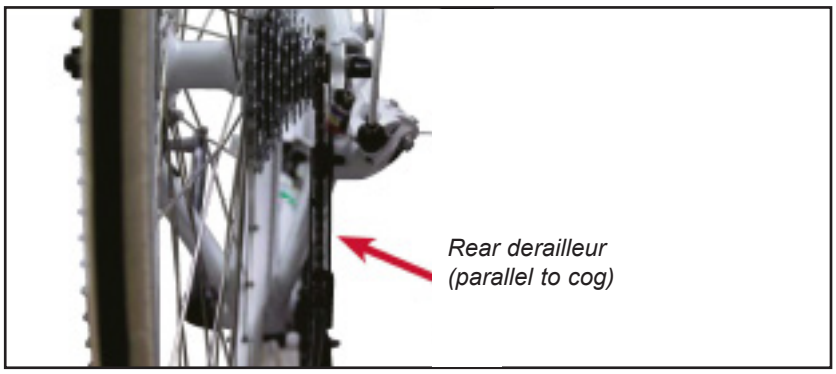
Due to the climatic conditions in Denmark, it is important, regardless of what the gear manufacturer states, that the gear hub is disassembled, cleaned and lubricated at least once a year.

If the hub is exposed to salt water, it must be disassembled, cleaned and lubricated immediately to prevent corrosion damage that could render the hub unusable.

Disassembly, cleaning and lubrication must be carried out by a specialist.

If the bicycle is cleaned with water, it is important to ensure that the water does not penetrate the gear hub. Never use high-pressure cleaners/washers.





External gears (derailleur gears)
The derailleur gear system must always be cleaned of dirt and grime and be well cared for in order to function. It is normal for the chain and rear sprocket to be changed every approx. 3,000 km or minimum every two years - and more often if said maintenance is not observed. Since the chain and rear sprocket wear together, you should always replace both parts at the same time.

Note that the rear derailleur must be correctly adjusted, i.e. the two chain guide wheels parallel to that of the cassette, and never beyond the two outermost gears. If the rear derailleur or the fork end is pushed inwards (the bike may, for example, have fallen over without you knowing it), the derailleur can go into the spokes of the rear wheel, with major damage as a result.

Like the other parts of the gear system, the freewheel/cassette housing must be lubricated regularly. If the bike is not used for an extended period, the freewheel/cassette hub must be particularly well lubricated. Dismantling the freewheel/cassette hub requires special tools and should be carried out by a specialist.

When cleaning, do not use high-pressure cleaners/washers.

Only shift gears when pedalling forward. Changing gears when pedalling backwards can cause serious damage on the gear system.

Useful links:
www.shimano.com

Crank and head sets

Crank and head sets (bearings) must be well lubricated and move easily and without play. If there is a play, it must be corrected, otherwise bearings and other parts such as e.g. fork tube thread may be damaged.

Play must be corrected by the bicycle dealer.

Wheels and spokes

Spokes
Spokes will give when using the bike. It is therefore important that the spokes are regularly inspected to ascertain whether they are properly tensioned and none are loose. If a spoke pops, it must be changed immediately and the rest of the spokes must be adjusted and tightened. If you drive with a cracked spoke, it will usually result in the wheel breaking and a replacement of both rim and spoke may prove necessary.

Since re-tensioning and replacement of rims or cracked spokes require specialist knowledge, the maintenance must be carried out by the bicycle dealer.

Quick release
Some bicycle types have quick release hubs. This means that the wheels can be removed and installed using the eccentric quick-release arm on one side.

It is important that the wheel is clamped correctly and with the right force. With correct locking, resistance can only be felt when the arm is half locked. If too much force must be applied, loosen the nut on the other side slightly and try again. Please note that if too much pressure is applied to get into the locked position, the inner shaft can be subjected to such great pressure that it breaks.

If in doubt, contact your dealer.

Suspension forks

Suspension forks are available with many different damping systems, each of which requires its own form of maintenance.

Basic suspension fork maintenance is to ensure that the upper parts of the inner fork legs are clean and free of sand, gravel or other debris. Chrome-plated inner legs must be maintained with a chrome care product.

Please note that a suspension fork requires special care, and in order to function satisfactorily, it must be serviced at least once a year or more frequently depending on the manufacturer's instructions. Remember to check the service intervals.

A simple fork, which only contains a steel spring, does not require much maintenance, while more sophisticated forks are sensitive to the condensation that forms in all forks and should therefore be disassembled, lubricated and have the oil changed after 50 - 100 hours of use.
As it requires a great deal of insight and professional skill to carry out the necessary service, it is recommended to have the bicycle dealer carry it out.

Useful links:
www.rockshox.com
www.foxracingshox.com
www.srsuntour-cycling.com
www.rst.com.tw

Tires and tubes

Tires
Always keep the tires inflated to the correct tire pressure. It makes driving easier and prevents damage to tires, tubes and rims.

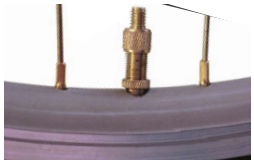
The correct tire pressure is indicated on the side of the tyre, e.g. as INFLATED TO 40 -65 psi or max. 60 psi. If you don't have a pump with a tire pressure gauge, the pressure can be checked by pressing your thumbs hard against the tire. The tire should feel hard.

It is recommended to check the tires before riding for correct pressure and to remove stones that have become stuck. This avoids many punctures.

Tubes
Bicycle tubes can be fitted with different valves. Atom, Presta and Schrader valves.

Please note that when pumping tubes with a Presta valve, the small nut on the valve must be loosened before pumping. If this does not happen, air will not enter the tube, and you risk breaking the valve with the pump.

Schrader valve



Regular Atom valve

Presta valve

Paintwork

Stone chips and scratches should be repaired as soon as possible after they occur. Otherwise, rust formations can occur, which in the worst case can spread and “run” under the paint.

Lock

Keep the lock clean and free of dirt. Lubricate the cylinder, trigger and locking arm opening regularly. Open and close the lock repeatedly after lubrication.

Saddle

In order to get a saddle as comfortable as possible, it is important to make sure that the distance between the cushions (resting points) on the saddle corresponds to the distance between the seat bones. Ask your dealer for help to find the correct saddle.

Saddles in core leather must be maintained with leather grease so that flexibility is optimal at all times. The core leather will give with use and it is therefore necessary to tighten the leather by adjusting the adjusting screw under the nose of the saddle. Always follow the saddle manufacturer’s instructions for correct maintenance.

Plastic saddles can be advantageously sprayed with “Plastic Finish” to freshen up the surface and make it continue to be water resistant.

Safety

If you have had an accident, been knocked over, hit, etc, whereby the handlebar, frame, front fork, pedals, or crank arms may have been damaged, replacement should always take place, as the danger of subsequent breakage is present.

Regular maintenance

Always keep the bike clean. Use regular cleaning detergents and a soft brush to remove dirt. The dealer has a wide selection of environmentally friendly lubricants and care products and is happy to advise on the general care of the bicycle. Regular cleaning extends the life of the bicycle.

Extra keys

If your new E-bike is equipped with an approved lock, 2 keys are included. As there is no register that can tell which key is fitted to which bike, it is important to save the issued lock certificate on which the key number is listed. It must be used when you want to buy extra keys for the lock.

Extra keys can be bought from your dealer.

Storing the bike

If the bicycle is not used for a long period, e.g. during a severe winter, it must be protected from rust. Spray chrome-plated and galvanized parts and details with an anti-rust agent. Places on the frame where it is difficult to get to and aluminum parts are protected against rust and oxidation.
It is a good idea to store the bike hanging. This relieves the tires and they are less prone to cracking.

When the bicycle is put into use again, it must be thoroughly dried. If the bicycle is equipped with rim brakes, it is particularly important to thoroughly wipe the rim sides to maintain optimal and safe braking performance.

Insurance

It is a good idea to talk to your insurance company to learn how your bicycle is covered.

E-bikes

In the vast majority of areas, an E-bike looks like a normal bicycle and must be maintained in the same way and at the same intervals.

Manufacturer's references
It is very important to read the manufacturer's instruction manual thoroughly and to follow the service intervals and the instructions given on charging the battery and maintaining the various components.

The instruction manual also contains important information about special complaint provisions regarding the E-bike.

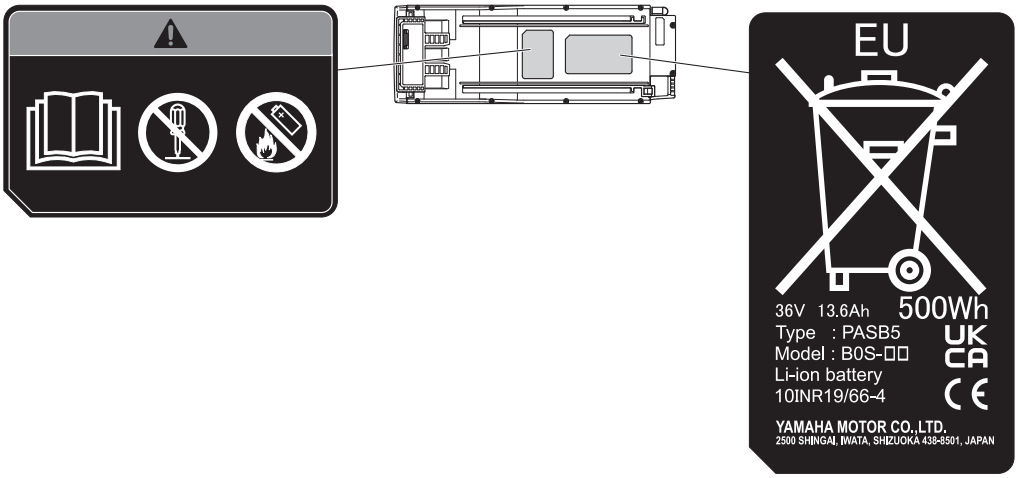
C. Location of the warning and specification labels

Read and understand all of the labels on your Battery Pack and Battery Charger*. These labels contain important information for safe and proper operation. Never remove any labels from your Battery Pack and Battery Charger:

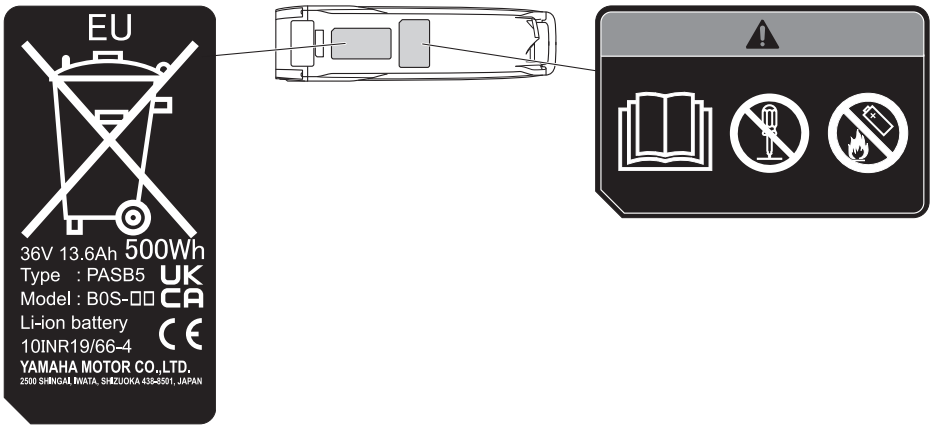
* The contents of the label affixed to the product might differ from the contents of the label on this page. Be sure to check the label affixed to the product.

Battery Pack

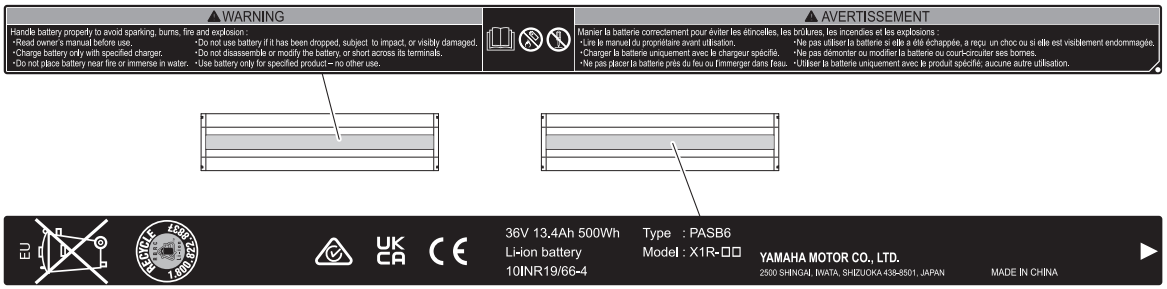
Rear Carrier Battery 400/500



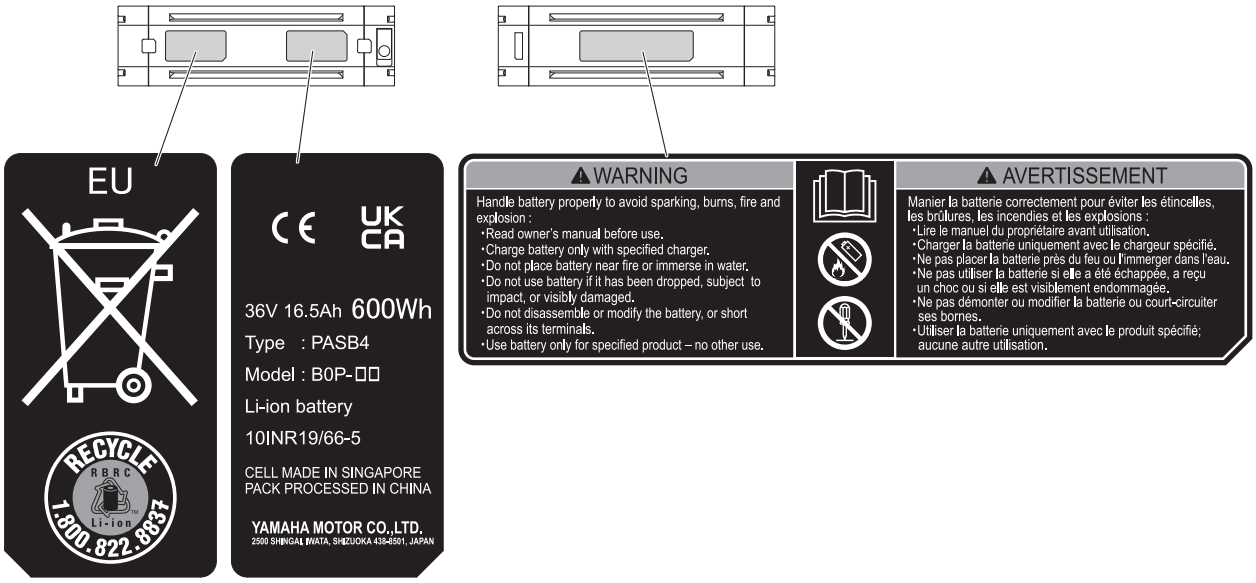
Down Tube Battery 400/500



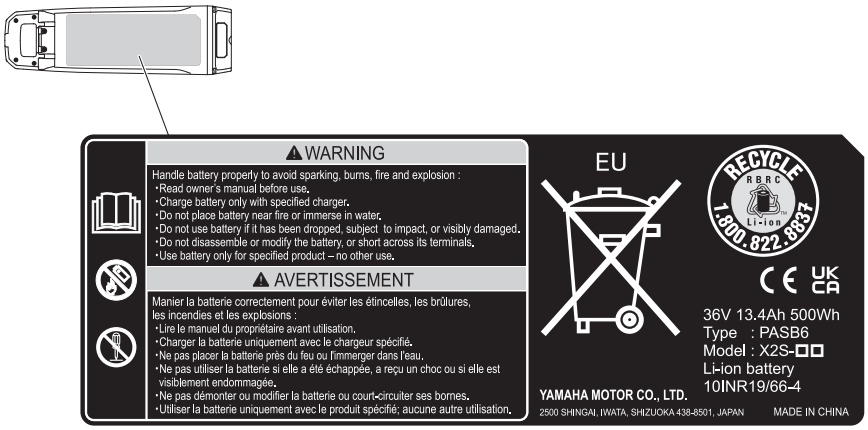
Multi Location Battery 400/500



Multi Location Battery 600

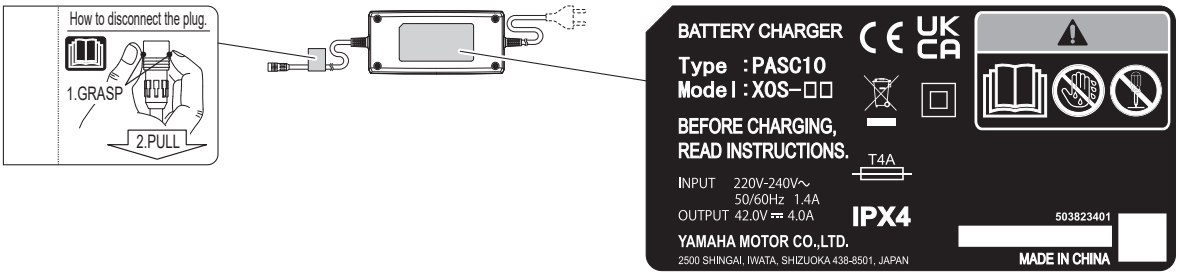


External Crossover Battery 400/500

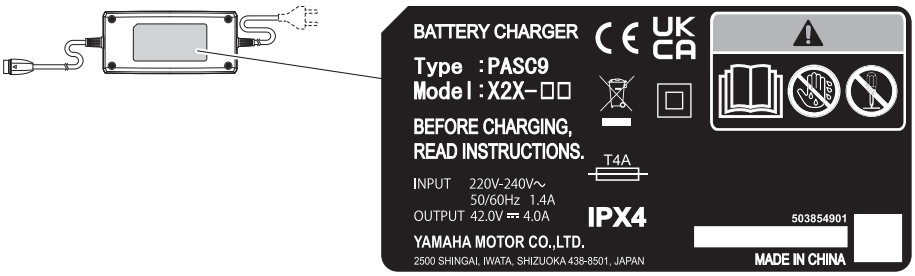


Battery Charger

PAC10



PAC9

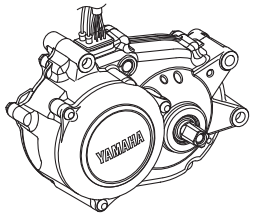


Familiarize yourself with the following pictograms and read the explanatory text, then make sure to check the pictograms that apply to your model.

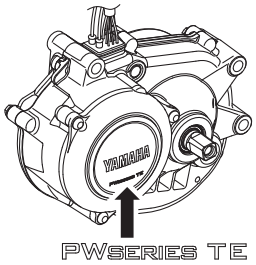
Read the Owner's Manual	Do not disassemble
Do not dispose of in a fire	Do not use with wet hands

D. Description

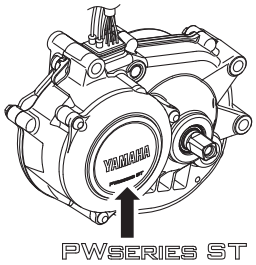
1



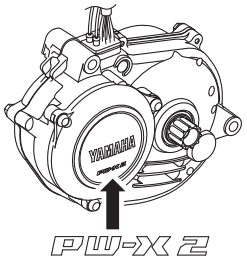
2



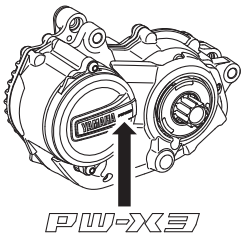
3



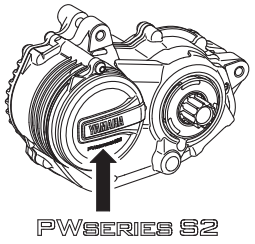
4



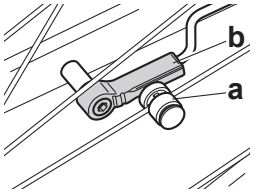
5



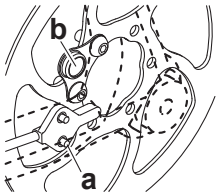
6



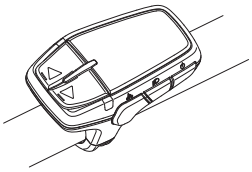
7



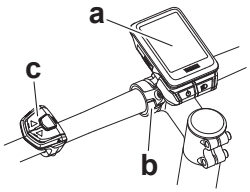
8



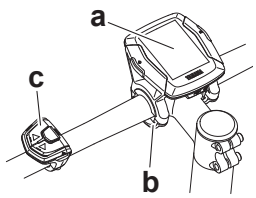
9



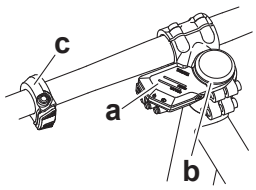
10



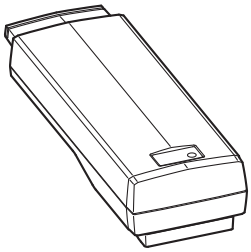
11



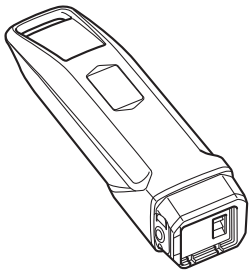
12



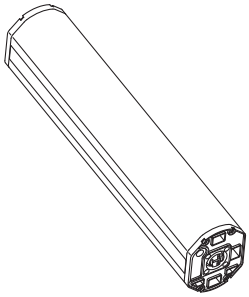
13



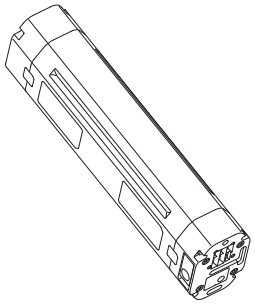
14



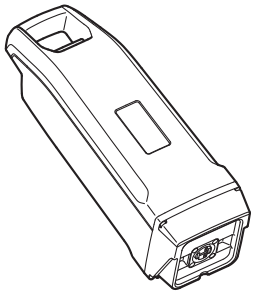
15



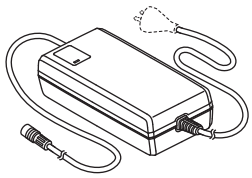
16



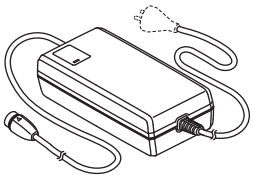
17



18



19



1. Drive Unit (PWseries CE)
2. Drive Unit (PWseries TE)
3. Drive Unit (PWseries ST)
4. Drive Unit (PW-X2)
5. Drive Unit (PW-X3)
6. Drive Unit (PWseries S2)
7. Speed Sensor Set
   a) Spoke magnet
   b) Speed sensor
8. Speed Sensor Set
   a) Rotor magnet
   b) Speed sensor
9. Display Unit (Display A)
10. Display Unit (Display B)
    a) Display (detachable)
    b) Display holder
    c) Remote switch
11. Display Unit (Display C)
    a) Display
    b) Clamp
    c) Remote switch
12. Display Unit (Interface X)
    a) Communication unit
    b) Mounting spacer
    c) Remote switch
13. Battery Pack (Rear Carrier Battery 400/500)
14. Battery Pack (Down Tube Battery 400/500)
15. Battery Pack (Multi Location Battery 400/500)
16. Battery Pack (Multi Location Battery 600)
17. Battery Pack (External Crossover Battery 400/500)
18. Battery Charger (PASC10)
19. Battery Charger (PASC9)

E. 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.
  * Power turns off automatically when you do not operate the e-Bike Systems for 5 minutes.
- When the assist mode is set to Off Mode.
- When setting the language. (Applies to display B and Display C.)
- When the display is removed of display holder. (Applies to display B.)

Multiple power assist modes are available.

Choose from Extra Power Mode*1, High-Performance Mode, Standard Mode, Eco Mode, +Eco Mode and Off Mode to suit your riding conditions.
See "Displaying and switching the assist mode" for information on switching between assist modes.

Assist mode	Display*2	Example of recommended driving environment
Extra Power Mode*1	EXPW	Use when climbing rough terrain.
High-Performance Mode	HIGH	Use when you want to ride more comfortably, such as when climbing a steep hill.
Standard Mode	STD	Use when riding on flat roads or climbing gentle hills.
Eco Mode	ECO	Use when you want to ride as far as possible.
+Eco Mode	+ECO	
Off Mode	OFF	Use when you want to ride without power assist. You can still use the other Display Unit functions.

*1 Applies to the Drive Unit (PW-X2, PW-X3).
*2 The Display Unit (Interface X) is displayed by the indicator.

Conditions that could decrease range (remaining assist distance)

The range (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

Range (Remaining assist distance) will also decrease if the bicycle is not maintained properly.
Examples of inadequate maintenance that could decrease range (remaining assist distance):

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

F. ⚠ Safety information

Never use this Battery Charger to charge other electrical appliances.

Do not use any other charger or charging method to recharge the Battery Packs. Using any other charger could result in fire, explosion, or damage the Battery Packs.

This Battery Charger can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the Battery Charger in a safe way and understand the hazards involved. Children shall not play with the Battery Charger. Cleaning and user maintenance shall not be made by children without supervision.

Although the Battery Charger is waterproof, never allow it to become immersed in water or other fluids. In addition, never use the Battery Charger if the terminals are wet.

Never handle the power plug, charging plug or touch the Battery Charger contacts with wet hands. This could result in electric shock.

Do not touch Battery Charger contacts with metallic objects. Do not allow foreign material to cause short circuit of the contacts. This could result in electric shock, fire, or damage the Battery Charger.

Periodically remove dust from the power plug. Dampness or other issues could reduce the effectiveness of the insulation, resulting in fire.

Never disassemble or modify the Battery Charger. This could result in fire or electric shock.

Do not use with a power strip or extension cord. Using a power strip or similar methods may exceed rated current and can result in fire.

Do not use with the cable tied or rolled up, and do not store with the cable wrapped around the Battery Charger main body. Cable damage can result in fire or electric shock.

Firmly insert the power plug and the charging plug into the socket. Failure to insert the power plug and the charging plug completely can result in fire caused by electric shock or overheating.

Do not use the Battery Charger near flammable material or gas. This could result in fire or explosion.

Never cover the Battery Charger or place other objects on top of it while charging. This could result in internal overheating leading to fire.

Do not drop the Battery Charger or expose it to strong impacts. Otherwise, it could cause a fire or electric shock.

Store the Battery Pack and Battery Charger out of reach of children.

Do not touch the Battery Pack or Battery Charger while it is charging. As the Battery Pack or Battery Charger reaches 40–70 °C during charging, touching it could result in burns.

Do not use if the Battery Pack case is damaged, cracked, or if you smell any unusual odors. Leaking battery fluid can cause serious injury.

Do not short the contacts of the Battery Pack. Doing so could cause the Battery Pack to become hot or catch fire, resulting in serious injury or property damage.

Do not disassemble or modify the Battery Pack. Doing so could cause the Battery Pack to become hot or catch fire, resulting in serious injury or property damage.

If the power cable is damaged, stop using the Battery Charger and have it inspected at a bicycle dealer.

Do not turn the pedals or move the bicycle while the Battery Charger is connected. Doing so could cause the power cable to become tangled in the pedals, resulting in damage to the Battery Charger, power cable, and/or plug.

Handle the power cable with care. Connecting the Battery Charger from indoors while the bicycle is outdoors could result in the power cable becoming pinched and damaged in a doorway or window.

Do not run over the power cable or plug with the wheels of the bicycle. Doing so could result in damage to the power cable or plug.

Do not drop the Battery Pack or subject it to impact. Doing so could cause the Battery Pack to become hot or catch fire, resulting in serious injury or property damage.

Do not dispose of the Battery Pack in a fire or expose it to a heat source. Doing so could cause fire, or explosion, resulting in serious injury or property damage.

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.

For Display Unit with detachable display, do not remove the display while riding the bicycle. Doing so will turn off the power assist, and could result in the bicycle falling over.

Do not use the wireless communication functions in areas such as hospitals or medical institutions where use of electronic equipment or wireless communication devices are prohibited. Otherwise, this could affect the medical equipment, etc. and cause an accident.

When using the wireless communication functions, keep the display at a safe distance from heart pacemakers in use. Otherwise, the radio waves could affect the heart pacemaker function.

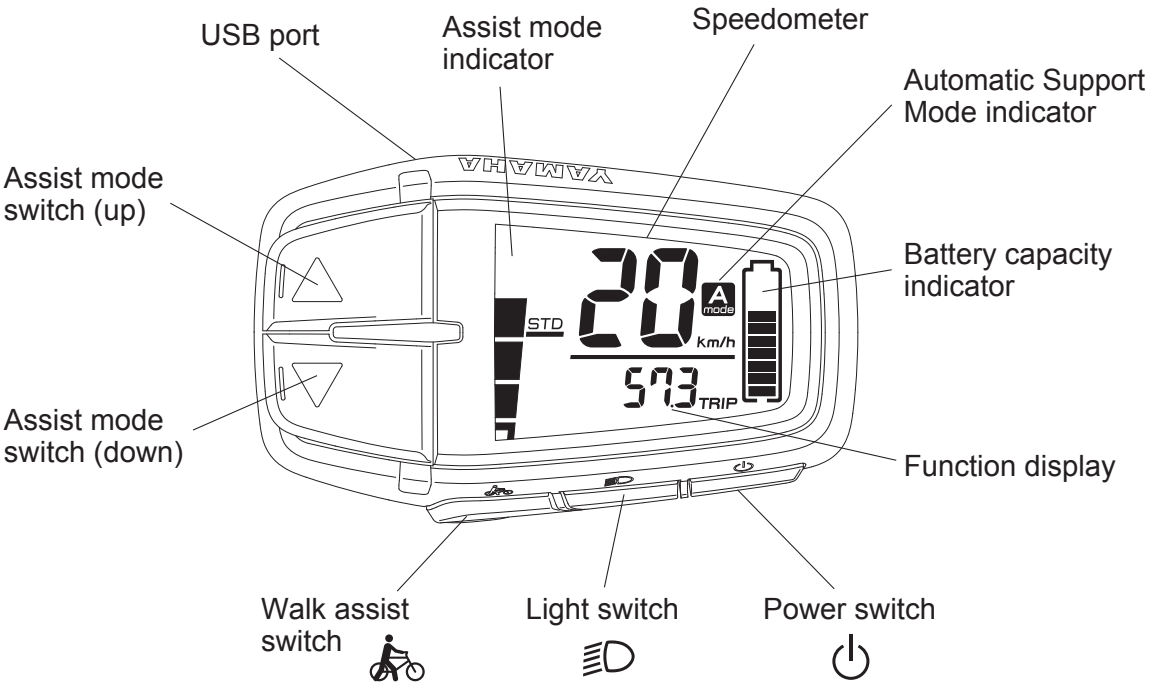
Do not use the wireless communication functions near automatic control equipment such as automatic doors, fire alarms, etc. Otherwise, the radio waves could affect the equipment and cause an accident through possible malfunction or unintentional operation.

Before equipping the bicycle with a Multi Location Battery 400/500, make sure that there is no foreign matter or water in the connector on the bicycle. Otherwise, it could lead to heat generation, smoke and/or a fire owing to short-circuiting of the terminals.

For bicycles equipped with a Multi Location Battery 400/500, do not remove the Battery Pack from the bicycle when cleaning the bicycle. Otherwise, water could enter the connector and cause heat generation, smoke and/or a fire.

G. Instrument and control functions

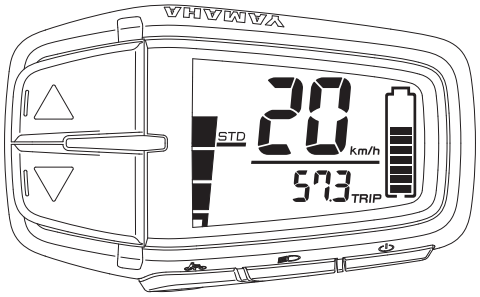
Display Unit (Display A)



TIP

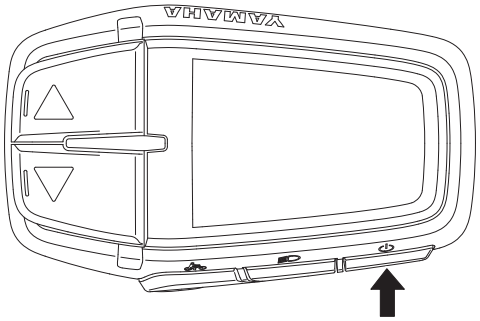
The USB port is for connecting the designated YAMAHA diagnostic tool; it cannot be used as a power supply.

Display Unit (Display A)



The Display Unit offers the following operations and information displays.

○ Power on/off ⏻

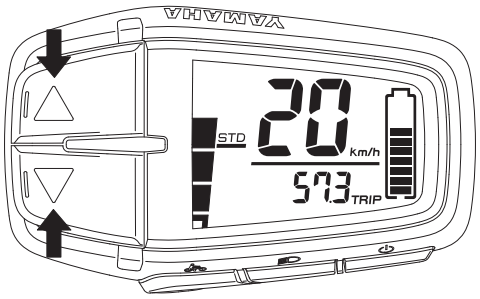


Each time you press the power switch, the power is turned on and off.
When you turn on the power, all of the displays come up. After that, the main riding display is shown.

TIP

Keep your feet off the pedals when turning on the Display Unit. Also, do not start riding immediately after turning on the Display Unit. Doing so could weaken the assist power. (Weak assist power in either of these cases is not a malfunction.) If you did either of the above by accident, remove your feet from the pedals, turn on the power again, and wait a moment (approximately two seconds) before starting to ride.

○ Displaying and switching the assist mode

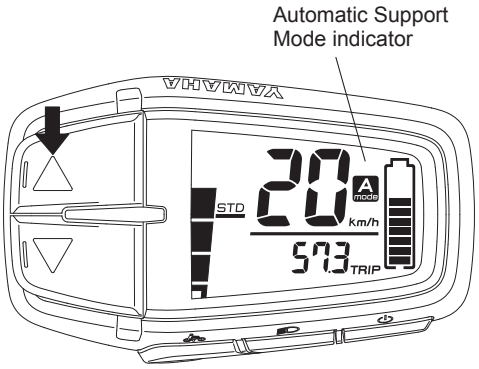


You can select the assist mode by using the assist mode switches (up) or (down).
The selected assist mode is displayed by the assist mode indicator.

- When you press the assist mode switch (up), the mode changes from “OFF” to “+ECO”, or from “+ECO” to “ECO”, or “ECO” to “STD”, or “STD” to “HIGH”, or “HIGH” to “EXPW”.
- When you press the assist mode switch (down), the mode changes from “EXPW” to “HIGH”, or from “HIGH” to “STD”, or “STD” to “ECO”, or “ECO” to “+ECO”, or “+ECO” to “OFF”.

TIP

- Bicycles equipped with the PWseries CE, PWseries TE, PWseries ST, or PWseries S2 Drive Unit have no Extra Power Mode.
- Further pressing of the assist mode switch will not cycle the assist mode selections.
- When the power is turned on, the e-Bike Systems will be activated with the same assist mode as when the power was last turned off.

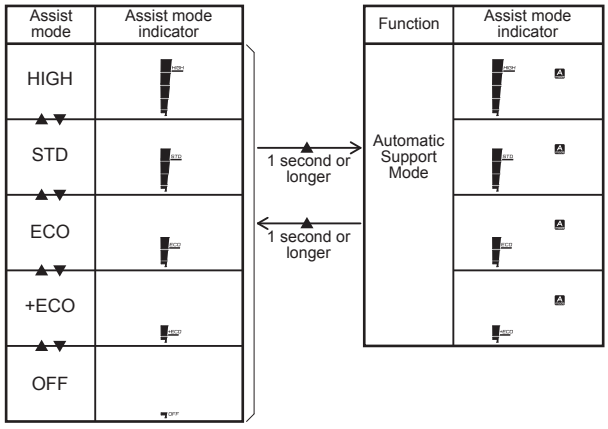


The Automatic Support Mode, which enables automatic change to the optimal assist mode according to the riding conditions, can also be used.

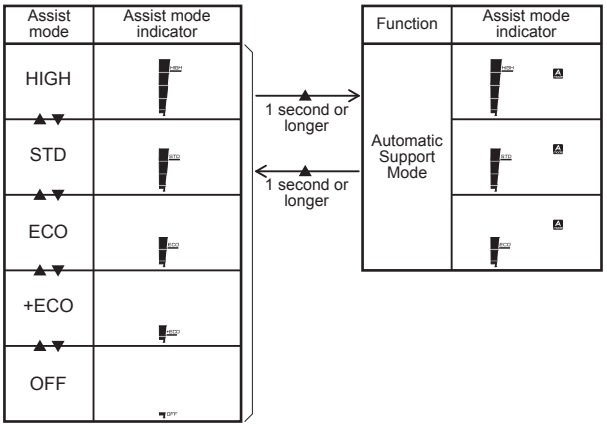
- To use the Automatic Support Mode, press the assist mode switch (up) for 1 second or longer. The Automatic Support Mode indicator will light up and the mode will be changed to the Automatic Support Mode.
- To cancel the Automatic Support Mode, press the assist mode switch (up) for 1 second or longer. The Automatic Support Mode indicator will go off and the Automatic Support Mode will be canceled.

TIP

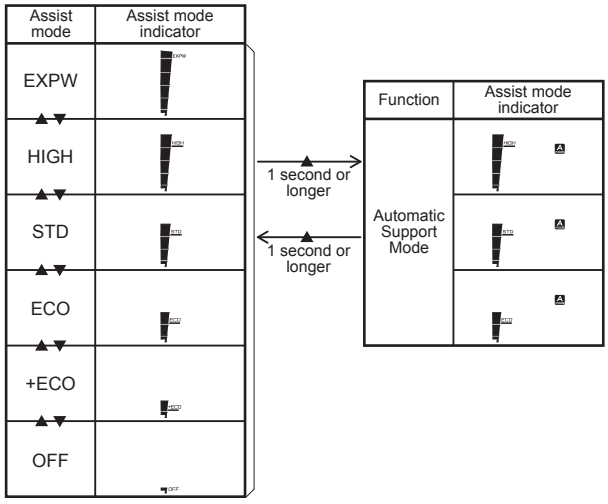
- Even if you press the assist mode switches (up) or (down) while in Automatic Support Mode, the assist mode cannot be changed.
- The Automatic Support Mode is saved when the power is turned off. When you turn on the power again, the e-Bike Systems will be activated with the Automatic Support Mode.



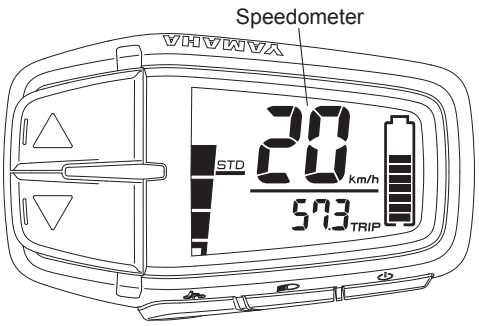
PWseries TE Drive Unit
PWseries CE Drive Unit



PWseries ST Drive Unit
PWseries S2 Drive Unit



PW-X2 Drive Unit
PW-X3 Drive Unit

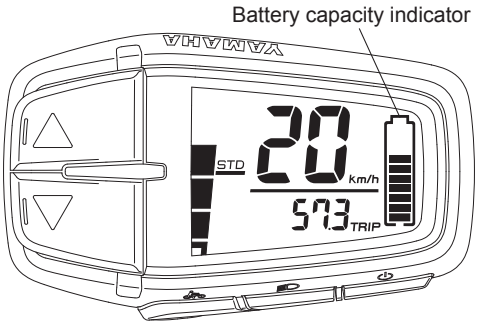


○ Speedometer

The speedometer displays your bicycle speed (in kilometer per hour or mile per hour). To select the km/mile, see “km/mile setting”.

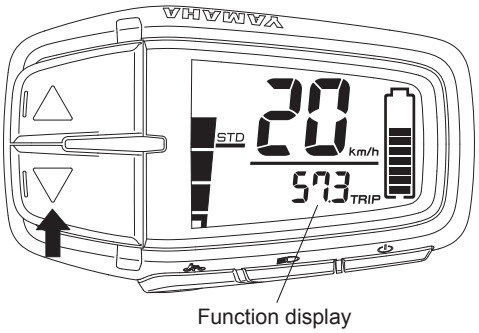
TIP

If your bicycle speed is less than 2.0 km/h or 1.2 MPH, the speedometer displays “0 km/h” or “0 MPH”.



○ Battery capacity indicator

The battery capacity indicator displays an estimate of how much capacity is left in the Battery Pack.



○ Function display

The function display can display the following functions.

- Odometer
- Trip meter
- Range (Remaining assist distance)

Push the assist mode switch (down) for 1 second or longer, the display changes as follows:
Odometer → Trip meter → Range → Odometer

You can reset the data for trip meter.

● Odometer

This displays the total distance (in kilometers or miles) ridden while the power was on.
The odometer cannot be reset.

● Trip meter

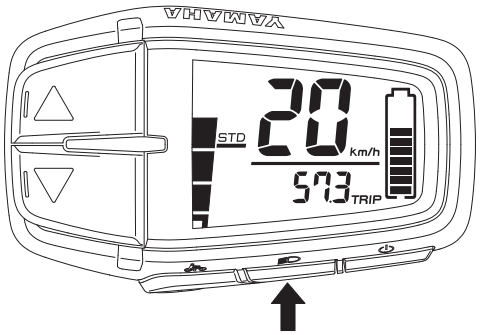
This displays the total riding distance (in kilometers or miles) since it was last reset.
When you turn off the power, the data up to that point will be saved.
To reset the trip meter and begin counting a new total, press the assist mode switch (up) and assist mode switch (down) simultaneously for 2 seconds or longer when the trip meter is displayed.

● Range (Remaining assist distance)

This displays an estimate of the distance (in kilometers or miles) that can be ridden with assist on the residual battery capacity of the Battery Pack installed. If you switch the assist mode when the range (remaining assist distance) is displayed, the estimate of the distance that can be ridden with assist changes.
The range (remaining assist distance) estimate cannot be reset.

TIP

- Actual range (remaining assist distance) changes depending on the riding situation (hills, headwind, etc.) and as the Battery Pack runs down.
- If in Off Mode, “- - - -” is displayed.

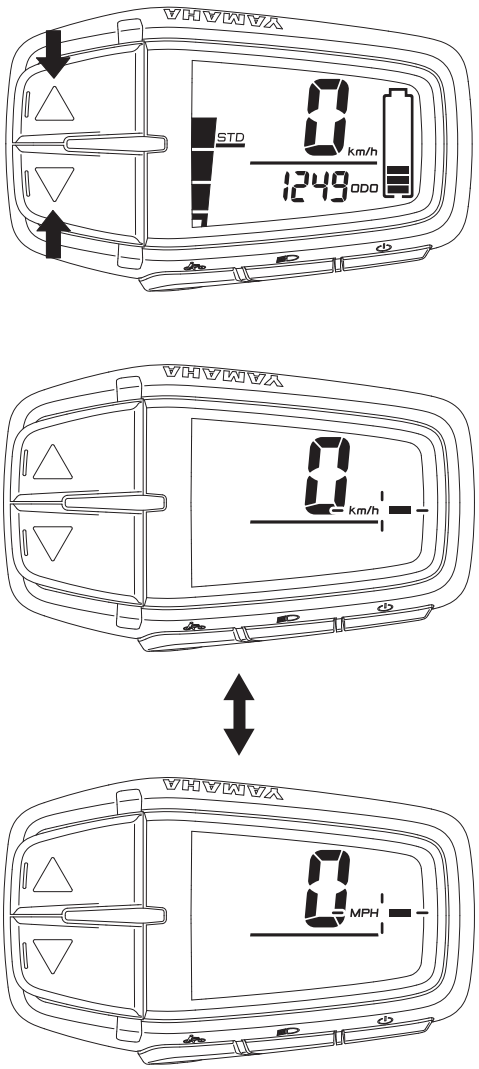


○ Headlight on/off

For models equipped with a headlight or taillight powered by the Battery Pack, each time you press the light switch, the headlight and taillight will turn on and off.

TIP

When the power is turned on, the lights will return to the last on/off setting.



○ km/mile setting

Use the following steps to set the km/mile setting.

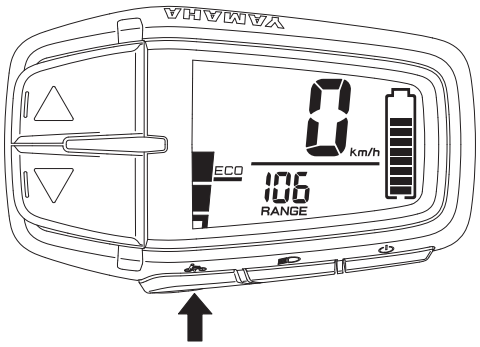
1. Make sure that the Display Unit is turned on.
2. Select the odometer display in the function display.
3. Press the assist mode switch (up) and assist mode switch (down) simultaneously for 2 seconds or longer.
4. When either “km/h” or “MPH” flashes, release the switch.
5. Use the assist mode switches (up) or (down) to set either the km or mile unit.
6. While the unit that you want to set is flashing, press the assist mode switch (down) for 1 second or longer, and release the switch when the display returns to the main riding display.

⚠ WARNING

For all setting procedures, be sure to stop the bicycle and perform the required settings in a safe location. Otherwise, lack of attention to surrounding traffic or other hazards could cause an accident.

TIP

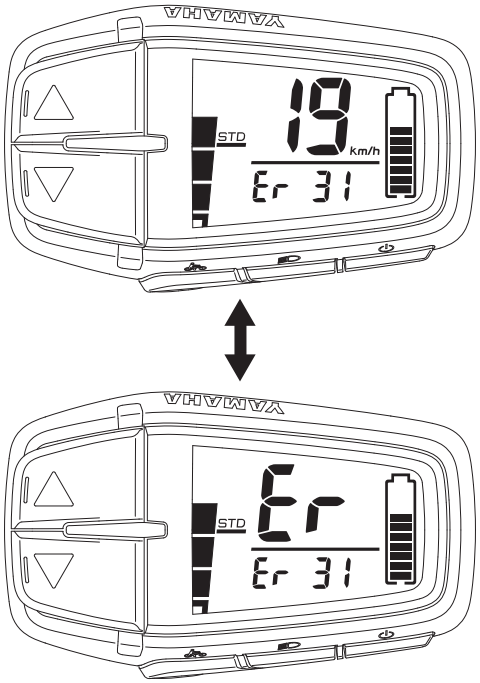
- The settings cannot be adjusted while riding.
- If you do the following during setting, the item that you are setting will be canceled and the display will return to the main riding display.
  - Turning the crank (pedal) in the traveling direction
  - Turning the rear wheel at 2 km/h and more
  - Pushing the walk assist switch



○ Walk assist

When you are on or off the bicycle and start moving it, you can use walk assist without pedaling the bicycle.
To use walk assist, press and hold the walk assist switch.
Walk assist will not work in the following situations:

- When you release the walk assist switch.
- If you press another switch at the same time.
- When you start to pedal.
- If your bicycle speed exceeds 6 km/h.
- If you select Off Mode.
- If the wheels are not turning (when braking or coming into contact with an obstacle, etc.).



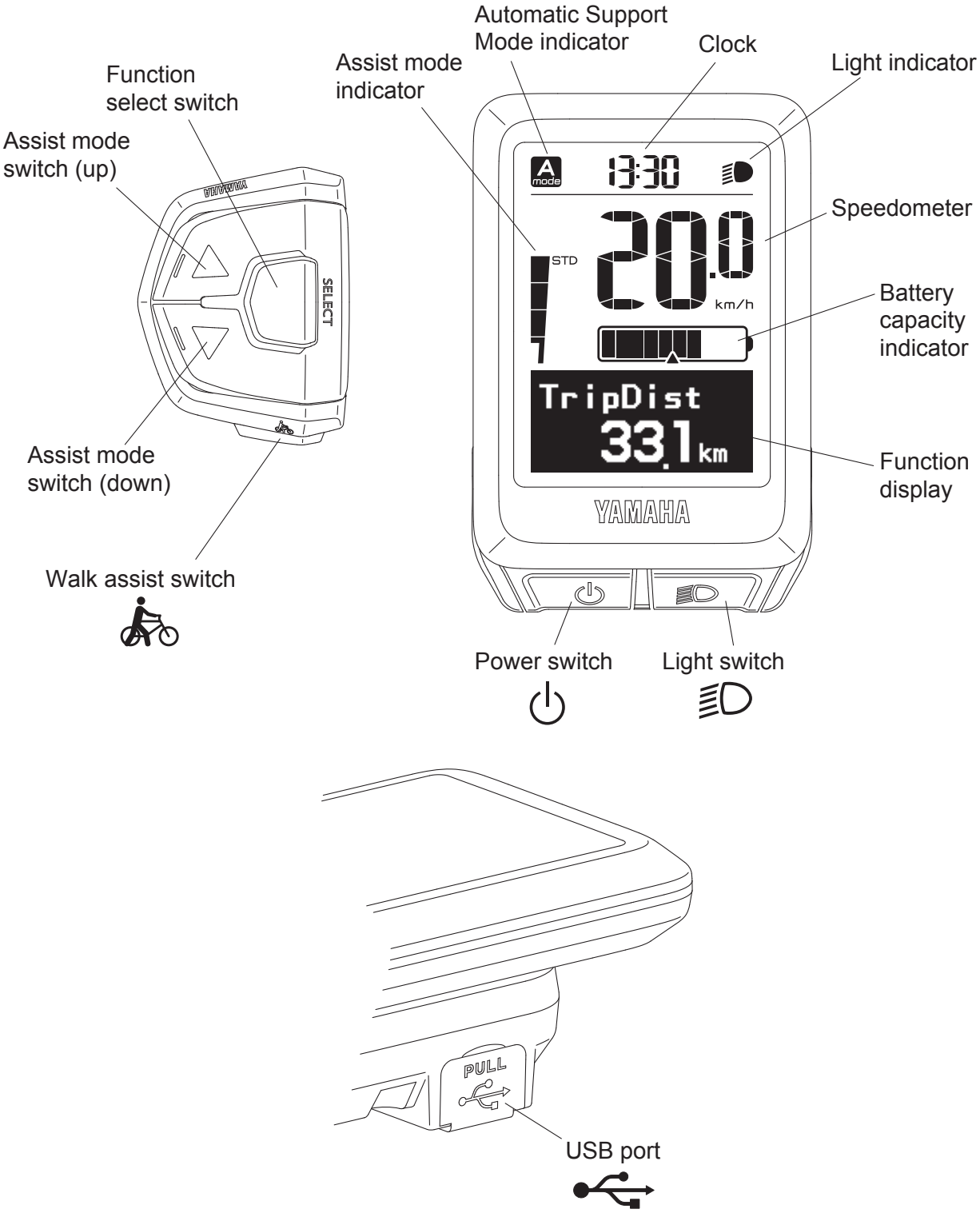
○ Self-diagnosis function

The e-Bike Systems are equipped with a self-diagnosis function. If a malfunction or fault occurs in the e-Bike Systems, the main riding display and “Er” will be shown alternately, while an error code will inform you of the type of error in the function display. See “Troubleshooting” regarding symptoms and remedies for abnormal displays and abnormal flashing.

⚠ WARNING

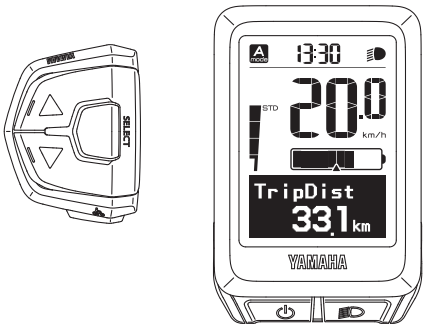
If the problem cannot be solved, have your bicycle inspected by a dealer as soon as possible.

Display Unit (Display B)

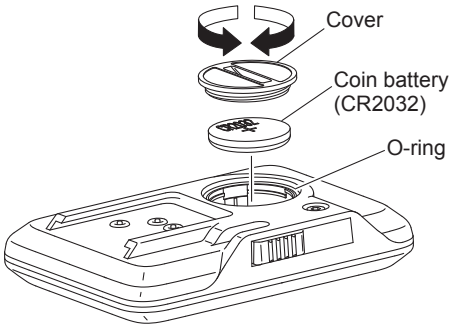


Display Unit (Display B)

The Display Unit offers the following operations and information displays.



○ Coin battery (CR2032)



Check if the rated coin battery is installed in the rear of the Display Unit.
If a coin battery is not installed, or if there is not sufficient battery power remaining, install a new coin battery.
In case of setting the language, see “Language”.
To adjust the time, see “Settings”.

⚠ WARNING

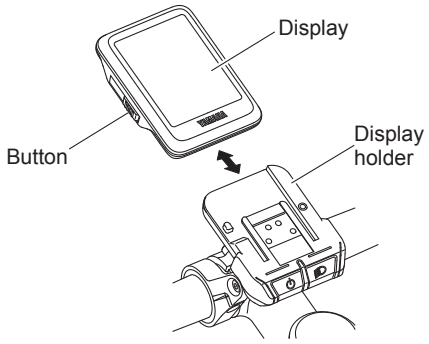
Coin battery is hazardous and is to be kept away from children (whether the battery is new or used).
If the cover of coin battery does not close securely, stop using the product.
Coin battery can cause severe or fatal injuries in 2 hours or less if it is swallowed or placed inside any part of the body.
Medical attention should be sought immediately if it is suspected coin battery has been swallowed or placed inside any part of the body.
Unfortunately, it is not obvious when coin battery is stuck in a child's oesophagus (food pipe).
There are no specific symptoms associated with this. The child might:

- **cough, gag or drool a lot;**
- **appear to have a stomach upset or a virus;**
- **be sick;**
- **point to their throat or stomach;**
- **have a pain in their abdomen, chest or throat;**
- **be tired or lethargic;**
- **be quieter or more clingy than usual or otherwise "not themselves";**
- **lose their appetite or have a reduced appetite; and**
- **not want to eat solid food/be unable to eat solid food.**

These sorts of symptoms vary or fluctuate, with the pain increasing and then subsiding.
A specific symptom to coin battery ingestion is vomiting fresh (bright red) blood. If the child does this seek immediate medical help.
The lack of clear symptoms is why it is important to be vigilant with used or spare coin batteries in the home and the products that contain them.

TIP

- Make sure that the O-ring is installed correctly.
- Use a new coin battery (sold separately).
- When the coin battery is completely discharged and the power of the vehicle is turned on, the clock "--:--" will flash for 5 seconds, and then "--:--" will remain shown. Additionally the language indication is in English. Replace the coin battery if this happens.

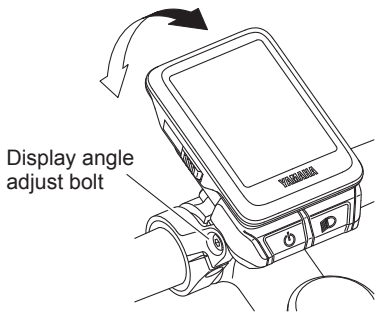


○ Mounting and removing the display

To mount the display, slide the display toward the rear side of the bicycle, and then insert it into the display holder. To remove the display, press the button while sliding the display towards the front of the bicycle out of the display holder.

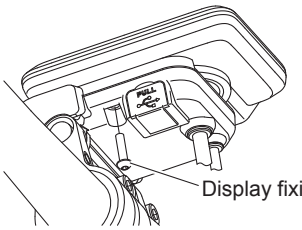
TIP

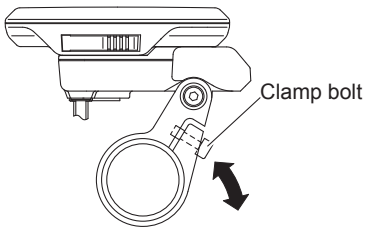
- Adjust the display angle by loosening the display angle adjust bolt. The angle depends on each rider. After adjusting the display angle, tighten the display angle adjust bolt to 0.5 N·m.
- Make sure the display is turned off before mounting or removing it.



○ Fixing the display

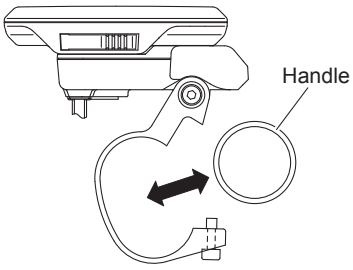
The display can be secured to prevent easy removal.
Make sure that the display is properly set in the display holder firmly.
Then, install the display fixing bolt (M3 thread, 12 mm long) from underneath. If the display fixing bolt cannot be installed nor removed due to interference of the handlebar, loosen the clamp bolts, and then remove the display holder from the handlebar.





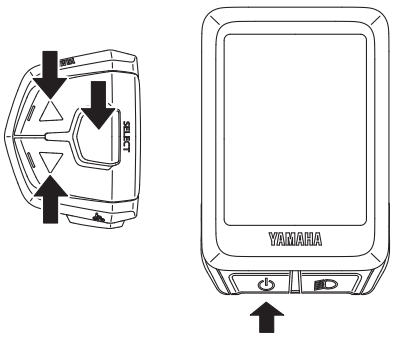
⚠ WARNING

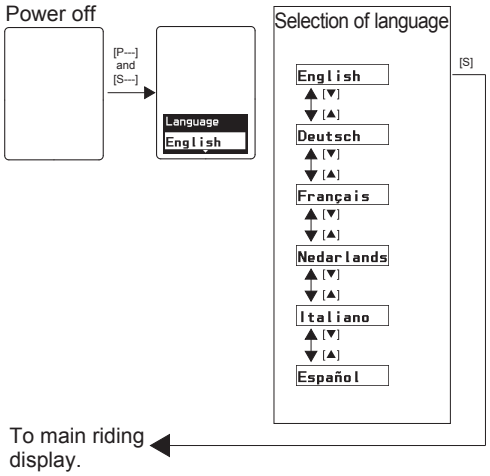
Tighten the clamp bolts to 1.2 N·m. Otherwise, during riding, vibration could cause the clamp bolts to come loose with the risk that the Display Unit may fall off. A loose display could distract the rider or interfere with control and cause an accident.



TIP

The structure that secures the display is not designed for anti-theft.





○ Language

In Display B, you can select the language between the following languages:

SUPPORTED LANGUAGE	DISPLAY
English	English
German	Deutsch
French	Français
Dutch	Nederlands
Italian	Italiano
Spanish	Español

1. Make sure that the power is turned off.
   When nothing is shown in the display, the power is off. When something is shown in the display, the power is on. Press the power switch to turn the power off.
2. Hold the power switch and function select switch pressed simultaneously for 2 seconds or longer.
3. Select the language by using the assist mode switches (up) or (down), and then press the function select switch. This setting will then be kept and the display will return to the main riding display.

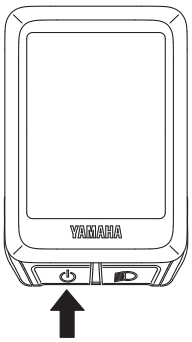
⚠ WARNING

When setting the language, be sure to stop the bicycle and to set the language in a safe location. Otherwise, lack of attention to surrounding traffic or other hazards could cause an accident.

TIP

The assist system does not function while setting the language.

[P---] ···· Press the power switch for 2 seconds or longer
[S---] ···· Press the function select switch for 2 seconds or longer
[S] ····· Press the function select switch
[▲] ····· Press the assist mode switch (up)
[▼] ····· Press the assist mode switch (down)

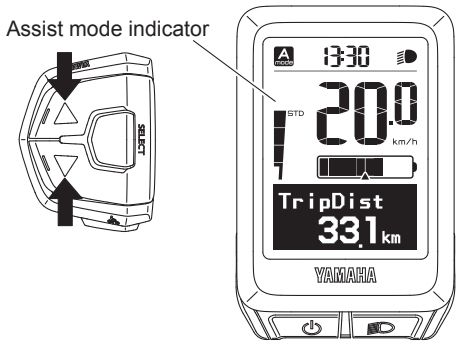


○ Power on/off ⏻

Each time you press the power switch, the power is turned on and off.
When you turn on the power, all of the displays come up. After that, the main riding display is shown.

TIP

Keep your feet off the pedals when turning on the Display Unit. Also, do not start riding immediately after turning on the Display Unit. Doing so could weaken the assist power. (Weak assist power in either of these cases is not a malfunction.) If you did either of the above by accident, remove your feet from the pedals, turn on the power again, and wait a moment (approximately two seconds) before starting to ride.



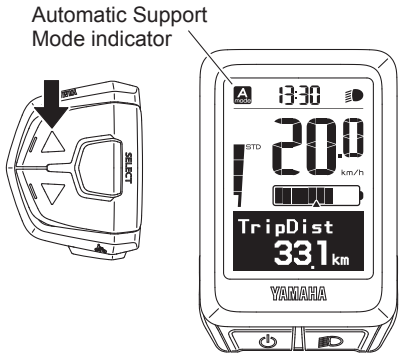
○ Displaying and switching the assist mode

You can select the assist mode by using the assist mode switches (up) or (down).
The selected assist mode is displayed by the assist mode indicator.

- When you press the assist mode switch (up), the mode changes from “OFF” to “+ECO”, or from “+ECO” to “ECO”, or “ECO” to “STD”, or “STD” to “HIGH”, or “HIGH” to “EXPW”.
- When you press the assist mode switch (down), the mode changes from “EXPW” to “HIGH”, or from “HIGH” to “STD”, or “STD” to “ECO”, or “ECO” to “+ECO”, or “+ECO” to “OFF”.

TIP

- Bicycles equipped with the PWseries CE, PWseries ST.
- Further pressing of the assist mode switch will not cycle the assist mode selections.
- When the power is turned on, the e-Bike Systems will be activated with the same assist mode as when the power was last turned off.

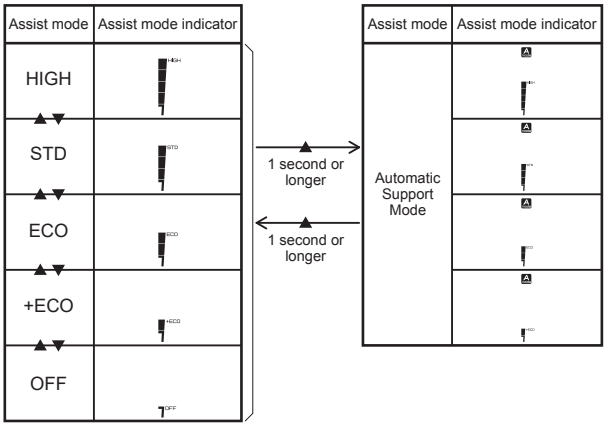


The Automatic Support Mode, which enables automatic change to the optimal assist mode according to the riding conditions, can also be used.

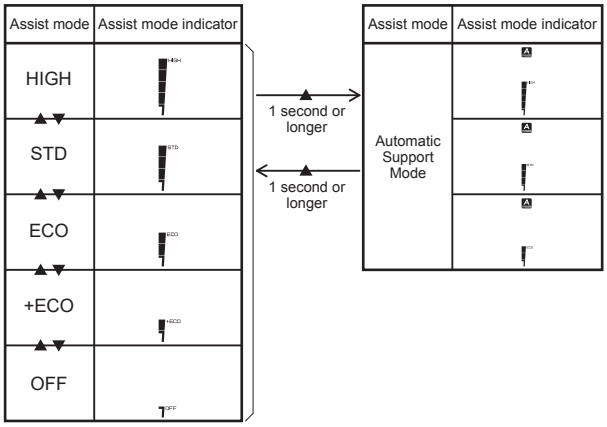
- To use the Automatic Support Mode, press the assist mode switch (up) for 1 second or longer. The Automatic Support Mode indicator will light up and the mode will be changed to the Automatic Support Mode.
- To cancel the Automatic Support Mode, press the assist mode switch (up) for 1 second or longer. The Automatic Support Mode indicator will go off and the Automatic Support Mode will be canceled.

TIP

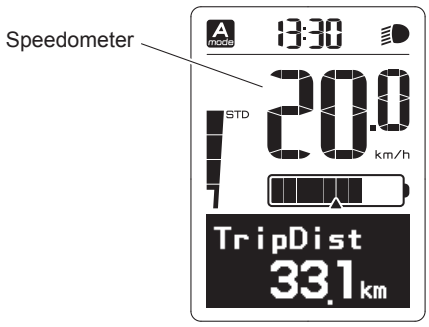
- Even if you press the assist mode switches (up) or (down) while in Automatic Support Mode, the assist mode cannot be changed.
- The Automatic Support Mode is saved when the power is turned off. When you turn on the power again, the e-Bike Systems will be activated with the Automatic Support Mode.



PWseries TE Drive Unit
PWseries CE Drive Unit



PWseries ST Drive Unit
PWseries S2 Drive Unit

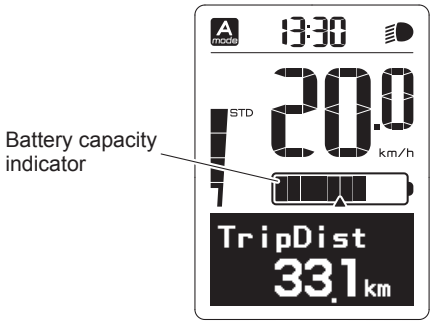


○ Speedometer

The speedometer displays your bicycle speed (in kilometer per hour or mile per hour). To select the km/mile, see “Settings”.

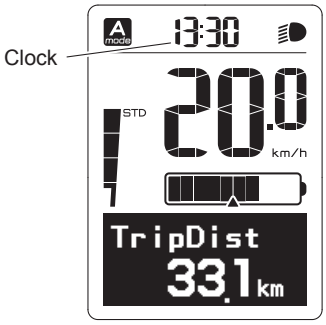
TIP

If your bicycle speed is less than 2.0 km/h or 1.2 MPH, the speedometer displays “0.0 km/h” or “0.0 MPH”.



○ Battery capacity indicator

The battery capacity indicator displays an estimate of how much capacity is left in the Battery Pack.

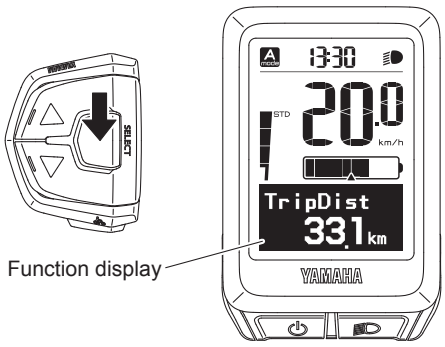


○ Clock

Displays the current time in 24 hour format. To adjust the time, see “Settings”.

TIP

- When the power of the bicycle is turned on, if a coin battery (CR2032) is not installed or if the remaining battery power is insufficient, the clock “--:--” will flash for 5 seconds, and then “--:--” will remain shown. Install the coin battery or replace the coin battery to adjust the clock.
- If the clock is not adjusted after the coin battery is installed or replaced, “--:--” will continue to appear.



○ Function display

The function display can display the following functions.

- Odometer
- Trip meter
- Average bicycle speed
- Maximum bicycle speed
- Range (Remaining assist distance)
- Battery capacity (%)
- Cadence
- Trip time

Push the function select switch, the display changes as follows:
Odometer → Trip meter → Average bicycle speed → Maximum bicycle speed → Range → Battery capacity (%) → Cadence → Trip time → Odometer

You can select the items to be displayed.
For more information, see “Settings”.

You can reset the data for trip meter, average bicycle speed, maximum bicycle speed, and trip time.
For more information, see “Settings”.

● Odometer

This displays the total distance (in kilometers or miles) ridden while the power was on.
The odometer cannot be reset.

● Trip meter

This displays the total riding distance (in kilometers or miles) since it was last reset.
When you turn off the power, the data up to that point will be saved.
To reset the trip meter and begin counting a new total, press the assist mode switch (up) and assist mode switch (down) simultaneously for 2 seconds or longer when the trip meter is displayed on the function display. Or see “Settings”.

● Average bicycle speed

This displays the average bicycle speed (in kilometers per hour or miles per hour) since it was last reset.
When you turn off the power, the data up to that point will be saved.
To reset the average bicycle speed, press the assist mode switch (up) and assist mode switch (down) simultaneously for 2 seconds or longer when the average bicycle speed is displayed on the function display. Or see “Settings”.

● Maximum bicycle speed

This displays the maximum bicycle speed (in kilometers per hour or miles per hour) since it was last reset.
When you turn off the power, the data up to that point will be saved.
To reset the maximum bicycle speed, press the assist mode switch (up) and assist mode switch (down) simultaneously for 2 seconds or longer when the maximum bicycle speed is displayed on the function display. Or see “Settings”.

● Range (Remaining assist distance)

This displays an estimate of the distance (in kilometers or miles) that can be ridden with assist on the residual battery capacity of the Battery Pack installed. If you switch the assist mode when the range (remaining assist distance) is displayed, the estimate of the distance that can be ridden with assist changes.
The range (remaining assist distance) estimate cannot be reset.

TIP

- Actual range (remaining assist distance) changes depending on the riding situation (hills, headwind, etc.) and as the Battery Pack runs down.
- If in Off Mode, “- - - -” is displayed.

● Battery capacity (%)

This displays the power remaining in the Battery Pack.
The residual battery capacity (%) cannot be reset.

● Cadence

This displays your pedaling speed in revolutions per minute.
The pedaling cadence display cannot be reset.

TIP

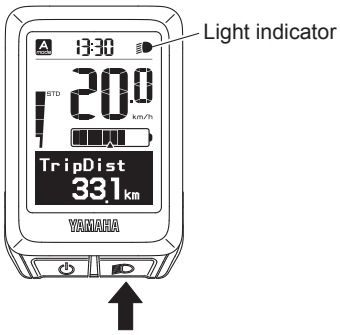
If you pedal backwards, “0” is displayed.

● Trip time

This displays the total riding time since it was last reset. When you turn off the power, the data up to that point will be saved.
To reset the trip time, press the assist mode switch (up) and assist mode switch (down) simultaneously for 2 seconds or longer when the trip time is displayed on the function display. Or see “Settings”.

TIP

If your bicycle speed is less than 2.0 km/h or 1.2 MPH, the trip time will not be accumulated.

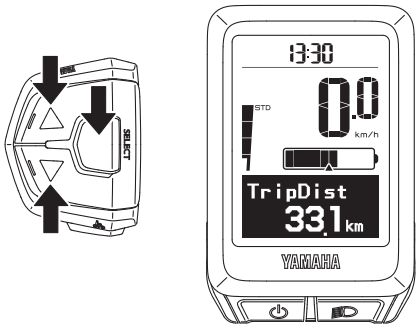


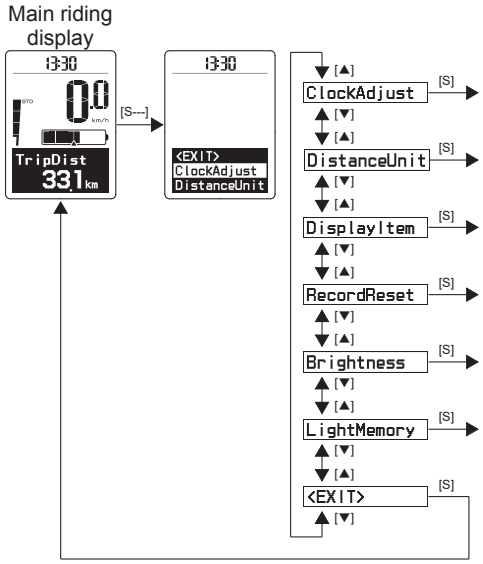
○ Headlight on/off

For models equipped with a headlight or taillight powered by the Battery Pack, each time you press the light switch, the headlight and taillight will turn on and off.

TIP

- Display backlight operates simultaneously with the light switch.
- As the light switch is turned on or off, the display backlight will light accordingly. For the procedure of selecting the brightness condition, see “Settings”.
- The on or off status of the headlight operates simultaneously with the on or off status of the light indicator.





○ Settings

The display enables the following.

- ClockAdjust (Clock Adjust)
  Clock setting
- DistanceUnit (Distance Unit)
  km/mile setting
- DisplayItem (Display Item)
  Sets the items to be displayed in the function display during normal riding.
- RecordReset (Record Reset)
  Resets the values of the trip meter, average bicycle speed, maximum bicycle speed, and trip time.
- Brightness
  Set the brightness of the display backlight.
- LightMemory (Light Memory)
  Sets whether to ignore or save the on or off status of the headlight when the power of the e-Bike Systems is turned off.

1. Press the function select switch for 2 seconds or longer.
2. Select an item by using the assist mode switches (up) or (down).
   When you select an item to set and press the function select switch, the setting will be displayed.
   Selecting “EXIT” returns to the main riding display.

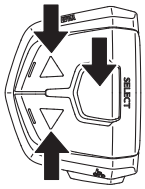
⚠ WARNING

For all setting procedures, be sure to stop the bicycle and perform the required settings in a safe location. Otherwise, lack of attention to surrounding traffic or other hazards could cause an accident.

TIP

- The settings cannot be adjusted while riding.
- If you do the following during setting, the item that you are setting will be canceled and the display will return to the main riding display.
  - Turning the crank (pedal) in the traveling direction
  - Turning the rear wheel at 2 km/h and more
  - Pushing the walk assist switch

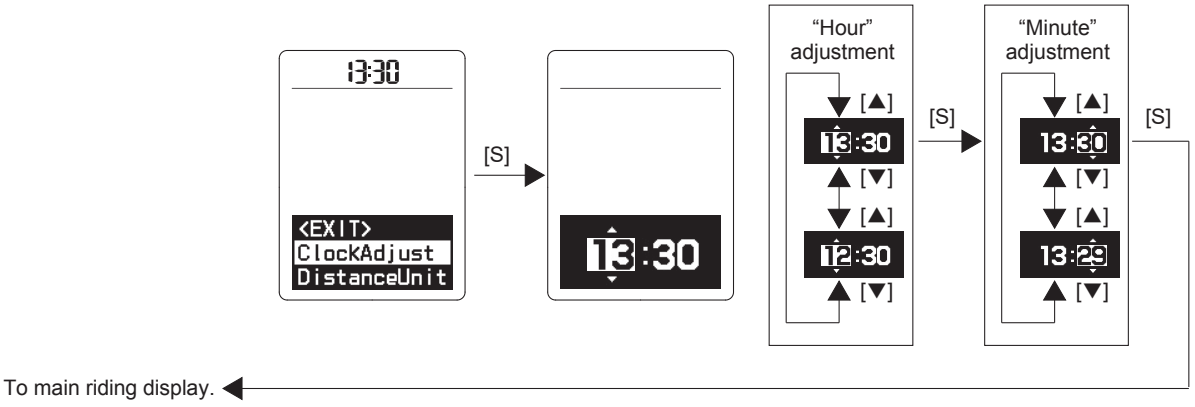
[S---]···· Press the function select switch for 2 seconds or longer
[S]····· Press the function select switch
[▲]····· Press the assist mode switch (up)
[▼]····· Press the assist mode switch (down)

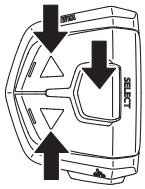


● ClockAdjust (Clock Adjust)

You can adjust the time of the clock.

1. Check that the “Hour” is flashing and adjust the hour by using the assist mode switches (up) or (down).
2. Press the function select switch to adjust the minutes.
3. Check that the “Minute” is flashing and adjust the minutes by using the assist mode switches (up) or (down).
4. Press the function select switch to return to the main riding display.

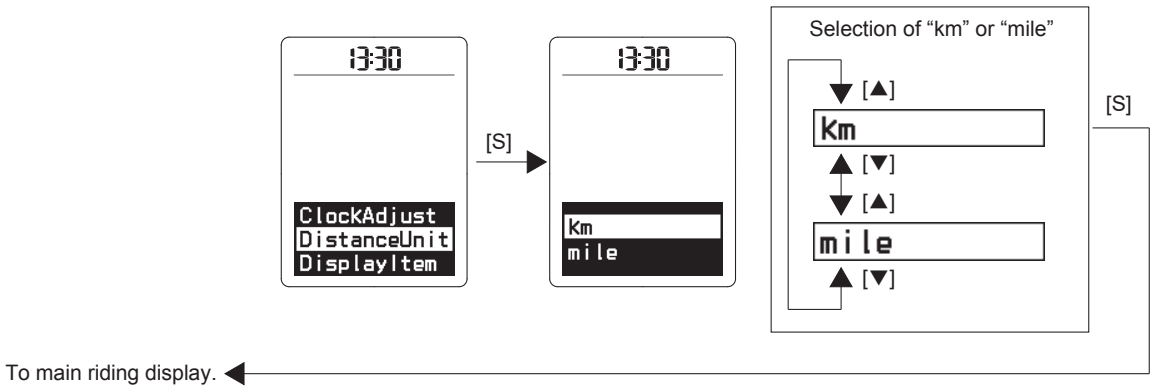


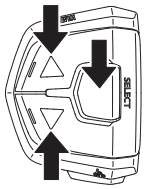


● DistanceUnit (Distance Unit)

You can select the unit for distance and speed.
When “km” is selected, the traveled distance will be indicated in kilometers and the speed in km/h.
When “mile” is selected, the traveled distance will be indicated in miles and the speed in mph.

1. Select “km” or “mile” by using the assist mode switches (up) or (down).
2. When you press the function select switch, the setting will then be kept and the display will return to the main riding display.





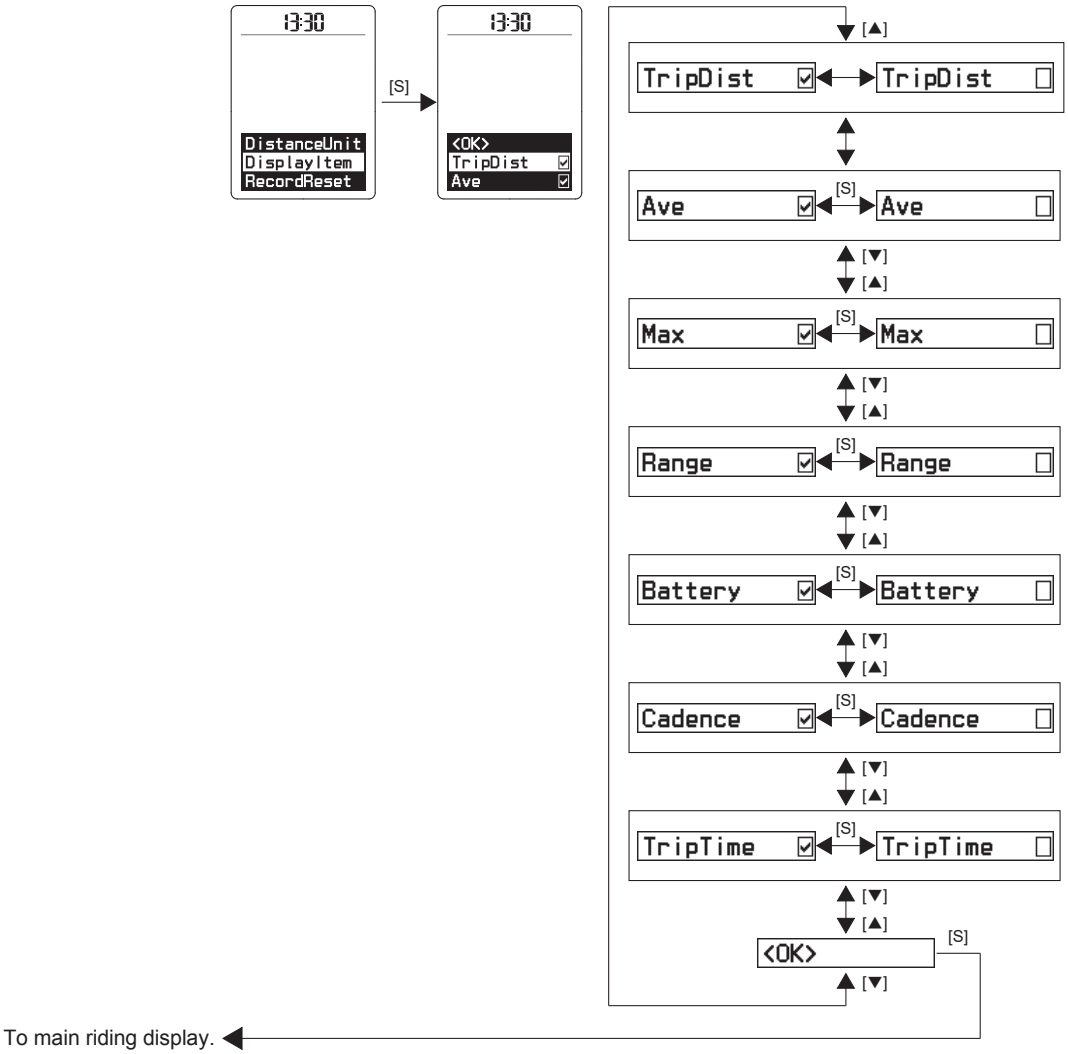
● DisplayItem (Display Item)

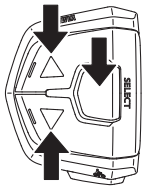
You can select to show or hide different items in the function display during normal riding.
The items which you can select to show or hide are:
“TripDist” (Trip meter), “Ave” (Average bicycle speed), “Max” (Maximum bicycle speed), “Range”, “Battery” (Battery capacity (%)), “Cadence”, and “TripTime” (Trip time).

TIP

You cannot hide the odometer indication.

1. Select an item by using the assist mode switches (up) or (down).
2. Use the function select switch to show or hide the selected item. (When an item is shown, a check mark will be shown in the check box.)
3. When you select “OK” and press the function select switch, the setting will be kept and the display will return to the main riding display.





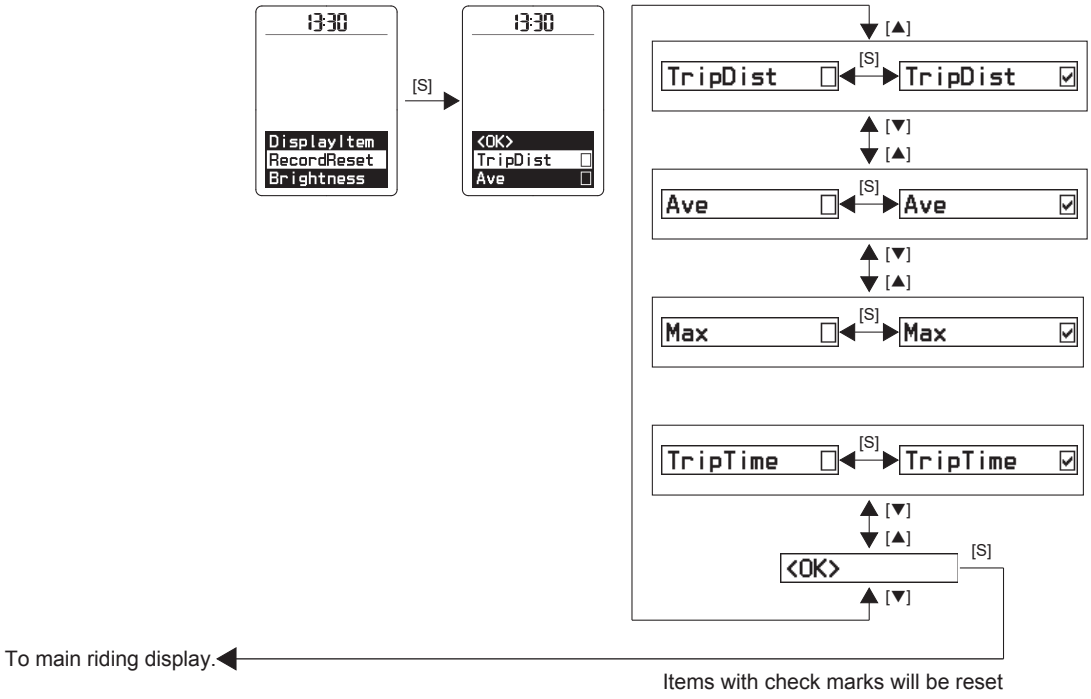
● RecordReset (Record Reset)

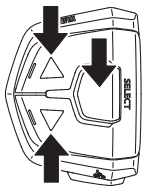
You can reset the “TripDist” (Trip meter), “Ave” (Average bicycle speed), “Max” (Maximum bicycle speed), and “TripTime” (Trip time) values.

TIP

You cannot reset the odometer.

1. Select an item by using the assist mode switches (up) or (down) and use the function select switch to place a check mark in the check box for the item that you want to reset.
2. When you select “OK” and press the function select switch, the items with check marks will be reset and the display will return to the main riding display.





● Brightness

You can set the display backlight state when the headlight is on and off. You can select between 3 brightness levels.

[Setting the display backlight brightness when the headlight is on]

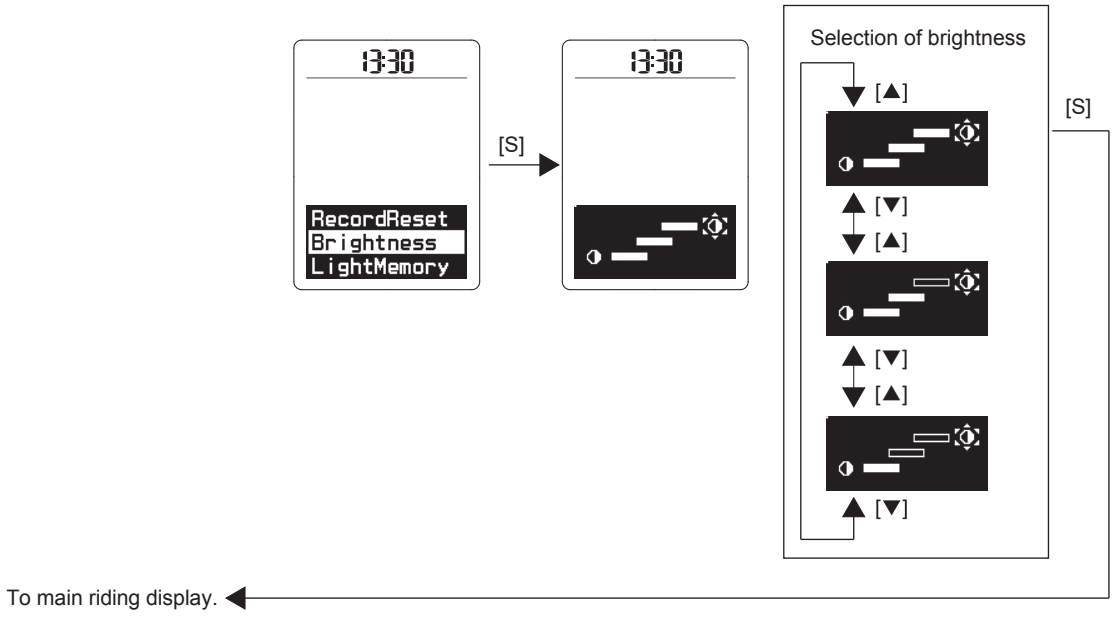
1. Turn the headlight on by using the light switch.
2. Select the display backlight brightness by using the assist mode switches (up) or (down).
3. When you press the function select switch, the setting will then be kept and the display will return to the main riding display.

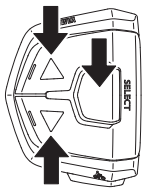
[Setting the display backlight brightness when the headlight is off]

1. Turn the headlight off by using the light switch.
2. Select the display backlight brightness by using the assist mode switches (up) or (down).
3. When you press the function select switch, the setting will then be kept and the display will return to the main riding display.

TIP

- While adjusting the brightness of the display backlight, the backlight brightness will become the selected one.
- Even if the power is turned off, the setting will be kept. When the power is turned on the next time, the last used setting will be selected.

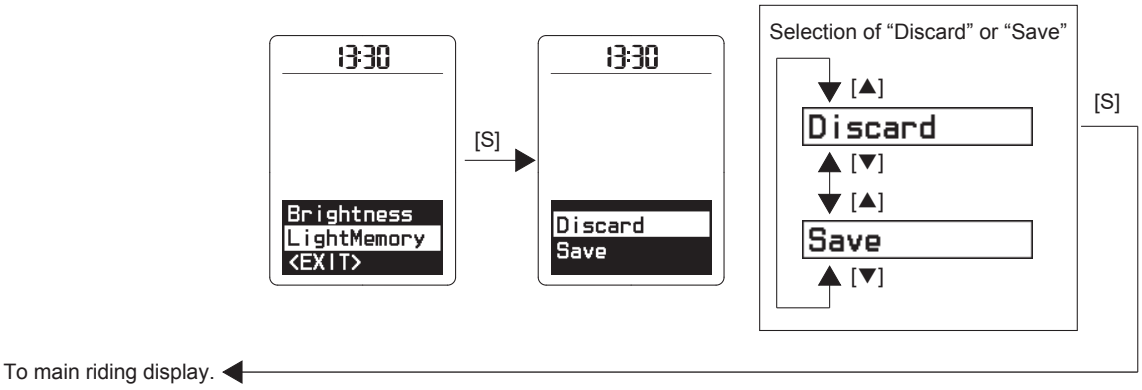


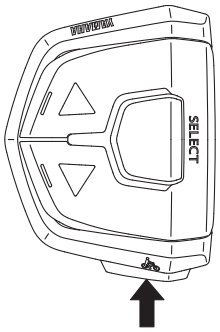


● LightMemory (Light Memory)

Sets whether to ignore or save the on or off status of the headlight when the power of the e-Bike Systems is turned off.
When “Discard” is selected, the on or off status of the headlight will not be saved when the power of the e-Bike Systems is turned off. In addition, when turning on the e-Bike Systems, the headlight will remain off.
When “Save” is selected, the on or off status of the headlight will be saved when the power of the e-Bike Systems is turned off. When later turning on the e-Bike Systems, the headlight will light or not light depending on the on or off status that was last in use.

1. Select “Discard” or “Save” by the assist mode switches (up) or (down).
2. When you press the function select switch, the setting will then be kept and the display will return to the main riding display.

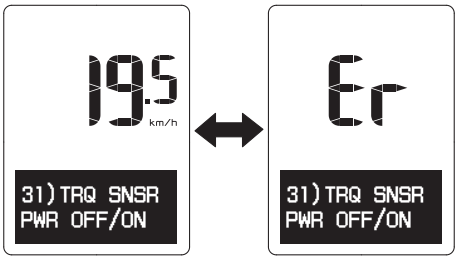




○ Walk assist

When you are on or off the bicycle and start moving it, you can use walk assist without pedaling the bicycle.
To use walk assist, press and hold the walk assist switch.
Walk assist will not work in the following situations:

- When you release the walk assist switch.
- If you press another switch at the same time.
- When you start to pedal.
- If your bicycle speed exceeds 6 km/h.
- If you select Off Mode.
- If the wheels are not turning (when braking or coming into contact with an obstacle, etc.).

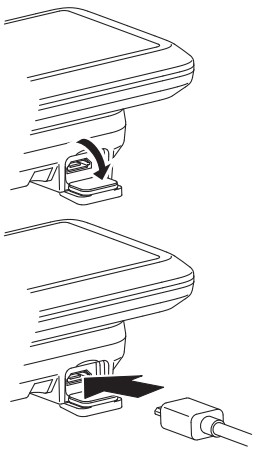


○ Self-diagnosis function

The e-Bike Systems are equipped with a self-diagnosis function. If a malfunction or fault occurs in the e-Bike Systems, the speedometer and “Er” will be shown alternately, and an error message will be shown on the function display. See “Troubleshooting” regarding symptoms and remedies for abnormal displays and abnormal flashing.

⚠ WARNING

If the problem cannot be solved, have your bicycle inspected by a dealer as soon as possible.



○ Power supply to external devices

Power can be supplied to most external devices (e.g. various smart phones etc.) by connecting a commercial USB 2.0 OTG cable.

[To supply power]
1. Open the USB port cap of the display.
2. Connect the USB cable to the display and external device.
3. Turn on the power of the vehicle.

[To stop the power supply]
1. Turn off the power of the vehicle.
2. Disconnect the USB cable and put on the cap of the USB port.

NOTICE

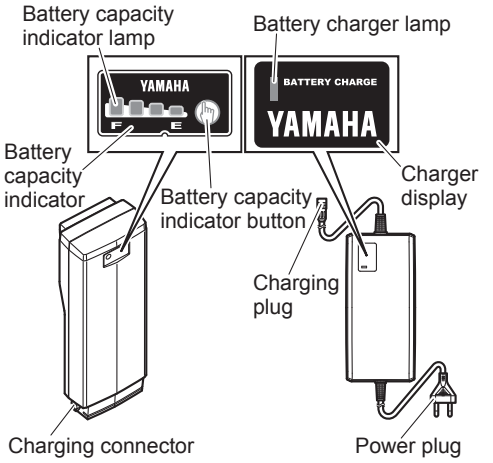
- **Do not apply unreasonable force on the USB plug or pull the USB cable.**
- **Check that the USB plug is facing the right way and not totally out-of-position with the USB port or slanted, and make sure it is fully inserted all the way in.**
- **Do not connect the USB port and the USB plug in a wet state.**
- **Use a USB 2.0 OTG cable that conforms to the standards.**
- **Do not insert foreign objects into the USB port unit.**

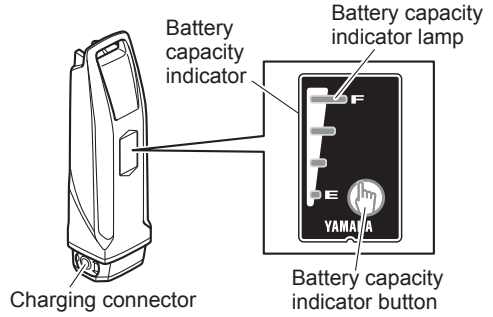
Otherwise the Display Unit and external device may malfunction.

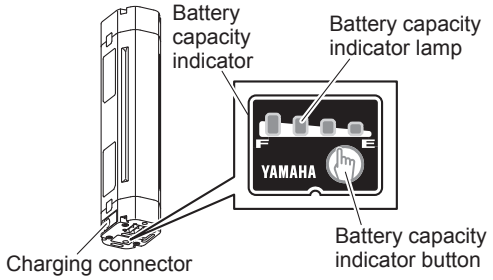
TIP

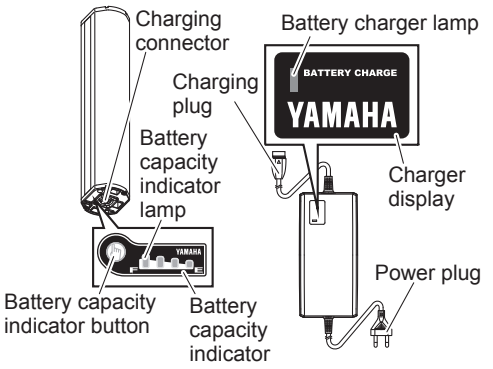
- Power is supplied automatically when an external device is connected with the USB cable.
- No power is supplied if the remaining capacity of the Battery Pack is low.
- The power supply of the vehicle will go off and power supplied by the USB connection will also stop if the vehicle is not operated for 5 minutes.

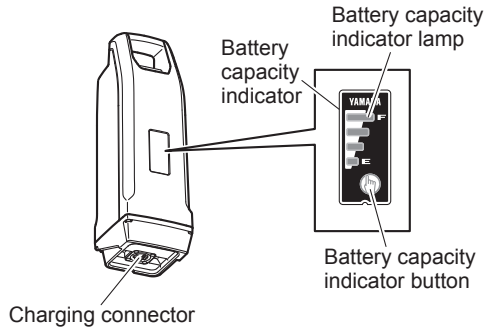
H. Battery Pack and charging procedure











The Battery Pack equipped for the Yamaha e-Bike Systems is a lithium-ion battery. The lithium-ion battery is lightweight and offers superior capacity. However, it does have the following characteristics.

- Its performance decreases in extremely hot or cold environments.
- It naturally loses its charge.

The Battery Pack for the Yamaha e-Bike Systems also has an embedded computer which notifies you of estimated residual battery capacity and suspected faults via the battery capacity indicator lamp.
By pressing the battery capacity indicator button, you can display the residual battery capacity for approximately 5 seconds.
See “Checking the residual battery capacity” for the estimate of the residual battery capacity. See “Troubleshooting” for information on fault flashing.

⚠ WARNING

Do not use any other charger or charging method to recharge the Battery Packs. Using any other charger could result in fire, explosion, or damage the Battery Packs.

⚠ WARNING

IMPORTANT SAFETY INSTRUCTIONS — SAVE THESE INSTRUCTIONS
TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, CAREFULLY FOLLOW THESE INSTRUCTIONS
This manual contains important safety and operating instructions for Battery Charger type PASC9 and PASC10. Those types can be found in the labels on the products.
Before using Battery Charger, read all instructions and cautionary markings on Battery Charger, Battery Pack and product using Battery Pack.
Only use the Battery Charger type PASC10 to charge PASB2, PASB4, and PASB5 type Battery Packs for Yamaha e-Bike Systems, while only using the Battery Charger type PASC9 to charge PASB6 type Battery Pack for Yamaha e-Bike Systems. Other types of batteries may burst causing injury to persons and damage.

NOTICE

Do not apply grease on the terminal of the Battery Pack.

Appropriate charging environments

For safe and efficient charging, charge the Battery Pack in a location that is:

- Flat and stable
- Free of rain or moisture
- Out of direct sunlight
- Well-ventilated and dry
- Not accessible to children or pets
- Temperature between 15–25 °C

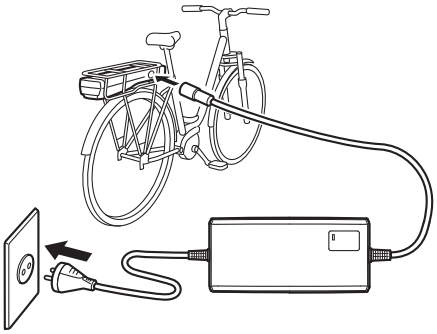
Inappropriate charging environments and solutions

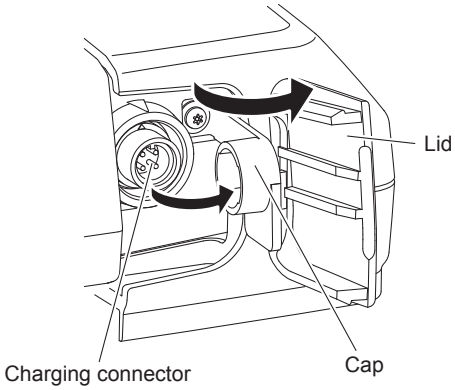
The hot and cold environments described below can cause charging to enter standby or suspension without fully charging the Battery Pack.

- Summertime charging standby/suspension
  If charging in a location receiving direct summer sunlight or immediately after riding, the Battery Pack might enter charging standby (all four battery capacity indicator lamps flash slowly). See “Reading the charging status for Battery Pack”. This is to automatically stop charging in order to protect the Battery Pack from exceeding the specified temperature while charging. You can avoid charging suspension by starting to charge with the Battery Pack cold or at a room temperature of 15–25 °C. If charging suspension occurs, move the Battery Pack to a cool location to reduce the charging standby time.
- Wintertime charging standby/suspension
  Charging standby will occur if the temperature is less than 0 °C. If charging is started and the temperature drops below this level due to late-night cooling or other factors, charging is suspended and standby mode is entered to protect the Battery Pack. In such cases, restart charging at an indoor location with a temperature of 15–25 °C.
- Noise on televisions/radios/computers
  Charging next to televisions, radios, or similar appliances might cause static, flickering images, and other interference. If this occurs, recharge in a location further away from the television or radio (such as in another room).

⚠ WARNING

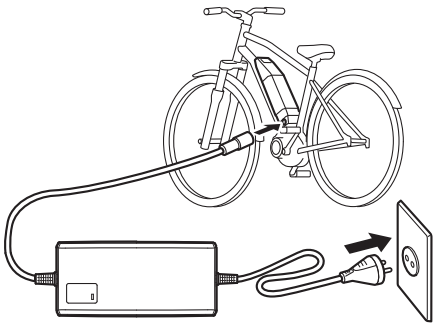
If a charging fault occurs during charging, remove the power plug of the Battery Charger from the socket and wait for the Battery Pack/Battery Charger to cool.

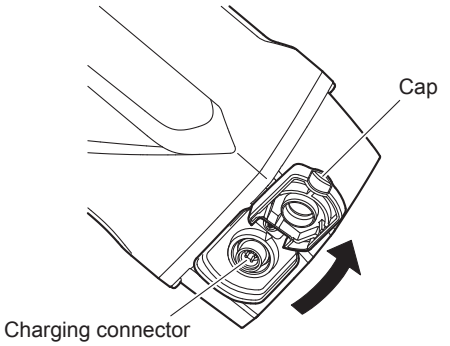




Charging the Battery Pack mounted on the bicycle (Rear Carrier Battery)

1. Connect the power plug of the Battery Charger to a household power outlet.
2. Remove the lid of the battery holder cover and the cap of charging inlet from the charging connector on the Battery Pack, and connect it to the charging plug on the Battery Charger.





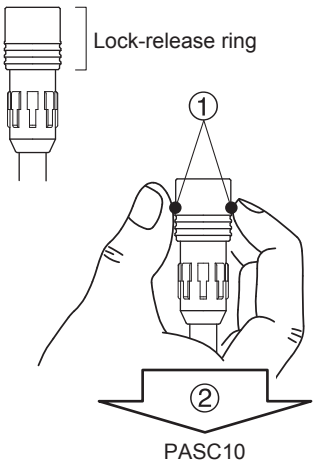
Charging the Battery Pack mounted on the bicycle (Multi Location Battery, External Crossover Battery)

1. Connect the power plug of the Battery Charger to a household power outlet.
2. Remove the cap of charging inlet from the charging connector on the bicycle, and connect it to the charging plug on the Battery Charger. How to open the cap varies between bicycles.

NOTICE

- **Do not connect the charging plug of the Battery Charger with the charging connector of the Battery Pack in a wet state.**
  Otherwise, the Battery Charger and Battery Pack may malfunction.
- **Be sure to connect the charging plug only after the charging connector on the Battery Pack is completely dry.**
  Otherwise, the Battery Charger and Battery Pack may malfunction.
- **Do not apply excessive force to the charging plug or pull on the cord with the charging plug connected to the Battery Pack.**
  Otherwise, the charging plug or connector may be damaged.
- **Do not pedal while the charging plug is connected.**

3. See “Reading the charging status for Battery Pack”, and check that the Battery Charger is charging the Battery Pack.
4. The battery capacity indicator lamps will light up one by one until all four are on. Then, when charging is complete, all of the lamps will go off.
5. Confirm that charging is complete, and then disconnect the charging plug from the Battery Pack.
   How to disconnect the charging plug of Battery Charger type PASC10 (see the left figure)
   ① Grasp the lock-release ring.
   ② Pull it out straight.
6. Place the cap of charging inlet on the Battery Pack’s charging connector.



PASC10

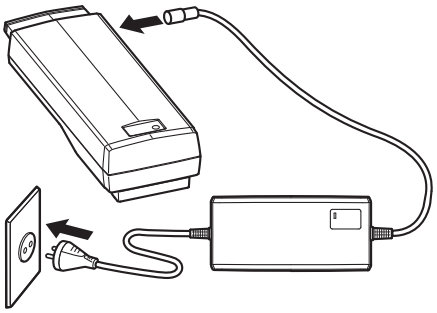
⚠ WARNING

Never handle the power plug, charging plug or touch the Battery Charger contacts with wet hands. This could result in electric shock.

TIP

- Charging will start automatically.
- If the Display Unit is turned on while the Battery Pack is charging, all normal displays will be shown, including the battery capacity indicator, but the assist system will not function.
- When the Battery Pack is connected to the Battery Charger, the battery capacity indicator lamp will flash at approximately 0.2 second intervals to indicate that the Battery Pack is being prepared to be charged. Leave it alone and charging will start normally.
- If you charge the Battery Pack with the Battery Pack installed in the bicycle, the headlight might go off.

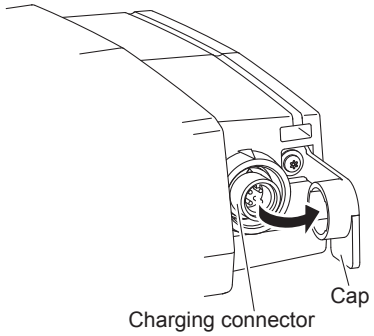
Charging the Battery Pack removed from the bicycle



1. Turn the Display Unit off.
2. Insert the key into the battery lock, and turn it to release the battery lock.
3. Remove the Battery Pack.

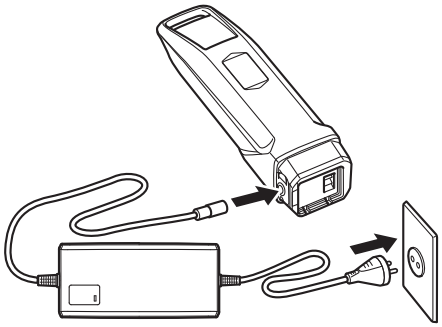
⚠ WARNING

Use both hands when removing the Battery Pack. Do not drop the Battery Pack or subject it to impact. Doing so could cause the Battery Pack to become hot or catch fire, resulting in serious injury or property damage.

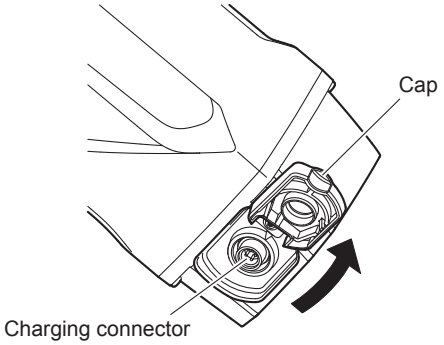


TIP

How to remove Multi Location Batteries varies between bicycles. For more information, see the instruction manual supplied with the bicycle.

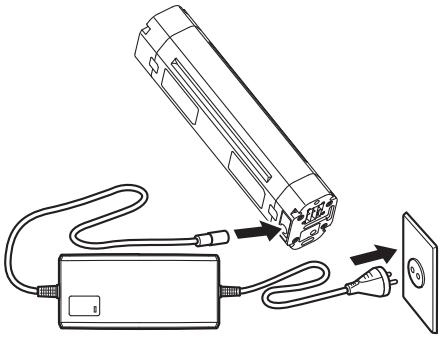


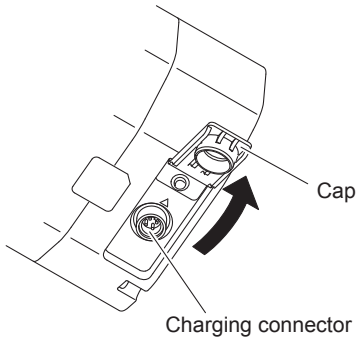
4. Connect the power plug of the Battery Charger to a household power outlet.
5. Remove the cap from the charging connector on the Battery Pack, and connect it to the charging plug on the Battery Charger.
   The Multi Location Battery 400/500 and External Crossover Battery 400/500 are not equipped with a cap.

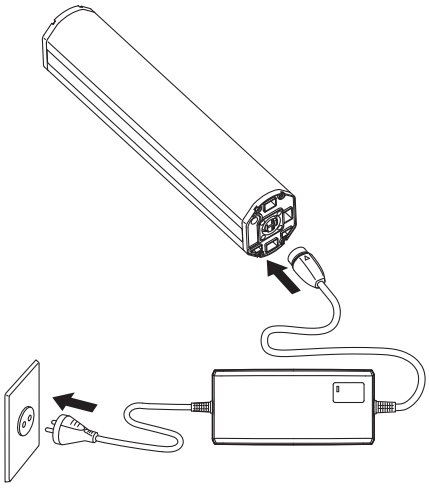


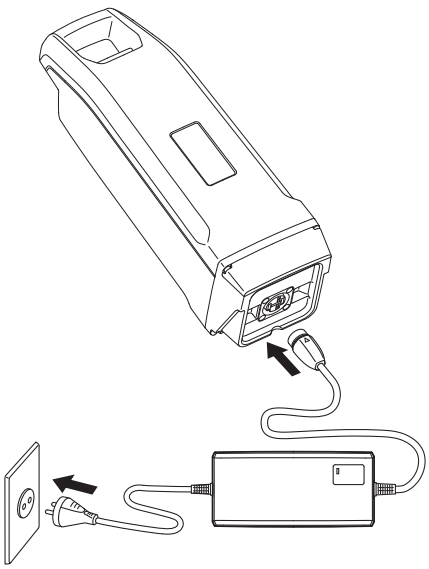
NOTICE

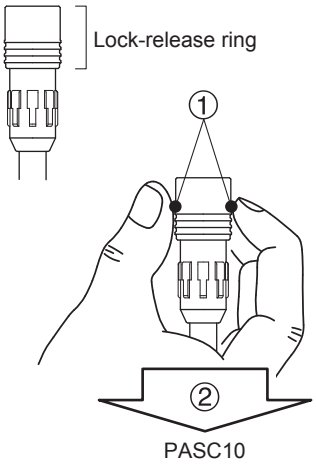
- **Do not connect the charging plug of the Battery Charger with the charging connector of the Battery Pack in a wet state.**
  Otherwise, the Battery Charger and Battery Pack may malfunction.
- **Be sure to connect the charging plug only after the charging connector on the Battery Pack is completely dry.**
  Otherwise, the Battery Charger and Battery Pack may malfunction.
- **Do not apply excessive force to the charging plug or pull on the cord with the charging plug connected to the Battery Pack.**
  Otherwise, the charging plug or connector may be damaged.




Cap
Charging connector





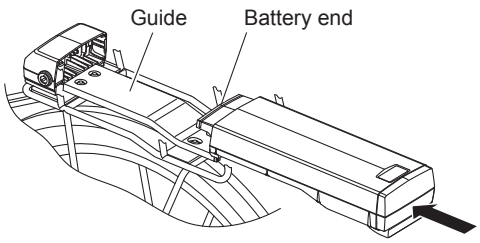


PASC10

6. See “Reading the charging status for Battery Pack”, and check that the Battery Charger is charging the Battery Pack.
7. The battery capacity indicator lamps will light up one by one until all four are on. Then, when charging is complete, all of the lamps will go off.
8. Confirm that charging is complete, and then disconnect the charging plug from the Battery Pack.
   How to disconnect the charging plug of Battery Charger type PASC10 (see the left figure)
   ① Grasp the lock-release ring.
   ② Pull it out straight.
9. Place the cap on the Battery Pack’s charging connector.
   The Multi Location Battery 400/500 and External Crossover Battery 400/500 are not equipped with a cap.
10. Mount the Battery Pack on the bicycle.

⚠ WARNING

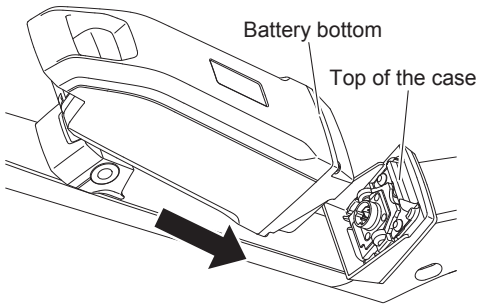
- **Do not touch Battery Charger contacts with metallic objects. Do not allow foreign material to cause short circuit of the contacts. This could result in electric shock, fire, or damage the Battery Charger.**
- **Periodically remove dust from the power plug. Dampness or other issues could reduce the effectiveness of the insulation, resulting in fire.**
- **Never disassemble or modify the Battery Charger. This could result in fire or electric shock.**
- **Do not use with a power strip or extension cord. Using a power strip or similar methods may exceed rated current and can result in fire.**
- **Do not use with the cable tied or rolled up, and do not store with the cable wrapped around the Battery Charger main body. Cable damage can result in fire or electric shock.**
- **Firmly insert the power plug and the charging plug into the socket. Failure to insert the power plug and the charging plug completely can result in fire caused by electric shock or overheating.**
- **Do not use the Battery Charger near flammable material or gas. This could result in fire or explosion.**
- **Never cover the Battery Charger or place other objects on top of it while charging. This could result in internal overheating leading to fire.**

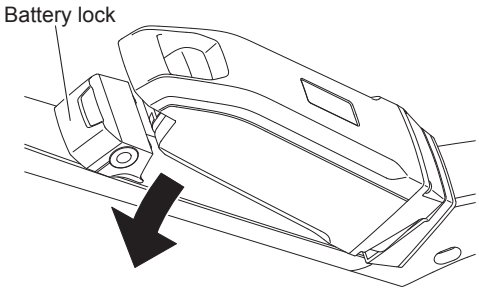


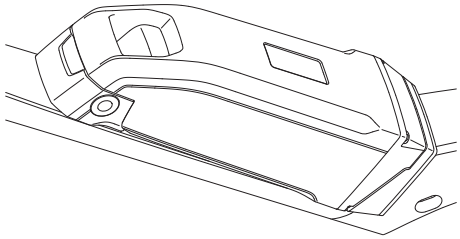
TIP

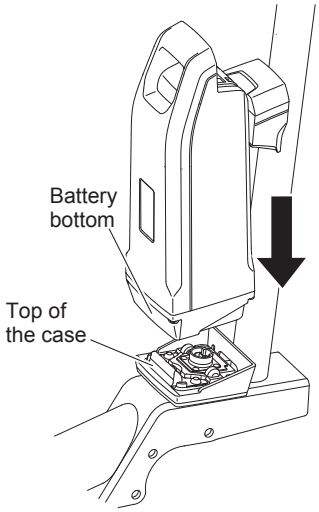
Battery Pack mounting method (Rear Carrier Battery)
The Battery Pack is installed from behind the rear carrier.

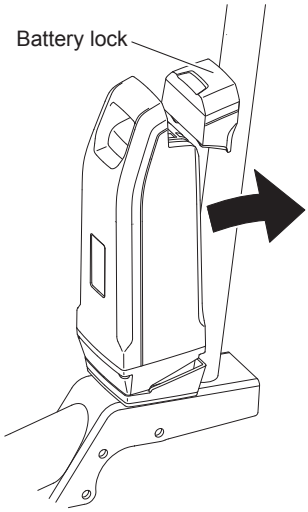
- Put the battery end on top of the guide.
- Slide the Battery Pack in the direction of the arrow until hearing a click.

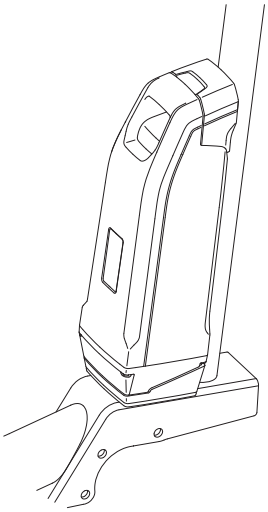












TIP

Battery Pack mounting method (External Crossover Battery)

- Insert the Battery Pack in the direction of the arrow so that the battery bottom is aligned to the top of the case.
- Press the upper part of the Battery Pack toward the frame until it clicks into place to secure it.

11. Make sure that it is securely attached by pulling the Battery Pack after installation.

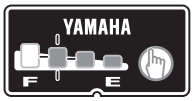
⚠ WARNING

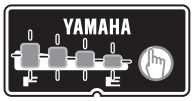
- **Do not short the contacts of the Battery Pack. Doing so could cause the Battery Pack to become hot or catch fire, resulting in serious injury or property damage.**
- **Do not disassemble or modify the Battery Pack. Doing so could cause the Battery Pack to become hot or catch fire, resulting in serious injury or property damage.**
- **Do not dispose of the Battery Pack in a fire or expose it to a heat source. Doing so could cause an explosion, resulting in serious injury or property damage.**
- **Do not drop the Battery Pack or subject it to impact. Doing so could cause the Battery Pack to become hot or catch fire, resulting in serious injury or property damage.**

NOTICE

Make sure there is no foreign matter on the Battery Pack contacts before inserting the Battery Pack.

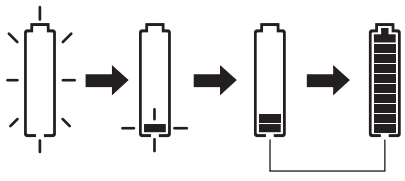
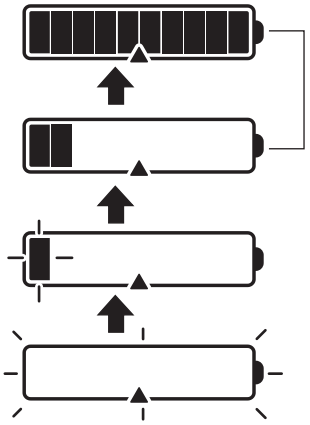
Reading the charging status for Battery Pack

Battery charger lamp	Battery capacity indicator lamps	Current status	Details
BATTERY CHARGE YAMAHA On	Lit battery capacity indicator lamps indicate the amount of charging completed. A flashing battery capacity indicator lamp indicates current progress. **(Rear Carrier Battery)**  **(External Crossover Battery)**  (Example: Battery is approximately 50–75 % charged.)	Charging	During charging, the battery capacity indicator lamps light up one by one.

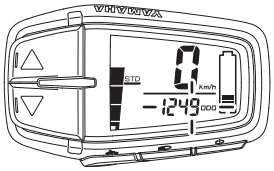
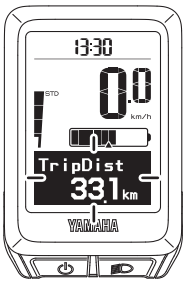
Battery charger lamp	Battery capacity indicator lamps	Current status	Details
BATTERY CHARGE YAMAHA Off	**(Rear Carrier Battery)**  **(External Crossover Battery)**  Off	Charging completed	When charging is complete, the battery charger lamp on the Battery Charger and the battery capacity indicator lamp on the Battery Pack go off.
	Four lamps flash simultaneously. **(Rear Carrier Battery)**  **(External Crossover Battery)**  	Battery Pack is in standby mode. * The Battery Pack internal temperature is too high or too low.	Charging will automatically restart when a temperature is reached that allows charging. (See “Appropriate charging environments”.) When possible, always perform charging at the optimal temperature of 15–25 °C.

Reading the charging status for Display Unit (Applies only to models equipped with the Multi Location Battery.)

To check the charge status, turn on the power of the Display Unit.

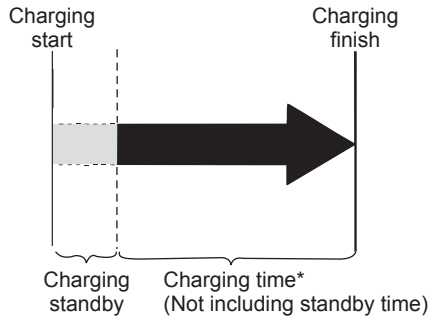
Battery charger lamp	Display Unit	Current status	Details
BATTERY CHARGE YAMAHA On	**(Display A)**  0% <0.2 second intervals> 1–10% <0.5 second intervals> 11–99% **(Display B)**  11–99% 1–10% <0.5 second intervals> 0% <0.2 second intervals>	Charging	The battery capacity indicator slowly increases.

Battery charger lamp	Display Unit	Current status	Details
BATTERY CHARGE YAMAHA Off	**(Display A)** All segments of the battery capacity indicator light up.  **(Display B)** **All segments of the battery capacity indicator light up.** 	Charging completed	When charging is complete, all segments of the battery capacity indicator of the Display Unit will go off and the battery charger lamp of the Battery Charger will go out.

Battery charger lamp	Display Unit	Current status	Details
BATTERY CHARGE YAMAHA Off	**(Display A)** All function display items are flashing.  **(Display B)** All function display items are flashing. 	Battery Pack is in standby mode. * The Battery Pack internal temperature is too high or too low.	Charging will automatically restart when a temperature is reached that allows charging. (See “Appropriate charging environments”.) When possible, always perform charging at the optimal temperature of 15–25 °C.

TIP

For example, even if normal charging is started, if the Battery Pack temperature or the surrounding temperature is too high or too low, the charging may be extended or charging may be stopped without the Battery Pack being charged sufficiently in order to protect the Battery Pack.



Charging time guidelines

Although charging time varies depending on residual battery capacity and external temperature, if the Battery Pack has been exhausted, this time is typically as indicated in the table below.

Battery Pack	Charging time
Rear Carrier Battery 400	3.5 hours
External Crossover Battery 400	
Rear Carrier Battery 500	4 hours
External Crossover Battery 500	

If the Battery Pack enters standby mode while charging, charging time will increase by an equal amount.

* If charging after a long period of disuse, the charging time will be lengthened depending on the Battery Pack status. However, note that if the battery capacity indicator lamps do not flash in fault pattern (See “Reading the charging status for Battery Pack”), there is no malfunction.

I. Checking the residual battery capacity

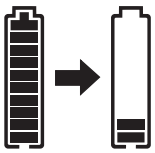
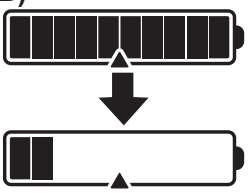
You can check the estimate of how much capacity is left in the Battery Pack and to what extent it is charged. The check can be performed using either the Display Unit's residual battery capacity indicator or the Battery Pack's residual battery capacity indicator lamps.

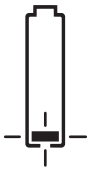
TIP

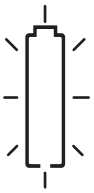
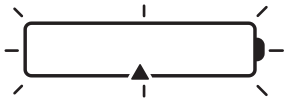
- Even if the Battery Pack's capacity reaches 0 (zero), you can still ride the bicycle as a regular bicycle.
- If you are using an old Battery Pack, the residual battery capacity indicator may suddenly display very little power when you start moving. This is not a malfunction. Once riding stabilizes and the load is reduced, the proper value is displayed.

Residual battery capacity indicator display and estimate of residual battery capacity for Display Unit

The residual battery capacity can be displayed as a numerical value on the Display Unit.

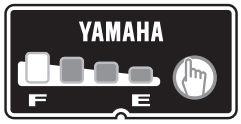
Display of the residual battery capacity for the Display Unit	Display of the residual battery capacity	Applicable situation
(Display A)  **(Display B)** 	100–11 %	(Display A, Display B, and Display C) When you turn on the power of the Display Unit and ride continually after the Battery Pack is fully charged, the segments for the residual battery capacity indicator go out one by one each time the residual battery capacity is reduced by 10 %.

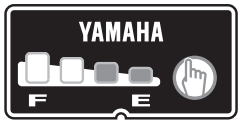
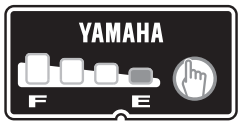
Display of the residual battery capacity for the Display Unit	Display of the residual battery capacity	Applicable situation
(Display A)  <0.5 second intervals> **(Display B)**  <0.5 second intervals>	10–1 %	There is very little residual battery capacity left. Please charge the Battery Pack soon.

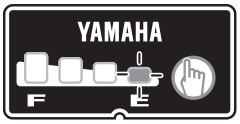
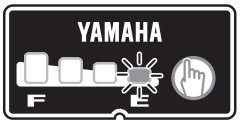
Display of the residual battery capacity for the Display Unit	Display of the residual battery capacity	Applicable situation
(Display A)  <0.2 second intervals> **(Display B)**  <0.2 second intervals>	0 %	There is no more residual battery capacity. Turn off the power for the Display Unit and charge the Battery Pack soon. * Assist is stopped, but you can still ride the bicycle as a regular bicycle.

Display of the battery capacity indicator lamps and the estimate of the residual battery capacity

When checking the residual battery capacity, push the battery capacity indicator button "".

Display of the battery capacity indicator lamps	Estimate of the residual battery capacity	Applicable situation
(Rear Carrier Battery)  **(External Crossover Battery)**  	100–76 %	From full charge (100 %), the battery capacity indicator lamps turn off, one by one.
(Rear Carrier Battery)  **(External Crossover Battery)**  	75–51 %	

Display of the battery capacity indicator lamps	Estimate of the residual battery capacity	Applicable situation
(Rear Carrier Battery)  **(External Crossover Battery)**  	50–26 %	From full charge (100 %), the battery capacity indicator lamps turn off, one by one.
(Rear Carrier Battery)  **(External Crossover Battery)**  	25–11 %	

Display of the battery capacity indicator lamps	Estimate of the residual battery capacity	Applicable situation
(Rear Carrier Battery)  **(External Crossover Battery)**  Slow flashing <0.5 second intervals>	10–1 %	There is very little battery capacity left.
(Rear Carrier Battery)  **(External Crossover Battery)**  Fast flashing <0.2 second intervals>	0 %	The battery capacity has reached 0 (zero). Please charge the Battery Pack.

J. 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 Pack?
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?
4	Display unit*	Is the display mounted correctly?

* Applies to Display B.

K. Cleaning, maintenance and storage

⚠ WARNING

For bicycles equipped with a Multi Location Battery 400/500, do not remove the Battery Pack from the bicycle when cleaning the bicycle. Otherwise, water could enter the connector and cause heat generation, smoke and/or a fire.

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 or Display Unit or Battery Pack. Should water get inside one of these units, have a bicycle dealer inspect your bicycle.

Caring for the Battery Pack

Use a moist, tightly-wrung towel to wipe off dirt on the Battery Pack. Do not pour water directly on the Battery Pack, such as with a hose.

NOTICE

Do not clean the contacts by polishing them with a file or using a wire, etc. Doing so could result in a fault.

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.

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

Long storage period (1 month or longer) and using it again after a long storage period

- When storing the bicycle for a long period (1 month or longer), remove the Battery Pack and store it using the following procedure.
- Decrease the residual battery capacity to where one or two battery capacity indicator lamps are lit, and store it indoors in a cool 15–25 °C, dry place.
- Check the residual battery capacity once a month, and if only one battery capacity indicator lamp is flashing, charge the Battery Pack for about 10 minutes. Do not let the residual battery capacity become too low.

TIP

- If you leave the Battery Pack at “full charge” or “empty”, it will deteriorate quicker.
- Due to self-discharge, the Battery Pack slowly loses its charge during storage.
- The Battery Pack’s capacity decreases over time but proper storage will maximize its service life.

- When using it again after a long storage period, be sure to charge the Battery Pack before using it. Also, if you are using it again after storing it for 6 months or longer, have your bicycle inspected and maintained at a dealer.

L. Transport

The Battery Packs are subject to the Dangerous Goods Legislation requirements. When being transported by third parties (e.g. via air transport or forwarding agency), special requirements on packaging and labels must be observed. To prepare the item for shipping, consult a hazardous materials expert. The customer can transport the Battery Packs by road without further requirements. Do not transport damaged Battery Packs.
Tape or mask off open contacts and pack up the Battery Pack in such a manner that it cannot move around in the packaging. Be sure to observe all local and national regulations. In case of questions concerning transport of the Battery Packs, please refer to a bicycle dealer.

M. Disposal

The Drive Unit, Battery Pack, Battery Charger, Display 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, 2006/66/EC and related national laws, electrical devices/tools that are no longer usable, defective or used Battery Packs/batteries, must be collected separately and disposed of in an environmentally correct manner.
Please return Battery Packs that are no longer usable to a bicycle dealer.

⚠ WARNING

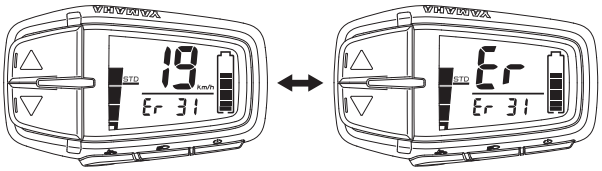
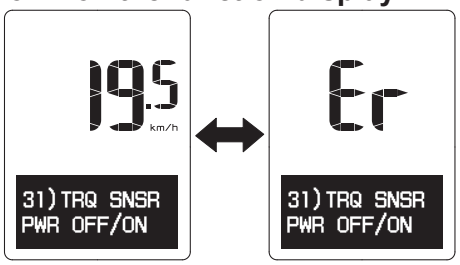
Do not dispose of the Battery Pack in a fire or expose it to a heat source. Doing so could cause fire, or explosion, resulting in serious injury or property damage.

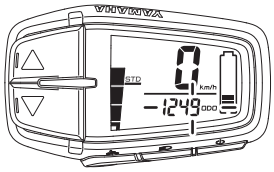
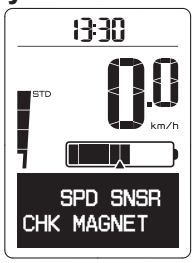
O. Troubleshooting

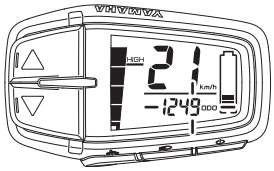
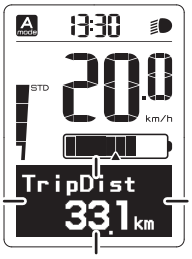
e-Bike Systems

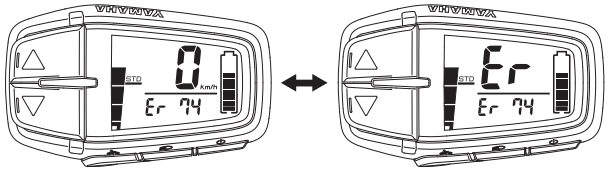
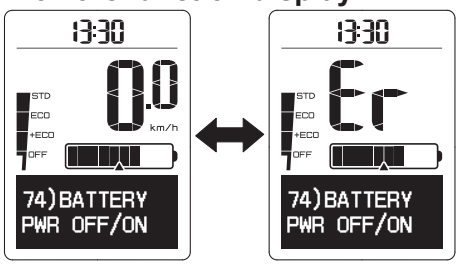
Symptom	Check	Action
Pedaling is difficult.	Is the Display Unit's power on?	**Press the power switch on the Display Unit to turn the power on.**
	Is the Battery Pack installed?	**Install a charged Battery Pack.**
	Is the Battery Pack charged?	**Charge the Battery Pack.**
	Has the bicycle remained not 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.**
	(Display B) Is the display set correctly?	**Set the display correctly.**

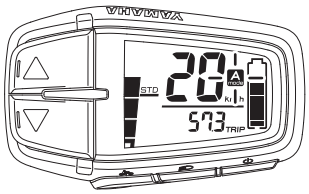
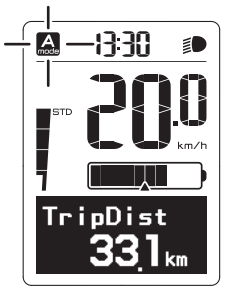
Symptom	Check	Action
The Drive Unit turns on and off while riding.	Is the Battery Pack correctly installed?	**Check to make sure the Battery Pack is locked in place. If this problem still occurs with the Battery Pack firmly locked in place, there may be a loose connection with the Battery Pack terminals or wires. Have a bicycle dealer inspect your bicycle.**
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.**

Symptom	Check	Action
(Display A) **The main riding display and "Er" are displayed alternately, and an error code is indicated in the function display.**  **(Display B)** **The speedometer and "Er" will be shown alternately, and an error message other than errors relating to the battery pack will be shown on the function display.**  		**The problem occurs in the e-Bike Systems. Turn off the power and then turn it on again.** **If the problem cannot be solved, have your bicycle inspected by a dealer as soon as possible.**

Symptom	Check	Action
Traveling range has decreased.	Are you fully charging the Battery Pack?	**Charge the Battery Pack until full (F).**
	Are you using the system under low-temperature conditions?	**Normal traveling range will be restored when the ambient temperature rises. Additionally, storing the Battery Pack indoors (in a warm location) before use will improve traveling range under cold conditions.**
	Is the Battery Pack worn out?	**Replace the Battery Pack.**
(Display A) **The speed is not displayed even while riding, and the function display is flashing.**  **(Display B)** **An error description is indicated in the function display.** 		**The speed sensor cannot detect a correct signal.** **Turn off the power to the Display Unit and then turn it on again.** **Select the assist mode and then ride for a short distance.** **Also, make sure the magnet is mounted correctly.**

Symptom	Check	Action
(Display A) **The speed is displayed but the function display is flashing. (Power assist is stopped.)**  **(Display B)** **The function display are flashing. (Power assist is stopped.)** 		**This is not a malfunction. It is in a state that the operation of the e-Bike Systems is normal. This state may occur depending on the pedaling strength and riding speed, but it returns to normal condition if it is confirmed that the system is normal.**

Symptom	Check	Action
(Display A) **The main riding display and “Er” are displayed alternately, and an error code is indicated in the function display.**  **(Display B)** **The main riding display and “Er” will be shown alternately, and an error message relating to the battery pack error will be shown on the function display.**  		**The problem occurs in the Battery Pack. Turn off the power and then turn it on again. If the problem cannot be solved, have your Battery Pack inspected by a dealer as soon as possible.**

Symptom	Check	Action
(Display A) **The Automatic Support Mode indicator is flashing.**  **(Display B)** **The Automatic Support Mode indicator is flashing.** 		**There could be a problem inside the Drive Unit. Turn off the power to the Display Unit and then turn it on again.** **If the problem cannot be solved, have your bicycle inspected by a dealer as soon as possible.**

Walk assist function

Symptom	Check	Action
The walk assist function turns off.	Is the tire locked for a few seconds?	**Release your finger from the walk assist switch for a moment, and after making sure that the tires turn, push the switch again.**
	Did you pedal while the walk assist function was running?	**Take your feet off the pedals and remove your finger from the walk assist switch for a moment, and then press it again.**

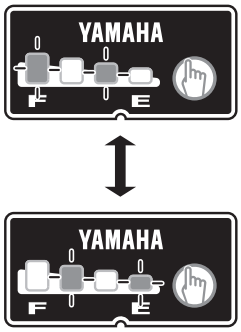
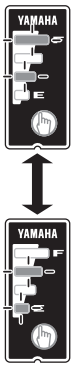
Power supply of external devices via USB connection

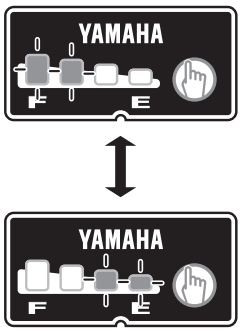
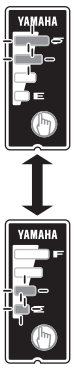
* Applies to Display B, Display C, and Interface X.

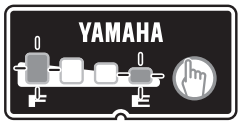
Symptom	Check	Action
Power is not supplied.	Is the Display Unit's power on?	**Press the power switch on the Display Unit to turn the power on.**
	Is the USB version correct?	**Use an external device that complies with USB 2.0.**
	Is the USB cable type correct?	**Use an OTG cable. Also connect the host side to the display.**
	Is the USB cable firmly connected?	**Reconnect the USB cable.**
	Is the USB port or USB plug terminal dirty or wet?	**Disconnect the USB cable from the Display Unit and external device. Remove the dirt and water on the USB port and USB plug terminal and reconnect the cable.**

Battery Pack and Battery Charger

Symptom	Check	Action
Cannot charge	Is the power plug firmly connected? Is the charging plug firmly inserted in the Battery Pack?	**Reconnect and try charging again. If the Battery Pack still does not charge, the Battery Charger might be malfunctioning.**
	Are the residual battery capacity indicator lamps lit?	**Review charging method and try charging again. If the Battery Pack still does not charge, the Battery Charger might be malfunctioning.**
	Are the Battery Charger or Battery Pack contact terminals dirty or wet?	**Remove the Battery Pack from the Battery Charger and the charging plug from the socket. Use a dry cloth or cotton swab to clean the Battery Charger and Battery Pack contact terminals. Then reconnect both the Battery Pack and the Battery Charger.**

Symptom	Check	Action
(Rear Carrier Battery)  (External Crossover Battery)  	There is a contact fault in the contact terminals.	**Remove the Battery Pack from the bicycle.** **Then connect the charging plug into the Battery Pack. (If battery capacity indicator lamps still flash alternatively, there might be a fault in the Battery Pack).** **When the Battery Pack is remounted on the bicycle and the power switch of the Display Unit is pressed, if battery capacity indicator lamps still flash alternately, there might be a fault in the Drive Unit.**

Symptom	Check	Action
(Rear Carrier Battery)  	There is a contact fault in the contact terminals.	**Remove the Battery Pack from the Battery Charger, mount the Battery Pack on the bicycle and press the power switch of Display Unit. When the charging plug is reconnected into the Battery Pack, if battery capacity indicator lamps still flash simultaneously, there might be a fault in the Battery Charger.**
(External Crossover Battery)  	Is the charging connector on the Battery Pack wet?	**Clean the charging connector and charging plug. Then dry them. Afterwards, connect the charging plug to the charging connector.**

Symptom	Check	Action
Both side battery capacity indicator lamps are flashing simultaneously. (Rear Carrier Battery)  (External Crossover Battery)  		**The Battery Pack protection feature has been activated and the system cannot be used. Replace the Battery Pack at a bicycle dealer as soon as possible.**
The Battery Charger emits abnormal noises, foul odors or smoke.		**Unplug the charging plug and immediately cease operation.** **Have a bicycle dealer inspect your bicycle.**
The Battery Charger becomes hot.	It is normal for the Battery Charger to become somewhat warm during charging.	**If the Battery Charger is too hot to be touched by hand, unplug the charging plug, wait for it to cool, and consult a bicycle dealer.**
After charging, all of the battery capacity indicator lamps do not light up when the battery capacity indicator button "(hand)" is pressed.	Has the charging plug been unplugged or the Battery Pack removed during charging?	**Charge the Battery Pack again.**
	Did you start charging with the Battery Pack at a high temperature, such as immediately after use?	**Move to a location where the Battery Pack temperature can reach the range where charging is possible (15–25 °C), and then start charging again.**
After disconnecting the charging plug on the Battery Charger from the Battery Pack, the battery capacity indicator lamps continue to light up.	Is the charging connector on the Battery Pack wet?	**Clean the charging connector and charging plug. Then dry them.**

P. Specifications

Drive Unit

PWseries CE	Range of assist speed		0 to less than 25 km/h
	Electric motor	Type	Permanent Magnet Synchronous Motor
		Rated output	250 W
	Assist power control method		Control method depends on pedaling torque and bicycle speed
PWseries ST	Range of assist speed		0 to less than 25 km/h
	Electric motor	Type	Permanent Magnet Synchronous Motor
		Rated output	250 W
	Assist power control method		Control method depends on pedaling torque and bicycle speed

Battery Pack

Rear Carrier Battery 400/500	Type	PASB5 (Lithium-ion battery)
	Voltage	36 V
	Capacity	11 Ah/13.6 Ah
	Number of battery cells	40
External Crossover Battery 400/500	Type	PASB6 (Lithium-ion battery)
	Voltage	36.5 V/36 V
	Capacity	11 Ah/13.4 Ah
	Number of battery cells	40

Product Information UK CA	Product Name	• Rear Carrier Battery 500 • External Crossover Battery 400/500
	Manufacturer	YAMAHA MOTOR CO., LTD. 2500 Shingai, Iwata, Shizuoka 438-8501, Japan

* Even if a Battery Pack is not listed in the product name field of the table above, it is UKCA conformed if the UKCA marking is placed on it.

Battery Charger

PASC9	Input voltage	AC 220–240 V/50–60 Hz
	Maximum output voltage	DC 42 V
	Maximum output current	DC 4.0 A
	Maximum consumed power	310 VA/180 W (Charged at AC 240 V)
	Applicable type Battery Pack	PASB6
PASC10	Input voltage	AC 220–240 V/50–60 Hz
	Maximum output voltage	DC 42 V
	Maximum output current	DC 4.0 A
	Maximum consumed power	310 VA/180 W (Charged at AC 240 V)
	Applicable type Battery Pack	PASB2/PASB4/PASB5

Battery Pack and Battery Charger information is also available at the following internet address:
https://global.yamaha-motor.com/business/e-bike-systems/products/battery-charger/

Display Unit

Display A	Power supply portion	—	
	Wireless communication portion	—	
Display B	Power supply portion	USB port type	USB2.0 Micro-B
		Output current	Max. 1000 mA
		Rated voltage	5 V
	Wireless communication portion	—	
	Product Information	Model No.	X3M
		Manufacturer	YAMAHA MOTOR CO., LTD. 2500 Shingai, iwata, Shizuoka 438-8501, Japan
		Trade mark/ Trade name	YAMAHA

Maintenance

The E-Bike system is maintained according to the section: “Cleaning and storage”.¨

It is recommended to clean the bike and lubricate moving parts at regular intervals.

However, be aware that wearing parts must be replaced as necessary. If possible, the timing of replacing the parts should be detected in time so that repairs are minimized.

If these guidelines are not followed, the risk of damage increases and the warranty on the bike will be lost.

To maintain and keep the E-bike in good condition, we recommend an inspection twice a year, but at least once a year at an authorized dealer.

Traffic law

It is important to abide by local traffic laws and ride based on the conditions. We recommend using a helmet as well as lights.

Warranty

If there are defects in the material that occur during delivery or manufacture within two years of delivery to the buyer, HF Christiansen A/S or a designated dealer will rectify the defect without any repair costs, unless the defect is excluded from the warranty according to:

In the following, “HF Christiansen A/S” means “HF Christiansen A/S or someone for whom HF Christiansen A/S is responsible”.

The duty to rectify errors as referred to in the above section. without any cost, however, does not apply:

• Errors caused by external influences, including on the paint.

• Errors caused by the use of non-original spare parts that do not correspond in quality to original spare parts.

• Errors that have arisen or worsened due to lack of maintenance and non-compliance with the requirements for checking the delivered, or poor work carried out by an unauthorized repairer.

• Errors or damages which the buyer has not notified HF Christiansen A/S within a reasonable time.

• Errors or damages that the buyer has been aware of, but that the buyer has not chosen within a reasonable time to have HF Christiansen A/S remedied.

• If repairs are carried out within a reasonable time, the buyer is not entitled to compensation, proportionate refusal, cancellation or redelivery.

• The buyer delivers and collects at his own expense the delivered goods at the repair location specified by HF Christiansen A/S within the country’s borders.

• The burden of proof that there is a defect in material or manufacturing rests with the buyer. The same applies to the burden of proof that the fault occurred during delivery.

• In the first 6 months after delivery, however, a detected fault is assumed to have been present at the time of delivery.

• Repair costs relating to errors due to the buyer not caring for the purchased item correctly, including failing to carry out such maintenance as the conditions and the manual as well as other documents handed over to the buyer at the latest at the same time as delivery require, shall be handled by the buyer.

• The same applies to costs for repairs as a result of natural wear and tear, damage caused by overloads, as well as damage caused by constructive changes to the item.

Warranty

• The buyer's claim in accordance with the present warranty provisions must be submitted to HF Christiansen A/S within a reasonable time after a error has been detected, and at the latest before the end of the two-year warranty period, since the warranty and HF Christiansen A/S otherwise can no longer be held responsible.

• HF Christiansen A/S can only be held responsible for losses caused by defects of what has been delivered if the buyer proves that the loss is a foreseeable consequence of errors or negligence committed by HF Christiansen A/S.

• HF Christiansen A/S is not liable for indirect damages and consequential losses unless the buyer can document that:

  • HF Christiansen A/S has acted contrary to common decency.

  • HF Christiansen A/S has given the buyer misleading information that HF Christiansen A/S did not have reason to believe to be correct.

  • HF Christiansen A/S has neglected to provide the buyer with information about a defect such as HF Christiansen A/S knew or should have known; the E-Bike lacks characteristics, whether to be considered a given accompanying feature of the product; or the deficiency exists due to negligence from HF Christiansen A/S.

Approvals

Your bike is produced according to the guidelines in the EU standard EN 14764 (City- and trekking bikes) and EPAC EN 15194. The bike is CE approved.

Insurance

It is recommended that you talk to your insurance company about the insurance conditions regarding an E-Bike.

○ **Frame number**
The E-Bike is equipped with a frame number. It is located on the left side just above the motor.

Reklamationsret

For cykler leveret af medlemmer af FAPIC gælder nedenstående reklamationsbestemmelser

Købelovens regler er gældende for reklamationsretten. Købelovens regler kan ses på Forbrugerstyrelsens hjemmeside www.forbrug.dk.
Vær opmærksom på, at krav om udbedring af mangler ved cyklen indenfor reklamationsfristen efter købelovens regler gælder kun, hvis ansvaret for de opståede mangler skyldes forhold, som sælger er ansvarlig for. Sælger er uden ansvar, hvis manglerne f.eks. skyldes hærværk, påkørsel, manglende vedligehold, unormalt brug eller almindeligt slid.
Såfremt stel, gaffel eller farve er udgået og ikke kan repareres, vil det blive erstattet af den model eller farve, der ligner mest.
Reklamationsretten bortfalder, såfremt der fra anden side er foretaget eller forsøgt reparation eller ændring af stel eller gaffel.
Konstateres fejl eller mangler er det vigtigt, at der omgående rettes henvendelse til den cykelhandler, hvor cyklen er købt.

Service

In order to maintain and preserve the condition of the E-bike, we recommend an inspection twice a year, but at least once a year.

Ordering a service inspection can be done at your dealer.

Date and dealer stamp:	Date and dealer stamp:
Date and dealer stamp:	Date and dealer stamp:
Date and dealer stamp:	Date and dealer stamp:
Date and dealer stamp:	Date and dealer stamp:

Date and dealer stamp:	Date and dealer stamp:
Date and dealer stamp:	Date and dealer stamp:
Date and dealer stamp:	Date and dealer stamp:
Date and dealer stamp:	Date and dealer stamp:
Date and dealer stamp:	Date and dealer stamp:

CE declaration of conformity 2023

Distributor:
HF Christiansen A/S
Hvidemøllevej 9-11
DK-8920 Randers NV

Hereby confirms that the following products are in compliance according to:
Directive 2006/42/EC
Directive 2014/30/EU
Directive 2011/65/EU
The design meets the requirements for EN 15194: 2017

Production year - 2023

Product:
Yamaha PW-CE & PW-ST

Model:
MBK Vitesse, MBK Airborn, MBK Octane Cross,
Nishiki PRO SLE, Nishiki PRO SLB,
Centurion Invincible, Centurion Challenger, Centurion Image
Winther Superbe 3, Winther Superbe 3 LTD

Randers, Danmark	5/11/2022	
Location	Date	Michael Hansen Product manager, E-Bikes

HF Christiansen A/S

Hvidemøllevej 9-11
DK - 8920 Randers NV.

+45 86 42 33 33
info@hfchristiansen.com
www.hfchristiansen.com

HF Christiansen A/S

Hvidemøllevej 9-11
DK - 8920 Randers NV.

+45 86 42 33 33
info@hfchristiansen.com
www.hfchristiansen.com