



POWER  
ASSIST BICYCLES

## OWNER'S MANUAL



**BOOSTER**

**X3W-F819D-EA**

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## USE OF YOUR DATA

**This is a brief summary of how Yamaha (Yamaha Motor Co. Ltd., and Yamaha Europe N.V.) uses your data. For more details, please go to Yamaha Europe N.V. website and see our Privacy Policy <https://www.yamaha-motor.eu/gb/en/#/>**

### **What data we collect? and How we collect your data?**

This bicycle collects three types of data through integrated Drive Unit controller.:

(1) Component identification number; (2) live data showing the performance of the bicycle such as motor/ battery operating state, mileage; and (3) other data showing the status of the bicycle such as motor/ battery error code.

The collected data will be uploaded to server at Yamaha Motor Co., Ltd. by attaching a special Yamaha diagnostic tool to the bicycle, only when maintenance checks or service procedures are performed.

### **How will we use your data?**

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

### **How we share your data?**

We may share your data with: (i) our subsidiaries, affiliates, and business partners; (ii) dealers in your country or region, and (iii) contractors within the scope necessary to achieve the purpose of use described above.

### **How to contact us**

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

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

**The SOLE PURPOSE of above provided contact information is TO RESPOND DATA PROCESSING INQUIRY AND OTHER KINDS OF INQUIRIES WILL NOT BE RESPONDED.**

Please provide the following information for the proper handling of your inquiry: **(1) Your Name; (2) Your Email Address; (3) Your Country of Residence; and (4) Your bicycle (component) identification number.**

We will use your personal information provided only for the purpose of supporting your data processing inquiry.

# INTRODUCTION

## INTRODUCTION

Thank you for choosing a Yamaha Power Assist Bicycle.

This model is the result of Yamaha's vast experience in the production of fine sorting, touring, and pacesetting racing machines. It represents the high degree of craftsmanship and reliability that have made Yamaha a leader in these fields.

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**Keep this booklet for future reference.**



**If in doubt about the use or maintenance of any Yamaha product, contact your dealer.**

|                                     |                                                                                                                                                       |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Manufacturer</b>                 | <b>FANTIC MOTOR S.P.A.</b><br>Via Tarantelli, 7<br>31030 Dosson di Casier<br>Treviso - Italy                                                          |
| <b>Importer<br/>(UK)</b>            | <b>YAMAHA MOTOR EUROPE N.V.<br/>BRANCH UK</b><br>Units A2-A3, Kingswey Business Park,<br>Forsyth Road,<br>Woking, Surrey. GU21 5SA.<br>United Kingdom |
| <b>Importer<br/>(except for UK)</b> | <b>YAMAHA MOTOR EUROPE N.V.</b><br>Koolhovenlaan 101<br>1119NC Schiphol-Rijk, 1117ZN,<br>Schiphol, the Netherlands                                    |

### Owner's manual download

This owner's manual can be downloaded at the URL:

<https://www.yamaha-motor.eu/gb/en/services/owner-manual/>

Original language: Italian.

Language of translation: English.

## VERSIONS

| Area            | Brakes                    | Unit of measurement | Speed limit for S-Pedelec use |
|-----------------|---------------------------|---------------------|-------------------------------|
| EUROPE / others | front right and rear left | km                  | 45 km/h (28 mph)              |
| UK              | front right and rear left | mi                  | 28 mph (45 km/h)              |

## BASIC INFORMATION

This pedal-assist bicycle is an **S-Pedelec** vehicle.

To be able to use the vehicle you must meet all the requirements of the law:

- be at least 14 years old;
- AM driving licence or higher category driving licence;
- insurance;
- government taxes;
- registration;
- vehicle certificate;
- number plate.
- wear a legally approved helmet.



**Interventions that alter the operating mode of your vehicle are punishable by law.**



**In order to use your vehicle on the road, it is first necessary to check that all the devices prescribed by the highway code (front and rear lights, horn, etc.) are correctly installed and functional.**

### Meaning of S-Pedelec

The name **S-Pedelec** (or Speed e-Bike) is a description in English of what is commonly associated with a pedal-assist bicycle.

In order for a pedal-assist bicycle to be classified as an **S-Pedelec** in category **L1e-B**, according to the classification provided for in European Regulation **168/2013**, the **S-Pedelec** must comply with the following:

- Electric motor with a maximum continuous rated power of 4.00 kW;
- Maximum speed by vehicle construction of 45km/h.



**The A-weighted emission sound pressure level at the driver ears is less than 70 dB(A).**

In some countries it may be necessary to ensure that the bicycle specifications comply with the locally applicable standards. Check all such requirements before using your bicycle.

# INTRODUCTION

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## DESCRIPTION OF SYMBOLS

This manual contains a series of symbols that are intended to draw your attention to particularly important information and instructions. The meaning of these symbols is explained below:

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**HAZARD:** This symbol indicates a potential falling hazard and the consequent risk of personal injury and damage (to both yourself and third parties).



**ATTENTION:** This symbol indicates that improper conduct may result in damage to property or the environment.



**N.B.:** This symbol indicates important information designed to help you get the best out of your bicycle.



**RESPECT THE RECOMMENDED TIGHTENING TORQUE:** This symbol indicates that it is important to apply the correct tightening torque in order to guarantee safety when using your bicycle. In order to do this it is necessary to use a torque wrench. If you do not possess such a tool, we recommend that you ask a qualified technician to carry out this operation. Incorrect tightening torque may result in components breaking or becoming detached, resulting in dangerous falls. Check the list of the correct torque values inside this booklet.

## NOTES FOR PARENTS AND LEGAL GUARDIANS

A parent or legal guardian is responsible for the actions, safety of the under-aged and the safe state of the vehicle.

These vehicles are NOT suitable for use by people under 14 years of age. The driver must comply with the legal conditions and regulations in order to use it. In addition, it must be ensured that they have learned to use the vehicle safely and responsibly. The best way to check this is to use the environment in which the vehicle is intended to be used.

## WEEE DECLARATION



### Directive 2012/19/EU

The WEEE mark that appears on the product and associated documentation indicates that it must not be disposed of together with normal household waste at the end of its working life.

In order to avoid health or environmental damages resulting from incorrect disposal of waste materials, you are requested to separate this product from other types of waste and recycle it responsibly in order to favour the sustainable reuse of recyclable materials.

Private users are invited to contact the vendor from whom they purchased the product or the relevant local authority for all the information necessary about recycling this type of product.

Commercial users are invited to contact their supplier and check the terms and conditions stipulated in the sales contract.

This product must not be disposed of together with other commercial waste.

## SAFETY INFORMATION



**Failure to follow the warnings and instructions provided in this manual could result in failure of the product, an accident, personal injury or death.**

This user and maintenance booklet contains all the information you need to familiarise yourself with your Vehicle, to know its main components and technology, and to learn all the tips necessary for its correct and absolutely safe use.

- Read carefully the information about safety warnings in this booklet. Knowledge of and compliance with the warnings prevents the risk of accidents to yourself, other people, animals or property and allows you to use your vehicle in an environmentally friendly manner.
- Any accident could result in loss of control of the vehicle, damage to the vehicle or its components and, most importantly, expose you or a bystander to the risk of serious personal injury or death.
- Keep this booklet in a safe place for future reference; if the vehicle is transferred to another person, also hand over the user and maintenance booklet.
- The documentation (this booklet, EU Certificate of Conformity, Warranty, etc.) is an integral part of the vehicle and must be retained for its entire life. If the vehicle is sold or transferred, give the documentation to the new user.
- If this document is lost or damaged, request a new copy from the vendor.
- When collecting your vehicle, make sure that your retailer has completed the delivery certificate in full. Make sure that you receive copies of all the documents indicated on the delivery certificate. Contact the vendor if any documents are forgotten or omitted. Only use your vehicle after you have received and carefully read all the documentation.
- Be sure to read and follow all instructions and warnings provided with your electric vehicle and all its equipment.



**If you have any questions regarding the care, maintenance or use of your product, please contact Yamaha dealer.**



**Yamaha reserves the right to modify this documentation in any way it sees fit, for technical or commercial reasons, at any time and without prior notice.**



**This user and maintenance handbook contains all the information necessary to get to know your E-bike, understand the main components and the associated technology, and learn how to use it correctly and safely.**

- Do not under any circumstances make any modifications to any part of the vehicle, including the battery pack (where applicable).
- The components of Yamaha products are designed as a single integrated system. To avoid compromises in terms of safety, performance, durability and function, and to prevent voiding of the warranty, do not substitute any components (such as the battery, charger or electric cords) with components manufactured by other companies. Use only original spare parts.
- Do not open or attempt to make any repairs to the battery pack, charger, power cords or drive unit yourself. They must be repaired only by qualified experts and only with original spare parts. In addition, unauthorized opening of any equipment unit will void any warranty claims.
- Never operate a vehicle if you do not know its full operating and maintenance history. The previous user may have misused/improperly operated the vehicle, making it dangerous to drive.

# SAFETY INFORMATION

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## LEGAL REGULATIONS

EN

 Refer to the “Road surface suitability table” to check whether your vehicle is suitable for road use (as it is not equipped with all the equipment required by the regulations). For the addition of all equipment necessary, contact your trusted dealer, he will be happy to help you.

 Use the vehicle in accordance with its intended purpose.

 This manual provides information and instructions on the use of the vehicle which are in addition to, but not in place of, general or specific RULES, REQUIREMENTS, DECREES OR LAWS in force in the place of use.

All road users are required to comply with the traffic regulations applicable in their country. For example, In Italy and Germany, it is not necessary to obtain permission or hold a driver's license to use an EPAC bicycle on the public roads. You can only ride the EPAC on public roads and streets with the additional equipment required by law in your country (if not already on the bicycle). In Italy and Germany, these requirements are covered by the vehicle road worthiness regulations.

 **If your vehicle is not suitable for road use because it does not have all the equipment required by the regulations, it must be configured in accordance with the regulations. To add all equipment, contact your dealer, they will be pleased to help you.**

In Italy, regulations on the use of pedal-assisted vehicles do not impose any age limits, but the driver must:

- be able to drive the vehicle, i.e. has the basic knowledge of how to operate a vehicle and has the sense of balance necessary to drive and control an EPAC;
- when stationary, is able to get on and off the vehicle safely, especially when using ergonomic saddles if the driver, when seated, is unable to touch the ground with his/her feet;
- has a physical size appropriate to the characteristics of the vehicle and does not exceed the maximum permitted load.

This vehicle can reach high speeds for long periods of time. The driver must ensure that he/she has the stamina to safely control the vehicle for at least two hours.

The vehicle does not compensate for infirmity or a lack of physical fitness.

**Correct use**

The vehicle, described in this manual, is suitable for road and/or off-road use according to the table “Road surface suitability table”.



Using your vehicle for purposes other than its intended use may result in dangerous driving situations, falls and accidents. Improper use may also result in short-circuits inside the battery pack, which can lead to fires.



**ALWAYS** use the vehicle as described in this user booklet and in any supplementary documentation.

**Misuse**

Read the information in paragraph “Correct use” of the safety warnings booklet.



Users may only carry out the operations described in this manual on their own.



It is strictly forbidden for the user to connect and use diagnostic and programming equipment to any of the vehicle’s electronic units (battery, dashboard, etc.).



**ALWAYS** use the bicycle as described in this user booklet and in any supplementary documentation.

**Road conditions table**

| Surface                | Road condition                                                      | Booster |
|------------------------|---------------------------------------------------------------------|---------|
| Public road            | Tarmac paved                                                        | √       |
| Non public road        |                                                                     | √       |
| Public path            | Sand, gravel, earth, etc                                            | √       |
| Non public path        |                                                                     | √       |
| Off-road               |                                                                     | X       |
| Paved touristic track  | Undemanding terrain with slight or medium gradients reasonable flat | √       |
| Un-paved tourist track | Terrain with exposed roots, protrusions, etc                        | X       |
| Bike park              | Dirt track with jumps on specially configured tracks                | X       |
| Downhill               | Very steep descents with suitably configured tracks                 | X       |
| Freeriding             | Competitive and creating riding, fast descents on natural terrain   | X       |

√ - Travel conditions allowed.

X - Travel conditions not allowed.

# DESCRIPTION AND TECHNICAL DATA

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## REMOVING THE PACKAGING

The vehicle is shipped packed and protected with bubble wrap to preserve its mechanical and aesthetic integrity. Remove the packaging carefully and dispose of it in compliance with the locally applicable regulations.

EN



**The items of the packaging (plastic bags, polystyrene, straps, etc.) must not be left within the reach of children.**



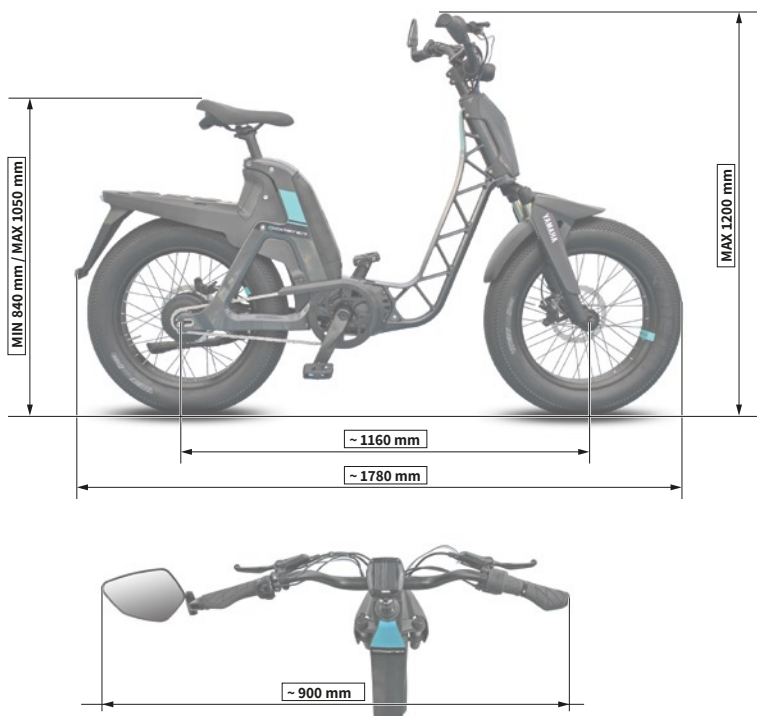
## IDENTIFICATION

### Vehicle Identification Number (V.I.N.)

Each vehicle is fitted with an “A” identification plate bearing the vehicle identification number (V.I.N.) located on the lower part of the frame. Communicate the VIN number indicated on the plate at every request for service or to order spare parts.

## EXTERNAL DIMENSIONS

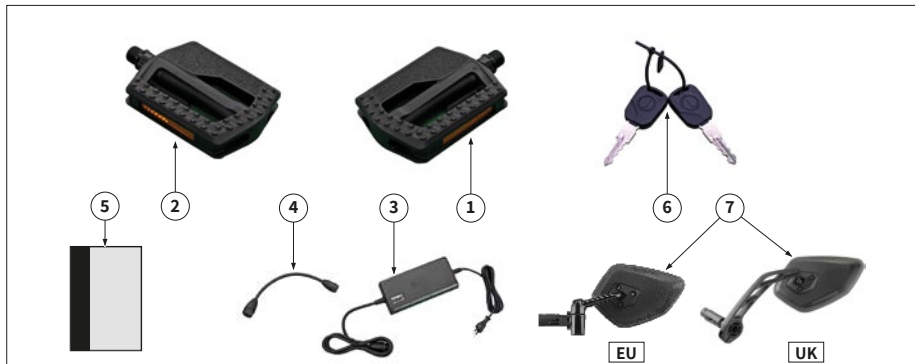
EN



# DESCRIPTION AND TECHNICAL DATA

## STANDARD EQUIPMENT

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After removing the bicycle from its packaging, check that the following components are present:

1. Right pedal
2. Left pedal
3. Battery charger
4. Battery charger adapter
5. "Use and maintenance" booklet
6. Two copies of keys for battery release
7. Rear view mirror

## VEHICLE COMPONENT IDENTIFICATION

EN



- |                                     |                      |
|-------------------------------------|----------------------|
| 1. Right grip                       | 14. Front tire       |
| 2. Handlebar                        | 15. Front rim        |
| 3. Rechargeable Li-Ion battery pack | 16. Front tire valve |
| 4. Battery LED                      | 17. Front wheel hub  |
| 5. Headlight                        | 18. Rear wheel hub   |
| 6. Tail light                       | 19. Gearshift group  |
| 7. Front fender                     | 20. Rear tire valve  |
| 8. Rear carrier                     | 21. Chain            |
| 9. Seat                             | 22. Right Pedal      |
| 10. Seat post                       | 23. Drive sprocket   |
| 11. Battery pack support            | 24. Rear rim         |
| 12. Steering tube                   | 25. Crank            |
| 13. Rear tire                       |                      |

# DESCRIPTION AND TECHNICAL DATA

## VEHICLE COMPONENT IDENTIFICATION

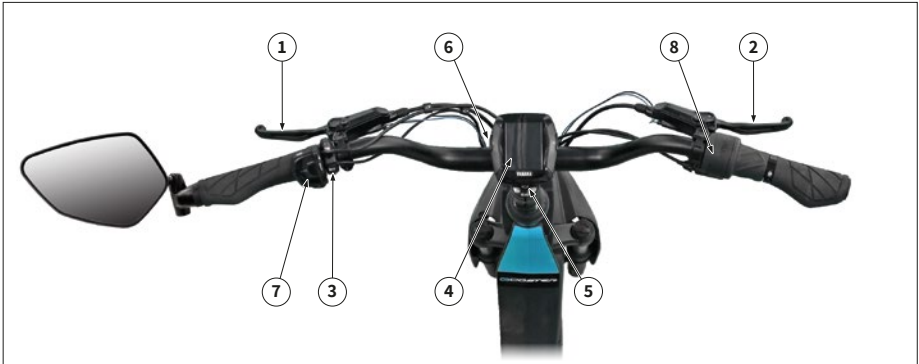
EN



- 26. Left pedal
- 27. Left crank
- 28. Drive Unit
- 29. Left grip
- 30. Handlebar mount
- 31. Fork
- 32. Front brake disc
- 33. Front brake caliper

- 34. Rear brake disc
- 35. Rear brake caliper
- 36. Side stand
- 37. Battery lock
- 38. Horn
- 39. Speed sensor

## CONTROLS ON THE HANDLEBAR



EN

- |                      |                       |
|----------------------|-----------------------|
| 1. Rear brake lever  | 5. USB port           |
| 2. Front brake lever | 6. Power switch       |
| 3. Horn button       | 7. Assist mode switch |
| 4. Display unit      | 8. Gearshift control  |

# DESCRIPTION AND TECHNICAL DATA

## CONTROLS ON THE HANDLEBAR (UNITED KINGDOM ONLY)

EN



1. Rear brake lever
2. Front brake lever
3. Horn button
4. Display unit

5. USB port
6. Power switch
7. Assist mode switch
8. Gearshift control

# DESCRIPTION AND TECHNICAL DATA

## TECHNICAL DATA

**EN**

| Component                                              | Booster                                                                                           |
|--------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| E-Bike                                                 | Weight 36 kg                                                                                      |
| Motor                                                  | PWseries S2                                                                                       |
| Battery                                                | Lithium-ion battery<br>model FTC-004-35SD<br>36 Volt 17.5 Ah (630 Wh)                             |
| Battery Charger                                        | Type PASC9<br>Input voltage AC220 – 240V / 50-60 Hz<br>Max. output voltage / current DC42V / 4.0A |
| Display                                                | Display C Yamaha Multifunction TFT                                                                |
| Frame                                                  | Aluminum                                                                                          |
| Fork                                                   | Zoom CH-879AMS-20"                                                                                |
| Gear change unit                                       | Enviolo Heavy Duty                                                                                |
| Cranks                                                 | 150 mm                                                                                            |
| Pinion                                                 | 16D                                                                                               |
| Crown wheel                                            | 44D                                                                                               |
| Chain                                                  | KMC 1v Z1eHX Narrow (3/32")                                                                       |
| Brake system                                           | Promax DSK-930B                                                                                   |
| Front disk                                             | 180 mm                                                                                            |
| Rear disk                                              | 180 mm                                                                                            |
| Tires                                                  | Vee Tire Speedster 20x4.00                                                                        |
| Front wheel                                            | 20" FAT                                                                                           |
| Rear wheel                                             | 20" FAT                                                                                           |
| Handlebar                                              | 740 mm                                                                                            |
| Handlebar mount                                        | Promax 40 mm                                                                                      |
| Headset                                                | FSA semi integrated NO.69 / SRS-HBS-190-1 (1-1/8", 36° / 45° ACB)                                 |
| Pedals                                                 | VP Components VPE-889P                                                                            |
| Seatpost                                               | Promax 350 mm                                                                                     |
| Seat                                                   | Selle Royal Orbis Unitech                                                                         |
| Grips                                                  | Switch 92-130                                                                                     |
| Working temp                                           | 0/45 °C                                                                                           |
| Rear carrier                                           | Maximum allowable load: 25 Kg                                                                     |
| Maximum permissible total payload (rider plus luggage) | 125 kg                                                                                            |

# DESCRIPTION AND TECHNICAL DATA

EN



## VEHICLE DESCRIPTION

### Brakes

The bicycle is fitted with two, independent disk brakes. The left lever applies the rear wheel brake and the right lever applies the front wheel brake.



**Ride with caution until the braking system running in period has been completed.**



**Run the braking system in by carrying out 30 brief braking manoeuvres, coming to a complete standstill from a medium speed (approx. 25 km/h).**



**Once the braking system has been run in, the braking force will be noticeably greater.**



**Operating the brake levers too sharply may cause the wheels to lock and expose the rider to the rider of falling.**



### Gearshift

The bicycle is equipped with a gearshift inserted inside the hub of the rear wheel. A continuously variable transmission is available. The gearshift offers the best ratio for each speed and helps to climb the slopes more easily.



**In order to prevent the motor traction from damaging the chain, reduce the pressure exerted on the pedals before changing gears.**



### Frame and fork

The bicycle has a frame with a damped front fork.

# DESCRIPTION AND TECHNICAL DATA



## Wheel units

The wheel units are called “front wheel” and “rear wheel”.

The units are composed of:

- Hub
- Gearshift (in the rear hub)
- Brake disc
- Spokes
- Rim
- Tire
- Inner tube with valve
- Front mudguard
- Rear rack

EN



## Electrical devices

The bicycle is equipped with a power assist control instrument.

The components of the electric power assisted system and their use are described in chapter “DISPLAY”.



## Battery pack

The battery pack must be fixed to the frame. For safety reasons, the battery pack can be locked to the support using one of the keys supplied. The battery pack is supplied with the dedicated charger complete with the cables needed for recharging.



Do not expose the battery to heat and open flames



Do not modify or disassemble the battery



Read the Owner's manual



Do not dispose of the battery in the sea

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

# CHECKS AND INSPECTIONS

## WHEN USING THE VEHICLE FOR THE FIRST TIME



Before using your vehicle, please read this booklet carefully.

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The vehicle is delivered to the dealer pre-assembled. Some safety-relevant components are not fully assembled, your dealer must carry out the final assembly of the vehicle and make it safe.

- Make sure that the retailer has completely filled out the testing and inspection form before delivery (see the safety warnings in this booklet).
- Only use the vehicle in a sitting position suitable for the user.
- Adjust the position and height of the seat (see chapter "SEAT ADJUSTMENT").
- Ask your dealer for instructions on the technical devices of the bicycle.
- Fully charge the battery pack (see chapter "USE OF ASSIST MODES").

## BEFORE EACH USE OF THE VEHICLE



A vehicle that is not safely operated can lead to dangerous riding situations, falls and accidents.

- Before using the vehicle, check that it is safe to operate. Also consider the possibility that, while unattended, the vehicle may have fallen to the ground or been handled by someone else.
- Read the information in the safety warnings booklet.

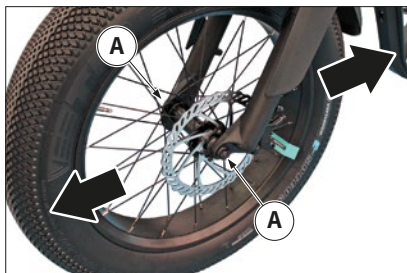


Visually check every part of the vehicle for notches, cracks, deep cracks and other mechanical damage. If you find any defects, contact your vendor.

## CHECKING WHEELS AND TIRES



The tread depths should never be less than 1 mm (0.03 in) or less than required by the legislation in force in the country where the vehicle is used.



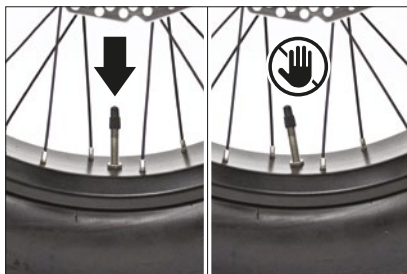
### Wheel fixing check

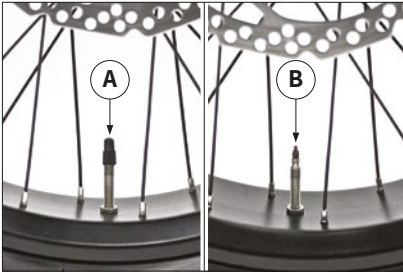
Operating first on one wheel and then on the other, shake the wheel unit with force transversally with respect to the direction of travel; the locking mechanism of the wheel unit must not move. The two nuts "A" must be tightened. No squeaking or creaking must be heard.

### Checking the tire valves

If the bicycle is ridden when the tire pressure is too low, it may displace the position of the tire and inner tube on the wheel rim, so that the valve assumes an oblique position. In this case, the base of the valve may be torn away from the inner tube while the bicycle is in use, resulting in a sudden loss of tire pressure.

- Check the position of the valves: they must be pointing towards the centre of the wheel.
- If necessary, deflate the tire, loosen the valve nut (if present) and attempt to correct the position.
- Re-tighten the valve nut (if present) and re-inflate the tire.





## Checking the tire pressure

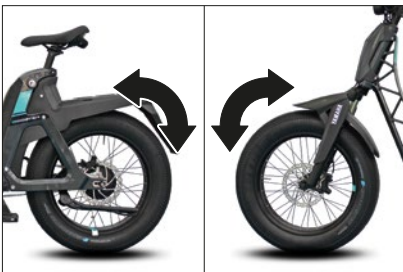
If the tire pressure is too low:

- It may displace the position of the tire and inner tube on the wheel rim, so that the valve assumes an oblique position. In this case, the base of the valve may be torn away from the inner tube while the bicycle is in use, resulting in a sudden loss of tire pressure.
- The tire may become detached from the wheel rim on curves
- The frequency of faults is increased.

**i** The higher the body weight and the load, the higher the tire pressure must be. The reference values are shown in the table below. Consider that the values shown in the table are purely indicative. If in doubt, contact your dealer or a tire dealer. Always respect the minimum and maximum pressure indicated on the tire.

| Booster |                                              |
|---------|----------------------------------------------|
| Use     | Tire air pressure (Front / rear)             |
| Road    | 140 kPa (1.4 kgf/cm <sup>2</sup> , 20.3 psi) |

- Unscrew the safety cap “A”.
- Check the pressure using a pressure gauge, or a pump with a built-in pressure gauge.
- If necessary, inflate or deflate the tire (pressing against the internal valve “B”).
- Replace the safety cap “A”.



## Wheel check

Lift the front wheel and turn it with your hand. The rim and the tire must turn in a perfectly circular way. Eccentricity or warping are not allowed.

Operate in the same way for the rear wheel check.

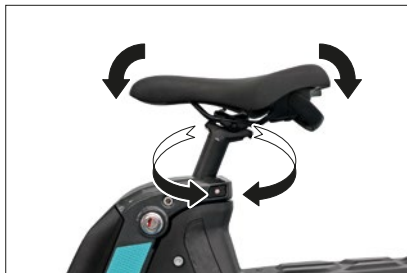
Check that there are no foreign bodies on the wheel units (for example: twigs, fabric residues, etc.), if necessary remove them.

Check that the wheel units have not been damaged by foreign bodies.

If rim reflectors have been fitted, check that they are firmly fixed; if they are loose, remove them.

# CHECKS AND INSPECTIONS

EN



## MAIN COMPONENTS CHECK

### Seat and seat post check



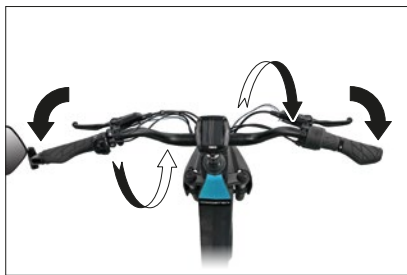
If the seat post is not inserted deep enough, it may come off the frame during riding and cause dangerous riding situations, falls and accidents.

Make sure that the seat post is inserted at the right depth (see chapter "SEAT ADJUSTMENT").

With your hands, try to rotate the seat (where provided) and the post inside the frame.



**They must not move. In case they move, fix them correctly.**



### Handlebar check

If the handlebar and handlebar mount are not correctly installed or damaged they can lead to dangerous riding situations, falls and accidents.

If defects are noticed in these parts or if you are in doubt, do not use the bicycle and contact your dealer or a qualified technician.

Perform visual inspection of the handlebar and its mount; the mount must be parallel to the front wheel

rim and the handlebar must be placed perpendicular. Lock the front wheel between your legs, grab the handlebars at both ends and using your hands try to turn the handlebars in both directions.

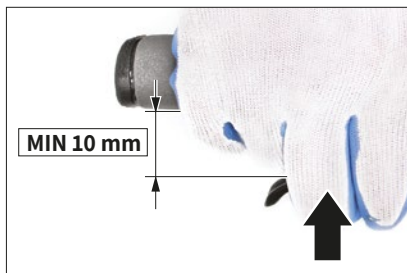
Always forcing with your hands, try to rotate the handlebar inside the mount.

Always on the handlebars, check that the gearshift lever, brake levers and grips are correctly fixed. With your hand search for the levers (one at a time).

Keep the front brake pulled and with short and sharp movements move the bicycle back and forth; the steering unit must not have any clearance. No squeaking or creaking must be heard. If defects are noticed, contact your dealer or a qualified technician.



**No part should move or shift. No squeaking or creaking must be heard. In case they move, fix them correctly.**



## Brake check



**Danger of serious falls. Non-functioning brakes always cause dangerous riding situations, falls and accidents. A brake malfunction can be life threatening.**

Check your brake system with particular care. If defects are noticed or if you are in doubt, do not use the bicycle and contact your dealer or a qualified technician. While stationary, pull both brake levers up to the stop.

The minimum distance between the brake lever and the handlebar grip must be at least 10 mm.



**If the distance is less, go to an authorized workshop to carry out the necessary checks to restore the best operating state.**

Try to move the bicycle back/forth; both wheels must remain locked. Using your hands, pull the brake calliper alternately in all directions. The brake calliper must not move.



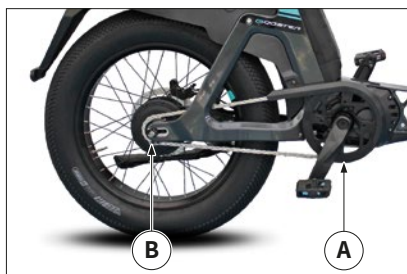
**Dirty brake discs must be cleaned immediately. The presence of oil and/or grease on the brake discs can reduce the braking action and generate dangerous riding situations, falls and accidents.**

While stationary, operate the brake lever several times and keep it pulled. The compression point must not change.

Visually check the brake system starting from the lever and continuing with the cables and brakes. No hydraulic fluid leaks must be noticed.

Check that the brake disc is not damaged. It must be free of notches, breaks, deep scratches and other mechanical damage.

Lift the front wheel first, then the rear wheel and turn it with your hand. The rotation of the brake disc must be smooth.



## Chain check and pedal crank fixing

Operating in two persons, one must lift the rear wheel so that it is no longer in contact with the floor and the other must rotate the right pedal crank clockwise. From the top, observe the alignment of sprocket "A" and pinion "B".



**The minimum eccentricity of the two sprockets is not allowed.**

Make sure there are no foreign bodies and remove them if they are found.

Check that the chain is not damaged. The chain must not have any damage at any point caused by, for example, curved chain links, pins to be riveted that come out, etc. or fixed/locked chain links.

Check the connection of the sprocket to the right pedal crank, making sure there is no clearance.

# CHECKS AND INSPECTIONS

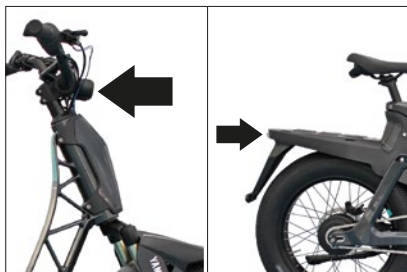
## Electric motor check



**A defective or damaged electric motor can cause a short circuit, with consequent risk of fire.**

Visually check that all electrical cables are intact and correctly installed. Switch on the electric control unit only after all other checks have been completed. Pay attention to the error messages that appear on the display.

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## Lights check



**Danger of falling and accidents in darkness and/or poor visibility conditions. There is a high risk of not seeing obstacles or not being seen by other road users.**

Check the integrity of the front and rear lights.  
Check that the lights come on correctly.

## Frame cover check (optional)



**Check that the accessories are properly secured before riding.**



**Check that the components of the accessories are not damaged, do not move, do not shift or creak: otherwise have them replaced by your dealer or a qualified technician.**



**Wash the frame covers with water and neutral soap using a soft cloth.**

## OTHER CHECKS

Damaged vehicle components may have sharp edges that could cause injury. Check all the components for signs of damage. Ask your vendor or a qualified technician to repair or replace any damaged parts immediately.

## TIGHTENING TORQUE

The corresponding tightening torque (in Nm) is stamped into the heads of the bolts and screws. If no specific information has been provided by the manufacturer, refer to the following tightening torque values.

| Item                        | Thread size | Tightening torque (Nm) |
|-----------------------------|-------------|------------------------|
| Pedals                      | 9/16"       | 30                     |
| Stem expansion bolt         | M6          | 5                      |
| Stem front screws           | M5          | 5                      |
| Stem lateral screws         | M7          | 8                      |
| Seat adjustment screw       | M8          | 15                     |
| Seat post connection nuts   | M8          | 25                     |
| Brake calliper screws       | M6          | 8                      |
| Gearshift control screw     | M4          | 3                      |
| Brake lever connection      | M5          | 5                      |
| Front wheel hub             | M10         | 35                     |
| Rear wheel hub              | M10         | 35                     |
| Cranks screws               | M15         | 50                     |
| Rear-view mirror screws     | M4          | 3                      |
| Front light screws          | M5          | 5                      |
| Horn button screws          | -           | 1.7                    |
| Side kickstand plate screws | M6          | 10                     |

# ASSEMBLY AND ADJUSTMENTS

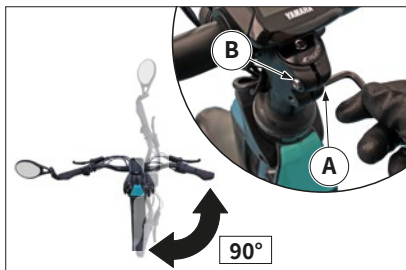
EN



## HANDLEBAR ADJUSTMENT



To avoid overstretching the cables, make the handlebar adjustment before removing the vehicle from the base of the package.

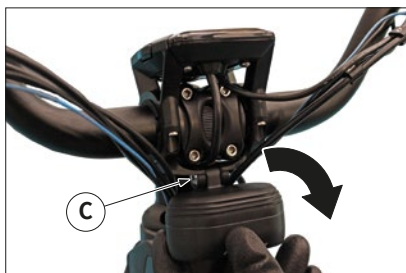


Also for reasons of space, the bicycle is shipped with the handlebar aligned to the frame.

- Use a 6mm Allen key and loosen the screw "A".
- Loosen the screw "B".
- Rotate the handlebar in a position perpendicular to the frame.

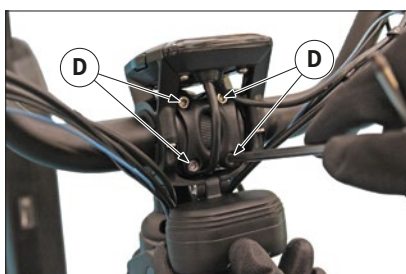


Tighten the two screws "A" and the screw "B" to the correct tightening torque (see the "TIGHTENING TORQUE" table in "CHECK AND INSPECTIONS" chapter).



To adjust the handlebar height:

- Loosen screw "C" with a 4 mm Allen key;
- Lower the front light..



- Loosen screws "D" with a 4 mm Allen key;



Tighten screws "C" and "D" to the correct torque (see the "TIGHTENING TORQUE" table in "CHECK AND INSPECTIONS" chapter).

- Reposition the front light.



To adjust the front light beam, follow the instructions in the "FRONT LIGHT ADJUSTMENT" section.



## PEDALS INSTALLATION

The bicycle, for space reasons, is shipped without the pedals.

To install the two pedals:

- Remove the film that protects the pedals.
- The pedals are different from each other and are marked with the letters "R" (right) and "L" (left).
- Screw the right pedal onto the right pedal crank turning it clockwise.



**Use a 15mm spanner to tighten the pedal (see the "TIGHTENING TORQUE" table in "CHECK AND INSPECTIONS" chapter).**



Screw the left pedal onto the left pedal crank turning it counter-clockwise.



**Use a 15mm spanner to tighten the pedal (see the "TIGHTENING TORQUE" table in "CHECK AND INSPECTIONS" chapter).**



## SEAT ADJUSTMENT

### Height adjustment

- Loosen the locking screw of the seat post.
- Adjust the seat height by moving the seat post to the desired position.



**Do not raise the seat post beyond the indication on it and in any case the part that remains inside the frame must be at least 10cm.**

- Align the tip of the seat towards the front of the vehicle.



**Tighten the screw "A" to the correct tightening torque (see the "TIGHTENING TORQUE" table in "CHECK AND INSPECTIONS" chapter).**

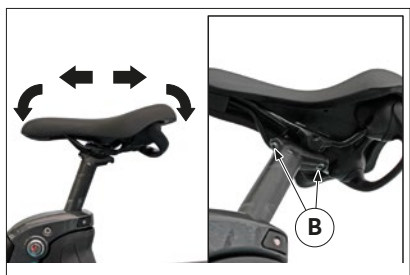


### Seat position and inclination adjustment

- Loosen the seat locking screws "B".
- Adjust the tilt (where applicable) or distance to the handlebars as desired.

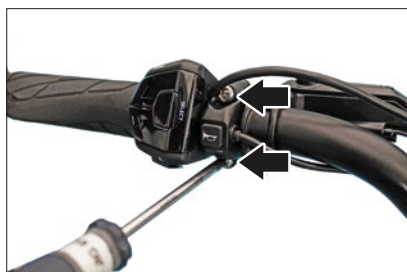
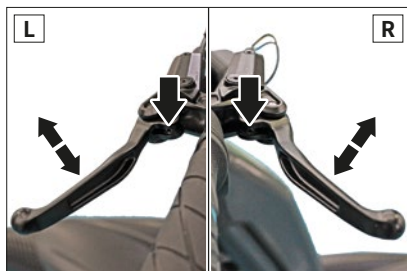
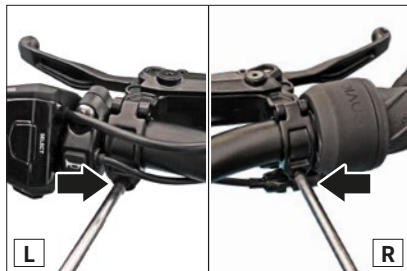


**Tighten the screws "B" to the correct tightening torque (see the "TIGHTENING TORQUE" table in "CHECK AND INSPECTIONS" chapter).**



# ASSEMBLY AND ADJUSTMENTS

EN



## BRAKE LEVERS ADJUSTMENT

If you want to adjust the position of the brake levers:

**i** The operations described apply to both brake levers.

- Loosen the lever locking screw.
- Adjust the lever inclination as desired.

 **Tighten the locking screw to the correct tightening torque (see the “TIGHTENING TORQUE” table in “CHECK AND INSPECTIONS” chapter).**

- Adjust the opening position of the lever using the adjuster.

**i** The lever adjustment screws are black.

- Screw in the adjuster to increase the opening or unscrew it to decrease it

## GEARSHIFT CONTROL ADJUSTMENT

If you want to adjust the position of the gearshift control:

- Loosen the locking screw and the gearshift control.
- Adjust the lever inclination as desired.

 **Tighten the locking screw to the correct tightening torque (see the “TIGHTENING TORQUE” table in “CHECK AND INSPECTIONS” chapter).**

## HORN BUTTON ADJUSTMENT

To adjust the horn button position:

- Loosen the locking screws on the horn button.
- Adjust the inclination of the button as desired.

 **Tighten the locking screws to the correct torque (see the “TIGHTENING TORQUE” table in “CHECK AND INSPECTIONS” chapter).**

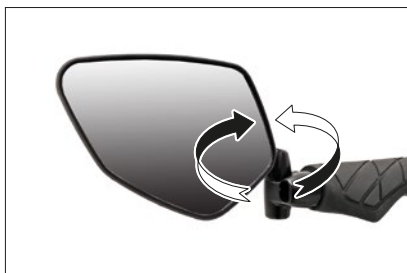


## MODE SELECTION BUTTONS ADJUSTMENT

To adjust the position of the mode selection buttons and the power button:

- Loosen the button block locking screw.
- Adjust the inclination of the block as desired.

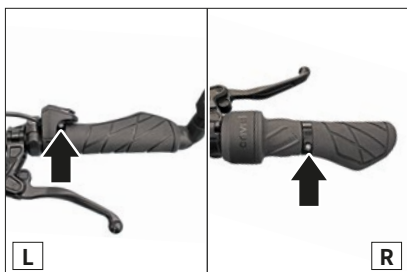
 **Tighten the locking screw to the correct tightening torque (see the “TIGHTENING TORQUE” table in “CHECK AND INSPECTIONS” chapter).**



## REAR VIEW MIRROR ADJUSTMENT

To adjust the position of the rearview mirror:

- Get on the vehicle in the driving position.
- Adjust the position of the rear-view mirror to suit your needs.



## GRIPS ADJUSTMENT

To adjust the grips position, if desired:

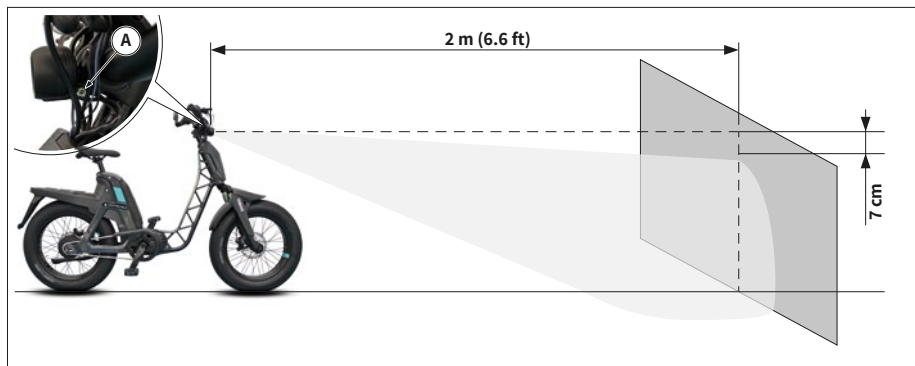
- Loosen the grip locking screw.
- Adjust the grip position to suit the rider's needs.

 **Tighten the locking screw to the correct tightening torque (see the “TIGHTENING TORQUE” table in the “CHECKS AND INSPECTIONS” chapter).**

# ASSEMBLY AND ADJUSTMENTS

## FRONT LIGHT ADJUSTMENT

EN



To check the correct orientation of the front light beam, place the vehicle at 2 m (6.6 ft) away from a vertical wall, making sure that the ground is level.

- Switch on the front light and sit on the seat;
- Check that the light beam projected onto the wall is 7 cm below the horizontal straight line of the headlight;
- To make the adjustment, loosen screw “A” and manually adjust the desired position of the light beam;



**Tighten screw “A” to the correct torque (see “TIGHTENING TORQUE” table in the “CHECKS AND INSPECTIONS” chapter).**

- Check again the correct orientation of the light beam.

## GENERAL SUGGESTIONS

The vehicle can be used as a power assist bicycle.

Before using the power assist mode, you should familiarise yourself with the use of your bike.



**To set the assist level, see the chapter “USE OF ASSIST MODE”.**



**Carefully read that stated in the safety recommendation booklet.**

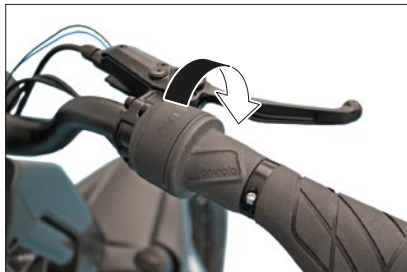


## GEARSHIFT USE



**Change the gear only after having lightened the pressure on the pedals, to avoid that the motor traction could damage the chain.**

The bicycle is equipped with a continuously variable gearshift inside the rear wheel hub.



**It is recommended to shift the gear while driving.**

The transmission is equipped with a continuously variable handlebar control:

- By turning the control forward, the gear is smaller (greater agility).
- By turning the control backwards, the gear is bigger (higher speed).



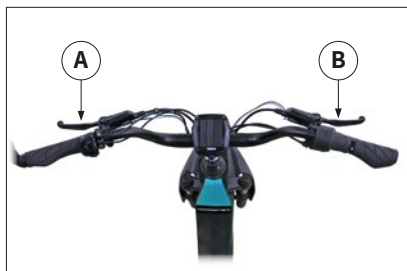
Shifting to a smaller gear results in less gearing-up. Pedal resistance decreases and the speed obtained is lower, but it is possible to ride uphill more easily.

To switch to a smaller gear:

- Turn the control upwards.

To move to a bigger gear:

- Turn the control downwards.



## USE OF BRAKES

To activate a brake pull the respective lever in the direction of the handlebar:

- Rear brake lever "A".
- Front brake lever "B".

The maximum braking performance is achieved by simultaneously operating the two levers.

65% (approximately) of the total braking force is obtained from the front brake.



**Danger of falls and accidents.** Applying the brake too hard can cause the wheels to block and cause slippage or overturning. It is necessary to become familiar with the brakes operation. Begin by pedaling slowly and applying the brake levers with moderation. Perform these braking exercises on flat road surfaces with low traffic. Measure the brakes and apply the two levers simultaneously. Be careful when applying the front brake lever; the presence of sand, gravel, etc. could make the front wheel slip causing a fall.



**Disc brakes fully achieve their braking action after a certain "break-in phase".** The general rule is the following: The brakes are considered run-in after about 30 short complete braking actions starting from an average speed (about 25 km/h). Avoid long trips if the brake system has not been run-in. Once the braking system has been run-in, a very high braking force will be available.



**Applying the brake levers too hard can block the wheels.**

# VEHICLE USE

EN



## VEHICLE USE

- Always grasp the left hand grip firmly with your left hand, and right hand grip firmly with your right hand.
- Operate both the brake levers.
- To move forward, place your left foot on the left hand pedal and your right foot on the right hand pedal.
- This action may be performed either while sitting on the saddle, or standing up in the pedals.
- Release both the brake levers.
- Start pedaling.
- ENJOY YOURSELF!



**Do not park the vehicle in the sun: the battery pack may over heat causing the safety device to intervene.**



**The transport of children, people or animals is not permitted. It is not possible to install any child seat or carrier (either front or rear).**

## WHAT TO DO FOLLOWING A FALL

 Following a fall or accident, contact your dealer immediately to have the vehicle checked before using it again.

 Only reuse the vehicle after it has been properly inspected and, if necessary, repaired by the dealer. Failure to replace such components, if damaged, may result in hazardous riding conditions, falls, accidents and damage to property.

 Carefully read that stated in the safety recommendation booklet.

## HOW TO TRANSPORT THE VEHICLE

It may be necessary to remove the front and/or rear wheel in order to transport the vehicle correctly. (see chapter “CLEANING AND MAINTENANCE”).

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 requirement.

Do not transport damaged batteries.

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.

 To transport the vehicle correctly and safely, read the specific warnings in the “HOW TO TRANSPORT THE VEHICLE” section of the “WARNINGS AND SAFETY” chapter in the safety warnings booklet.



### FRONT FORK PRELOAD ADJUSTMENT

To adjust the front fork preload according to the type of route and user's weight, turn both knobs on the front fork crown.

To increase the preload (stiffer fork), turn knob “A” clockwise (+).

To decrease the preload (softer fork), turn knob “A” counterclockwise (-).

 Do not force rotation of the adjuster from either side.

# VEHICLE USE

## NOTES ON BATTERY DURATION

Battery duration may vary significantly (from 20 to 150 km) depending on the type of use and the age of the batteries (on average, battery duration is reduced by approx. 40 % after 3 or 4 years). The main factors that affect battery duration are:

EN

| Factor                                                                      | Relevance | Effect on duration                                                                                                                                                                           |
|-----------------------------------------------------------------------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Weight of rider and load                                                    | *         | Decreases as the weight of the rider and any accessories increases.                                                                                                                          |
| Tire pressure                                                               | *         | Decreases as the tire pressure decreases.                                                                                                                                                    |
| Type of road surface                                                        | **        | Decreases significantly when riding on mud, damp grass, or irregular surfaces, increases on smooth surfaces.                                                                                 |
| Climbing                                                                    | ***       | Decreases as the gradient increases.                                                                                                                                                         |
| Gear ratio                                                                  | **        | It decreases if a "hard" ratio is used, increases the "lighter" the ratio used.                                                                                                              |
| External temperature                                                        | *         | Decreases by approx. 15% if the temperature falls below 0°C.                                                                                                                                 |
| Speed                                                                       | ***       | Decreases exponentially as the speed increases.                                                                                                                                              |
| Wind                                                                        | **        | Decreases significantly in the presence of a head wind in excess of 15 km/h, negligible variations at lower wind speeds.                                                                     |
| Assistance setting (with continuous transmission)                           | **        | Decreases as the requested power assist level increases.                                                                                                                                     |
| Stationary start                                                            | **        | Decreases the more often the "stop&go" function is used, since the bicycle consumes almost 3 times as much power during the acceleration phase as when it is travelling at a constant speed. |
| * = low significance<br>** = medium significance<br>*** = high significance |           |                                                                                                                                                                                              |

## INTRODUCTION TO USE

This chapter summarises the most important information for the correct use of the power assist mode.

Perform the following before proceeding:

- Fully charge the battery pack (see “CHARGING THE BATTERY PACK” in this section).

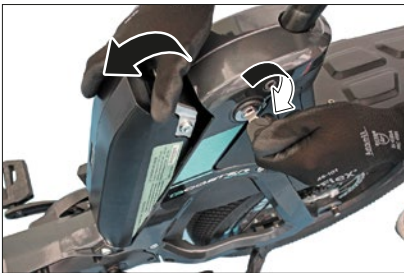
**i** Battery charging can be carried out either with the battery removed or with the battery hooked up to the vehicle.

- Make sure that the connector is correctly connected to the battery.



## BATTERY PACK REMOVAL FROM THE SUPPORT

- Disconnect the connector from the battery pack.



- Use the key supplied to open the battery pack lock.



- Lift the battery pack until it is released from its housing and remove it.
- Place the battery pack on a flat, dry surface.

**!** Do not put the battery pack in contact with water or other liquids. If this happens, do not use it and let it be checked by the retailer.

# USE OF ASSIST MODE

## CHARGE THE BATTERY PACK

### Activating the battery pack before use

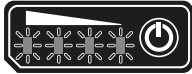
The battery pack is supplied partially charged.  
Short pressing the battery button will show the battery charge status by the LEDs lighting up.

EN

| Display of the battery capacity indicator lamps                                                                                | Estimate of the residual battery capacity | Applicable situation                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------------------------------------------------------|
|                                               | 100–76 %                                  | From full charge (100 %), the battery capacity indicator lamps turn off, one by one. |
|                                               | 75–51 %                                   |                                                                                      |
|                                               | 50–26 %                                   |                                                                                      |
|                                               | 25–11 %                                   |                                                                                      |
| <br>Slow flashing<br><0.5 second intervals>  | 10–1 %                                    | There is very little battery capacity left.                                          |
| <br>Fast flashing<br><0.2 second intervals> | 0 %                                       | The battery capacity has reached 0 (zero). Please charge the Battery Pack.           |

-  Make sure that the battery pack is fully charged (all four LEDs lit) before you use you bicycle.
-  The battery LED turns off in about 5 seconds after the LED button is pressed, but there is no function for turning off the battery switch.

## Charging the battery pack

| Battery charger lamp                                                                         | Battery capacity indicator lamps                                                                                                                                                                                                                                  | Current status                                                                                    | Details                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p>On</p>  | <p>Lit power lamps indicate the amount of charging completed. A flashing power lamp indicates current progress.</p>  <p>(Example: Battery is approximately 50–75 % charged.)</p> | Charging                                                                                          | During charging, the battery capacity indicator lamps light up one by one.                                                                                                                                                      |
|  <p>Off</p> | <p>Off</p>                                                                                                                                                                       | 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.                                                                                  |
|                                                                                              | <p>Four lamps flash simultaneously.</p>                                                                                                                                          | <p>Battery is in standby mode.<br/>* The battery internal temperature is too high or too low.</p> | <p>Charging will automatically restart when a temperature is reached that allows charging. (See “Appropriate charging environments”).</p> <p>When possible, always perform charging at the optimal temperature of 15–25 °C.</p> |

 Do not charge the battery following intensive use of the vehicle. High temperature inside the battery may result in inability to charge (battery in “self-protection”). If connected to the charger, disconnect it and wait for it to cool down before charging.

 If charging stops due to temperature (too high or too cold), all four LEDs will blink simultaneously. If the battery is connected to a charger, charging will resume automatically when the temperature inside the battery reaches a temperature suitable for charging.

 Always use the battery charger supplied with the bicycle.

 In order prolong battery life, it should not be recharged too often, or left in the discharged state for more than two months at a time.

 Comply with the sequence of operations indicated to carry out charging. Failure to follow this sequence may result in a malfunction in the charging process.

 Make sure that the main AC supply voltage corresponds to the value indicated on the battery charger data plate.

# USE OF ASSIST MODE

---

## Important safety instructions



Save and carefully follow these instructions to reduce the risk of fire or electric shock.



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



This manual contains important safety and operating instructions for Battery Charger type PASC9 and FTC-004-35SD.



Those types can be found in the labels on the products.



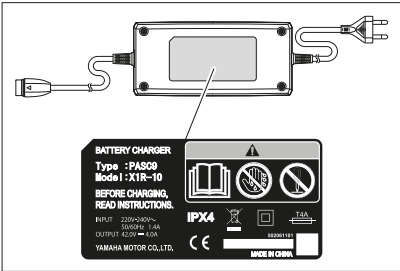
Before using Battery Charger, read all instructions and cautionary markings on Battery Charger, Battery Pack and product using battery.



Only use the Battery Charger type PASC9 to charge FTC-004-35SD type Battery Packs.



Other types of batteries may burst causing injury to persons and damage.



## 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 °C ÷ 25 °C



**ONLY FOR UK: vehicle provided with battery charger model X2X-00 (PASC9) with UK specific AC plug.**

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



Read the Owner's Manual



Do not disassemble



Do not use with wet hands



## Connect the battery charger adaptor

- Connect the battery charger adaptor to the battery charger cable.
- Connect the battery charger adaptor connector to the socket on the battery pack.
- At this point the battery starts to recharge.
- The LEDs on the battery pack light up to indicate the charge level. When all four LEDs are lit it indicates that the battery pack is fully charged. Each LED corresponds to approx. 25% of the full charge.
- Disconnect the battery charger from its power supply and the connector from the battery pack.



**If after properly connecting the battery to the charger and started the charging process, all four battery LEDs blinking simultaneously (battery in protection) are noticed, it means that the battery's internal temperature is too high or too low. Charging will resume automatically when the temperature inside the battery reaches a temperature suitable for charging.**

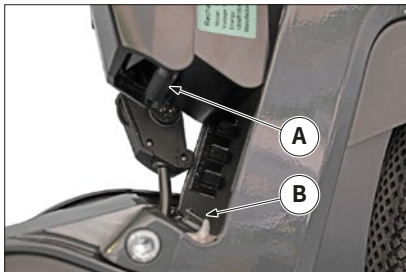
## USE OF ASSIST MODE

EN



### BATTERY PACK ASSEMBLING IN THE HOUSING

- Insert the battery pack in the appropriate housing on the frame.



- Place the rubber rod "A" on the fork support "B".



- Insert and turn the key in the lock and insert the battery pack in its housing. Once positioned release the key and remove it.



**When inserting the battery, the strap must be folded over the back of the battery.**



- Connect the connector to the battery pack.

## Important notes

All user must be sure to aware of the following:



If the fault information cannot be eliminated according to the instructions, must give up to proceed with the operation, please contact the local dealer or professional.



Do not to let water soak the wiring ports and buttons.



Although this product is designed to be completely waterproof for riding in rainy days, do not let this product soak in water or use in water.



Do not clean the vehicle motor with a steam jet, high-pressure cleaner or water hose. Water may seep into the electrics or drive and destroy the equipment.



Please use this product with care and without strong impact.



Do not use thinner or other solvents to clean any of the HMI. Such substances may damage the surfaces.



Be not guaranteed to wear out due to normal use and aging.

# USE OF ASSIST MODE

---

## Safety information

EN

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 headlight and taillight battery capacity before riding at night. Riding without an operating headlight and taillight 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.

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 Battery Pack, 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.

# DISPLAY

## 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 45 km/h or faster.
- › When you are not pedaling and the running assist switch is released.
- › 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 the language setting of Display C is executed.

**Multiple power assist modes are available.**

Choose from 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 | Example of recommended driving environment                                                          |
|-----------------------|---------|-----------------------------------------------------------------------------------------------------|
| 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. |

**Automatic Support mode is available.**

The Automatic Support mode, which enables automatic change to the optimal assist mode (+Eco mode, Eco mode, Standard mode, High Performance Mode) according to the riding condition, can also be used. The automatic assist mode automatically changes to weak assist on flat roads and stronger assist on steep slopes.

## Conditions that could decrease remaining assist distance

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

- › Frequent starts and stops
- › Numerous steep inclines
- › Poor road surface conditions
- › Riding into a strong head wind
- › Low air temperature
- › Worn-out Battery Pack
- › When using the headlight
- › Frequent acceleration
- › Heavier rider and luggage weight
- › Higher assist mode
- › Higher riding speed

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

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

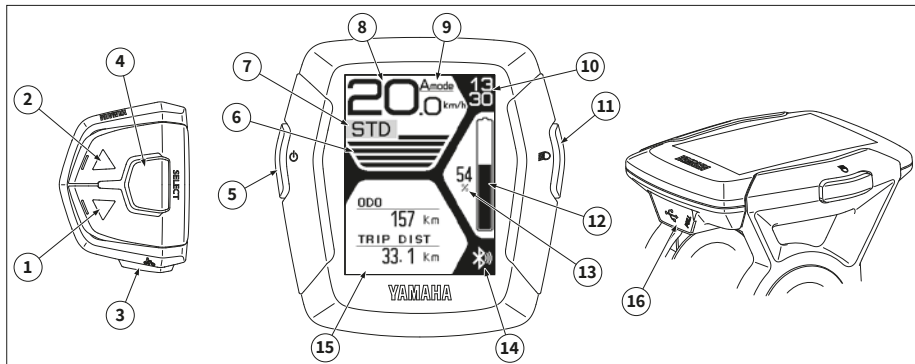


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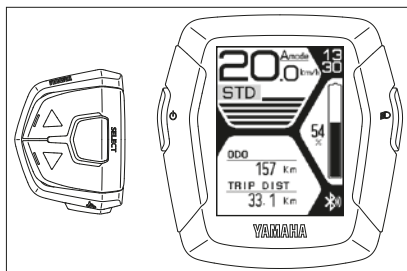
# DISPLAY

## INSTRUMENT AND CONTROL FUNCTIONS

EN

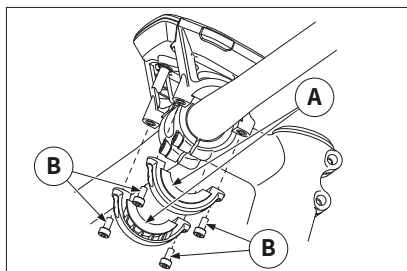


- |                                                                                                   |                                                                                                                 |
|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| 1. Assist mode switch (down)                                                                      | 9. Automatic Support mode indicator                                                                             |
| 2. Assist mode switch (up)                                                                        | 10. Clock                                                                                                       |
| 3. Function select switch                                                                         | 11. Light switch  (not active) |
| 4. Running assist switch                                                                          | 12. Battery capacity indicator                                                                                  |
| 5. Power switch  | 13. Battery capacity (%)                                                                                        |
| 6. Assist power meter                                                                             | 14. Bluetooth indicator                                                                                         |
| 7. Assist mode indicator                                                                          | 15. Function display                                                                                            |
| 8. Speedometer                                                                                    | 16. USB port                   |



## Display Unit

The Display Unit offers the following operations and information displays.



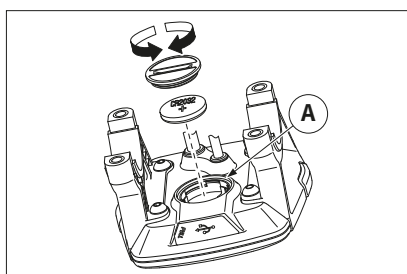
## Installing the battery

The Display Unit needs to be removed and installed for changing the battery.

- › Remove the display holder “A” by loosening the four bolts “B” and remove the display from the handle.
- › When installing the Display Unit, tighten the four clamp bolts from the back side of the clamp.



**Tighten the clamp bolts to 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.**



## Battery

Make sure the battery (CR2032) with the correct power rating is installed at the back of the display unit.

If a battery is not installed, or if there is not sufficient battery power remaining, install a new battery.

After installing a new battery, turn the power on once and then off so that the Display Unit can recognize the battery.

In case of setting the language, see “Language”.

To adjust the time, see “Settings”.



**Make sure that the “A” O-ring is installed correctly.**



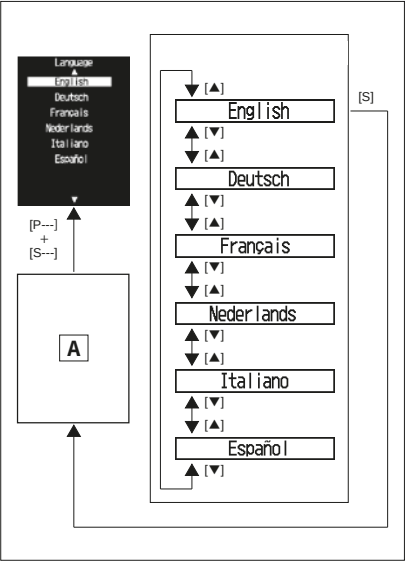
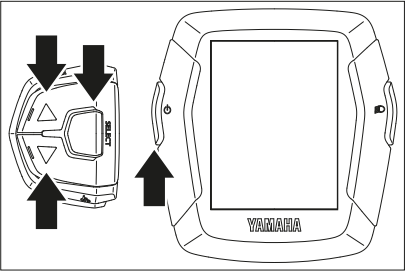
**Use a new CR2032 button cell battery (sold separately).**



**When a battery is drained, whenever the vehicle power supply is turned on, 11:00 appears and it disappears approximately 10 seconds later. Additionally the language indication is in English. Replace the battery if this happens.**

# DISPLAY

EN



## Language

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

| Supported language | Display    |
|--------------------|------------|
| English            | English    |
| German             | Deutsch    |
| French             | Français   |
| Dutch              | Nederlands |
| Italian            | Italiano   |
| Spanish            | Español    |

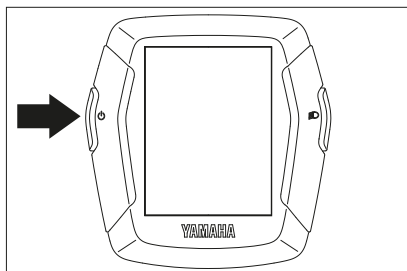
17. Make sure that the power is turned off. When nothing is shown in the display, the power is off. When something is shown in the display, the power is on. Press the power switch to turn the power off.
18. Hold the power switch and function select switch pressed simultaneously for 2 seconds or longer.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

### Key:

- “A” Power supply disabled
- [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)

**⚠ 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.**

- i** If a battery (CR2032) is not installed, or if the remaining battery power is insufficient, “Requires CR2032 (button battery)” is shown in the display. Even if you set the language in this situation, the display will return to the English setting each time the power is turned off. Install the battery (CR2032) or replace the battery to set the language.
- i** After installing the battery (CR2032), “Requires CR2032 (button battery)” may still be shown in the display. In that case, turn the power off once.
- i** The assist system does not function while setting the language.



## Power “On/Off”

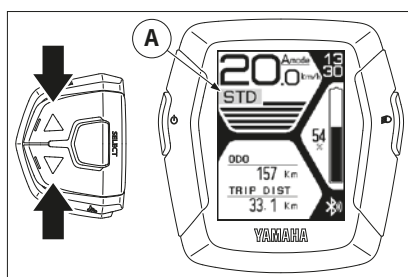
Each time you press the power switch, the power is turned “On” and “Off”. When you turn on the power, the animation will be displayed. After that, the main riding display is shown.

- i** When you turn on the power, the assist mode is Automatically set to Standard mode or Automatic Support mode.

- i** 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 & down).

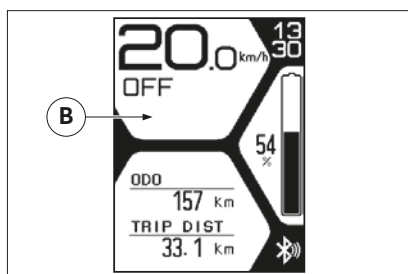


The selected assist mode is displayed by the “A” assist mode indicator.

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

- i** Further pressing of the assist mode switch will not cycle the assist mode selections.

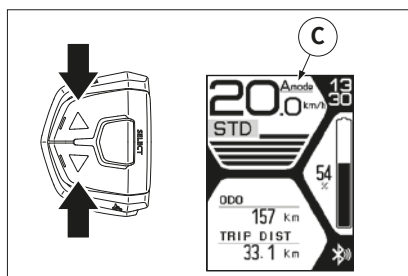
- i** In the Off mode, the “B” assist power meter is not displayed.



The Automatic Support mode enables automatic change to the optimal assist mode according to the riding conditions.

- › To use the Automatic Support mode, press the assist mode switch (up) for 1 second or longer. The “C” 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.

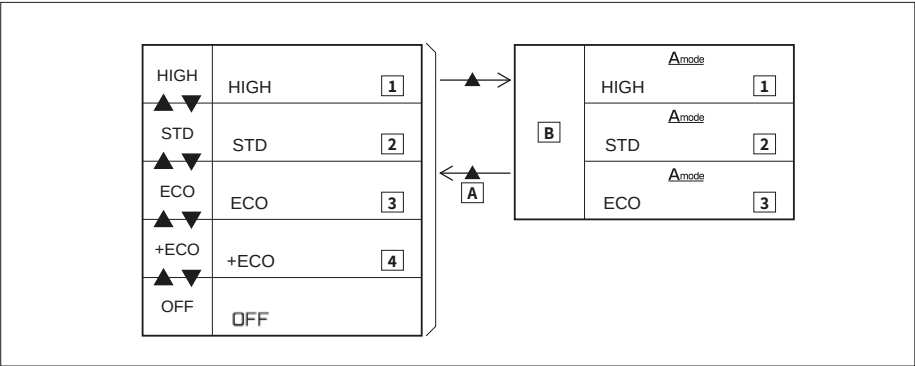
- i** Even if you press the assist mode switches (up & down) while in Automatic Support mode, the assist mode cannot be changed.



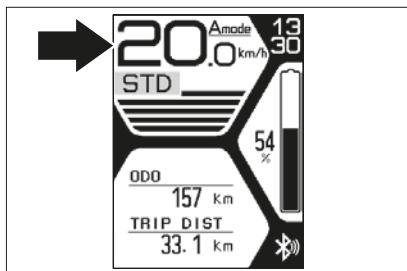
- i** The Automatic Support mode is saved when the power is turned off. When you turn on the power again, the assist mode will be in the Automatic Support mode.

Assistance mode diagram

EN



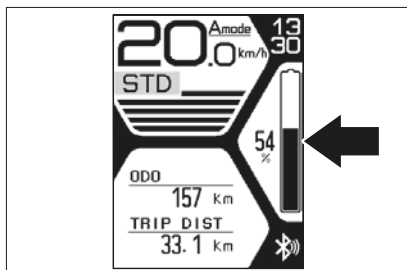
- Key:**
- “A” Pressed for 1 second or more
  - “B” Automatic Support mode
  - ▲ Assist mode switch (up)
  - ▼ Assist mode switch (down)
  - “1” Violet
  - “2” Blue
  - “3” Green
  - “4” Yellowish green



## Speedometer

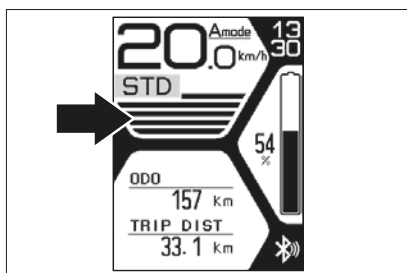
The speedometer displays your bicycle speed (in kilometer per hour or mile per hour). To select the km/mile, see “Settings”.

- i** 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”.



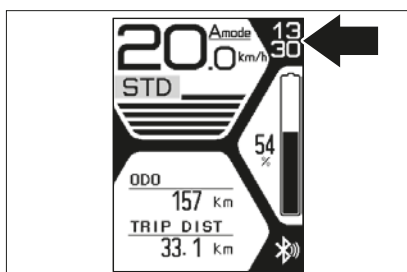
## Battery capacity indicator

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



## Assist power meter

The assist power meter displays an estimate of the assist power during riding. When the e-Bike Systems are not in operation, none of the segments of the assist power meter are displayed. When the e-Bike Systems are operating, as the assist power increases, the segments of the assist power meter are added one by one.



## Clock

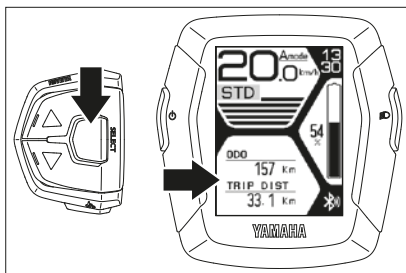
Displays the current time in 24 hour format. The upper part shows the “Hour” and the lower part the “Minute”. To adjust the time, see “Settings”.

- i** If a battery (CR2032) is not installed, or if the remaining battery power is insufficient, whenever the vehicle power supply is turned on, 11:00 appears and it disappears approximately 10 seconds later. Install the battery (CR2032) or replace the battery to adjust the clock.

- i** If the clock is not adjusted after the battery (CR2032) is installed or replaced, 00:00 will continue to appear.

# DISPLAY

EN



## Function display

The function display can display the following functions.

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

Push the function select switch, the display changes as follows:

Odometer -> Trip meter -> Average bicycle speed -> Maximum bicycle speed -> Range -> 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, trip time, average bicycle speed, and maximum bicycle speed.

For more information, see “Settings”.



**When you connect to the smartphone and run the application, the Trip meter, Trip time, Average bicycle speed, and Maximum bicycle speed will all be reset.**

**ODO**  
**157 km**

## Odometer

This displays the total distance (in kilometers or miles) ridden while the power was on.

The odometer cannot be reset.

**TRIP DIST**  
**33.1 km**

## 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 upper row of the function display. Or see “Settings”.

**AVE**  
7.7 km/h

## 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 upper row of the function display. Or see “Settings”.

**MAX**  
13.7 km/h

## 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 upper row of the function display. Or see “Settings”.

**RANGE**  
15 km

## 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 installed. If you switch the assist mode when the remaining assist distance is displayed, the estimate of the distance that can be ridden with assist changes.

The remaining assist distance estimate cannot be reset.

**i** Actual remaining assist distance changes depending on the riding situation (hills, headwind, etc.) and as the battery runs down.

**i** If in Off mode, “- - - -” is displayed.

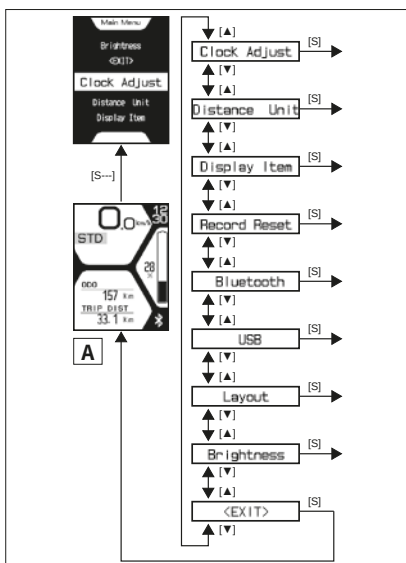
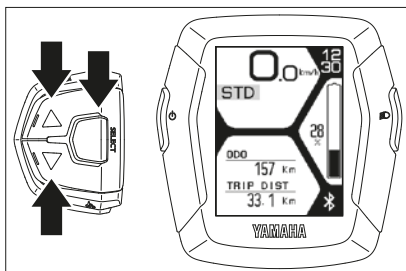
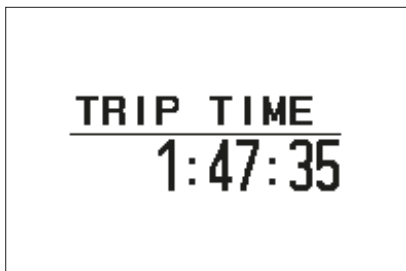
**CADENCE**  
50 rpm

## Cadence

This displays your pedaling speed in revolutions per minute.

The pedaling cadence display cannot be reset.

**i** 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.

For the procedure to reset the trip time, see “Settings”.

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

## Settings

The display enables the following.

- › Clock Adjust
  - › Clock setting
- › Distance Unit
  - › km/mile setting
- › Display Item
  - › Sets the items to be displayed in the function display during normal riding.
- › Record Reset
  - › Resets the values of the trip meter, average bicycle speed, maximum bicycle speed, and trip time.
- › Bluetooth (Bluetooth low energy technology)
  - › Switches the profiles and turns off the wireless function.
- › USB
  - › Switches the USB port between a power supply port and a wired communication port.
- › Layout
  - › Switches the layout of the display.
- › Brightness
  - › Set the brightness and the color of the display backlight.

### Key:

“A” Main drive display

“B” Main menu

[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)

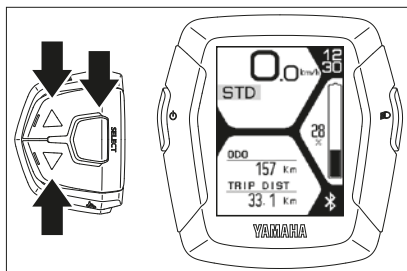
1. Press the function select switch for 2 seconds or longer.
2. Select an item by using the assist mode switches (up & down).
3. When you select an item to set and press the function select switch, the setting will be displayed.
4. Selecting “EXIT” returns to the main riding display.

**!** 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.

**i** The settings cannot be adjusted while riding.

**i** 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 running assist switch

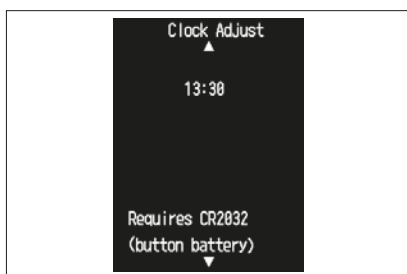
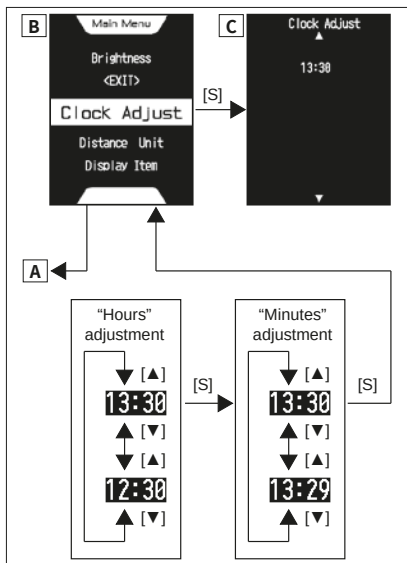


## Clock Adjust

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 & 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 & down).
4. Press the function select switch to return to the Main Menu display.

Selecting “EXIT” returns to the main riding display.



### Key:

“A” Main drive display

“B” Main menu

“C” Clock setting menu

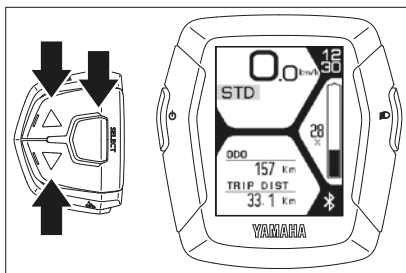
[S] Press the function select switch

▲ Press the assist mode switch (up)

▼ Press the assist mode switch (down)

**i** If a battery (CR2032) is not installed, “Requires CR2032 (button battery)” is shown in the display.

**i** After installing the battery (CR2032), “Requires CR2032 (button battery)” may still be shown in the display. In that case, turn the power off.



## Distance Unit

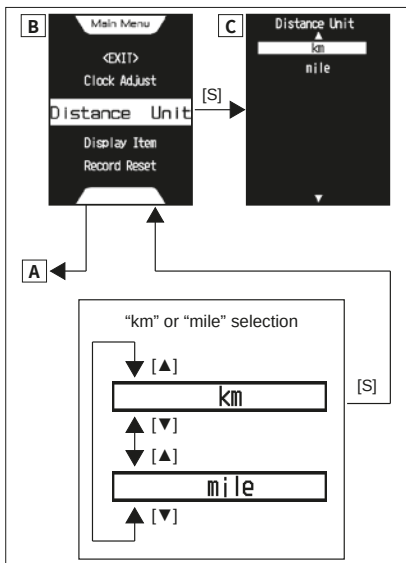
You can select the unit for distance and speed.

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 & down).
2. When you press the function select switch, the setting will then be kept and the display will return to the Main Menu display.

Selecting “EXIT” returns to the main riding display.



### Key:

“A” Main drive display

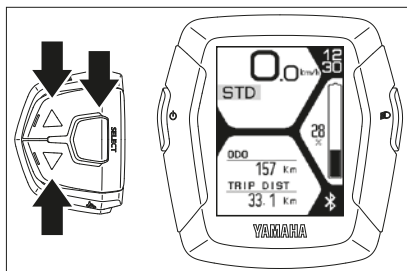
“B” Main menu

“C” Distance Units menu

[S] Press the function select switch

▲ Press the assist mode switch (up)

▼ Press the assist mode switch (down)



## 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: “Trip Distance” (Trip meter), “Average Speed” (Average bicycle speed), “Maximum Speed” (Maximum bicycle speed), “Battery Range” (Range), “Cadence”, and “Trip Time”.

**i** You cannot hide the odometer indication.

## Key:

“A” Main drive display

“B” Main menu

“C” Show item menu

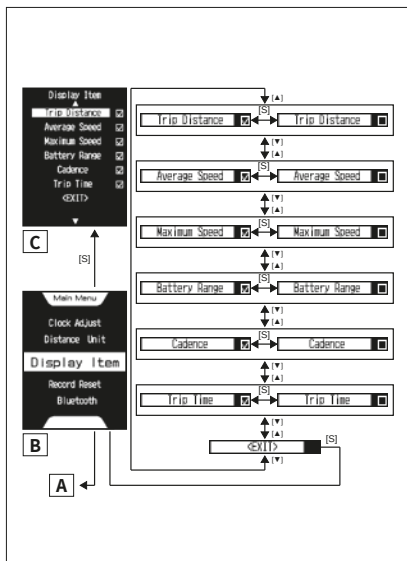
[S] Press the function select switch

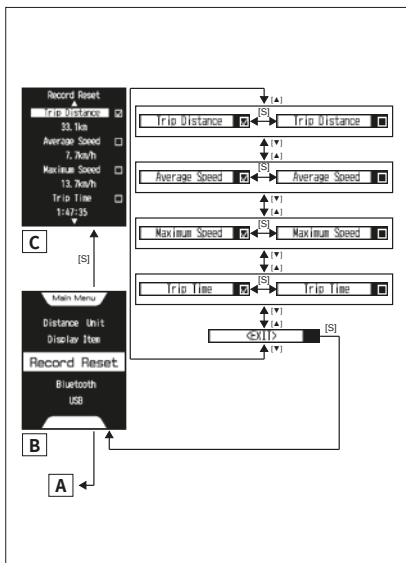
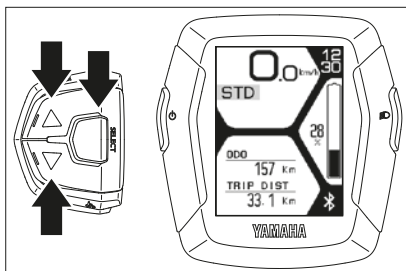
▲ Press the assist mode switch (up)

▼ Press the assist mode switch (down)

3. Select an item by using the assist mode switches (up & down).
4. 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.)
5. When you select “EXIT” and press the function select switch, the setting will be kept and the display will return to the Main Menu display.

Selecting “EXIT” returns to the main riding display.





## Record Reset

You can reset the “Trip Distance” (Trip meter), “Average Speed” (Average bicycle speed), “Maximum Speed” (Maximum bicycle speed), and “Trip Time” values.

- i** Non è possibile azzerare il contachilometri totale.
- i** Per ripristinare l’energia accumulata che è visualizzata sul dispositivo collegato tramite la tecnologia a risparmio energetico Bluetooth, selezionare “CPP” o “YEP1.0” sul display “Bluetooth” (tecnologia a risparmio energetico Bluetooth). “Totale calorie” verrà aggiunto nel display “Resetta valori”. Quindi, selezionare “Totale calorie” per ripristinare l’energia accumulata.

## Key:

“A” Main drive display

“B” Main menu

“C” Reset values menu

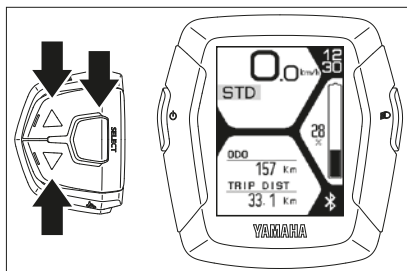
[S] Press the function select switch

▲ Press the assist mode switch (up)

▼ Press the assist mode switch (down)

- Select an item by using the assist mode switches (up & down) and use the function select switch to place a check mark in the check box for the item that you want to reset.
- Quando si seleziona “Esci” e si preme l’interruttore selezione di funzione, le voci con i segni di spunta vengono azzerate e il display ritorna al display del menu principale.

Selecting “EXIT” returns to the main riding display.



## Bluetooth (Bluetooth low energy technology)

You can set the profile to use the wireless function with Bluetooth low energy technology, or you can select not to use the wireless function.

When “Off” is selected, the wireless function will be inactive.

When “CSCP” is selected, the Cycling Speed and Cadence Profile will be available.

When “CPP” is selected, the Cycling Power Profile will be available.

When “YEP1.0” is selected, the e-Bike profile preset by YAMAHA MOTOR CO., LTD. will be available.

**i** Set the profile according to the wireless communication equipment that communicates via Bluetooth low energy technology.

**i** For the output power level of each profile, see “Specifications”.

**i** 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.

### Key:

“A” Main drive display

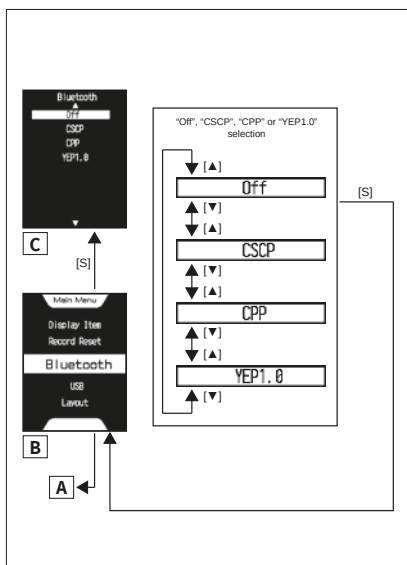
“B” Main menu

“C” Bluetooth menu

[S] Press the function select switch

▲ Press the assist mode switch (up)

▼ Press the assist mode switch (down)

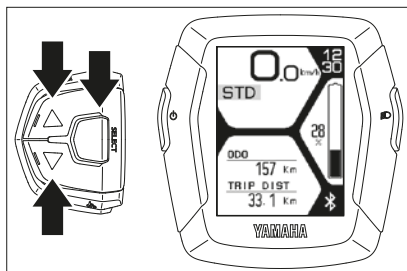


1. Select “Off”, “CSCP”, “CPP”, or “YEP1.0” by using the assist mode switches (up & down).
2. When you press the function select switch, the setting will then be kept and the display will return to the Main Menu display.

Selecting “EXIT” returns to the main riding display.

# DISPLAY

EN



## USB

You can use the USB port as a power supply.

- i** Normally you should not use “COMM” because this is a service mode used for wired communication.
- i** When the power is turned off, the mode automatically changes to “Power Supply”.

## Key:

“A” Main drive display

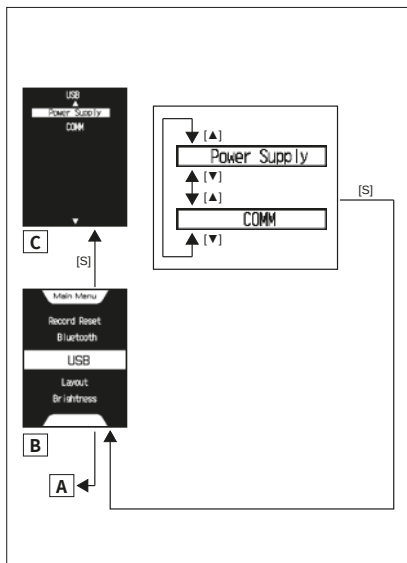
“B” Main menu

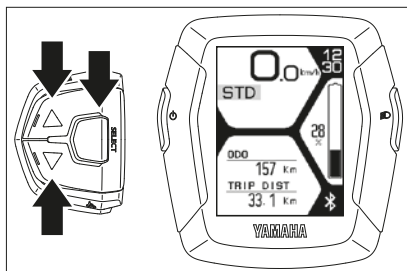
“C” USB menu

[S] Press the function select switch

▲ Press the assist mode switch (up)

▼ Press the assist mode switch (down)



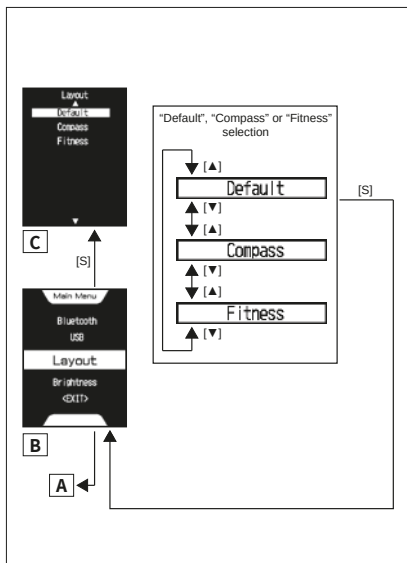


## Layout

You can select the layout for the main riding display. However, only the options from the connected smartphone application can be selected in the display. When you select “Default”, the main riding display will be shown.

When you select “Compass”, mainly navigation information will be displayed once the unit has been paired with the smartphone application.

When you select “Fitness”, mainly fitness information will be displayed once the unit has been paired with the smartphone application.



**i** To display the correct information on the “Compass” and “Fitness” displays, be sure to use the Bluetooth low energy technology communication and the YEP1.0 profile in order to make the Display Unit and the smartphone application work properly together.

**i** When the Display Unit and smartphone application are properly paired, the Compass function and Fitness function will start on the application side, and the display will automatically change.

**i** When the power is turned off, the mode automatically changes to “Default”.

**i** Only the options from the connected smartphone application can be selected in the display.

## Key:

“A” Main drive display

“B” Main menu

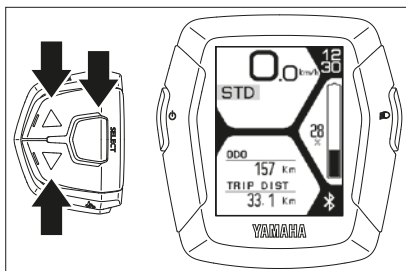
“C” Layout menu

[S] Press the function select switch

▲ Press the assist mode switch (up)

▼ Press the assist mode switch (down)

1. Select “Default”, “Compass”, or “Fitness” by the assist mode switches (up & down).
2. Press the function select switch when the desired layout is indicated in the display. This setting will then be kept and the display will return to the main riding display.



## Brightness

You can select between 16 brightness and color configurations.

1. Select the display backlight brightness and color by using the assist mode switches (up & 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.

### Key:

“A” Main drive display

“B” Main menu

“C” Brightness menu

[S] Press the function select switch

▲ Press the assist mode switch (up)

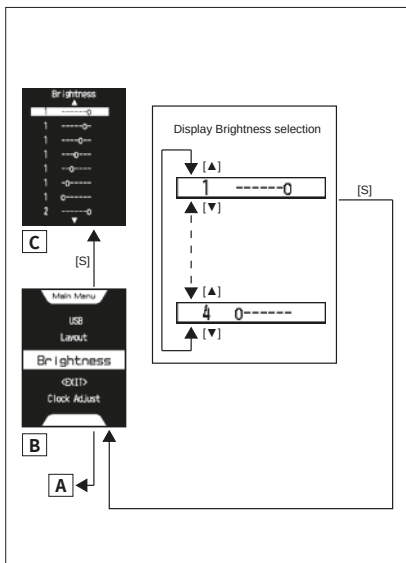
▼ Press the assist mode switch (down)

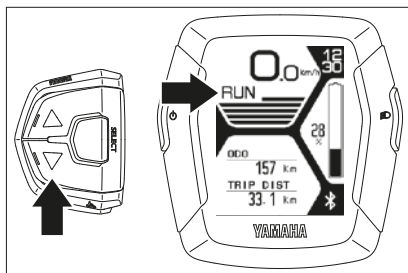


**While adjusting the brightness and color of the display backlight, the backlight brightness and color will become the selected one.**



**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.**





## Running assist

When you are on or off the bicycle and start moving it, you can use running assist without pedaling the bicycle. When you press the running assist switch once, the running assist indicator will come on for five seconds. Press and hold the running assist switch again while the indicator is still lit.

Running assist will not work in the following situations:

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

**i** Even if you release the running assist switch while the function is being used, the running assist indicator will remain on the display for five seconds.

**i** When you press and hold the running assist switch again while the indicator is lit, the running assist function will be available.

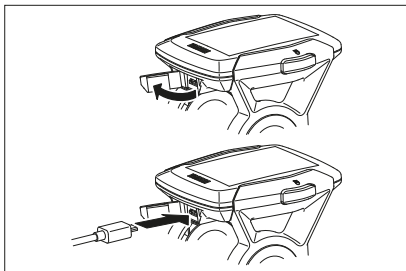


## Diagnosis mode

The e-Bike Systems are equipped with a diagnosis mode. If a malfunction or fault occurs in the e-Bike Systems, an error message will be displayed. For the symptoms and actions, see "Troubleshooting".



**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.



- 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.



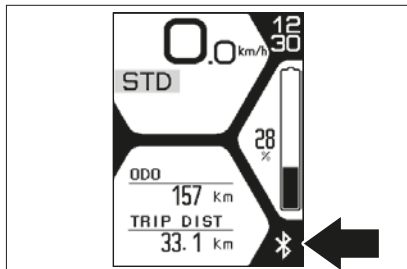
Power is supplied automatically when an external device is connected with the USB cable.



No power is supplied if the remaining capacity of the Battery Pack is low.



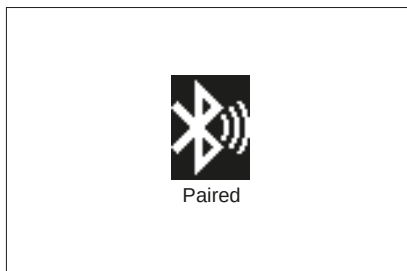
The power supply of the vehicle will go off and power supplied by the USB connection will also stop if the vehicle is not operated for 5 minutes.



## Communication with Bluetooth low energy technology

The wireless equipment corresponding to the CSCP, CPP, or YEP1.0 profiles can provide the communication via Bluetooth low energy technology.

1. Set the profiles of the Display Unit by referring to “Settings”. Also confirm that they are in accordance with the connection settings of your wireless communication equipment.
2. Check that the Bluetooth indicator is displayed .
3. Select “Yamaha #####” or “Yamaha #####\*” from the user menu of your wireless communication equipment. For more information, see the instruction manual of the wireless communication equipment. \* “#####” or “#####\*” is a combination of irregular alphanumeric characters.
4. Make sure that the Bluetooth indicator displays successful pairing .



**i** Keep the distance between the display and wireless communication equipment within 1 m. The maximum communication distance of this equipment is 1 m. If the wireless communication equipment is kept in a bag, etc., the actual communication distance might be shorter.

**i** Do not use the equipment in places with magnetic fields, static electricity, or electromagnetic interference. If the equipment is used near transmitters, broadcasting stations or the following type of equipment, wireless communication may not be possible.

- Microwave ovens
- Digital cordless phones
- Wireless communication devices
- Near other wireless equipment using the 2.4 GHz band.

**i** Do not cover the display with objects such as aluminum sheets that block the radio waves. Otherwise, wireless communication may not be possible.

**i** For the output power level of each profile, see the “Specifications”.

# DISPLAY

## Display of paired application

By using the Bluetooth low energy technology communication and YEP1.0 profile and then pairing the Display Unit with the smartphone application, navigation information (Compass) and fitness support (Fitness) will be available on the display.

**⚠ Do not look at the display while bicycling since lack of attention to surrounding traffic can cause an accident.**

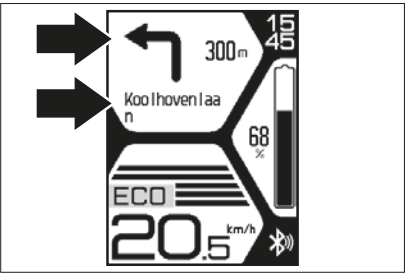
**i In this manual, all information that can be shown on the Display Unit, is described. However, some information may not be correctly shown owing to the smartphone application.**

## Compass (Navigation information)

Sets the destination or waypoints by using the smartphone application and shows this information on the display.

You can select the information to be displayed.

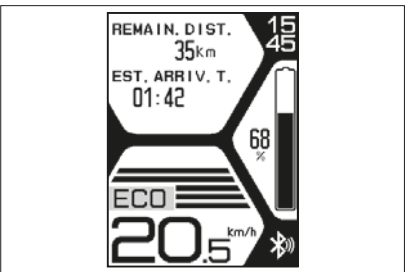
Push the function select switch to change the displayed information.



### Turn-by-turn

The upper part shows the distance to the next turn on the traveling route to reach the destination.

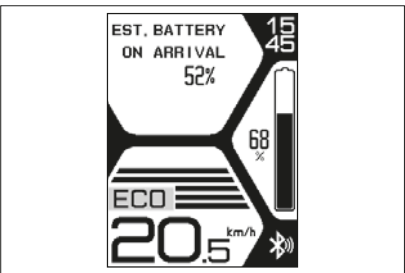
The lower part shows relevant information (such as a street name, crossing name, or place name) transmitted from the application. The displayed information depends on the application.



### Estimated time

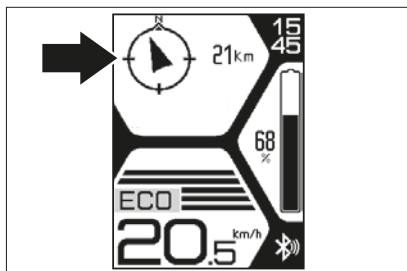
The remaining distance to the destination is shown at the top.

The estimated time of arrival at the destination is shown under this.



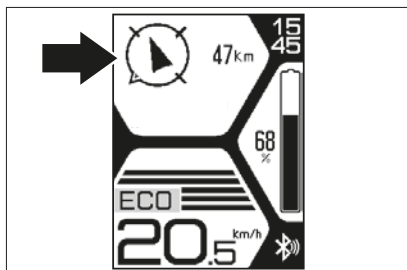
### Estimated battery

Displays the estimated remaining battery capacity when you arrive at the destination.



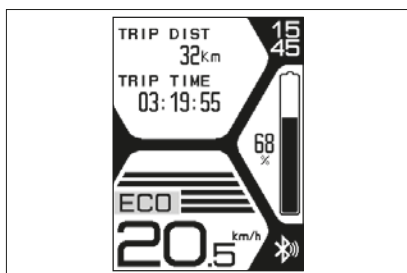
## North up

The upper part displays the heading to the destination and straight-line distance when the compass direction of the Display Unit has been fixed to north. It displays the heading to the next waypoint and straight-line distance in case waypoints have been set.



## Heading up

The upper part displays the direction and straight-line distance to the destination in relation to the current traveling direction and compass direction. It displays the direction and straight-line distance to the next waypoint in relation to the compass direction in case waypoints have been set.



## Trip distance/time

The upper part displays the distance traveled since the smartphone application started the navigation. The lower part displays the elapsed time since the smartphone application started the navigation.

-  Be sure to obey local traffic regulations and ride according to the actual road conditions. Otherwise, you could cause a traffic accident.
-  When the Turn-by-turn function of the smartphone application starts, only the Turn-by-turn display will be shown. Even if the function select switch is pressed, the display will not change.
-  When the Compass function of the smartphone application starts, you can switch the display mode among North up, Heading up, and Trip distance/time by pressing the function select switch. However, you cannot change to any other display modes.
-  The displayed contents of the navigation information depends on the smartphone application.
-  The estimated remaining battery capacity varies according to the riding mode.

# DISPLAY

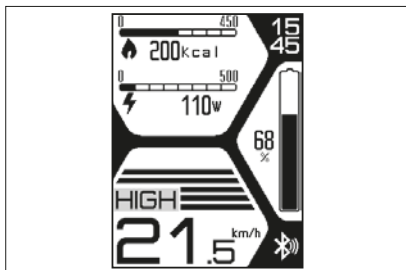
## Fitness (Fitness-support information)

Set the target riding distance, target riding time, calorie burn target, etc. using the smartphone application and show this information on the display.

You can select the information to be displayed.

Push the function select switch, the display changes.

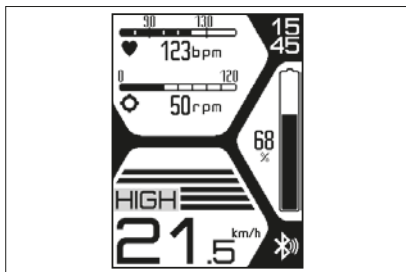
EN



### Calorie/Power

The upper part displays the calorie burn target value together with the accumulated burned calories over time since the application started the Fitness function. In addition, the number of burned calories for the current ride is displayed by a bar graph.

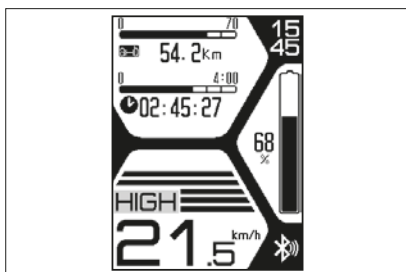
The lower part displays the target pedal power value and current pedal power. The current pedal power is displayed by a bar graph.



### Heart rate/Cadence

The upper part displays the target heart rate together with the current heart rate as beats per minute. In addition, the current heart rate is displayed by a bar graph.

The lower part displays the target cadence value together with the current cadence value as revolutions per minute. In addition, the current cadence value is displayed by a bar graph.



### Workout distance/time

The upper part displays the target distance traveled value together with the accumulated distance traveled over time since the application started the Fitness function. In addition, the current distance traveled is displayed by a bar graph.

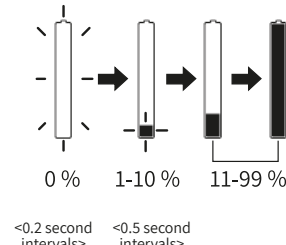
The lower part displays the target riding time value and accumulated riding time since the application started the Fitness function. In addition, the current riding time is displayed by a bar graph.

**i** The number of burned calories and pedal power are measured by an original method developed by YAMAHA MOTOR CO., LTD. The figures are for reference and may differ from similar figures of other products.

**i** In order to display the heart rate, this information must be received from a commercially available heart rate sensor supporting the smartphone application and Bluetooth low energy technology communication specifications. The accuracy of the displayed heart rate depends on the measuring accuracy of the heart rate sensor.

## Reading the charging status for Display Unit

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

| Battery charger lamp                                                                         | Battery capacity indicator lamps                                                                                                                                                                | Current status                                                                                       | Details                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p>On</p>  | <p>(Display C)</p>  <p>0 % 1-10 % 11-99 %</p> <p>&lt;0.2 second intervals&gt; &lt;0.5 second intervals&gt;</p> | Charging                                                                                             | The battery capacity indicator slowly increases.                                                                                                                                                                                |
|  <p>Off</p> | <p>(Display C)</p> <p>All segments of the battery capacity indicator light up.</p>                             | Charging completed                                                                                   | When charging is complete, all segments of the battery capacity indicator of the Drive Unit will go off and the battery charger lamp of the Battery Charger will go out.                                                        |
|                                                                                              | <p>(Display C)</p> <p>All function display items are flashing.</p>                                            | <p>Battery is in standby mode.</p> <p>* The battery internal temperature is too high or too low.</p> | <p>Charging will automatically restart when a temperature is reached that allows charging. (See "Appropriate charging environments".)</p> <p>When possible, always perform charging at the optimal temperature of 15–25 °C.</p> |

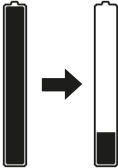
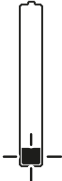
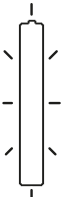
**i** For example, even if normal charging is started, if the battery temperature or the surrounding temperature is too high or too low, the charging may be extended or charging may be stopped without the battery being charged sufficiently in order to protect the battery.

# DISPLAY

## 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.

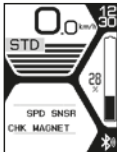
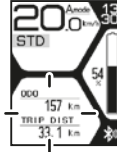
EN

| Display of the residual battery capacity for the Display Unit                                                               | Display of the residual battery capacity | Applicable situation                                                                                                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------------|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (Display C)<br>                            | 100–11 %                                 | When you turn on the power of the Display Unit and ride continually after the battery 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 C)<br><br><0.5 second intervals>  | 10–1 %                                   | There is very little residual battery capacity left. Please charge the battery soon.                                                                                                                                                           |
| (Display C)<br><br><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.<br>* Assist is stopped, but you can still ride the bicycle as a regular bicycle.                                         |

## TROUBLESHOOTING

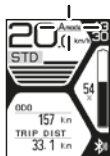
### E-Bike Systems

EN

| Symptom                                                                                                                                                                                                                                         | Check                                                      | Action                                                                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>(Display C)<br/>Error messages other than those related to the battery are displayed here as “ER” together with a description of the error underneath.</p>  |                                                            | <p>The problem occurs in the e-Bike Systems. Turn off the power and then turn it on again.<br/>If the problem cannot be solved, have your bicycle inspected by a dealer as soon as possible.</p>                                                                       |
| <p>Traveling range has decreased.</p>                                                                                                                                                                                                           | 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.                                                                                                                                                                                                                                              |
| <p>(Display C)<br/>An error description is indicated in the function display.</p>                                                                            |                                                            | <p>The speed sensor cannot detect a correct signal.<br/>Turn off the power to the Display Unit and then turn it on again.<br/>Select the assist mode and then ride for a short distance.<br/>Also, make sure the magnet is mounted correctly.</p>                      |
| <p>(Display C)<br/>The function display are flashing. (Power assist is stopped.)</p>                                                                         |                                                            | <p>This is not a malfunction. It is in a state that the operation of the power assist system 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.</p> |

# DISPLAY

EN

| Symptom                                                                                                                                                                                                                             | Check | Action                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>(Display C)<br/>Error messages relating to battery errors are displayed here as “ER” together with “BATTERY” and a description underneath.</p>  |       | <p>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.</p>                        |
| <p>(Display C)<br/>The Automatic Support mode indicator is flashing.</p>                                                                           |       | <p>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.</p> |

## Running assist function

| Symptom                                       | Check                                                               | Action                                                                                                                                                        |
|-----------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The running assist function turns off.</p> | <p>Is the tire locked for a few seconds?</p>                        | <p>Release your finger from the running assist switch for a moment, and after making sure that the tires turn, operate the running assist function again.</p> |
|                                               | <p>Did you pedal while the running assist function was running?</p> | <p>Take your feet off the pedals and remove your finger from the running assist switch for a moment, and then operate the running assist function again.</p>  |

## Power supply of external devices via USB connection

| Symptom                       | Check                                              | Action                                                                                                                                                               |
|-------------------------------|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Power is not supplied.</b> | Is the Display Unit's power on?                    | <b>Press the power switch on the Display Unit to turn the power on.</b>                                                                                              |
|                               | Is the USB version correct?                        | <b>Use an external device that complies with USB 2.0.</b>                                                                                                            |
|                               | Is the USB cable type correct?                     | <b>Use an OTG cable. Also connect the host side to the display.</b>                                                                                                  |
|                               | Is the USB cable firmly connected?                 | <b>Re-connect the USB cable.</b>                                                                                                                                     |
|                               | Is the USB port or USB plug terminal dirty or wet? | <b>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 re-connect the cable.</b> |
|                               | Is USB setting set to "COMM"?                      | <b>Set the USB settings to "Power Supply" by referring to "Settings" or turn off the power and then turn it on again.</b>                                            |

## Wireless communication with Bluetooth low energy technology

| Symptom                                                                               | Check                                                                                                                                                                 | Action                                                                                                                                                                                                                                                                      |
|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Wireless communication cannot be used.</b>                                         | Are both the wireless communication settings of the Display Unit and your wireless communication equipment turned on?                                                 | <b>Set the communication profiles by referring to "Settings", and then set the correct communication profiles of the wireless equipment or application software.</b>                                                                                                        |
|                                                                                       | Are the communication profiles of the wireless equipment or application software that communicates wirelessly with the communication profiles of the display correct? |                                                                                                                                                                                                                                                                             |
| <b>The display values of the external wireless communication equipment are wrong.</b> | Did you change the settings of the communication profiles?                                                                                                            | <b>Reset pairing for a moment, set the communication profiles of the display, and then establish pairing again. For resetting of pairing and the procedure of establishing pairing, refer to the instruction manual supplied with the wireless communication equipment.</b> |

# DISPLAY

## Display Unit

EN

|           |                                                                                                          |                           |                                                                                                 |
|-----------|----------------------------------------------------------------------------------------------------------|---------------------------|-------------------------------------------------------------------------------------------------|
| Display C | Power supply portion                                                                                     | USB port type             | USB2.0 Micro-B                                                                                  |
|           |                                                                                                          | Output current            | Max. 1000 mA                                                                                    |
|           |                                                                                                          | Rated voltage             | 5 V                                                                                             |
|           | Wireless communication portion                                                                           | Communication range       | Line-of-sight distance approx. 1 m (3 ft) without interference                                  |
|           |                                                                                                          | Frequency band            | 2.4 GHz band (2.400–2.4835 GHz)                                                                 |
|           |                                                                                                          | Modulation method         | GFSK                                                                                            |
|           |                                                                                                          | Communication system      | Bluetooth version 4.0 (Bluetooth low energy technology)                                         |
|           |                                                                                                          | Output power              | –5,39 dBm (e.i.r.p.)                                                                            |
|           |                                                                                                          | Supported profiles        | CSCP <sup>*1</sup><br>CPP <sup>*2</sup><br>YEP1.0 <sup>*3</sup>                                 |
|           | Product Information<br> | Model No.                 | X1R-02/X1R-A0                                                                                   |
|           |                                                                                                          | Manufacturer              | YAMAHA MOTOR CO., LTD.<br>2500 Shingai, Iwata,<br>Shizuoka 438-8501, Japan                      |
|           |                                                                                                          | Trade mark/<br>Trade name |  <b>YAMAHA</b> |

\*1 CSCP (Cycling Speed and Cadence Profile)

Corresponds to the wheel revolution data and crank revolution data.

\*2 CPP (Cycling Power Profile)

Corresponds to the wheel revolution data, crank revolution data, instantaneous power, and accumulated energy.

\*3 YEP1.0

The e-Bike profile preset by YAMAHA MOTOR CO., LTD.

Navigation information (Compass) and fitness support (Fitness) can be displayed on the Display Unit by pairing the smartphone application with YEP1.0.

- Communication is not necessarily guaranteed with all wireless communication devices that have the same profiles as this system. Even when a device complies with the specification for Bluetooth low energy technology, there may be cases where the characteristics, specifications, or communicative environment of the device with this technology make it impossible to connect, or may result in different control methods, display or operation.
- YAMAHA MOTOR CO., LTD. can not be held liable in any way for damages or other loss resulting from information leaks during the communication via Bluetooth low energy technology.



- i** The operations described in this section may be carried out by the user. All other operations **MUST** be carried out by the vendor or qualified personnel.

## CLEANING AND CARE

- !** Always disconnect the battery pack before carrying out maintenance and/or cleaning operations.



**Failure to clean and care for your bicycle correctly may result in hazardous riding conditions, falls and accidents. Attentive care preserves the vehicle over time.**

## PERIODIC MAINTENANCE PROGRAM

Carry out the following work to ensure the safety and functionality of the vehicle and its components.

### After each use of the vehicle

Always check the following parts:

- As a first step, carry out a general cleaning of the vehicle, especially if it is used on particularly dirty and/or muddy surfaces (see “VEHICLE CLEANING” section).
- Spokes.
- Wheel rims, inspecting them for signs of wear and tear and checking that they are concentric.
- Tires for signs of damage and foreign bodies.
- Front wheel locking nuts wear status.
- Gear wheels and suspension components, inspecting them for signs of wear and tear and checking that they function correctly.
- Hydraulic brakes, inspecting them for signs of wear and tear and checking that they function correctly (check for leaks).
- Lights (if fitted).
- Lubricate chain and pinions after riding the bicycle on wet road; after each wash with water; after prolonged journeys on sandy soils (see section “VEHICLE CLEANING”).



**It is important to keep in mind that not all lubricants and maintenance products are suitable for your vehicle.**



**Contact your specialized vendor for more information.**



**Using unsuitable lubricants or maintenance products may damage or impair the vehicle's functionality.**



**Ensure that brake shoes, brake disks and the braking surfaces on the wheel rims do not come into contact with maintenance products or lubricating oils, as this would reduce the braking efficiency of your bicycle.**



**Failure to inspect and repair damages to your bicycle resulting from a fall, or failure to carry out such operations correctly, may result in hazardous riding conditions, further falls and accidents. Take the vehicle to the dealer or a specialised workshop in due time. This is the only way to be certain of identifying and repairing worn and damaged parts safely.**

Expert users can normally carry out some maintenance operations even though they require the use of specific equipment and suitable technical preparation.



**If you do not have all the specific tools, suitable clothing and protections, and a suitable place to operate in complete safety, it is not recommended to perform maintenance operations. If it is necessary to have technical advice or request service, contact the Authorized Yamaha Center.**

# CLEANING AND MAINTENANCE

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EN

-  Yamaha declines all civil and criminal liability for damage to the vehicle, property and/or persons due to maintenance operations performed by the user.
-  If the user is not interested in performing certain routine maintenance operations, we recommend going to an Authorized Yamaha Service Center.
-  Carry out maintenance operations more frequently if the vehicle is used in rainy, dusty areas or rough roads.
-  It is essential to make the first inspection and servicing by the end of the first year of use of the vehicle even if the deadline of 2,000 km (600 mi) has not been reached.
-  It is essential to make inspection and servicing by the end of the second year of use of the vehicle even if the specified deadline has not been reached.
-  The timely execution of the inspection and servicing indicated (the first one in the first year and the second one in the second year) is necessary for the correct use of the warranty.
-  Perform the annual checks on a regular basis unless a kilometre (or mileage) interval has expired previously.

## Maintenance for the Drive Unit

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.

# CLEANING AND MAINTENANCE

EN

| Position    | Operation                                                                                      | 2.000<br>km<br>(1.242<br>mi) | 4.000<br>km<br>(2.485<br>mi) | 6.000<br>km<br>(3.728<br>mi) | 8.000<br>km<br>(4.970<br>mi) | 10.000<br>km<br>(6.213<br>mi) |
|-------------|------------------------------------------------------------------------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|-------------------------------|
| Front brake | – Check the correct operation.                                                                 | √                            | √                            | √                            | √                            | √                             |
|             | – Check the wear condition of the brake disc and possible deformation<br>Replace if necessary. | √                            | √                            | √                            | √                            | √                             |
|             | – Replace the brake pads.                                                                      | √                            | √                            | √                            | √                            | √                             |
|             | – Replace the brake system oil.                                                                |                              |                              | √                            |                              | √                             |
|             | – Check the brake hose for cracks or damage.                                                   |                              | √                            |                              | √                            |                               |
|             | – Replace the brake hose.                                                                      |                              |                              |                              |                              | √                             |
| Rear brake  | – Check the correct operation.                                                                 | √                            | √                            | √                            | √                            | √                             |
|             | – Check the wear condition of the brake disc and possible deformation<br>Replace if necessary. | √                            | √                            | √                            | √                            | √                             |
|             | – Replace the brake pads.                                                                      | √                            | √                            | √                            | √                            | √                             |
|             | – Replace the brake system oil.                                                                |                              |                              | √                            |                              | √                             |
|             | – Check the brake hose for cracks or damage.                                                   |                              | √                            |                              | √                            |                               |
|             | – Replace the brake hose.                                                                      |                              |                              |                              |                              | √                             |
| Wheels      | – Check for misalignment and the presence of damage.                                           | √                            | √                            | √                            | √                            | √                             |
|             | – Check the wheel spoke nipples tightening.                                                    |                              | √                            |                              | √                            |                               |
|             | – Check for damaged or broken spokes.<br>Replace if necessary.                                 |                              |                              | √                            |                              | √                             |
| Tires       | – Check the tread depth and the presence of damage.<br>Replace if necessary.                   |                              | √                            |                              | √                            |                               |
|             | – Check the air pressure.<br>Correct it if necessary.                                          | √                            | √                            | √                            | √                            | √                             |

# CLEANING AND MAINTENANCE

EN

| Position                   | Operation                                                                   | 2.000<br>km<br>(1.242<br>mi) | 4.000<br>km<br>(2.485<br>mi) | 6.000<br>km<br>(3.728<br>mi) | 8.000<br>km<br>(4.970<br>mi) | 10.000<br>km<br>(6.213<br>mi) |
|----------------------------|-----------------------------------------------------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|-------------------------------|
| <b>Transmission chain</b>  | - Check the tension, alignment and conditions of the chain.                 | ✓                            | ✓                            | ✓                            | ✓                            | ✓                             |
|                            | - Check the rim and sprocket.                                               | ✓                            | ✓                            | ✓                            | ✓                            | ✓                             |
|                            | - Lubricate the chain with a specific lubricant.                            |                              | ✓                            |                              | ✓                            |                               |
|                            | - Replace the chain.                                                        |                              |                              | ✓                            |                              | ✓                             |
| <b>Handlebar</b>           | - Check the tightness of the components fastened on the handlebars.         |                              | ✓                            |                              | ✓                            |                               |
| <b>Cables and controls</b> | - Check the correct operation of the continuous transmission.               | ✓                            |                              | ✓                            |                              | ✓                             |
|                            | - Check the correct operation of the electronic throttle.                   | ✓                            |                              | ✓                            |                              | ✓                             |
|                            | - Check the wear condition of the sheaths of the shift and throttle cables. | ✓                            |                              | ✓                            |                              | ✓                             |
| <b>Fork</b>                | - Check its operation and the absence of oil leaks.                         |                              | ✓                            |                              | ✓                            |                               |
| <b>Dashboard</b>           | - Check the correct operation.                                              | ✓                            | ✓                            | ✓                            | ✓                            | ✓                             |
|                            | - Check for the presence of errors.<br>Possible deletion of errors.         | ✓                            | ✓                            | ✓                            | ✓                            | ✓                             |
| <b>Side kickstand</b>      | - Check its operation.                                                      | ✓                            | ✓                            | ✓                            | ✓                            | ✓                             |
|                            | - Lubricate with silicone grease.                                           |                              | ✓                            |                              | ✓                            |                               |
| <b>Pedals</b>              | - Check tightening and integrity.                                           |                              | ✓                            |                              | ✓                            |                               |
| <b>Lights</b>              | - Check its operation.                                                      | ✓                            | ✓                            | ✓                            | ✓                            | ✓                             |
|                            | - Adjust the headlight beam.                                                |                              | ✓                            |                              | ✓                            |                               |

# CLEANING AND MAINTENANCE

EN

| Position        | Operation                                                           | 2.000<br>km<br>(1.242<br>mi) | 4.000<br>km<br>(2.485<br>mi) | 6.000<br>km<br>(3.728<br>mi) | 8.000<br>km<br>(4.970<br>mi) | 10.000<br>km<br>(6.213<br>mi) |
|-----------------|---------------------------------------------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|-------------------------------|
| Battery         | – Verification of operation.                                        | √                            | √                            | √                            | √                            | √                             |
|                 | – Check for the presence of errors.<br>Possible deletion of errors. | √                            | √                            | √                            | √                            | √                             |
| Battery charger | – Verification of operation.                                        | √                            |                              | √                            |                              | √                             |
| Diagnostic tool | – Check for updates                                                 | √                            | √                            | √                            | √                            | √                             |

# CLEANING AND MAINTENANCE

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## CLEANING THE VEHICLE

EN

Proceed as follows:

- Disconnect the battery pack and remove it, remove the display.
- Using a delicate water jet, remove as much dirt (soil, small stones, sand, grass, etc.) as possible.

 **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.**

- Allow the vehicle to dry.
- Spray the entire vehicle with a suitable cleaning agent.
- Thoroughly rinse each part of the vehicle with a gentle jet of water.
- You may also wish to use a sponge or a cloth during this phase.
- Allow the vehicle to dry.

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

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

Cleaning and lubricating the chain:

- Pour a few drops of bicycle chain detergent onto clean, lint-free cotton cloth.
- Rub the cloth along the chain.
- Feed the chain forward so that the cloth comes into contact with its entire length.
- Request a helper to raise the rear wheel so that it is not in contact with the ground, then rotate the pedal crank very slowly in the direction of travel in order to distribute the detergent over the entire length of the chain.
- Make sure that the chain is fully lubricated.
- Allow the detergent to evaporate for approx 1 hour.
- Apply a small quantity of bicycle chain lubricant to the chain links.

 **Using too much lubricant, or unsuitable products, may result in dripping onto the brake disks, significantly reducing the bicycle braking efficiency.**

- Remove any excess lubricant from the chain using a clean, dry lint-free cloth.
- Clean the wheel rims and brake disks using a suitable degreasing product (consult your vendor).

 **Do not use motorcycle chain lubricants on your bicycle as this will cause the chain and gear change components to jam. Use ONLY lubricants that are specifically indicated for bicycle chains.**

Manually remove any remaining dirt using a clean, lint-free cotton cloth and a suitable detergent. Spray the entire vehicle with a suitable spray wax or similar protective product.

After the action time prescribed on the product used has passed, polish the vehicle with a clean, lint-free cotton cloth.

Clean the brake disks manually, using a clean, dry lint-free cotton cloth and a suitable degreasing product.

 **The presence of wax spray or other protective products on the brake disks will significantly reduce the braking efficiency of your bicycle. Clean the brake disks using a suitable degreasing product. Consult the vendor.**

The following components must not be treated with protective products:

- Brake shoes.
- Brake disks.
- Hand grips, brake and gear change levers.
- Saddle.
- Tires.

 **Wash the frame covers with water and neutral soap.**

## STORING THE VEHICLE



**A vehicle resting on its stand, against a wall or fence may tip over even with the slightest force. This may result in injuries to persons or animals and damage to property. Store your vehicle only where it will not be in anyone's way. Keep children and animals away from the parked vehicle. Do not store the vehicle near easily damaged objects, such as cars and the like.**

### Storage

Store the vehicle in a place that is:

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

How to store the vehicle correctly:

- Place the vehicle on a level, stable surface.
- With the vehicle stationary, lower the side kickstand with your right foot until it clicks into place.
- Rotate the handlebars so that they are facing slightly to the left.
- Carefully place the vehicle on its left side until a stable position is reached.
- Check the stability of the vehicle.
- Use one hand to steady the vehicle by holding it lightly by the handlebars or seat and use the other hand to tap the saddle lightly in all directions. If there is a risk that the vehicle may fall, look for another place to store it.

To park it without using the stand:

- Place the vehicle on a level, stable surface.
- Support the vehicle with the rear wheel or seat on a stable object.
- Turn the handlebars on the side towards which the vehicle was turned.
- Make sure that the vehicle is stationary and stable.
- If there is a risk that the vehicle may fall, place it in another way and/or location.

### 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 °C ÷ 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.



**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.

# CLEANING AND MAINTENANCE

## UNSCHEDULED MAINTENANCE OPERATIONS

### Removing and remounting the wheels units:

It is necessary to remove the wheel units when repairing tires or other wheel components.

It can also be useful for transporting the vehicle (e.g. in the boot of the car).



**It is absolutely compulsory to deflate the vehicle's tires when transporting it by car or any other transport vehicle!**



### Front wheel disassembly

- Remove the two nuts “A” that fix the front wheel to the fork.



- Remove the two spacers “B”.



- Remove the complete wheel from the fork.



**Hydraulic brakes should never be applied after removing the front wheel unit.**



**Be careful not to lose the two spacers “B”.**



## Front wheel assembly

**i** Do not apply the front brake lever during assembly.

- Place the complete wheel on the fork.

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- Position the two spacers "B".



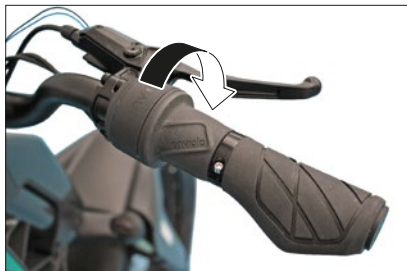
- Fix the front wheel using the two nuts "A".

 Fix the two nuts "A" to the correct tightening torque (see the "TIGHTENING TORQUE" table in chapter "CHECKS AND INSPECTIONS").

 Check that the wheel is firmly and correctly installed. If the front wheel is not firmly closed, it may come loose and move. This can lead to dangerous riding situations, falls and accidents.

# CLEANING AND MAINTENANCE

EN



## Rear wheel disassembly

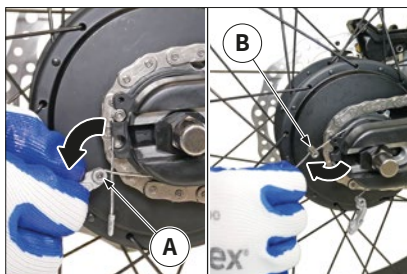


**Position the vehicle so that it is stable and the rear wheel is raised off the floor.**

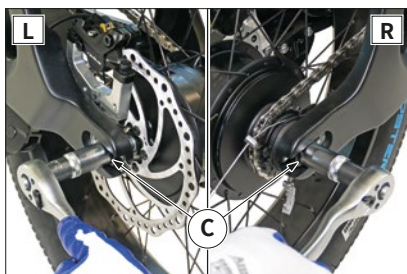
- Act on the continuously variable transmission control, turning it forwards to set the shortest possible ratio.



- Raise lever “A” on the rear wheel hub.



- Pull lever “A” out of the lower hub housing to loosen the shifting control cable.
- Pull out clutch “B” of the shifting control cable from the upper housing of the wheel hub.



- Loosen the two rear wheel fasteners “C”.



- Remove the chain from the gearshift pinion.

# CLEANING AND MAINTENANCE

EN



- Remove the rear wheel.

**i** Hydraulic brakes should never be applied after removing the rear wheel unit.



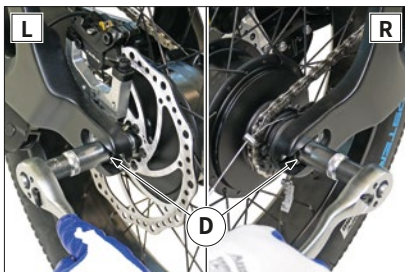
## Rear wheel assembly

**i** Do not apply the rear brake lever during assembly.

- Place the complete wheel on the fork.



- Position the chain on the gearshift pinion.



- Back the wheel until you feel the branch of the chain resting between the crown and pinion. Align the wheel and tighten the two rear wheel fasteners "D".

**i** The chain must not be in tension but only in support.

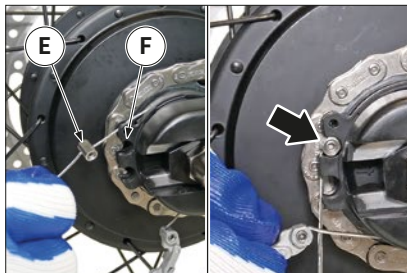
 Fix the two fasteners "D" to the correct tightening torque (see the "TIGHTENING TORQUE" table in chapter "CHECKS AND INSPECTIONS").



- Act on the continuously variable transmission control, turning it backwards to set the longest possible ratio.

# CLEANING AND MAINTENANCE

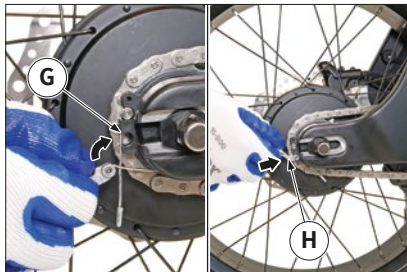
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- Position coupling “E” of the shifting control cable and insert it inside the upper housing “F” of the rear wheel hub.



**Check that the gearshift control cable is free of obstructions and that the chain is correctly positioned on the sprocket.**



- Pull lever “H” closer and insert it into the lower housing “G” of the rear wheel hub.



**Take care not to pull the shifting control cable forcibly, to avoid breakage or fraying.**



- Raise lever “H” until it is closed over the shifting cable coupling.
- Check that the wheel turns freely.



**Check that the wheel is firmly and correctly installed. If the rear wheel is not firmly closed, it may come loose and move. This can lead to dangerous riding situations, falls and accidents.**



## FLAT TIRE

In the event of a flat tire, first of all, attempt to re-inflate it, if the tire deflates again it may be punctured or damaged.

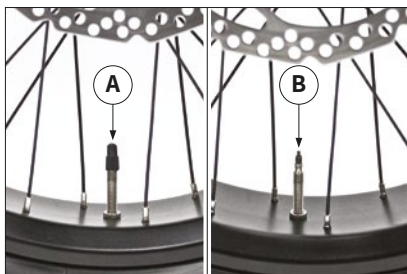
If you need replace a tire we recommend you contact your vendor or a bicycle tire fitter.

If you wish to repair a tire yourself, make sure you have the following items:

- 2 tire levers.
- A (new) inner tube having the same type of valve and dimensions as the one to be replaced.
- A new tire (if necessary).
- A compatible bicycle pump.



**If repairs are not carried out correctly it may result in dangerous riding conditions. Do not attempt to carry out this repair if you do not have the necessary tools.**



- Remove the wheel unit (see the preceding section in this chapter).
- Remove the valve safety cap “A”.
- Deflate the tire completely by pressing the inner valve “B”.
- Lift the tire away from the wheel rim using the tire levers and starting from the point opposite the valve.
- Remove the inner tube from inside the tire. Make a note of how the inner tube was aligned inside the tire.
- Identify the cause of the puncture:
- Inflate the defective inner tube using the bicycle pump.



- Attempt to find the point where the air escapes.
- If it is possible to identify the air leak, twist the inner tube around so that the valve is pointing inwards.

If the leak is located on the inner surface:

- Check that the rim protection band is positioned correctly in its housing.
- Check that all the spoke holes are covered. If not, contact your vendor.

- Check the rim for signs of damage (sharp edges, chips, splinters, etc.). If you notice any damage of this type, contact your vendor.
- Check whether there are multiple puncture holes located close to each other.



**If so, it may indicate a “snake bite”, which is caused by riding over sharp objects when the tire pressure is too low.**

- If the rim is not damaged, fit a new inner tube.

# CLEANING AND MAINTENANCE

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If the leak is located on the outer surface:

- Position the inner tube next to the wheel rim, complete with the tire, in the alignment in which they were fitted.
- Attempt to identify the area on the tire that corresponds to the point where the hole is located in the inner tube. Items such as thorns, small stones or fragments of glass will often be found lodged in the tire surface.
- Carefully remove the object that caused the tear using a suitable tool.
- In the event of extensive damage or tears, replace the tire.



**Touching the inside of the tire with your fingers is not recommended as it could be dangerous: any sharp objects left in the tire could cause cuts or injuries. Avoid rapidly sliding the inside of the tire with your fingers. Carefully touch the tire walls.**

If it is necessary to replace the tire:

- Remove it completely from the wheel rim.
- Fit the new tire, inserting one side onto the wheel rim.



**Make sure that the direction arrow on the tire corresponds to the direction of rotation.**

If it is not necessary to replace the tire:

- Inflate the new inner tube slightly so that it begins to take shape.
- Insert the valve through the appropriate hole in the rim. The valve must face the centre of the wheel (see “Checking the tire valves” chapter “CHECKS AND INSPECTIONS”).
- Push the remaining wall of the tire onto the wheel rim, starting at the point where the valve is located.
- Push the opposing sides of the tire onto the rim simultaneously, working your way right around the perimeter and starting from the valve.



**The further away from the valve you get, the greater the force required to push the tire onto the rim. For this reason, it may be necessary to use the tire levers, while taking care not to damage the inner tube.**

- Inflate the inner tube a little more.
- Move the tire backwards and forwards, transversally with respect to the direction of rotation.



**Make sure that the tire is positioned centrally on the wheel rim and that the inner tube does not protrude at any point.**

- Inflate the inner tube to the recommended pressure (see value indicated on the tire).
- Replace the wheel unit (see the preceding paragraphs in the section).
- Check the tires.

## OTHER OPERATIONS

For any maintenance operations not described in this section, contact your vendor.

## WINTER STORAGE

When the bicycle is not used for prolonged periods:

- Disconnect the battery and recharge it; recharge it at least once every 4 months.
- Wipe the battery terminals with dry cloth after leaving for prolonged periods.
- Do not clean the battery terminals contacts by polishing them with a file or using wire, etc. Doing so could result in a fault.
- Check the tire pressure (1 bar) and inflate them at least once every 4 months.

## DISPOSAL

Drive unit, display/control unit, battery, speed sensor, accessories and packaging should be recycled in an environmentally friendly way. Do not throw e-bikes and their components in the household waste!



According to European Directive 2012/19/EU, electrical appliances that can no longer be used and, according to European Directive 2006/66/EC, defective or used batteries, must be collected separately and recycled in an environmentally friendly way.



Old machines, replacement parts and packaging are made of recyclable materials. The owner is obliged to dispose of them in accordance with legal regulations in a proper and environmentally friendly manner.

All plastic injection-moulded parts are provided with a recycling symbol.

- REACH directive no. 1907/2006 (EC)
- RoHS directive (2011/65/EU)
- The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 (United Kingdom or Canada)

Please return any unusable E-Bike components to an authorised bicycle dealer.

**Subject to change.**

# TROUBLESHOOTING

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## TROUBLESHOOTING

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If problems occur while using the vehicle, first check whether the problem is one of those described in the following tables.

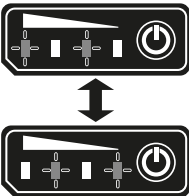
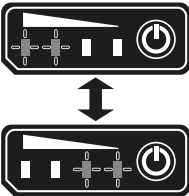
This table is designed to help you identify the correct solution without taking your bicycle to the authorized vendor. If the problem is not among those described, or if it is found in the table and operating as described in the tables does not solve it, consult your authorised dealer before using the vehicle again.

**Troubleshooting table**

| Problem                                                           | Possible cause                                                                                                                        | Possible solution                                                                                                                                                                                                              |
|-------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The display or assist system cannot be activated.                 | The battery pack has malfunction, despite being fully charged.                                                                        | Press the white push-button on the battery pack to check whether it is switched on. The battery pack charge level indicator LEDs should switch on. If they do not, the battery pack may be defective.                          |
|                                                                   | Battery pack overheated.                                                                                                              | Wait until the battery pack has cooled down.                                                                                                                                                                                   |
|                                                                   | Battery pack not installed correctly.                                                                                                 | Remove the battery pack and attempt to reinsert it into its coupling. Make sure that it is positioned correctly.                                                                                                               |
|                                                                   | Battery pack discharged.                                                                                                              | Recharge the battery pack using the dedicated battery charger.                                                                                                                                                                 |
|                                                                   | Electrical contacts on battery pack and/or connector damaged.                                                                         | Make sure that all the contacts are clean. If necessary, clean them using a soft, dry cloth.                                                                                                                                   |
|                                                                   | Display not mounted correctly on its support.                                                                                         | Remove the display from the support and reposition it. Make sure that it has been inserted correctly.                                                                                                                          |
|                                                                   | Display and/or support contacts damaged.                                                                                              | Make sure that all the contacts are clean. If necessary, clean them using a soft, dry cloth.                                                                                                                                   |
|                                                                   | Connector not inserted correctly into the battery pack.                                                                               | Insert the connector correctly into the battery pack contact.                                                                                                                                                                  |
| The display provides no data despite the vehicle being in motion. | Speed sensor not working correctly.                                                                                                   | Check the position of the contact on the rear wheel spokes; in particular, the distance from the speed sensor must be between 5 mm and 17 mm.                                                                                  |
| The vehicle lights do not come on.                                | Cables of the lights not correctly connected.                                                                                         | Check the cables and the electrical plugs and connect them correctly.                                                                                                                                                          |
| The display indicates an error code.                              | A system error is present.                                                                                                            | Consult the following table.                                                                                                                                                                                                   |
| Battery does not charge                                           | High or low battery temperature (battery in protection). Visible through the simultaneously blinking of all four LEDs on the battery. | Charging will resume automatically when the temperature inside the battery reaches a temperature suitable for charging.                                                                                                        |
|                                                                   | Poor contact between the battery and the battery charger adapter.                                                                     | Insert and remove the battery charger adapter from the battery several times. Use a dry cloth or cotton swab to clean the charger and battery contact terminals. Then reconnect both the Battery Pack and the Battery Charger. |

# TROUBLESHOOTING

EN

| Problem                                                                             | Possible cause                                                                                | Possible solution                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Battery does not charge                                                             | Is the power plug firmly connected? Is the charging plug firmly inserted in the Battery Pack? | Reconnect and try charging again.<br>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.<br>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 charger and battery contact terminals. Then reconnect both the Battery Pack and the Battery Charger.                                                                                                                                                                                       |
|    | There is a contact fault in the contact terminals.                                            | Remove the Battery Pack from the bicycle.<br>Then connect the charging plug into the Battery Pack. (If battery capacity indicator lamps still flash alternately, there might be a fault in the Battery Pack).<br>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. |
|   | There is a contact fault in the contact terminals.                                            | Remove the Battery Pack from the Battery Charger, mount the battery 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.                                                                                                                     |
| Both side battery capacity indicator lamps are flashing simultaneously.             | 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.                                                                                                                                                                                                                                                                                                |
|  |                                                                                               | 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.<br>Have a bicycle dealer inspect your bicycle.                                                                                                                                                                                                                                                                                                                       |

| Problem                                                                                                                                                                                                                  | Possible cause                                                                                     | Possible solution                                                                                                                               |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| 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 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 temperature can reach the range where charging is possible (15 °C ÷ 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.                                                                                  |

# TROUBLESHOOTING

## List of error codes and corresponding assist operation

| Error codes | Fault device              | Fault details                                                                                | Restoration condition                                                                                                                                                                                                    | Action                                                                                                                                                                                                                                                                      |
|-------------|---------------------------|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12          | Display Unit              | Stopped the communications to the display unit                                               | If the system will not detect any errors, the system can return to normal immediately.                                                                                                                                   | <ol style="list-style-type: none"> <li>1. Check the display unit connector.</li> <li>2. Replace the display unit assembly.</li> <li>3. Replace the wire lead 2.</li> <li>4. Replace the controller assembly (internal circuit board) or the Drive Unit assembly.</li> </ol> |
| 13          | Drive Unit - Display Unit | Communication data failure to display unit                                                   |                                                                                                                                                                                                                          | Make sure that the combination of Drive Unit and display unit are correct.                                                                                                                                                                                                  |
| 31          | Torque sensor             | No communication signals                                                                     | If the system will not detect any errors, the system can return to normal when the power is cycled.                                                                                                                      | <ol style="list-style-type: none"> <li>1. Replace the torque sensor assembly.</li> <li>2. Replace the controller assembly (internal circuit board) or the Drive Unit assembly.</li> </ol>                                                                                   |
|             |                           | Disconnected                                                                                 |                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                             |
|             |                           | Short-circuited                                                                              |                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                             |
|             |                           | Wiring failure between the torque sensor and the controller                                  |                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                             |
|             |                           | Wiring failure between the coil and the circuit board (wire chattering: nearly disconnected) |                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                             |
| 32          | Torque sensor             | Abnormal no-load voltage                                                                     | If the system will not detect any errors, the system can return to normal when the power is cycled. (When the system detects same error several times, the system can not return to normal even if the power is cycled.) | <ol style="list-style-type: none"> <li>1. Perform the torque sensor reference voltage adjustment.</li> <li>2. Replace the torque sensor assembly.</li> <li>3. Replace the controller assembly (internal circuit board) or the Drive Unit assembly.</li> </ol>               |
| 33          |                           | Abnormal voltage (detected during running / with high constant voltage)                      |                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                             |
| 34          |                           | Abnormal voltage (detected during running / others)                                          |                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                             |
| 35          |                           | Abnormal voltage (detected during running / others)                                          |                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                             |
| 36          |                           | Abnormal voltage (detected during running / others)                                          |                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                             |
| 37          |                           | Abnormal voltage (detected during running at low speeds)                                     |                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                             |

| Error codes | Fault device | Fault details                                                                       | Restoration condition                                                                               | Action                                                                               |
|-------------|--------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| 38          | Crank sensor | Abnormal voltage of the sensor for U phase current while the motor is not operating | If the system will not detect any errors, the system can return to normal when the power is cycled. | Replace the torque sensor assembly or controller assembly or drive axle assembly.    |
| 39          |              | Abnormal voltage of the sensor for W phase current while the motor is not operating |                                                                                                     | Replace the controller assembly (internal circuit board) or the Drive Unit assembly. |
| 61          | Controller   | Over current is applied to the U phase of the motor                                 | If the system will not detect any errors, the system can return to normal when the power is cycled. | Replace the controller assembly (internal circuit board) or the Drive Unit assembly. |
|             |              | Over current is applied to the V phase of the motor                                 |                                                                                                     |                                                                                      |
| 62          | Motor        | Over current is applied to the W phase of the motor                                 | The system can not return to normal even if the power is cycled.                                    | Replace the controller assembly (internal circuit board) or the Drive Unit assembly. |
|             |              | Abnormal current is applied to the U phase of the motor                             |                                                                                                     |                                                                                      |
|             |              | Abnormal current is applied to the V phase of the motor                             |                                                                                                     |                                                                                      |
|             |              | Abnormal current is applied to the W phase of the motor                             |                                                                                                     |                                                                                      |
|             |              | Corrente anomala applicata alla fase V del motore                                   |                                                                                                     |                                                                                      |
|             |              | Corrente anomala applicata alla fase W del motore                                   |                                                                                                     |                                                                                      |

TROUBLESHOOTING

| Error codes | Fault device | Fault details                                                                                                                                                        | Restoration condition                                                                                                                                                                                                    | Action                                                                                                                                                                                            |
|-------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 63          | Controller   | Failure in data reading                                                                                                                                              | If the system will not detect any errors, the system can return to normal when the power is cycled.                                                                                                                      | Replace the controller assembly (internal circuit board) or the Drive Unit assembly.                                                                                                              |
| 66          |              | External memory data error<br>EEPROM error                                                                                                                           |                                                                                                                                                                                                                          |                                                                                                                                                                                                   |
| 64          |              | Detected circuit board temperature is too low (−20°C)                                                                                                                | If the system will not detect any errors, the system can return to normal when the power is cycled. (When the system detects same error several times, the system can not return to normal even if the power is cycled.) |                                                                                                                                                                                                   |
|             |              | Detected circuit board temperature is too high (125°C) (including DC circuit)<br>Sensor on the board is nearly detached                                              |                                                                                                                                                                                                                          |                                                                                                                                                                                                   |
| 67          | Motor        | 2 lead wires are disconnected<br>Yellow lead wire is disconnected (U phase)<br>Blue lead wire is disconnected (V phase)<br>White lead wire is disconnected (W phase) | If the system will not detect any errors, the system can return to normal when the power is cycled.                                                                                                                      | 1. Replace the controller assembly (internal circuit board) or the Drive Unit assembly.<br>2. Replace the wire lead 3 or wire lead 4 or wire lead 5.                                              |
| 68          | Encoder      | Disconnected or led wire is short-circuited<br>Black wire is short-circuited                                                                                         | If the system will not detect any errors, the system can return to normal when the power is cycled.                                                                                                                      | 1. Check the encoder connector.<br>2. Replace the encoder lead wire.<br>3. Replace the controller assembly (internal circuit board) or the Drive Unit assembly.<br>4. Replace the motor assembly. |

| Error codes | Fault device    | Fault details                              | Restoration condition                                                                               | Action                                                                                                                                         |
|-------------|-----------------|--------------------------------------------|-----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| 71          | Battery         | Can't receive data from battery correctly  | If the system will not detect any errors, the system can return to normal when the power is cycled. | 1. Check the connection portion between the battery pack and bicycle, charging connector of power lead.                                        |
| 73          |                 | Detected battery voltage is too high (45V) |                                                                                                     | 2. Replace the plug D.C. receptacle or wire lead 2.<br>3. Replace the controller assembly (internal circuit board) or the Drive Unit assembly. |
| 74          |                 | Internal system failure                    |                                                                                                     | 4. Replace the battery assembly.<br><br>Battery capacity indicator may flush abnormally, refer to the battery service manual.                  |
| 79          | DC/DC converter | Abnormal DC current                        | If the system will not detect any errors, the system can return to normal when the power is cycled. | 1. Replace the external DC/DC converter.<br>2. Replace the controller assembly (internal circuit board) or the Drive Unit assembly.            |
| -           | Speed sensor    | Speed sensor disconnected                  | If the system will not detect any errors, the system can return to normal immediately.              | 1. Check the speed sensor lead connector.<br>2. Check the gap between the speed sensor and the magnet.<br>3. Replace the speed sensor set.     |

# WARNINGS AND SAFETY DEVICES

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## DRIVING AN ELECTRIC VEHICLE

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- Wear your helmet at all times and keep the chinstrap fastened.
- Always keep the lights on, even during the day. This makes the vehicle more visible in traffic.
- Wear shoes that cannot slip off and that fit firmly on the pedals. Do not wear sandals or operate the vehicle barefoot.
- Wear clothes that make you visible on the road and avoid loose clothing that could get tangled in the moving parts of the vehicle.

### Correct use



**Depending on the type, the vehicles can be used on various types of road according to the “Table of road surface conditions” in this booklet.**



**Using your vehicle for purposes other than those intended may result in dangerous driving situations, falls and accidents.**



**Improper use may also result in short-circuits inside the battery pack, which can lead to fires.**



**ALWAYS use the vehicle as described in this booklet and any supplementary documentation.**

### Improper use

- As has already been described, you must ensure your bicycle has been fitted with all the accessories required by the locally applicable regulations before using it on public roads.
- Changes that alter the bicycle geometry (example: different offset, different excursion, longer seat post, etc.)
- Adding non-approved accessories and components to your vehicle may cause damage to it and compromise its safe operation. This may result in hazardous riding conditions, falls and accidents.
- Never add equipment to the vehicle yourself or attempt to modify it; refer to a qualified dealer.
- Any mistakes made during improper work can cause damage to the vehicle and impair its operation and safety. This may result in hazardous riding conditions, falls and accidents.
- The user can only perform the operations described in the Use and Maintenance Manual.



**It is strictly forbidden for the user to connect and use diagnostic and programming equipment to any of the vehicle's electronic units (battery, dashboard, etc.).**



**The battery pack support or luggage carrier (if applicable) cannot be used to transport people and child seats.**

## FOR SAFE RIDING

### Use the following recommendations for safe driving and safeguarding your vehicle:

- This handbook should be read and understood before using the vehicle.
- If the rider is inexperienced, it is advisable to become familiar with the vehicle on sections of road with little traffic. NEVER lend the vehicle to inexperienced persons and in any case ensure that the person has the necessary qualifications for riding the vehicle.
- The Highway Code must be meticulously observed when riding the vehicle. It is absolutely forbidden to race with the vehicles outside special authorised circuits supervised by appointed personnel.
- Always ride correctly, avoiding manoeuvres that are abrupt or dangerous for yourself and others (e.g.: wheeling, remaining in the slipstream of the vehicles in front, failing to comply with speed limits, etc.). Assess and always take into due consideration road conditions, visibility, etc.
- **Keep both hands on the handlebars for safe riding** and always keep your feet on the appropriate spaces. Absolutely avoid standing up or relaxing while riding.
- While riding it is a good rule to pay the utmost attention, avoiding being distracted or influenced by persons, things, actions (e.g. do not smoke, eat, drink, read, etc.). The vehicle must always be kept in perfect condition, checking that the brake fluid levels (if present) are always within the prescribed values. Only use vehicle-specific lubricants of the type shown in the relevant tables.
- After a fall, check all the controls, levers, pipes, cables, braking systems, wheels and tyres for damage. If any damage is found, do not ride the vehicle, but have it suitably transported (complying with safety and legal regulations) to a YAMAHA authorised dealer.

 **It is forbidden to change in any way whatsoever the position, angle or colour of: number plate, turn indicators, lighting devices and horns. Do not make technical changes to increase performance or to alter the original characteristics of the vehicle in any way.**

 **Do not alter or modify in any way the original features and performance of the vehicle. The alteration or modification of the original parts of the vehicle is prohibited by law and makes the vehicle no longer compliant and it becomes dangerous for driving. These changes lead not only to the annulment of the guarantee, but also to possible fines.**

Such changes lead to the voiding of the guarantee and may compromise the performance of the product, thus reducing the level of security or even making it illegal and subject to serious sanctions. It is recommended to always comply with all national and local laws and regulations regarding vehicle equipment.

 **When riding a power-assisted bicycle, be sure that you are completely familiar with the starting, accelerating and handling characteristics of the bicycle, which are very different from a bicycle that does not have any power assist.**

 **The power output may be sudden and unexpected. Sudden start-up and/or acceleration of the vehicle could catch you unaware and cause you to lose control of your vehicle, exposing you to the risk of an accident.**

 **Ride with care.**

 **Drive so that you are always ready to brake.**

 **Do not ride the vehicle while drunk, under the influence of drugs, after taking certain medicines or in a state of physical fatigue and drowsiness. Failure to comply with these rules is considered extremely dangerous and could cause serious damage to property and/or people.**

 **Drive in such a way that you are always in full control of the vehicle and so that you do not get into difficulties in case of sudden dangerous situations.**

 **When riding in wet conditions, remember that the stopping power of your brakes is greatly reduced and that the adherence of the tires on the ground is considerably reduced. Carefully monitor your speed and give yourself extra time to stop.**

# WARNINGS AND SAFETY DEVICES

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-  Always wear an appropriate and legally approved helmet, correctly fastened and any other safety equipment required for your riding style.
  -  When using your vehicle, you should only wear suitable clothing that does not restrict driving and does not obstruct your view.
  -  Only wear tight-fitting trousers. Loose clothing could become entangled in the vehicle and cause serious falls.
  -  Certain items of clothing and/or the use of a backpack may restrict the driver's movements.
  -  We strongly recommend you do not attempt to ride your bicycle while wearing high heels.
- In case the vehicle is used on roads dirty with sand, mud, snow mixed with salt, we recommend checking and if necessary cleaning the brake discs with special non-aggressive detergents, so as to prevent the formation of abrasive agglomerates inside the holes and an early wear of the brake pads.
-  If the product will be used on public roads at any time, install appropriate reflectors to meet the requirements of the local, state or federal requirements applicable to vehicles. If you have questions regarding reflectors, please contact Yamaha.
  -  When riding at night or in poor visibility conditions, wear clothing with reflective bands and switch your lights on.
  -  When driving at night or in bad weather, switch on the vehicle's lights. Wear light-coloured and/or reflective clothing. Assume that drivers are unable to see the vehicle and drive with great caution. Drive slower than normal to maintain full control of the vehicle at all times.
  -  Overloading the vehicle can cause some components to fail or even break. This could lead to dangerous driving conditions, falls and accidents. Do not exceed the maximum permissible load specified in the user and maintenance booklet.
  -  Falling hazard and risk of accidents due to unexpected start.
  -  When using an EPAC or S-Pedelec bicycle, if you put your foot on the pedal, the electric motor starts with the slightest movement of the wheels. There is therefore a danger of an unwanted departure.
  -  Do not place your foot on the pedal until you are ready to start riding.
  -  Operate both brakes, and release them only when you wish to start moving.
  -  Falling hazard and risk of accidents caused by an unexpected movement.
  -  Cycle with care, always respect the recommended maintenance intervals and contact the vendor immediately in the event of defects.
  -  While riding, do not focus your attention on the display screen, as this can lead to accidents. Maintain focus on the road, your surroundings and other vehicles.

-  **Only one driver at a time. Operating the vehicle with two people on it or carrying large objects that obstruct your view or interfere with your control of the vehicle can cause accidents unless the vehicle is designed for riding with a passenger.**
-  **Do not perform tricks or stunts. Maintain complete control, caution and a reasonable speed at all times.**
-  **Never have the vehicle towed by other vehicles.**
-  **In addition to other factors, rider safety also depends on riding speed and conditions. Cycling at high speeds has an adverse effect on riding conditions, and increases the risk of falls and accidents. It is important to bear in mind factors such as damaged road surfaces, obstacles, bumps, kerbs etc. Proceed slowly and with caution in areas where such elements are present.**
-  **The wheel units may cause injuries to hands and other body parts when they are in motion. Keep hands and other body parts away from the wheel units when they are in motion. Ensure that other persons (children and adults) are prevented from coming into contact with the wheel units, with their hands or any other part of their bodies, while they are in motion.**
-  **When driving, particularly on long journeys and during frequent braking, the brake discs may become so hot that they can cause burns on contact with the skin. Do not touch the brake discs immediately after driving, allow them to cool for at least 5 minutes before touching them. Do not cool them by pouring water or other liquids on them; the discs may be damaged.**
-  **Loading (where permitted) worsens the vehicle's handling and increases braking distance.**

## Getting on and off of the vehicle

The getting on and off from the vehicle must be in complete freedom of movement and without impediments. Go up and down only from the left side of the vehicle and with the kickstand down to prevent unbalancing or loss of balance, causing falls or overturns.

The passenger must make the movements to get on with the utmost caution, avoiding to unbalance the rider and the vehicle.

Place your feet on the ground and hold the vehicle in running position.

-  **The kickstand is designed to support the weight of the vehicle and a maximum load, without rider and passenger.**
-  **If it is not possible to have both feet on the ground when getting on, keep only the right foot on the ground, as the left side of the vehicle is “protected” from the kickstand, in case of imbalance or loss of balance.**

Use the left foot to retract the lateral kickstand.

Stop the vehicle in an area suitable for stopping or parking, ensuring that the ground is stable and free of obstacles.

Fully extend the kickstand using the left foot.

## WARNINGS AND SAFETY DEVICES

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-  **If it is not possible to have both feet on the ground when getting off, keep only the right foot on the ground, as the left side is “protected” from the kickstand, in case of imbalance or loss of balance.**

If the vehicle is approved to carry a passenger, hold the vehicle in the running position and wait for the passenger to get off the vehicle.

-  **The passenger must always get off from the left side of the vehicle, using the left footrest.**
-  **The rider must instruct the passenger on how to get off the vehicle. The passenger must get off with the utmost caution, avoiding unbalancing the rider and the vehicle.**

Tilt the vehicle making the kickstand touch the ground. Get off the vehicle and turn the handlebar completely to the left.

-  **Make sure that the vehicle is stationary and stable.**

-  **Do not lift the vehicle grasping the license plate holder frame, in order to avoid damage.**

## RESIDUAL HAZARDS

### Fire hazard

Strong shocks due to improper use of the vehicle, storage in a hot environment (e.g. the passenger compartment of a car in strong sunlight) and dropping the battery pack can cause internal short circuits in the battery pack and a subsequent fire.



**Motor vehicle cabins may overheat if exposed to strong sunlight. High temperatures may result in short-circuits inside the battery pack, causing it to catch fire.**



**In addition, it is absolutely compulsory to completely deflate the vehicle's tyres when transporting it inside a motor vehicle.**



**Always park in a shaded area and make sure that the ambient temperature remains below 32°C (90°F).**

- Use the vehicle in accordance with its intended purpose (see section "Correct use" in the user and maintenance booklet).
- Always store the vehicle in an environment with a temperature between -10°C and +50°C (14°F and 122°F).
- Keep the vehicle away from heat sources such as radiators, heaters, etc.
- In the event of smoke or flames emanating from the battery pack, stop the bicycle immediately and put the fire out using an extinguisher, if possible. If there is a risk of the fire spreading to surrounding objects, contact the Fire Service without delay.

### Electrical hazards

The use of non-standard, damaged or faulty battery chargers and electrical cables may generate potentially fatal electric shocks.

- Always use the battery charger supplied with the bicycle.
- Do not attempt to dismantle the battery pack or battery charger.
- Keep the vehicle and charger away from children and animals.
- Ensure that the battery charger does not come into contact with water or other liquids.
- Do not leave the battery pack or battery charger where they may be exposed to direct sunlight or heat sources (heaters, stoves, etc.).
- Never use the battery charger or the batteries if they are damaged in any way.
- Never use the battery charger if the isolation on the cables or any of the plug connectors are damaged. In such cases, grasp the plugs only by the isolated parts.

### Generic hazards

- Always keep your hands, feet and any other part of your body away from the bicycle moving parts (wheels, chain, gears). Injury hazard.
- When transporting children on child seats, make sure that they cannot come into contact with the wheels while they are in motion.
- In the event of rain, snow or slippery road conditions, reduce your speed and increase your distance from other vehicles.
- Avoid riding through puddles. If water gets into the motor hub it could cause short circuits or irreparable damage.
- Do not leave the vehicle in the car under the sun.



**The brake disks may reach very high temperatures following a long descent. Do not touch the brake disks immediately following a descent. Allow them to cool down for at least 5 minutes before touching them. In order to check the temperature, touch them momentarily with an exposed finger. If they are still very hot, wait a few minutes and then repeat the check until the disks have cooled down.**

### Danger of burns

The motor and brake discs (if fitted) can become very hot with use and may remain so even when the vehicle is stationary for some time. Before carrying out any operation near the engine or braking system, wear insulating gloves or wait for their cooling.

# WARNINGS AND SAFETY DEVICES

## VEHICLE CARE

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-  **To ensure safety and keep components in good working order, have your vehicle serviced regularly by a mechanic at least once a year.**

Throughout the year, you should perform the following checks:

- Confirm that all nuts and bolts are tight.
- Check all hardware to see that no parts are worn, damaged or missing. Make certain that the frame and fork alignment are true and that all components are seated in the right position.
- Reflectors should be kept clean, securely fastened and positioned for easy visibility at night from the front, rear and side. Immediately replace any damaged reflectors. Always use a front and rear light when riding day or night.
- Replace worn or damaged cables. Cables stretch with use and require periodic adjustment and lubrication.
- Check the chain tension frequently and adjust as necessary.

-  **Never spray the vehicle with pressurised water. Pressurised water, even from the nozzle of a small garden hose, can seep under the seals and enter the product, affecting its operation.**

-  **Wash the vehicle and all components with a damp cloth.**

Yamaha recommends using appropriate vehicle care products. Using products that contain alcohol, nitro diluents, cold detergents, fuels or similar can ruin and/or damage vehicle components. Regular care preserves the aesthetic and functional quality of your vehicle for a long time.

-  **Do not use abrasive pastes on the vehicle, they could damage the painted parts.**

-  **Do not apply protective wax on the parts of the braking system, it could compromise their operation.**

-  **Do not pass wax on the saddle, it could damage it and make it slippery, reducing the stability of the rider's and/or passenger's seat thus increasing the risk of accidents and/or damage to things and/or people.**

## BRAKE FLUID

-  **Brake fluid may damage painted, plastic or rubber surfaces. Protect these components with a clean rag when performing certain operations.**

-  **Always wear protective glasses and in case of accidental contact with eyes, rinse immediately with plenty of clean, fresh water and consult a doctor immediately. Keep out of the reach of children.**

## BATTERY INSTRUCTIONS

-  **Battery fluid is corrosive. In case of contact with your skin or eyes, immediately seek medical attention.**
-  **Avoid personal injury. All batteries and electric systems present:**  
**FIRE HAZARD**  
**EXPLOSION HAZARD**  
**ELECTRICAL SHOCK**
-  **Only use the batteries and chargers originally installed in the vehicles by Yamaha.**
-  **Use of other battery packs, chargers or power cords presents a risk of fire and other personal injury.**
-  **Improper use of lithium batteries may result in fires, explosions or chemical hazards.**
-  **The battery charger supplied with your bicycle must only be used to charge lithium ion batteries. Do not use it to charge lead, NiCd-NiMh batteries or accumulators.**
-  **The user is strictly forbidden to connect and use diagnostic and programming equipment to the battery.**

### Battery and Charger Care and Maintenance

-  **Examine the battery and charger regularly for damage, especially the cable, plug and housing. If any component is damaged, even slightly, DO NOT USE IT. Replace damaged component with genuine spare parts provided by the battery manufacturer.**
  - Do not open the battery pack or charger for any reason. This could cause a short circuit and a fire.
  - Never modify in any way any component of the battery pack, charger or power cords.
  - Do not park your vehicle in the sun: the battery pack may become hot and the protection may be triggered.
  - Never expose the battery or store the battery in the vicinity of high temperatures.
-  **The battery must be kept in a dry place and at a temperature between 5-35 °C (41-95 °F). Keep the battery out of reach of children.**
  - Always keep your charging set away from direct sunlight, high temperature or flammable gases when charging.
  - Do not attempt to charge the battery pack when it is hot. Make sure that the battery pack is at room temperature before charging it.
  - The battery will heat up slightly while it is being recharged, however, the charging process must be interrupted immediately if the battery pack starts to over heat.
  - Never throw the battery pack into a fire.
  - Do not allow the battery to contact metal objects (paper clips, coins, keys, nails, screws, etc.), as this may cause a short-circuit. Short-circuits can cause a fire.
  - Never subject the battery or the charger to physical shocks, such as dropping it or striking it with a hammer.
  - Keep the battery / charger out of reach of children and animals.
  - Make sure that the battery pack does not come into contact with water or other liquids. If it does, avoid using it and have it checked by the vendor.
  - Remove the battery pack from the vehicle before transporting it by car or plane or before storing it.

# WARNINGS AND SAFETY DEVICES

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## Battery and Charger Use

- The battery comes with a nominal preliminary charge. For optimum performance, discharge and charge the battery fully twice.
- Charge the battery before using the vehicle.
- To allow riding in damp conditions, the product is designed to be water resistant. Do not use the vehicle in heavy rain. Do not immerse the battery in water.
- The charger can be used with an input voltage in the range of 100V to 240VAC.
- Never rotate the pedals while the battery is being charged.
- Never connect, disconnect or otherwise handle the battery pack / charger with wet hands or when standing on a wet surface.
- Only use the charger in a dry, well-ventilated and dust-free environment.
- Charge the battery at an ambient temperature between 5°C and 35°C (40°F and 95°F).
- Only charge the battery when the battery is at ambient temperature. Stop charging if the battery gets too hot during the charging process (greater than 55°C / 130°F).
- Immediately disconnect the battery from the charger when the battery is fully charged.
- The charger generates heat and can be hot:
  - ◊ Do not wrap the charger in a towel, blanket or other object;
  - ◊ Do not use the charger near flammable objects;
  - ◊ Do not place the charger on floor coverings such as carpets, mats, area rugs or other flammable surfaces;
  - ◊ Avoid prolonged skin contact.
- If the battery never fully charges, disconnect it from the socket immediately to stop the charging process and contact Yamaha.
- If you detect a strange odor or smoke, immediately disconnect the battery.
- When charging the battery, ensure that the power plug is fully inserted into the wall outlet.
- Never leave the charger plugged in the wall when not in use.
- Never leave the charger plugged into the battery even if the charger is not plugged into a wall outlet.
- Never pull on the plug to unplug the power cord from a wall outlet.
- Keep the power plug clean and dust free. The charger should be cleaned regularly.
- Never use extension cords.
- Do not bend the cable. The cable must not be rolled up while charging.
- Never use a single outlet for multiple devices.
- Never use the battery or charger for any other purpose.
- If the vehicle is not in use, when possible, remove the battery and store it at a temperature between -10°C and +50°C (14°F and 122°F) in a dry environment.

## WHAT WORK THE OPERATOR CAN DO ON THE VEHICLE INDEPENDENTLY



**Mistakes made during improper work on the vehicle can cause damage to the vehicle and impair its safe operation. This may result in hazardous riding conditions, falls and accidents.**

- It is not permitted to modify the characteristics of individual components of the vehicle.
- All other operations, including preparing the bicycle for use, may only be carried out by the vendor or a specialized technician.

## PRECAUTIONS FOR MOUNTING ACCESSORIES OR COMPONENTS FOR MODIFICATIONS



**Adding non-approved accessories and components to your vehicle may cause damage to it and compromise its safe operation. This may result in hazardous riding conditions, falls and accidents.**

Do not add accessories or equipment to your vehicle yourself or attempt to modify it.

In the case of modifications, always consult a specialized vendor when selecting accessories and components.

When calculating the additional weight of the accessories it is important to bear in mind the maximum permitted weight of your bicycle.

Any modifications made to the vehicle, and the removal of original parts, can affect the performance of the vehicle, thus reducing the level of safety or even making it illegal. It is recommended to always comply with all national and local laws and regulations regarding vehicle equipment.

In particular, technical modifications designed to increase performance or to alter the original characteristics of the vehicle must be avoided. Modifications to the vehicle invalidate the warranty and invalidate the type-approval. Any arbitrary changes made release YAMAHA from any liability resulting from damage or injury to property, persons or animals. The user is personally responsible for the choice of installation and use of accessories.

YAMAHA recommends the use of original accessories.