

# QORE System

E-Bike System Assembly Manual | V1.1

**QORE**



**IMPORTANT SAFETY INSTRUCTIONS  
KEEP THESE INSTRUCTIONS**

Yamaha no. 592584-101



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# 1 About this assembly manual

This assembly manual contains the necessary information for the intended use and safe assembly of the “QORE System” drive system (hereinafter referred to simply as the “product”). The information is primarily intended for the technical personnel responsible for the assembly and integration of the product.

Before completing any work relating to the product:

- Make sure that you have read and understood this assembly manual in full, paying particular attention to the safety and warning notices.
- Keep this assembly manual in a safe place for future reference.

- Follow the instructions in this assembly manual at all times when using and handling the product.

If you have any queries, questions or problems with the product that cannot be resolved by this assembly manual, do not attempt to carry out any work yourself and contact Yamaha or your dealer.

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## 1.1 Design of safety and warning notices

This assembly manual contains safety-related instructions to warn the user of residual risks.

The safety instructions in this assembly manual are detailed in „*IMPORTANT SAFETY INFORMATION*“. To warn of specific hazards in the context of an activity or life cycle phase, warnings are used in the text. These warnings are identified by a warning symbol in conjunction with a signal word. The signal words indicate the degree of the hazard.

The following warnings are used in this assembly manual.

### DANGER

DANGER indicates an immediate hazard which, if the safety measures are not followed, will result in fatal or serious injury.

### WARNING

WARNING indicates a potential hazard which, if the safety measures are not followed, can result in fatal or serious injury.





**CAUTION**

CAUTION indicates a potential hazard which, if the safety measures are not followed, can result in minor or non-serious injury.

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**NOTICE**

NOTICE indicates a potential hazard which, if the safety measures are not followed, can result in property or damage to the environment.

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## 1.2 Format conventions

This assembly manual uses additional forms of presentation for certain information.

### Highlighting in texts

<b>Bold</b>	Highlights information which is particularly important when describing procedures.
<i>Italicized</i>	Highlights references to information in this assembly manual.
<u><i>Italicized underlined</i></u>	Highlights references to information in other documents.

### Figures

The figures contained in this assembly manual are schematic representations and serve only to graphically clarify the product and the respective processes. The figures may deviate from the actual state of the product upon delivery.



## Lists

Instructions are presented as numbered lists and must be carried out in the specified order.

1. Activity step 1
  2. Activity step 2
- ✓ Outcome

Bulleted lists are displayed as unnumbered lists.

- Bullet point 1
- Bullet point 2
- Sub-point 1
- Sub-point 2

## 1.3 Terms and abbreviations

Term	Meaning
EPAC	Electrically Power Assisted Cycle
HMI	Human Machine Interface



## 1.4 Symbols and notices

### Symbols



This symbol indicates that personal protective equipment must be worn for the subsequent activity.



This symbol indicates components that are included in the scope of delivery.



This symbol indicates components that are not included in the scope of delivery but are required.



This symbol indicates tools and equipment required for the subsequent activity.

### Mandatory signs



Read the instructions in full before working on the product and follow the instructions provided.



Wear safety gloves.



Wear safety boots.



Wear safety goggles.

## 1.5 Applicable documents

To use the product as intended, it is necessary to observe all the accompanying information provided.

This includes this assembly manual, the operating manual of the manufacturer of the EPAC, and the accompanying information for the additional components of the QORE System.

This includes, in particular:

- Operating manuals for the battery and the charger
- Operating manual for HMI Allround
- Operating manual for speed sensor



## 2 IMPORTANT SAFETY INFORMATION

The following safety information describes potential hazards and residual risks that may arise when using the product. To avoid personal injury and damage to property, it is necessary to read and follow the instructions provided here before

using the product. It is also necessary to comply with all the applicable national regulations for the operation of EPACs as well as all the applicable national and international regulations on safety, health, and occupational safety.

### 2.1 Overall system safety instructions

#### WARNING

When using this product, basic precautions should always be taken, including the following:

- Read all instructions concerning the use of the product.
- To reduce the risk of injury, close supervision is required when the product is used near children.
- Do not insert fingers or other limbs into the product.
- Do not use the product if the power cord or other live wires are damaged.
- The product and its accessories are designed for use within specified ambient conditions / temperatures (see „*Technical data*“). Do not charge the battery if the ambient temperature is outside the permissible ambient conditions.

#### ELECTRICAL HAZARDS

- Damage to live parts poses the risk of electric shock. Do not use the product if it is damaged.
- If live components of the product come into contact with moisture, there is a risk of a short circuit. Keep liquids away from live components and do not spray any liquids (e.g., cleaning agents) onto live components.
- The use of unsuitable power cables and connectors can lead to personal injury and damage to property. Only the power cables and connectors approved by Yamaha for the cabling may be used.
- Working on live parts with conductive tools poses a risk of electric shock. Always remove the battery when working on the product and only use insulated tools.
- Moisture and foreign matter can enter the product through exposed connections. Seal exposed connections with dummy plugs.



- Improper cabling of the connecting cables in the drive chamber may result in damage to the product. When laying cables, do not kink them, lay them over sharp edges or pinch them.
- When the cables are pulled to disconnect them, this may damage the cables. Always disconnect the cable by pulling the plug, not by pulling on the cable.
- Due to its design, the product has sharp edges. During the assembly work, wear the prescribed personal protective equipment.
- Dropping the product can cause bruising and contusions to persons as well as damage the product. Always handle the product with care and wear the prescribed personal protective equipment.

## HAZARDS DUE TO HEAT AND FIRE

- Electrical energy or sparks can ignite materials in the immediate vicinity. The area must be free of flammable substances or other combustible materials during all assembly work.
- The surfaces of the drive housing can become hot during operation (up to 70°C) and cause burns upon contact. Avoid contact with the drive housing during and shortly after operation. Integrate the drive unit into the overall system in such a way as to ensure the safety of the end user and prevent the risk of burns.

## Mechanical hazards

- If mechanical connections between product components are improperly made, personal injury and property damage can result from loosening connections and material damage. Only tighten screw connections to the specified torque.

## Hazards posed by combining the product

- Combining the product with accessories (e.g., chain guides, chains) or spare parts not approved by Yamaha may result in personal injury or damage to property. Only use accessories and spare parts that are approved by Yamaha. If in doubt, contact Yamaha customer service team.
- The product may only be integrated into EPACs that are compatible with the product's specifications. If in doubt, contact the Yamaha customer service team.

## Hazards during assembly and commissioning

- The assembly may only be performed only by trained and qualified personnel.
- Before any assembly work, remove the battery properly and disconnect the power supply to the drive.



- The use of sharp or pointed tools during assembly can damage live parts of the product. Keep sharp or pointed tools away from cables, connectors and any other live parts.
- When assembling and commissioning the product, there is a risk of crushing, burns or injury due to rotating parts. Always wear the prescribed personal protective equipment.
- Modifications to the product may lead to malfunctions and compromise the operational safety. Do not make any modifications to the product that have not been confirmed and approved in writing by Yamaha.
- The safety features on the product are essential for the operational safety. Check that the safety features are functioning properly before using the product. If any defects are discovered, do not operate the product and contact the Yamaha customer service team immediately.
- Foreign matter in the working area of the product can cause damage to property or compromise the operational safety. Remove any unused cables, tools and other objects from the working area after completing any and all assembly work.
- Improper assembly can lead to personal injury and damage to property. Before use, ensure that the assembly has been carried out correctly and that the product is functioning properly.
- When commissioning individual modes (e.g., walk assist) or without load (e.g., without a rider), malfunctions or excessively powerful motor assistance may occur, which may injure persons in the vicinity. Always perform commissioning under load.
- When commissioning the circuitry, unexpected motor assistance from the drive may lead to personal injury and damage to property.
- The specifications of the EPAC frame may have a direct influence on the vibrations transferred to the drive.

### Hazards during operation

- Undesired electromagnetic disturbances may lead to malfunctions of the drive unit. This may result in severe personal injury and damage to property. The manufacturer of the EPAC in which this product is incorporated is obliged to test and demonstrate the electromagnetic compatibility of the system as a whole.
- Modifications to the product and its components that aim to result in an increased performance are not permissible.
- The A-rated emission sound pressure level at the ears of the rider is lower than 70 dB(A).
- The product may be operated exclusively in combination with a chain guide approved by Yamaha.



- Operation of the product without an underride guard cause damage to the product. The product may exclusively be operated with a suitable underride guard (rock guard).
- If a malfunction should occur, the product switches off automatically and must be switched back on manually by the user. In this way, the product prevents hazardous situations caused by a sudden restart during the trip.
- In the event of failure, malfunctioning, or obvious damage to the product (e.g., loose connections/missing screws), do not attempt to embark on any repairs yourself and contact Yamaha or an authorized garage.
- Unauthorized access to the product can result in personal injury and damage to property. When not in use, secure the product against unauthorized access using appropriate measures.
- Like all mechanical components, the EPAC is subject to wear and tear and high levels of stress. Different materials and components may respond differently to wear and continuous stress. If the intended service life of a component is exceeded, it may fail suddenly and potentially cause injury to the rider. Any cracks, grooves or discoloration in high-stress areas indicate that the component has reached the end of its service life and should be replaced.

- High temperatures can occur in the area of the drive unit. Inspect the area around the drive unit for damage and unusual changes on a regular basis.

### **Hazards during maintenance**

- Unauthorized repairs to the product can lead to personal injury and damage to property. Repairs should be carried out by authorized garages only.
- Before any maintenance work, remove the battery properly and disconnect the power supply to the drive.
- The surfaces of the drive housing can become hot during operation. Before any maintenance work (e.g., lubricating the chain), allow the product to cool down completely.
- Aggressive cleaning agents can damage the product. Only use solvent-free, non-corrosive and non-abrasive cleaning agents.
- For information on the cleaning and maintenance of third-party components (e.g., chain guides, chains), refer to the accompanying information provided with each component.



### **Hazards during storage and disposal**

- The product may be damaged if it is stored in a humid environment. Store the product (whether installed or as a separate component) in a dry environment, protected against direct sunlight and away from dust and moisture.
- When disposing of the product or its components, observe the local waste disposal regulations.

## **2.2 Battery safety instructions**

### **ELECTRICAL HAZARDS**

- Unsuitable chargers and connecting cables can cause damage to the battery. Only use the original Yamaha charger to charge the battery. The EPAC must not be used during the charging process.
- Remove the battery before any work on the EPAC and prior to transport or storage.
- A short circuit can occur if the battery terminals come into contact with metallic objects. Never short-circuit the battery. Keep metal objects away from the battery. Never store the battery together with metal objects (e.g., in a drawer).
- When using additional power consumers (e.g., heated grips), the EPAC manufacturer is responsible for the correct design and protection of the wiring. The total current usage of the drive unit and other components must be taken into account.

### **HAZARDS DUE TO HEAT, FIRE AND EXPLOSION**

- Improper handling can cause the battery to explode. Never use the battery for any purposes other than those specified here.
- Check the battery for damage before each use. Do not use or charge damaged batteries.
- Never open, disassemble, puncture, or otherwise modify the battery.
- Ensure that the battery is inspected by an authorized Yamaha dealer after an impact or it is dropped.
- Keep the battery away from naked flames, heat (e.g., direct sunlight) and liquids.
- In the case of a fire or explosion, do not attempt to extinguish the battery yourself. Remove yourself from the vicinity of the battery and call the fire department as soon as possible.



- The battery can become hot during charging and pose a risk of causing burning or igniting other materials. Allow the battery to cool before handling it and keep it away from flammable materials.
- Only charge the battery in a dry, fireproof location and do not leave it unattended during the charging process.
- Lithium batteries are hazardous goods and subject to the hazardous goods regulations in accordance with UN 3480 during transport.
- Always wear personal protective equipment (safety goggles, protective clothing) when handling damaged batteries.
- If you come into contact with leaked battery acid, rinse the affected area immediately with plenty of tap water. Next, consult a doctor immediately, especially if the acid has come into contact with your eyes and/or mucous membranes (e.g., nasal mucosa).
- Should toxic gases escape, ensure a sufficient supply of fresh air. Consult a doctor immediately if you suspect that you have inhaled toxic gases.

### **Hazards posed by corrosive substances**

- If the battery is damaged, corrosive battery acid or toxic gases may escape. Ensure that the battery is inspected by an authorized Yamaha dealer if you suspect that it is damaged.

## **2.3 Charger safety instructions**

- The charger may be used by persons suffering from reduced physical, sensory, or mental capabilities, or with a lack of experience and knowledge, if they are supervised or have been instructed in the safe use of the device and understand the hazards involved.
- The charger may be used by children aged 14 years and older if they are supervised in its use.
- Children must not play with the charger.
- Keep the charger out of the reach of children at all times.
- Never carry the charger by its cables / power cord.
- Disconnect the charger from the power supply before connecting or disconnecting the battery connection.



- Disconnect the charger from the mains power supply during thunderstorms.
- Do not place objects on top of the charger cable or drive vehicles over it.
- When laying cables, ensure they do not create tripping hazards and are not within the reach of children.
- Store the charger in a cool, dry place when it is not in use.
- The charger must be grounded during operation. In the event of a malfunction or failure, the grounding provides a path of least resistance for the electric current, reducing the risk of electric shock. The charger is equipped with a cable that has a grounding conductor and a grounding plug. The plug must be inserted fully and securely into a properly installed and grounded wall socket which complies with the local regulations.

## ELECTRICAL HAZARDS

- Check the charger, cables and plugs for damage before each use. Do not use a damaged charger.
- Only connect the charger to an electrical outlet whose voltage matches the specifications on the name plate of the battery.
- Use the charger only in dry, well-ventilated indoor areas and keep it away from liquids.
- Do not attempt to repair or open the charger yourself. Any necessary repairs must be carried out by an authorized Yamaha dealer.
- Do not bend, kink, or coil the charger's cables around the charger.
- The improper removal of the power plug poses a risk of electric shock. Only unplug the power plug from the power socket if your hands are dry and clean. Only pull on the plug itself, not on the cable.
- **WARNING** – The improper connection of the grounding conductor can result in electric shock. Ask a qualified electrician if you are unsure as to whether the device is properly grounded.
- Do not modify the plug supplied with the device – if it does not fit into the socket, have a suitable socket installed by a qualified electrician.
- Do not touch the charger contacts with metallic objects. Keep metallic objects away from the charger.
- Regularly check the charger contacts for dirt and foreign objects. Remove any foreign objects with a dry, lint-free cloth when the charger is unplugged.
- Do not use the charger in areas that have high levels of electromagnetic interference.



## HAZARDS DUE TO HEAT, FIRE AND EXPLOSION

- Improper handling can cause the battery to explode. Never use the battery for any purposes other than those specified here.
- Keep the charger away from naked flames, heat (e.g., direct sunlight) and liquids.
- Only use the charger for the purpose of charging the original Yamaha battery. Do not use it to charge unsuitable batteries or rechargeable batteries (e.g., vehicle batteries).
- Do not use the charger with a multiple adapter or extension cord.
- The charger can become hot during charging and pose a risk of causing burning or igniting other materials. Allow the charger to cool before handling it and keep it away from flammable materials.
- Do not cover the charger or place any objects on it during the charging process.
- Only use the charger in a dry, fireproof location and do not leave it unattended during the charging process.
- Unplug the charger once the charging process is complete.

## 2.4 Operating units safety instructions

- When commissioning individual modes (e.g., walk assist) or without load (e.g., without a rider), malfunctions or excessively powerful motor assistance may occur, which may injure persons in the vicinity. Always perform commissioning under load.
- The operating units may be destroyed if opened. Never open the operating units.
- Improper use of the walk assist function can lead to personal injury and damage to property. Ensure that the tires of the EPAC have contact with the ground when you engage the walk assist function. Only actuate the walk assist function to walk with the EPAC.
- The operating units are only approved for use in combination with the QORE System.
- Extreme loads may damage the operating unit. Do not use the operating unit as a handle or to grip onto the product.
- Do not use the operating unit with Bluetooth® technology in airplanes. Avoid using the operating unit in close proximity to the body for longer periods of time.
- Ensure that use of the operating unit is not a distraction during the trip. For entries which go beyond switching the assist level or reading trip data, stop your trip and make the entries while the EPAC is stationary.



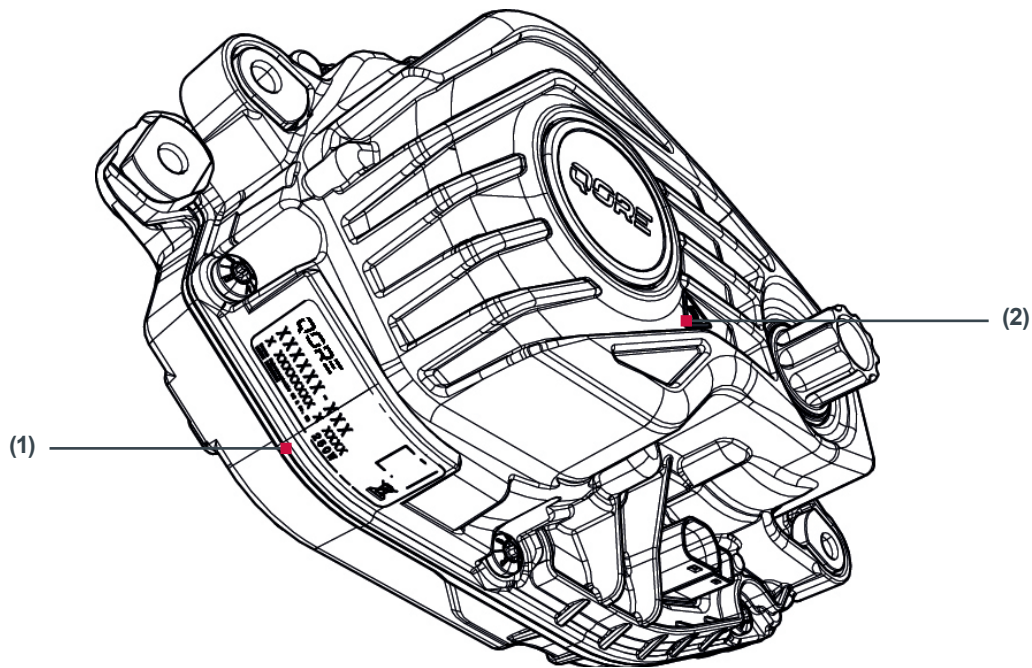
- When using the operating units with Bluetooth® technology, disturbances to other devices and systems, airplanes and medical devices (e.g., cardiac pacemakers) may occur. Do not use the operating units with Bluetooth® technology near medical devices, gas stations, chemical plants or potentially explosive environments.
- Perform the basic settings on the operating unit before commencing the trip. Before commencing your trip, familiarize yourself with the functionalities of operation and the EPAC.



## 2.5 Labels on the product

The machine has labels that provide further information and warn users of the hazards associated with its use. These labels must remain legible throughout the lifespan of the product and must be replaced

immediately if they are damaged. For information on the labels of the additional components of the QORE System, refer to the separate accompanying information.



**Fig. 1** Labels on the drive unit

(1) Name plate

(2) Warning of hot surface



### 3 Intended use

The QORE System is an EPAC drive system which, in its entirety, is intended for incorporation into electrically power assisted cycles (EPACs) in accordance with, for example, DIN EN 15194:2023 (EU) or USA EPAC Class 1 and 3.

The QORE System may only be used in a complete EPAC in accordance with the aforementioned standards, and comprises the following individual components:

- Drive unit (QORE Peak / Power)
- Battery (Battery InTube 650 / 800)
- Battery holder (Direct Mount)
- Speed sensor (dropout/spoke)
- Operating unit (HMI Allround)

#### Foreseeable misuse

The operation of the product with components, parameters or equipment other than those specified by Yamaha is considered misuse. Furthermore, the following are considered misuse:

- The unauthorized modification or alteration of the product and its integrated safety features without the written approval of Yamaha.
- The bypassing or disabling of safety- and protective equipment.
- The use of accessory components not approved by Yamaha for use with the product.

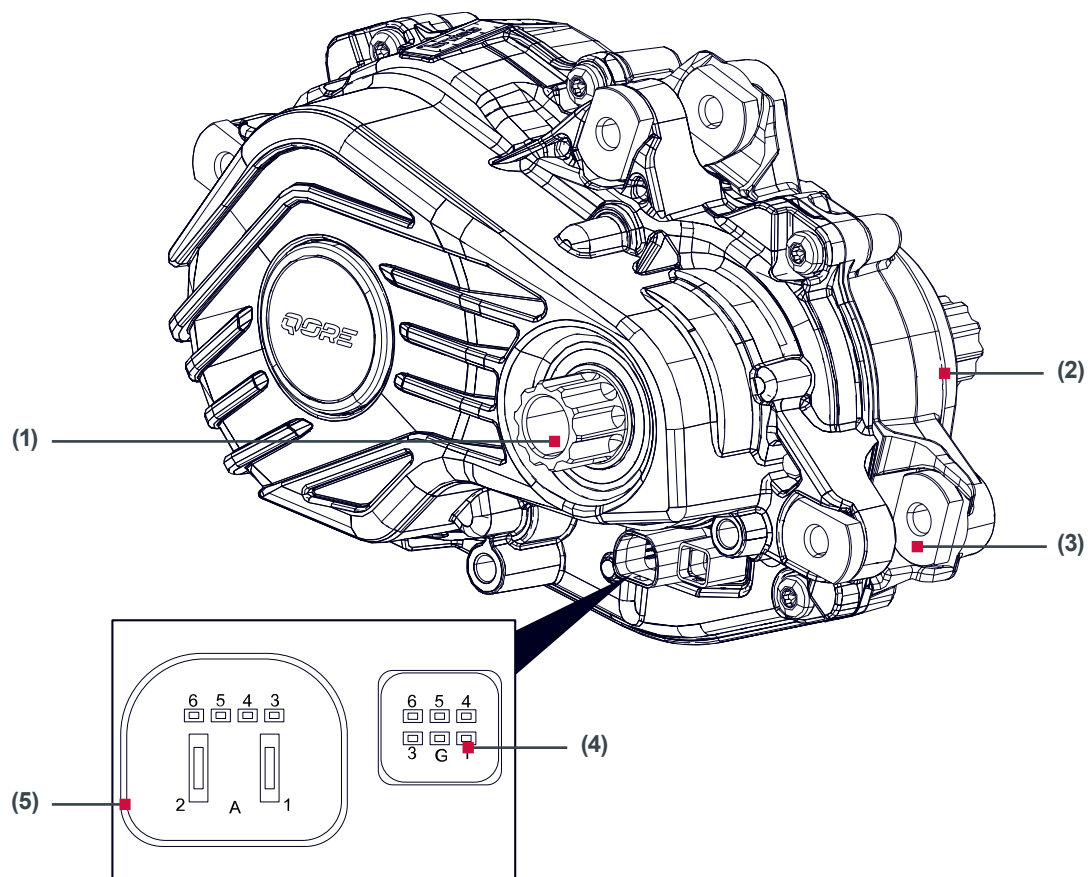


## 4 Structure and function

### 4.1 Drive unit

The drive unit forms the central component of the QORE System and converts electrical energy into pedal assistance. This assists the driver of the EPAC up to a maximum speed of 25 km/h. Once the maximum speed is reached, the drive

unit switches pedal assist mode off. The product also features a walk assist function, which can be triggered manually and which propels the EPAC up to a speed of maximum 6 km/h without user participation.

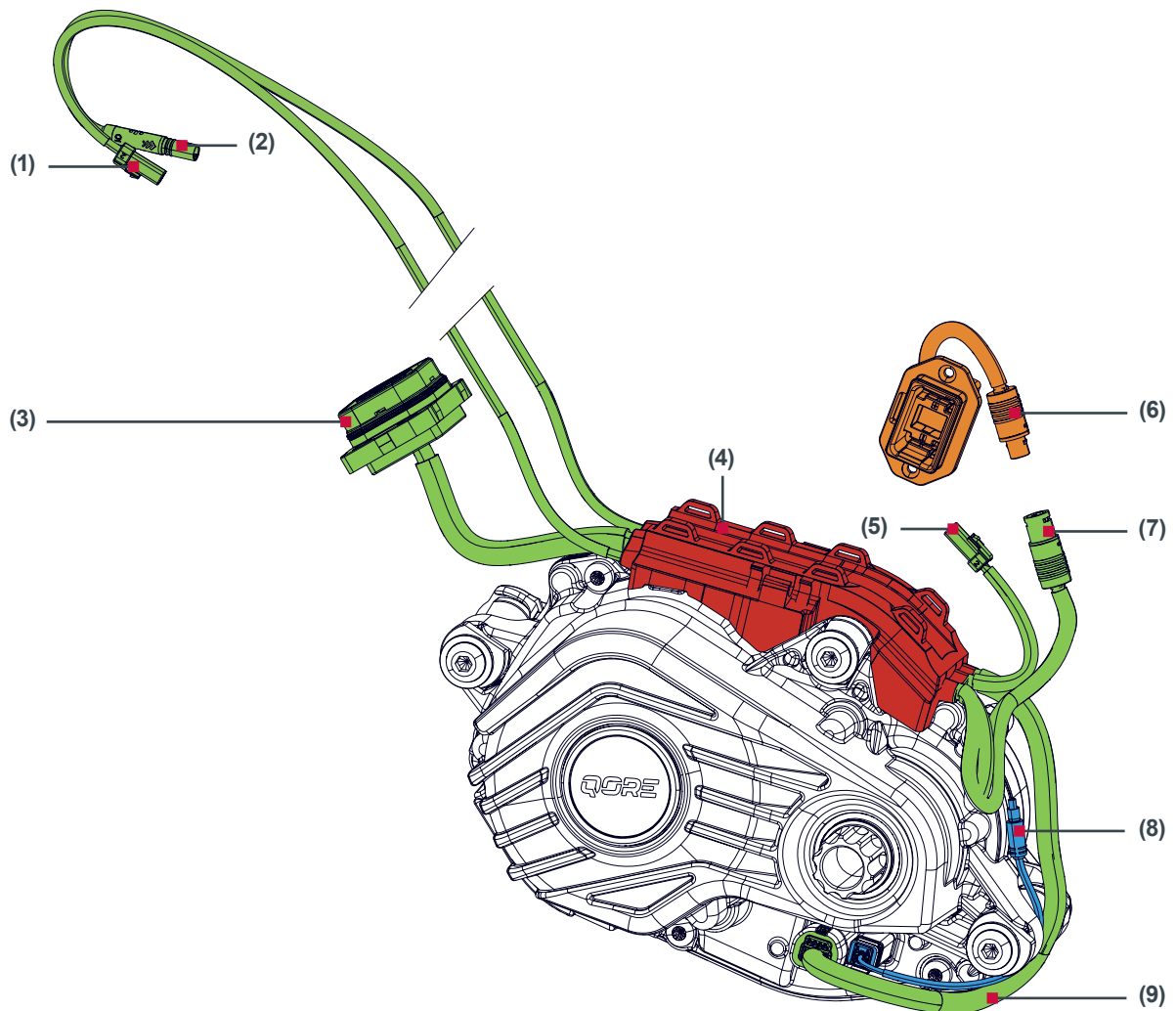


**Fig. 2** Drive unit overview

- |                                                    |                             |
|----------------------------------------------------|-----------------------------|
| (1) Drive shaft (in travel direction to the left)  | (3) 6x fastening sockets    |
| (2) Drive shaft (in travel direction to the right) | (4) Speed sensor connection |
|                                                    | (5) Power supply connection |



## 4.2 Cable harness



**Fig. 3** Cable harness – connections and interfaces (here “Basic” version, depending on customer-specific solutions and solutions agreed separately with Yamaha, the cable harness may deviate from the figure shown.)

- |                                    |                                    |
|------------------------------------|------------------------------------|
| (1) Front light connection         | (6) Frame charging port            |
| (2) HMI connection                 | (7) Frame charging port connection |
| (3) Battery connection/contact     | (8) Speed sensor connection        |
| (4) Cable harness mounting bracket | (9) Drive power supply connection  |
| (5) Rear light connection          |                                    |



### 4.3 Operating unit

The product is controlled via the operating unit (Allround). The operating units are used to control the level of assistance and to read key product and trip information (*for more detailed information about the operating unit, see separate operating manual*).

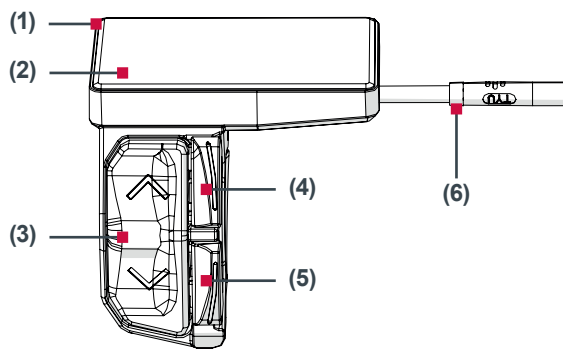


Fig. 4 HMI Allround (front)

- (1) Light sensor
- (2) Display
- (3) ▲/▼ button
- (4) Upper multi-functional button
- (5) Lower multi-functional button
- (6) Connecting cable with plug

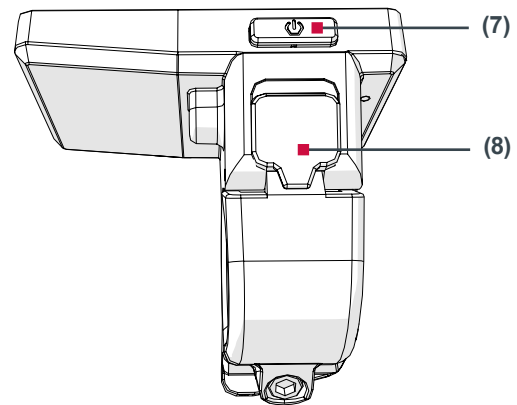


Fig. 5 HMI Allround (rear)

- (7) ON/OFF button
- (8) Charging and service connection



## 4.4 Battery and battery holder

The Battery InTube 650 / 800 ensures the supply of power to the QORE System and is integrated into the EPAC via the battery holder which is permanently

mounted to the frame (*for more detailed information about the battery, see the separate operating manual*).

### 4.4.1 Battery

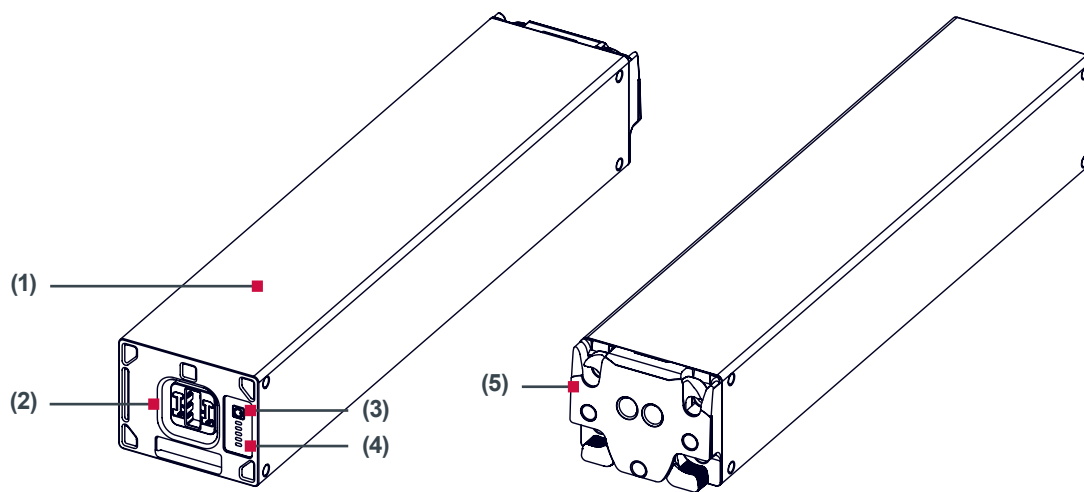
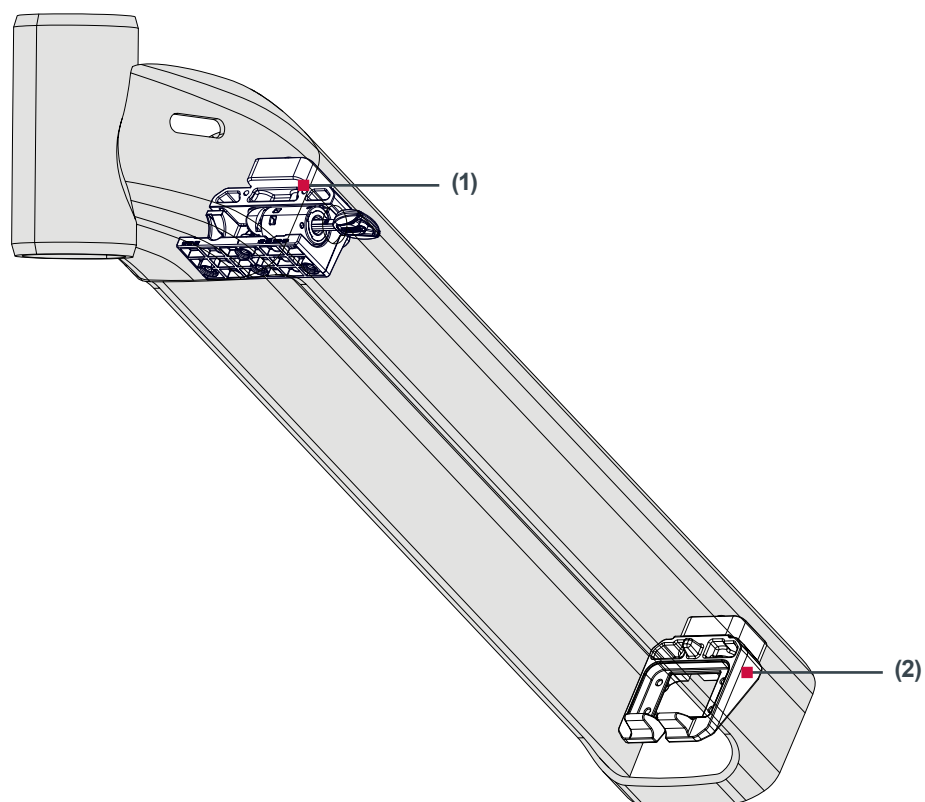


Fig. 6 Overview of battery

- (1) Battery housing
- (2) Charging and discharging plug
- (3) Charging status button
- (4) Charge level display
- (5) Unlocking system



#### 4.4.2 Battery holder



**Fig. 7** Overview of Direct Mount battery holder

**(1)** Lock bracket with lock

**(2)** Connector bracket

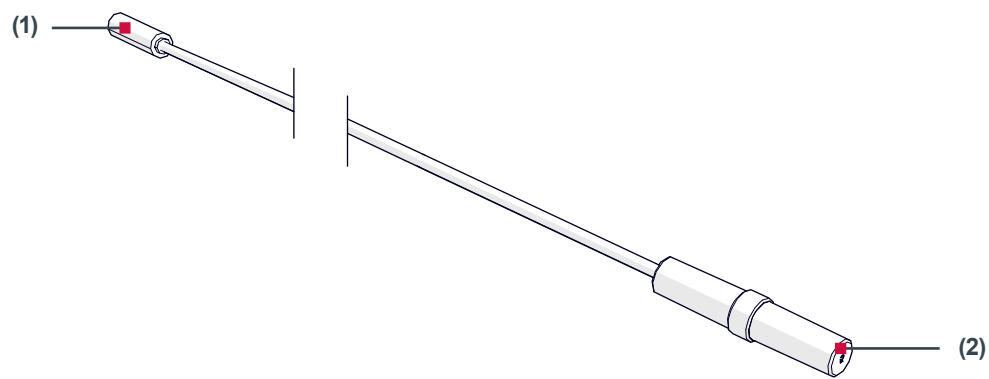


## 4.5 Speed sensor

The speed sensor is available in two different versions (dropout/spoke). It is mounted on the frame of the EPAC at the height of the rear wheel and reports

the current speed back to the system (for more detailed information about the speed sensor, see separate operating manual).

### 4.5.1 Version 1: Dropout speed sensor

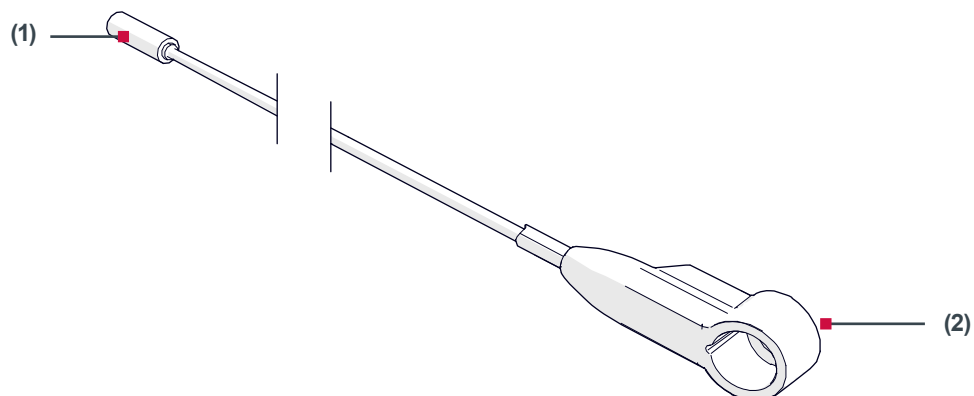


**Fig. 8** Overview of speed sensor (dropout)

(1) Connector plug

(2) Speed sensor (type: dropout)

### 4.5.2 Version 2: Spoke speed sensor



**Fig. 9** Overview of speed sensor (spoke)

(1) Connector plug

(2) Speed sensor (type: spoke)



## 5 Technical data

Specification QORE Peak / Power	Value
Weight	2.9 kg
Dimensions	219 x 134 x 98 mm (housing) 136 mm (axle width)
Nominal voltage	48 V
Continuous rated power	250 W
Maximum power	800 W (QORE Peak) 700 W (QORE Power)
Torque	105 Nm (QORE Peak) 90 Nm (QORE Power)
Assistance level	up to 600%
Maximum speed for pedal assist	25 km/h
Maximum speed for walk assist	6 km/h
Noise emission (sound pres- sure level)	<47 dB(A)
Permissible am- bient conditions for operation	0°C to +40°C
Permissible ambient condi- tions for storage	0°C to +40°C Store in a dry place and avoid exposure to direct sunlight

Battery spec- ifications	Value
Weight	InTube650: 3.7 kg InTube800: 3.9 kg
Dimensions	388.5 x 83.3 x 65.3 mm (prelim- inary values without tolerances)
IP protection class	IP66
Housing material	Aluminum (plas- tic cover)
Energy (nominal)	InTube 650: 649 Wh InTube 800: 792 Wh
Capacity (nominal)	InTube 650: 13.5 Ah InTube 800: 17.1 Ah
Capacity (minimal)	InTube 650: 13.05 Ah InTube 800: 16.7 Ah
Output	1092 W
Nominal voltage	InTube 650: 48.1 V InTube 800: 46.7 V
Max. charging current	6.5 A
Continuous discharge	20 A
Charging cycles	700 full cycles with 80% residual capacity
Connections	Proprietary
Compatibility	QORE Peak / Power
Communication	CAN Bus



Battery specifications	Value
Certification	UN 38.3 / IEC 62133 / EN 15194 / ISO 13849 / UL 2271 / EN 50604 In compliance with the Battery Regulation
Permissible ambient conditions for charging	0°C to +40°C
Permissible ambient conditions for discharging	0°C to +40°C
<b>Dropout specifications</b>	
Sensor length	34 mm
Cable length	600 mm
Activation sensitivity	16-25 AW
Deactivation sensitivity	4-18 AW
Closing time (including bounce time (typ.))	0.35 ms
Bounce time (typ.)	0.10 ms
Release time (max.)	50 µs
Contact resistance (initial max.)	100 mΩ
Switching speed	100 Hz

<b>Dropout specifications</b>	
Vibration speed (10-2000 Hz)	10 g
Shock resistance (1/2 sin 11ms)	150 g
Permissible ambient conditions	0°C to +40°C
Compatible magnet units	Six hole magnet (E80490), Centerlock magnet (E80493), Thru axle magnet (E80494)

Spoke specifications	Value
Sensor length	45 mm
Cable length	450 mm
Activation sensitivity	16-25 AW
Deactivation sensitivity	4-18 AW
Closing time (including bounce time (typ.))	0.35 ms
Bounce time (typ.)	0.10 ms
Release time (max.)	50 µs
Contact resistance (initial max.)	100 mΩ
Switching speed	100 Hz



<b>Spoke specifications</b>	<b>Value</b>
Vibration speed (10-2000 Hz)	10 g
Shock resistance (1/2 sin 11ms)	150 g
Permissible ambient conditions	0°C to +40°C
Compatible magnet units	Spoke magnet (C54757)
<b>HMI Allround specifications</b>	<b>Value</b>
Display	1.9" TFT color display (320 x 170 px)
Dimensions (L x H x W)	55 x 48 x 53 mm
Compatible handlebar diameter	22.2 mm
Power supply	12 V / max. 10 W
Permissible ambient conditions	0°C to +40°C
IP protection class	IP55
Communication	Bluetooth® 5.0
Frequency band	2402 MHz ~ 2480 MHz
Max. transmission power	< 1.9 mW



## 6 TRANSPORT AND STORAGE

The packaging of the product depends on the customer's requirements, the transport route, and the duration of storage after delivery and before assembly.



### WARNING

#### Hazard posed by hazardous materials

The improper transport of hazardous materials can lead to a risk of fire and explosion.

- Please observe the instructions in the enclosed accompanying information and safety data sheets.



### CAUTION

#### Bruises and contusions caused by falling components

If the product falls on limbs, bruises and contusions may result.

- Handle the product with care at all times.
- Wear personal protective equipment.

### NOTICE





#### Damage to the product due to improper transport

Failure to follow the instructions on the packaging may result in damage to the product.

- Observe the packaging labelling when handling the package.
- If you are unsure, do not carry out any work and contact the Yamaha customer service team or your dealer.

#### Symbols on the packaging

The packaging may feature symbols indicating special transport or storage conditions and warning the user of hazards when handling the package.

Symbol	Meaning
	Protect the package against the rain and moisture.
	Do not exceed the specified stacking limits.
	Transport with this side facing upwards.
	Protect the package against direct sunlight.



## Delivery

Upon delivery, the packages are packed according to requirements. Upon delivery, check for the following:

- Completeness of the packages
- Damage to the packaging and the components inside
- Completeness and accuracy of the shipping documents

If any defects are discovered to the packages or shipping documents during inspection, report them to Yamaha and the responsible forwarding company immediately and document them on the transport documents.

## Storage

Remove the product in accordance with the instructions in this assembly manual and store it in a dry and dust-free location. Avoid exposure to direct sunlight.

### Storage conditions

- 0°C to +40°C

To avoid the premature aging of the product (e.g., aging of the battery's electronic components), a storage temperature range of +10°C to +25°C is recommended.

*Refer to the respective accompanying information for storage instructions on additional QORE System components.*



## 7 ASSEMBLY

The QORE System assembly is divided into the following stages:

- Assembly of the operating unit
- Assembly of the electrical connections
- Assembly of the battery holder
- Assembly of the speed sensor
- Assembly of the drive unit



### WARNING

#### **Risk of electric shock**

Working on live components poses a risk of electric shock.

- Ensure the power supply is disconnected during all assembly steps.
- Only insert the battery after the assembly is complete.
- Ensure that cables and connections are not damaged during the assembly.



### CAUTION

#### **Risk of crushing and pinching**

During assembly, extremities can be caught or crushed between the frame components and the product.

- Wear the prescribed personal protective equipment.
- Observe the correct assembly position and sequence.
- Secure the product against falling.

### NOTICE

During assembly, ensure that the operation of the safety-relevant parts (e.g., brake levers) is always possible.



## 7.1 Assembly of the operating unit



- Safety gloves
- Safety goggles



- Allround operating unit (G66788), UL under **Menu > Regulatory information**



- Handlebar (ø 22.2 mm)



- Allen key (3 mm)
- Torque wrench

### Procedure

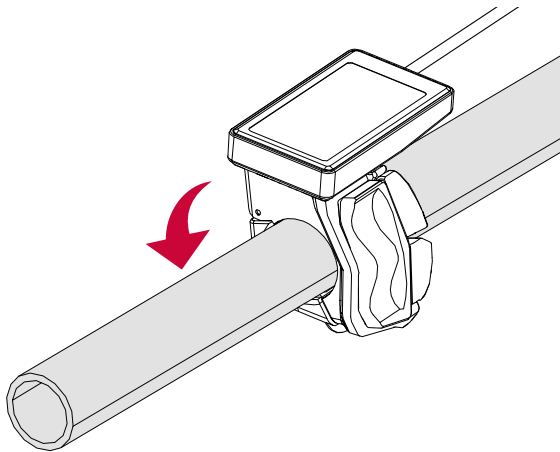


Fig. 10 Allround assembly (1)

1. Open the fastening clip.
2. **NOTICE** When positioning, make sure that the light sensor is not covered by the attachment parts and that the parts relevant to safety (e.g., brake levers) can be used.

**NOTICE** To ensure functionality and

operability, fit the operating unit to the left side of the handlebar.

Position the operating unit on the handlebar with the clip open.

3. Close the clip and position the preassembled fastening screw.

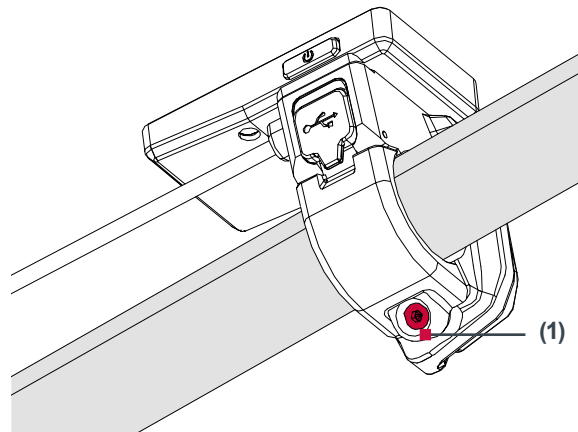


Fig. 11 Allround assembly (2)

4. Tighten the fastening screw (1) with the prescribed tightening torque of **0.6 Nm**.
5. **NOTICE** Lay the connecting cable so that it is free from tensile stress in all end positions and avoid kinking the cable. Do not lay the connecting cable over sharp edges.

Lay the connecting cable of the operating unit according to its own specifications and connect it with the cable harness.

- ✓ The operating unit is fitted.



## 7.2 Assembly of the electrical connections

### 7.2.1 Assembling the cable harness



– Cable harness  
(G871H9/ G893R4)

#### Procedure

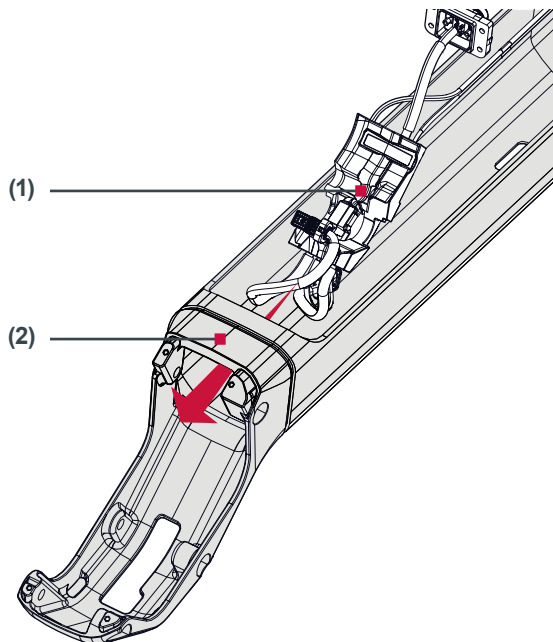


Fig. 12 Cable harness assembly

1. Thread the cable harness (1) through the lower end of the frame (2).

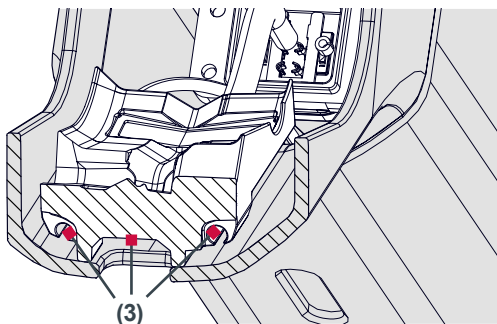


Fig. 13 Junction point cable duct (section plane)

2. Lay the cables / Bowden wires already present in the EPAC in the cable ducts (3) of the junction point intended for this purpose.

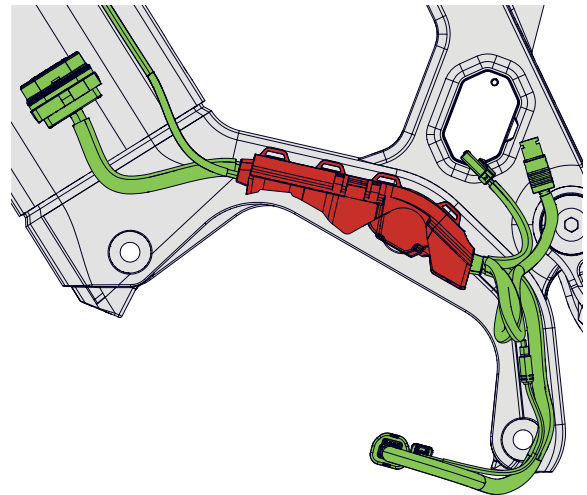


Fig. 14 Positioning the cable harness

3. **NOTICE** Lay the connecting cable so that it is free from tensile stress in all end positions and avoid kinking the cable. Do not lay the connecting cable over sharp edges.

Fit the cable harness into the intended position.

- ✓ The cable harness is fitted.



## 7.2.2 Assembling the frame charging port

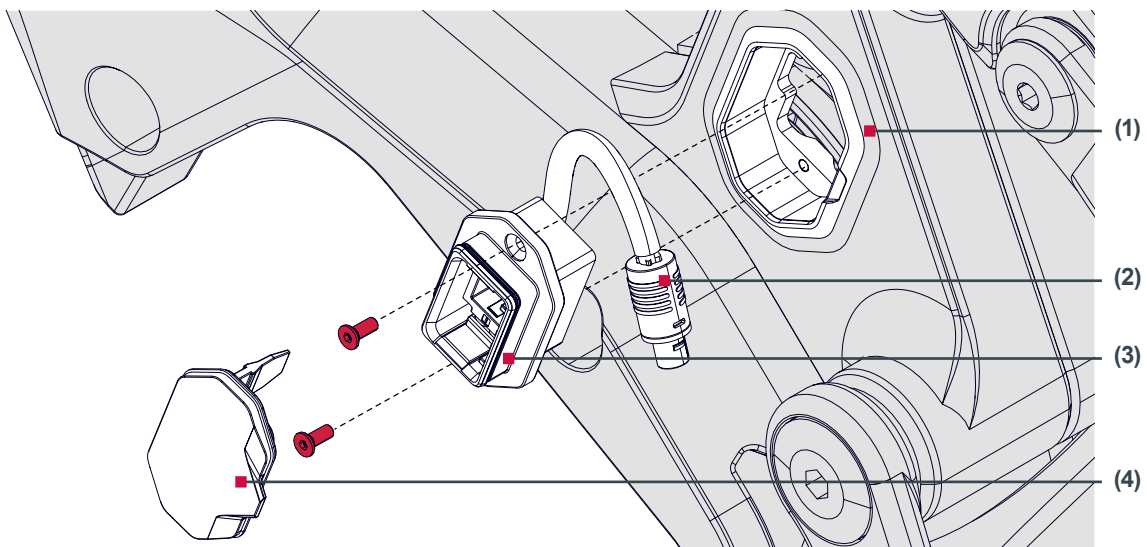


– Frame charging port (G871L7)



– Hex socket (2 mm)

### Procedure



**Fig. 15** Assembling the frame charging port

1. Place the cover (4) on the frame charging port (3) and thread the retainer into the recess.
  2. **NOTICE** Lay the connecting cable so that it is free from tensile stress in all end positions and avoid kinking the cable. Do not lay the connecting cable over sharp edges.  
  
Guide the connecting cable of the cable harness through the opening of the insert for the frame charging port (1).
  3. Connect the frame charging port (2) connecting cable with the cable harness connecting cable.
  4. Thread the connected cable through the opening of the insert in the frame (1) and insert the frame charging port.
  5. Insert the fastening screws and tighten with the prescribed tightening torque of **0.6 Nm**.
  6. Ensure that the cover sits fully over the frame charging port and seals it tightly.
- ✓ The frame charging port is fitted.



## 7.3 Assembly of the battery holder

The battery holder consists of two separate brackets which are positioned and secured within the EPAC frame using an assembly aid.

The assembly aid has the necessary fastening mechanisms for locking the brackets in the intended installation position and mounting them correctly within the frame.



- Battery holder / brackets (G8G321 + G8G325)
- Assembly aid (G8H2L8)



- TORX 30 (brackets)
- TORX 20 (plugs)

### Requirements

- The cable harness is fitted.

### Preparation of the assembly

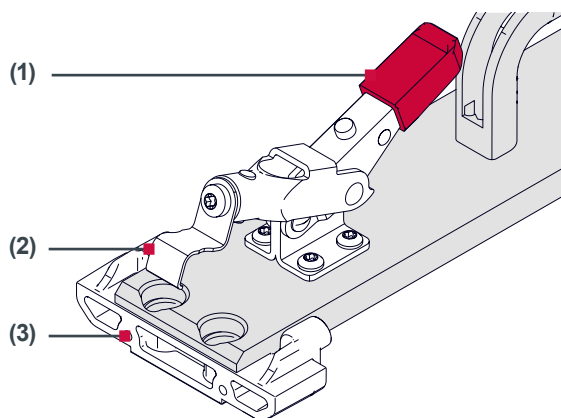


Fig. 16 Attaching the lock bracket

1. Pull the first clamping lever (1) on the assembly aid upwards to release it, and position the lock bracket (3) as shown in Figure 16.
2. Guide the retaining plate (2) over the lock bracket and close the clamping lever (1).

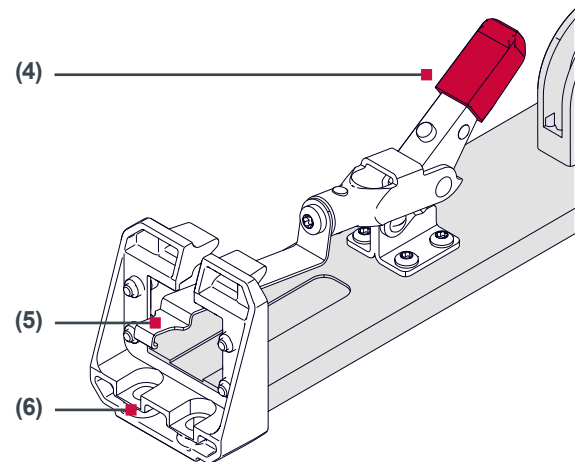


Fig. 17 Attaching the connector bracket

3. Pull the second clamping lever (4) on the assembly aid upwards to release it, and position the connector bracket (6) as shown in Figure 17.
  4. Guide the retaining plate (5) over the connector bracket and close the clamping lever (4).
- ✓ The two brackets are in position on the assembly aid and can be mounted in the frame.



## Assembly in the frame

1. Position the EPAC frame on a suitable mounting surface or in a mounting bracket. The opening of the battery compartment must face upwards.

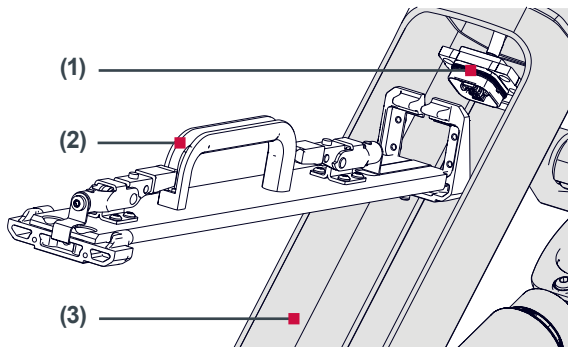


Fig. 18 Assembly in the frame (1/2)

2. Align the assembly aid with the positioned brackets of the battery holder (2) on the frame of the EPAC (3).
3. Feed the battery connector cable (1) through the opening of the connector bracket and then swivel the assembly aid into place on the side of the lock bracket.

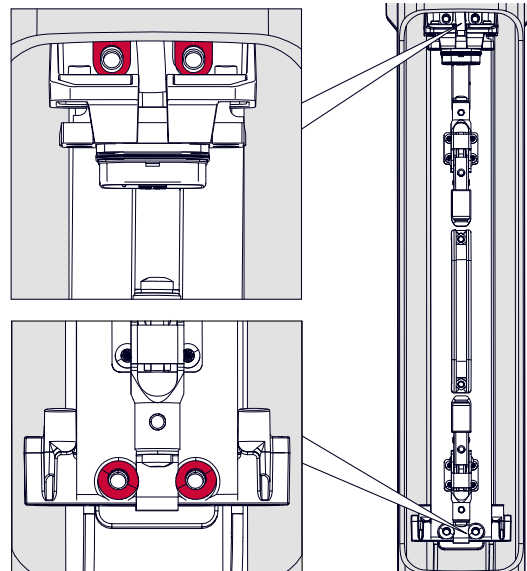
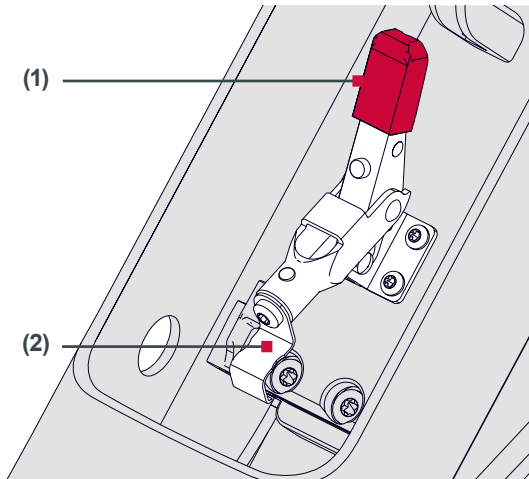


Fig. 19 Assembly in the frame (2/2)

4. Position the assembly aid in the frame. Ensure that the mounting holes of the brackets are flush with the attachment points in the frame.
  5. Loosely attach the lock bracket to the frame using the fastening screws.
  6. Loosely attach the connector bracket to the frame using the fastening screws. If necessary, carefully slide the battery connector to the side.
  7. Once correctly positioned, tighten the fastening screws for the lock bracket followed by the fastening screws for the connector bracket by hand, then tighten all screws to a torque of **7 Nm**.
- ✓ Both brackets for the battery holder are now securely attached to the frame.

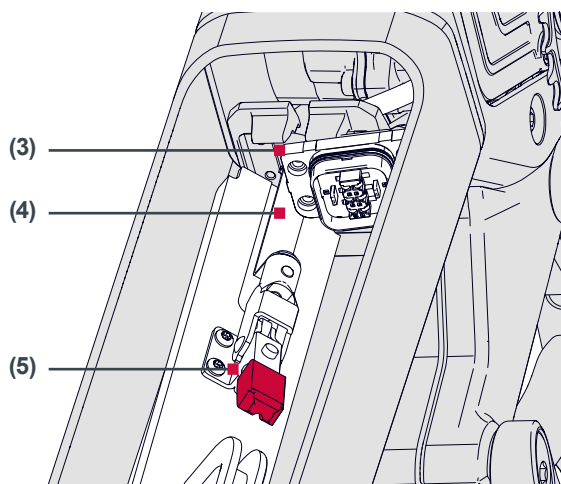


## Removal of the assembly aid



**Fig. 20** Removing the assembly aid (1/2)

1. Release the clamping lever (1) on the lock bracket side and remove the retaining plate (2) from the lock bracket.
2. Release the clamping lever (5) on the connector bracket side and remove the retaining plate (4) from the connector bracket.

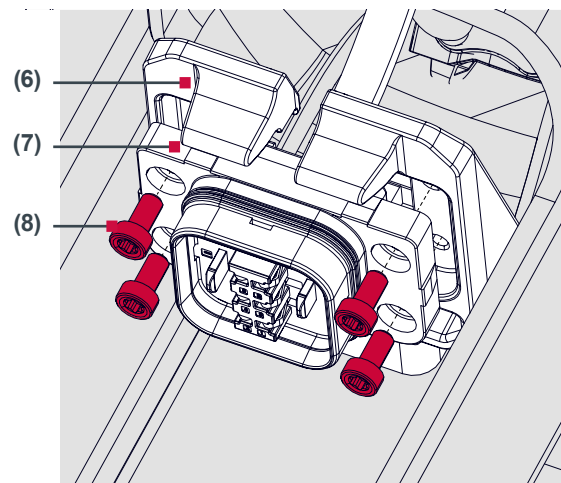


**Fig. 21** Removing the assembly aid (2/2)

3. Carefully slide the battery connector (3) to the side.

4. Turn the assembly aid along its longitudinal axis and guide it out from underneath the battery connector.
5. Remove the assembly aid from the frame.

## Assembly of the battery connector



**Fig. 22** Mounting the battery connector

1. Insert the battery connector (7) into the recess of the connector bracket (6).
2. Insert four fastening screws (M4 x 8) (8) and tighten with a tightening torque of **1.2 Nm**.



## Assembly of the lock holder



- Lock (G896K5)
- 3x fastening screws (M5 x 10)



- TORX 25

## Requirements

- The battery holder (lock bracket and connector bracket) is mounted in the frame.
- Operating units and other components above the lock bracket (e.g., lights) are connected to the cable harness.

## Procedure

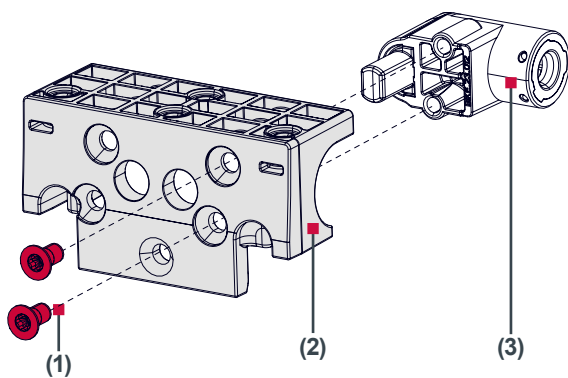


Fig. 23 Mounting the lock

1. Insert the lock (3) in the lock holder (2). Pay attention to the alignment of the keyhole.
2. Insert the fastening screws and tighten with a tightening torque of **3.5 Nm**.

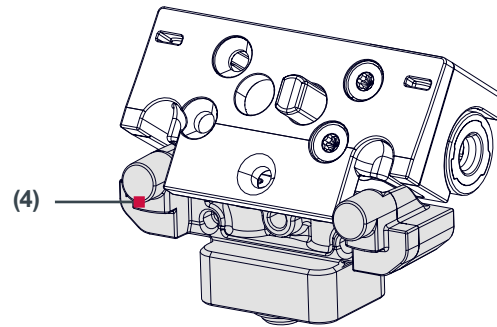


Fig. 24 Mounting the lock holder (1/2)

3. Position the pre-assembled lock holder slightly tilted on the lock bracket (4) assembled in the frame, before tilting it to its final position.

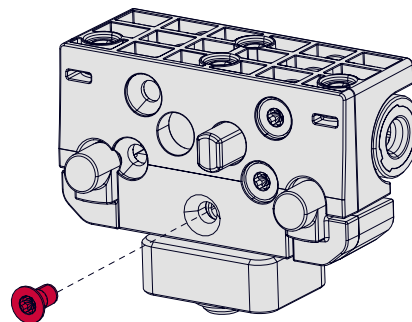


Fig. 25 Mounting the lock holder (2/2)

4. Insert the fastening screw and tighten it with a tightening torque of **3.5 Nm**.
  5. Put the key in the lock.
- ✓ The lock holder is mounted.



## 7.4 Assembly of the battery



- Battery InTube 800 (G8B371) or InTube 650 (G8K7J5)
- 4x fastening screws (M4 x 8)

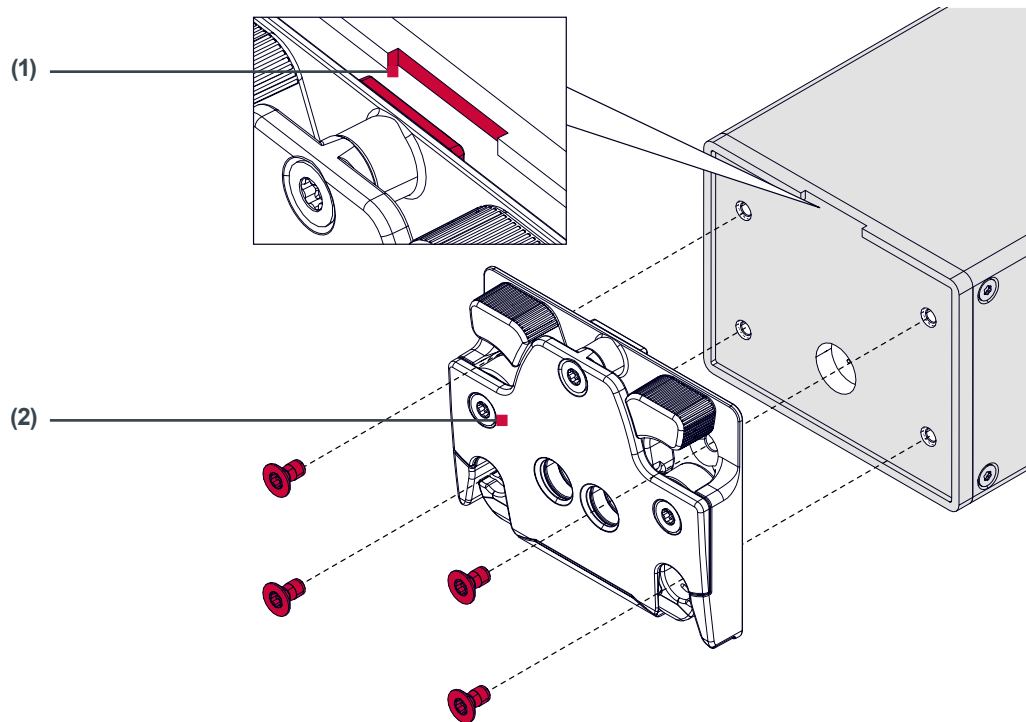


- TORX 20
- Threadlocker (e.g., LOCTITE® 243)

### Requirements

- The battery holder is installed.
- The lock holder is mounted.

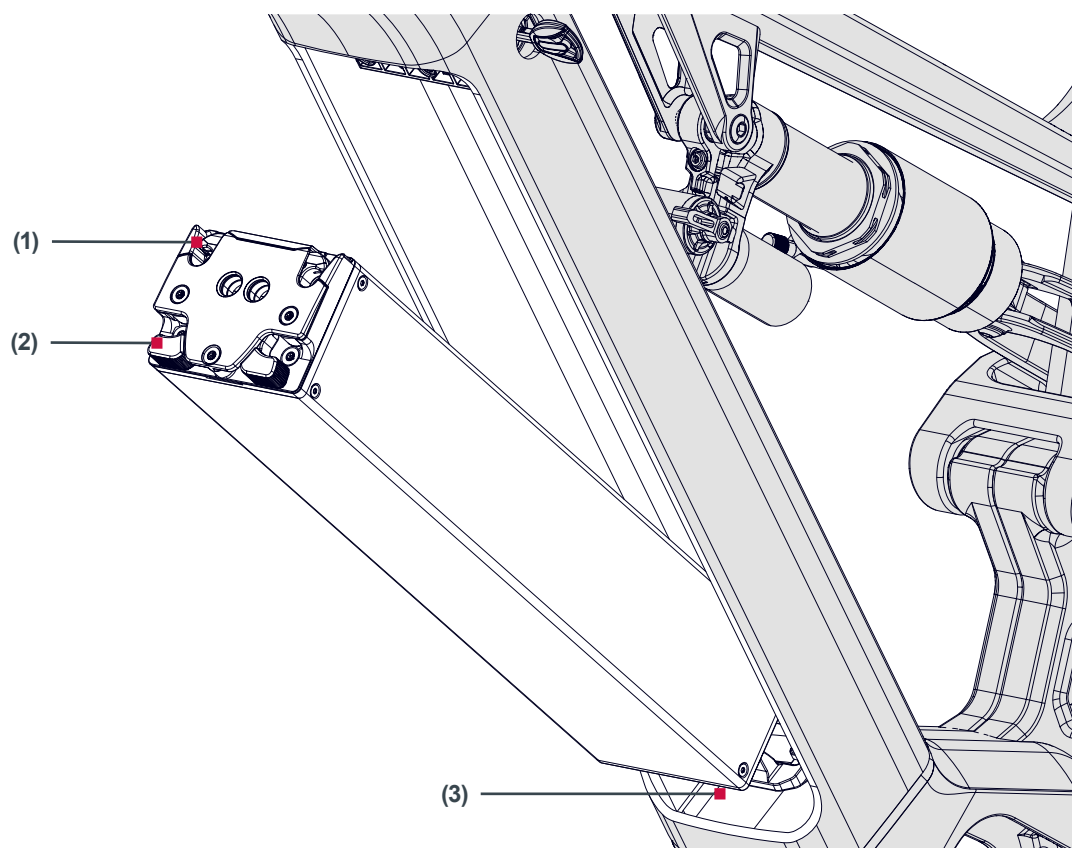
### Assembly of the end cap



**Fig. 26** Install the end cap

1. Align the end cap (2) with the recess of the battery (1) and place it on the battery.
2. Apply the threadlocker (e.g., LOCTITE®) to the fastening screws according to the manufacturer's guidelines.  
Alternatively, use microencapsulated screws manufactured to specification.
3. Insert four fastening screws (M4 x 8) and tighten with a tightening torque of **1.2 Nm**.



**Assembly in the frame****Fig. 27** Insert the battery

1. Open the lock using the key.
  2. Align the underside of the battery with the connector bracket in the frame (3) and insert the battery.
  3. Push the top end of the battery into the frame until you hear the locking mechanism (1) click into place.
  4. Manually close the lever mechanism (2) completely.
  5. Close the lock using the key.
  6. Make sure that the battery is inserted correctly and isn't able to fall out.
- ✓ The battery is installed and locked.



## 7.5 Assembly of the speed sensor

### 7.5.1 Assembling the spoke speed sensor



– Safety gloves

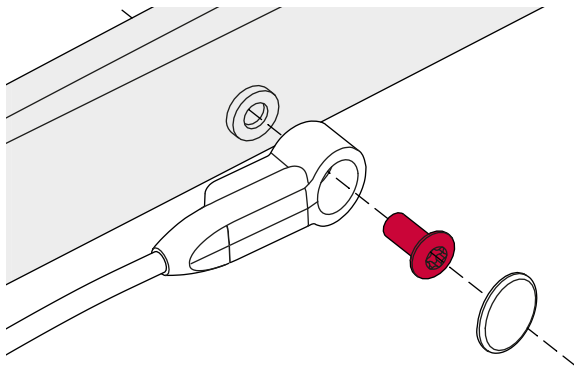


– TORX (T20)



– Spoke speed sensor (G8BOY9)  
– Spoke magnet (C54757)

#### Fitting the sensor



**Fig. 28** Assembling the spoke speed sensor

4. **NOTICE** Lay the connecting cable so that it is free from tensile stress in all end positions and avoid kinking the cable. Do not lay the connecting cable over sharp edges.

Lay the connecting cable along the frame according to its own specifications.

- ✓ The speed sensor is fitted.

1. Place the speed sensor on the assembly frame on the left chain stay of the frame. The cable must point in the direction of the drive.
2. Insert the fastening screw and tighten it with the prescribed tightening torque of **0.8 Nm**.
3. Place the protective cap on the fastening screw.



## Fitting the magnet unit

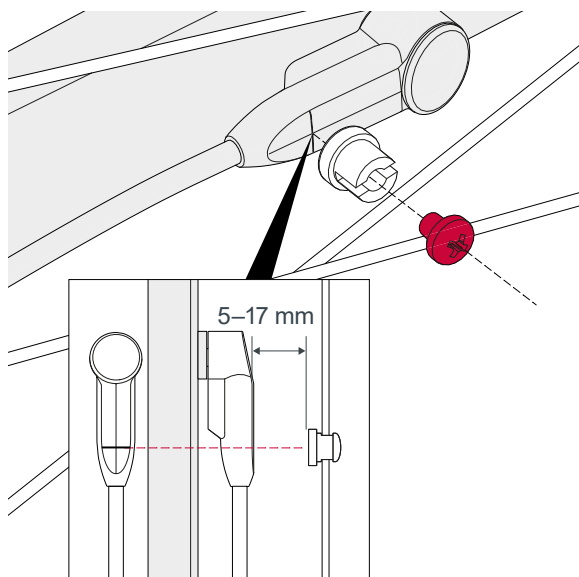


Fig. 29 Fitting the spoke magnet

1. Place the magnet unit with its recess on a spoke (pay attention to the distance and adjust using suitable materials if necessary).
  2. Position the fastening screw and tighten it with the prescribed tightening torque of **1.8–2.4 Nm**.
- ✓ The magnet unit is fitted.

## 7.5.2 Assembling the dropout speed sensor



– Safety gloves



– Dropout speed sensor (G8BOZ1)  
– Magnet unit (E80490 / E80493 / E80494)  
– Sensor bracket (E80496)



– Fastening screw (M4)



– TORX T20

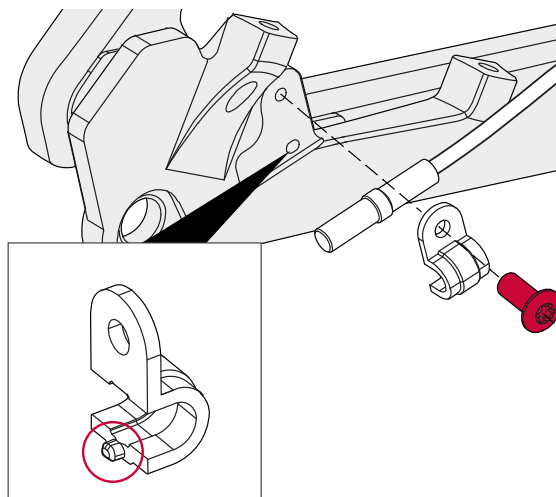
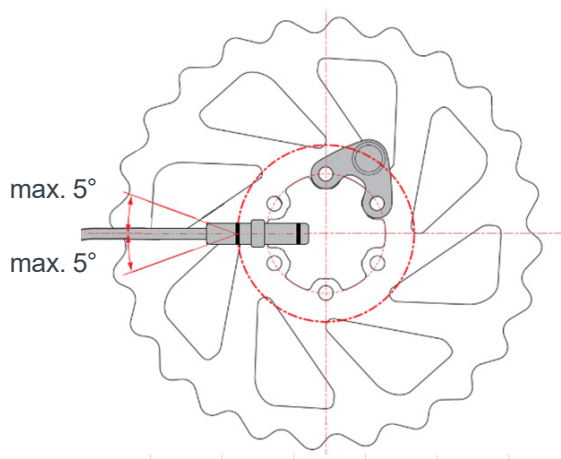


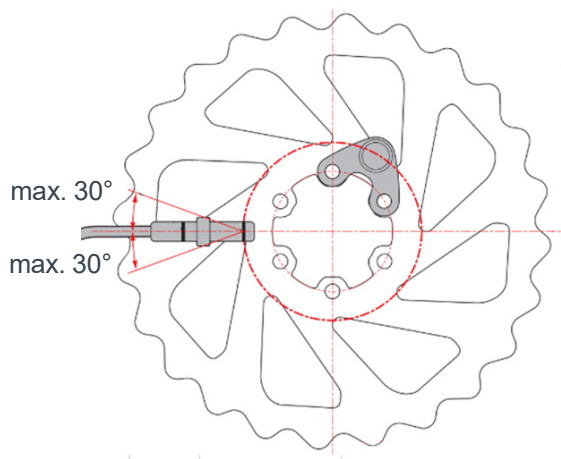
Fig. 30 Assembling the dropout speed sensor



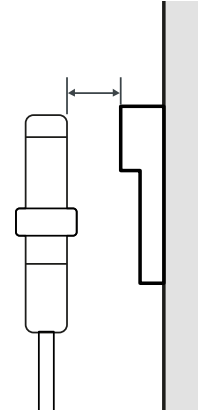
1. Position the speed sensor between the two bore holes on the frame. The cable must point in the direction of the drive.
2. Insert the lower pin of the sensor bracket into the lower bore hole on the frame.
3. Position the speed sensor according to the permissible tolerances for the installation angle and distance from the magnet unit.



**Fig. 31** Installation tolerance, rear switching point



**Fig. 32** Installation tolerance, front switching point



**Fig. 33** Tolerance for the distance from the magnet unit

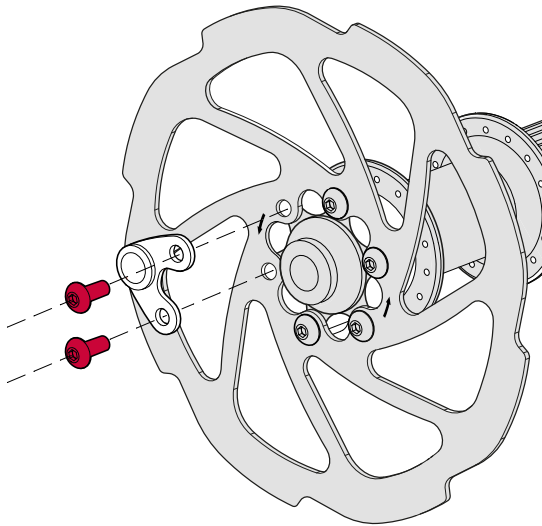
4. Insert the fastening screw into the upper bore hole and tighten it with the prescribed tightening torque of **0.8 Nm**.
5. **NOTICE** Lay the connecting cable so that it is free from tensile stress in all end positions and avoid kinking the cable. Do not lay the connecting cable over sharp edges.

Lay the connecting cable of the speed sensor along the frame according to its own specifications.

- ✓ The speed sensor is fitted.



### Option 1: Fitting the magnet unit (6-hole, E80490)



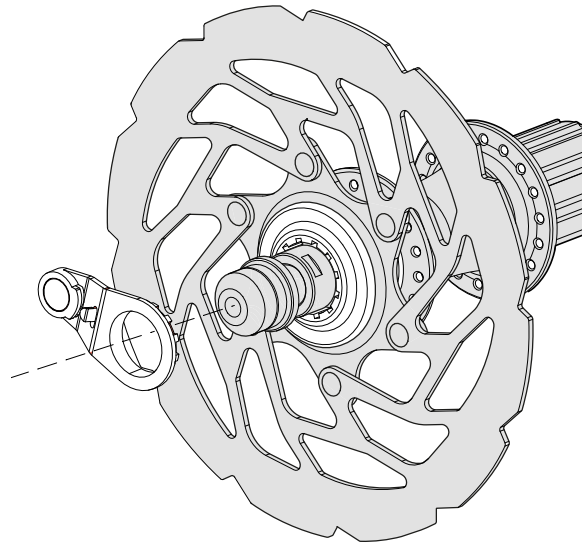
**Fig. 34** Fitting the magnet unit (6-hole)

1. Loosen and remove two fastening screws from the assembled 6-hole brake disk.
  2. Guide the removed fastening screws through the magnet unit bore holes and into the now clear bore holes of the brake disk, and insert them into the holder.
  3. Tighten all fastening screws with the prescribed tightening torque (see brake disk manufacturer's specifications).
- ✓ The magnet unit (6-hole) is fitted.

### Option 2: Fitting the magnet unit

1–8 mm

### (quick-release axle, E80493)

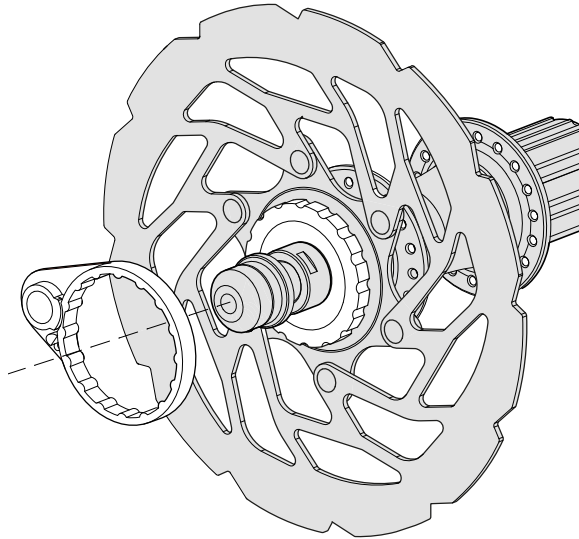


**Fig. 35** Fitting the magnet unit (quick-release axle)

1. Place the lockring on the center lock brake disk and tighten with a suitable tool (internal gearing).
  2. Place the magnet unit on the lockring. When doing so, ensure the correct gearing.
- ✓ The magnet unit (quick-axle-release) is fitted.



**Option 3: Fitting the magnet unit (thru-axle, E80494)**



**Fig. 36** Fitting the magnet unit (thru-axle)

1. Place the lockring on the center lock brake disk and tighten with a suitable tool (external gearing).
  2. Place the magnet unit on the lockring. When doing so, ensure the correct gearing.
- ✓ The magnet unit (thru-axle) is fitted.



## 7.6 Assembly of the drive unit

### 7.6.1 Assembling the drive unit on the frame



- Safety gloves
- Protective footwear
- Safety goggles



- Drive unit (Drive<sup>3</sup> Peak G8H237; Drive<sup>3</sup> Power G8H236)
- 6x screw

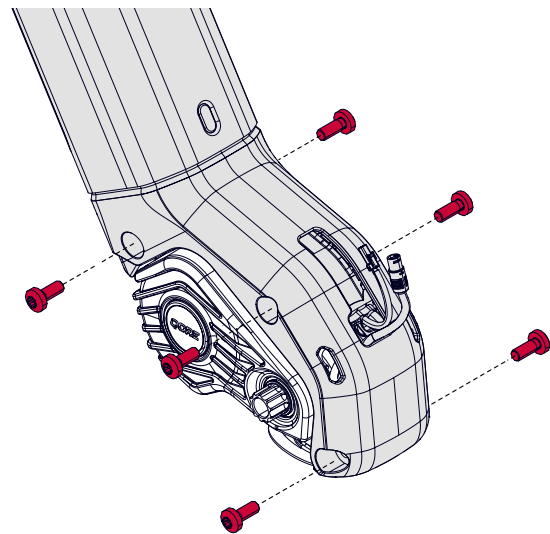


- Allen key (5 mm)
- Torque wrench
- Threadlocker

#### Requirements

- The cable is guided according to its own specifications, within the frame as far as possible.
- The cable harness is fitted.
- The length of the fastening screws is suitable for the planned installation.
- The fastening sockets on the drive unit are present, free from damage and positioned correctly.
- The drive unit labelling is present and legible (see „Labels on the product“).

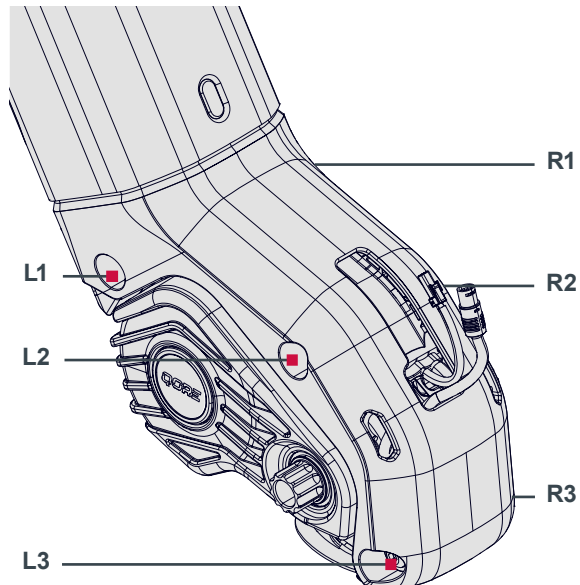
#### Procedure



**Fig. 37** Assembling the drive unit (1)

1. If it has not already been done, complete the cabling of the other system components.
2. **NOTICE** When inserting the drive, cables which have already been laid may be damaged. Carefully insert the drive unit into the frame. Position the cables in the intended recesses.
3. Fit the fastening screws with washers and insert them.
4. Make sure that the fastening sockets and frame bore holes are correctly aligned with each other.
5. Slightly tighten the fastening screws.





**Fig. 38** Assembling the drive unit (2)

6. Tighten the fastening screws on the drive side (right) with the prescribed tightening torque of **25 Nm**

Sequence: **R1 - R3 - R2.**

7. Tighten the fastening screws on the opposite side (left) with the prescribed tightening torque of **25 Nm**

Sequence: **L1 - L3 - L2.**

- ✓ The drive unit is assembled.



## 7.6.2 Assembling the underride guard



- Safety gloves
- Protective footwear
- Safety goggles



- Underride guard
- 4x screws

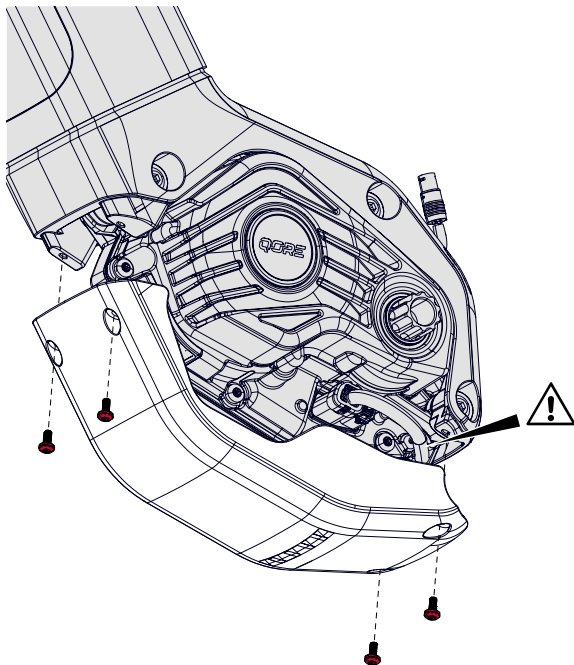


- Allen key (4 mm)
- Torque wrench

### Requirements

- The drive unit is assembled.

### Procedure



1. **NOTICE** When assembling the underride guard, cables which have already been laid may be damaged. Carefully affix the underride guard. Position the cables in the intended recesses.
  2. Align the bore holes on the underride guard with the bore holes in the frame.
  3. Insert the fastening screws and tighten slightly so that the underride guard can still move for fine adjustments.
  4. Tighten the fastening screws in a crosswise manner with the prescribed tightening torque of **5 Nm**.
- ✓ The underride guard is assembled.

Fig. 39 Assembling the underride guard



### 7.6.3 Assembling the chain guide / chain guard



- Safety gloves
- Safety goggles



- Chain guide / chain guard according to ISCG 05
- Holder / assembly goggles



- Allen key (5 mm)
- Torque wrench

#### Procedure

1. Fit the chain guide / chain guard according to the specifications of the component manufacturer.
  2. Hold the holders up to the assembly points of the drive.
  3. Fit the holder to the drive with the fastening screws using the prescribed tightening torque of **3.5 Nm**.
- ✓ The chain guide / chain guard is assembled.

#### Requirements

- The drive unit is assembled.
- The underide guard is assembled.

#### NOTICE

#### Damage to the product due to unsuitable accessories

If unsuitable accessories are used, damage to the product may occur.

- Only use approved accessories.
- Observe the information and specifications from the component manufacturers.



## 7.6.4 Assembling the chainring, spider and cranks



- Safety gloves
- Safety goggles



- Slotted nut
- Chainring
- Spider
- Chainring screws
- 2x ISIS cranks (r/l)
- ISIS crank screws M15x1



- Torque wrench
- Allen key (5 mm, 8 mm)
- ISIS bottom bracket tool (e.g., Parktool BBT18)
- Chainring key
- Threadlocker
- Lubricating grease

### Requirements

- The drive unit and under-ride guard are assembled.
- The chain guide / chain guard is assembled properly.

### NOTICE

#### Damage to the product due to unsuitable accessories

If unsuitable accessories are used, damage to the product may occur.

- Only use approved accessories.
- Observe the information and specifications from the component manufacturers.



### CAUTION

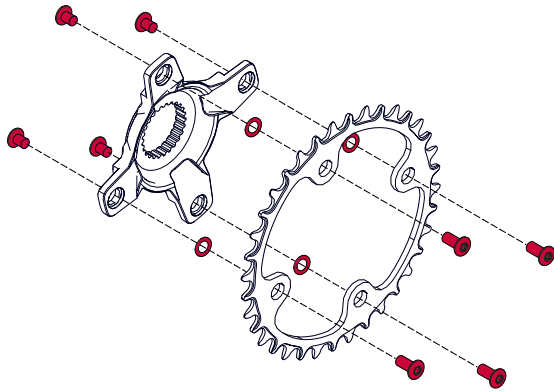
#### Risk of injury due to incorrect assembly of the cranks and pedals

If the cranks are not assembled correctly, they may become loose during the trip.

- Observe the side specification on cranks and pedals during assembly.
- Observe the information and specifications from the component manufacturers.

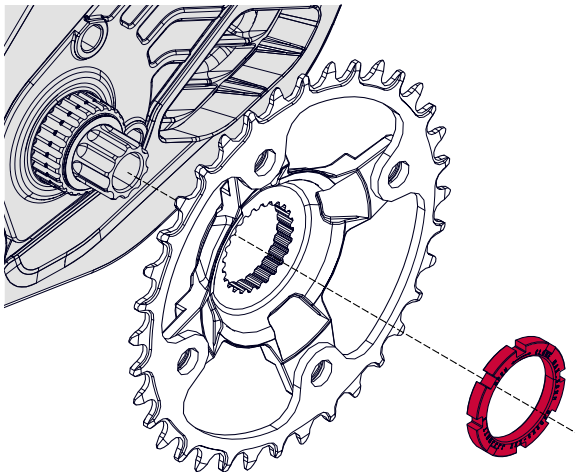


## Procedure



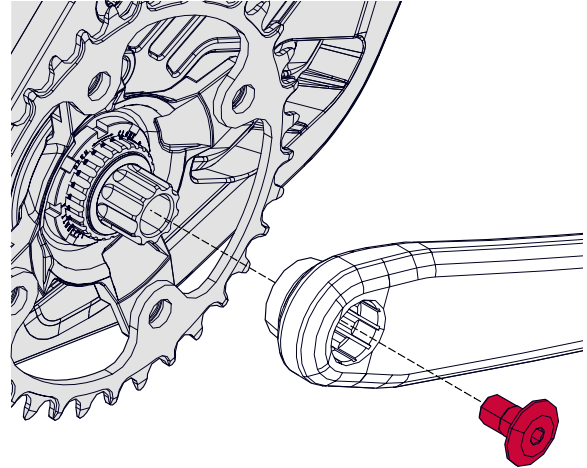
**Fig. 40** Assembling the chainring, spider, cranks (1)

1. Connect the chainring and spider according to the specifications of the component manufacturer.



**Fig. 41** Assembling the chainring, spider, cranks (2)

2. Place the chainring and spider on the drive shaft.
3. Apply the threadlocker (medium tight) to the threads of the slotted nut.
4. Tighten the slotted nut with the bottom bracket tool and the prescribed tightening torque of **28 Nm**.



**Fig. 42** Assembling the chainring, spider, cranks (3)

5. Lightly grease the ISIS holder of the crank.
  6. Place the right crank on the right drive shaft.
  7. Tighten the fastening screw of the right crank. Observe the tightening torques from the relevant crank manufacturer.
  8. Place the left crank on the left drive shaft, offset by 180°. When doing so, ensure the correct gearing and orientation.
  9. Tighten the fastening screw of the left crank. Observe the tightening torques from the relevant crank manufacturer.
  10. Fit the pedals on the cranks on the relevant sides according to the specifications of the component manufacturer.
- ✓ The chainring, spider and cranks are assembled.



## 8 DISPLAY AND OPERATION

The display and operation are carried out via the respective connected operating unit. Observe the safety instructions in this assembly manual (see „*IMPORTANT SAFETY INFORMATION*“) and in the accompanying documents.

*For details on operation, refer to the enclosed user information for the operating unit.*



## 9 MAINTENANCE BY THE USER

To support the longevity of the product and prevent repairs, the following activities should be carried out at the specified intervals.

### CAUTION

#### **Risk of burns due to hot surfaces**

The surfaces of the drive can be hot during and after operation.

- Allow the drive to cool completely before embarking on any cleaning.

### **NOTICE**

#### **Damage to the product due to improper cleaning**

Improper cleaning can damage the product and cause malfunctions.

- Do not clean the product with a pressure washer.
- Do not use any additional cleaning agents. Clean the product with water only.

### DANGER

#### **Risk of injury due to improper maintenance and repair**

The improper maintenance or repair of the product and its components can result in malfunctions, failures and mechanical defects.

- Only perform the work described in this assembly manual.
- Do not attempt to perform any other maintenance or repairs to the drive unit or the system components.
- Maintenance and repair work that is not described in this assembly manual may only be performed by authorized Yamaha garages.



<b>Task</b>	<b>Equipment / method</b>	<b>Interval</b>
Check the drive and overall system for damage.	Visual inspection.	Before starting each trip.
Check the drive and overall system for proper functioning.	Functional test.	Before starting each trip.
Check all screw connections for tightness and tighten if necessary.	Tighten loose screw connections to the torque specified in this assembly manual.	Weekly or if unusual noises occur.
Clean the drive surfaces.	Manual cleaning with a soft brush and damp, lint-free cloth.	If there is visible dirt.
Clean the operating and display units.	Manual cleaning with a damp, lint-free cloth.	If there is visible dirt.



## 10 Troubleshooting

The following information is intended to help you troubleshoot any faults that may occur when using the product.

is not detailed below, do not use the product and contact the customer service team at an authorized Yamaha dealer.

If the fault cannot be resolved using the measures provided here, or if the fault

Fault	Possible cause	Remedy
The product won't switch on.	The battery isn't inserted or isn't charged.	Insert a charged battery.
	The cable connections between the operating unit and the drive are loose.	Check the cable connections. Reconnect the cables insofar as this is possible without disassembly. Contact the customer service team at the authorized dealer.
	The product is defective.	Contact the customer service team at the authorized dealer.
The pedal assist is insufficient / does not work.	The pedal assist is not switched on or is set too low.	Adjust the pedal assist using the operating unit.
	The battery isn't inserted or isn't charged.	Insert a charged battery.
	The product is defective.	Contact the customer service team at the authorized dealer.
The handles / pedals won't move or are locked.	Mechanical fault.	Do not use the product. Contact the customer service team at the authorized dealer.
The battery holder is rattling.	The battery is loose.	Arrange for the bracket clearance to be adjusted by your authorized dealer.



Fault	Possible cause	Remedy
The lever mechanism cannot be closed when the battery is inserted.	The bracket clearance is too small.	Arrange for the bracket clearance to be adjusted by your authorized dealer.
The lever mechanism jams / is stiff (outside the frame).	The lever mechanism is dirty.	Clean the lever mechanism (e.g., blow it out, move the lever back and forth several times).
	The lever mechanism is extremely wet.	Allow the lever mechanism to dry and clean it if necessary (e.g., blow it out, move the lever back and forth several times).
The kinematics are compromised (broken levers, frame, etc.)	Crash with the EPAC.	Contact the customer service team at Yamaha or the authorized dealer.
	The battery falls / is dropped when removed.	Contact the customer service team at Yamaha or the authorized dealer.
The bracket is loose (rattles, moves).	The screws in the frame have become loose.	Re-tighten the screws. Contact the customer service team at Yamaha or the authorized dealer.
The key can't be inserted.	The key or the lock is dirty.	Clean the key and the lock.
	The wrong key was used.	Use the correct key.
	The key is misaligned with the front of the lock.	Check the positioning of the key and the lock.
	The key is broken.	Contact the customer service team at Yamaha or the authorized dealer



<b>Fault</b>	<b>Possible cause</b>	<b>Remedy</b>
The key is inserted but can't be removed.	The lock is fully or partially open.	Lock in full
The key is inserted but the lock won't lock.	The lever mechanism is still open.	Close the lever mechanism in full.
The key won't turn.	The key or the lock is dirty.	Clean the key and the lock.
	The wrong key was used.	Use the correct key.
The battery can't be fitted.	The lock is closed (the lock bolt is extended).	Open the lock using the key (retract the lock bolt).
	The battery was incorrectly positioned on the centering pin on the lock bracket.	Re-position the battery.
	The lever mechanism is jamming.	Refer to the remedy for when the lever mechanism jams.
	The bracket clearance in the frame is too small.	Arrange for the bracket clearance to be adjusted by your authorized dealer.
The system switches off in the event of extreme riding conditions / vibrations.	The contacts are faulty.	Contact the customer service team at Yamaha or the authorized dealer.



# 11 Accessories and spare parts

## 11.1 Accessories

Product	Product number	Product	Product number
Drive <sup>3</sup> Peak	G8H237	Magnet thru-axle	E80494
Drive <sup>3</sup> Power	G8H236	Socket battery holder	G8G321
Drive <sup>3</sup> chain-ring slotted nut	G8D2K3	Lock battery holder	G8G325
Drive <sup>3</sup> assembly screws	G8D4E7	Assembly aid	G8H2L8
Battery InTube 800	G8B371	Cable harness	G871H9
Battery InTube 650	G8K7J5	Cable harness extended	G893R4
Allround control	G66788	Charging port cable	G871L7
Smart charger 250	G66952	Speed sensor cable	G871M0
Country-specific cable, EU	G66967	Speed sensor & AUX cable	G871L8
Country-specific cable, USA	G66968	Charging port cover	G8J3V7
Spoke speed sensor	G8B0Y9		
Dropout speed sensor	G8B0Z1		
Spoke magnet	C54757		
Brake disk speed sensor bracket	E80496		
Magnet center lock	E80493		
Magnet 6-hole	E80490		



## 11.2 Spare parts

Necessary spare parts are available from Yamaha upon request. For information about extended maintenance and service procedures and the availability of spare parts, contact the Yamaha customer service team.

Distributing company	Yamaha Motor eBike Systems GmbH
Address	Sickingenstraße 29-38 10553 Berlin
Phone	+49 30 343498 100
Email	service.ebike@ yamaha-ebike-systems.com



## 12 DISASSEMBLY AND DISPOSAL

### 12.1 Disassembly

The disassembly takes place in the reverse order of the installation. When disassembling third-party components, always observe the respective accompanying information and specifications of the component manufacturer.

For information on the required tools and equipment, refer to the relevant section in section „ASSEMBLY“.

#### **Disassembling the cranks, spider and chainring**

1. Disassemble the pedals.
  2. Loosen and remove the fastening screws on the left and right cranks.
  3. Use a crank remover to remove the cranks from the drive shaft.
  4. Use a bottom bracket tool to loosen the slotted nut counter-clockwise and remove the spider with the chainring.
- ✓ The cranks, spider and chainring are disassembled.

#### **Disassembling the chain guide / chain guard**

1. Loosen and remove the fastening screws from the chain guide / chain guard.
  2. Disassemble the chain guide /chain guard.
- ✓ The chain guide / chain guard is disassembled.

#### **Disassembling the drive**

1. Secure the drive against falling.
  2. Loosen the underride guard fastening screws and remove the underride guard.
  3. Loosen and remove the front and center fastening screws.
  4. Remove all connecting plugs from the drive.
  5. Loosen and remove the rear fastening screws.
  6. Take the drive out of the frame.
- ✓ The drive is disassembled.



**Disassembling the speed sensor**

1. Remove the magnet unit.
  2. Loosen and remove the fastening screws of the speed sensor.
  3. Remove the speed sensor.
- ✓ The speed sensor is disassembled.

**Disassembling the frame charging port**

1. Loosen and remove the fastening screws from the frame charging port.
  2. Remove the frame charging port from the frame.
- ✓ The frame charging port is disassembled.

**Disassembling the battery**

1. Remove the battery cover.
  2. Secure the battery against falling.
  3. Open the battery lock by turning the key.
  4. Pull both locking levers at the top of the battery.
  5. Remove the battery.
- ✓ The battery has been removed.

**Disassembling the battery holder**

1. Secure the battery holder against falling.
  2. Disconnect and remove the battery connector from the connector bracket.
  3. Remove the key and detach the lock holder from the lock bracket.
  4. Remove the lock holder.
  5. Remove the mounting screws for the connector bracket and the lock bracket from the frame.
  6. Carefully remove both brackets from the frame.
- ✓ The battery holder is disassembled.

**Disassembling the cable harness**

1. Loosen the laid cables from the frame.
  2. Remove the cable harness from the frame.
- ✓ The cable harness is disassembled.

**Disassembling the Allround operating unit**

1. Disconnect the connecting cable from the operating unit.
  2. Loosen the fastening screw from the operating unit.
  3. Remove the operating unit from the handlebar.
- ✓ The operating unit is removed.



## 12.2 Disposal



The symbol depicting a crossed out garbage bin indicates that a product and its accessories (e.g., charger, USB cable) must not be disposed of together with household waste at the end of their service life.

To prevent damage to the environment or human health due to improper waste disposal and to support the sustainable reuse of material resources, these items must be separated from other kinds of waste and recycled responsibly.

### Batteries and rechargeable batteries

Batteries/rechargeable batteries may contain substances that are harmful to the environment and human health. You are legally required to return used batteries / rechargeable batteries.

Observe the disposal instructions on the batteries / rechargeable batteries.

- Before disposing of the product, consider options for waste prevention (e.g., selling functional products or repairing them).
- Before disposal, erase all personal data from the product (e.g., saved login data, user names, passwords or files).

- Before disposing of the product, remove batteries / rechargeable batteries / lamps / illuminants if this can be done without damaging it.
- Private end-customers can dispose of the product at a public waste collection and/or take-back facility in their local area. The addresses of suitable waste disposal points are available from your city, country or district council. Comply with the local regulations.
- In Germany, commercial customers can contact the following company for the purposes of free-of-charge take-back:

GRS Service GmbH  
 Gotenstraße 14  
 20097 Hamburg  
<https://www.grs-batterien.de/kontakt/>

- Outside Germany, contact the following company:

Go4Recycling GmbH  
 Rathenauplatz 9  
 50674 Cologne  
<https://go4recycling.de>



## 13 EU Declaration of Incorporation

For the EU Declaration of  
Incorporation refer to:

[https://www.qore-system.de/  
konformitätserklärung](https://www.qore-system.de/konformitätserklärung)









**IMPORTANT SAFETY INSTRUCTIONS  
KEEP THESE INSTRUCTIONS**

Yamaha no. 592584-101

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