

Operating instructions

Part 3 - For the customer



ZC-15-0100	ICONIC EVO 1
ZC-15-0101	ICONIC EVO 2
ZC-15-0102	ICONIC EVO BELT
ZC-15-0104	ICONIC EVO FS
ZC-15-0123	VUCA EVO FS 1
ZC-15-0124	VUCA EVO FS 2
ZC-18-0100, ZC-18-0101	EVO CX 2
ZC-18-0102, ZC-18-0112	COPPERHEAD EVO 1
ZC-18-0103, ZC-18-0113	COPPERHEAD EVO 2
ZC-18-0104, ZC-18-0105	EVO CX AM 1
ZC-18-0106	EVO CX AM 2
ZC-18-0107	COPPERHEAD EVO AM 1
ZC-18-0109	COPPERHEAD EVO AM 2
ZC-18-0110	COPPERHEAD EVO AM 3
ZC-18-0111	COPPERHEAD EVO AM 4
ZC-18-0114	VUCA EVO AM 1
ZC-18-0115, ZC-18-0116	VUCA EVO AM 2
ZC-18-0121, ZC-18-0122	EVO CX 1
ZC-19-0100	SONIC EN-R TEAM 600
ZC-23-0101, ZC-23-0102	URBAN GRINDER EVO SX
ZC-23-0103	CLUNKER EVO
ZC-15-0100	ICONIC EVO 1
ZC-15-0101	ICONIC EVO 2
ZC-15-0102	ICONIC EVO BELT
ZC-15-0104	ICONIC EVO FS
ZC-15-0123	VUCA EVO FS 1

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Contact if you have any questions or problems, or wish to have a printed copy of these operating instructions:

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Subject to internal changes

The information contained in these operating instructions are the approved technical specifications at the time of printing. In addition to the functions described here, the software may be modified at any time to rectify errors and extend functions. Any significant changes are included in a new published version of the operating instructions. All changes and new versions of the operating instructions are published on the following website: www.bulls-bikes.com/gb-en/

1 About these instructions for use

1.1 Aim of the instructions for use

BULLS pedelecs are premium quality vehicles. Final assembly is completed at the specialist dealer's. Your specialist dealer will also be happy to assist you in the future, whether you require an inspection, retrofit or repair.

The instructions for use aim to provide you with the information you need to use your new pedelec effectively and safely throughout its entire lifecycle while also avoiding misuse.

The operating instructions are designed for pedelecs that are purchased online or directly from a specialist dealer. As a result, there is no need for instruction from a specialist dealer.

Please take time to become familiar with your new pedelec. Once you have read the instructions for use, you will be able to:

- Identify and avoid dangers that the pedelec entails
- Understand the pedelec's different components
- Following an online purchase, assemble the pedelec and adjust it for the rider's size
- using the pedelec,
- Clean the pedelec
- Inspecting the pedelec,
- Detect simple faults on the pedelec, correct faults and prevent misuse
- Schedule maintenance
- Dispose of the pedelec in the correct manner.

Use the tips and suggestions in the operating instructions. They will help you to enjoy your pedelec for a long time to come.



Download the operating instructions onto your phone at the following link, so that you can use them when you are out riding:

www.bulls-bikes.com/gb-en/service/downloads

After purchasing the pedelec, you may request a printed copy of the manual from your specialist dealer within a month.

1.2 Manufacturer

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50739 Köln, Germany

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Email: info@zeg.de

1.3 Frame number

Each frame has an individual frame number stamped on it or on a special sticker (see Figure 2). The frame number can be used to link the pedelec to the owner. The frame number is the most important identifier for verifying ownership.

1.4 Identifying the instructions

The instructions identification number is located in bottom left-hand corner of each page.

The identification number is composed of the document number, the version number and the release date.

Part 2/3-_1.0_23.01.2026

1.5 For your information

1.5.1 Warnings

Warnings indicate hazardous situations and actions. You will find three categories of warnings in the operating instructions:

⚠ WARNING May lead to serious or even fatal injuries if ignored. Medium-risk hazard.

⚠ CAUTION May lead to minor or moderate injuries if ignored. Low-risk hazard.

Notice May lead to material damage if ignored.

1.5.2 Markups

You will find the following markups in the operating instructions:

Stylised form	Use
Link	Link
✓	Requirements
▶	Instructions for actions with no specific order
1	Instructions for actions in specified order
⇒	Result of the action
•	Bulleted lists
Only applies to pedelecs with this equipment	A notice beneath the heading indicates components which can be used as an option

Table 1: Markups

1.5.3 Abbreviations

Abbreviation	Meaning/derivation
ABS	Anti-blocking system
BLE	Bluetooth® Low Energy
EPAC	Electric power-assisted cycle
PTW	Permitted total weight

Table 2: Table of abbreviations

2 Safety

2.1 Residual risk



2.1.1 Risk of fire and explosion

Never charge if there is a critical fault

If a charger is connected to the drive system when a critical fault is reported, the battery may be damaged permanently and may catch fire.

- ▶ Connect charger to fault-free electric drive system only.

Protect against water ingress

The battery is only protected from spray water. Penetration by water can cause a short circuit. The battery may self-ignite and explode.

- ▶ Never immerse battery in water.
- ▶ Take battery out of service if you suspect water has penetrated it.

Avoid heat

Temperatures over 60 °C can also cause liquid to leak from the battery and the battery will become damaged. The battery may self-ignite and explode.

- ▶ Protect the battery against heat.
- ▶ Never store the battery next to hot objects.
- ▶ Never expose battery to continuous direct sunlight.
- ▶ Avoid wide temperature fluctuations.

Never use incorrect charger

Chargers with excessive voltage damage batteries. This may cause a fire or an explosion.

- ▶ Charge approved batteries only.

Prevent short circuit due to interconnection

Metal objects may interconnect the battery's electrical terminals. The battery may self-ignite and explode.

- ▶ Never insert paper clips, screws, coins, keys and other small parts into the battery.
- ▶ Place the battery on clean surfaces only. Prevent charging socket and contacts against contamination from dirt, sand and similar.

Handling a damaged or faulty battery

Faulty batteries are hazardous goods. These include:

- Batteries which have leaked or discharged gas
- Cells or batteries which have sustained external or physical damage.

The safety electronics may fail if the batteries are damaged or faulty. The residual voltage can cause a short circuit. The battery may self-ignite and explode.

- ▶ Only use and charge battery and accessories if they are in perfect condition.
- ▶ Never open or repair the battery.
- ▶ Batteries with external damage must be removed from service immediately.
- ▶ If a battery is dropped or struck, remove it from service and keep it under observation for at least 24 hours.
- ▶ Contact specialist dealer.

Dispose of faulty batteries

- ▶ Take faulty battery to your specialist dealer in your pedelec as quickly as possible. Store the battery in the pedelec until it is taken away for transport.

Avoid overheating in the charger

The charger heats up when it is charging the battery. If it is not allowed to cool down sufficiently, it can cause a fire or burns to the hands.

- ▶ Never use charger on a highly flammable surface.
- ▶ Never cover the charger during charging.
- ▶ Never leave battery unattended during charging.



2.1.2 Hot surfaces

The brakes, hubs and the motor may become very hot when in operation. There is a risk of burns or fire in case of contact.

- ▶ Never touch the brakes or the motor immediately after a ride.
- ▶ Never place the pedelec on a flammable surface, such as grass or wood, directly after use.



2.1.3 Electric shock

Never use damaged network components

Damaged chargers, cables and plug connectors increase the risk of electric shock.

- ▶ Check the charger, cable and plug connector before each use. Never use a damaged charger.

Avoid water ingress

If water penetrates into the charger, there is a risk of electric shock.

- ▶ Use the charger indoors only.

Dealing with condensate

Condensation may form in the charger and battery when the temperature changes from cold to hot, causing a short circuit.

- ▶ Wait until both charger and battery are at room temperature before connecting them.



2.1.4 Risk of a crash

Adjusting quick release correctly

Excessively high clamping force will damage the quick release and cause it to lose its function. Insufficient clamping force will result in unfavourable transmission of force. This can cause components to break. This will result in a crash with injuries.

- ▶ Only use the clamping lever with the specified set clamping force.
- ▶ Contact specialist dealer if the quick release has lost clamping force.



2.1.5 Risk of amputation

The brake disc in disc brakes is so sharp that it can cause serious injuries to fingers if they are inserted into the brake disc openings.

The chain wheels and belt sprockets can draw in fingers, thus causing serious injuries to fingers.

- ▶ Always keep fingers well away from rotating brake discs and the chain or belt drive.

2.2 Toxic substances



2.2.1 Carcinogenic substances

Suspension oil

If you come into contact with the suspension oil in the fork or the rear frame damper, it will irritate the respiratory tract and can cause cancer, sterility and changes to the genetic make-up of germ cells oil cause.

- ▶ Never dismantle the rear frame damper or the suspension fork.



2.2.2 Toxic materials

Brake fluid

Brake fluid may leak out after an accident or due to material fatigue. Brake fluid can be fatal if swallowed or inhaled.

- ▶ Never dismantle the brake system.

Suspension oil

The suspension oil in the fork and the rear frame damper is toxic to the touch.

- ▶ Never dismantle the rear frame damper or the suspension fork.



2.2.3 Irritants and corrosive substances

Defective battery

Liquids and vapours may leak from damaged or faulty batteries. Excessively high temperatures may also cause liquids and vapours to leak from the battery. Such liquids and vapours can irritate the airways and cause burns.

- ▶ Never dismantle the battery.
- ▶ Never inhale vapours.

2.3 Vulnerable groups

- ▶ Keep batteries and the charger away from children and people with reduced physical, sensory or mental capacities or lacking in experience and knowledge.
- ▶ Children and young people must be provided with comprehensive instructions by a legal guardian.

2.4 Requirements for the pedelec rider

The pedelec rider must have adequate physical, motor and mental abilities to ride on public roads. A minimum age of 14 years is recommended.

2.5 Personal protective equipment

To ensure safe use of your pedelec, we recommend:

- wearing a suitable helmet.

The following items of equipment will also improve your safety:

- sturdy shoes
- tight-fitting clothes
- gloves
- well-fitting glasses.

2.6 Safety guards

Three safety guards on the pedelec protect pedelec riders against heat, dirt or moving parts:

- the motor cover
- the battery cover
- the chain guard.

- ▶ Never remove the safety guards.
- ▶ Check the safety guards on a regular basis.
- ▶ Take pedelec out of service if a guard is damaged or missing. Contact specialist dealer.

2.7 Safety markings and safety instructions

Pedelec and battery nameplates contain the following safety markings and safety instructions:

Symbol	Explanation
	General warning signs
	Warning of explosive substances
	Warning of hot surfaces
	Adhere to the instructions for use
	No naked flames

Table 3: Safety markings

Symbol	Explanation
	Collect ordinary batteries and rechargeable batteries separately.
	It is forbidden to open any type of battery.
	Protect from temperatures above 50 °C and direct sunlight.

Table 4: Safety instructions

2.8 What to do in an emergency

2.8.1 Dangerous situations in road traffic

- ▶ If you encounter any hazards or dangers in road traffic, apply the brake until the pedelec comes to a halt.

2.8.2 Leaked brake fluid

- ▶ Avoid contact with skin and eyes. Wear gloves and safety gloves as protective equipment. Remove any clothing contaminated with brake fluid immediately.
- ▶ Take care with leaked brake fluid as it poses a slip hazard.
- ▶ Keep leaked brake fluid away from naked flames, hot surfaces and sources of ignition.

After skin contact

- 1 Wash affected skin with soap and water and rinse well.
- 2 Remove contaminated clothing.
- 3 Consult doctor in the event of pain or discomfort.

After contact with eyes

- 1 Rinse eyes under flowing water for at least ten minutes with the lids open; also rinse under lids.
- 2 Immediately consult a doctor in case of any pain or discomfort.

Environmental protection measures

- ▶ Never allow brake fluid to flow into sewage, water courses or groundwater.
- ▶ Notify the relevant authorities if fluid penetrates the ground, water courses or the sewage system.
- ▶ Dispose of leaking brake fluid in an environmentally responsible way in accordance with statutory regulations.
- ▶ The brake system must be repaired immediately if brake fluid leaks out. Contact specialist dealer.

2.8.3 Battery vapour emission

Vapours may be emitted if the battery is damaged or used improperly. The vapours may cause respiratory tract irritation.

- 1 Get into fresh air.
- 2 Consult doctor in the event of pain or discomfort.

After contact with eyes

- 1 Carefully rinse eyes with plenty of water for at least 15 minutes. Protect unaffected eye.
- 2 Seek medical advice immediately.

After skin contact

- 1 Remove any solid particles immediately.
- 2 Remove contaminated clothing immediately.
- 3 Rinse the affected area with plenty of water for at least 15 minutes.
- 4 Then dab the affected skin gently. Do not rub dry.
- 5 Immediately consult a doctor if there is any redness, pain or discomfort.

2.8.4 Battery fire

The safety electronics may fail if the battery is damaged or faulty. The residual voltage can cause a short circuit. The battery may self-ignite and explode.

- 1 Keep your distance if the battery becomes deformed or starts to emit smoke.
 - 2 If charging, remove the plug connector from the socket.
 - 3 Contact the fire service immediately.
- ▶ Use Class D fire extinguishers to put out the fire.
 - ▶ Never extinguish damaged batteries with water or allow them to come into contact with water.

Inhaling vapours can cause intoxication.

- ▶ Stand on the side of the fire where the wind is blowing from.
- ▶ Use breathing apparatus if possible.

2.8.5 Oil and lubricant leaks from the fork

- ▶ Dispose of leaked oils and lubricants in an environmentally responsible way in accordance with statutory regulations.
- ▶ Contact specialist dealer.

2.9 BOSCH data privacy information

When the pedelec is connected to the diagnosis tool at the specialist dealer's, data is transferred to BOSCH eBike Systems (Robert Bosch GmbH) when the Bosch drive unit is used, including its energy consumption and temperature, to help improve the product.

You will find more information on the Bosch eBike website:

- ▶ www.bosch-ebike.com/en/.

3 Description

3.1 Proper use

All checklists and instructions for actions in these operating instructions must be met. Approved accessories can be installed by specialist staff.

Use the pedelec when it is in perfect, proper working order only. National requirements may apply to the pedelec which the standard equipment may not meet. Different regulations apply across the country to the riding light, reflectors and other components when riding on public roads. The general laws and the regulations on accident prevention and environmental protection in the respective country of use must be observed.

The rechargeable batteries are designed to supply power to the pedelec motor only. Never use the batteries for other purposes.

3.1.1 Improper use

Failure to adhere to the pedelec's proper use poses a risk of personal injury and material damage. It is prohibited to use the pedelec in the following ways:

- When the electrical drive system has been manipulated
- Change, erase, make unrecognisable or otherwise tamper with the frame number, nameplate or serial number of components
- Riding with a damaged or incomplete pedelec
- Riding through deep water
- Charging with an incorrect charger
- Lending the pedelec to untrained pedelec riders
- Carry other people without a seat
- Riding with excessive baggage
- Improper servicing
- Improper repair
- Tough areas of use, such as professional competitions
- Acrobatics, riding up ramps, stunt riding or flying stunts.

3.2 Area of use

You will find your pedelec's area of use on the nameplate.







Area of use	Unsuitability
 EN 17406	Use on normal, paved surfaces where the tyres should maintain contact with the ground at average speed with occasional drops. Never ride off road. Never perform drops over 15 cm.
 EN 17406	The area of use specified in Condition 1 applies. The vehicle can also be used on unpaved roads and gravel paths with moderate upward and downward slopes. Under these conditions, the bike may come into contact with uneven terrain and tyres may lose contact with the ground repeatedly. Never ride off road. Never perform drops over 15 cm.
 EN 17406	The area of use specified in Condition 2 applies. The vehicle can also be used on rough paths, bumpy roads, difficult terrain and undeveloped tracks. Riding off-road requires skill. However, individuals without this skill may also ride this bicycle. Never perform drops over 60 cm.
 EN 17406	The area of use specified in Condition 3 applies. The vehicle can also be used for descents on unpaved roads at speeds of up to 40 km/h. Never perform drops over 120 cm.
 EN 17406	The area of use specified in Condition 4 applies. The vehicle can also be used for extreme drops and descents on unpaved roads or a combination of the two at speeds of up to 40 km/h.
 EN 17406	The area of use specified in Condition 1 applies. The vehicle can also be used in competitions or for other purposes at speeds of more than 50 km/h (e.g. descents or sprints). Never ride off road. Never perform drops over 15 cm.

Table 5: Area of use, average speed and unsuitability

3.2.1 Dimensions

The pedelec may only be loaded to its *maximum permitted total weight* (PTW).

The maximum total permitted weight is

- the weight of the fully assembled pedelec
- plus body weight

plus baggage (this also includes a trailer).

Type no.	Vehicle weight [kg]	PTW [kg]
ZC-15-0100	27	135
ZC-15-0101	28	150
ZC-15-0102	28	150
ZC-15-0104	30	150
ZC-15-0123	30	150
ZC-15-0124	30	150
ZC-18-0100	25	130
ZC-18-0102, ZC-18-0112	25	150
ZC-18-0103, ZC-18-0113	25	150
ZC-18-0104, ZC-18-0105	27	130
ZC-18-0106	27	130
ZC-18-0107	25	130
ZC-18-0109	25	130
ZC-18-0110	25	130
ZC-18-0111	25	130
ZC-18-0114	26	150
ZC-18-0115	26	150
ZC-18-0116	26	150
ZC-18-0121	24	130
ZC-23-0101	22	135
ZC-23-0102	#	135
ZC-23-0103	19	135
ZC-23-0105	18	135
ZC-23-0106	17	135

Table 6: Type number, vehicle weight and PTW

3.2.2 Environmental requirements

During winter use, especially at temperatures below 0 °C, we recommend that you don't insert a battery charged and stored at room temperature into the pedelec until just before setting off. We recommend using thermal protection sleeves when riding longer distances at low temperatures.

Temperatures under -10 °C and over +60 °C must be avoided as a general rule. Never put the battery in a car in summer or store it in direct sunlight.

Operating temperature	-5 ... +40 °C
-----------------------	---------------

You must also keep within the following temperature ranges.

Transportation temperature	+10 ... +40 °C
Storage temperature	+10 ... +40 °C
Charging temperature	+10 ... +40 °C
Work environment temperature	+15 ... +25 °C

Charger protection rating	IP40
---------------------------	------

The charger is protected against solid foreign objects ≥ 1.0 mm in diameter but offers no protection against water.

- Charging the pedelec in dry, dust-free, frost-protected rooms only.

Protection rating for electrical components	IP55
---	------

All electrical components on the pedelec are protected against harmful amounts of dust and are fully safeguarded against contact. The components are protected against water jets (projected by a nozzle) at any angle

- The pedelec may be used when it is raining.
- The electrical components must not come into contact with water.

Protection rating for electrical components	IP55
---	------

All electrical components on the pedelec are protected against harmful amounts of dust as a minimum and are fully safeguarded against contact. The components are protected against water jets (projected by a nozzle) at any angle

- The pedelec may be used when it is raining.

The electrical components must not come into contact with water.

3.2.3 Technical data for entire vehicle

Power output/system	250 W (0.25 kW)
Shut-off speed	25 km/h
Temperatures and protection rating	See Section 3.2.2
Service life	7 Years
Weight	See Section 3.2.1
PTW	See Section 3.2.1

Table 7: Technical data for pedelec

3.2.3.1 Emissions

The safety requirements as per Electromagnetic Compatibility Directive 2014/30/EU have been met. The pedelec and the charger can be used in residential areas without restriction.

A-weighted emission sound pressure level	<70 dB(A)
Total vibration level for the hands and arms	<2.5 m/s ²
Highest effective value of weighted acceleration for the entire body	<0.5 m/s ²

Table 8: Emissions from the pedelec

3.3 Overview of nameplate

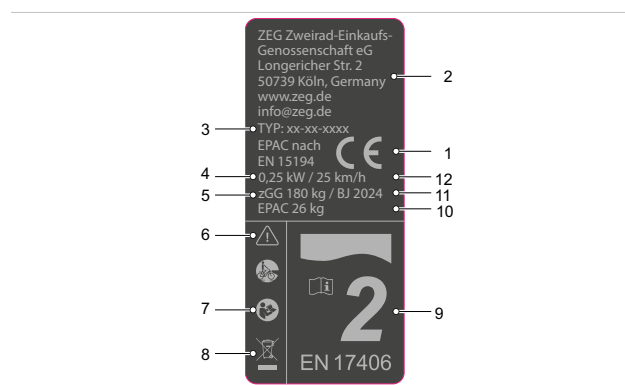


Figure 1: Example of ZEG nameplate

No.	Designation	Description
1	CE marking	The manufacturer uses the CE marking to declare that the pedelec complies with applicable requirements.
2	Manufacturer	You can contact the manufacturer at the address indicated.
3	Type number	All pedelec models have an eight-digit type number, which is used to specify the type of pedelec and the version.
4	Maximum continuous power rating	The maximum continuous power rating is the greatest possible power for the electric motor output shaft over 30 minutes.
5	Maximum permitted total weight (PTW)	The maximum total permitted weight is the weight of the fully assembled pedelec with the rider's body weight plus the baggage (this also includes a trailer).
6	Safety markings Caution	The safety markings warn of hazards.
7	Notice on operating instructions	Read operating instructions before your first ride.
8	Disposal instructions	Follow the guidelines on waste disposal when disposing of the pedelec.
9	Area of use	Ride pedelec in permitted locations only.
10	Weight of the ready-to-ride pedelec (optional; only for pedelecs 25 kg or more)	The weight of the ready-to-ride pedelec is specified as a weight of 25 kg or above and refers to the weight of a standard version at the time of purchase. Any extra accessories need to be added to the weight.
11	Year of manufacture	The year of manufacture is the year in which the pedelec was manufactured.
12	Shut-off speed	The speed that the pedelec reaches at the moment when the current has dropped to zero or to the no-load current value.

3.3.1 Overview of the pedelec

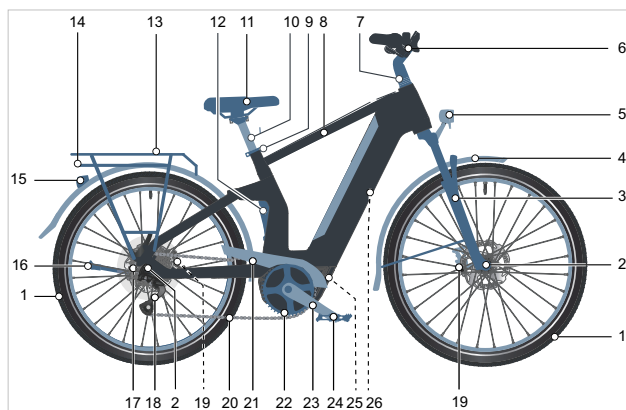


Figure 2: Pedelec viewed from right, example

1	Wheel
2	Hub
3	Fork
4	Guard
5	Front light
6	Handlebars
7	Stem
8	Frame
9	Saddle clamp
10	Seat post
11	Saddle
12	Rear frame damper
13	Pannier rack
14	Rear light
15	Reflector
16	Stand
17	Cassette
18	Rear derailleur
19	Brake
20	Chain
21	Chain guard
22	Chainring
23	Crank
24	Pedal
25	Motor
26	Battery and nameplate

3.3.2 Overview of handlebars



Figure 3: Handlebars –example with BOSCH LED Remote with Kiox 300

1	Handle
2	Hand brake (behind handlebars)
3	Bell
4	Display
5	On-board computer
6	Lockout
7	Shifter

3.3.3 Stem

The stem connects the handlebars to the fork steerer tube. The stem is used to adjust the handlebar height and the gap between the handlebars and saddle.

3.3.4 Handlebars

The pedelec is steered using the handlebars. The handlebars are used to support the upper body and mount operating and display components.

3.3.5 Suspension fork

The suspension fork helps to protect the pedelec and rider against impacts and vibrations on the front wheel caused by uneven ground. A suspension fork deflects when a steel spring, air suspension or both suspension types act on it. Read the suspension fork operating instructions.

3.3.6 Rear frame damper

The rear frame damper helps to protect the pedelec and rider against impacts and vibrations on the rear wheel caused by uneven ground. A rear frame damper deflects when steel suspension, air suspension, or both suspension types act on it. Read the operating instructions for the rear frame damper.

3.3.7 Brake

A pedelec's brake system is primarily operated using the brake lever on the handlebars.

- If the left brake lever is pulled, the brake on the front wheel is applied.
- If the right brake lever is pulled, the brake on the rear wheel is applied.

The brakes are used to regulate speed and make an emergency stop. Applying the brakes will bring the pedelec to a safe, rapid halt in an emergency.

The brake is applied using the brake lever either

- with the brake lever and brake cable (mechanical brake) or
- with the brake lever and hydraulic brake cable (hydraulic brake).

3.3.7.1 Mechanical brake

The brake lever is connected to the brake via a wire inside the shift cable (also known as a Bowden cable).

3.3.7.2 Hydraulic brake

The brake fluid is contained in a closed tube system. If the brake lever is pulled, the brake fluid transfers pressure to the brake on the wheel.

3.3.7.3 Disc brake

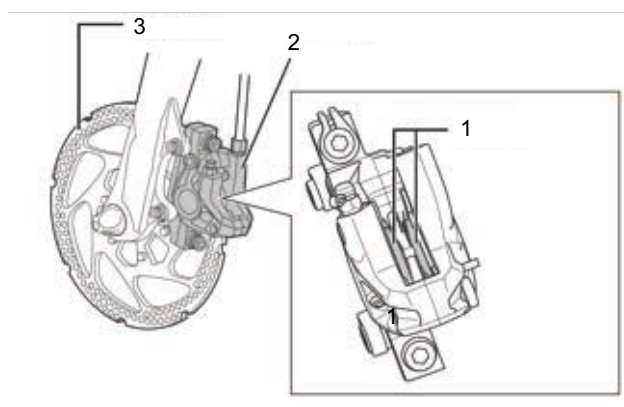


Figure 4: Brake system with disc brake – example

1	Brake lining
2	Brake calliper
3	Brake disc

The brake disc is permanently screwed to the hub on pedelecs with a disc brake.

You increase brake pressure by pulling the brake lever. The brake fluid is used to transfer pressure through the brake cables to the cylinders in the brake calliper.

The braking force is boosted by a speed reduction and applied to the brake linings. These apply the brake disc mechanically. If the brake lever is pushed, the brake linings are pressed against the brake disc and the wheel movement is decelerated until it comes to a stop.

3.3.8 Saddle

The purpose of the saddle is to absorb body weight, provide support and allow different riding positions. The shape of the saddle thus depends on the intended use of the pedelec and the rider's physique and posture.

When riding, the rider's body weight is distributed between the pedals, the saddle and the handlebars. When the rider is an upright position, the relatively small saddle area bears about 75% of their body weight.

3.3.9 Seat post

Seat posts are not only designed to fasten the saddle but also to adjust exactly to the optimum sitting position. The seat post can:

- adjust the seat height in the seat tube
- adjust the saddle horizontally with a clamping mechanism
- adjust the saddle angle by swivelling the entire saddle clamping mechanism.

Retractable seat posts feature a remote control on the handlebars, which can be used to lower the seat post at traffic lights, for example, and then raise it again.

3.3.9.1 Suspension seat post

Suspension seat posts can reduce shock after one-time hard impacts, thus improving ride comfort significantly. However, suspension seat posts are not able to compensate for bumps in the road.

3.3.10 Mechanical drive system

The pedelec is driven by muscle power, just like a bicycle.

The force which is applied by pedalling in the direction of travel drives the front chain wheel. The chain or belt transmits the force onto the rear chain wheel and then onto the rear wheel.

The pedelec is equipped with either a chain or belt drive.

3.3.10.1 Parts of a chain drive

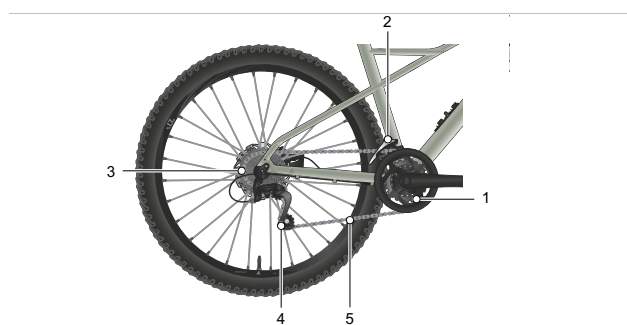


Figure 5: Diagram of chain drive with derailleurs gears

- 1 Chain wheel
- 2 Front derailleur
- 3 Cassette, sprocket
- 4 Rear derailleur
- 5 Chain

The chain drive is compatible with a

- Back-pedal brake
- Hub gear
- Gears or
- Derailleur gears.

3.3.10.2 Parts of a belt drive



Figure 6: Diagram of a belt drive

- 1 Front belt sprocket
- 2 Rear belt sprocket
- 3 Belt

A belt drive is compatible with

- Back-pedal brake
- Hub gear and, very importantly
- Gears

A belt drive is not compatible with derailleur gears.

3.3.11 Electric drive system

3.3.11.1 Motor

As soon as the muscle power required for pedalling passes a certain level, the motor is activated smoothly and assists with the pedalling motion. The motor power always depends on the power used to pedal: Motor assistance is lower when little muscle power is used than when a great deal of muscle power is used. This happens regardless of the level of assistance.

The motor switches off automatically as soon as the rider no longer pedals, the temperature is outside the permitted range, there is an overload or the shut-off speed of 25 km/h has been reached.

The pedelec does not have a separate emergency shut-off button. The mechanical brakes are used as an emergency stop system and bring the bicycle to a quick halt safely in the event of an emergency. Observe the manufacturer's operating instructions:

Component	Designation	Reference Part 4, Section
Motor	FIT, Pinion E1.9 (501069)	A: 1.010
Motor	FIT, Pinion E1.12 (501070)	A: 1.010
Motor	FIT, BAFANG H600 (501187)	#
Motor	BOSCH, Performance Line SX [BDU3144] (EB11.100.00V)	A: 1.004
Motor	BOSCH, Performance Line CX [BDU3843] (EB11.100.01C)	A: 1.007, embargo until 30.09.2024
Motor	BOSCH, Performance Line CX [BDU3840] (EB11.100.00E)	A: 1.007, embargo until 30.09.2024

3.3.11.2 On-board computer

The on-board computer acts as the control unit for the electric drive system.

Observe the manufacturer's operating instructions. The following on-board computer can be built into the pedelec:

Component	Designation	Reference Part 4, Section
On-board computer	FIT, Remote Basic (501262)	A: 2.005
On-board computer	FIT, Master Node Basic (501301)	A: 2.018
On-board computer	BOSCH, SystemController [BRC3100] (EB13.100.000)	A: 2.004
On-board computer	BOSCH, SystemController [#] (EB13.200.03B)	#
On-board computer	BOSCH, Purion 200 [BRC 3800] (EB13.200.03V)	A: 2.003

3.3.11.3 Display

A display is supplied with some pedelecs. Device and ride information is shown on the display screen.

Observe the manufacturer's operating instructions. The following control panel can be built into the pedelec:

Component	Designation	Reference Part 4, Section
Display	BOSCH, Intuvia 100 [BHU3200] (EB13.100.00F)	A: 3.001
Display	BOSCH, Kiox 500 [BHU3700] (EB13.100.004)	A: 3.002
Display	FIT, Compact (500085)	A: 3.003

3.3.11.4 Control panel

Some pedelecs are supplied with a control panel. The control panel relays the rider's inputs to the on-board computer.

Observe the manufacturer's operating instructions. The following control panel can be built into the pedelec:

Component	Designation	Reference Part 4, Section
Control panel	FIT, Remote Pure Links (501303)	A: 02.018
Control panel	BOSCH, Mini-Remote [BRC3300] (EB13.100.001)	A: 4.001
Control panel	BOSCH, Mini Remote Dropbar [BRC3310] (EB13.100.002)	A: 4.001

3.3.11.5 Battery

Each pedelec is supplied with a rechargeable battery. The battery powers the pedelec. The battery is a lithium ion battery which has been developed and manufactured to the latest technical standards. Each battery cell is protected by a steel cup and encased in a plastic battery housing.

The battery has an interior electronic protection circuit, which is specifically designed for the charger and the pedelec.

The battery temperature is monitored at all times.

The battery is protected against deep discharge, overcharging, overheating and short circuit. In the event of a hazard, a protective circuit switches the battery off automatically.

The battery has a high energy content when charged. You will find codes of practice for their safe handling in Section 2 *Safety* and Section 6.9 *Rechargeable battery* in the operating instructions.

The type and duration of operating conditions have a significant effect on the battery life. Just like any other lithium-ion battery, the battery will age naturally if it is not being used. The battery's service life can be extended if the battery is well maintained and stored at the correct temperature. The charging capacity will decrease with age, even if the battery is maintained properly. If the operating time is significantly shortened after charging, this is a sign that the battery has reached the end of its useful life.

Battery performance is reduced when the temperature drops since this increases electrical resistance. You should expect the range to be less than normal at low temperatures in winter. We recommend using thermal protection sleeves when riding longer distances at low temperatures.

Each battery has its own lock.

Observe the manufacturer's operating instructions. The following battery can be built into the pedelec:

Component	Designation	Reference Part 4, Section
Battery	BOSCH, CompactTube 400 Wh [BBP3242] (EB12.100.020)	A: 5.002
Battery	BOSCH, PowerTube 600 [BBP3860] (EB12.100.04W)	A: 5.008
Battery	BOSCH, PowerTube 800 Vertical [BBP3881] (EB12.100.054)	A: 5.008
Battery	FIT, Supertube 275 (501167)	#
Battery	FIT, Supertube 550 (501168)	#
Battery	FIT, Ultracore 800 Wh (501215)	#
Battery	FIT, Ultracore 1060 Wh (501216)	#

3.3.11.6 Charger

There is a specific charger designed for the battery for each pedelec. Only chargers included in the supply or approved by the manufacturer may be used.

Observe the manufacturer's operating instructions. The following charger can be supplied with the pedelec:

Component	Designation	Reference Part 4, Section
Charger	BOSCH, 2A Charger [BPC3200] (EB12.110.016)	A: 6.001
Charger	BOSCH, 4A charger [BPC3400] (EB12.110.001)	A: 6.001
Charger	FIT, FIT Standard Charger (500950)	A: 6.004

3.4 Description of controls and screens

3.4.1 BOSCH Kiox 400C on-board computer

The BOSCH Kiox 400C on the top tube is an on-board computer and control panel. It controls the system using four buttons and features an indicator and a USB charging port.

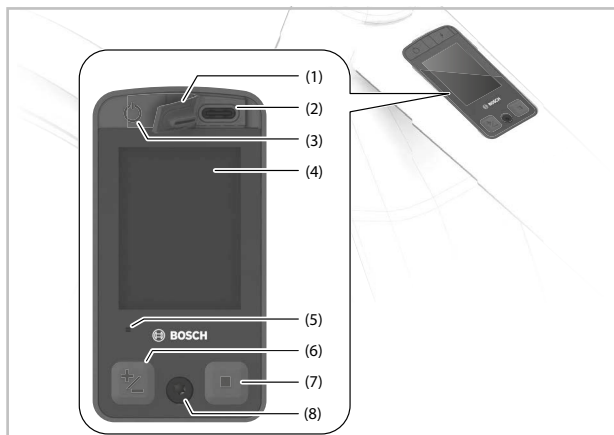


Figure 7: Overview of Kiox 400C on-board computer

1		USB charging port flap
2		USB charging port
3		On-off button (on-board computer)
4		Display
5		Ambient light sensor
6		Plus-minus button
7		Select button
8		Kiox 400C attachment screw

Table 9: Overview showing buttons and indicators on the BOSCH Kiox 400C

3.4.1.1 Level of assistance indicator

The higher the selected level of assistance, the more the drive system assists with pedalling.

eMTB mode is available for Performance Line CX drives. In eMTB mode, the assistance factor and the torque are dynamically adjusted depending on the pedalling force applied to the pedals. Selectable levels of assistance depend on the model.

Level of assistance	Use
OFF	When the drive system is switched on, the motor assistance is switched off. Use the pedelec like a normal pedelec by simply pedalling
ECO	Limited assistance with maximum efficiency for maximum range
ECO+	Range-optimised riding mode that only activates drive assistance once the rider exceeds a certain level of effort; for natural driving and maximum range
TOUR	Constant assistance, for long-range tours
TOUR+	Dynamic support for sports cycling and riding in the countryside
eMTB	Powerful assistance for a sporty start-up and optimal assistance on all types of terrain
eMTB+	Powerful assistance for a sporty start-up and optimal assistance on all types of terrain With up to 100% more extended boost
SPORT	Powerful assistance for sport rides on both mountainous routes and urban roads
TURBO	Maximum assistance up to high pedalling frequencies, for sport riding
AUTO	Assistance is adapted to the ride situation dynamically
RACE	Maximum assistance on eMTB race circuits; highly direct response behaviour and maximum extended boost for high power in competitions
CARGO	Uniform, powerful assistance to transport heavy loads safely
SPRINT	Dynamic assistance depending on pedalling frequency – for sporty rides on gravel and roads with fast sprints and frequent climb

Table 10: Overview of levels of assistance on the BOSCH Kiox 400C

3.4.1.2 ABS indicator (optional)

The ABS indicator lights up on pedelecs with an ABS system when they start up. After setting off, the ABS checks its functionality internally and the ABS symbol goes out.

In the event of a fault, the ABS symbol illuminates and a message appears on the display. This means that the ABS is inactive. Press the Select button to acknowledge the fault and the ABS error message will disappear. The ABS symbol appears in the status bar and continues to notify that the ABS is switched off.

The uppermost bar will flash if the battery is charging.

3.4.2 BOSCH Purion 200 on-board computer

The on-board computer on the handlebars is used as a control panel. It controls the system and all indicators using six buttons.

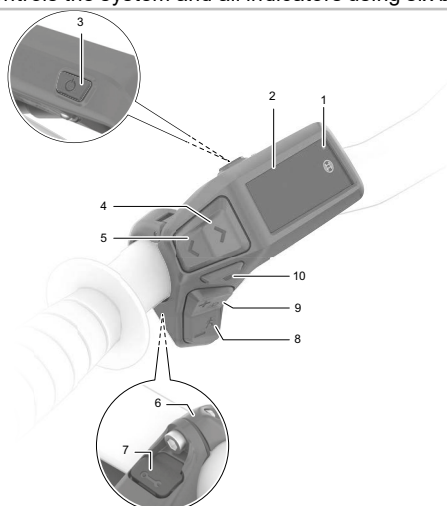


Figure 8: Overview of BOSCH Purion 200 on-board computer






1		Ambient light sensor Level of assistance indicator
2		Display ABS indicator (optional)
3		On-off button (on-board computer) Battery level indicator (on-board computer)
4	>	Increase brightness/scroll forward button
5	<	Reduce brightness/scroll backward button
6		Mount
7		Diagnosis port (for maintenance purposes only)
8	 	Minus button Push assist button
9	 	Plus button Light button
10		Select button

Table 11: Overview of buttons and indicators on the BOSCH Purion 200

3.4.2.1 Level of assistance indicator

The higher the selected level of assistance, the more the drive system assists with pedalling.

eMTB mode is available for Performance Line CX drives. In eMTB mode, the assistance factor and the torque are dynamically adjusted depending on the pedalling force applied to the pedals. Selectable levels of assistance depend on the model.

Level of assistance	Use
OFF	When the drive system is switched on, the motor assistance is switched off. Use the pedelec like a normal pedelec by simply pedalling
ECO	Limited assistance with maximum efficiency for maximum range
TOUR	Constant assistance, for long-range tours
TOUR+	Dynamic support for sports cycling and riding in the countryside
eMTB	Powerful assistance for a sporty start-up and optimal assistance on all types of terrain
SPORT	Powerful assistance for sport rides on both mountainous routes and urban roads
TURBO	Maximum assistance up to high pedalling frequencies, for sport riding
AUTO	Assistance is adapted to the ride situation dynamically
RACE	Maximum assistance on eMTB race circuits; highly direct response behaviour and maximum extended boost for high power in competitions
CARGO	Uniform, powerful assistance to transport heavy loads safely
SPRINT	Dynamic assistance depending on pedalling frequency – for sporty rides on gravel and roads with fast sprints and frequent climb

Table 12: Overview of levels of assistance on the BOSCH Purion 200

3.4.2.2 ABS indicator (optional)

The ABS indicator lights up on pedelecs with an ABS system when they start up. After setting off, the ABS checks its functionality internally and the ABS symbol goes out.

In the event of a fault, the ABS symbol illuminates and a message appears on the display. This means that the ABS is inactive. Press the Select button to acknowledge the fault and the ABS error message will disappear. The ABS symbol appears in the status bar and continues to notify that the ABS is switched off.

The uppermost bar will flash if the battery is charging.

3.4.3 BOSCH Purion 400 on-board computer

The on-board computer on the handlebars controls the system and displays all indicators on the screen.

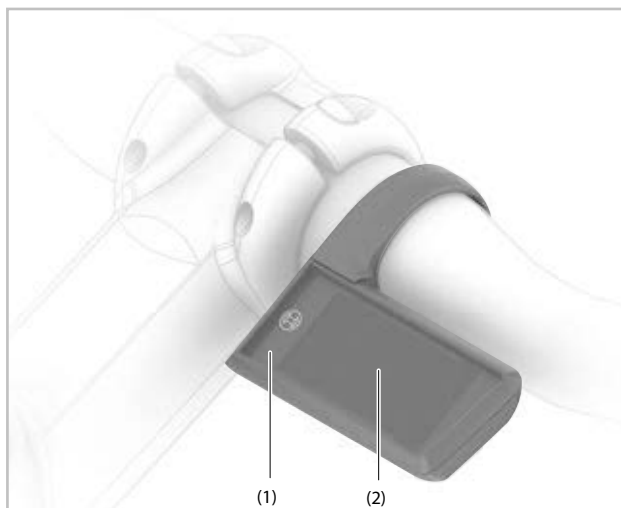


Figure 9: Overview of BOSCH Purion 400 on-board computer

1	On-board computer
2	Display

Table 13: Buttons and indicators on the BOSCH Purion 400

3.4.3.1 Level of assistance indicator

The higher the selected level of assistance, the more the drive system assists with pedalling.

eMTB mode is available for Performance Line CX drives. In eMTB mode, the assistance factor and the torque are dynamically adjusted depending on the pedalling force applied to the pedals. Selectable levels of assistance depend on the model.

Level of assistance	Use
OFF	When the drive system is switched on, the motor assistance is switched off. Use the pedelec like a normal pedelec by simply pedalling
ECO	Limited assistance with maximum efficiency for maximum range
TOUR	Constant assistance, for long-range tours
TOUR+	Dynamic support for sports cycling and riding in the countryside
eMTB	Powerful assistance for a sporty start-up and optimal assistance on all types of terrain
SPORT	Powerful assistance for sport rides on both mountainous routes and urban roads
TURBO	Maximum assistance up to high pedalling frequencies, for sport riding
AUTO	Assistance is adapted to the ride situation dynamically
RACE	Maximum assistance on eMTB race circuits; highly direct response behaviour and maximum extended boost for high power in competitions
CARGO	Uniform, powerful assistance to transport heavy loads safely
SPRINT	Dynamic assistance depending on pedalling frequency – for sporty rides on gravel and roads with fast sprints and frequent climb

Table 14: Overview of levels of assistance on the BOSCH Purion 200

3.4.3.2 ABS indicator (optional)

The ABS indicator lights up on pedelecs with an ABS system when they start up. After setting off, the ABS checks its functionality internally and the ABS symbol goes out.

In the event of a fault, the ABS symbol illuminates and a message appears on the display. This means that the ABS is inactive. Press the Select button to acknowledge the fault and the ABS error message will disappear. The ABS symbol appears in the status bar and continues to notify that the ABS is switched off.

The uppermost bar will flash if the battery is charging.

3.4.4 BOSCH System Controller control panel

The BOSCH System Controller on the top tube is a control panel. It controls the system with two buttons and has three indicators.

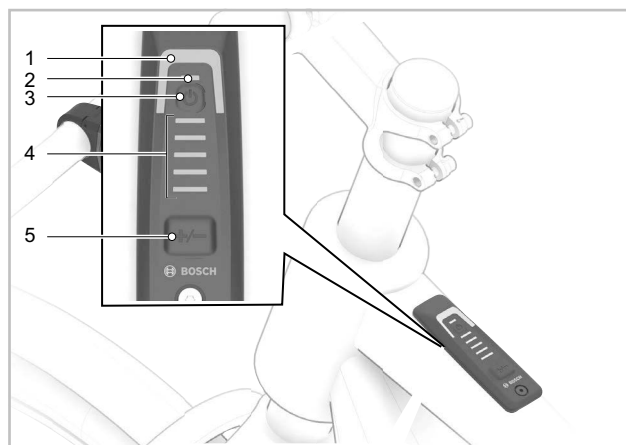


Figure 10: Overview of the System Controller control panel


1		Level of assistance indicator
2		ABS indicator (optional)/ambient light sensor
3		On-Off button (control panel)
4		Battery Level indicator (control panel)
5	+ / -	Mode button

Table 15: Overview of buttons and indicators on the BOSCH System Controller

3.4.4.1 Level of assistance indicator

The higher the selected level of assistance, the more the drive system assists with pedalling. The BOSCH System Controller or BOSCH Mini Remote control panel is used to configure how much the electric drive assists with pedalling. Selectable levels of assistance depend on the model.

Level of assistance	Use
OFF	When the drive system is switched on, the motor assistance is switched off. Use the pedelec like a normal pedelec by simply pedalling
ECO	Limited assistance with maximum efficiency for maximum range
TOUR	Constant assistance, for long-range tours
TOUR+	Dynamic support for sports cycling and riding in the countryside
eMTB/SPORT	Powerful assistance for a sporty start-up and optimal assistance on all types of terrain
TURBO	Maximum assistance up to high pedalling frequencies, for sport riding
AUTO	Assistance is adapted to the ride situation dynamically
RACE	Maximum assistance on eMTB race circuit; highly direct response behaviour and maximum extended boost for high power in competitions
CARGO	Uniform, powerful assistance to transport heavy loads safely

Table 16: Overview of level of assistance on the BOSCH System Controller

The level of assistance is displayed by different colours on the level of assistance indicator.

Use	Colour
Maximum level of assistance	Red
Medium level of assistance	Purple
Low level of assistance	Blue
Lowest level of assistance	Green
Assistance off	Black (LEDs are off)

Table 17: Colours for level of assistance on the BOSCH System Controller

3.4.4.2 ABS indicator (optional)

The ABS indicator lights up on pedelecs with an ABS system when they start up.

The ABS will switch off if the pedelec reaches a speed of 6 km/h.

If there is a fault, the ABS indicator lights up together with the indicator showing the selected level of assistance, which will flash orange.

Press the Select button to acknowledge the fault and the flashing indicator showing the selected level of assistance will go out. The ABS indicator remains lit to indicate that the ABS system is not in operation.

3.4.5 BOSCH Mini Remote control panel and Mini Remote Dropbar

The BOSCH Mini Remote on the handlebars and the Mini Remote Dropbar on racing bicycle handle bars are control panels. They control the system and all indicators using four buttons.

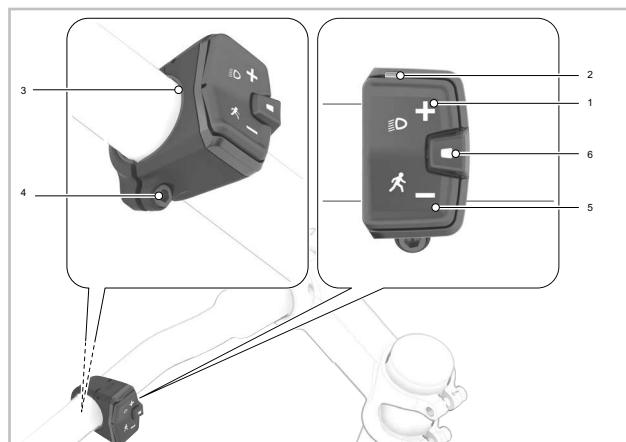


Figure 11: Overview of BOSCH Mini Remote control panel






1	 	Plus button/ Light button
2		LED indicator lamp
3		Rubber inlay/battery holder
4		Attachment screw (Mini Remote)
5	 	Minus button Push assist button
6		Select button

Table 18: Overview of buttons and indicators on the BOSCH Mini Remote

3.4.6 FIT Remote Basic on-board computer

The on-board computer on the handlebars is used as a control panel. It controls the system using six buttons.

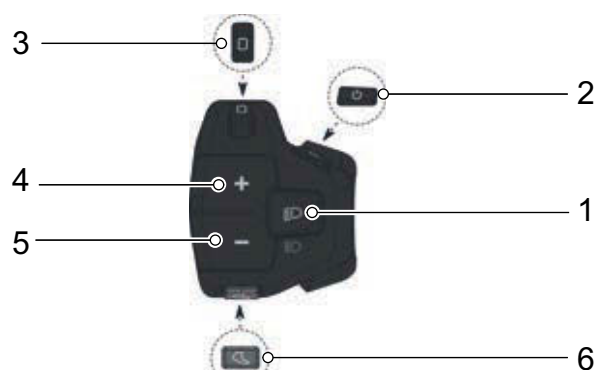


Figure 12: Overview of the FIT Remote Basic control panel

- 1 Light button
- 2 On-off button (on-board computer)
- 3 Select button
- 4 Plus button
- 5 Minus button
- 6 Push assist button

3.4.7 FIT LCD Remote on-board computer

The on-board computer on the handlebars is used as a control panel. It controls the system and all indicators using six buttons.



Figure 13: Overview of the FIT LCD Remote on-board computer

- 1 **On-Off button (on-board computer)**
- 2 Selector button
- 3 Plus button
- 4 Minus button
- 5 Push assist button
- 6 **Light button**

3.4.7.1 Level of assistance indicator

The higher the level of assistance, the more the drive system assists the rider when pedalling.

Level of assistance	Use
FLY	Maximum motor assistance up to high pedalling frequencies for sports cycling.
FLEX	The motor assistance is perfect for E-MTB trails or highly agile e-biking.
FLOW	Motor assistance for energy-saving long-distance rides or moderate off-road terrain.
ECO	Minimum motor assistance with maximum efficiency for maximum range.
OFF	No motor assistance. You ride an e-bike like a normal bicycle. You can access all on-board computer functions.
BOOST	In the [BOOST] level of assistance, the motor power can be increased to [HIGH] irrespective of the selected level of assistance. This function is only available in ride mode.

Table 19: Overview of levels of assistance on the FIT LED remote

3.4.8 FIT Master Node Display on-board computer

The FIT Master Node Display on-board computer in the top tube is a control panel. It controls the system with three buttons and features two indicators.



Figure 14: Overview of the FIT Master Node Basic on-board computer

- 1 Battery level indicator
- 2 **On-off button (on-board computer)**
- 3 Function indicator
- 4 >-button
- 5 <-button

3.4.8.1 Level of assistance indicator

The higher the selected level of assistance, the more the drive system assists with pedalling. The level of assistance is shown on the function display.

Level of assistance	Indicator	Use	Level of assistance	Indicator	Use
OFF		No assistance. You ride an e-bike like a normal bicycle. You can access all on-board computer functions.	FLEX		Assistance is perfect for E-MTB trails or highly agile e-biking.
ECO		Minimum assistance with maximum efficiency for maximum range.	FLY		Maximum assistance for sports riding up to high pedalling frequencies.
FLOW		Assistance for energy-saving long-distance rides or moderate off-road terrain.			

Table 20: Overview of levels of assistance FIT Master Node Basic

3.4.9 FIT Remote Pure Links control panel

The FIT Remote Pure Links control panel is used to operate the pedelec.



Figure 15: Overview of the FIT Remote Pure Links control panel

1	Lever
2	Function button

Table 21: Button and lever on the FIT Remote Pure Links

4 Transporting and storing

4.1 Transportation

CAUTION Crash caused by unintentional activation

There is a risk of injury if the drive system is activated unintentionally.

- ▶ Remove the battery.

4.1.1 Using the transport lock

Only applies to pedelecs with hydraulic disc brakes

CAUTION Oil leak if no transport lock

The brake transport lock prevents the brakes from being applied accidentally during transportation or shipment. Accidental braking could cause irreparable damage to the brake system or an oil leak, which would harm the environment.

- ▶ Never push the brake lever when the wheel has been dismantled.
 - ▶ Always use the transport lock when transporting or shipping.
 - ▶ Insert the transport securing devices between the brake linings.
- ⇒ Transport lock is squeezed between the two linings and prevents undesired, sustained braking which can cause brake fluid to leak out.

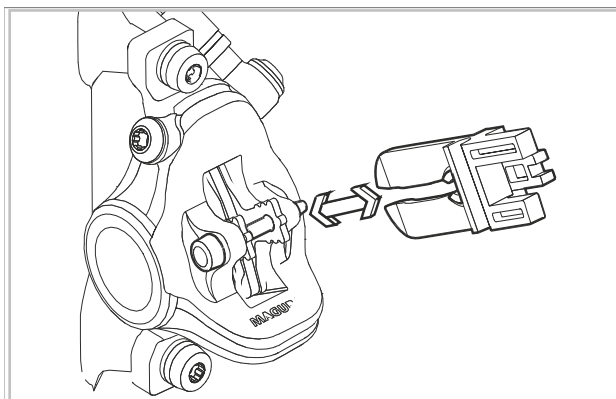


Figure 16: Fastening the transport lock

4.1.2 Transporting the pedelec

By car

Bicycle rack systems that hold the pedelec upside down cause air bubbles in the brake system.

- ▶ Remove battery
- ▶ Remove all detachable components (display screen, bicycle pump, water bottle and similar) from the pedelec.
- ▶ Transport the battery in a clean, dry position where it is protected from direct sunlight.
- ▶ Never use bicycle rack systems which hold the pedelec in an upside-down position. The specialist dealer will give a consultation on correct selection and safe use of a rack system.
- ▶ Take into account the weight of the ready-to-use pedelec when transporting it.

4.1.3 Shipping a pedelec

- ▶ When shipping the pedelec, we recommend that you have the specialist dealer place it in proper packaging.

4.1.4 Transporting the battery

Batteries are subject to hazardous goods regulations. Undamaged batteries may be transported by private persons in road traffic.

4.1.5 Shipping the battery

The battery is considered a hazardous good and only trained persons may pack and ship a battery. Contact specialist dealer.

4.2 Storing

- ▶ Always store pedelec, battery, on-board computer, display and charger separately.

Storage temperature	+10 ... +40 °C
Humidity	30%...85%
Ideal storage temperature	+10 ... +20 °C
Optimum air humidity	30%...60%

Table 22: Ambient conditions for storage

- ▶ Temperatures under -5 °C or over +40 °C and air humidity over 85% must generally be avoided.
- ▶ Store pedelec, on-board computer, battery and charger in a place which is
 - dry
 - clean
 - protected from direct sunlight
 - well-ventilated
 - never store in the open air.
- ▶ Store the pedelec in a dry room.
- ▶ Store on-board computer, display and charger in a dry environment at room temperature.
- ▶ Storage at about 10 °C to 20 °C for a long battery life.
- ▶ Store batteries in rooms with smoke detectors. A protection box with an electrical connection is an optimal solution.
- ▶ Never store batteries near to inflammable or easily combustible objects.
- ▶ Never store batteries near sources of heat.

4.3 Break in operation

Notice Batteries discharge if they are not used. If the battery is stored for a longer period of time when empty, it can become damaged and its storage capacity can be greatly reduced.

- ▶ Store battery with at least 30% charge.
 - ▶ Charge battery every six months.
 - ▶ Charge LED on the Remote or System Controller via the USB diagnostic interface for about an hour every three months.
 - ▶ Remove the on-board computer and battery from their mount if the pedelec is not going to be used for up to four weeks.
 - ▶ If the pedelec is removed from service for longer than four weeks, you need to prepare it for a break in operation.
- Notice** The battery may become damaged if it is connected permanently to the charger.
- ▶ Never connect the battery to the charger permanently.

4.3.1 Preparing for a break in operation

- 1 The pedelec needs to be cleaned with a damp cloth and preserved with wax spray. Never wax the friction surfaces of the brake.
- 2 Have the specialist dealer carry out maintenance and basic cleaning and apply preservative agent before longer periods without use.
- 3 Remove battery
- 4 Charge battery between 30% and 60% so that two or three LEDs light up on the battery level indicator. Check the battery level after 6 months. If only one LED on the battery level indicator lights up, recharge the battery to around 30%–60%.

5 Assembly instructions for online sales

Your specialist dealer will complete assembly and commissioning for this pedelec. The pedals were unscrewed and the handlebars repositioned before transportation. You need these instructions to get your pedelec roadworthy and ready for use after transportation.

⚠ CAUTION Crash caused by incorrectly configured tightening torque

If a screw is fastened too tightly, it may break. If a screw is not fastened enough, it may loosen. This will result in a crash with injuries.

- ▶ Always observe the indicated tightening torques on the screw, the component and in the operating instructions.
- ▶ Prior knowledge is required for assembly. If you don't have any prior knowledge, contact specialist dealer.

⚠ CAUTION Crash and crushing hazard caused by unintentional activation

There is a risk of injury if the drive system is activated unintentionally.

- ▶ Remove the battery.

5.1 Scope of delivery

- ▶ The packaging material consists of cardboard. Dispose of the packaging in accordance with the regulatory requirements.

Scope of delivery

<input type="checkbox"/>	1 pedelec with battery
<input type="checkbox"/>	2 pedals
<input type="checkbox"/>	1 charger
<input type="checkbox"/>	1 Technical documentation

5.2 Assembly

- ▶ Assemble the pedelec in a clean, dry environment. The work environment temperature should be between 15 °C and 25 °C.
- ▶ Secure the pedelec in a fitting stand. The fitting stand used must be approved for a maximum weight of least 30 kg. Alternatively, you can get another person to hold the pedelec.

5.2.1 Getting the required tools ready

The following tools are required to assemble the pedelec:

	Screw wrench 15 mm
	Torque wrench Working range: 5- 40 Nm
	Torx bits: T15, T20, T25 Hex key bits: 4 mm, 5 mm and 6 mm

Table 23: Tools required for assembly

5.2.2 Straightening the handlebars

The handlebars must be turned so that they are parallel to the frame and tyres for transportation.

- 1 Turn handlebars clockwise until they are vertically aligned with the wheel and frame. The way the handlebars are secured depends on the stem fitted with a screw.

Only applies to pedelecs with this equipment

- 1 Remove the safety cap from the stem.
- 2 Undo the screw using a T15, T20, T25 Torx or 4 mm, 5 mm, or 6 mm hex key, depending on the type of screw.
- 3 Turn the handlebars into the required position.
- 4 Fasten the screw using a T15, T20, T25 Torx or 4 mm, 5 mm, or 6 mm hex key, depending on the type of screw.
- 5 Refasten the safety cap on the stem.

5.2.3 Checking the stem and handlebars are in correct position

Checking the connections

- 1 Stand in front of the pedelec. Clamp the front wheel between your legs. Grasp the handlebar grips.
- 2 Try to twist the handlebars against the direction of the front wheel.

⇒ The stem must not move or twist.

- 3 If the stem can be twisted, check fastening.

⇒ If the stem cannot be secured properly, contact your specialist dealer.

Checking stem is firmly in position

- 1 Press full body weight on the handlebars.

⇒ The stem and handlebars must not shift or slip.

- ▶ If the handlebars cannot be fastened, contact your specialist dealer.

Checking the bearing clearance

- 1 Place the fingers of one hand on the upper headset cup. Pull the front wheel brake with the other hand and try to push the pedelec backwards and forwards.

⇒ The headset cup halves must not move towards one another.

⇒ If the headset cup halves shift, contact a specialist dealer.

5.2.4 Fitting the pedals

The pedals have two different threads to ensure they don't come loose while the rider is pedalling.

- The pedal on the left facing the direction of travel has a left-hand thread and is marked L.
- The pedal on the right facing the direction of travel has a right-hand thread and is marked R.

The mark is either on the top end, the axle or the pedal body.



Figure 17: Example of markings on pedals

- 1 Coat threads in both pedals with waterproof grease.
- 2 Turn the pedal marked L anti-clockwise by hand into the crank arm on the left as seen when facing the direction of travel.



Figure 18: L pedal in the left-hand crank arm

- 3 Turn the pedal marked R anti-clockwise by hand into the crank arm on the right as seen when facing the direction of travel.



Figure 19: R pedal in the right-hand crank arm

- 4 Use a 15 mm spanner to fasten the left-hand pedal thread anti-clockwise and the right-hand pedal clockwise with a torque between 33 - 35 Nm.

6 Operation

6.1 Risks and hazards

WARNING Injuries and death caused by blind spots

Other road users such as buses, trucks, cars or pedestrians often underestimate the speed of bicycles. Such road users frequently do not even see bicycles. This may lead to an accident with serious injuries or even death.

- ▶ Wear a helmet. The helmet must have a reflective strip or a light in a clearly visible colour.
- ▶ Clothing should be retroreflective or as light as possible. Fluorescent materials are also suitable. High-visibility jackets and straps on your upper body ensure even greater safety.
- ▶ Always allow for mistakes on the part of other road users.
- ▶ Avoid the blind spots of vehicles turning off the road. Reduce speed as a precaution when other road users turn right.

WARNING Injuries and death caused by riding incorrectly

Misjudging speeds and mistakes made while riding quickly lead to hazardous situations, which can cause an accident with serious or fatal injuries.

- ▶ Get used to road traffic and speed little by little before riding, especially if you have not ridden a bicycle for some time.
- ▶ Practice braking hard on a regular basis.
- ▶ Take and complete a riding safety course.

WARNING Injuries and death caused by distraction

A lack of concentration while riding increases the risk of an accident. This may cause a crash with serious injuries.

- ▶ Never allow yourself to be distracted by the smartphone.

CAUTION Crash caused by loose clothing

Laces, scarves and other loose items may become entangled in the spokes on the *wheels* and the *chain drive*. This may cause a crash with injuries.

- ▶ Wear sturdy footwear and close-fitting clothing.

CAUTION Crash caused by difficult-to-spot damage

If the bicycle topples over or you have a fall or an accident, there may be difficult-to-spot damage to components such as the brake system, quick releases or *frame*. This may cause a crash with injuries.

- ▶ Take bicycle out of service. Contact specialist dealer.

CAUTION Crash caused by dirt

Heavy soiling can impair the functions of the bicycle, for example, the function of the brakes. This may cause a crash with injuries.

- ▶ Remove coarse dirt before riding.

CAUTION Crash caused by material fatigue

Intensive use can cause material fatigue. A component may suddenly fail in case of material fatigue. This may cause a crash with injuries.

- ▶ Remove the bicycle from service immediately if there are any signs of material fatigue. Have your specialist dealer inspect the component.
- ▶ Arrange the mandatory full inspections with your specialist dealer on a regular basis. During the full inspection, the specialist dealer will check the bicycle for any signs of material fatigue on the frame, fork, suspension element mountings (if there are any) and components made of composite materials.

Carbon becomes brittle when exposed to heat radiation such as heating. This can cause the carbon component to break, leading to a crash with injuries.

- ▶ Never expose carbon components on the bicycle to strong sources of heat.

CAUTION Crash caused by poor road conditions

Loose objects, such as branches and twigs, may become caught in the wheels and cause a crash with injuries.

- ▶ Be aware of the road conditions.
- ▶ Ride slowly and brake in good time.

The *tyres* may slip on wet roads. You must also account for a longer braking distance in wet conditions. The brake response will feel different to normal. This can cause loss of control or a crash, which may result in injuries.

- ▶ Ride slowly and brake in good time when it is raining.

Notice Heat or direct sunlight can cause the *tyre pressure* to increase above the permitted maximum pressure level. This can destroy the *tyres*.

- ▶ Park the bicycle in the shade.
- ▶ On hot days, check the *tyre pressure* regularly and adjust it as necessary.

Notice Moisture penetrating at cold temperatures may impair individual functions due to the open structural design.

- ▶ Always keep the bicycle dry and free from frost.

6.2 Instruction and customer service

The supplying specialist dealer will provide customer service. Contact details can be found on the pedelec pass for these operating instructions. The supplying specialist dealer will also perform all inspection, modifications and repairs in the future.

6.3 Adjusting the pedelec

⚠ CAUTION Crash caused by incorrectly adjusted tightening torques

If a screw is fastened too tightly, it may break. If a screw is not fastened enough, it may loosen. This will result in a crash with injuries.

- ▶ Always observe the tightening torque indicated on the screw and in the operating instructions.

Only a correctly adjusted pedelec will guarantee the desired ride comfort and health-promoting activity.

All settings must be re-configured if the body weight or maximum baggage weight changes.

6.3.1 Preparing

The following tools are required to adjust the pedelec:









	Tape measure
	Scales
	Spirit level
	Ring spanners 8 mm, 9 mm, 10 mm, 13 mm, 14 mm and 15 mm
	Torque wrench Working range 5-40 Nm
	Hex key 2 mm, 2.5 mm, 3 mm, 4 mm, 5 mm, 6 mm and 8 mm
	Cross-recess screwdriver
	Slotted-head screwdriver

Table 24: Tools required for assembly

6.3.2 Adjusting the ride position

The starting point for a comfortable posture is the correct position of the pelvis. If the pelvis is in the wrong position, it can cause different types of pain, e.g. in the shoulder or back.

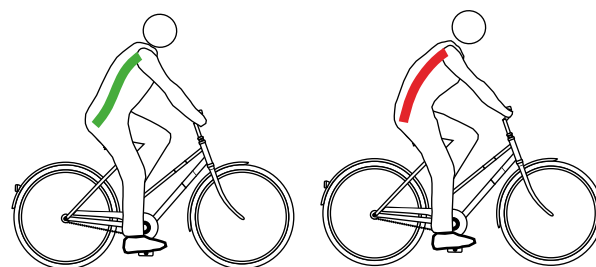


Figure 20: The pelvis is in the right position (green) or incorrect position (red)

The pelvis is in the right position if the spine forms an S-shape and a natural, easy arch.

The pelvis is positioned incorrectly if it tilts slightly backwards. As a result, the spine becomes curved and can no longer deflect to an optimal extent.

A suitable riding position must be selected beforehand depending on the pedelec type, physical fitness and desired trip distance or speed.

It is especially advisable to check and optimise the riding position once more before longer rides.

6.3.2.1 Adjusting the suspension elements to body weight

The correct functioning of the following seat posts depends on the body weight:

- Suspension seat post,
 - Rhomboid seat post or
 - Suspension fork.
- ✓ The rider's body weight must correspond to the suspension element's load capacity and spring load.
 - ▶ If the rider's body weight deviates from the suspension elements' specifications, contact your specialist dealer. If a spring is fitted, either the spring in the component or the entire component must be replaced.
 - ▶ The PTW must never be exceeded.

6.3.3 Saddle

6.3.3.1 Straightening the saddle

- ▶ Position saddle in direction of travel. In doing so, align the tip of the saddle with the top tube.

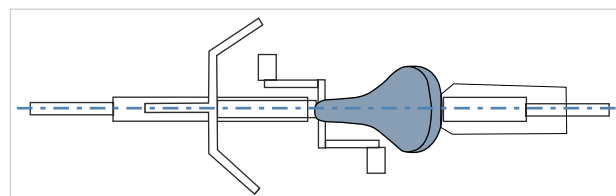


Figure 21: Positioning the saddle in direction of travel

6.3.3.2 Adjusting the saddle height

- ✓ To adjust the saddle height safely, either:
 - Push the pedelec near to a wall so that the pedelec rider can lean on the wall to support themselves or
 - Ask another person to hold the pedelec.
- 1 Use the seat height formula to roughly set the saddle height:
Seat height (SH) = inner leg length (I) \times 0.9
- 2 Climb onto the bicycle.
- 3 Place your heel on the pedal and extend your leg, so that the pedal is at the lowest crank rotation point. Your knee should now be fully extended.

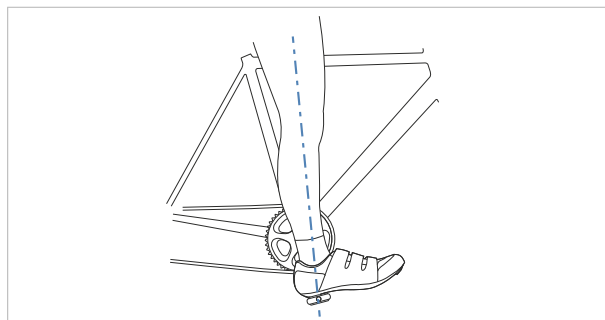


Figure 22: Heel method

- 4 Take a test ride.
 - ⇒ Pedelec riders sit straight on the saddle at an optimal saddle height.
 - If the pelvis moves to the left and right as you pedal, the saddle is too high.
 - If your knees are painful after a few kilometres, the saddle is too low.
 - ⇒ Position the seat post according to needs if necessary. Adjust the seat height with the quick release.
- 5 Open the quick release on the seat post to change the seat height (1). To do so, push the clamping lever (5) away from the seat post (3).

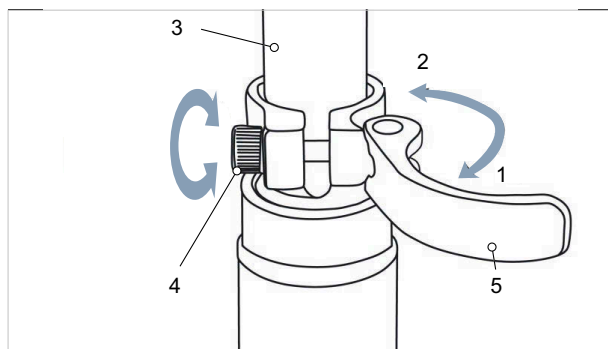


Figure 23: Opening the seat post quick release

- 6 Set the seat post to the required height.

CAUTION Crash caused by an excessively high seat post setting

A *seat post* with is set too high will cause the *seat post* or the *frame* to break. This will result in a crash with injuries.

- ▶ Do not pull the seat post out of the frame beyond the minimum insertion depth marking.

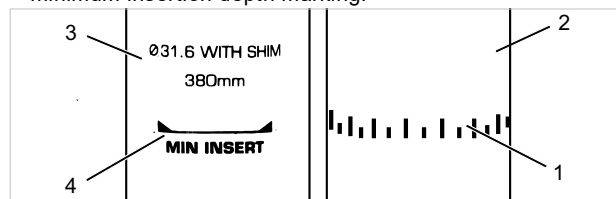


Figure 24: Detailed view of the seat post – examples of the minimum insertion depth marking

- 7 To close it, push the *seat post clamping lever* as far as it will go into the *seat post* (2).
- 8 Check the *clamping force of the quick releases*.

6.3.3.3 Adjusting the saddle height with the remote control

Use the seat height formula to set the saddle height:
Seat height (SH) = inner leg length (I) \times 0.9

- ▶ **Notice** If you are unable to achieve the required saddle height, lower the seat post further into the seat tube. The seat post Bowden cable must be tightened in the frame up to the remote control to the same length as the seat post was lowered. If this is not possible, contact your specialist dealer.

6.3.3.4 Adjusting the saddle position

The saddle can be shifted on the saddle frame. The right horizontal position ensures an optimal leverage position for legs. This prevents knee pain and incorrect, painful pelvis positions. If you have displaced the saddle more than 10 mm, you need to adjust the saddle height again since both settings affect one another.

- ✓ You must only adjust the saddle setting when the bicycle is stationary.
- ✓ To set the saddle position, either:
 - Push the pedelec near to a wall so that the pedelec rider can lean on the wall to support themselves or
 - Ask another person to hold the pedelec.
- ✓ Move the saddle within its permitted displacement range only (marked on the saddle stay).
- 1 Climb onto the pedelec.
- 2 Place the pedals into the horizontal position with your feet.
 - ⇒ Pedelec riders are adopting the optimal saddle position if the perpendicular line from the kneecap runs through the pedal axle.
 - ▶ If the perpendicular line crosses behind the pedal, bring the saddle further forward.
 - ▶ If the perpendicular line crosses in front of the pedal, bring the saddle further back.

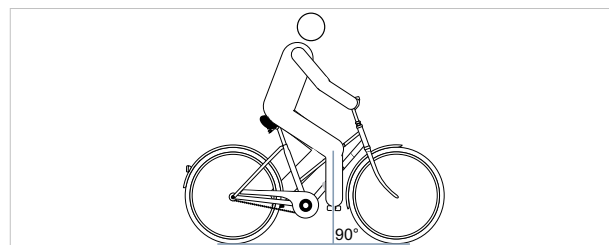


Figure 25: Knee cap perpendicular line

- 3 Unfasten and adjust the designated screw connections, and clamp them with the maximum tightening torque for the saddle clamping screws.

6.3.3.5 Adjusting the saddle tilt

The saddle tilt must be adjusted to the seat height, the saddle and handlebar position, and the saddle shape to ensure an optimum fit. This allows you to optimise the seating position.

The saddle prevents pedelec riders from slipping backwards or forwards when placed in a horizontal position. This avoids seat problems. The tip of the saddle may press uncomfortably into the crotch area in any other position. It is also recommended that the saddle be perfectly aligned in the centre. This ensures that the rider is seated with their sit bones on the wide rear part of the saddle.

- 1 Adjust the saddle tilt to horizontal.
- 2 Position saddle middle so that it is completely straight.

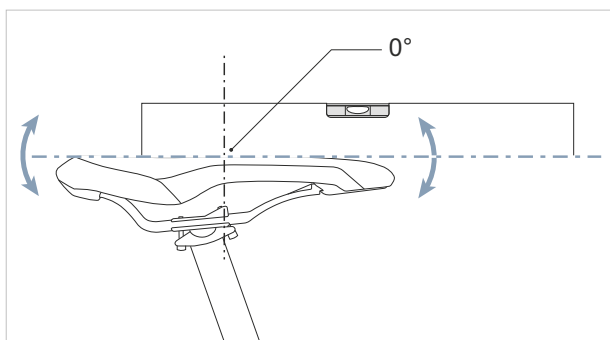


Figure 26: Horizontal saddle tilt with 0° tilt in the centre of the saddle

- ⇒ Pedelec riders sit comfortably on the saddle and do not slip backwards or forwards.
- 3 Pedelec riders tend to slip forwards or sit on the narrow part of the saddle; readjust the saddle to position or tilt the saddle very slightly backwards.

6.3.3.6 Checking the saddle

- ▶ Check the saddle after adjustment.

6.3.4 Handlebars

6.3.4.1 Adjusting the handlebars

The handlebars and their position determine the posture that the pedelec rider adopts on the pedelec.

- 1 After selecting the seating position, determine the angle of the upper body and the upper arm.
- 2 Tension the back muscles when adjusting the handlebars. The only way to stabilise the spine and protect it from excessive strain is to tension the back and abdominal muscles. Passive muscles are not able to perform this important task.
- 3 Depending on the equipment fitted, set the required handlebar position on the stem by adjusting the stem height and angle.
- 4 After adjusting the handlebars, check the saddle height and riding position again. The position of the pelvis on the saddle may have changed when the handlebars were adjusted. This can have considerable impact on the position of the hip joint due to the pelvis tilting and may change the usable leg length on the saddle support by up to 3 cm.
- 5 Correct the saddle height and position if necessary.

6.3.5 Stem

6.3.5.1 Checking the stem stability

- ▶ Hold handlebars firmly after adjusting the saddle. Press full body weight on the handlebars.
- ⇒ The handlebars remain stable in their position.

6.3.5.2 Adjusting the quick release clamping force

⚠ CAUTION Crash caused by incorrectly set clamping force

Applying excessive clamping force damages the quick release. Insufficient clamping force will result in unfavourable transmission of force. This can cause components to break. This will result in a crash with injuries.

Never fasten a quick release using a tool (e.g. hammer or pliers).

If the *handlebar clamping lever* stops before reaching its end position, unscrew the *knurled nut*.

- ▶ Tighten the *knurled nut on the seat post* if the seat post clamping lever's *clamping force* is not effective enough.
- ▶ Contact your specialist dealer if you cannot set the clamping force.

6.3.5.3 Adjusting the Ahead stem

In the case of an Ahead stem, the stem is placed directly on the fork steerer, which protrudes over the frame.

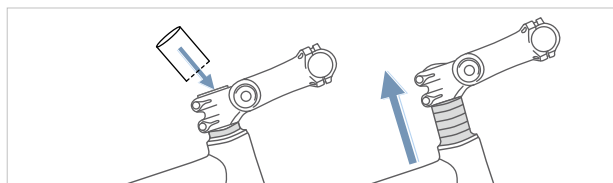


Figure 27: Raising the Ahead stem by fitting spacer rings

- ▶ If the height of the stem needs to be changed, contact your specialist dealer.

6.3.5.4 Adjusting the angle-adjustable stem

Angle-adjustable stems are available in different lengths for quill and Ahead stems.



Figure 28: Different versions of angle-adjustable stems

Adjusting the stem angle (c) changes both the distance from the upper body to the handlebars (b) and the handlebar height (a).

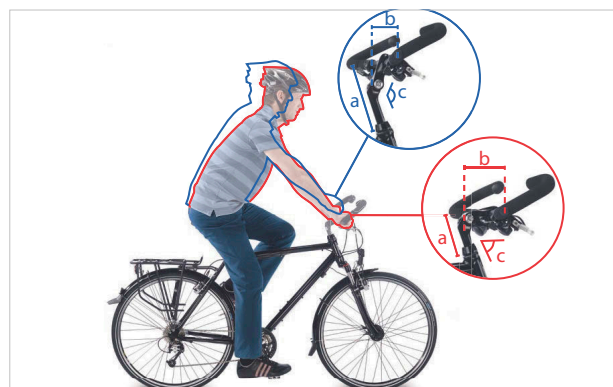


Figure 29: City bike (blue) and trekking bike position (red) by changing the angle

6.3.5.5 Checking the stem

- ▶ Check stem after adjusting it (see Section 8.5.5).

6.3.6 Handles

6.3.6.1 Adjusting the ergonomic handles

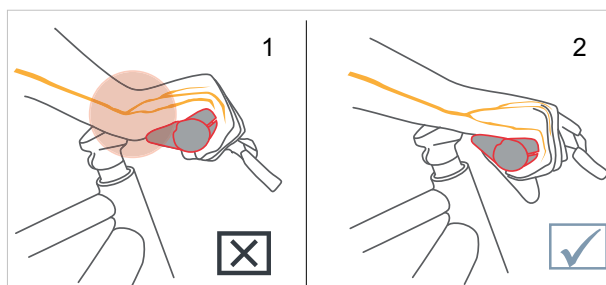


Figure 30: Incorrect (1) and correct (2) position of the handle

- 1 Undo handle clamping screw.
- 2 Turn handle into the right position.
- 3 Fasten handle clamping screw with the torque value indicated there.

⇒ The handles are firmly fastened.

6.3.6.2 Checking the handlebars

- ▶ Check handlebars after adjusting the handles.

6.3.7 Tyres

The following applies to all tyres:

- ▶ Never exceed or go below the minimum and maximum pressure limits indicated on the tyre.
- ▶ If the pressure specifications on the rim and tyre are different, use the lower figure as a reference.

The correct tyre pressure largely depends on the weight load on the tyres. This load is determined by the pedelec's tare weight, the rider's body weight and the baggage load.

Unlike cars, the weight of the vehicle has little impact on the total weight. Moreover, the personal preferences for low rolling resistance or a high degree of suspension comfort vary a great deal.

It is important to remember that

- the higher the tyre pressure is, the lower the wear, rolling resistance and the risk of breakdown are.
- The lower the pressure in the tyre is, the greater the comfort and grip is that the tyre offers.

A permanently excessively low tyre pressure often leads to premature wear in the tyre. Cracking in the side wall is a typical consequence of very low tyre pressure. Abrasion is also unnecessarily high.

On the other hand, a tyre can absorb road impacts more effectively at a low pressure.

As a general rule, wide tyres are used at a lower tyre pressure. They provide a way to exploit the advantages of the lower tyre pressure without the serious disadvantages it causes with regard to wear, rolling resistance and breakdown protection.

6.3.8 Brake

The handbrake grip distance can be adjusted to ensure that it can be reached more easily. The pressure point can also be adjusted to the pedelec rider's preferences.

Retracting the brake linings

Disc brakes require a break-in period. The braking force increases over time. This is also the case when the brake pads or brake discs are replaced.

- 1 Accelerate pedelec to 25 km/h.
- 2 Brake pedelec until it comes to a halt.
- 3 Repeat process 30 to 50 times. The disc brake is retracted and provides optimal braking power.

6.4 Accessories

Not included in price

6.4.1 Child seat

⚠️ CAUTION Crash caused by incorrect attachment

Pannier racks with a maximum load capacity under 27 kg are unsuitable for mounting child seats and may break. Such an incorrect position may cause a crash with serious injuries for the rider or child.

- ▶ Never attach a child seat to the seat post or handlebars.

⚠️ CAUTION Crash caused by broken rear frame damper

Fastening child seats onto carbon components may break them. Such an incorrect position may cause a crash with serious injuries for the pedelec rider or child.

- ▶ Never fit a child seat onto a carbon frame or carbon seat post.

⚠️ CAUTION Crash caused by improper handling

When using child seats, the riding characteristics and the stability of the bicycle change considerably. This can cause a loss of control, a crash and injuries.

- ▶ You should practice how to use the child seat safely and reliably before using the bicycle in public spaces.

⚠️ CAUTION Risk of crushing due to exposed springs

The child may crush their fingers on exposed springs or open mechanical parts attached to the saddle or the seat post.

- ▶ Never install saddles with exposed springs if a child seat is being used.
- ▶ Never install suspension seat posts with open mechanical parts or exposed springs if a child seat is being used.

Notice Observe the legal regulations on the use of child seats.

Notice Observe the operating and safety instructions for the child seat system.

Notice Never exceed the maximum permitted total weight.

The specialist dealer will advise you on which child seat system is suitable for the child and the bicycle.

The specialist dealer must install the child seat the first time to ensure that it is safely fitted.

When installing a child seat, it must be ensured that:

- the seat and the seat fastening are suitable for the bicycle,
- all components are installed and securely fastened
- shift cables, brake cables, hydraulic and electrical cables are adjusted as necessary
- the rider has optimum freedom of movement
- the bicycle's maximum total permitted weight is observed.

The specialist dealer will provide instruction on how to handle the bicycle and the child seat.

6.4.2 Trailers

⚠️ CAUTION Crash caused by brake failure

The braking distance may be longer if the trailer is carrying excessive load. The long braking distance can cause a crash or an accident and injuries.

- ▶ Never exceed the specified trailer load.
- ▶ Always include the trailer load in calculating the PTW and ensure the PTW is never exceeded

Notice The operating and safety instructions for the trailer system must be observed.

Notice Observe the statutory regulations on the use of bicycle trailers.

Notice Only use type-approved coupling systems.

A bicycle which is approved for towing a trailer is equipped with the relevant information sign. You may only use trailers with a tongue load and weight which do not exceed the permitted values.

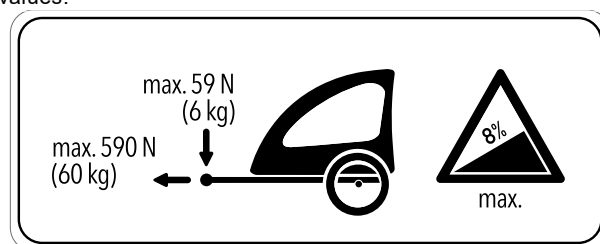


Figure 31: Trailer sign

The specialist dealer will advise you on which trailer system is suitable for the bicycle. The specialist dealer must install the trailer the first time to ensure that it is fitted safely.

6.5 Using the battery

6.5.1 Using the integrated battery

Only applies to pedelecs with this equipment

6.5.1.1 Removing the integrated battery

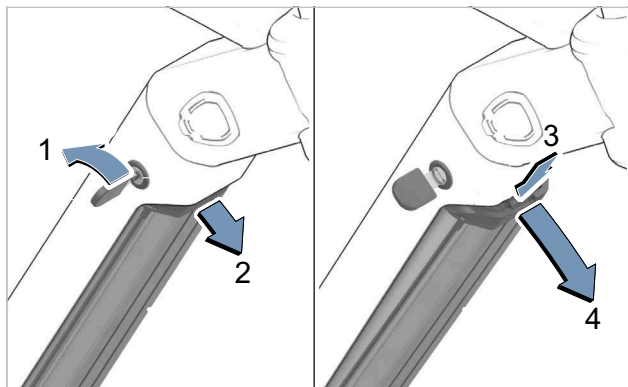


Figure 32: Removing the integrated battery

- 1 Open battery lock with battery key (1).
⇒ The battery is released and falls into the retainer guard (2).
- 2 Hold the battery in your hand from below. Use the other hand to push on the retainer guard from above (3).
⇒ The battery is released and falls into the hand (4).
- 3 Remove the battery from the frame.
- 4 Remove the battery key from the battery lock.

6.5.1.2 Inserting the integrated battery

- ✓ The key is inserted in the lock.
- ✓ The lock is unlocked.

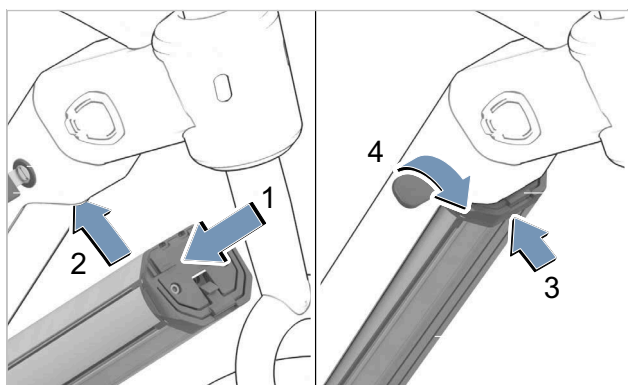


Figure 33: Inserting the integrated battery

- 1 Place the battery into the lower mount with the contacts facing the front (1).
- 2 Flip the battery upwards so that the battery is held by the retainer guard (2).
- 3 Keep the lock open with the key.
- 4 Push the battery upwards (3).
⇒ The battery can be heard locking into place.
- 5 Check battery to ensure it is firmly in place on all sides.
- 6 Lock the battery with the battery key; otherwise, the battery may fall out of the mount when you open (4).
- 7 Remove the battery key from the battery lock.
- 8 Check the battery to ensure it is firmly in place before each ride.

6.5.2 Using the Sonic EN-R battery

Only applies to Sonic EN-R Pedelecs

6.5.2.1 Removing the Sonic EN-R battery

- 1 Rotate the Allen key beneath the top tube 90° clockwise. Remove the Allen key from the mount. Open the Allen key.

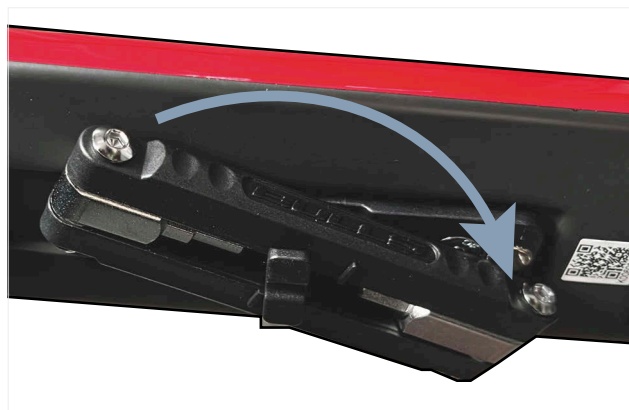


Figure 34: Removing the Allen key

- 2 Open battery lock with the Allen key (1).
⇒ The battery is released and falls into the retainer guard (2).

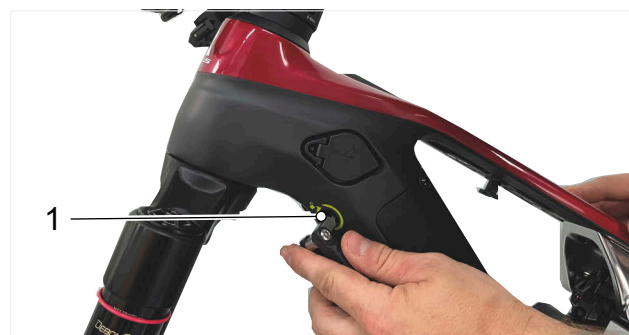


Figure 35: Opening the battery lock with the Allen key

- 3 Hold the battery in your hand from below. Use the other hand to push on the retainer guard from above (3).
⇒ The battery is released and falls into the hand (4).
- 4 Remove the battery from the frame.
- 5 Remove the Allen key from the battery lock.

6.5.2.2 Using the Sonic EN-R battery

- 1 Rotate the Allen key beneath the top tube 90° clockwise. Remove the Allen key from the mount. Open the Allen key. Place the battery into the lower mount with the contacts facing the front (1).
- 2 Lift the battery upwards so that the retainer guard holds the battery in position.
- 3 Keep the lock open with the key.
- 4 Push the battery upwards.
⇒ The battery can be heard locking into place.
- 5 Check battery to ensure it is firmly in place on all sides.
- 6 Lock the battery with the Allen key; otherwise, the battery may fall out of the mount when the lock opens.
- 7 Remove the battery key from the battery lock.
- 8 Check the battery to ensure it is firmly in place before each ride.

6.5.3 Charging the battery

- ▶ Follow the operating instructions for the battery and charger.

Component	Reference Part 4, Section
BOSCH, CompactTube 400 Wh [BBP3242] (EB12.100.020)	A: 5.002
BOSCH, PowerTube 600 [BBP3860] (EB12.100.04W)	A: 5.008
BOSCH, PowerTube 800 Vertical [BBP3881] (EB12.100.054)	A: 5.008
FIT, Supertube 275 (501167)	A: #
FIT, Supertube 550 (501168)	A: #
FIT, Ultracore 800 Wh (501215)	A: #
FIT, Ultracore 1060 Wh (501216)	A: #
BOSCH, 2A Charger [BPC3200] (EB12.110.016)	A: 6.001
BOSCH, 4A charger [BPC3400] (EB12.110.001)	A: 6.001
FIT, FIT Standard Charger (500950)	A: 6.004

6.5.4 Changing the ride geometry

Only applies to bicycles with this equipment

Changing the position of the locking plate adjusts the geometry by altering how the rear frame damper is connected to the top tube.

- 1 Rotate the Allen key beneath the top tube 90° clockwise. Remove the Allen key from the mount. Open the Allen key.



Figure 36: Removing the Allen key

- 2 Use an Allen key to turn the two screws circled in yellow 1.5 turns (540°) to the left.

⇒ The screw is unfastened.

Notice Never unfasten screws completely.



Figure 37: Undoing screws

- 3 Slide the frame to the desired angular position. Make sure the locking marks align.

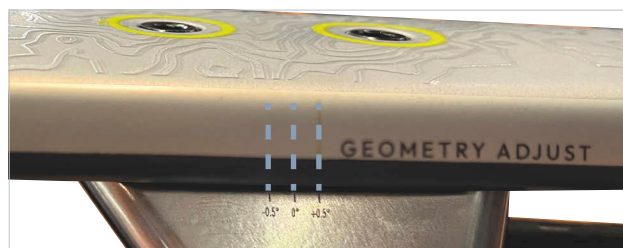


Figure 38: Correctly positioned locking marks - 0.5°, 0° and 0.5°

- 4 Use an Allen key to turn the two screws circled in yellow 1.5 turns (540°) firmly to the right, applying 8 Nm.

- 5 Apply force to the connection in the direction of travel.

⇒ If the connection does not move, the locking plate is correctly engaged.

⇒ If it moves or is displaced under load, the locking plate is not correctly engaged.

- ▶ Repeat step 2 to 5.

- 6 Close the Allen key. Insert into the mount beneath the top tube. Turn the Allen key 90° anticlockwise.

6.5.5 Adjusting pinion gears

Only applies to bicycles with this equipment

6.5.5.1 Activating the SMART.SELECT automatic gear setting

- ✓ The pedelec is stationary.

- ✓ The drive system is activated.

- ▶ SMART.SELECT can be activated in the <Shift> menu in the settings on the on-board computer.

⇒ The system shifts into the selected starting gear automatically when the pedelec comes to a halt.

6.5.5.2 Activating the SMART.SELECT automatic gear setting

- ✓ The pedelec is stationary.

- ✓ The drive system is activated.

- ▶ PRE.SELECT can be activated in the <Shift> menu in the settings on the on-board computer.

⇒ The system automatically shifts into the perfect gear for the speed at the preferred pedalling frequency when the user rides without pedalling.

6.5.5.3 Activating the AUTO.SHIFT automatic gear setting

- ✓ The pedelec is stationary.

- ✓ The drive system is activated.

- ▶ AUTO.SHIFT can be activated in the <Shift> menu in the settings on the on-board computer.

⇒ The system will switch to the right gear based on the pedalling frequency.

6.5.5.4 Activating the AUTO.SHIFT.PRO automatic gear setting

- ✓ The pedelec is stationary.

- ✓ The drive system is activated.

- 1 AUTO.SHIFT.Pro can be activated in the <Shift> menu in the settings on the on-board computer.

⇒ The system automatically shifts into the perfect gear for the speed at the preferred pedalling frequency when the user rides without pedalling.

- 2 Press the rear button on the shifter for a long time.

⇒ The pedalling frequency originally selected is reset again.

6.6 Before each ride

- ▶ Check the bicycle before each ride.

Checklist before each ride		
<input type="checkbox"/>	Check everything is sufficiently clean.	See Section 7.2
<input type="checkbox"/>	Check safety guards.	See Section 7.1.1
<input type="checkbox"/>	Check frame.	See Section 7.1.2
<input type="checkbox"/>	Checking the fork.	See Section 7.1.3
<input type="checkbox"/>	Check rear frame damper (if there is one).	See Section 7.1.4
<input type="checkbox"/>	Check pannier rack.	See Section 7.1.5
<input type="checkbox"/>	Check guards.	See Section 7.1.6
<input type="checkbox"/>	Check wheel concentricity.	See Section 7.1.7
<input type="checkbox"/>	Check quick releases.	See Section 7.1.8
<input type="checkbox"/>	Check bell.	See Section 7.1.9
<input type="checkbox"/>	Check handles.	See Section 7.1.10
<input type="checkbox"/>	Check lights.	See Section 7.1.11
<input type="checkbox"/>	Check brake.	See Section 7.1.12

- ▶ Be on the alert for any unusual noises, vibrations or odours while riding. Also watch out for any unusual responses or behaviour when braking, pedalling or steering. This indicates material fatigue.
- ⇒ Take bicycle out of service if there are any deviations from the "Before each ride" checklist or any unusual behaviour. Contact specialist dealer.

6.7 Using the pannier rack

CAUTION Crash caused by loaded pannier rack

The bicycle's ride performance changes with a loaded pannier rack, in particular when steering and braking. This can lead to a loss of control. This may cause a crash with injuries.

- ▶ You should practice how to use a loaded pannier rack safely and reliably before using the bicycle in public spaces.

CAUTION Crushing fingers in the spring flap

The spring flap on the pannier rack operates with a high clamping force. There is a risk of crushing fingers in the flap.

- ▶ Never allow the spring flap to snap shut in an uncontrolled manner.
- ▶ Be careful where you position your fingers when closing the spring flap.

CAUTION Crash caused by unsecured baggage

Loose or unsecured objects on the pannier rack, e.g. belts, may become caught in the rear wheel. This may cause a crash with injuries.

Objects which are fastened to the pannier rack may cover the reflectors and the riding light. The bicycle may be overseen on public roads. This may cause an accident with injuries.

- ▶ Secure any objects which are attached to the pannier rack sufficiently.
- ▶ Objects fastened to the pannier rack must never cover the reflectors, the headlight or the rear light.
- ▶ Distribute the baggage as evenly as possible between the left- and right-hand side.
- ▶ We recommend using panniers and baggage baskets.

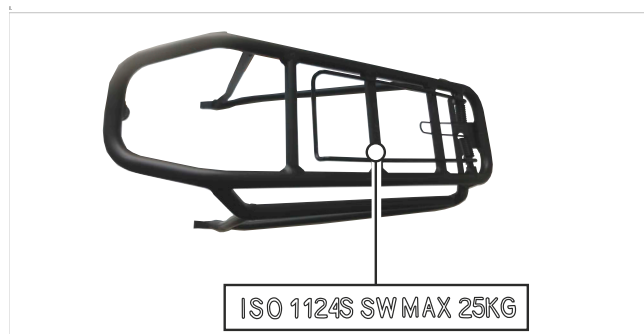


Figure 39: The maximum load bearing capacity is indicated on the pannier rack

- ▶ Pack the bicycle to its *maximum permitted total weight* (PTW) only.
- ▶ Pack the bicycle to the pannier rack's maximum load capacity only.
- ▶ Use the original or approved pannier rack only.

6.8 Raising the kickstand

- ▶ Use your foot to raise kickstand completely before setting off.

6.9 Using the pedals

- ▶ The ball of the foot is placed on the pedal when riding and pedalling.

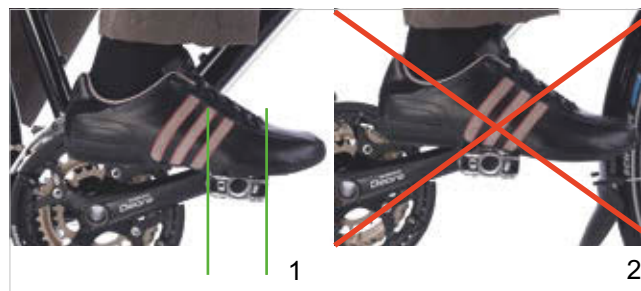


Figure 40: Correct (1) and incorrect (2) foot position on the pedal

6.10 Adjusting the saddle height with the remote control

Only applies to bicycles with this equipment

6.10.1 Lowering the saddle

- 1 Sit on the saddle.
- 2 Press the remote control operating lever.
 - ⇒ The seat post will lower.
- 3 Release the remote control operating lever when you have reached the desired saddle height.

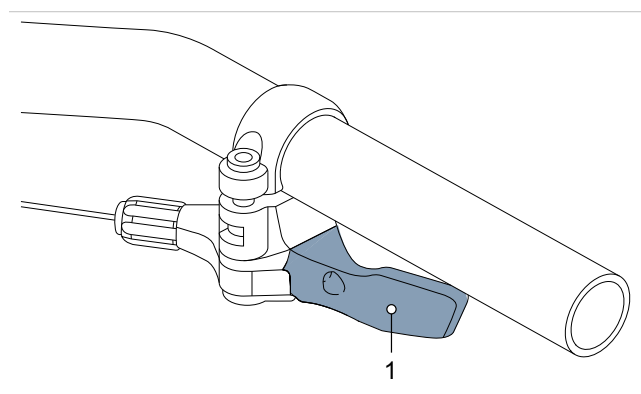


Figure 41: Remote control operating lever (1)

6.10.2 Raising the saddle

- 1 Remove any pressure from the saddle.
- 2 Press the remote control operating lever.
 - ⇒ The seat post will rise.
- 3 Release the remote control operating lever when you have reached the desired saddle height.

6.11 Using the bell

- 1 Press the bell button downwards.
- 2 Let button spring back.

6.12 Using the handlebars

- ⇒ This helps protect sensitive areas of your palms.
- ⇒ This prevents overstraining and fatigue in your hands.

6.13 Using the electric drive system

6.13.1 Switching on the electric drive system

CAUTION Crash caused by failure to prepare to brake.

When it is switched on, the drive system can be activated by applying force to the pedals. There is a risk of a crash if the drive is activated unintentionally and the brake is not reached.

- ▶ Never start the electric drive system, or switch it off immediately, if the brake cannot be reached safely and reliably.
- ✓ A sufficiently charged battery has been inserted into the pedelec.
- ✓ The battery is firmly positioned and locked. The battery key has been removed.
- ✓ The speed sensor is connected correctly.
- ▶ Press the **On-Off button** on the battery, the on-board computer or control panel briefly (< 3 seconds).
- ⇒ The electric drive system is switched on.

6.13.2 Switching off the electric drive system

- ▶ Press the **On-Off button** on the battery, the on-board computer or control panel briefly (< 3 seconds).
- ⇒ The electric drive system is switched off.

6.14 Using the basic on-board computer functions

6.14.1 Using the diagnosis port

Notice A USB connection is not a waterproof plug connection. Any moisture seeping through the USB port may cause a short circuit in the control panel.

- ▶ Never connect an external device.
- ▶ Regularly check the position of the rubber cover on the USB port.

The diagnosis connection is only designed for maintenance purposes and is not suitable for connecting external devices.

- ▶ Keep the diagnosis port flap closed at all times to ensure no dust or moisture can penetrate through the port.

6.14.2 Charging the control panel battery

- ▶ Follow the on-board computer's operating instructions.

Designation	Reference Part 4, Section
BOSCH, Purion 200 [BRC 3800] (EB13.200.03V)	A: 2.003

6.14.3 Using the riding light

- ▶ The electric drive system is switched on.
- ▶ Press on the light button briefly.
- ⇒ The riding light is switched on.
- ▶ Press on the light button briefly.
- ⇒ The riding light is switched off.

Using the driving light with FIT Remote Basic

Only applies to pedelecs with this equipment

- ▶ Press the **on-off button** briefly.
- ⇒ The riding light is switched on.

6.14.4 Using the main beam

Only applies to pedelecs with this equipment

- ✓ Only use the main beam when it will not dazzle other road users.
- ✓ The riding light is on and the LED in the main beam switch is green.
- ▶ Press the **main beam switch** on the handlebars.
- ⇒ The main beam is activated.
- ⇒ The LED in the main beam switch lights up blue.
- ▶ Press the **main beam switch** on the handlebars.
- ⇒ The riding light is switched on.
- ⇒ The LED in the main beam switch lights up green.

6.14.4.1 Using the headlamp flasher

- ▶ Press the **main beam switch** twice quickly.

6.14.5 Selecting the level of assistance

The control panel is used to set how much the electric drive should assist the rider when pedalling. You can change the level of assistance at any time while you are cycling.

- ▶ Press the **plus button**.
- ⇒ The level of assistance is increased.
- ▶ Press the **minus button**.
- ⇒ The level of assistance is reduced.

Selecting the level of assistance with FIT Remote Basic

Only applies to pedelecs with this equipment

- ▶ Press the **>-button**.
- ⇒ The level of assistance is increased.
- ▶ Press the **<-button**.
- ⇒ The level of assistance is reduced.

Selecting the level of assistance with FIT Pure Left

Only applies to pedelecs with this equipment

- ▶ Press the **rotary switch** upwards
- ⇒ The level of assistance is increased.
- ▶ Press the **rotary switch** downwards
- ⇒ The level of assistance is reduced.

6.14.6 Using the push assist system

Only applies to pedelecs with this equipment

CAUTION Injury from pedals or wheels

The pedals and the drive wheel turn when the push assist system is used. There is a risk of injury if the pedelec wheels are not in contact with the ground when the push assist system is used (e.g. when carrying the pedelec up stairs or when placing it on a bicycle rack).

- ▶ Only use the push assist mode when pushing the pedelec.
- ▶ You must steer the pedelec securely with both hands when using push assist.
- ▶ Allow for enough freedom of movement for the pedals

The push assist system helps move the pedelec. The push assist system speed depends on the selected gear. The lower the selected gear is, the lower the speed in the push assist function is (at full power). The maximum speed is 6 km/h.

- ✓ We recommend using first gear for cycling uphill to protect the drive.

Pedelec with BOSCH System

- ✓ The drive system is switched on.
- 1** Press Push assist button for longer than 1 second. Hold down the button.
- ⇒ The push assist is activated.
- 2** One of the following actions must be taken within the next 10 seconds:
 - ▶ Push pedelec forwards.
 - ▶ Push pedelec backwards.
 - ▶ Make a weaving movement with the pedelec.
- ⇒ Push assist is switched on. The motor starts to push.
- 3** Release the push assist button to switch the motor assistance off.
- ⇒ Push assist is switched off.

If motor assistance deactivates within 10 seconds, the push assist function switches off automatically.

Pedelec with FIT Remote LCD

- ✓ The drive system is switched on.
- 1** Press the push assist button briefly.
- ⇒ The push assist is activated.
- 2** Press and hold the push assist button again within 3 seconds.
- ⇒ Push assist is switched on. The motor starts to push.
- 3** Release the push assist button.
- ⇒ Push assist is switched off.

If motor assistance deactivates within 10 seconds, the push assist function switches off automatically.

Pedelec with FIT Master Node

- ✓ The drive system is switched on.
- ✓ A FIT Remote Pure Left is available.
- 1** Press the rotary switch upwards briefly.
- ⇒ The push assist is activated.
- 2** Press the rotary switch upwards again and hold in the upper position.
- ⇒ Push assist is switched on. The motor starts to push.
- 3** Release the rotary switch for longer than 5 seconds to turn off the push assist system.
- ⇒ Push assist is switched off.

If motor assistance deactivates within 5 seconds, the push assist function switches off automatically.

Pedelec with Bafang-System

- ✓ The drive system is switched on.
- ✓ The pedelec must be stationary.
- 1** Keep minus button pressed down.
- ⇒ Push assist is switched on. The motor starts to push.
- 2** Release the minus button.
- ⇒ Push assist is switched off.

If motor assistance deactivates within 5 seconds, the push assist function switches off automatically.

6.15 Further information Using the on-board computer

- ▶ Follow the on-board computer's operating instructions.

Component
BOSCH, KIOX 400C [BRC3200] (EB13.100.00Z)
BOSCH, Purion 200 [BRC3800] (EB13.200.03V)
BOSCH, Purion 400 [BHU3500] (EB13.100.00H)
BOSCH, SystemController [BRC3100] (EB13.100.000)
BOSCH, Mini-Remote [BRC3300] (EB13.100.01E)
BOSCH, Mini-Remote [BRC3300] (EB13.100.001)
BOSCH, Mini Remote Dropbar [BRC3310] (EB13.100.002)
FIT, LCD Remote (RMT.RD2.1-001) (501263)
FIT, Master Node Display (501392)
FIT, Remote Basic (501262)
FIT, Remote Pure Links (501303)

6.16 Using the brake

⚠ WARNING Crash caused by brake failure

Oil or lubricant on the brake disc in a disc brake or on the rim of a rim brake can cause the brake to fail completely. This may cause a crash with serious injuries.

- ▶ Never allow oil or lubricant to come into contact with the brake disc or brake linings or on the rim of a rim brake.
- ▶ If the brake linings have come into contact with oil or lubricant, contact specialist dealer to have the components cleaned or replaced.

If the brakes are applied continuously for a long time (e.g. while riding downhill for a long time), the fluid in the brake system may heat up. This may create a vapour bubble. This will cause air bubbles or water contained in the brake system to expand. This may suddenly make the lever travel wider. This may cause a crash with serious injuries.

- ▶ Release the brake regularly when riding downhill for a longer period of time. Use the front and rear wheel brakes alternately.

The motor's drive force is switched off during the ride as soon as the pedelec rider is no longer pedalling. The electric drive system does not switch off when braking.

- ▶ In order to achieve optimum braking results, do not pedal while braking.

6.16.1 Using the handbrake

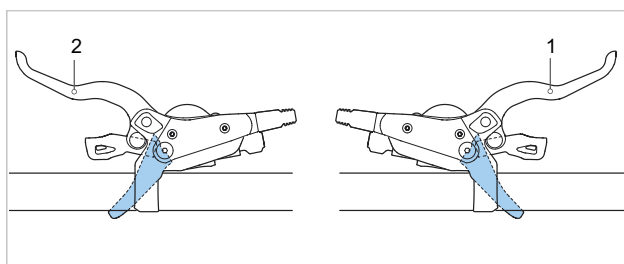


Figure 42: Handbrake, front (2) and rear (1) – SHIMANO brake used as an example

- ▶ Pull the *left handbrake* to apply the *front wheel brake*.
- ▶ Pull the *right handbrake* to apply the *rear wheel brake*.

6.16.2 Using the back-pedal brake

Only applies to pedelecs with this equipment

- 1 Move pedals a little beyond the 3 o'clock and 9 o'clock position.
- 2 Pedal in the opposite direction to the *direction of travel* until the desired speed has been reached.

6.17 Gear shift

The selection of the appropriate gear is a prerequisite for a physically comfortable ride and making sure that the electric drive system functions properly. The ideal pedalling frequency is between 70 and 80 revolutions per minute.

- ▶ Stop pedalling briefly when changing gears. This makes it easier to switch gears and reduces wear on the drivetrain.

6.17.1 Using the derailleur gears

The speed and range can be increased while applying the same force if you select the right gear.

- ✓ Stop pedalling briefly when changing gears. This makes it easier to switch gears and reduces wear on the drivetrain. However, keep the crank moving while switching gears.

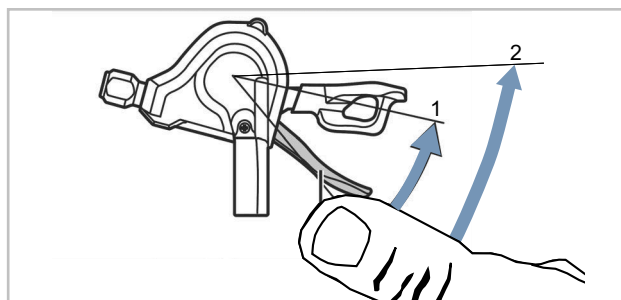


Figure 43: Switching gears with lever A, using gear shift SL-M315 as an example

Lever A switches up from the smallest sprocket to the largest sprocket.

- ▶ Place shifter A in position 1.
- ⇒ System shifts one sprocket higher.
- ▶ Place shifter A in position 2.
- ⇒ System shifts two sprockets higher.

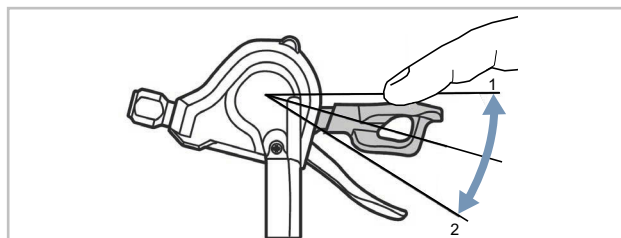


Figure 44: Switching gears with lever B, using gear shift SL-M315 as an example

Lever B switches down from the largest sprocket to the smallest sprocket. There are two ways to switch down a gear:

- ▶ Place shifter B in position 1.
- ⇒ System shifts one sprocket lower.
- ▶ Place shifter B in position 2.
- ⇒ System shifts one sprocket lower.

Switching gears

- ▶ Select the appropriate gear with the gear shift unit.
- ⇒ The gear shift switches gear.
- ⇒ The shifter returns to its original position.
- ▶ Clean and lubricate the rear derailleur if gear changes block.

6.17.2 Using pinion gears

6.17.2.1 Shifting gear manually with E-Trigger TE1

Only applies to vehicles with this equipment

Pinion gears switch between 9 or 12 speeds. It is possible to switch through several gears at once (e.g. from 6th to 2nd). Changing gear is possible while stationary or with the crank stationary or turning backward and is gentle on the gears.

It is possible to shift down gears (12-11-10 ... -01) without any restrictions when under load. The gear change will not be completed if there is too much pressure on the crank or on the pedal.

A mechanism in the gears allows the ride to shift up gears (01-02-03 ... -12) under load. This is possible for all gear shifts, except a change of gear between the different half-gears. The rider needs to take pressure off the pedals briefly in this case.

- ▶ Push the front shifter (4) backwards to shift up.
- ▶ Push the rear shifter (5) backwards to shift down.
- ▶ Always reduce pressure on the pedals when shifting down gears (12-11-10 ... -01).

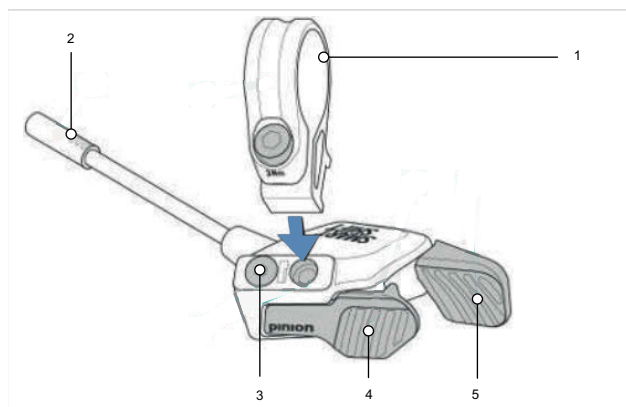


Figure 45: Parts of Pinion E-Trigger TE1

- | | |
|---|------------------------------------|
| 1 | Ring clamp with screw |
| 2 | Connector |
| 3 | Screw-on position with blind screw |
| 4 | Front shifter |
| 5 | Rear shifter |

Applies to P1.12 motor

- ▶ Always reduce the pressure on the pedals when shifting up a gear from 04 to 05 or from 08 to 09.

Applies to P1.9 motor

- ▶ Always reduce pressure on the pedals when shifting up a gear from 03 to 04 or from 06 to 07.
- ⇒ The crank occasionally drops about 10° after a gear change. This causes the bike to jerk until the pawl is securely engaged in the next tooth. This phenomenon cannot always be eliminated but will not cause damage to the gears.

6.17.2.2 Changing pedalling frequency with Auto.Shift activated

- ▶ Then push the rear shifter (4) backwards.
- ⇒ Pedalling frequency is increased.
- ▶ Push the rear shifter (5) backwards.
- ⇒ The pedalling frequency is reduced.
- ▶ Press the rear button on the shifter for a long time.
- ⇒ The pedalling frequency is reset to the initial value.

6.17.2.3 Switching gears with Auto.Shift activated

- ▶ Then push the rear shifter (4) backwards.
- ⇒ The gears shift to one gear higher.
- ▶ Push the rear shifter (5) backwards.
- ⇒ the gears shift to one gear higher.
- ▶ Press the rear button on the shifter for a long time.
- ⇒ The pedalling frequency is reset to the initial value.

6.17.3 Using a SHIMANO hub gear

Only applies to pedelecs with this equipment

⚠ CAUTION Crash caused by incorrect use

If the rider applies too much pressure on the pedals during a gear change and activates the shifter or changes several gears at a time, their feet may slip from the pedals. This may cause a crash or flip-over with injuries.

Switching down several gears to a low gear may cause the twist grip shifter outer sleeve to come off suddenly. This will not prevent the twist grip shifter from functioning correctly since the outer guide returns to its original position after the gear change is complete.

- ▶ Apply little pressure on the pedals while changing gears.
- ▶ Never change more than one gear at a time.

Notice The interior hub is not completely waterproof. If water gets into the hub, it may rust and the gear switch function may no longer function as a result.

- ▶ Never use the pedelec in places where water may get into the hub.

Notice In rare cases, noises may be heard from the rear derailleur in the hub interior after a gear change. This is normal when gears are changed.

Notice Never detach the hub yourself. Contact specialist dealer.

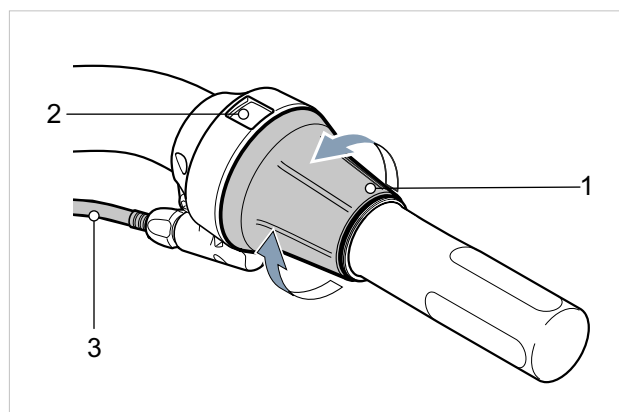


Figure 46: SHIMANO SL-C30000-70 gear shift

- ▶ Turn the twist grip shifter (1) backwards to switch up a gear.
- ▶ Turn the twist grip shifter (1) forwards to switch down a gear.
- ⇒ The gear shift switches gear.
- ⇒ The screen display (2) shows the changed gear.

6.18 Using the rear frame damper

► Follow the rear frame damper's operating instructions.

Designation	Reference Part 4, Section
ROCKSHOX, Deluxe Select+ (RS-DLX-SEL)	A: 8.002
ROCKSHOX, Deluxe Ultimate (RS-DLX-ULT)	A: 8.002
ROCKSHOX, SIDLuxe Select+ (RS-SIDL-SELP)	A: 8.002
ROCKSHOX, SIDLuxe Ultimate (RS-SIDL-ULT)	A: 8.002
ROCKSHOX, Super Deluxe Select+ (RS-SDLX-SELP-B2)	A: 8.002
ROCKSHOX, Super Deluxe Coil Ultimate (RS-SDLC-ULT-A2)	A: 8.002
ROCKSHOX, Vivid Ultimate (RS-VIVD-ULT-C1)	A: 8.002
ROCKSHOX, Vivid R2C (RS-VIVC-R2C-B3)	A: 8.002
ROCKSHOX, SID Select+ (ID: FS-SID-SELP-B4)	A: 8.002
SR SUNTOUR, Edge Plus 2CR	A: 8.003
SR SUNTOUR, Edge X TR	A: 8.003
SR SUNTOUR, Edge EVO 2CR Trunnion	A: 8.003

6.19 Using the suspension fork

Follow the fork's operating instructions.

Designation	Reference Part 4, Section
FOX, 38 A Float 29"	A: 7.001
ROCKSHOX, 35 Gold FS (#)	A: 7.002
ROCKSHOX, 35 Gold FS (#) Maxle (AX-STE-MXLF-A1)	A: 7.002
ROCKSHOX, 35 Gold RL (FS-35G-RL)	A: 7.002
ROCKSHOX, Domain Gold RC (FS-DOMN-GRC-C1) Maxle (AX-STE-MXLF-A1)	A: 7.002
ROCKSHOX, Lyrik (FS-LYRK-BSE)	A: 7.002
ROCKSHOX, Lyrik Ultimate (FS-LYRK-ULT)	A: 7.002
ROCKSHOX, Lyrik Ultimate (FS-LYRK-ULT) Maxle (AX-STE-MXLF-A1)	A: 7.002
ROCKSHOX, Pike Select (FS-PIKE-SEL) Maxle (AX-STE-MXLF-A1)	A: 7.002
ROCKSHOX, Pike Ultimate (FS-PIKE-ULT) Maxle (AX-STE-MXLF-A1)	A: 7.002
ROCKSHOX, Rudy Ultimate XPLR (FS-RUDY-ULT-A1) Maxle (AX-STE-MXLF-A1)	A: 7.002
ROCKSHOX, Sid (FS-SID-BSE-C1)D295 Maxle (AX-STE-MXLF-A1)	A: 7.002
ROCKSHOX, ZEB Select (FS-ZEB-SEL-A2) Maxle (AX-STE-MXLF-A1)	A: 7.002
ROCKSHOX, ZEB Ultimate (FS-ZEB-ULT-A2) Maxle (AX-STE-MXLF-A1)	A: 7.002
SR SUNTOUR, AION36X-BOOST EQ 2CRPCS DS 15AH2-110 29"	A: 7.003
SR SUNTOUR, AION36X-BOOST EQ ABS 2CR-PCS DS 15AH2-110 29"	A: 7.003
SR SUNTOUR, GVX32-E EQ LOR FDS 15AH2 700C	A: 7.003
SR SUNTOUR, Lytro34 BOOST AIR DS 15LH-110 29" CTS	A: 7.003
SR SUNTOUR, Lytro34 BOOST AIR DS LOR 15LH-110 27.5" CTS	A: 7.003
SR SUNTOUR, Lytro34 BOOST AIR DS LOR 15LH-110 29" CTS	A: 7.003
SR SUNTOUR, Lytro35 Supreme SL BOOST AIR DS LOR 15LH-110 29" CTS	A: 7.003

Designation	Reference Part 4, Section
SR SUNTOUR, Lytro36 Supreme SL BOOST DS 2CR-PCD 15AH2-110 29" CTS EQ	A: 7.003
SR SUNTOUR, Mobie25 Air DS LOR 15LH 700C CTS	A: 7.003
SR SUNTOUR, NCX32-D-5TA AIR LO CTS 29"	A: 7.003
SR SUNTOUR, XCE28 DS 26"	A: 7.003
SR SUNTOUR, XCM32-ATB DS CTSO 29"	A: 7.003
SR SUNTOUR, XCR-32 COIL BOOST LO DS 15LH-110	A: 7.003
SR SUNTOUR, XCR32-ATB AIR LO DS CTS 27.5"	A: 7.003
SR SUNTOUR, XCT-JR-L DS 20"	A: 7.003
SR SUNTOUR, XCT-JR-L DS 24"	A: 7.003
SR SUNTOUR, ZERON36X-BOOST EQ 2CR DS 15AH2-110 29"	A: 7.003
SR SUNTOUR, ZERON36X-BOOST EQ ABS RC DS 15AH2-110 29"	A: 7.003
ZOOM, 860 Air 26"	A: 7.004

6.20 Using the seat post

► Follow the seat post operating instructions.

Designation	Reference Part 4, Section
8PINS, HNI	See Section =0
8PINS, NGS2	See Section =0
LIMOTEC, A1	See Part 4, Section 08.00003
LIMOTEC, A3	See Part 4, Section 08.00003
LIMOTEC, D3	See Section =0
LIMOTEC, K1	See Section =0
LIMOTEC, M1	See Section =0
ROCKSHOX, SP Reverb AXS (SP-RVB-AXS-A1)	See Part 4, Section 08.0005
RUMBLE, Escalator PRO (A1-L)	See Part 4, Section 08.00003
RUMBLE, Escalator ULTRA(A1UH)	See Part 4, Section 08.00003
Rumble, Z1	See Section =0

6.21 Parking

Notice Heat or direct sunlight can cause the *tyre pressure* to increase above the permitted maximum pressure level. This can destroy the *tyres*.

- ▶ Never park the pedelec in the sun.
- ▶ On hot days, check the *tyre pressure* regularly and adjust it as necessary.

Notice Moisture penetrating at cold temperatures may impair individual functions due to the open structural design.

- ▶ Always keep the pedelec dry and free from frost.

Notice The pedelec's force of weight may cause the kickstand to sink into soft ground, possibly causing the pedelec to topple over as a result.

- ▶ The pedelec must be parked on firm, level ground only.

- 1 Switch off the drive system.
- 2 After getting off, use your foot to lower the kickstand completely before parking. Ensure that it is stable.
- 3 Park the pedelec carefully and check that it is stable.
- 4 Lock the pedelec with the bicycle lock.
- 5 Remove battery to protect it against theft.
- 6 Clean and care for pedelec after every ride.

Checklist after each ride

Cleaning		
<input type="checkbox"/>	Clean riding light and reflectors.	See Section 7.2.1
<input type="checkbox"/>	Clean the brake.	See Section 7.2.2
<input type="checkbox"/>	Clean the suspension fork.	See Section 7.2.3
<input type="checkbox"/>	Clean the rear frame damper	See Section 7.2.4
<input type="checkbox"/>	Clean the pedal.	See Section 7.2.5
Caring for		
<input type="checkbox"/>	Service the suspension fork.	See Section 7.4.2

7 Cleaning, care and inspection

⚠ WARNING Crash caused by brake failure

Oil or lubricant on the brake disc in a disc brake or on the rim of a rim brake can cause the brake to fail completely. This may cause a crash with serious injuries.

- ▶ Never allow oil or lubricant to come into contact with the brake disc or brake linings or on the rim of a rim brake.
- ▶ If the brake linings have come into contact with oil or lubricant, contact specialist dealer to have the components cleaned or replaced.

After cleaning, care or repair, carry out a few test brake applications.

⚠ WARNING The brake system is not designed for use on a bicycle which is placed on its side or turned upside down. The brake may not function correctly as a result. This can cause a crash, which may result in injuries.

- ▶ If bicycle has been placed on its side or turned upside down, apply the brakes a couple of times before setting off to ensure they work as normal.

⚠ WARNING The brake seals are unable to withstand high pressures. Damaged brakes can fail and cause an accident with injury.

- ▶ Never clean the bicycle with a pressure washer or compressed air.
- ▶ Take great care when using a hosepipe. Never point the water jet directly at the seal section.

Notice Water may enter the inside of the bearings if you use a steam jet. This dilutes the lubricant inside, the friction increases and, as a result, the bearings are permanently damaged in the long term. Water may also penetrate the electric components and damage them permanently.

- ▶ Never clean bicycle with a pressure washer, water jet or compressed air.

Notice Greased parts, such as the seat post, the handlebars or the stem, may no longer be safely and reliably clamped.

- ▶ Never apply grease or oil to parts which are clamped.

Notice Harsh cleaning agents such as acetone, methylene and trichloroethylene and solvents such as thinners, alcohol and corrosion protection can attack bicycle components and damage them permanently.

- ▶ Use approved care and cleaning products only.

Complying with these cleaning instructions is the only way to reduce wear on components, increase the operating hours and guarantee safety.

7.1 Before each ride

7.1.1 Checking the safety guards

The chain or belt guards, mudguards or the motor cover may break and fall off when the bicycle is transported or parked outside.

- ▶ Check that all guards are in place.
- ▶ Take bicycle out of service if a guard is damaged or missing. Contact specialist dealer.

7.1.2 Checking the frame

- ▶ Check frame for cracks, warping and damage to the paintwork.
- ▶ If there are any cracks, warping or damage to the paintwork, remove the bicycle from service. Contact specialist dealer.

7.1.3 Checking the fork

- ▶ Check fork for cracks, warping, tarnished components, leaked oil and damage to the paintwork. Also look at concealed sections on the vehicle's lower surfaces.
- ⇒ If there are any cracks, warping, tarnished components, leaked oil or damage to the paintwork, remove the bicycle from service. Contact specialist dealer.

7.1.4 Checking the rear frame damper

- ▶ Check rear frame damper for cracks, warping, tarnished components, leaked oil and damage to the paintwork. Also look at concealed sections on the vehicle's lower surfaces.
- ⇒ If there are any cracks, warping, tarnished components, leaked oil or damage to the paintwork, remove the bicycle from service. Contact specialist dealer.

7.1.5 Checking the pannier rack

- 1 Hold onto bicycle by its frame. Hold onto pannier rack with the other hand.
 - 2 Move the pannier rack backwards and forwards to check that all screw connections are firmly in place.
- ⇒ Tighten loose screws.
 - ⇒ Attach loose baskets permanently with a basket bracket or cable ties.

7.1.6 Checking the guards

- 1 Hold onto bicycle by its frame. Hold onto guard with the other hand.
 - 2 Move the guard backwards and forwards to check that all screw connections are firmly in place.
- ⇒ Tighten loose screws.

7.1.7 Checking the wheel concentricity

- ▶ Lift the front and rear wheels one after the other and spin each wheel when lifted.
- ⇒ If the wheel is loose or crooked when it turns, take bicycle out of service. Contact specialist dealer.

7.1.8 Checking the quick releases

- ▶ Check quick releases to ensure that they are all firmly in their fully closed end position.
- ⇒ If a quick release is not firmly in its closed end position, open quick release and place in its end position.
- ⇒ If the quick release cannot be firmly placed in its end position, take bicycle out of service. Contact your specialist dealer.

7.1.9 Checking the bell

- 1 Press the bell button downwards.
 - 2 Let button spring back.
- ⇒ If you do not hear a clear, distinct ring of the bell, replace bell.

7.1.10 Checking the handles

- ▶ Check the handles are firmly in place.
- ⇒ Screw loose handles firmly into place.

7.1.11 Checking the lights

- 1 Switch light on.
 - 2 Check that the headlight and rear light come on.
- ⇒ If the headlight and rear lights do not come on, take bicycle out of service. Contact specialist dealer.

7.1.12 Checking the brake

- 1 Pull both handbrakes when stationary.
 - 2 Push the pedals.
- ⇒ If no resistance is generated in the handbrake's usual position, take bicycle out of service. Contact specialist dealer.
- ⇒ If the brake is losing fluid, take bicycle out of service. Contact specialist dealer.

7.2 After every ride

7.2.1 Cleaning the riding light and reflectors

- 1 Clean headlight, rear light and reflectors with a damp cloth.

7.2.2 Cleaning the brake

- ▶ Clean dirt on the rim and brake components with a clean, slightly dampened cloth.

7.2.3 Cleaning the suspension fork

- 1 Remove dirt and deposits from the stanchions and deflector seals with a damp cloth. Check stanchions for dents, scratches, staining or leaking oil.
- 2 Lubricate the dust seals and stanchions with a few drops of silicone spray.
- 3 Service the suspension fork after cleaning.

7.2.4 Cleaning the suspension seat post

- ▶ Clean dirt on the articulated joints with a slightly dampened cloth immediately after a ride.

7.2.5 Cleaning the rear frame damper

- ▶ Clean dirt on the articulated joints with a slightly dampened cloth immediately after a ride.

7.2.6 Cleaning the pedals

- ▶ Clean pedals with a brush and soapy water.

7.3 Basic cleaning

- 1 Clean pedelec with lukewarm water and a cloth dampened with soapy water.
- 2 Rinse off component with water from a watering can.
- 3 Care for the component after cleaning.

7.3.1 Cleaning the tyres

- 1 Clean tyres with a sponge, a brush and soap cleaner.
- 2 Rinse off component with water from a watering can.
- 3 Remove any embedded chips and small stones.

7.3.2 Cleaning the hub

- 1 Put on protective gloves.
- 2 Remove dirt from hub with a sponge and soapy water.
- 3 Rinse off component with water from a watering can.
- 4 Wipe off oily dirt with a degreaser and a cloth.

7.3.3 Cleaning the SRAM AXS rear derailleur

Notice The rear derailleur battery or the battery mount battery will be permanently damaged if water enters them.

- ▶ If fitted, remove the rear derailleur battery from the SRAM rear derailleur and insert the battery separator into the rear derailleur before cleaning.
- ▶ Never immerse the rear derailleur battery in water.

- ▶ Never use acidic or degreasing agents on the electrical components.
- ▶ Never use chemical cleaning agents or solvents as they can destroy the plastic components.
- ▶ Clean all derailleur components with a damp cloth.

7.3.4 Cleaning the shifter

- ▶ Carefully clean shifter with a soft, damp cloth.

7.3.5 Cleaning the cassette, chain wheels and front derailleur

- 1 Put on protective gloves.
- 2 Spray cassette, chain wheels and front derailleur with degreasing agent.
- 3 Clean coarse dirt with a brush after soaking for a short time.
- 4 Wash down all parts with dishwashing liquid and a toothbrush.
- 5 Rinse off component with water from a watering can.

7.3.6 Cleaning the brake

7.3.6.1 Cleaning the handbrake

- ▶ Carefully clean the handbrake with a soft, damp cloth.

7.3.7 Cleaning the brake disc

- ▶ **Notice** Protect brake disc against lubricants and grease from hands.

- 1 Put on protective gloves.
- 2 Spray brake disc with brake disc cleaning spray.
- 3 Wipe with a cloth.

7.3.8 Cleaning the belt

- ▶ **Notice** Never use aggressive (acid-based) cleaners, rust removers or degreasers when cleaning the belt.

- 1 Dampen a cloth with soapy water. Place the cloth on the belt.
- 2 Hold and apply slight pressure while slowly turning the rear wheel so that the belt passes through the cloth.

7.3.9 Cleaning the chain

- ▶ **Notice** Never use aggressive (acid-based) cleaners, rust removers or degreasers when cleaning the chain.

- ▶ **Notice** Never use gun oil or rust remover spray.

- ▶ **Notice** Never use chain cleaning devices or chain cleaning baths.

- ▶ **Notice** Have chain with all-round guard cleaned and serviced during major inspection.

- ✓ Place newspaper or paper towels underneath to collect dirt.

- 1 Slightly dampen a brush with dishwashing liquid. Brush both sides of the chain.
- 2 Dampen a cloth with soapy water. Place the cloth on the chain.
- 3 Hold and apply slight pressure while slowly turning the rear wheel, so the chain passes through the cloth.
- 4 Wipe off oily, dirty chains thoroughly with a cloth and degreaser.
- 5 Service the chain after cleaning.

7.3.9.1 Cleaning the chain and all-round chain guard

- ▶ **Notice** The chain guard must be removed before cleaning. Contact specialist dealer.

- ▶ Clean water hole on the chain guard lower surface.

- ▶ Service the chain after cleaning.

7.4 Care

Complying with these care instructions is the only way to reduce wear on components, increase the operating hours and guarantee safety.

7.4.1 Caring for the frame

► **Notice** Hard wax polish and protection wax are particularly resistant on gloss paintwork. These car accessory retail products are unsuitable for matt paint finishes.

► **Notice** Try wax spray out on a small spot before applying.

- 1 Dry frame with a cloth. Spray frame with spray wax and leave to dry.
- 2 Wipe away any wax residue with a cloth.

7.4.2 Caring for the fork

► **Notice** Hard wax polish and protection wax are particularly resistant on gloss paintwork. These car accessory retail products are unsuitable for matt paint finishes.

► **Notice** Try wax spray out on a small spot before applying.

- 1 Dry fork with a cloth.
- 2 Spray frame care oil on frame and leave to dry.
- 3 Wipe away any wax residue with a cloth.
- 4 Apply fork oil to dust seals on suspension forks.

7.4.3 Caring for the pannier rack

- 1 Dry pannier rack with a cloth.
- 2 Spray pannier rack with spray wax and leave to dry. Wipe pannier rack with a cloth.
- 3 Protect chafing points on panniers with adhesive film. Replace worn adhesive film.
- 4 Care for coil springs with silicone spray or wax spray from time to time.

7.4.4 Caring for the mudguard

► Depending on the requirements for the guard material, apply hard wax polish, metal polish or a plastic care product as per the product instructions.

7.4.5 Caring for the kickstand

- 1 Dry kickstand with a cloth.
- 2 Spray kickstand rack with spray wax and leave to dry.
- 3 Wipe down kickstand with a cloth.
- 4 Lubricate the kickstand joints with spray oil.

7.4.6 Caring for the stem

- 1 Spray painted and polished metal surfaces with wax spray and leave to dry.
- 2 Wipe away any wax residue with a cloth.
- 3 Apply silicone or Teflon oil to the stem shaft tube and the quick release lever pivot point with a cloth.
- 4 Apply a little acid-free lubricant grease between the stem quick release lever and the sliding piece to reduce the quick release lever operating force.
- 5 If you have a stem with a cone clamp, apply a new protective layer of assembly paste onto the stem and fork steerer contact point once a year.

7.4.7 Servicing the handlebars

- 1 Spray painted and polished metal surfaces with wax spray and leave to dry.
- 2 Wipe away any wax residue with a cloth.

7.4.8 Caring for the handles

7.4.8.1 Caring for rubber handles

► **Notice** Never apply talcum powder to leather or foam handles.

► Apply talcum powder to sticky rubber handles.

7.4.8.2 Caring for leather handles

Standard leather care products keep leather smooth and resistant, brighten its appearance and improve or replace stain protection.

- 1 Try leather care product out on a less visible spot before use.
- 2 Care for leather handles with a leather care product.

7.4.9 Servicing the seat post

- 1 Carefully preserve screw connections with wax spray. In doing so, ensure that no wax is applied to the metal contact surfaces.
- 2 Replace the assembly paste protective layer on the metal contact surfaces on the seat post and seat tube every year.

7.4.9.1 Caring for the suspension seat post

- 1 Lubricate articulated joints with spray oil.
- 2 Deflect and let the suspension seat post rebound five times. Remove any surplus lubricant with a clean cloth.

7.4.9.2 Servicing the carbon seat post

► **Notice** Rain and puddle water can cause contact corrosion if carbon seat posts are used in an aluminium frame without protective assembly paste. It may then take a great deal of force to remove the seat post. The carbon seat post may break as a result.

- 1 Take out the carbon seat post.
- 2 Remove old assembly paste with a cloth.
- 3 Apply new assembly paste with a cloth.
- 4 Re-insert the carbon seat post.

7.4.10 Servicing the rims

► Care for polished aluminium rims with chrome or metal polish. Never apply polish to the brake surface.

7.4.11 Caring for the hub

- 1 Apply wax spray, especially around the spoke holes. In doing so, ensure that no wax is applied to brake parts.
- 2 Service the rubber seals with a cloth with one or two drops of silicone spray. Never use oil if you have disc brakes.

7.4.12 Servicing the spoke nipples

- 1 Apply wax spray onto the spoke nipples from the rim side.
- 2 Treat heavily corroded spoke nipples with a drop of penetrating of special care oil.

7.4.13 Caring for the gear shift

7.4.13.1 Servicing the rear derailleur articulated shafts and jockey wheel

- ▶ Apply Teflon spray to front and rear derailleur articulated shafts and jockey wheels.

7.4.13.2 Caring for the shifter

- ▶ **Notice** Never treat shifters with degreaser or penetrating oil spray.
- ▶ Lubricate articulated joints and mechanical parts which are accessible from outside with a few drops of spray oil or precision mechanics oil.

7.4.14 Caring for the pedals

- 1 Treat pedals with spray oil. In doing so, ensure that no lubricant is applied to the pedal surfaces.
- 2 Lubricate seals and mechanical parts sparingly with a few drops of oil.
- 3 Remove any surplus lubricant with a clean cloth.
- 4 Spray metal foot rests with silicone spray.

7.4.15 Caring for the chain

CAUTION Cut injury

If your hand slips, it may come into contact with the chainring. This poses a risk of cut injury.

- ✓ Always wear an assembly glove while maintaining the chain.
 - ✓ Place newspaper or paper towels underneath to collect chain oil.
- 1 Quickly turn the crank anti-clockwise with your right hand.
 - 2 Place the ball of your left hand on the end of the chain stay.
 - 3 Use slight finger pressure to the chain oil bottle to apply a wafer-thin thread of oil to the chain links. The faster the crank is turned, the thinner the threads of oil will be.

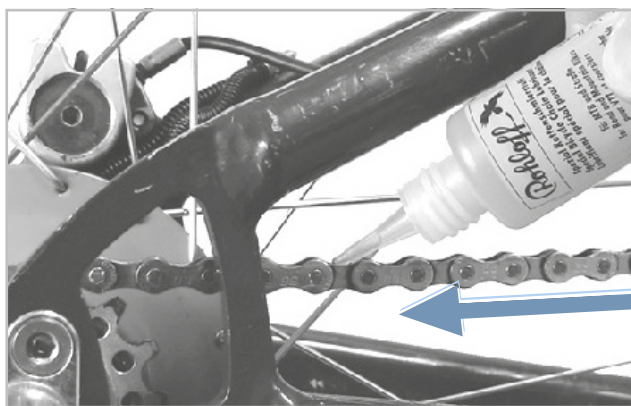


Figure 47: Lubricating the chain

- 4 Remove excessive chain oil with a cloth. If you apply too much oil, it will make the chain all the dirtier at a later point in time.
- 5 Leave chain oil to penetrate into the chain links for a few hours or overnight.

7.4.16 Caring for the brake

7.4.16.1 Caring for the handbrake

- ▶ **Notice** Never treat brake handbrake with degreaser or penetrating oil spray.
- ▶ Lubricate articulated joints and mechanical parts which are accessible from outside with a few drops of spray oil or precision mechanics oil.

7.5 Inspection

7.5.1 Checking the wheel

- 1 Hold the bicycle firmly.
- 2 Hold onto the front or rear wheel and try to move the wheel sideways. In doing so, check to see if the wheel nuts or quick releases move.
 - ⇒ If the wheel moves or the wheel nut or quick release moves sideways, take bicycle out of service. Contact specialist dealer.
- 3 Lift bicycle slightly. Turn front or rear wheel. In doing so, check whether the wheel deflects sideways or outwards.
 - ⇒ If the wheel deflects sideways or outwards, take bicycle out of service. Contact specialist dealer.

7.5.1.1 Checking the tube

Notice If the tyre pressure is too low, the tyre cannot support its full load capacity. The tyre is not stable and may come off the rim. If the tyre pressure is too high, the tyre may burst.

Tyres are wear parts and degrade due to fatigue, storage, environmental influences or mechanical impacts. Only optimum tyre pressure will guarantee greater safety, lower rolling resistance, effective protection against punctures and a longer service life.

Air loss

Even the most airtight tube will gradually lose pressure since the air pressures in bicycle tyres are significantly higher and the wall thicknesses significantly finer than in a car tyre. Pressure loss of 1 bar per month can be considered normal. At high pressures, this loss occurs significantly faster while loss is much slower at lower pressures.

Checking tyre pressure

The permitted pressure range is indicated on the side of the tyre.



Figure 48: Tyre pressure specification in bar (1) and psi (2)

- ▶ Verify tyre pressure against the value noted in the bike pass every 10 days as a minimum.

7.5.1.2 Inflating the tube

Valve type	Bicycle pump
Dunlop valve	The tyre pressure cannot be measured on the simple Dunlop valve. The tyre pressure is thus measured in the filling tube while pumping slowly with the bicycle air pump. It is recommendable to use a bicycle pump with a pressure gauge. You must observe the bicycle pump operating instructions.
Schrader valve	It is recommended to use an air pump at a filling station or a modern bicycle pump with a pressure gauge. Older and simple bicycle pumps are unsuitable for pumping tyres through a Schrader valve. You must observe the bicycle pump operating instructions.
Presta valve	It is recommendable to use a bicycle pump with a pressure gauge. You must observe the bicycle air pump operating instructions.

- 1 Unscrew and remove the valve cap.
- 2 If you have a Presta valve, open the knurled nut about four turns.
- 3 Connect the appropriate air pump.
- 4 Pump up the tyre slowly, keeping an eye on the pressure in the tyre.

- ⇒ The tyre pressure is corrected as specified on the tyre.
- 5 Remove the bicycle pump.
- 6 If you have a Presta valve, tighten the knurled nut firmly.
- 7 Screw the valve cap tight.

7.5.1.3 Checking the tyres

The tread is far less important for bicycle tyres than it is for car tyres, for example. Consequently, tyres with a worn tread can still be used, except if the tyre is on a mountain bike.

- 1 Check the tread for wear. The tyre is worn if the anti-puncture protection or the carcass cords are visible on the tread.

Since resistance to punctures also depends on the thickness of the tread, it may be a good idea to change the tyre earlier.



Figure 49: Tyres without a tread which can be replaced (1) and tyres with puncture protection showing through (2) must be replaced

- 2 Check the side walls for wear. If there are any cracks or tears, the tyre must be replaced.



Figure 50: Examples of fatigue cracks (1) and ageing cracks (2)

7.5.1.4 Checking the rims

⚠ WARNING Crash caused by a worn rim

A worn rim can break and block the wheel. This may cause a crash with serious injuries.

- ▶ Check rim wear on a regular basis.
- ▶ Do not use bicycle if the rim has any cracks or is warped. Contact your specialist dealer.

Rims are wear parts and degrade due to fatigue, mechanical impacts, environmental influences or due to braking if rim brakes are used.

- ▶ Check the rim well thoroughly for wear.
- ⇒ The rims of a rim brake with an invisible wear indicator are worn as soon as the wear indicator becomes visible in the rim joint area.
- ⇒ The rims with a visible wear indicator reach their wear limit as soon as the black, all-round groove on the pad friction surface is no longer visible.
- ▶ We recommend that you also replace the *rims* every second time the brake linings are changed.

7.5.1.5 Checking the spokes

- ▶ Press spokes slightly together with your thumb and index finger. Check to ensure that the tension is the same for all spokes.
- ⇒ Contact your specialist dealer if the spokes are loose or are tensioned differently.

7.5.2 Checking the brake system

⚠ CAUTION Crash caused by brake failure

Worn brake discs and brake linings and a lack of hydraulic fluid in the brake cable reduce braking power. This may cause a crash with serious injuries.

- ▶ Check brake disc, brake linings and the hydraulic brake system regularly. Contact specialist dealer.

The inspection interval for the brake depends on how often it is used and on the weather conditions. If the bicycle is used under extreme conditions such as rain, dirt or high mileage, inspection must be performed more frequently.

7.5.2.1 Checking the handbrake

- 1 Check that all screws in the handbrake are firmly in place.
 - 2 Tighten loose screws.
 - 3 Check that handbrake is torsionally rigid on the handlebars.
 - 4 Tighten loose screws.
 - 5 Check that there is a gap of at least 1 cm between the handbrake and the handle when the handbrake is fully applied.
 - 6 Adjust the grip distance if the gap is too narrow.
 - 7 Check the braking effect by pedalling while pulling the handbrake.
- ▶ If the braking power is too weak, adjust the brake pressure point.
 - ▶ Contact your specialist dealer if the pressure point cannot be reached.

7.5.2.2 Checking the hydraulic brake system

- 1 Pull on the handbrake and check whether any brake fluid leaks out of the lines, connections or on the brake linings.
- 2 If any brake fluid leaks from anywhere, take bicycle out of service. Contact specialist dealer.
- 3 Pull and hold handbrake several times.
- 4 If you are unable to clearly detect the pressure point and it changes, the brake needs to be bled. Contact specialist dealer.

7.5.2.3 Checking the Bowden cables

- 1 Pull on handbrake several times. Check whether the Bowden cables get stuck or they make scraping noises.
- 2 Check the physical condition of the Bowden cables for visible damage and check to see if wire strands are broken.
- 3 Have defective Bowden cables replaced. Contact specialist dealer.

7.5.2.4 Checking the disc brake

Checking the brake linings

- ▶ Check that the brake linings are no less than 1.8 mm wide at any point and there are no less than 2.5 mm between the brake lining and supporting plate.



Figure 51: Checking the brake lining when fitted with the help of the transport lock

- 1 Check brake linings for damage and thick dirt.
 - ⇒ Have damaged or very dirty brake linings replaced. Contact specialist dealer.
- 2 Pull handbrake and hold.
- 3 In doing so, check whether the transport lock can fit between the brake linings supporting plates.
 - ⇒ If the transport lock fits between the supporting plates, the brake linings have not reached their wear limit.
 - ⇒ Contact your specialist dealer if they are worn.

Checking the brake discs

- ✓ Put on gloves as the brake disc is very sharp.
- 1 Take hold of brake disc and wiggle it gently to check whether the brake disc is positioned against the wheel free of backlash.
 - ⇒ If the brake disc can be moved or the brake linings move erratically, contact your specialist dealer.
 - 2 Check that the brake linings move steadily and symmetrically back towards the brake disc when you pull and release handbrake.
 - ⇒ If the brake disc is under the wear limit and is less than 1.8 mm thick, the brake disc must be replaced. Contact specialist dealer.

7.5.3 Checking the chain

- ▶ Check chain for rust, damage and chain links that are difficult to move.
 - ⇒ Replace rusted, damaged or difficult-to-move chains since they will not withstand the tensile loads from the drive and will soon break. Contact your specialist dealer.

7.5.4 Checking the chain tension

Notice

Excessive chain tension increases wear. If the chain tension is too low, there is a risk that the chain will slip off the chain wheels.

- ▶ Check the chain tension once a month.

7.5.4.1 Checking the tension in derailleur gears

The rear derailleur tensions the chain on bicycles with derailleur gears.

- 1 Check to see if the chain is sagging.
- 2 Gently press the rear derailleur forwards to check whether it moves and whether it goes back into position by itself.
 - ⇒ If the chain is sagging or the rear derailleur does not go back into position by itself, contact your specialist dealer.

7.5.4.2 Checking the tension in the hub gear

- 1 Remove the chain guard on bicycles with a circumferential chain guard.

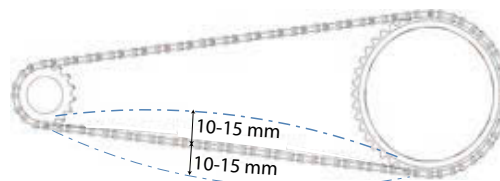


Figure 52: Checking the chain tension (example): 5 mm upwards, 10 mm downwards = 15 mm deviation

- 2 Lift chain upwards. Measure the distance to the centre. Press chain downwards. Measure the distance to the centre.
 - 3 Add the two values together to calculate the deviation.
 - 4 Check the chain tension at three to four points.
 - ⇒ If the deviation is greater than 20 mm, tighten chain.
 - ⇒ If the deviation is less than 10 mm, Loosen chain.
- ▶ If a hub gear is fitted, the rear wheel must be pushed backwards and forwards to tighten the chain. Contact specialist dealer.
 - ▶ In the case of bicycles with a hub gear or back-pedal brake, the chain is tensioned by an eccentric bearing or movable fork end in the bottom bracket axle. Special tools and specialist knowledge are required to tension the chain. Contact specialist dealer.

7.5.5 Checking the chain for wear

Each chain has a wear limit. If this limited is exceeded, the chain needs to be replaced.

7.5.5.1 Rough check

You can perform a rough check on the chain wheel by hand on conventional chains

- 1 Place the chain on the largest chain wheel.
- 2 Lift the chain from the front to the centre of the wheel.
 - ⇒ If the chain can be lifted more than half a link from the chain wheel, carry out a check or contact your specialist dealer.

7.5.5.2 Check

There is a different wear gauge for each chain, depending on the manufacturer:

- 1 Insert gauge between two chain links on the right-hand side.

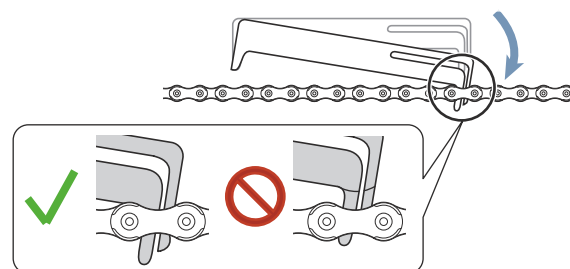


Figure 53: Gauge is inserted

- 2 Lower gauge down to the left-hand side.

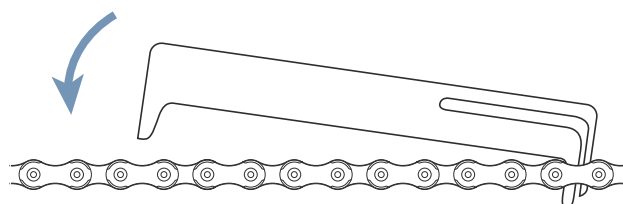


Figure 54: Lower gauge to the left

⇒ If the gauge does not fit between the links, the chain is not worn yet.

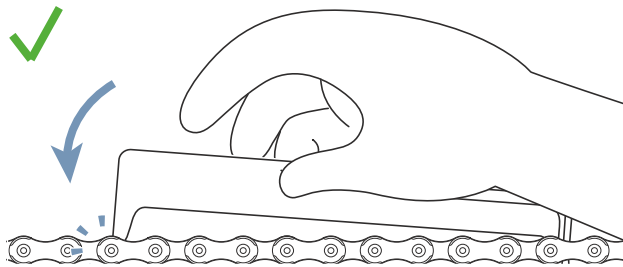


Figure 55: Gauge does not fit

⇒ If the gauge does not fit between the links, the chain is worn and must be replaced. Contact specialist dealer.

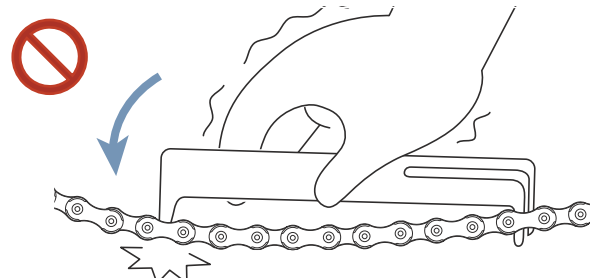


Figure 56: Gauge fits

7.5.6 Checking the belt

7.5.6.1 Checking the belt for wear

► Check belt for indications of wear:

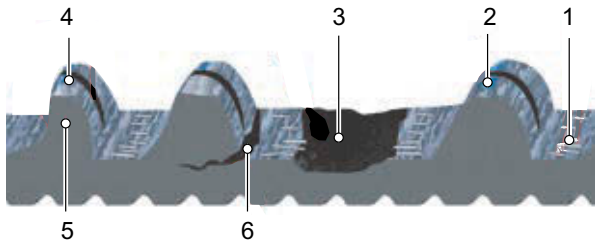


Figure 57: Indications of wear on a belt

- 1 Carbon tensile fibres are exposed
- 2 Worn webbing with visible polymer
- 3 Missing belt tooth
- 4 Imbalance
- 5 Shark tooth or
- 6 Cracks

⇒ If there is one or more indications of wear, replace belt. Contact specialist dealer.

7.5.6.2 Checking the belt sprocket for wear

► Check belt sprocket.

⇒ The tooth profile is rounded and the teeth are thick. The belt drive sprocket does not need to be replaced.

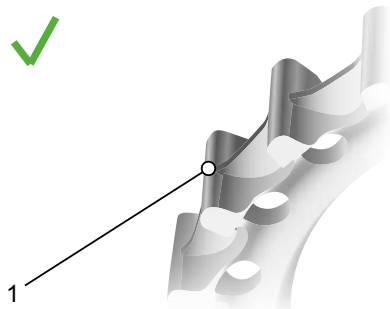


Figure 58: Optimum tooth profile

⇒ The tooth profile is pointed and teeth have worn thinner. Replace belt sprocket. Contact your specialist dealer.

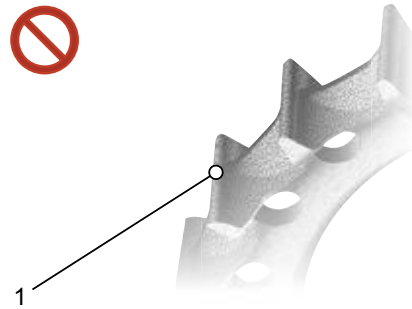


Figure 59: Worn tooth profile

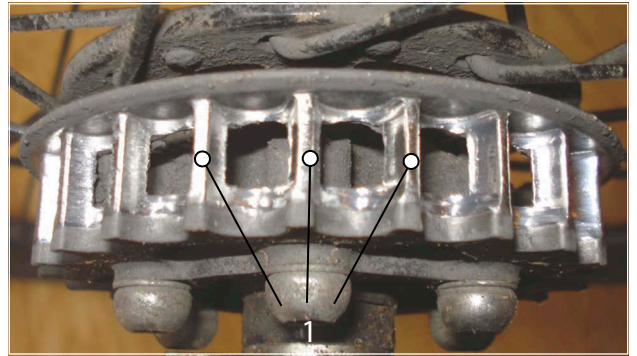


Figure 60: Photo showing worn tooth profile

7.5.6.3 Checking belt tension

If the belt tension is too low, this can cause the system to skip over a tooth or slip, i.e. the teeth on the belt slip over the teeth on the rear wheel belt sprocket. Excessive tension can cause damage to the bearings, sluggishness in the system and increased wear on the electric drive system. Belt tension adjustment varies depending on the bicycle. There are three common methods of measuring belt tension:

- Gates Carbon Drive mobile app for iPhone® and Android®,
- Gates Kriket tension meter
- Eco tension tester.

The tension along the belt may vary slightly with any of these methods, so you should repeat the process several times. Turn the pedal a quarter after each measurement. Measure again.

The tools measure the tension only. They do not provide specifications for the required tension. The table below contains specifications for the correct tensioning range for Gates Carbon Drive belts.

	Steady pedalling	Sports usage
MTBs* and single-speed bicycles	45–60 Hz (35–45 lbs)	60–75 Hz (45–53 lbs)
Hub gear/pinion gear	35–50 Hz (28–40 lbs)	

Table 25: Specifications for tensioning

These tension specifications are designed as initial guidance and may have to be corrected upwards or downwards, depending on the body size, gear ratio and the force applied to the pedals.

7.5.6.4 Checking belt tension

Check belt tension according to the manufacturer's specifications.

7.5.7 Checking the riding light

- 1 Check the cable connections on the headlight and rear light for damage and corrosion and ensure they are firmly in position.
 - ⇒ If cable connections are damaged or corroded, or are not firmly in position. take bicycle out of service. Contact specialist dealer.
- 2 Switch light on.
- 3 Check that the headlight and rear light come on.
 - ⇒ If the headlight or rear lights do not come on, take bicycle out of service. Contact specialist dealer.
- 4 Place bicycle 5 m from the wall.
- 5 Stand the bicycle up straight. Hold the handlebars straight with both hands. Do not use the kickstand.

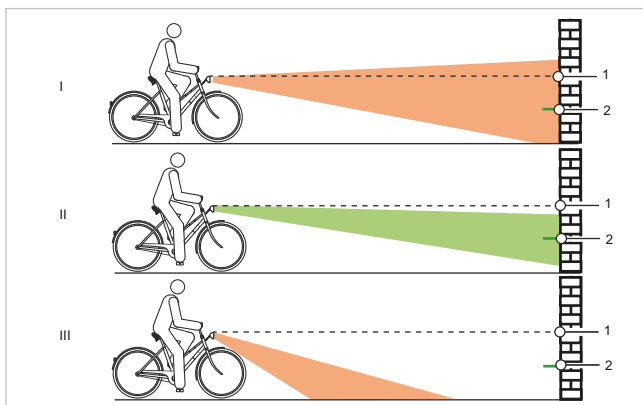


Figure 61: Light positioned too high (1), correctly (2) and too low (3)

- 6 Check the position of the light beam.
 - ⇒ If the light is positioned too high or too low, adjust riding light.

7.5.8 Checking the stem

- ▶ The stem and quick release system must be inspected at regular intervals. The specialist dealer should adjust them if they require adjustment.
- ▶ If the hexagon socket screw is also loosened, the bearing clearance also needs to be adjusted. Medium-strength thread locker, such as Loctite blue, then needs to be applied to the loosened screws and the screws tightened as per specifications.
- ▶ Check metal contact surfaces on cone, stem clamping screw and fork steerer for corrosion.
 - ⇒ Take bicycle out of service if there is any wear or signs of corrosion. Contact specialist dealer.

7.5.9 Checking the handlebars

- 1 Take hold of handlebars with both hands on the handles.
- 2 Move handlebars up and down and press to tilt.
 - ⇒ If the handlebars can move, contact your specialist dealer.
- 3 Place front wheel in position where it can't move sideways (e.g. in a bike stand).
- 4 Hold handlebars firmly with both hands.
- 5 Check if the handlebars are able to twist against the front wheel.
 - ⇒ If the handlebars can move, contact your specialist dealer.

7.5.10 Checking the saddle

- 1 Hold saddle firmly.
- 2 Check whether the saddle twists, tilts or can be pushed in one direction or other.
 - ⇒ If the saddle twists, tilts or can be pushed in one direction or other, adjust the saddle (see Section 6.5.4).
 - ⇒ Contact your specialist dealer if the saddle cannot be fixed into position.

7.5.11 Checking the seat post

- 1 Take seat post out of the frame.
- 2 Check seat post for cracks and corrosion.
- 3 Reinsert seat post.

7.5.12 Checking the pedal

- 1 Hold pedal and try to move it sideways toward the inside or outside. In doing so, observe whether the crank arm or bearing move sideways.
 - ⇒ If the pedal, crank arm or crank bearing moves sideways, fasten screw on the pedal crank rear.
- 2 Hold pedal and try to move it upwards and downwards vertically. In doing so, observe whether the pedal, crank arm or crank bearing moves vertically.
 - ⇒ If the pedal, crank arm or crank bearing moves vertically, fasten screw.

7.5.13 Checking the gear shift

- 1 Check that all gear shift components are free of damage.
- 2 Contact your specialist dealer if components are damaged.
- 3 Ask someone to lift the rear wheel or secure the pedelec in a fitting stand capable of supporting its weight.
- 4 Turn the pedal crank clockwise.
- 5 Switch through all speeds.
- 6 Check that pedelec can switch through all speeds without making unusual noises.
- 7 Adjust the gear shift if gears cannot be changed correctly.

7.5.13.1 Checking the electric gear shift

- 1 Check the cable connections for damage and corrosion and ensure they are firmly in position.
 - ⇒ If cable connections are loose, damaged or corroded, contact your specialist dealer.

7.5.13.2 Checking the mechanical gear shift

- 1 Change gear a number of times. Check whether the Bowden cables get stuck or they make scraping noises.
- 2 Check the physical condition of the Bowden cables for visible damage and check to see if wire strands are broken.
 - ⇒ Have defective Bowden cables replaced. Contact specialist dealer.

7.5.13.3 Checking the derailleur gears

The chain is tensioned by the rear derailleur in bicycles with derailleur gears.

- 1 Place the bicycle on stand.
- 2 Check to see if the chain is sagging.
- 3 Gently press the rear derailleur forwards to check whether it moves and whether it goes back into position by itself.
⇒ If the chain is sagging or the rear derailleur does not go back into position by itself, contact your specialist dealer.
- 4 Check that there is clearance between the chain tensioner and spokes.
⇒ If there is no clearance or the chain scrapes against the spokes or tyres, contact your specialist dealer.
- 5 Check that there is clearance between the chain or rear derailleur and spokes.
⇒ If there is no clearance or the chain scrapes against the spokes, contact your specialist dealer.

7.5.13.4 Checking the hub gear

In the case of bicycles with a hub gear or back-pedal brake, an eccentric bearing or movable fork end in the bottom bracket axle tensions the chain or the belt. Special tools and expertise are required to tension the chain. Contact your specialist dealer.

7.5.13.5 Adjusting the cable-operated gear shift, dual-cable

- ▶ For a smooth gear shift, adjust the **adjusting sleeves** underneath the chain stay on the frame.
- ▶ The shift cable has around 1 mm play when it is pulled out gently.

7.5.13.6 Checking kickstand stability

- 1 Place the bicycle on a slight elevation of 5 cm.
- 2 Extend kickstand.
- 3 Jolt bicycle to check stability.
⇒ If bicycle topples over, tighten screws or change height of the kickstand.

8 Inspection and maintenance

⚠️ WARNING Injury due to damaged brakes

Special tools and specialist knowledge are required to repair the brakes. Incorrect or unauthorised assembly can damage the brakes. This may lead to an accident with serious injuries.

- ▶ Only specialist dealers may carry out repairs on brakes.

⚠️ CAUTION Crash caused by material fatigue

If the service life of a component has expired, the component may suddenly fail. This may cause a crash with injuries.

- ▶ Have the specialist dealer carry out basic cleaning of the pedelec every six months, preferably at the same time as the required servicing work.

Notice The motor is maintenance-free and only qualified specialist personnel may open it.

- ▶ Never open the motor.

8.1 Initial inspection

Vibrations produced while riding can cause screws and springs that were tightened when pedelec was manufactured to settle or come loose.

- ▶ Have the initial inspection carried out after 200 km or 4 weeks after purchase.
- ▶ Arrange an appointment for the initial inspection intermediately when purchasing the pedelec.
- ▶ Have the initial inspection entered and stamped in the maintenance book.

8.2 Major inspection

You must have your specialist dealer perform a major inspection every twelve months or after 1,000 km of use as a minimum. This is the only way to ensure that the pedelec remains safe and fully functional.

The tasks require technical expertise, special tools and special lubricants. The pedelec may become damaged if the stipulated major inspection and procedures are not carried out. This is why only specialist dealers may carry out the major inspection.

- ▶ Contact your specialist dealer and arrange an appointment.
- ▶ Enter and stamp major inspection tasks in the maintenance book.

8.3 Component-specific maintenance

High-quality components require extra maintenance. The tasks require technical expertise, special tools and special lubricants. The pedelec may become damaged if the stipulated maintenance intervals and procedures are not observed. This is why only specialist dealers may carry out maintenance.

Correct maintenance on the fork not only guarantees a long service life, but also ensures optimal performance.

Each maintenance interval shows the maximum cycling hours for the required type of maintenance that the component manufacturer recommends.

- ▶ Optimise performance with shorter maintenance intervals, depending on use, terrain and environmental conditions.

Inspection and maintenance intervals for suspension fork		
SR SUNTOUR suspension fork		
<input type="checkbox"/>	Maintenance 1	Every 50 hours
<input type="checkbox"/>	Maintenance 2	Every 100 hours
FOX suspension fork		
<input type="checkbox"/>	Maintenance	Every 125 hours or once a year
ROCKSHOX suspension fork		
<input type="checkbox"/>	Maintenance of stanchions for: Paragon, Rudy XPLR, XC 28, XC 30, 30, Judy, Recon, Sektor, 35 , Bluto, REBA, SID , RS-1, Revelation, PIKE , Lyrik, Yari, Domain, ZEB , BoXXer	Every 50 hours
<input type="checkbox"/>	Maintenance of spring and damper unit for: Rudy XPLR (2022+), 30 (2016+), Judy (2018+), Recon (2016+), Sektor (2016+), 35 (2020+) , Bluto (2017+), REBA (2017+), SID (2017+) , RS-1 (2018+), Revelation (2018+), PIKE (2014+) , Yari (2016+), Lyrik (2016+) , Domain (2022+), ZEB (2022+) , BoXXer (2019+)	Every 200 hours
EIGHTPINS seat post		
<input type="checkbox"/>	Clean wiper	20 hours
<input type="checkbox"/>	Clean slide bushing	40 hours
<input type="checkbox"/>	Replace slide bushing, wiper and felt strip	100 hours
<input type="checkbox"/>	Seal service for gas pressure spring	200 hours
All other suspension seat posts		
<input type="checkbox"/>	Maintenance	Every 100 hours
Inspection and maintenance intervals for rear frame damper		
RockShox rear frame damper		
<input type="checkbox"/>	Service air chamber Monarch, Monarch Plus, Deluxe , SIDLuxe (2021+), Super Deluxe , Vivid Air (2011-2022)	Every 50 hours
<input type="checkbox"/>	Air chamber service: Vivid (2024+)	Every 100 hours
SR SUNTOUR rear frame damper		
<input type="checkbox"/>	Complete shock absorber service, including damper reassembly and air seal replacement	Every 100 hours
Inspection and maintenance intervals for motor		
pinion E1.12, E1.9		
<input type="checkbox"/>	Oil change	Every 10,000 km
Inspection and maintenance intervals for hub		
All other SHIMANO gear hubs		
<input type="checkbox"/>	Lubricate internal components	1,000 km after start of use, then every 2 years or 2,000 km

9 Repair

Components deteriorate over time due to normal wear and tear during use. Components must be replaced regularly and are thus considered wear parts.

The following components on the pedelec are often wear parts.

Wear parts	
<input type="checkbox"/>	Battery
<input type="checkbox"/>	Lighting
<input type="checkbox"/>	Brake lining
<input type="checkbox"/>	Brake disc
<input type="checkbox"/>	Rims
<input type="checkbox"/>	Handles/saddle
<input type="checkbox"/>	Chain
<input type="checkbox"/>	Crank
<input type="checkbox"/>	Bearing
<input type="checkbox"/>	Motor
<input type="checkbox"/>	Tyres and tubes
<input type="checkbox"/>	Belt
<input type="checkbox"/>	Sprocket, chainring or belt sprocket
<input type="checkbox"/>	Shift cables/brake cables

9.1 Repairs at the specialist dealer

Expert knowledge, a workshop, special tools and additional training are required for many repairs. Contact your specialist dealer if you are unable to carry out work on your pedelec yourself, you feel unsure or you do not have the right tools.

You can perform the following steps yourself:

- Replacing tyres and tube Never perform replacement yourself if you have a motor hub.
- Replacing handles with bolt clamp
- Attaching approved accessories (mirror, bar ends)
- Replacing the bell
- Replacing pedals if the pedal is not wider than the original component
- Replacing the guards and the chain case

10 Recycling and disposal



This device is marked according to the European Directive 2012/19/EU on waste electrical and electronic equipment – WEEE and the European Directive 2006/66/EC on accumulators. The

directive provides the framework for returning and recycling used devices across the EU. Consumers are legally required to return all used batteries of any type. It is forbidden to dispose of batteries in domestic waste.

The battery manufacturer is legally obliged to take back used and old batteries free of charge according to Section 9 German Batteries Act. The pedelec frame, battery, motor, on-board computer and charger are recyclable materials. You must dispose of and recycle them separately from domestic waste in compliance with the applicable statutory regulations. Collecting and recycling items separately safeguards reserves of raw materials and ensures that all the regulations on health and environmental protection are observed when recycling the product and/or the battery.

- ▶ Never dismantle the pedelec, battery or charger for disposal.

The pedelec, the on-board computer, the unopened and undamaged battery and the charger can be returned to any specialist dealer free of charge. Further disposal options may be available, depending on the region.

- ▶ Store the individual parts of the decommissioned pedelec in a dry place, free from frost, where they are protected from direct sunlight.

11 Appendix

11.1 Declaration of conformity with RED Directive SRAM

DE: Hiermit erklärt die SRAM, LL, dass der Funkanlagentyp AXS den Richtlinien 2014/53/EU entspricht. The complete EU Declaration of Conformity is available online at: www.sram.com/de/company/legal/regulatory-compliance/eu-and-uk-docs.

FR: Le soussigné, SRAM, LL, déclare que l'équipement radioélectrique du type AXS est conforme à la directive 2014/53/UE. Le texte complet de la déclaration UE de conformité est disponible à l'adresse internet suivante: www.sram.com/de/company/legal/regulatory-compliance/eu-and-uk-docs.

NL: Hierbij verklaar ik, SRAM, LL, dat het type radioapparatuur AXS conform is met Richtlijn 2014/53/EU. De volledige tekst van de EUconformiteitsverklaring kan worden geraadpleegd op het volgende internetadres: www.sram.com/de/company/legal/regulatory-compliance/eu-and-uk-docs.

EN: Hereby, SRAM, LL, declares that the radio equipment type AXS is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: www.sram.com/de/company/legal/regulatory-compliance/eu-and-uk-docs.

ES: Por la presente, SRAM, LL declara que el tipo de equipo radioeléctrico AXS es conforme con la Directiva 2014/53/UE. El texto completo de la declaración UE de conformidad está disponible en la dirección Internet siguiente: www.sram.com/de/company/legal/regulatory-compliance/eu-and-uk-docs.

IT: Il fabbricante, SRAM, LL, dichiara che il tipo di apparecchiatura radio AXS è conforme alla direttiva 2014/53/UE. Il testo completo della dichiarazione di conformità UE è disponibile al seguente indirizzo Internet: www.sram.com/de/company/legal/regulatory-compliance/eu-and-uk-docs.

DA: Hermed erklærer SRAM, LL, at radioudstyrstypen AXS er i overensstemmelse med direktiv 2014/53/EU. EUoverensstemmelseserklæringens fulde tekst kan findes på følgende internetadresse: www.sram.com/de/company/legal/regulatory-compliance/eu-and-uk-docs.

PL: SRAM, LL, niniejszym oświadczam, że typ urządzenia radiowego AXS jest zgodny z dyrektywą 2014/53/UE. Pełny tekst deklaracji zgodności UE jest dostępny pod następującym adresem internetowym: www.sram.com/de/company/legal/regulatory-compliance/eu-and-uk-docs.

HU: SRAM, LL igazolja, hogy a AXS típusú rádióberendezés megfelel a 2014/53/EU irányelvnek. Az EU-megfelelőségi nyilatkozat teljes szövege elérhető a következő internetes címen: www.sram.com/de/company/legal/regulatory-compliance/eu-and-uk-docs.

HR: SRAM, LL ovime izjavljuje da je radijska oprema tipa AXS u skladu s Direktivom 2014/53/EU. Cjeloviti tekst EU izjave o sukladnosti dostupan je na sljedećoj internetskoj adresi: www.sram.com/de/company/legal/regulatory-compliance/eu-and-uk-docs.

CS: Tímto SRAM, LL prohlašuje, že typ rádiového zařízení AXS je v souladu se směrnicí 2014/53/EU. Úplné znění EU prohlášení o shodě je k dispozici na této internetové adrese: www.sram.com/de/company/legal/regulatory-compliance/eu-and-uk-docs.

SL: SRAM, LL potrjuje, da je tip radijske opreme AXS skladen z Direktivo 2014/53/EU. Celotno besedilo izjave EU o skladnosti je na voljo na naslednjem spletnem naslovu: www.sram.com/de/company/legal/regulatory-compliance/eu-and-uk-docs.

RO: Prin prezenta, SRAM, LL declară că tipul de echipamente radio AXS este în conformitate cu Directiva 2014/53/UE. Textul integral al declarației UE de conformitate este disponibil la următoarea adresă internet: www.sram.com/de/company/legal/regulatory-compliance/eu-and-uk-docs.

LT: Aš, SRAM, LL, patvirtinu, kad radijo irenginiu tipas AXS atitinka Direktyva 2014/53/ES. Visas ES atitikties deklaracijos tekstas prieinamas šiuo interneto adresu: www.sram.com/de/company/legal/regulatory-compliance/eu-and-uk-docs.

11.2 Declaration of conformity with RED Directive Biketec

DE: Hiermit erklärt die Biketec GmbH, dass der Funkanlagentyp 500093, 501262, 501263, 501264, 501301, 500429 den Richtlinien 2014/53/EU entspricht. The complete EU Declaration of Conformity is available online at:
<https://fit-ebike.com/service/konformitaetserklaerungen>.

FR: Le soussigné, Biketec GmbH, déclare que l'équipement radioélectrique du type 500093, 501262, 501263, 501264, 501301, 500429 est conforme à la directive 2014/53/UE. Le texte complet de la déclaration UE de conformité est disponible à l'adresse internet suivante:
<https://fit-ebike.com/service/konformitaetserklaerungen>.

NL: Hierbij verklaar ik, Biketec GmbH, dat het type radioapparatuur 500093, 501262, 501263, 501264, 501301, 500429 conform is met Richtlijn 2014/53/EU. De volledige tekst van de EUconformiteitsverklaring kan worden geraadpleegd op het volgende internetadres:
<https://fit-ebike.com/service/konformitaetserklaerungen>.

EN: Hereby, Biketec GmbH, declares that the radio equipment type 500093, 501262, 501263, 501264, 501301, 500429 is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address:
<https://fit-ebike.com/service/konformitaetserklaerungen>.

ES: Por la presente, Biketec Gmb, declara que el tipo de equipo radioeléctrico 500093, 501262, 501263, 501264, 501301, 500429 es conforme con la Directiva 2014/53/UE. El texto completo de la declaración UE de conformidad está disponible en la dirección Internet siguiente:
<https://fit-ebike.com/service/konformitaetserklaerungen>.

IT: Il fabbricante, Biketec GmbH, dichiara che il tipo di apparecchiatura radio 500093, 501262, 501263, 501264, 501301, 500429 è conforme alla direttiva 2014/53/UE. Il testo completo della dichiarazione di conformità UE è disponibile al seguente indirizzo Internet:
<https://fit-ebike.com/service/konformitaetserklaerungen>.

DA: Hermed erklærer Biketec GmbH, at radioudstyrstypen 500093, 501262, 501263, 501264, 501301, 500429 er i overensstemmelse med direktiv 2014/53/EU. EUoverensstemmelseserklæringens fulde tekst kan findes på følgende internetadresse:
<https://fit-ebike.com/service/konformitaetserklaerungen>.

PL: Biketec GmbH, niniejszym oświadczam, że typ urządzenia radiowego 500093, 501262, 501263, 501264, 501301, 500429 jest zgodny z dyrektywą 2014/53/UE. Pełny tekst deklaracji zgodności UE jest dostępny pod następującym adresem internetowym:
<https://fit-ebike.com/service/konformitaetserklaerungen>.

HU: Biketec GmbH, igazolja, hogy a 500093, 501262, 501263, 501264, 501301, 500429 típusú rádióberendezés megfelel a 2014/53/EU irányelvnek. Az EU-megfelelőségi nyilatkozat teljes szövege elérhető a következő internetes címen:
<https://fit-ebike.com/service/konformitaetserklaerungen>.

HR: Biketec GmbH, ovime izjavljuje da je radijska oprema tipa 500093, 501262, 501263, 501264, 501301, 500429 u skladu s Direktivom 2014/53/EU. Cjeloviti tekst EU izjave o sukladnosti dostupan je na sljedećoj internet-skoj adresi:
<https://fit-ebike.com/service/konformitaetserklaerungen>.

CS: Tímto Biketec GmbH, prohlašuje, že typ rádiového zařízení 500093, 501262, 501263, 501264, 501301, 500429 je v souladu se směrnicí 2014/53/EU. Úplné znění EU prohlášení o shodě je k dispozici na této internetové adrese:
<https://fit-ebike.com/service/konformitaetserklaerungen>.

SL: Biketec GmbH, potrjuje, da Per tip radijske opreme 500093, 501262, 501263, 501264, 501301, 500429 skladen z Direktivo 2014/53/EU. Celotno besedilo izjave EU o skladnosti je na voljo na naslednjem spletnem naslovu:
<https://fit-ebike.com/service/konformitaetserklaerungen>.

RO: Prin prezenta, Biketec GmbH, declară că tipul de echipamente radio 500093, 501262, 501263, 501264, 501301, 500429 este în conformitate cu Directiva 2014/53/UE. Textul integral al declarației UE de conformitate este disponibil la următoarea adresă internet:
<https://fit-ebike.com/service/konformitaetserklaerungen>.

LT: Aš, Biketec GmbH, patvirtinu, kad radijo įrenginiu tipas 500093, 501262, 501263, 501264, 501301, 500429 atitinka Direktyva 2014/53/ES. Visas ES atitikties deklaracijos tekstas prieinamas šiuo interneto adresu:
<https://fit-ebike.com/service/konformitaetserklaerungen>.

11.3 Konformitätserklärung RED-Richtlinie BOSCH

DE: Hiermit erklärt die Robert Bosch GmbH, Bosch eBike Systems, dass der Funkanlagentyp BRC3600, BSP3200, BRC3800, BCM3100, BHU3200, BRC3100, BRC3300 den Richtlinien 2014/53/EU entspricht. The complete EU Declaration of Conformity is available online at: www.ebike-connect.com/conformity.

FR: Le soussigné, Robert Bosch GmbH, Bosch eBike Systems, déclare que l'équipement radioélectrique du type BRC3600, BSP3200, BRC3800, BCM3100, BHU3200, BRC3100, BRC3300 est conforme à la directive 2014/53/UE. Le texte complet de la déclaration UE de conformité est disponible à l'adresse internet suivante: www.ebike-connect.com/conformity.

NL: Hierbij verklaar ik, Robert Bosch GmbH, Bosch eBike Systems, dat het type radioapparatuur BRC3600, BSP3200, BRC3800, BCM3100, BHU3200, BRC3100, BRC3300 conform is met Richtlijn 2014/53/EU. De volledige tekst van de EUconformiteitsverklaring kan worden geraadpleegd op het volgende internetadres: www.ebike-connect.com/conformity.

EN: Hereby, Robert Bosch GmbH, Bosch eBike Systems, declares that the radio equipment type BRC3600, BSP3200, BRC3800, BCM3100, BHU3200, BRC3100, BRC3300 is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: www.ebike-connect.com/conformity.

ES: Por la presente, Robert Bosch GmbH, Bosch eBike Systems declara que el tipo de equipo radioeléctrico BRC3600, BSP3200, BRC3800, BCM3100, BHU3200, BRC3100, BRC3300 es conforme con la Directiva 2014/53/UE. El texto completo de la declaración UE de conformidad está disponible en la dirección Internet siguiente: www.ebike-connect.com/conformity.

IT: Il fabbricante, Robert Bosch GmbH, Bosch eBike Systems, dichiara che il tipo di apparecchiatura radio BRC3600, BSP3200, BRC3800, BCM3100, BHU3200, BRC3100, BRC3300 è conforme alla direttiva 2014/53/UE. Il testo completo della dichiarazione di conformità UE è disponibile al seguente indirizzo Internet: www.ebike-connect.com/conformity.

DA: Robert Bosch GmbH, Bosch eBike Systems ovime izjavljuje da je radijska oprema tipa BRC3600, BSP3200, BRC3800, BCM3100, BHU3200, BRC3100, BRC3300 u skladu s Direktivom 2014/53/EU. EU-overensstemmelseserklæringens fulde tekst kan findes på følgende internetadresse: www.ebike-connect.com/conformity.

PL: Robert Bosch GmbH, Bosch eBike Systems, niniejszym oświadczam, że typ urządzenia radiowego BRC3600, BSP3200, BRC3800, BCM3100, BHU3200, BRC3100, BRC3300 jest zgodny z dyrektywą 2014/53/UE. Pełny tekst deklaracji zgodności UE jest dostępny pod następującym adresem internetowym: www.ebike-connect.com/conformity.

HU: Robert Bosch GmbH, Bosch eBike Systems igazolja, hogy a BRC3600, BSP3200, BRC3800, BCM3100, BHU3200, BRC3100, BRC3300 típusú rádióberendezés megfelel a 2014/53/EU irányelvnek. Az EU-megfelelőségi nyilatkozat teljes szövege elérhető a következő internetes címen: www.ebike-connect.com/conformity.

HR: Robert Bosch GmbH, Bosch eBike Systems ovime izjavljuje da je radijska oprema tipa BRC3600, BSP3200, BRC3800, BCM3100, BHU3200, BRC3100, BRC3300 u skladu s Direktivom 2014/53/EU. Cjeloviti tekst EU izjave o skladnosti dostupan je na sljedećoj internetskoj adresi: www.ebike-connect.com/conformity.

CS: Tímto Robert Bosch GmbH, Bosch eBike system prohlašuje, že typ rádiového zařízení BRC3600, BSP3200, BRC3800, BCM3100, BHU3200, BRC3100, BRC3300 je v souladu se směrnicí 2014/53/EU. Uplné znění EU prohlášení o shodě je k dispozici na této internetové adrese: www.ebike-connect.com/conformity.

SL: Robert Bosch GmbH, Bosch eBike Systems ovime izjavljuje da je radijska oprema tipa BRC3600, BSP3200, BRC3800, BCM3100, BHU3200, BRC3100, BRC3300 u skladu s Direktivom 2014/53/EU. Celotno besedilo izjave EU o skladnosti je na voljo na naslednjem spletnem naslovu: www.ebike-connect.com/conformity.

RO: Prin prezenta, Robert Bosch GmbH, Bosch eBike Systems declară că tipul de echipamente radio BRC3600, BSP3200, BRC3800, BCM3100, BHU3200, BRC3100, BRC3300 este în conformitate cu Directiva 2014/53/UE. Textul integral al declarației UE de conformitate este disponibil la următoarea adresă internet: www.ebike-connect.com/conformity.

LT: Aš, Robert Bosch GmbH, Bosch eBike Systems, patvirtinu, kad radijo irenginiu tipas BRC3600, BSP3200, BRC3800, BCM3100, BHU3200, BRC3100, BRC3300 atitinka Direktyva 2014/53/ES. Visas ES atitikties deklaracijos tekstas prieinamas šiuo interneto adresu: www.ebike-connect.com/conformity.

11.4 Translation of the original EC/EU Declaration of Conformity

Manufacturer

ZEG Zweirad-Einkaufs-Genossenschaft eG
Longericher Str. 2
50739 Köln, Germany

Authorised representative for documentation*

Janine Otto
c/o ZEG Zweirad-Einkaufs-Genossenschaft eG
Longericher Str. 2
50739 Köln, Germany

The machine, pedelec types:

ZC-15-0100	ICONIC EVO 1
ZC-15-0101	ICONIC EVO 2
ZC-15-0102	ICONIC EVO BELT
ZC-15-0104	ICONIC EVO FS
ZC-15-0123	VUCA EVO FS 1
ZC-15-0124	VUCA EVO FS 2
ZC-18-0100, ZC-18-0101	EVO CX 2
ZC-18-0102, ZC-18-0112	COPPERHEAD EVO 1
ZC-18-0103, ZC-18-0113	COPPERHEAD EVO 2
ZC-18-0104, ZC-18-0105	EVO CX AM 1
ZC-18-0106	EVO CX AM 2
ZC-18-0107	COPPERHEAD EVO AM 1
ZC-18-0109	COPPERHEAD EVO AM 2
ZC-18-0110	COPPERHEAD EVO AM 3
ZC-18-0111	COPPERHEAD EVO AM 4
ZC-18-0114	VUCA EVO AM 1
ZC-18-0115, ZC-18-0116	VUCA EVO AM 2
ZC-18-0121, ZC-18-0122	EVO CX 1
ZC-19-0100	SONIC EN-R TEAM 600
ZC-23-0101, ZC-23-0102	URBAN GRINDER EVO SX
ZC-23-0103	CLUNKER EVO

From year of manufacture 2025, it complies with the following applicable EU provisions:

- Machinery Directive 2006/42/EC.
- RoHS Directive 2011/65/EU
- Electromagnetic Compatibility Directive 2014/30/EU.

The safety objectives in the Low Voltage Directive 2014/35/EU have been met in compliance with Appendix I, No. 1.5.1 of the Machinery Directive 2006/42/EC.

The following harmonised standards have been applied:

EN 15194:2017 Cycles – Electrically power assisted cycles – EPAC bicycles, **except Section 6 Instruction for use and 4.3.14 Chain-wheel and belt-drive protective device applies to mountain bikes and gravel bikes)**

EN ISO 20607:2019 Safety of machinery – Instruction handbook – General drafting principles, **except for Section 7 Form of publication**

The following other technical standards have been applied:

EN ISO 11243:2023 Cycles – Pannier racks for bicycles – Requirements and test methods

EN 17406:2021-11 Classification for bicycles usage.

For mountain bikes:

EN 17404:2022-07, Cycles – Electrically power assisted cycles – EPAC mountain bikes.



Cologne, 09.04.2025, Management Board: Fred Schierenbeck (Chair), Jens Stahlshmidt ZEG Zweirad-Einkaufs-Genossenschaft eG

* **Community member who is authorised to compile the technical documentation**

12 Glossary

Bicycle for young adults

Source: ISO 4210-2: pedelec designed for use on public roads by a young adult whose weight is less than 40 kg, with maximum saddle height of 635 mm or more and less than 750 mm (see ISO 4210).

Brake lever

Source: EN 15194:2017: lever used to apply the brake.

Braking distance

Source: EN 15194:2017: distance travelled by a pedelec between the commencement of braking and the point at which the pedelec comes to rest.

Cable

In the bicycle industry, cable is the preferred term over wire.

Cargo bike

Source: DIN 79010: pedelec mainly designed to carry goods.

CE marking

Source: Directive on Machinery: the manufacturer uses the CE marking to declare that the pedelec complies with the applicable requirements.

City and trekking bicycle

Source: EN-ISO 4210 - 2: pedelec designed for use on public roads primarily for means of transportation or leisure.

Consumables

Source: EN 82079-1: any part or material that is needed to continue using or maintain the product.

Continuous power rating

Source: ISO 15194:2017: output power specified by the manufacturer at which the motor reaches its thermal equilibrium under the specified ambient conditions.

Decommissioning

Source: DIN 31051: intentional, unlimited interruption in an object's functional capability.

Disc brake

Source: EN 15194:2017: brake in which brake pads are used to grip the lateral faces of a thin disc attached to or incorporated into the wheel hub.

Drive belt

Source: EN 15194:2017: seamless ring belt which is used as a means of transmitting drive force.

Electrical control system

Source: EN 15194:2017: electronic and/or electrical component or an assembly of components provided for installation into a vehicle, together with all electrical connections and associated wiring for the motor electrical power assistance.

Electrically power assisted cycle, pedelec

Source: EN 15194:2017: electrically power assisted cycle pedelec EPAC bicycles, equipped with pedals and an auxiliary electric motor, which cannot be propelled exclusively by means of the auxiliary electric motor, except in start-up assistance mode.

Emergency stop

Source: ISO 13850:2015: to avert arising or reduce existing hazards to persons, damage to machinery or to work in progress; – to be initiated by a single human action.

Fault

Source: EN 13306:2018-02, 6.1: state of an item (4.2.1) characterized by its inability to perform a required function (4.5.1), excluding such inability during preventive maintenance or other scheduled actions or due to lack of external resources.

Folding bicycle

Source: ISO 4210-2: pedelec designed to fold into a compact form, making it easy to transport and store.

Fork steerer

Source: EN 15194:2017: part of a fork that rotates around the steering axis of a pedelec frame head tube. It is normally connected to the fork crown or directly to the fork legs, and is normally the point of connection between the fork and the handlebar stem.

Fracture

Source: EN 15194:2017: unintentional separation into two or more parts.

Maintenance

Source: DIN 31051: maintenance is generally performed at regular intervals and often carried out by trained technical staff. This ensures a maximum service life and low wear and tear for the maintained items. Proper maintenance is often also a prerequisite for providing a warranty.

Manufacturer

Source: Directive 2006/42/EC on Machinery, 17.05.2006 Any natural or legal person who designs and/or manufactures machinery or partly completed machinery covered by this Directive and is responsible for the conformity of the machinery or the partly completed machinery with this Directive with a view to its being placed on the market, under his own name or trademark or for his own use.

Maximum continuous power rating

Source: ZEG: the maximum continuous power rating is the maximum power for the electric motor output shaft during 30 minutes.

Maximum permitted total weight

Source: EN 15194:2017: weight of the fully assembled pedelec plus the rider and baggage, as specified by the manufacturer.

Maximum saddle height

Source: EN 15194:2017: vertical distance from the ground to the point where the top of the seat surface is intersected by the seat-post axis, measured with the saddle in a horizontal position and with the seat-post set to the minimum insertion-depth mark.

Maximum tyre pressure

Source: EN 15194:2017: maximum tyre pressure recommended by the tyre or rim manufacturer for a safe and efficient performance. If the rim and tyre both indicate a maximum tyre pressure, the maximum inflation pressure is the lower of the two pressures indicated.

Minimum insertion depth

Source: EN 15194:2017: mark indicating the minimum insertion depth of handlebar stem into fork steerer (fork stem) or seat post into frame.

Model year

Source: ZEG: the model year refers to the first production year that the series-manufactured pedelec was manufactured in the version in question and is not always identical with the year of manufacture. The year of manufacture may be before the model year in some cases. If no technical modifications are introduced to the series, production may continue of pedelecs from a previous model year.

Mountain bike, MTB

Source: ISO 4210-2: pedelec designed for use off-road on rough terrain, on public roads, and on public pathways, equipped with a suitably strengthened frame and other components, and, typically, with wide-section tyres with coarse tread patterns and a wide range of transmission gears.

Negative deflection

Negative deflection or sag is fork compression caused by body weight and gear (e.g. a backpack), the rider's position and the frame geometry.

Off-road rough terrain

Source: EN 15194:2017: rough gravel tracks, forest trails and other generally off-road tracks where tree roots and rocks are likely to be encountered.

Operating instructions

Source: ISO/DIS 20607:2018: part of the user information that machine manufacturers provide to machine operators; it contains guidance, instructions and tips related to the use of the machine in all its life cycle phases.

Placing on the market

Source: Directive 2006/42/EC on Machinery, 17.05.2006, making available for the first time in the Community machinery or partly completed machinery with a view to distribution or use, whether for reward or free of charge.

Pressure point

Source: ZEG: the pressure point on a brake is the point on the brake lever where the brake disc and brake pads respond and the braking process is initiated.

Quick-release device, quick release

Source: EN 15194:2017: lever actuated mechanism that connects, retains or secures a wheel or any other component.

Racing bicycle

Source: ISO 4210-2: bicycle intended for high-speed amateur use on public roads and having a steering assembly with multiple grip positions (allowing for an aerodynamic posture), a multi-speed transmission system, tyre width not greater than 28 mm and a maximum mass of 12 kg for the fully assembled bicycle.

Rebound

The rebound defines the speed at which the fork rebounds after being loaded.

Rechargeable battery, battery

Source: DIN 40729:1985-05: a rechargeable battery is an energy storage device that can store supplied electrical energy as chemical energy (charging) and release it as electrical energy when required (discharging).

Seat post

Source: EN 15194:2017: component that clamps the saddle (with a bolt or assembly) and connects it to the frame.

Shut-off speed

Source: EN 15194:2017: speed reached by the pedelec at the moment the current has dropped to zero or to the no load current value.

Slippage

Source: DIN 75204-1:1992-05: the difference in relation to vehicle speed between the vehicle speed and the speed of its wheels at their circumference.

Spare part

Source: EN 13306:2018-02, 3.5: item intended to replace a corresponding item in order to retain or maintain the original required function of the item.

Suspension fork

Source: EN 15194:2017: front wheel fork incorporating controlled, axial flexibility to reduce the transmission of road-shocks to the rider.

Suspension frame

Source: EN 15194:2017: frame incorporating controlled, vertical flexibility to reduce the transmission of road-shocks to the rider.

Terrain

Source: ISO 4210-1:2023-05, EN 15194:2017: coarse pebble tracks, forest trails and other general off-road tracks where tree roots and rocks are likely to be encountered

Total deflection

Source: Benny Wilbers, Werner Koch: Neue Fahrwerkstechnik im Detail (New chassis technology in detail): The distance that the wheel travels between an unloaded and a loaded position is called total deflection. When at rest, the vehicle's mass is applied to the springs and reduces the total deflection by the *negative deflection* to the positive deflection.

Wear

Source: DIN 31051: reduction in useful life (4.3.4), caused by chemical and/or physical processes.

Weight of the ready-to-ride pedelec

Source: ZEG: the indicated weight for a ready-to-ride pedelec refers to the weight of a pedelec at the time of sale. The weight of each additional accessory must be added to this weight.

Wheel

Source: ISO 4210-2: unit or combination of hub, rim and spokes or disc, but excluding tyre assembly.

Work environment

Source: EN 9000:2015: set of conditions under which work is performed.

Year of manufacture

Source: ZEG: the year of manufacture is the year in which the pedelec was manufactured. The production period is always from May to July the following year.

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