

**NOX  
CYC  
LES**  
NOXCYCLES.COM



ORIGINAL OPERATING INSTRUCTIONS



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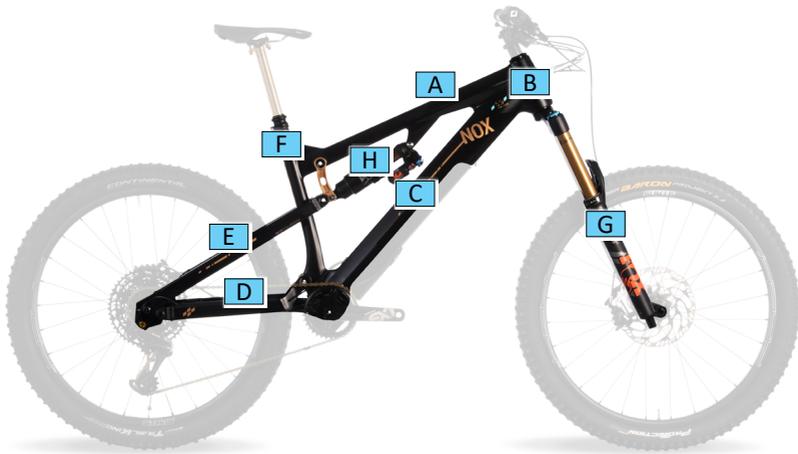
Version 2020.1

**T**hank you for choosing a NOX bike!

With a NOX bike, you have not only acquired an exceptional e-bike with high quality and performance, but also a piece of our beautiful company history.

We warmly welcome you to our NOX family – from now on, you'll be helping to write our history!

Your NOX Team



### Frame

- A** Top tube
- B** Head tube
- C** Bottom tube
- D** Rear bottom tube
- E** Rear upper strut
- F** Seat tube

### Suspension

- G** Suspension fork
- H** Frame damper



- |  |                                 |
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| <b>1</b> Handlebar with operating elements | <b>7</b> Pedal drive            |
| <b>2</b> Handlebar stem                    | <b>8</b> Motor unit             |
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## ABOUT THESE INSTRUCTIONS

### 1 Reading and storing these instructions



These Original Operating Instructions – referred to as the instructions in the following – is part of the pedelec.

Contrary to standard EN 15194, all electrically power assisted cycles (EPACs\*) described here are subsumed under the term “pedelec”\*\*.

Whenever these instructions refer to “pedelec” in general, they mean any of the EPAC models described here.

All illustrations in these instructions are exemplary; as a result, individual details on your pedelec may look different from those shown in this manual.

These instructions contain all important information on the safety and use of the pedelec. It is based on the standards that apply in the European Union.

Before using your pedelec for the first time, please read these instructions and all applicable manufacturer's component instructions, especially the safety instructions, carefully and completely.

If you do not follow these instructions and all other applicable manufacturer's component instructions, you may injure yourself and other persons and/or cause damage to property.

Always keep these instructions and all other applicable manufacturer's component instructions on hand for further use.

If you pass on your pedelec to a third party, it is essential that you include these instructions and all applicable manufacturer's component instructions.

You can download these instructions and all applicable manufacturer's component instructions in PDF format from the respective homepage.

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\* “Electrically Power Assisted Cycles” = EPAC.

\*\* “Pedal electric cycle” = Pedelec.

## 2 Additionally applicable documents

In addition to these instructions, always observe the additionally applicable manufacturer's instructions for the components installed in your pedelec.

In addition to these instructions, manufacturer's instructions for other components are always included, which you must observe. e.g.:

- Pedelec: Drive unit, control unit, battery and charger
- Brakes
- Suspension fork and rear suspension
- Gear shift
- etc.

As a supplement to this manual, these manufacturer's component instructions are an essential part of the scope of the technical documentation for this pedelec.

If you have not received separate manufacturer's component instructions, please contact the manufacturer of your pedelec to request them.

## 3 Marking and meaning of safety notices and warnings

Safety notices and warnings describe hazards that may occur when handling or using the pedelec and provide instructions on how to avoid such hazards.

The **safety instructions** are summarized in the "SAFETY" section. **Warnings** are placed directly at the step or process from which the potential hazard emanates.

For the safe use of the pedelec, both the safety notices and the action-related warnings are essential. You must therefore absolutely read through all safety notices and warnings in a concentrated manner and take care to internalize the contents in order to avoid risks when handling and using the pedelec.

Depending on the possible consequences of non-compliance the safety notices and warnings in this manual are indicated as follows.

### 3.1 Display and structure

 <b>SIGNAL WORD</b>
<b>Type and source of the danger!</b> Explanation of the nature and source of the hazard. » Measures to avert the hazard.

### 3.2 Hazard grading



#### **DANGER**

The signal word “Danger” indicates a hazard with a high degree of risk: Non-compliance with the safety notices and warnings in this category will result in death or serious injury.



#### **WARNING**

The signal word “Warning” indicates a hazard with a medium degree of risk: Non-compliance with the safety notices and warnings in this category can result in death or serious injury.



#### **CAUTION**

The signal word “Caution” indicates a hazard with a moderate degree of risk: Failure to comply with safety notices and warnings in this category may result in moderate or minor injuries.

#### **NOTICE**

The signal word “Note” indicates a hazard that can lead to material damage: Failure to comply with safety notices and warnings in this category may damage your pedelec or cause other material damage.



#### **INFORMATION**

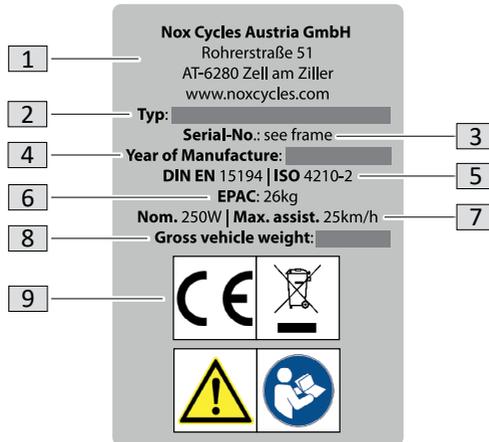
This symbol indicates useful additional information for handling and using your pedelec.

#### 4 Explanation of symbols and signs

	<p>Be absolutely sure to read the instructions.</p>
	<p>Marking for products that must only be used indoors. <b>DANGER!</b> There is a risk of electric shock if used in a damp environment and in contact with liquids!</p>
	<p>This electrical device corresponds to protection class II: The device has double or reinforced insulation to protect against electric shock.</p>
	<p>Warning against hot surfaces. <b>WARNING!</b> There is a risk of burns and fire on contact with flammable materials.</p>
	<p>Symbol for direct current (DC).</p>
	<p>Symbol for alternating current (AC).</p>
	<p>Electrical devices with this marking must not be disposed of with household or non-recyclable waste. Consumers are required by law to dispose of electrical devices bearing this mark at suitable collection points for environmentally friendly recycling.</p>
  <p>Li-ion</p>	<p>Any batteries with this marking may not be disposed of with household or non-recyclable waste. Consumers are required by law to dispose of batteries bearing this mark at suitable collection points for environmentally friendly recycling.</p>
	<p>Marking for recyclable materials. Dispose of the packaging according to material type. Dispose of card and cardboard in your paper container and films in your plastic recyclables container.</p>
	<p>Products marked with this symbol meet all applicable European Economic Community regulations.</p>

## 5 Nameplate

The nameplate for your pedelec is affixed to the bicycle passport by your specialist dealer  
> Section "Bicycle passport" page 104.



### Pictogram of nameplate

- 1** Name and address of manufacturer
- 2** Model designation
- 3** Serial number – see the frame
- 4** Year of manufacture / model year
- 5** DIN EN 15194 Cycles – Electrically Power Assisted Cycles – EPAC Bicycles  
ISO 4210-2 Cycles- Safety requirements for bicycles
- 6** Weight of pedelec (EPAC)
- 7** Nominal output of motor 250 W / maximum assistance speed 25 km/h (15.5 mph)
- 8** Maximum permitted total weight\*  
> Chap. 11 "Maximum permitted total weight" page 29
- 9** Symbols  
> Chap. 3 "Marking and meaning of safety notices and warnings" page 14  
and  
> Chap. 4 "Explanation of symbols and signs" page 16

\* The maximum permissible total weight of the pedelec (sum of pedelec + rider + payload) must not be exceeded under any circumstances.

## SAFETY

## 6 Proper use

Neither the manufacturer nor the specialist dealer will accept liability for damage which occurs due to improper use. Use your pedelec only as described in these instructions. Any other use is considered improper and may lead to accidents, serious injury or damage to the pedelec and its components.

Improper use of the pedelec will void the warranty.

**Fundamentally, the following applies:**

- Your pedelec is designed for one cyclist.
- The sitting position on the pedelec must be correctly adjusted according to the cyclist's height.
- The maximum permissible total weight for your pedelec may not be exceeded.
- For the intended use of the pedelec in road traffic, country-specific and regional regulations must be observed
  - > Chap. 10.3 "Safety instructions for cycling in road traffic" page 28.
- Your pedelec is approved for the use of a child seat and/or trailer (child, load, dog trailer, etc.) if so noted in the bicycle passport
  - > Section "Bicycle passport" page 104.

In addition, the specific specifications for intended use apply to the corresponding category of your pedelec > Chap. 7 "Categorization" page 19.

Possible examples of improper use are as follows:

- Manipulating or modifying the e-drive of a pedelec.
- Using an unsuitable pedelec with a child seat and/or a vehicle trailer.

## 7 Categorization

If you are unsure or do not know which category\* your pedelec belongs to, contact your specialist dealer.

Cat.	Specific requirements for proper use	Typical examples**
<b>2</b>	Bicycles of <b>category 2</b> are designed for: <ul style="list-style-type: none"> <li>• Use on tarred or paved roads and paths;</li> <li>• Use on gravel and dirt roads with moderate gradient;</li> <li>• Jumps from a height of max. 15 cm (5.9"). The tires can temporarily lose contact with the ground.</li> </ul>	City bike Trekking bike Cross trekking bike Cargo bike, Teens' bike 24" Children's bike 20"
<b>3</b>	Bicycles of <b>category 3</b> are designed for: <ul style="list-style-type: none"> <li>• Use as for bicycles of <b>category 2</b>;</li> <li>• Use on rough and/or difficult routes that require advanced riding technique;</li> <li>• Jumps from a height of max. 61 cm (24").</li> </ul>	Mountain bike [CrossCountry/ Marathon/Tour] Gravel Cyclo-Cross All track
<b>4</b>	Bicycles of <b>category 4</b> are designed for: <ul style="list-style-type: none"> <li>• Use as for bicycles of <b>category 2</b> and <b>3</b>;</li> <li>• Descents in rough terrain with a maximum speed of 40 km/h or 25 mph;</li> <li>• Jumps from a height of max. 122 cm (48").</li> </ul>	Mountain bike [All-mountain]
<b>5</b>	Bicycles of <b>category 5</b> are designed for: <ul style="list-style-type: none"> <li>• Use as for bicycles of <b>category 2, 3</b> and <b>4</b>;</li> <li>• Extreme jumps;</li> <li>• Descents in rough terrain at speeds over 40 km/h or 25 mph;</li> </ul>	Mountain bike [Enduro/Freeride/ Downhill]

\* The categorization corresponds to the classification of many manufacturers based on international standard ASTM F2043-13. If you have specific questions about your model, please contact the manufacturer's Customer Service department.

\*\* The examples of bicycle types provided here always refer to both bicycle models without an electric-drive and bicycle models with an electric drive (pedelecs).

## 8 Misuse

In order to use your pedelec safely, avoid the following instances of misuse:

- Use of the pedelec for competitions, jumps, stunts or tricks if the vehicle category excludes such use;
- Improper repairs and maintenance;
- Improper use of the rechargeable battery;
- Structural changes to the pedelec as delivered, especially to the tuning, and any other modifications to the pedelec;
- Opening and changing any components on the pedelec;
- Charging outside the temperature range specified by the manufacturer;
- Deep discharge of the battery due to long pauses in charging or improper storage of the battery outside the optimum storage temperature specified by the manufacturer.
- Ambient temperatures below +10°C and above +40°C may reduce the range.
- In the long run, especially high and especially low ambient temperatures can accelerate the wear of the battery or even damage the battery.

### INFORMATION

Misuse of the pedelec can lead to the warranty becoming void.

## 9 Residual risks

Unavoidably, certain residual risks will remain when using the pedelec – despite a well-calculated design by the manufacturer and compliance with the specifications for proper use by the user.

You yourself can reduce, but not completely eliminate, these residual risks by observing all safety notices and warnings. It is therefore important that you are aware of the existence of residual risks when using the pedelec.

The unpredictable residual risks when using the pedelec described here may include:

### Risk of injury

- Unpredictable cycling maneuvers and/or misconduct of other road users;
- Surprising or sudden changes in road characteristics such as black ice;
- Unexpected material defects or signs of wear that can lead to components of the pedelec breaking or being impaired in their function.

### Fire hazard

- Internal, invisible damage can cause the battery to catch fire and ignite objects in the vicinity.

### Risk of damage

- A burning battery will produce hydrofluoric acid and flue gas. Hydrofluoric acid is extremely corrosive and permanently damages surfaces.

## 10 Safety information

# READ AND KEEP ALL IMPORTANT SAFETY INSTRUCTIONS!

The following important safety instructions must always be observed when using and handling the pedelec.

### 10.1 General safety information



## WARNING

### **Risk of accident and injury!**

If you do not follow the instructions listed below, which are intended to help reduce the general risk of accidents and injuries, you expose yourself and possibly other persons to an increased risk of serious injury.

- » Only use your pedelec if you are familiar with its handling and functions and always follow the instructions for the proper use of your pedelec.
- » When using any permissible special equipment or designs, please note that doing so may alter the handling of your pedelec and adjust your cycling style accordingly. When using a recumbent or aero handlebar, for example, access to controls may be restricted and the stopping distance may be longer than usual.
- » Cycle with foresight in order to recognize events early and be able to react to them.
- » Always adapt both your cycling style and speed to current weather conditions and road characteristics.
- » Please note in particular that the braking distance can be longer and the tires have less grip on icy, wet, slippery or dirty roads.
- » Pay attention to other road users and adopt a defensive cycling style.
- » Always visually inspect your pedelec before using it. Make sure that your pedelec or its components do not show any cracks, scoring, damage or color changes.
- » Make sure that safety-relevant devices on the pedelec (e.g. the brakes) are correctly adjusted and functional.
- » Never use your pedelec if safety-relevant components (e.g. the brakes) are damaged or do not function properly.

** WARNING****Continuation**

- » Under no circumstances should you arbitrarily exchange components on the pedelec or make any changes or repairs to the pedelec or individual components. Have any damage to the pedelec repaired by your specialist dealer and have damaged components replaced exclusively with suitable original spare parts.
- » Contact your specialist dealer if you are unable to carry out work on the pedelec described in the manual yourself (e.g. making certain adjustments or similar tasks), if you feel unsafe or if you do not have the correct tools.
- » After an accident or fall or if your pedelec has been subjected to excessive loads, contact your specialist dealer for a professional inspection of your pedelec.

** CAUTION****Risk of injury when wearing unsuitable clothing!**

Since moving parts of the pedelec are catching points for clothing, you can injure yourself if you wear unsuitable clothing when using your pedelec.

- » When cycling, wear tight-fitting legwear if possible instead of wide trousers, dresses or skirts.
- » Make sure that loose clothing cannot get caught in the moving parts of the pedelec, for example, using trouser clips.
- » Make sure that no loose straps, laces or the like are hanging down.
- » Wear shoes with non-slip soles to prevent your foot from slipping during pedaling.

**NOTICE****Risk of damage through improper use!**

If you do not use your pedelec in accordance with the instructions for proper use, you risk that components may show signs of wear or break more quickly.

- » Always observe the permissible total weight of the pedelec (including the cyclist and any luggage). The permissible total weight may not be exceeded.
- » Ensure that the tire inflation pressure is set correctly and adjust it if necessary.
- » Do not cycle through deep water points if such use is not explicitly permitted according to the intended use for your pedelec.

## 10.2 Safety instructions for the electric drive and its components

### **DANGER**

#### **Risk of accident and injury!**

Due to its construction and design, an pedelec behaves differently in many ways than a conventional bike without an electric drive. If you underestimate this difference, you could expose yourself and others to an increased risk of serious injury.

- » Be aware of the changed cycling behavior and do not underestimate the risks involved.
- » At the beginning, consciously practice typical cycling situations with your pedelec, such as starting and braking, cornering and turning, etc.
- » Inform yourself about any applicable national regulations for pedelecs and observe them.

### **DANGER**

#### **Risk of electric shock and injury!**

Improper handling of the pedelec or electric drive may result in electric shock and/or serious injury.

- » Always remove the battery from its holder on the pedelec before carrying out any work, before transporting it or storing it without using it for a longer period of time in order to prevent you or others from accidentally starting the electric drive.
- » Do not make any changes or manipulations to the electric drive. Never try to increase the power of the electric drive!
- » Under no circumstances may you modify or exchange components of the electric drive on your own.
- » Under no circumstances may you open the components of the electric drive on your own. The components of the electric drive are maintenance-free. Have any necessary repairs to the electric drive carried out exclusively by an authorized specialist dealer.
- » Only have components of the electric drive replaced with approved original spare parts by an authorized specialist dealer.
- » Only use the “Walk Assistance” function when pushing your pedelec: When the “Walk assistance” function is activated, the pedelec must be held securely with both hands and the wheels must have ground contact, otherwise there is a risk of injury. Do not use the sliding support to be propelled while sitting on the pedelec.

**DANGER****Risk of electric shock!**

Improper handling of electric current and live components may result in electric shock and/or serious injury.

- » Check the charger, mains cable, and mains plug for damage before each use. Do not use the charger if you discover damage or suspect that it is damaged.
- » If the charger's power cord is damaged, it must be replaced by the manufacturer, its Customer Service or a similarly qualified person in order to avoid hazards.
- » Do not kink the charger's power cord or place it over sharp edges.
- » Only connect the charger to a properly installed and easily accessible power outlet whose mains voltage matches the voltage indicated on the charger.
- » Only use the charger in dry indoor rooms.
- » Make sure that the mains voltage at the mains connection corresponds to the specification on the charger.
- » Do not allow the charger and the battery or the connection contacts for the battery on the pedelec to come into contact with water or other liquids.
- » Keep the components of the electric drive (especially the connection contacts on the battery and charger) in clean condition.
- » Do not pull on the power cord or charging cable to remove the respective cable from a socket or outlet, but always grasp the respective plug.
- » Never touch the plugs of the power cord and charging cable with wet or damp hands.

**DANGER****Risk of interference with medical equipment!**

The battery and charger (e.g. the magnetic connections) can impair the function of pacemakers.

- » Keep the battery and charger away from pacemakers or people who wear pacemakers and draw the attention of people with pacemakers to the danger.

**DANGER****Risk of explosion!**

If a battery is not handled properly, it may explode.

- » Keep the rechargeable battery away from fire and other heat sources.

**DANGER****Fire hazard!**

Improper handling of the battery and charger may cause a fire.

- » Only use the charger in dry indoor rooms under supervision.
- » The battery and charger may heat up during charging: Keep flammable materials away from the battery and charger, and place the charger on a fireproof surface when charging the battery.
- » Only use the original charger to charge the battery.
- » Only use the charger to charge the original battery. Do not charge other batteries with it.
- » Always pull the mains plug out of the socket after charging.
- » Observe any additional safety instructions on the charger.
- » Do not store the battery near metal objects such as coins, paper clips, screws, etc. Metal objects can short-circuit the battery. The short circuit may cause a fire.
- » Do not short-circuit the battery.

**WARNING****Risk of chemical burns and injury!**

Improper handling of the battery can cause burns and/or injuries to you and others.

- » Have the battery checked by an authorized dealer after a fall or hard impact to ensure that there is no (invisible) damage that could allow battery acid or toxic gases to escape.
- » Do not open, dismantle, drill through or deform the battery or battery housing.
- » Only touch a damaged battery with protective gloves.
- » In case of contact with damaged batteries, wear safety glasses and protective clothing to avoid contact with battery acid.
- » In case of contact with battery acid, immediately rinse the affected area thoroughly under plenty of running water. Consult a doctor after rinsing, especially in case of eye contact and/or if mucous membranes (e.g. nasal mucous membranes) are affected.
- » If the battery has caught fire, proceed as follows: Immediately remove yourself from the burning battery, shield the scene of the fire as much as possible and call the fire department. Do not try to extinguish the burning battery yourself with water!

** WARNING****Hazards for certain groups of persons (e.g. children)!**

Children or persons who are physically or mentally impaired may be seriously injured when handling the battery and/or charger or when accessing your pedelec as they may not be able to correctly assess certain risks.

- » The charger may not be used by children or persons with impaired physical, sensory or mental abilities unless they are supervised or have been instructed in the safe use of the charger and have understood the resulting risks.
- » Children may not play with the battery or the charger.
- » Cleaning and user maintenance may not be carried out by children without supervision.
- » The battery may not be removed or inserted by children.
- » Keep the battery and charger out of the reach of children.
- » Secure and park your pedelec in such a way that unauthorized persons (especially children) cannot access it.

** CAUTION****Burn hazard!**

The motor unit heats up during operation. Touching the hot motor unit may cause burns.

- » Be careful when handling the motor unit.
- » Let the motor unit cool down completely before touching it.

**NOTICE****Risk of damage!**

Improper handling can damage the electric drive or its components.

- » Have all components of the electric drive and pedelec replaced exclusively by identical or other components expressly approved by the manufacturer to prevent damage to other components or the pedelec.

### 10.3 Safety instructions for cycling in road traffic



#### **WARNING**

##### **Risk of accident and injury!**

If you do not follow the instructions listed below, which are intended to help reduce the general risk of accidents and injuries, you could expose yourself and possibly other persons to increased risk.

- » Before using your pedelec in road traffic, make sure that it complies with country-specific regulations. In order to travel on the road, pedelecs must be fitted with two independent brakes and a bell.
- » Observe and respect all national and regional road traffic regulations. For information on the applicable road traffic regulations of the country or region, contact the Ministry of Transport, for example.
- » When cycling, wear a suitable bicycle helmet tested according to DIN EN 1078 (with CE mark).
- » Dress in bright colors when cycling and improve your visibility by wearing reflective elements.
- » Do not use your pedelec if you have consumed alcohol, intoxicants or debilitating drugs.
- » Do not use mobile devices such as smartphones or tablets while cycling.
- » Be concentrated while cycling. Do not distract yourself by activities such as switching on the light. Stop for such activities.
- » Never cycle one-handed or with no-hands in road traffic.
- » Cycle on the prescribed cycle paths.

## 11 Maximum permitted total weight



### WARNING

#### **Risk of accident and injury!**

Overloading the pedelec can cause safety-relevant components to break or fail, resulting in accidents and injuries.

» Never exceed the maximum permissible total weight of the pedelec.

### NOTICE

#### **Risk of damage!**

Overloading the pedelec can lead to material damage.

» Never exceed the maximum permissible total weight of the pedelec.

Your pedelec has a maximum permitted total weight that must be observed when using the pedelec.

You will find the maximum permissible total weight on the nameplate of your pedelec and in the bicycle passport > Section "Bicycle passport" page 104.

The maximum permitted total weight is calculated from the sum of the following weight specifications:

**Pedelec + rider + luggage/child seat = maximum permitted total weight.**

If you use a trailer, the total weight of the trailer (trailer + payload) counts towards the total weight of the pedelec and must be taken into account with regard to the maximum permitted total weight.

## 12 Information on torque values



### WARNING

#### **Risk of accident and injury!**

Incorrectly tightened screw connections can result in material fatigue and eventually cause the screw connections to break.

- » Do not use your pedelec if you notice any loose screw connections.
- » Screw connections must be properly tightened with a torque spanner and the correct torque values.

Observe the relevant torque values to ensure the screw connections are tightened correctly. A torque spanner with a suitable adjustment range is required for this task.

The correct torque value for a screw connection depends on the material and diameter of the screw connection, as well as the material and design of the component.

- If you do not have any experience with using torque spanners or if you do not own a suitable torque spanner, you should ask your specialist dealer to check your screw connections.
- Individual bicycle components are labeled with information about the appropriate torques or with markings showing insertion depths. Always observe these specifications and markings.
- If you decide to tighten the screw connections yourself, check whether your pedelec is fitted with aluminum or carbon components > Section "Bicycle passport" page 104.
- Observe the special torque values for components manufactured from aluminum or carbon.

Torque specifications matched to the attachment parts can be found on the components.

Please also read the component instructions supplied, if applicable.

Please ask your specialist dealer for missing torque specifications.

## 13 Maintenance and wear

### **WARNING**

#### **Risk of accident and injury!**

Incorrect or unauthorized assembly and maintenance work can damage your pedelec or its components.

- » Do not overestimate your technical abilities. Have assembly and maintenance work, especially the replacement of components and spare parts, carried out only by an authorized specialist dealer.
- » Never work on or modify your pedelec or its components if you do not have the necessary expertise and tools.

### 13.1 Wear

### **WARNING**

#### **Risk of accident and injury!**

Excessive wear, material fatigue or loose screw connections can cause functional impairments and may lead to accidents or falls.

- » Check your pedelec regularly for wear.
- » Do not use the pedelec if you notice any cracks, distortions or changes in color.
- » Do not use the pedelec if you notice excessive wear or loose screw connections.
- » Have your pedelec checked immediately by your specialist dealer if you notice excessive wear, loose screw connections, cracks, deformation or color changes.

Your pedelec and its components are subject to wear and high stress.

The materials used have different wear properties due to their composition.

Only a specialist dealer is able to assess wear on components made of aluminum, carbon or composite materials > Chap. 14 "Information on carbon components" page 32.

- Ask your specialist dealer for advice on components that are subject to wear.
- Check the condition of all wear parts at regular intervals.
- Clean and maintain wearing parts regularly.

## 13.2 Replacing components

### **WARNING**

#### **Risk of accident and injury!**

Replacing components with incorrectly selected replacement parts may prevent the pedelec from functioning correctly.

- » Have components replaced only by your specialist dealer.
- » Have components or spare parts replaced only with original parts.

## 14 Information on carbon components

### **WARNING**

#### **Risk of accident and injury!**

Material failure due to non-visible cracks or deformations after a fall or due to an overload.

- » Do not use your pedelec if you suspect damage.
- » Have carbon components checked by your specialist dealer after an overload or fall, even if they show no visible damage.
- » Have components made of aluminum, carbon or composite materials checked at regular intervals by your specialist dealer, even if they have not been subjected to overload.

### **NOTICE**

#### **Risk of damage!**

Material damage or increased wear due to incorrect care of carbon components.

- » Avoid contact of carbon components with grease and oil.

For components such as frames, forks, handlebars and wheels made of carbon, hard impacts, shocks and tensions are harmful. This has a detrimental effect on the internal structure of the material without this damage being outwardly visible.

- Make sure to get carbon components checked over by a specialist dealer at regular intervals.

## BEFORE COMMISSIONING

Your specialist dealer has fully assembled the pedelec, made all adjustments according to your height and weight, and explained the operation and function of the components to you.

As a result, the pedelec is ready to use.

### 15 Getting to know your pedelec

1. Take your new pedelec for a test ride away from traffic before taking longer trips with the pedelec and/or riding it in traffic.
  - Get to know the driving characteristics of your pedelec.
  - Try out the brakes by first braking at low driving speed. When you feel confident, increase the driving speed and try different braking maneuvers.
  - Shift through the different gears and familiarize yourself with their driving characteristics. You must be able to operate the gear shift system in such a way that your attention to road traffic is not impaired by shifting gears.
  - Make sure that the adjusted seating position is comfortable even during longer rides and that you can safely operate the brake lever and controls on the handlebars while riding.
2. Run in the disc brakes if necessary  
> Chap. 24.5 "Running in disc brakes" page 50.
3. If necessary, have your specialist dealer change the assignment of the brake levers if you do not want to keep the preset assignment for the front wheel or rear wheel brake.

## 16 Checking the pedelec before starting to cycle

### **i** INFORMATION

You should carry out the component check described here before each journey. Information on the **periodic inspections** of the components to be performed every six months > Chap. 47.4 "Regular inspection of the pedelec components" page 93.

- Before starting to cycle, check that the components listed below are in good working order and undamaged.
- Contact your specialist dealer to have the relevant component replaced if you find that:
  - the function of the component is impaired,
  - the component is damaged,
  - the component shows excessive signs of wear.

#### **Brakes:**

- Check whether the front and rear wheels lock securely when you pull the respective brake lever one after the other or trigger the coaster brake.

#### **Gear shift system:**

- Lift the rear pedelec part so that the rear wheel is movable and set the rear wheel slightly in motion using the pedals.
- Shift through all gears: Switching must be easy; there should be no blockages or unusual noises.

#### **Frame, fork and seat post:**

- Check the components for damage and signs of wear such as cracks, deformation or color changes (visual inspection).

#### **Quick-release components:**

- Check that the quick-releases are securely fastened and locked.
- Check whether the pretension of the quick-releases is sufficiently tight.

#### **Screw and plug connections:**

- Check whether the screw and plug connections are securely closed (visual inspection).

**Pedal drive:**

- Lift the rear pedelec part so that the rear wheel is movable and set the rear wheel in motion using the pedals.
- Check whether the pedal mechanism functions smoothly and is secured correctly.

**Handlebars and handlebar stem:**

- Check that the handlebars and handlebar stem are firmly seated in their respective mounts and do not move within them.
- Check the components for damage and signs of wear such as cracks, deformation or color changes (visual inspection).

**Tires:**

- Check whether the tire pressure is sufficient.
- Check whether there are any cracks or foreign objects on the tires.

**Rims and spokes:**

- Check the rims for damage and signs of wear such as cracks deformation or color changes (visual inspection).
- Make sure that the spokes are evenly tensioned.

## 17 Adjusting the optimum seating position



### CAUTION

#### Risk of injury!

An incorrect seating position can cause muscle tension and joint pain. If you have limited access to the controls on the handlebars due to an incorrectly adjusted sitting position, the risk of accidents increases.

» Have your specialist dealer adjust the seating position correctly if you are unsure.

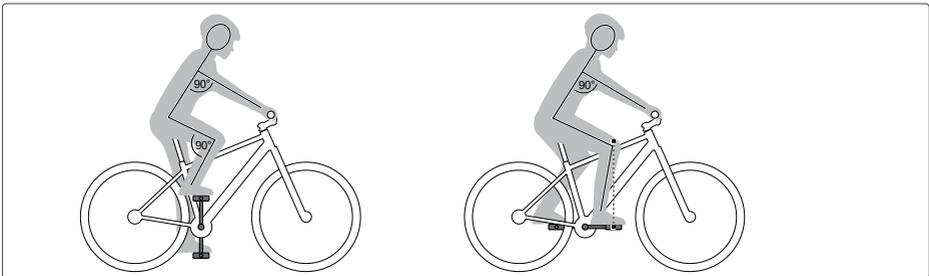


Fig. 1: Reference points for an optimum seating position

Various factors can play a role in setting the optimum seating position, e.g.:

- the height of the cyclist,
- the frame size and geometry of the pedelec,
- the settings of the saddle and handlebars,
- if applicable, the conditions of use (e.g. in the case of predominant use for sporting purposes).

Orientation points for adjusting the optimum sitting position are as follows:

- Arm and knee (upper leg) angles are 90° when one pedal is up. Your lower leg is slightly bent.
- Your knee is above the axis of the front pedal when one pedal is in front.
- Your arms are relaxed and slightly bent outwards.
- Your back is not vertical in relation to the seat post.

Adjust the saddle and handlebars so that you achieve the optimum seating position on the pedelec for your needs

> Chap. 36 "Adjusting the saddle" page 72;

> Chap. 38 "Handlebar settings" page 78.

## PEDAL DRIVE

### 18 General information

The term “pedal drive” refers to the process or the associated assembly with which you basically (manually) drive your pedelec:

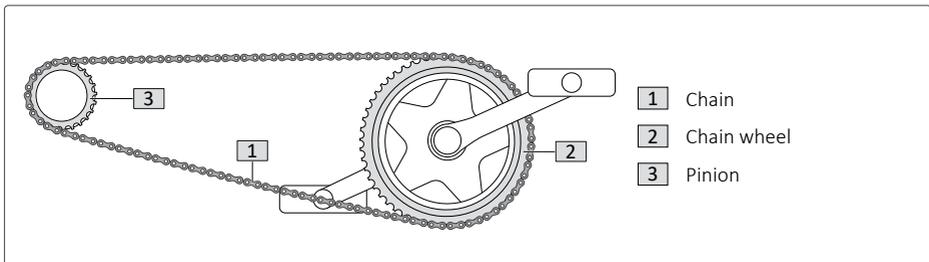
You pedal and the power applied while pedaling is transferred to a running wheel via the chain (chain drive). This wheel, driven in this way, in turn sets your pedelec in motion as a whole.

#### **i** INFORMATION

As a rule, the driven wheel is the rear wheel.

### 19 Chain drive

#### 19.1 Functionality and handling



**Fig. 2:** Chain drive components

The chain of your pedelec runs over two sprockets whose teeth each engage in the free openings of the individual chain links that make up the chain.

The cogwheel at the level of the pedals, which is set in rotation during pedaling, is called a chain wheel. The rotation of the chain wheel is transmitted via the chain to the so-called pinion on the wheel axle. With the help of the rotating pinion, the impeller also rotates, which drives your pedelec as a whole and sets it in motion.

#### **i** INFORMATION

Due to your composition of individual chain links, it is basically possible to open a chain and then close it again.

The chain can also be extended by inserting additional links or shortened by removing individual links to achieve the optimum chain length.

## 19.2 Wear and maintenance

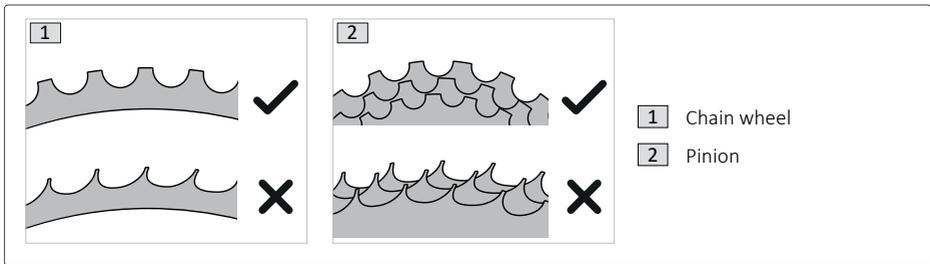


Fig. 3: Possible signs of wear on chain drive components

### Chain wheel and pinion

If the teeth on the chain wheel and/or pinion are worn due to material abrasion, the chain is guided less reliably over the corresponding sprocket and can easily jump off it.

### Chain or chain links

When the chain links are worn due to material abrasion, the free openings to accommodate the teeth widen. As a result, the chain is guided less reliably over the corresponding sprocket and can easily jump off it. The impression may arise that the chain has widened.

- Check chain wheels, pinions and chain regularly for signs of wear.
- Contact your specialist dealer to have worn chain wheels or pinions replaced.
- Contact your specialist dealer to have the chain correctly adjusted or replaced if you have the impression that the chain has widened or if you notice signs of wear on the chain links.

## 19.3 Cleaning and care

Keep the components of the chain drive free of dirt or clean the components regularly to avoid a loss of function of your chain drive.

- Clean the chain using a clean cloth with a dab of oil applied, if required.
- Clean the gears with a soft brush if necessary.
- Grease the chain with universal oil:
  - after you have cleaned the chain,
  - if the chain has become (excessively) wet,
  - regularly about every 15 operating hours.
- Make sure that the components of the chain drive are undamaged.
- Contact your specialist dealer if components of the chain drive show more persistent soiling or if you notice that components of the chain drive are damaged.

## 20 Belt drive

### 20.1 Functionality and handling

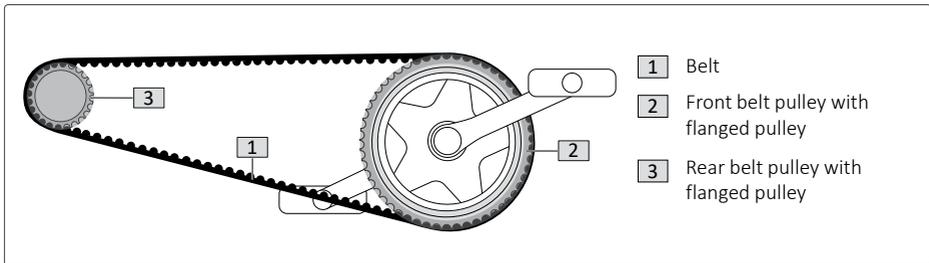


Fig. 4: Belt drive components

The rotation of the front belt pulley is transmitted via the belt to the rear belt pulley on the impeller axle. With the help of the rotating belt pulley, the impeller also rotates, which drives your pedelec as a whole and sets it in motion.

## NOTICE

### Risk of damage!

Damage to the belt due to incorrect usage.

- » Always make sure that the belt does not become buckled, twisted, bent backwards, turned outwards, tied up or used as a key.
- » During installation, do not roll the belt up over the teeth of the front belt pulley or put it into position using a lever such as a screwdriver.

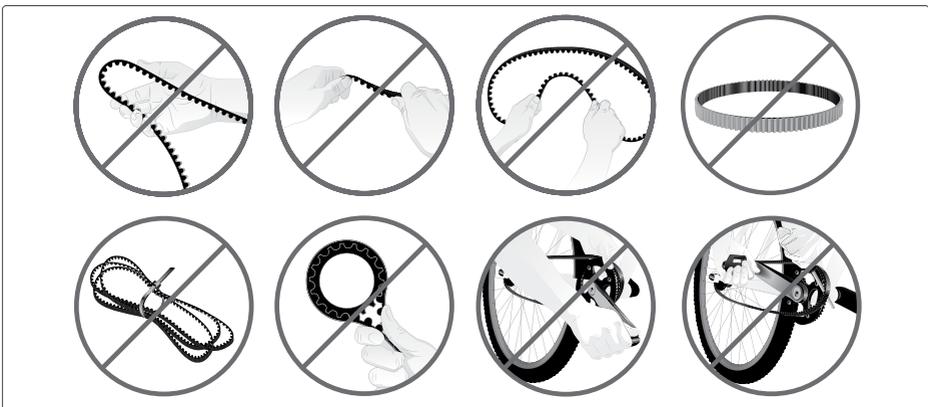


Fig. 5: Types of damage

## 20.2 Wear and maintenance

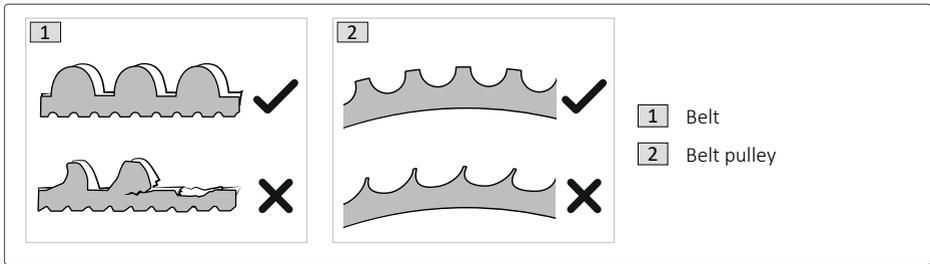


Fig. 6: Possible signs of wear on belt drive components

### NOTICE

#### Risk of damage!

Damage to the belt due to incorrect tools.

- » The belt tension may only be measured and adjusted with the manufacturer's original tool.

Depending on the mileage and cycling conditions, the belt drive components are subject to a certain amount of wear.

- Check the belt pulleys and belt regularly for signs of wear.
- Contact your specialist dealer to have worn belt pulleys or belts replaced.
- Have the belt tension checked and adjusted regularly by your specialist dealer.

## 20.3 Cleaning and care

Keep the belt drive free of dirt or clean the components regularly to avoid a loss of function of your belt drive.

### NOTICE

#### Risk of damage!

Damage to the belt drive due to cleaning with sharp or aggressive cleaning agents.

- » Clean the belt drive only with water and a soft brush.
- » Contact your specialist dealer if components of the belt drive show more persistent soiling or if you notice that components of the belt drive are damaged.

## SPECIAL FEATURES OF THE ELECTRIC DRIVE

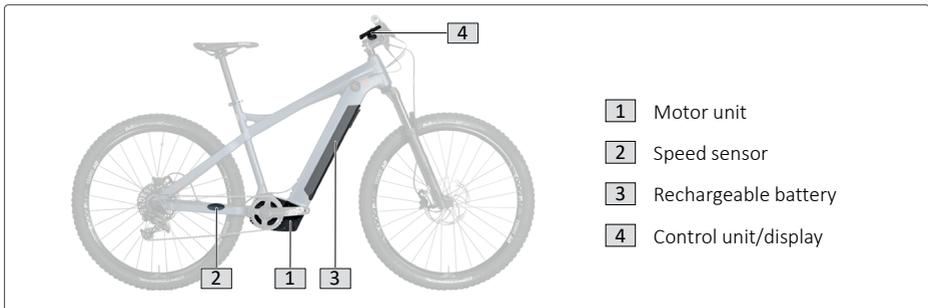
**i** INFORMATION

This section provides information that you need to consider for a pedelec as opposed to a conventional bicycle.

Detailed descriptions of the model-specific electric drive and its components including all relevant details, as well as the model-specific safety and warning instructions, can be found in the separate manufacturer's instructions for the electric drive.

- In addition to these instructions for the pedelec, **you must also observe the separate manufacturer's instructions for the e-drive.**

## 21 General information/components



**Fig. 7:** Electric drive components on the pedelec

Pedelecs – unlike conventional bicycles – have an electric assist motor that helps the cyclist propel the pedelec or relieves the rider when pedaling.

In this manual, the term “electric drive” is used to refer to the components used to operate and control the electric motor assistance system. This includes:

- the electric assist motor (as a motor unit),
- the rechargeable battery (for the power supply of the electric assist motor),
- the charger (for charging the rechargeable battery),
- the control unit (for operating/controlling the electric drive),
- the display (for displaying the cycling parameters, setting options, etc.).

Due to the additional components of the electric drive, a pedelec differs fundamentally in several respects from a conventional bicycle without an electric drive.

- The significantly higher weight of a pedelec and the correspondingly different weight distribution have an effect on the driving behavior.
  - The electric drive significantly influences the braking behavior.
  - Due to the higher braking forces, the wear of the brake components can be more pronounced on a pedelec.
  - You are likely to travel at a higher average speed on a pedelec and you may dare to take more challenging routes.
- Be sure to familiarize yourself with your pedelec when using it for the first time.
  - Do not underestimate the basic differences between a bike without an electric drive and a pedelec, especially if you have no previous experience with pedelecs > Chap. 15 "Getting to know your pedelec" page 33.

## 22 Information on use

### **i** INFORMATION

The operating steps for use are described in detail in the separate manufacturer's instructions for the electric drive.

In it you will find, among other things, the information:

- on how to operate the electric drive (e.g. on how to switch the electric drive on and off, adjust/change the pedal assistance strength, make settings, etc.),
- on handling the battery, (e.g. how to insert/remove the battery from the pedelec, how to charge the battery, charging times, protective devices, etc.).
- on the indications on the display and/or control element(s),
- on the warning and indicator lights (e.g. on the battery, display).

### 22.1 Functionality

When the electric drive of your pedelec is switched on, the electric assist motor assists you in propelling the pedelec. From a speed of 25 km/h or 15.5 mph, the electric pedal assistance switches off so that you can pedal without assistance from the motor using only your own muscle power. The speed is determined with the help of speed sensor and spoke magnet on the rear wheel.

How much pedaling assistance you get from the motor depends on how hard you pedal yourself. If you do not pedal, there is no assistance from the electric drive.

The only exception to this is the "push assist" function: If you activate the push assist, the motor will assist you in pushing the pedelec up to a speed of 6 km/h or 3.7 mph. The push assist must explicitly not be used to propel the pedelec when a cyclist is sitting on the pedelec, but only for pushing. Your pedelec must be held securely with both hands and all wheels must be in contact with the ground.

### 22.2 Driving without an electric drive

You can (continue to) use your pedelec as a conventional bicycle without e-drive without any problems if, for example, the battery charge is used up during a longer tour, if you deliberately switch off the electric drive or select the support level "none".

If you use your pedelec without the battery inserted, make sure that the battery holder or the connection contacts are protected against dirt and damage, e.g. by a suitable cover.

### 22.3 Range/trip planning

How long or far you can ride your pedelec before the battery charge is depleted depends on several factors. Relevant here is, among other things:

- which assistance level is set,
  - at what (cycling) speed you are moving,
  - the type of tire and the set tire pressure,
  - the road conditions on the selected route,
  - the weather conditions,
  - the total weight of the pedelec, cyclist and luggage,
  - the condition and age of the rechargeable battery.
- Familiarize yourself with your pedelec gradually and away from roads and heavy traffic.
  - Test the maximum range of your pedelec under different external conditions before planning longer trips and calculate carefully. You cannot determine the exact range of your pedelec either before or during a tour.

### 22.4 Storage and operating temperatures

- When parking your pedelec, pay attention to the operating and storage temperatures for the components of the electric drive. Do not park your pedelec in the blazing sun with the battery inserted, for example, as the battery can be damaged by extreme temperatures and may even explode.

## BRAKES

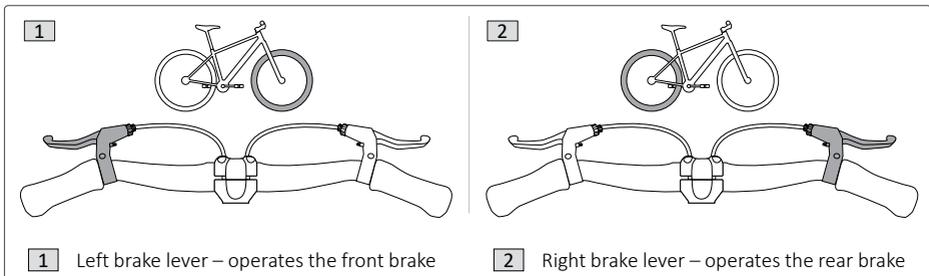
## 23 General information

Your pedelec is equipped with at least two brakes that act independently on the front wheel (front wheel brake) or on the rear wheel (rear wheel brake).

With the help of the brakes, you can slow down or stop your pedelec using a brake unit that brake the corresponding wheel, which in turn brakes your pedelec as a whole.

You usually operate the brake unit on the wheel using a brake lever mounted on the handlebar grip.

### 23.1 Brake lever configuration



**Fig. 8:** Brake lever assignment

The brake lever assignment outlined here applies to pedelecs that have two brake levers on the handlebars.

On pedelecs with coaster brakes, which only have a brake lever on the handlebars, the brake lever is usually mounted on the right handlebar grip and operates the front brake.

- Familiarize yourself with the brake lever arrangement before starting to cycle.
- Consult your specialist dealer if you wish to change the brake lever configuration.

## 23.2 Warnings for using the brakes

The following warnings always apply to the use of the brakes on your pedelec, regardless of the type or types of brakes with which your pedelec is equipped.

### **WARNING**

#### **Risk of accident and injury!**

When you cycle on icy, wet, slippery or dirty roads, the tires have less grip. This lack of grip reduces the braking power, your stopping distance increases and your pedelec can swing out during sudden braking.

» Always adapt both your cycling style and speed to current weather conditions and road characteristics.

### **WARNING**

#### **Risk of accident and injury!**

If you brake the front wheel abruptly, you could roll over or fall with the pedelec.

» Use the front brake very carefully when cycling at high speed.

» Always brake simultaneously with front and rear brakes. Especially when cycling at high speed, make sure that your pedelec is not braked abruptly with the front brake alone.

» Adjust the intensity with which you brake your pedelec – i.e. the braking force – according to the cycling situation.

### **WARNING**

#### **Risk of accident and injury!**

If you brake the rear wheel abruptly during certain riding maneuvers, it may lock and you may fall.

» Use the rear brake carefully when cornering.

**WARNING****Risk of accident and injury!**

If your pedelec is equipped with unsuitable or incorrect brake pads, the braking power may be too low or too strong or the brake may lose its function almost completely and fail completely.

- » Have any brake components (e.g. in case of repair) replaced exclusively with original spare parts.

**WARNING****Risk of accident and injury!**

If your pedelec is equipped with a so-called power modulator, this modifies the braking power of the front brake. If the power modulator is set incorrectly or braking with power modulator is unfamiliar to you, the risk of losing control and/or falling during braking increases.

- » Familiarize yourself with the function and operation of the brake and power modulator off the road.

## 24 Disc brake

### 24.1 Overview and part designations

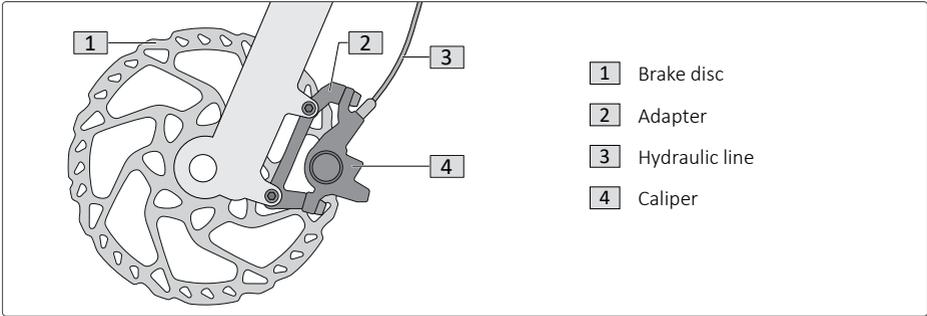


Fig. 9: Disc brake components

### 24.2 Functionality

The braking effect of a disc brake is created by braking the hub-mounted brake disc when you pull the brake lever.

Braking of the brake disc is performed by the brake caliper attached to the frame: This contains brake pads that are pressed against the brake disc from both sides when the brake lever is pulled. The power transmission is usually hydraulic: When the brake lever is pulled, pressure is built up on the brake fluid in the hydraulic line. The brake fluid transmits this pressure to the brake caliper and presses the brake pads against the brake disc.

Depending on the model, the transfer of braking force from the brake lever to the hydraulically controlled brake caliper can also take place mechanically by means of a brake cable.

### 24.3 Warnings for the use of disc brakes



#### WARNING

##### Risk of accident and injury!

If components of the disc brake wear out without you noticing it, a loss of function of the disc brake can result.

» Contact your specialist dealer regularly (annually, after 500 operating hours or after 1,000 km/620 mi) to have your disc brake(s) checked and, if necessary, worn components replaced.

## WARNING

### **Risk of injury from rotating brake discs and sharp edges!**

Brake discs have sharp edges and can lead to serious cuts. Rotating brake discs can sever limbs.

- » Do not reach into a rotating brake disc.
- » Wear protective gloves when working on or near the brake disc.

## WARNING

### **Risk of accident and injury!**

The braking force of the hydraulic braking system decreases.

- » Have the brake fluid checked and adjusted regularly by your specialist dealer.

## CAUTION

### **Risk of burns from contact with hot brake discs!**

Brake discs can become very hot due to solar radiation and during operation, especially when the brake is used intensively (e.g. when cycling downhill or during emergency braking).

- » Always let the brake disc cool down first before working on or near the brake disc.

## NOTICE

### **Risk of damage!**

Depending on the intensity of use, the brake pads of the disc brake can “glaze” over time, possibly reducing the braking effect and causing annoying noises (squeaking). Glazing can also occur when you make an emergency stop with new brake pads. When fitting or removing the corresponding wheel, you can also damage the disc brake components.

- » When descending longer gradients, regularly brake abruptly and relatively hard to release glazed brake pads. Always make sure that you can perform the cycling or braking maneuver in question without risk.
- » Brake your disc brake away from road traffic before using your pedelec regularly when the disc brake and/or your pedelec is new or after the brake pads have been replaced.
- » Always contact your specialist dealer to remove or install a wheel with a disc brake fitted to its hub.

## 24.4 Operating the brake

### **i** INFORMATION

If you brake almost simultaneously with the front and rear brakes, you can usually control your pedelec better when braking and reduce your braking distance.

- Pull the brake lever towards the handlebar grip to brake the corresponding wheel.
  - Pull the brake lever harder or to the maximum to increase or maximize the braking force (emergency braking).
  - Pull the brake lever less strongly or release it to reduce the braking force or to stop braking.

## 24.5 Running in disc brakes

Run in a new disc brake or a disc brake equipped with new brake pads before you use your pedelec regularly.

- In the process, make sure that:
  - the disc brake is run in away from road traffic,
  - any additional manufacturer's instructions for running in your disc brake are followed,
  - you always remain seated on the saddle during the braking process for safety reasons and
  - Do not bring your pedelec to a complete stop during braking, but only reduce the speed to walking speed as described below.
- Accelerate your pedelec to a speed of about 24 km/h or 14.9 mph and then brake strongly and evenly down to walking speed. The wheels may not lock in the process!
- Repeat this process up to 50 times. You will notice an increasing braking effect.
- Allow the brake discs and brake pads to cool down after braking or before the first journey.
- After engaging the disc brake, check the grip width and adjust it if necessary:
- The distance between the handlebar grip and the brake lever must be at least 1 cm (0.39") and you must be able to operate the brake lever safely while riding without taking your hand off the handlebar.
- Contact your specialist dealer if the effect of your disc brake is insufficient after braking in or if you hear unusual noises when braking.

## 24.6 Checking the disc brake

- Make sure that the brake lever and brake components are securely fastened.
  - Tighten loose screw connections if necessary.
  - Contact your specialist dealer to have the brake adjusted if you notice or have the impression that components have become loose.
- Make sure that the brake lever is mounted and aligned on the handlebar grip so that you can operate it comfortably while cycling.
  - If necessary, loosen the fastening of the brake lever and correct the alignment. Then tighten the brake lever fastening again.
- Check the distance between the fully tightened brake lever and the handlebar grip: The distance must be at least 1 cm (0.39").
  - Contact your specialist dealer to have the brake adjusted if the gap is less than 1 cm (0.39").
- Check whether the wheel locks when the corresponding brake lever is tightened.
  - Contact your specialist dealer to have the brake adjusted if the wheel is not braked or blocked sufficiently when the brake lever is tightened.
- Check how the brake pads move toward and away from the brake disc when you pull and then release the brake lever: The brake pads should move evenly and symmetrically.
- Check the wear on the brake pads: The brake pads should wear or deteriorate equally on both sides of the brake disc.
  - Contact your specialist dealer to have the brake checked if the brake pads wear unevenly or at an angle.
- Pull the brake lever as far as possible towards the handlebar grip and check whether brake fluid leaks from the hydraulic line or the connection points to other components.
  - Contact your specialist dealer to have the brake checked and, if necessary, serviced and readjusted correctly if brake fluid leaks out.

## 24.7 Wear and maintenance

According to the mode of operation and design of the disc brake, the following components in particular are subject to wear:

- Brake pads,
- Brake discs,
- Brake fluid (hydraulics),
- Any disc brake cables, if present.
- Check the brake pads, the brake discs and, if necessary, the brake cables regularly for signs of wear.
- Contact your specialist dealer:
  - if you are unsure or do not know how to recognize or comply with the wear limit of the brake pads. Depending on the model, your pedelec may be supplied with a corresponding test aid.
  - in order to have the hydraulics of your disc brake checked and serviced if necessary.
  - in order to have wear parts replaced and the disc brake subsequently readjusted.

## 24.8 Cleaning and care

Keep the components of the disc brake free of dirt or clean the components regularly to avoid a loss of function or a reduction in the braking performance of your disc brake.

- Clean the components with a damp cloth.
- In particular, keep the brake discs free of (coarser) dirt by washing them regularly using warm water.

## GEAR SHIFT SYSTEM

### 25 General information

The gear shift allows you to adjust your pedaling rate and the amount of power required to propel the pedelec according to the cycling situation. A model-dependent switching mechanism acts here, which you control with the associated control(s).

### 26 Derailleur gears

#### 26.1 Overview and part designations

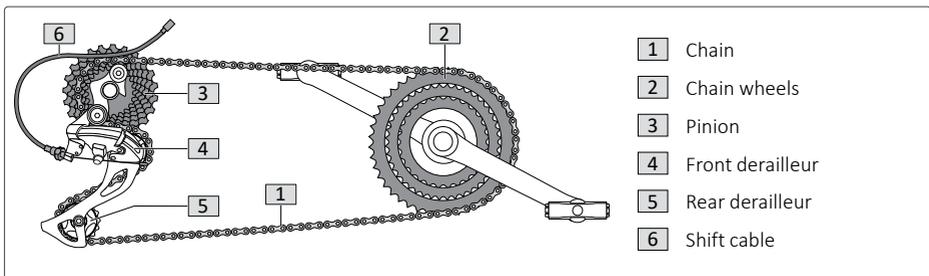


Fig. 10: Derailleur gear components

#### 26.2 Functionality

In derailleur gears, the shift mechanism acts on the chain:

Depending on the model, a pedelec with derailleur gear has 1-3 different sized chain wheels at the height of the pedals and 7-12 different sized pinions on the rear hub.

The different gears result from the different chain wheel/pinion combinations over which the chain can run ("gear ratio" of the chain).

##### High gear ratio (high effort/low pedaling rate):

If the chain runs over one of the smaller pinions, pedaling becomes more difficult for the cyclist, but the pedelec covers a greater distance per pedal revolution.

##### Low gear ratio (low effort/high pedaling rate):

If the chain runs over one of the larger pinions, pedaling becomes easier for the cyclist, but the pedelec covers a shorter distance per pedal revolution.

The front derailleur is the component at the level of the pedals through which the chain is passed from one chain wheel to another, the rear derailleur is responsible for changing from one pinion to another.

You usually control the front and rear derailleur, i.e. setting the desired gear, with two controls on the handlebars.

## 26.3 Operating the derailleur gear

### **i** INFORMATION

Do not pedal at all or too strongly while changing gears.

- Shift using the control for the front derailleur: The front derailleur pushes the chain onto the desired chain wheel.  
For uphill routes, a small chain wheel is recommended, while for flat or downhill routes, a larger chain wheel is recommended.
- Shift using the control for the rear derailleur: The rear derailleur pushes the chain onto the desired pinion.  
The smaller the pinion, the higher the ratio of the chain  
> Chap. 26.2 "Functionality" page 53.

## 26.4 Check the derailleur gear

- Check the derailleur gear components regularly to avoid loss of function and prevent unnecessary wear.
  - Make sure that the chain, chain wheels, pinions, front and rear derailleurs and shift cables are undamaged.
  - Make sure that the chain and rear derailleur have sufficient distance to the rear wheel or spokes.
  - Make sure the rear derailleur is perpendicular to the pinions and not bent.
  - Check the chain tension: The chain may not sag. If you carefully push the rear derailleur forward (in the direction of the pedals), it should independently move back to its original position when you let go.
  - Lift the rear pedelec part so that the rear wheel is movable and set the rear wheel slightly in motion using the pedals.
  - Shift through all gears: Switching must be easy; there should be no blockages or unusual noises.
- Contact your specialist dealer:
  - to replace damaged or worn components of the derailleur gear if necessary and then have it readjusted.
  - to have the derailleur checked and, if necessary, adjusted if you notice irregularities during your test.

## 26.5 Wear and maintenance

With regular maintenance and care, the components of derailleur gears usually show little signs of wear.

- Chain wheels and pinions are mounted in decreasing size from the inside out. Note that the chain will wear faster if the angle at which the chain runs is too steep (for example, if the chain runs over the largest chain wheel and the smallest pinion). Avoid such combinations to prevent unnecessary wear of the chain.
- Check the derailleur gears regularly > Chap. 26.4 "Check the derailleur gear" page 54.
- Consult your specialist dealer to service the derailleur gear if:
  - unusual noises occur when shifting gears,
  - you have problems when shifting gears,
  - the chain repeatedly jumps off.

## 26.6 Cleaning and care

- Keep the components of the derailleur gear free of dirt or clean the components regularly to avoid a loss of function of your derailleur gear.
  - Clean the controls with a damp cloth.
  - Remove coarse dirt from chain wheels and pinions, as well as front and rear derailleurs, with a slightly damp cloth or soft brush.
  - Grease the chain wheels, pinions and front and rear derailleurs with universal oil after cleaning.

## 27 Hub shifting system

### 27.1 Functionality

The hub shifting system is installed in the rear hub. Operation is via a twist grip shifter with gear indicator on the right side of the handlebars.

The number of gears depends on the model.

### 27.2 Operating the hub shifting system

#### NOTICE

##### **Risk of damage!**

Damage to the hub shifting system caused by improper use.

- » Do not pedal with force when changing gears.
- » Do not pedal backwards when shifting.
- » Downshift in time before going uphill.

- To shift up or down, turn the twist grip switch to the desired position.
- If you have no experience or feel unsure about the operation, have your specialist dealer explain the operation of the hub shifting system to you.

### 27.3 Checking the hub shifting system

- Check the hub shifting system components regularly to avoid loss of function and prevent unnecessary wear.
  - Make sure that the belt, belt pulleys and shift cables are undamaged.
  - Lift the rear pedelec part so that the rear wheel is movable and set the rear wheel slightly in motion using the pedals.
  - Shift through all gears: Switching must be easy; there should be no blockages or unusual noises.
- Contact your specialist dealer:
  - to replace damaged or worn components of the hub shifting system if necessary and then have it readjusted.
  - to check the hub shifting system and belt tension and, if necessary, have it adjusted if you notice irregularities during your test.

## 27.4 Wear and maintenance

With regular maintenance and care, the components of hub shifting systems usually show little signs of wear.

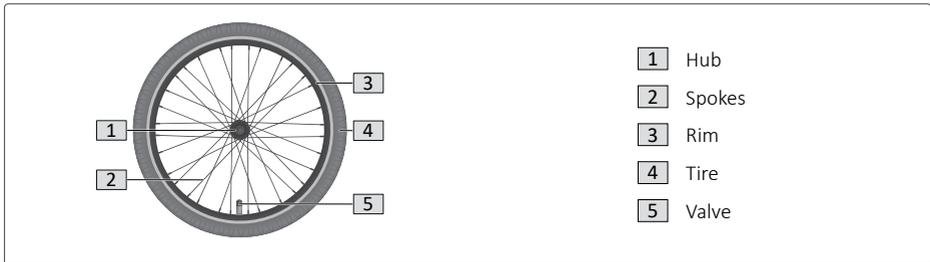
- Check the hub shifting system regularly
  - > Chap. 27.3 "Checking the hub shifting system" page 56.
- Consult your specialist dealer to service the derailleur gear if:
  - unusual noises occur when shifting gears,
  - you have problems when shifting gears.

## 27.5 Cleaning and care

- Keep the components of the hub shifting system free of dirt or clean the components regularly to avoid a loss of function of your hub shifting system.
  - Clean the controls with a damp cloth.
  - Remove coarse soiling with a slightly damp cloth or soft brush.

## WHEELS

## 28 General information



**Fig. 11:** Wheels

When cycling, the wheels are stressed by the weight of the cyclist and unevenness on the road.

- After run-in, contact your specialist dealer to have the wheels checked and recentered if necessary; depending on which event takes place first, at the latest after:
  - the first 300 km/186 mi cycled,
  - 15 hours of usage,
  - 3 months.
- Check the wheels for proper condition every six months.
  - The wheels must be free of damage and correctly aligned.

### 28.1 Rims and spokes

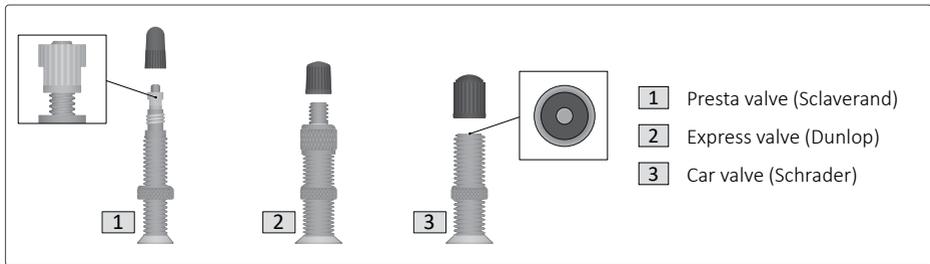
Correct and uniform tensioning of the rims stabilizes the concentricity of the wheels. If the concentricity of a wheel is compromised, this jeopardizes the stability of the rim, which may break as a result.

If you ride over obstacles (e.g. a curb) quickly or if a spoke nipple comes loose, this can affect the tension of the spokes.

### 28.2 Tire types

The tire and rim are usually not air-tight themselves, but contain a bicycle tube that is filled with air via the valve. The only exceptions here are tubular tires and UST tires, which are airtight systems that do not contain an additional bicycle tube. An indication of the tire size (mm or ") is usually located on the tire sidewall.

## 28.3 Valve types



**Fig. 12:** Valve types

Depending on which valve type the tire or tube has, you will need the appropriate valve plug or adapter to fill the tire with air.

- If necessary, ask your specialist dealer which valve plug or adapter you need for your tire.

### Presta valve (Sclaverand)

- To open the valve, turn the valve screw upwards (counterclockwise).
- To release air from the tire, depress the valve screw (without the valve plug/adapter attached).
- To close the valve, turn the valve screw downwards (clockwise).

### Express valve (Dunlop)

- To release air from the tire, turn the upper valve nut upwards (counterclockwise).
- To replace the valve insert, unscrew the upper valve nut completely (counterclockwise).
- To close the valve, turn the valve nut completely downwards (clockwise).

### Car valve (Schrader)

- To release air from the tire, push the plunger inside the valve.

## 28.4 Tire pressure

### INFORMATION

The tire pressure affects the rolling resistance and suspension of your pedelec.

As a rule, you will find two values on your tires as a default for the maximum tire pressure.

The lower value applies to:

- Lighter cyclists,
- Cycling over uneven surfaces.

The higher value applies to:

- Heavier cyclists,
  - Cycling over even surfaces.
- Check the tire pressure regularly.
    - If necessary, inflate or deflate the tire if the tire pressure does not meet specifications or is not suitable for the intended driving.

## 29 Warnings about the wheels

### WARNING

#### **Risk of accident and injury!**

If the wheels do not run centered (concentricity), but instead, for example, oscillate, there is an increased risk of accidents and injuries, the rim can break, rim brakes can block.

» Contact your specialist dealer to have the wheels aligned if they are not running centered or are oscillating.

### WARNING

#### **Risk of accident and injury!**

Dirty or missing reflectors impair your visibility in road traffic. There is an increased risk of accidents.

» Remove dirt from the reflectors and replace worn or missing reflectors immediately.

**WARNING****Risk of accident and injury!**

If damaged tires burst while driving, there is an increased risk of accidents and injuries.

- » Check the tires regularly for signs of damage and wear.
- » Do not ride the pedelec if the tires are not intact.

**WARNING****Risk of accident and injury!**

Cycling with incorrect tire pressure (too high or too low) increases the risk of accidents and injuries.

- » Observe the specifications for maximum and minimum tire pressure for your tires.
- » Contact your specialist dealer if you are uncertain about the correct tire pressure for your tires.

**NOTICE****Risk of damage!**

The function of the pedelec components can be impaired or damaged if the tires are inappropriate.

- » Contact your specialist dealer if you have questions about tire size or are unsure.

**30 Pumping up tires**

1. Have an air pump with a suitable valve plug/adaptor for your valve at hand.
2. Remove the protective valve from the valve.
3. Check the tire pressure with a pressure gage or an air pump with pressure indicator.
4. Inflate or deflate the tire to achieve the correct tire pressure.
5. Reattach the previously removed protective cap to the valve.
6. Then check whether the lower valve nut is screwed on correctly and tightly. If necessary, tighten the valve nut (clockwise).

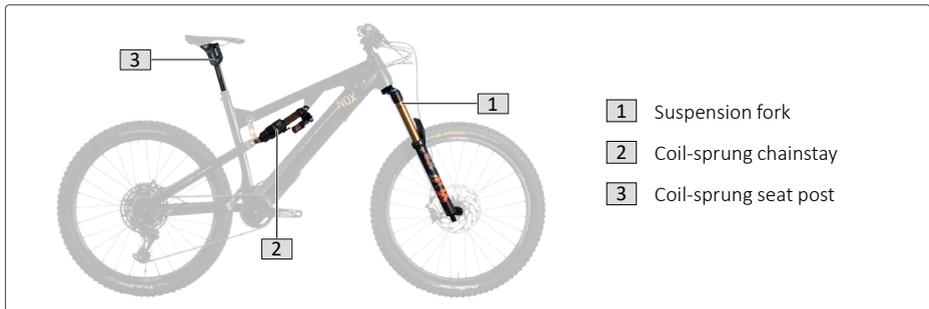
## 31 Regular inspection

- Check the tires.
  - In the process, check whether:
    - The tires are cracked or damaged.
    - The tire tread is in the correct range or the tire is already too worn and needs to be replaced.
    - Contact your specialist dealer to have damaged or worn tires replaced.
- Check the rims.
  - In the process, pay attention to whether the rims are cracked or damaged.
  - Depending on the model, there are indentations on the rims to determine the wear limit.

Check with your fingernail or a toothpick to see if you notice the indentation on the rim. If you hardly or not at all notice the indentation, the wear limit has been reached and the rim must be replaced.
  - Contact your specialist dealer to have the wear on carbon rims determined.
  - Contact your specialist dealer to have damaged or worn rims replaced.
- Check the spoke tension.
  - To do so, gently squeeze two spokes at a time: the spokes must be evenly tensioned.
  - If you notice that individual spokes have become loose, contact your specialist dealer to have the spokes retightened.

## SUSPENSION

## 32 General information



**Fig. 13:** Coil-sprung components

A suspension that is individually adjusted to the driver increases ride comfort and driving safety on uneven road surfaces.

Depending on the model, your pedelec has:

- a **suspension fork** instead of a conventional front fork.  
The suspension fork absorbs shocks and bumps on the front wheel  
> Chap. 33 "Suspension fork" page 68.
- a **coil-sprung chainstays**.  
The coil sprung chainstays absorb shocks and bumps on the rear wheel  
> Chap. 34 "Coil-sprung chainstay" page 70.
- a **coil-sprung seat post**.  
The suspension seat post absorbs shocks and road bumps on the saddle  
> Chap. 35 "Coil-sprung seat post" page 71.

## 32.1 Functionality and terms

During compression, the immersion tubes of the corresponding suspension sink into their seats and compress the spring inside the suspension component.

When the spring is released, the spring inside pushes the immersion tubes back into their original position.

Depending on the model, the spring is a **mechanical spring** made of steel or titanium > Chap. 32.3 "Mechanical suspension" page 66 or a **pneumatic spring** with air chambers > Chap. 32.4 "Pneumatic suspension" page 67.

By adjusting the **spring tension**, you can determine how heavily the suspension fork compresses under load or how strong its resistance to compression is.

**Hydraulic dampers** provide controlled and adjustable rebound. By adjusting the **compression and rebound stages** of the dampers, the speed at which the spring compresses or decompresses can be determined.

In general, the following applies:

The stronger the compression or rebound stage is set, the more sluggishly the suspension fork moves; the weaker it is set, the smoother/faster the suspension fork moves back to its original position.

**Sag** refers to the compression of the suspension by the body weight of the rider. As a rule, the optimum sag of a suspension fork is 15-30% of the total spring travel: The suspension should only compress by a few millimeters when the rider sits on the saddle.

## 32.2 Warnings about suspensions

**WARNING****Risk of accident and injury!**

An improperly adjusted suspension can impair the grip of your pedelec (depending on the respective road surface), which may increase the risk of accidents and injuries. Improper handling of the suspension components under tension can result in injury.

- » Ask your specialist dealer to set up the suspension system for you.
- » Have suspension forks, rear frame dampers and coil-sprung seat posts removed and repaired exclusively by your specialist dealer.

**NOTICE****Risk of damage!**

Improper adjustment or handling can damage suspension components.

- » Ask your specialist dealer to adjust the pneumatic suspension components.

**NOTICE****Risk of damage!**

Improperly adjusted suspension can affect your cycling comfort and cause damage to the pedelec.

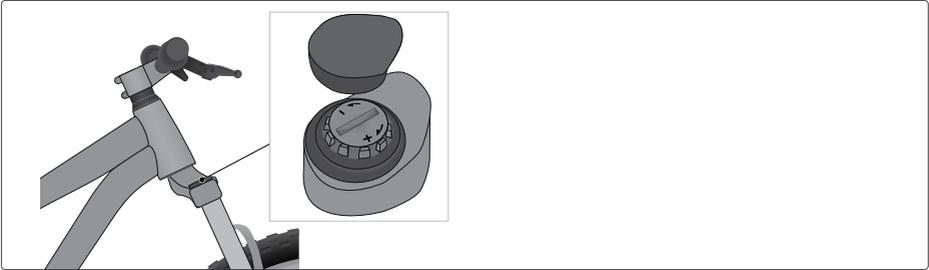
- » Have the suspension checked by your specialist dealer if you notice unusual noises or hard jolts when the suspension compresses or decompresses.

**NOTICE****Risk of damage!**

Permanent activation of the lock-out function increases wear on the suspension components affected.

- » Only use the lock-out function if it noticeably improves the cycling performance.
- » Be sure to deactivate the lock-out function again if the cycling situation permits.

## 32.3 Mechanical suspension



**Fig. 14:** Adjust spring tension

If your pedelec has a mechanical suspension with a steel or titanium spring, you can usually adjust the spring tension yourself if you have the necessary expertise.

1. Pull off the cover caps of the immersion tubes towards the top.
2. Turn the rotary knob on the immersion tube using a coin:
  - clockwise to increase the spring pre-tension.
  - anti-clockwise to decrease the spring pre-tension.
  - In the process, make sure that the spring tension is adjusted to the same level on both sides.
3. If you are unsure of how to adjust the suspension or experience problems when doing so, please consult a specialist dealer.

## 32.4 Pneumatic suspension

If your pedelec has a pneumatic suspension with air chambers, you usually need to inflate them before first use.

- Use a suitable air pump for inflation. If necessary, ask your specialist dealer for advice on suitable air pumps.
- Always have the spring tension of a pneumatic spring adjusted by your specialist dealer > Chap. 32.4 "Pneumatic suspension" page 67.

## 32.5 Maintaining the suspension

- Make sure that the sliding surfaces and seals of the suspension are free of dirt.
  - Wipe off any soiling with a clean cloth, lightly oiled if necessary.
- After cleaning, apply a small quantity of lubricant to the sliding surfaces, e.g. multi-purpose oil. As and when required, seek advice from your specialist dealer on suitable lubricants and care products.
  - After lubrication, apply pressure to the suspension five times so that it compresses.
  - Afterwards, wipe up any excess lubricant with a clean cloth.
- Have the suspension checked by your specialist dealer if you notice unusual noises when compressing or releasing the suspension or if you have the impression that the suspension has no resistance at all when compressing.

### 33 Suspension fork

By absorbing shocks and road irregularities at the front wheel, the suspension fork keeps the front wheel on the ground and increases grip. As a result, you will have better control of your pedelec and more cycling comfort on uneven road surfaces.

#### 33.1 Adjusting the spring tension

- If your pedelec has a suspension fork with steel or titanium spring, adjust the spring tension yourself, provided you have the necessary expertise  
> Chap. 32.3 "Mechanical suspension" page 66.
- If your pedelec has a pneumatic suspension fork with air chambers, always have the spring tension adjusted by your specialist dealer  
> Chap. 32.4 "Pneumatic suspension" page 67.

#### 33.2 Using the lock-out function

##### INFORMATION

With the **lock-out** function, you can lock the suspension fork completely, e.g. when you pedal hard and/or your progress or cycling comfort is impaired by the suspension.

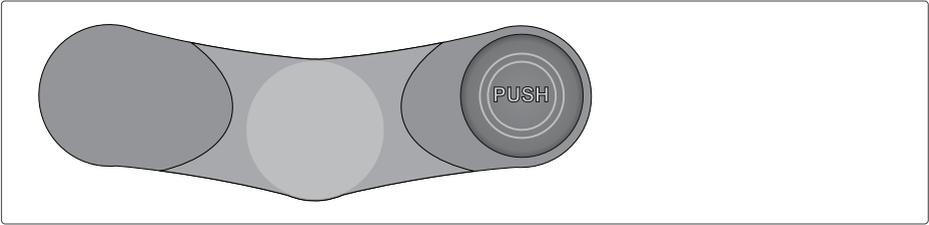
- Note, however, that even with the lock-out function activated, the suspension can compress by up to 15 mm (0.59") on uneven road surfaces.

Depending on the model, you can activate or deactivate the lock-out function with a rotary knob on the top of the suspension fork or with a control on the handlebars\*.

- Turn the rotary knob clockwise by a quarter turn or use the corresponding control element to activate the lock-out function.
- Turn the rotary knob counterclockwise by a quarter turn or use the corresponding control element to deactivate the activated lock-out function.

\* How you activate or deactivate the lock-out function depends on the respective suspension fork type. If the suspension fork installed on your model has different or additional operating options, please refer to the relevant manufacturer documentation or consult your specialist dealer.

### 33.3 Shortening/extending the spring travel



**Fig. 15:** Shortening/extending the spring travel

#### To shorten the spring travel:

1. Press and hold the "Push" key.
2. Press on the handlebar from above so that the suspension fork compresses.  
The deeper you push the suspension fork into the damper rod, the shorter the fork travel will be.
3. If you want to permanently set the adjustment, release the "Push" key.

#### To extend the spring travel:

1. Press and hold the "Push" key.
2. Hold the front wheel firmly and at the same time pull the handlebars upwards so that the suspension fork decompresses.  
The higher you pull the suspension fork out of its holder, the longer the suspension travel.
3. If you want to permanently set the adjustment, release the "Push" key.

## 34 Coil-sprung chainstay

### 34.1 Adjusting the spring tension

#### INFORMATION

Correctly adjusting a coil-sprung chainstay requires expertise.

- If you are unfamiliar or unsure of how to adjust the coil-sprung chainstay, please consult your specialist dealer.
- If your pedelec has a coil-sprung chainstay with steel or titanium spring, adjust the spring tension yourself, provided you have the necessary expertise  
> Chap. 32.3 "Mechanical suspension" page 66.
- If your pedelec has a pneumatic suspension with air chambers, always have the spring tension adjusted by your specialist dealer  
> Chap. 32.4 "Pneumatic suspension" page 67.

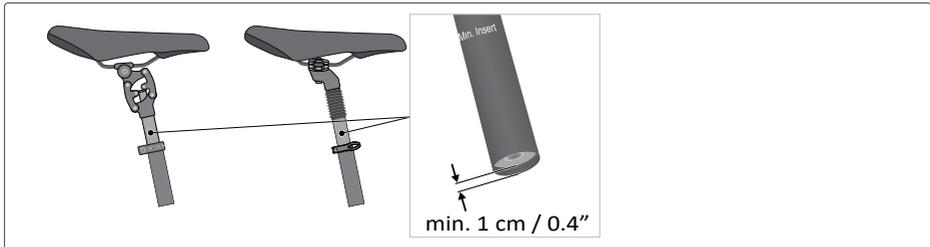
## 35 Coil-sprung seat post

### 35.1 Adjusting the spring tension

#### **i** INFORMATION

Correctly adjusting a coil-sprung seat post requires expertise.

- If you are unfamiliar or unsure of how to adjust the coil-sprung seat post, please consult your specialist dealer.



**Fig. 16:** Adjusting the spring tension

1. Remove the coil-sprung seat post from the seat tube.
2. Turn the adjustment screw on the lower part of the seat post:
  - clockwise to increase the spring tension.
  - anti-clockwise to decrease the spring tension.

When adjusting, be careful not to turn the adjustment screw out too far: The adjustment screw must be at least 1 cm (0.4") inside the suspension seat post.

3. If you are unsure of how to adjust the coil-sprung seat post or experience problems when doing so, please consult your specialist dealer.

### SADDLE

The saddle should have a saddle shape that suits the intended use and the cyclist's personal preferences and physical characteristics.

When the saddle is optimally adjusted, the rider can easily reach all the controls on the handlebars in a comfortable sitting position and support himself with his feet on the ground.

### 36 Adjusting the saddle



#### **WARNING**

##### **Risk of accident and injury!**

If you do not observe the minimum insertion depth for the seat post, the seat post may slip or break.

- » You absolutely must observe the minimum insertion depth for the seat post.
- » Never shorten the seat post on your own.

#### **NOTICE**

##### **Risk of damage!**

If you do not comply with any specified minimum extension height of the seat post, components on the pedelec may be damaged.

- » For folding bikes, make sure that the seat post does not protrude downward beyond the end of the seat tube.
- » When adjusting the saddle height, make sure that no cables, Bowden cables, etc. conducted through the seat tube are damaged.

**i** INFORMATION**Minimum insertion depth of the seat post**

There is a mark on the seat post of every pedelec which generally indicates the minimum distance the seat post must be inserted into the seat tube. If you have set the saddle height correctly, the mark for the minimum insertion depth of the seat post must no longer be visible, but must be located inside the seat tube.

**i** INFORMATION**Minimum seat post extension height**

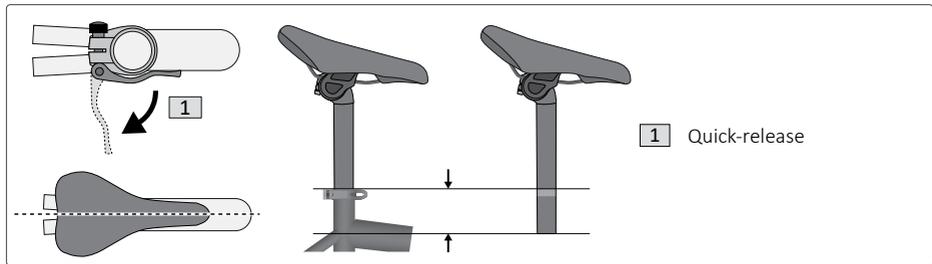
Depending on the model, you will find an additional specification for the minimum extension height of the seat post for your pedelec.

The corresponding value indicates how far the seat post must protrude at least upwards from the seat tube.

You can change both the height and the tilt/alignment of the saddle to achieve the right setting for your individual seating position.

### 36.1 Adjusting the saddle height

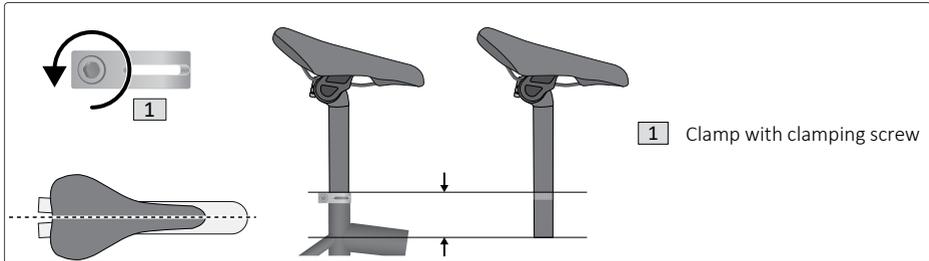
#### Clamp with quick-release



**Fig. 17:** Adjust saddle height (clamp with quick-release)

1. Swivel the quick-release lever outward.
2. Adjust the saddle to the desired height.
  - In the process, observe the minimum insertion depth for the seat post.
3. Align the saddle in line with the frame when you have brought the saddle to the correct height.
4. To fix the setting, swing the quick-release lever inward until it rests against the seat tube.
  - If the quick-release lever cannot be pivoted up to the seat tube, you can reduce the preload by turning the adjustment screw counterclockwise.
  - Then swing the quick-release lever inward again until it rests against the seat tube to close the seat post clamp.
5. Check if you can rotate your saddle.
  - If you can twist the saddle, increase the preload of the quick-release by turning the adjustment screw clockwise.

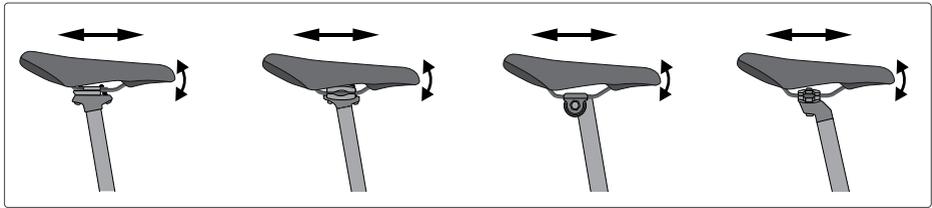
## Clamp with clamping screw



**Fig. 18:** Adjust saddle height (clamp with clamping screw)

1. Turn the clamping screw out counterclockwise until the saddle can be moved in the seat tube.
2. Adjust the seat post to the desired height.
  - In the process, observe the minimum insertion depth for the saddle.
3. Align the saddle in line with the frame when you have brought the saddle to the correct height.
4. To fix the setting, tighten the clamping screw clockwise.
  - Observe the torque of the clamping screw.
5. Check if you can rotate your saddle.
  - If you can twist the saddle, check the seat post clamp.

## 36.2 Adjusting the saddle angle



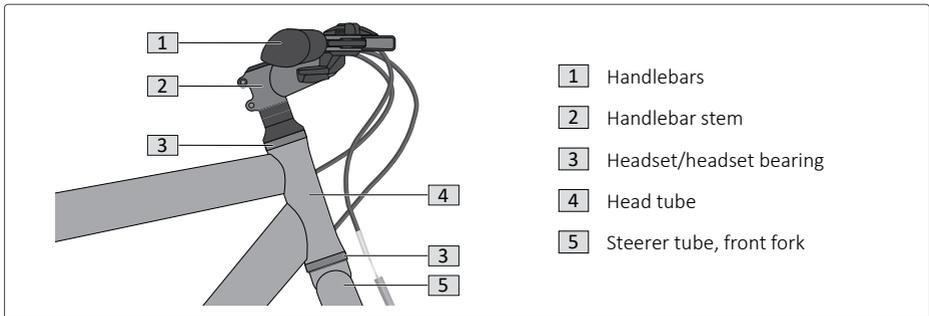
**Fig. 19:** Change saddle angle (different clamping variants)

Depending on the model, you can change the saddle angle and move the saddle further forward or backward if necessary.

1. Turn the screw(s) on the seat post one to two revolutions counterclockwise.
2. Move the saddle to the desired position.
  - On models with multiple screws, please note you must turn the loosened screws in opposite directions to adjust the saddle angle.
3. To fix the setting, tighten the screw(s) on the seat post clockwise.
  - In the process, observe the torque of the screw(s).
4. Check whether the saddle can be moved.
  - If the saddle can be moved, contact your specialist dealer.

## HANDLEBARS

## 37 General information



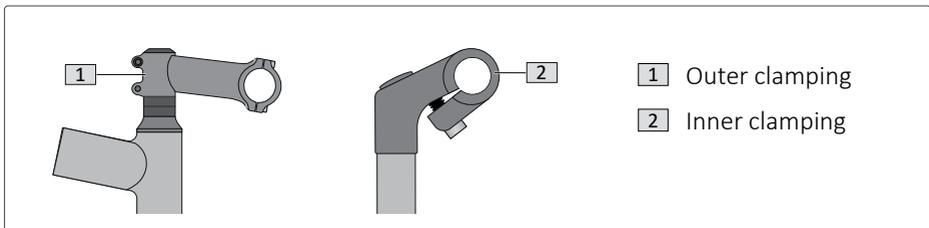
**Fig. 20:** Handlebar components

With the handlebars you turn the steerer tube of the front fork in the desired direction and thus steer your pedelec.

In addition to the handlebar and the steerer tube, the following components are relevant for the steering of the pedelec:

- Handlebar stem: Handlebar bracket
- Head tube: Holder for the steerer tube on the frame
- Headset/headset bearing: Attachment to hold the steerer tube inside the head tube in a rotary manner

The handlebar stem has external or internal clamping depending on the model.



**Fig. 21:** Handlebar stems, clamping types

Some models allow you to adjust the angle of the handlebar stem individually.

- If you want to change the inclination of the handlebar stem, contact your specialist dealer if necessary.

## 38 Handlebar settings

### 38.1 Adjusting the handlebar height

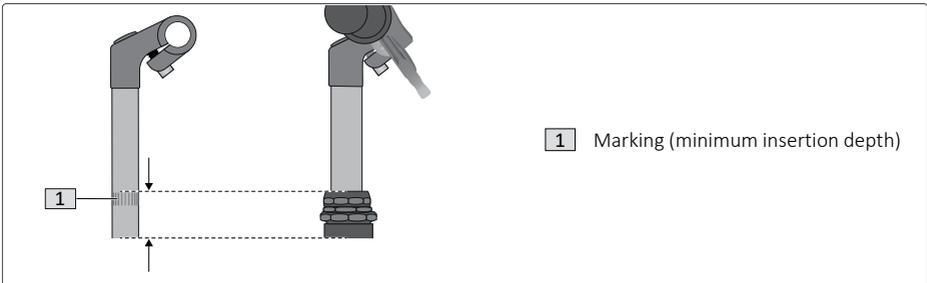


Fig. 22: Handlebar stem with inner clamping

### WARNING

#### Risk of accident and injury!

If you proceed improperly when adjusting the handlebar, the function and stability of the handlebar may be impaired. There is a risk of accident and injury.

- » Make sure that the torques are observed.
- » Observe the minimum insertion depth for the handlebar stem.
- » Adjusting the handlebar height on a handlebar stem with outer clamping requires expertise, consult your specialist dealer.

- To adjust the handlebar height for a **handlebar stem with internal clamping**, proceed as described below.
  - Remove the upper cover cap from the handlebar stem.
  - Loosen the screw in the handlebar stem (1-2 turns counterclockwise).
  - Move the handlebar stem up or down to the desired handlebar height.
    - Pay attention to the marking for the minimum insertion depth of the handlebar stem: The marking may **not** be visible.
  - Tighten the screw in the handlebar stem (clockwise).
    - Pay attention to the torques.
  - Replace the cover cap on the handlebar stem.

## 38.2 Adjust handlebar direction and headset bearing

### 38.2.1 Handlebar stem with outer clamping

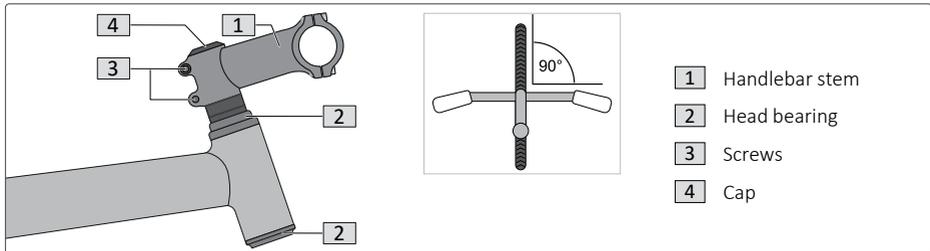


Fig. 23: Handlebar stem with outer clamping

## NOTICE

### Risk of damage!

In the case of a handlebar stem with external clamping, the headset bearing can be damaged if you adjust the handlebar direction improperly.

» Tighten the upper bolt on the handlebar stem with outer clamp only so that the headset bearing is fixed, but the bearing and handlebars remain free to move.

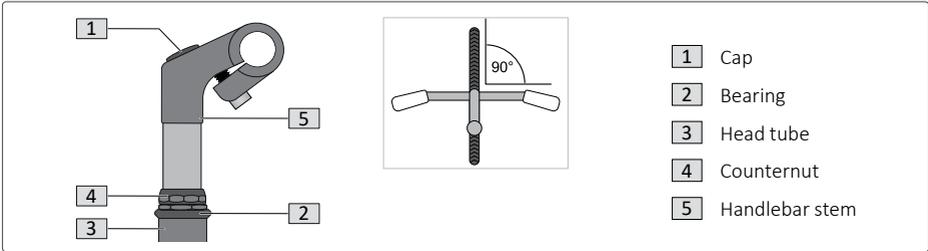
1. Remove the cover cap on the top of the handlebar stem.
2. Loosen the screw on the top of the handlebar stem (one turn counterclockwise).
3. Loosen the screws on the stem clamp (a few turns counterclockwise) so that the handlebar can be twisted against the front wheel.
4. Adjust the headset bearing as described below.
  - Tighten the screw on the top of the handlebar stem in minimal increments (about  $\frac{1}{8}$  turn clockwise per increment).
  - Press and hold the handbrake for the front wheel.
 

If you now try to push your pedelec back and forth, the headset bearing must be fixed and have no play.
  - Lift your pedelec by the frame.
 

If you now tilt the frame to one side, the front wheel must be movable in this position and move to the left or right by itself.
5. Align the handlebar at a 90° angle to the front wheel.
6. Tighten the bolts on the handlebar stem clockwise to fix the handlebar direction and headset bearing setting.
 

Pay attention to the torques.
7. Replace the cover cap on the top of the handlebar stem.

## 38.2.2 Handlebar stem with inner clamping



**Fig. 24:** Handlebar stem with inner clamping

**i** INFORMATION

To adjust the steering head bearing, you need two open-end wrenches with model-dependent wrench sizes.

1. Remove the cover cap on the top of the handlebar stem.
2. Loosen the screw on the top of the handlebar stem ( $\frac{1}{2}$  turn counterclockwise).
3. Align the handlebar at a  $90^\circ$  angle to the front wheel.
4. Tighten the inside screw clockwise to fix the handlebar direction setting. Pay attention to the torques.
5. Replace the cover cap on the top of the handlebar stem.
6. Adjust the headset bearing as described below.
  - Loosen the lock nut (a few turns counterclockwise).
  - Tighten the bearing shell (clockwise).
  - Press and hold the handbrake for the front wheel.
 

If you now try to push your pedelec back and forth, the headset bearing must be fixed and have no play.
  - Lift your pedelec by the frame.
 

If you now tilt the frame to one side, the front wheel must be movable in this position and move to the left or right by itself.
  - Hold the bearing shell with one hand and turn the lock nut tightly (clockwise) with the other hand to lock the headset bearing adjustment.
 

Pay attention to the torques.
7. Straighten the handlebars.
8. Check again that the handlebars are correctly aligned at a  $90^\circ$  angle to the front wheel.

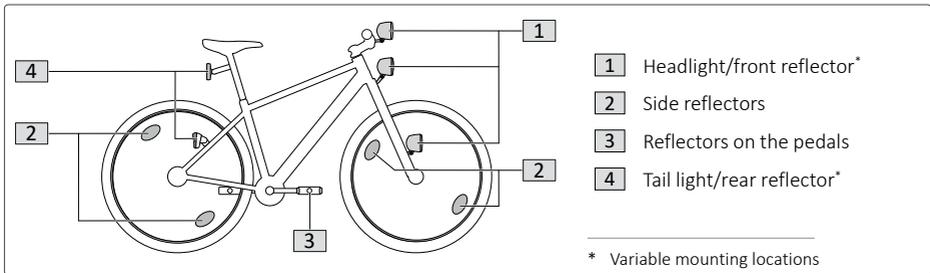
## OTHER COMPONENTS

## 39 Lights

## 39.1 General information

For participation in road traffic (germany), a pedelec must have the following lighting components:

- Headlamp
- Rear light
- Reflectors on the pedals
- Side reflectors or light strips
- White front reflector
- Red rear reflector



**Fig. 25:** Lighting components on the bike

- Only use your pedelec in road traffic if all lighting components comply with national and regional requirements.
- Find out about national laws and regulations.
- Have defective lighting replaced by your specialist dealer.

Depending on the model, the headlight and tail light are operated as follows:

- with a dynamo (side rotor or hub dynamo),
- with a separate battery or accumulator in the respective lighting component,
- about the energy supply of the electric drive.

## 39.2 Mounting locations

Depending on the model, the headlight and tail light are mounted in one of the following locations:

**Headlight**

- on steering head tube
- over the mudguard
- on the fork

**Rear light**

- below the luggage rack
- on the mudguard
- on the seat stay

## 39.3 Switching the lighting on and off

** WARNING****Risk of accident and injury!**

When driving with insufficient or no lighting, you may be poorly seen by other road users and you may recognize hazards (e.g. obstacles) too late. There is an increased risk of accident and injury.

» Always switch on the lights when driving in poor visibility conditions (e.g. fog, twilight) or in the dark.

** WARNING****Risk of accident and injury!**

If you are distracted from switching on the lights while driving, there is an increased risk of accident and injury.

» Turn on the lights before you start driving or stop to turn on the lights.

** WARNING****Risk of accident and injury!**

If the headlight shines too high, you can blind oncoming road users. There is a risk of accident and injury.

» Aim the headlight so that oncoming persons are not blinded by its light.

** INFORMATION**

When the headlight is switched on, the tail light is usually switched on automatically.

**Lighting operated with lateral dynamo**

- Activate the lighting by pressing from above on the pressure point on the dynamo so that the dynamo rests against the wheel flank.
- Deactivate the lighting by pushing the dynamo away from the wheel flank so that it swings back to its original position.

**Lighting powered by hub dynamo or separate battery**

- Activate the illumination by setting the on/off switch to position **I** (ON).
- Deactivate the illumination by setting the on/off switch to position **O** (OFF).

**Lighting operated via the electric drive**

- Depending on the model, switch on the illumination on the display or on the control unit.

## 40 Bell

Depending on the model, your pedelec is equipped with a bell on delivery. If your pedelec is not equipped with a bell, you can retrofit one without danger.

- In case of any questions, consult your specialist dealer.

To enable you to give other road users clearly audible acoustic signals while cycling, your pedelec must be equipped with an appropriate bell when participating in road traffic.

- Contact your specialist dealer to have the bell replaced if you cannot produce a clearly audible signal with the bell attached to your pedelec.
- Position the bell on the handlebar so that you can easily reach it without taking your hand off the handlebar grip.
- Pull back the bell lever and then release it to generate a signal.
- Attach the bell to the handlebar so that you can comfortably reach the bell while riding without having to let go of the handlebar grip.

## 41 Luggage rack

### NOTICE

#### **Risk of damage!**

Improper installation or use of a luggage rack can damage pedal corner components.

- » If you want to retrofit your pedelec with an optionally available luggage rack, make sure that your pedelec is suitable for this purpose. Get your specialist dealer to mount your luggage rack for you.
- » Only use luggage racks certified in accordance with EN ISO 11243 for retrofitting or conversion.
- » Do not make any structural modifications to the drive system. This may affect its stability.
- » When loading the luggage rack, observe the specifications for the maximum load capacity of the luggage rack and the maximum permissible total weight of the pedelec.

On the luggage rack, you can carry light luggage; here, the luggage is fixed to the luggage rack with a clamp bracket or with lashing straps.

The maximum load capacity of luggage racks is usually:

- 25 kg (55 lbs) for rear luggage rack
- 7 (15.4 lbs) or 12 kg (26.4 lbs) for front luggage rack
- Use the imprint on the luggage rack to make sure what the maximum load of the luggage rack is, if it is noted there, or contact your specialist dealer.
- Observe the information on the use of the luggage rack  
> Chap. 50.1 "Using luggage racks" page 99.

\* Quick-release axles are front or rear wheel axles that are locked using quick-releases.

## 42 Kickstand

### INFORMATION

Depending on the model, your pedelec is equipped with a kickstand on delivery.

- If your pedelec is not equipped with a stand, contact your specialist dealer. This can give you information on whether you can subsequently mount a kickstand on your pedelec.

You can support your pedelec with the kickstand when you park it so that it remains upright.

- If you want to park your pedelec: Hold your pedelec firmly, unfold the kickstand with your foot so that it locks into place, and carefully lean your pedelec on it.
  - Make sure that your pedelec is permanently held securely by the kickstand and not in danger of tipping over.
- If you want to use or move the parked pedelec: Hold your pedelec firmly and fold the stand upwards with your foot so that it locks into place.

Depending on the model, you can correct the adjustment / alignment of the stand so that your pedelec stands safely on it.

- Make the adjustment of the stand if it does not stand your pedelec safely.
- If you are unsure of how to adjust the kickstand or experience problems when doing so, please consult your specialist dealer.

## 43 Quick-release

**WARNING****Risk of accident and injury!**

Improperly closed or improperly adjusted quick-releases can open while riding so that the corresponding components are no longer securely fixed.

- » Before driving off, make sure that all quick-releases are closed with sufficient pretension and are in contact with the component or frame.
- » Only remove or install wheels that are fixed with quick-release axles\* yourself if you have sufficient expertise. Please contact your specialist dealer.

**CAUTION****Risk of injury!**

If you carelessly handle a quick release, you can crush your fingers.

- » Be careful when opening and closing the quick release and watch your fingers.

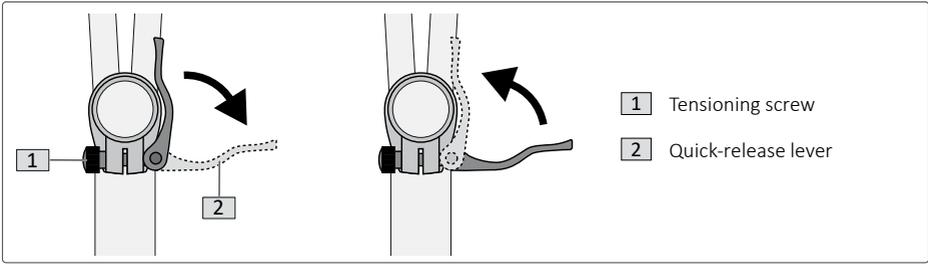


Fig. 26: Quick-releas

### 43.1 Opening and closing quick-releases

- To open, pull the quick-release lever outward (away from the component against which it rests when closed).
- To close, fold the quick-release lever against the corresponding component so that it rests against it to the maximum.
- Adjust the quick-release if you notice that the quick-release does not securely fix its component or if the quick-release closes too smoothly.
- If you notice unusual noises when opening or closing a quick-release, check the adjustment and condition of the quick-release. Have worn or damaged quick-releases replaced by your specialist dealer with suitable original spare parts.

### 43.2 Adjusting quick-releases

1. Open the quick-release lever.
2. Turn the tensioning screw clockwise one quarter of a revolution.
3. Close the quick-release lever.
4. Check that the quick release now securely fixes its component.

Repeat the process until the quick-release securely fixes its component when closed.

If the component cannot be fixed securely, contact your specialist dealer.

## 44 Storage of pedelecs

**WARNING****Risk of accident and injury!**

If the electric drive is started inadvertently or if children or persons who are physically or mentally impaired have access to your pedelec, accidents and serious injuries may result.

- » Always remove the battery before parking or storing your pedelec for an extended period of time.
- » Secure and park your pedelec so that unauthorized persons (especially children) cannot access it.

**NOTICE****Risk of damage!**

Improper storage can damage the electric drive or its components.

- » Observe the storage temperatures for the components of the electric drive to avoid damage and functional impairment.
- » Observe the information on storage in the corresponding manufacturer's instructions for the electric drive (especially for the battery) and for any other pedelec components.

1. Clean your pedelec before you store it for a longer period of time  
> Chap. 47.3 "Cleaning and caring for your pedelec" page 93.
2. If your pedelec has a derailleur gear, shift to the small chain wheel at the front and the smallest pinion at the rear to reduce the load on the cables as much as possible.
3. Store your pedelec in a dry room, frost-free and protected from large temperature differences.
  - If necessary, hang your pedelec on the frame to avoid deformation of the wheels.
4. Store the rechargeable battery, charger and, if necessary, other components separately from the pedelec and observe the information in the corresponding manufacturer's instructions.

## TRANSPORT

## 45 Transport of pedelecs

**WARNING****Risk of accident and injury!**

An accidental start of the electric drive can result in accidents and serious injuries.

- » Always remove the rechargeable battery before transporting your pedelec and transport the battery separately.

**NOTICE****Risk of damage!**

Improper transport can damage the electric drive or its components.

- » Secure your pedelec so that it cannot slip or fall during transport.
- » Transport the rechargeable battery carefully and make sure that it is secured against shocks and impacts.
- » If necessary, remove other sensitive components (e.g. display) in addition to the rechargeable battery from the pedelec before transport or protect the components in another way to avoid damage during transport.
- » Observe the information on transport in the corresponding manufacturer's instructions for the electric drive and, if applicable, for other components.

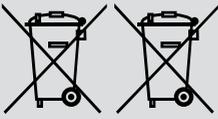
1. If necessary, switch off the electric drive and remove the battery from the pedelec.
2. If necessary, attach the transport safety device if your pedelec is equipped with a disc brake that has a transport safety device.
  - Contact your specialist dealer to have the handling of the transport safety device explained to you.
3. Attach your pedelec to the bike rack for transport. Observe the information in the manufacturer's instructions for the bike rack and, if necessary, for other components.
  - Only use approved bike racks on which you transport your pedelec standing upright.
  - If necessary, contact your specialist dealer for information on suitable bike racks.

If you plan to take or transport your bike on the bus, plane, ship or train:

- Before starting your journey, ask the relevant transport company about the transport conditions for the rechargeable battery and the pedelec.

## DISPOSAL

## 46 Disposal of pedelecs



The EU directives for electrical and electronic waste (Directive 2012/19/EU) and for waste accumulators (Directive 2006/66/EC) apply to the disposal of a pedelec, according to which the corresponding components must be collected separately and disposed of in an environmentally sound manner.

As a consumer, you are legally obligated to return electrical and electronic devices, as well as rechargeable and conventional batteries, at the end of their service life to the public collection points set up for this purpose or to the specialist trade.

1. Remove the rechargeable battery for supplying power to the electric drive and, if necessary, remove other rechargeable and conventional batteries installed on the pedelec, as well as all components and operating parts containing rechargeable or conventional batteries, from the pedelec.
2. Dispose of your pedelec (without batteries) as electrical waste.
  - Contact your city or local government for information about free collection points for electrical waste and/or collection points where electrical waste can be recycled.
  - If necessary, delete personal data stored on accessory devices before you hand in your pedelec at the collection point. This task is your responsibility.
3. Dispose of the removed rechargeable battery and any other conventional batteries from the pedelec as hazardous waste at a recycling center or collection point in your city or municipality.

## HOW TO HANDLE YOUR PEDELEC

## 47 Operating steps at a glance

**i** INFORMATION

This section summarizes and briefly describes the necessary operating steps for using your pedelec.

Detailed descriptions of the individual functions and operations including all relevant details and warnings can be found in the respective separate sections on the corresponding components.

- Be sure to read the separate detail sections completely before using your pedelec for the first time. It is not enough to read only this section: "How to handle your pedelec"!
- Refer to the separate detailed sections if:
  - you are unsure of how to use it,
  - you have problems using it.

## 47.1 Preparation

**You are riding your pedelec for the first time**

1. Adjust the saddle and handlebars correctly so that you can adopt the correct sitting position on the pedelec while cycling
  - > Chap. 36 "Adjusting the saddle" page 72 and
  - > Chap. 38 "Handlebar settings" page 78.
2. Familiarize yourself with your pedelec
  - > Chap. 15 "Getting to know your pedelec" page 33.
3. Check the components of your pedelec before you start cycling
  - > Chap. 16 "Checking the pedelec before starting to cycle" page 34.

**You are already familiar with the pedelec or ride it regularly**

- Check the components of your pedelec before you start cycling
  - > Chap. 16 "Checking the pedelec before starting to cycle" page 34.

## 47.2 Using your pedelec

### **i** INFORMATION

If you brake almost simultaneously with the front and rear brakes, you can usually control your pedelec better when braking and reduce your braking distance.

#### **Brakes**

> Chap. 24.4 "Operating the brake" page 50

- Pull the brake lever towards the handlebar grip to brake the corresponding wheel.
  - Pull the brake lever harder or to the maximum to increase or maximize the braking force (emergency braking).
  - Pull the brake lever less strongly or release it to reduce the braking force or to stop braking.

#### **Changing gears**

> Section "Gear shift system" auf page 53

- Change to a higher or lower gear using the gear shift system.

#### **Transporting baggage**

> Chap. 50 "Transporting baggage" page 98

- Transport luggage on the luggage rack or in a trailer if necessary. Use suitable panniers to store the luggage safely.

#### **Transporting children / taking children with you on the pedelec**

> Chap. 49 "Riding with children" page 95

- Only transport children on the pedelec in suitable child seats or child trailers.

### 47.3 Cleaning and caring for your pedelec

Regularly clean your pedelec or the components installed on your pedelec.

#### Pedal drive / components

> Section "Pedal drive" auf page 37

#### Electric drive

> Section "Special features of the electric drive" auf page 41

> Manufacturer's instructions for the electric drive

#### Front and rear brakes

> Chap. 24.8 "Cleaning and care" page 52

#### Gear shift system components

> Section "Gear shift system" auf page 53

### 47.4 Regular inspection of the pedelec components

Check the condition and function of the components installed on your pedelec every six months:

#### Pedal drive / components

> Section "Pedal drive" auf page 37

#### Electric drive

> Section "Special features of the electric drive" auf page 41

> Manufacturer's instructions for the electric drive

#### Front and rear brakes

> Chap. 24.6 "Checking the disc brake" page 51

> Chap. 24.7 "Wear and maintenance" page 52

#### Gear shift system components

> Section "Gear shift system" page 53

## 48 After a fall

**WARNING****Risk of accident and injury!**

Damaged pedelec components can suddenly break or otherwise fail; and damaged components of the electric drive can pose far-reaching risks.

- » Do not use your pedelec if it is damaged or if you suspect damage.
- » Have your pedelec checked by your specialist dealer after falls or accidents. Have damaged components replaced with suitable original parts.
- » Never try to straighten bent parts yourself.

Accidents and falls can cause damage to the pedelec that is not visible at first glance, e.g. hairline cracks. Especially with carbon components, the risk of "invisible damage" is high. Fibers or coatings can become detached or otherwise affected, compromising the strength and stability of the component.

- Always have carbon components replaced by your specialist dealer with suitable original parts after a fall.
- If the fall happened with the rechargeable battery inserted: Do not use the rechargeable battery anymore, but replace it with a suitable original battery. Please also observe the manufacturer's instructions for the electric drive.
- After a minor fall – e.g. if your pedelec has tipped over – check the condition and function of the components installed on your pedelec yourself.

## 49 Riding with children



### WARNING

#### **Risk of accident and injury!**

The risk of injury to children traveling with you is very high in the event of an accident or fall.

- » Always make sure that every child you take with you – whether in a child seat or trailer – wears a suitable bicycle helmet.

### NOTICE

#### **Risk of damage!**

Improper use of child seats and/or trailers can damage pedelec components.

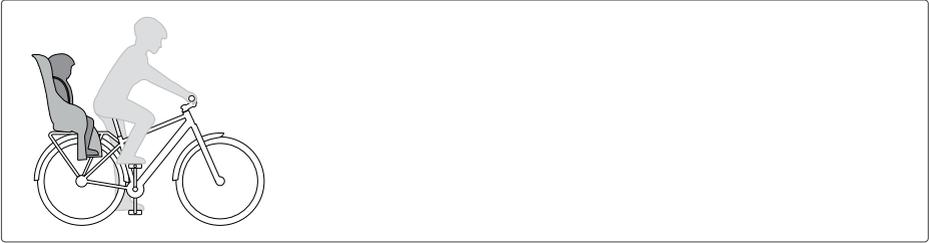
- » When transporting children, observe the information on the maximum load capacity of the child seat or trailer and the maximum permissible total weight of the pedelec.
- » Do not use child seats and/or trailers with unsuitable pedelecs.

If you want to use a child seat or a child trailer with your pedelec, your pedelec must be a category 2 or 3 model > Chap. 7 "Categorization" page 19.

The following are not suitable for use with child seats/child trailers:

- Pedelecs that do not belong to category 2 or 3.
- Pedelecs with a carbon frame.

## 49.1 Transporting children in a child seat



**Fig. 27:** Transporting children in a child seat

- Use a suitable certified child seat that meets your child's needs.
- Attach the child seat to the frame only, do not attach it to the luggage rack.
- Make sure that the saddle springs, spring seat post and any other moving components are completely enclosed. There must be no risk of the child reaching in and squeezing their fingers or otherwise becoming injured.

## 49.2 Transporting children in a child trailer

### **WARNING**

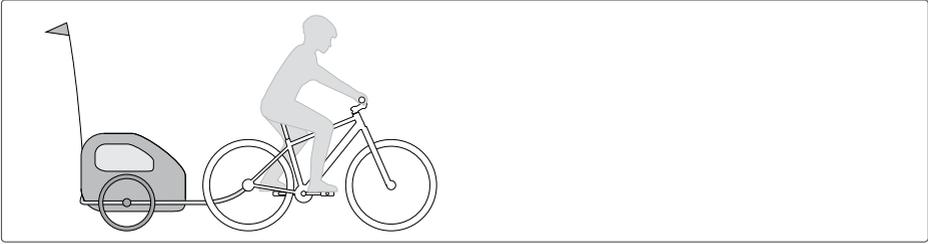
#### **Risk of accident and injury!**

With a trailer, your pedelec is much longer and the additional weight changes the cycling and especially the braking characteristics.

- » With a trailer attached, do not cycle too fast and maintain a steady speed.
- » Bear in mind that your braking distance will increase due to the additional weight and adjust your braking behavior accordingly.

### **INFORMATION**

The highest possible safety is provided by child trailers tested according to DIN EN 15918 with a stable passenger cell and safety belts.



**Fig. 28:** Transporting children in a child trailer

- Only use a suitable certified child seat that meets the needs of your child.
  - Make sure that the child trailer has a suitable restraint system that ensures the safety of your child during the ride.
  - Make sure that the child trailer has lighting that complies with country-specific and regional regulations.
- Follow the manufacturer's instructions for the child trailer. In particular, respect the maximum number of children that can be transported in the trailer.
- Observe the following maximum tow loads:
  - 40 kg (88 lbs) for unbraked trailers.
  - 80 kg (176 lbs) for braked trailers.

The total weight of the trailer (trailer + payload) counts towards the total weight of the pedelec and must be taken into account with regard to the maximum permissible total weight > Chap. 11 "Maximum permitted total weight" page 29.
- Attach a bendable pole with pennant in signal color to the child trailer. The pole should have a length of at least 1.5 m, so that the pennant draws the attention of other road users to the trailer.
- Take a test drive off the road to get used to the change in handling characteristics when cycling with a trailer.

## 50 Transporting baggage

**WARNING****Risk of accident and injury!**

By transporting luggage improperly, you may endanger traffic safety. There is an increased risk of accident and injury.

- » Do not attach luggage to the handlebars unless suitable special handlebar bags are used.

**NOTICE****Risk of damage!**

Improper use of luggage racks and/or trailers can damage pedal corner components.

- » When transporting luggage, observe the specifications for the maximum load capacity of the luggage rack or trailer and the maximum permissible total weight of the pedelec.
- » Do not use luggage racks and/or trailers with pedelecs that are not suitable for them.

If you want to use a trailer with your pedelec, your pedelec must be a category 2 or 3 model > Chap. 7 "Categorization" page 19.

**The following are not suitable for use with trailers:**

- Pedelecs that do not belong to category 2 or 3.
- Pedelecs with a carbon frame.

## 50.1 Using luggage racks

**WARNING****Risk of accident and injury!**

Improper loading of the luggage rack endangers traffic safety. There is an increased risk of accident and injury.

- » Secure your luggage to the luggage rack to prevent it from slipping or falling off. Only use undamaged lashing straps or similar aids for this purpose.
- » Make sure that the center of gravity of the luggage is in the middle.
- » Use only suitable bicycle bags from a specialist dealer.
- » Keep in mind that the extra weight may change the cycling characteristics of your pedelec.

**CAUTION****Risk of injury!**

You can catch your fingers on the clamping brackets, and recoiling lashing straps can hit and injure you.

- » Do not abruptly release the clamps or lashing straps, but carefully guide them into a relaxed position/length.

- Load the luggage rack so that no lighting component (headlight, rear light, reflectors) is covered.
- When loading heavier items of luggage, make sure to place them as far down as possible, e.g. in panniers, to achieve a low center of gravity for the luggage.
- Always ensure that lashing straps or similar are securely fastened and cannot get caught in moving parts.

50.2 Using trailers

 **WARNING**

**Risk of accident and injury!**

With a trailer, your pedelec is much longer and the additional weight changes the cycling and especially the braking characteristics.

- » With a trailer attached, do not cycle too fast and maintain a steady speed.
- » Bear in mind that your braking distance will increase due to the additional weight and adjust your braking behavior accordingly.

- Follow the manufacturer's instructions for the trailer.
- Follow the manufacturer's instructions for the child trailer  
 > Chap. 49.2 "Transporting children in a child trailer" page 96.
- Load the trailer so that the center of gravity of the luggage is in the middle.
- Secure your luggage to the trailer to prevent it from slipping or falling off. Only use undamaged lashing straps or similar aids for this purpose.
- When loading heavier items of luggage, make sure to place them as far down as possible to achieve a low center of gravity for the luggage.
- Always make sure that luggage, lashing straps, etc. are securely fastened and do not protrude or hang out of the trailer.
- Observe the following maximum tow loads:
  - 40 kg (88 lbs) for unbraked trailers.
  - 80 kg (176 lbs) for braked trailers.

The total weight of the trailer (trailer + payload) counts towards the total weight of the pedelec and must be taken into account with regard to the maximum permissible total weight > Chap. 11 "Maximum permitted total weight" page 29.

- Take a test drive off the road to get used to the change in handling characteristics when cycling with a trailer.



INSPECTION CERTIFICATE

**1. Inspection** – after about 200 km (124 mi) / 100 operating hours or 2 months

Activities performed, parts replaced/repared:

.....  
.....  
.....  
.....

..... Date, stamp/signature of specialist dealer:  
.....  
.....  
.....

**2. Inspection**- after about 1,000 km (620 mi) / 500 operating hours or 1 year

Activities performed, parts replaced/repared:

.....  
.....  
.....  
.....

..... Date, stamp/signature of specialist dealer:  
.....  
.....  
.....

**3. Inspection** – after about 2,000 km (1,240 mi) / 1,000 operating hours or 2 years

Activities performed, parts replaced/repared:

.....  
.....  
.....  
.....

..... Date, stamp/signature of specialist dealer:  
.....  
.....  
.....

**4. Inspection** – after about 3,000 km (1,865 mi) / 1,500 operating hours or 3 years

Activities performed, parts replaced/repared:

.....  
.....  
.....  
.....

..... Date, stamp/signature of specialist dealer:  
.....  
.....  
.....

**5. Inspection** – after about 4,000 km (2,485 mi) / 2,000 operating hours or 4 years

Activities performed, parts replaced/repared:

.....  
.....  
.....  
.....

..... Date, stamp/signature of specialist dealer:  
.....  
.....  
.....

**6. Inspection** – after about 5,000 km (3,100 mi) / 2,500 operating hours or 5 years

Activities performed, parts replaced/repared:

.....  
.....  
.....  
.....

..... Date, stamp/signature of specialist dealer:  
.....  
.....  
.....

BICYCLE PASSPORT

Nameplate:

Frame number: .....

Vehicle category according to proper use:  2  3  4  5

Permissible total weight in kg (lbs): .....

Carbon components

None  Frame  
 Handlebar  .....

EPAC drive system

BROSE Drive-S Mag Unit  FAZUA Drive-Pack  
 BROSE Drive-S Alu Unit  .....

EPAC display

BROSE Allround  BMZ Center Display DS103  
 FAZUA Evation 1.0  BMZ Sporty 14d  
 Marquardt Comfort 4311  .....

Drive

Chain drive  Belt drive

Gear shift system

Derailleur gears  Hub shifting system

Suspension

- Full suspension  Hardtail (front suspension)

Wheels

- Quick-release axle  Quick-releases  
 Rim size  27.5"  29"  
 Tire size .....
- Valve type (at delivery)  Express valve  Presta valve  Auto valve

Lights

- Hub dynamo  Detachable lights  
 EPAC (rechargeable battery)  .....

Luggage rack

- None  Rear  
 Retrofittable  Not suitable for luggage racks

Child seat

- Suitable for child seats  Not suitable for child seats

Trailer operation

- Only with adapter at the dropout  Not suitable for trailer operation

Special features

- The vehicle is **not** approved for public road traffic
- The vehicle is approved for public road traffic; the following equipment was mounted:
- .....
- .....
- .....
- .....
- .....

Date, stamp/signature of specialist dealer:

HANDOVER DOCUMENT

Specialist dealer

The handover of the pedelec indicated in the bicycle passport to the customer took place after:

- The final assembly of the pedelec,
- A check of all screw connections,
- A functional check of all components,
- The removal of excess oil and grease,
- A test ride,
- The adjustment of the pedelec to suit the customer,
- The training of the customer on how to properly use the pedelec,
- The advice to the customer to carry out an inspection after 200 km (124 mi),
- The advice to the customer to read the original operating instructions and all related instructions for the components before first use.

Date, stamp/signature of specialist dealer:

Customer

Last name .....

First name .....

Street .....

Zip code/city .....

- The bicycle passport was filled out by the specialist dealer.
- The pedelec has been adjusted to suit me.
- I have received an explanation of the basic operation of the pedelec.
- The original operating instructions and all related manuals for the components were handed over to me.

Place, date .....

Signature of customer .....

NOTES

