

ORIGINAL INSTRUCTIONS

PEDELEC / EPAC



MTB

Notes on this manual

Please read this manual extremely carefully and observe the instructions we have provided. These instructions serve your safety and a long service life of your pedelec. This manual contains functional descriptions and equipment variants for different models. Not all of the components or functions described are available on your pedelec. A legal claim to such components or functions does not arise from this documentation.



Please refer to the enclosed CE Declaration of Conformity.

Dear Customer,

You have chosen a product from our company. We would like to thank you for the trust you have placed in us and wish you much enjoyment with your new pedelec.

To ensure that your cycling pleasure lasts as long as possible, we have summarised a lot of useful information about pedelecs/e-bikes in this manual. If you have any further questions or require assistance, please contact the seller of your pedelec or contact us directly by telephone or e-mail.

We wish you a safe journey at all times!

Karcher AG (responsible manufacturer in regard to product safety and liability)

Gewerbestr. 19

75217 Birkenfeld, Germany

Our service is available to you as follows:

Phone: +49 (0)7082/9254-20

e-mail: service@karcher-products.de

Instructions for use:

Reprinting, translation and reproduction, even in part, is not permitted without our prior written consent.

We reserve the right to make technical changes to the details and illustrations mentioned here at any time.

The statements published herewith do not claim to be complete. Requirements can also change depending on the state of negotiations of the legislator. Therefore, please follow the publications of official bodies and pay attention to them as a matter of priority and exclusively.

TABLE OF CONTENTS

1	Notes on these operating instructions	8
1.1	Use and purpose of the operating instructions	8
1.2	Type plate	8
1.3	Validity of the operating instructions	9
1.4	Notes on wear	9
1.5	Notes for changes made by the user	9
1.6	Retention of documents	9
1.7	Symbols used in the operating instructions	10
1.8	Illustrations used in the operating instructions	11
2	Safety	12
2.1	Intended use	12
2.2	Incorrect use	12
2.3	Categorisation (use classification)	13
2.3.1	Category 1	13
2.3.2	Category 2	13
2.3.3	Category 3	14
2.3.4	Category 4	14
2.3.5	Category 5	15
2.3.6	Category 6	15
2.4	Labelling of the warnings	16
2.5	General safety instructions	17
2.6	Special safety instructions	17
2.6.1	Pedelec-specific components	17
2.6.2	Risk of electric shock	18
2.6.3	Explosion hazard	18
2.6.4	Fire hazard	18
2.6.5	Risk of burns	18
2.6.6	Interference with medical devices	18
2.6.7	Risk of burns	18
2.7	Safety instructions for road traffic	19
3	Commissioning	20
3.1	Final assembly	21
3.2	Before the first ride	22
3.2.1	Adjusting the seat position	23
3.2.2	Using a helmet	24
3.3	Before each ride	25
4	Pedelec body	26

5	Pedelec components.....	30
5.1	Battery.....	30
5.1.1	Removing the battery from the pedelec.....	34
5.1.2	Inserting the battery into the pedelec.....	34
5.1.3	Activating the battery.....	34
5.1.4	Deactivating the battery.....	34
5.1.5	Battery range.....	34
5.1.6	Battery wear.....	35
5.2	Motor.....	35
5.3	Charger.....	35
5.3.1	Connecting the battery to the charger.....	36
5.3.2	Removing the charger from the battery.....	36
5.4	Display.....	37
5.4.1	KD21C.....	38
5.4.2	Ananda D13.....	39
5.4.3	Ananda D15.....	40
5.5	Adjustable suspension fork.....	41
5.5.1	Preload.....	41
5.5.2	Lock-out (suspension unlocking/locking).....	42
5.6	Frame.....	43
5.6.1	Frame types.....	44
5.6.2	Rear suspension.....	44
5.7	Chain drive.....	46
5.8	Derailleur gear system.....	47
5.9	Chain guard.....	49
5.10	Brakes.....	50
5.10.1	Brake lever assignment.....	50
5.10.2	Adjusting the brake lever position.....	51
5.10.3	Adjusting the brake lever.....	52
5.10.4	Disc brake (hydraulic and mechanical).....	53
5.11	Wheels.....	54
5.11.1	Valves.....	56
5.12	Saddle and seat post.....	57
5.12.1	Suspension seat post (depending on model).....	58
5.13	Handlebars and stem.....	59
5.13.1	Adjusting the stem.....	60
5.13.2	Adjusting the handlebars.....	61
5.14	Quick release (depending on model).....	62

6	Storage.....	63
7	Transport	64
7.1	Transporting the pedelec	64
8	Malfunction	65
8.1	E-drive malfunction	65
8.2	Malfunctions in general	65
9	Maintenance.....	66
9.1	E-drive maintenance schedule	66
9.2	General maintenance plan (model-dependent).....	67
9.3	Tightening torques	68
9.3.1	Tight fit of all screws	68
9.3.2	Torque table	68
9.4	Maintenance	70
9.4.1	Checking the chain drive for wear.....	71
9.4.2	Checking the chain tension.....	71
9.4.3	Removing and fitting wheels	72
9.4.4	Change tyre/tube	73
9.4.5	Adjusting the derailleur gear system.....	75
9.5	Cleaning.....	77
10	Disposal.....	78
10.1	Information on waste electrical and electronic equipment.....	78
10.2	Disposing of the battery	81
10.3	Disposing of packaging.....	81
10.4	Disposing of lubricants and care products.....	81
10.5	Disposing of tyres and inner tubes.....	81
11	Inspection certificate	82
12	Pedelec passport	85
13	Notes	86

1 Notes on these operating instructions

Contrary to the standard, EPACs (= Electrically Power Assisted Cycle) are referred to as pedelecs (= pedal electric cycle) in these operating instructions. Pedelecs are vehicles with an electric assist motor that, when you pedal, provides assistance up to a maximum of 25 km/h. A push aid can accelerate the vehicle up to 6 km/h in the first gear of the gear shift. Pedelecs are vehicles that are legally classified as bicycles in some countries. Find out about the country-specific and regional regulations and classification in your country.

1.1 Use and purpose of the operating instructions

These operating instructions contain important information and instructions for the safe and proper operation of the pedelec. The operating instructions and the applicable manufacturer's instructions must be read and understood before commissioning.

1.2 Type plate

The specific type plate is located on the pedelec frame.

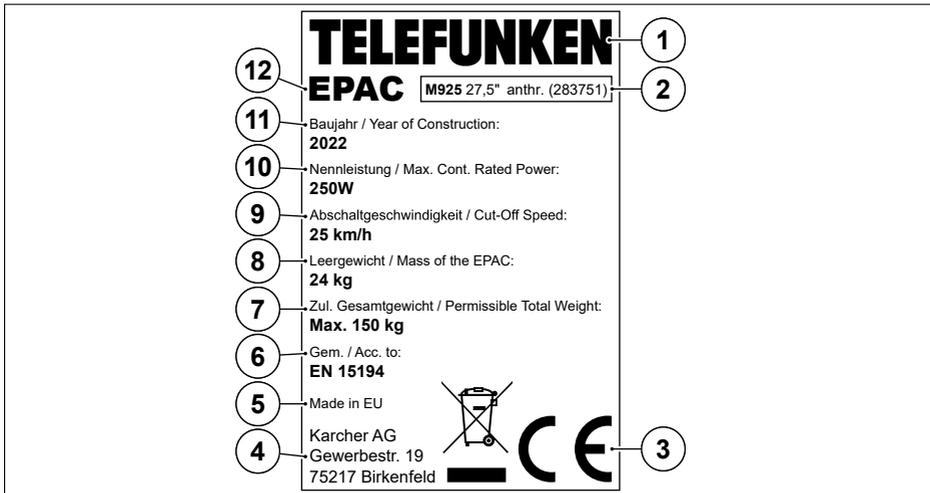


Fig. 1 Type plate example

1. Brand name	7. Maximum permissible total weight
2. Designation, colour, item number	8. Unladen weight
3. CE mark	9. Switch-off speed
4. Address of the manufacturer	10. Nominal power
5. Place of manufacture	11. Year of manufacture
6. Standard	12. Bicycle type – EPAC

1.3 Validity of the operating instructions

This user manual is valid for E- MTB pedelecs.

1.4 Notes on wear

Some components of your pedelec wear out due to their function. How much or how quickly this happens depends on the care, maintenance and type of use of the pedelec (mileage, driving in the rain, dirt, etc.). In particular, pedelecs that are frequently or always outdoors can wear out more quickly due to the weather. Wear parts include in particular, but are not exhaustive: Tyres, brake parts, chains, suspension elements, bearing components, light bulbs, batteries/rechargeable batteries. Such components are not subject to the law on material defects in the case of normal wear and tear, since in this respect there is no defect within the meaning of the law.

1.5 Notes for changes made by the user

If you make changes to the pedelec yourself (especially in the case of tuning), these changes can lead to greater stress on other components and damage to the pedelec. In doing so, you also risk the loss of your insurance cover, possible criminal liability in the event of accidents and the premature loss of your warranty rights. In addition, the changes can lead to an obligation to register the pedelec under road traffic law.

1.6 Retention of documents

Always keep these operating instructions and all applicable manufacturer's instructions for the components within easy reach for further use.

1.7 Symbols used in the operating instructions

Keys:

Press the key 

Press the key 

Press the key 

Numbered sequences of action

1. Sequence of action numbered (start)
2. Sequence of action numbered (continued)

Continuous text to plot

- Subordinate (list action)
- Subordinate (list enumeration)

Unnumbered action sequences

- Action or sequence of actions without a fixed order
- Action or sequence of actions without a fixed order

Continuous text to plot

- Subordinate (list action)
- Subordinate (list enumeration)

1.8 Illustrations used in the operating instructions

The pictures and graphics used are exemplary. They are intended to help understand the function and operation as well as maintenance and cleaning activities. The positions and illustrations of the components may differ depending on the type of equipment.

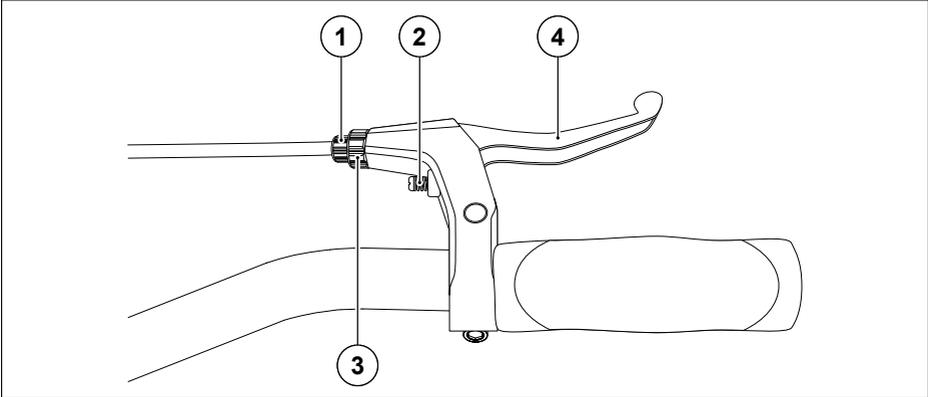


Fig. 2 Structure of the figures

Exemplary figure	Caption
------------------	---------

2 Safety

2.1 Intended use

Only use the pedelec as described in these operating instructions. Any other use is considered improper and may result in accidents, serious injury or damage to the vehicle.

Depending on the individual case, damage resulting from the improper use of the pedelec may be excluded from the statutory warranty obligations.

The pedelec is intended for use by a person to whose body height the seating position has been adjusted.

The specific categorisation of the pedelec ("Categorisation (use classification)" on page 13) must be observed.

The maximum permissible total weight of the pedelec ("Type plate" on page 8) must not be exceeded.

The pedelec is suitable for the use of a child seat, trailer or hitch system. The installation and use instructions for the respective accessories must be observed.

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

2.2 Incorrect use

Incorrect use of the pedelec can lead to the exclusion of the warranty.

- Use of the pedelec contrary to the categorisation;
- Improper repairs and maintenance
- Improper use of the battery
- Structural changes, tuning and manipulation of the delivery condition of the pedelec
- Opening and changing of the components of the pedelec
- Deep discharge of the battery due to long charging pauses or improper storage of the battery
- Exceeding of the permissible total weight See "Type plate" on page 8.

2.3 Categorisation (use classification)

The categorisation corresponds to EN 17406 “Classification for bicycles usage”. The categorisation of your pedelec is listed on the sticker on the frame.

2.3.1 Category 1

	<p>Pedelecs used on normal paved surfaces where the tyres are intended to maintain ground contact at average speed, with occasional drops.</p>
<p>Typical range \emptyset speed</p>	<p>15 km/h to 25 km/h</p>
<p>Max. drop/jump height</p>	<p>< 15 cm</p>
<p>Intended use</p>	<p>Commuting and leisure travel with moderate effort</p>
<p>Bicycle type (example)</p>	<p>City bikes and urban bikes</p>
<p>Recommended operating skills</p>	<p>No special operating skills required</p>

2.3.2 Category 2

	<p>Pedelecs to which condition 1 applies and which are also used on unpaved roads and gravel paths with moderate uphill and downhill gradients. Under these conditions, contact with uneven terrain and repeated loss of tyre contact with the ground may occur. Drops are limited to 15 cm or less.</p>
<p>Typical range \emptyset speed</p>	<p>15 km/h to 25 km/h</p>
<p>Max. drop/jump height</p>	<p>< 15 cm</p>
<p>Intended use</p>	<p>Leisure rides and trekking with moderate effort</p>
<p>Bicycle type (example)</p>	<p>Trekking and touring bikes</p>
<p>Recommended operating skills</p>	<p>No special operating skills required</p>

2.3.3 Category 3

	<p>Pedelecs to which conditions 1 and 2 apply and which are also used on rough paths, uneven unpaved roads and difficult terrain and on undeveloped paths, and the use of which requires technical skill. Jumps and drops should be less than 60 cm.</p>
<p>Typical range \emptyset speed</p>	<p>Not relevant</p>
<p>Max. drop/jump height</p>	<p>< 60 cm</p>
<p>Intended use</p>	<p>Sport and competition rides with moderate technical demands of the trails</p>
<p>Bicycle type (example)</p>	<p>Cross-country and marathon bikes</p>
<p>Recommended operating skills</p>	<p>Technical skills and practice required</p>

2.3.4 Category 4

	<p>Pedelecs to which conditions 1, 2 and 3 apply and which are used for descents on unpaved roads at speeds of less than 40 km/h. Jumps should be less than 120 cm.</p>
<p>Typical range \emptyset speed</p>	<p>Not relevant</p>
<p>Max. drop/jump height</p>	<p>< 120 cm</p>
<p>Intended use</p>	<p>Sport and competition rides with very challenging technical demands of the trails</p>
<p>Bicycle type (example)</p>	<p>Mountain bikes, trail bikes</p>
<p>Recommended operating skills</p>	<p>Technical skills, practice and good bike control required</p>

2.3.5 Category 5

	<p>Pedelecs to which conditions 1, 2, 3 and 4 apply and which are used for extreme jumps or descents on unpaved roads at speeds exceeding 40 km/h or for a combination thereof.</p>
<p>Typical range \emptyset speed</p>	<p>Not relevant</p>
<p>Max. drop/jump height</p>	<p>> 120 cm</p>
<p>Intended use</p>	<p>Extreme sports</p>
<p>Bicycle type (example)</p>	<p>Downhill, dirt jump and free-ride bikes</p>
<p>Recommended operating skills</p>	<p>Extreme technical skills, practice and bike control required</p>

2.3.6 Category 6

	<p>Pedelecs to which condition 1 applies and which are used in competitions or on other occasions at high speeds of more than 50 km/h, for example downhill runs and sprints.</p>
<p>Typical range \emptyset speed</p>	<p>30 km/h to 55 km/h</p>
<p>Max. drop/jump height</p>	<p>< 15 cm</p>
<p>Intended use</p>	<p>Sport and competition rides with high effort</p>
<p>Bicycle type (example)</p>	<p>Road bikes, time bikes and triathlon bikes</p>
<p>Recommended operating skills</p>	<p>Technical skills and practice required</p>

2.4 Labelling of the warnings



DANGER

Immediate danger to life or serious injury.

Failure to follow these safety instructions will result in serious injury, including death.

- ▶ Be sure to follow the measures described to avoid these dangers.
-



WARNING

Possible danger to life or serious injury.

Failure to follow these safety instructions can result in serious injury, including death.

- ▶ Be sure to follow the measures described to avoid these dangers.
-



CAUTION

Possible minor injuries.

Failure to comply with these safety instructions may result in minor to severe injuries or damage to property and the environment.

- ▶ Be sure to follow the measures described to avoid these dangers.
-

NOTE

Damage to the device or the environment.

Failure to observe these safety instructions may result in damage to property and the environment.

- ▶ Be sure to follow the measures described to avoid these dangers.
-

2.5 General safety instructions

- Only use the pedelec for its intended purpose.
- Only use the pedelec in accordance with the categorisation.
- Note changed driving behaviour due to optional components.
- Adjust speed and driving style to the traffic, weather and road conditions.
- Function/visual inspection of the pedelec before use.
- Only use the pedelec when all components are working properly.
- Repairs, replacement of components and installation of additional components must be carried out by qualified personnel.
- Have the pedelec checked by qualified personnel after a fall or excessive use.
- Use shoes with non-slip soles.
- Ensure that no loose clothing (ribbons, laces, etc.) get caught in the moving parts of the pedelec.
- Always be ready to brake.

2.6 Special safety instructions

2.6.1 Pedelec-specific components

- Do not drive through deep water.
- Observe pedelec-specific cycling behaviour.
- Pedelecs and components (battery, charger, etc.) must not be used by children or physically or mentally impaired persons or left alone unattended with such persons.
- Familiarise yourself with the pedelec away from road traffic.
- Remove the battery before working on, transporting or storing the pedelec.
- Do not modify, open or replace the motor, battery or control unit.
- Repairs, replacement of components and installation of additional components must be carried out by qualified personnel.
- Use the pedelec's push assist only for pushing and not for cycling.

2.6.2 Risk of electric shock

- Check the battery, charger, cable and mains plug for damage before each use.
- Do not bend the cable.
- Only connect the charger to a socket whose specifications match those on the charger.
- Do not use the battery, charger, cable or mains plug with wet or damp hands.

2.6.3 Explosion hazard

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

2.6.4 Fire hazard

- Only use the charger under supervision and in dry indoor areas.
- Place the charger and battery on a fireproof surface away from flammable materials when charging.
- Only use the original charger.
- Only charge the supplied battery and no third-party batteries.
- After charging, pull out the mains plug.
- Do not charge the battery in the immediate vicinity of metal objects.
- Do not short-circuit the battery.

2.6.5 Risk of burns

- Have the battery checked by qualified personnel after a fall or excessive stress.
- Do not open, disassemble, pierce or deform the battery.
- Only carry a damaged battery with protective clothing (gloves, clothing and goggles).
- In case of contact with battery acid, rinse the affected area with plenty of water and seek medical attention.
- In the event of a battery fire, move away and call the fire brigade.

2.6.6 Interference with medical devices

- Keep the battery and charger away from people with pacemakers and inform them.

2.6.7 Risk of burns



- When this symbol is on a component, it indicates that it may become hot.
- After use, allow motor or component that may become hot to cool completely before touching.

2.7 Safety instructions for road traffic

- Wear light-coloured clothing with reflective elements.
- Wear a helmet with a CE mark according to EN 1078.
- Observe and follow country-specific and regional road traffic regulations.
- Only use the pedelec in road traffic if the equipment complies with the country-specific and regional road traffic regulations.
- Use lanes designated for bicycles/pedelecs.
- Regularly obtain information about changes in country-specific and regional road traffic regulations.
- Always have both hands on the handlebars of the pedelec during use.
- Pursue a defensive cycling style.
- Expect incorrect behaviour from other road users.
- Stop to perform activities on the pedelec (switching on lights, stowing luggage, etc.) and other distractions (e.g. smartphone use, etc.).

3 Commissioning

WARNING

Danger of accident!

If children play with the packaging or small parts, they can choke on them and suffocate or injure themselves.

- ▶ Keep small parts away from children.
- ▶ Do not let children play with the packaging or the pedelec.
- ▶ Do not leave the pedelec unattended during assembly.

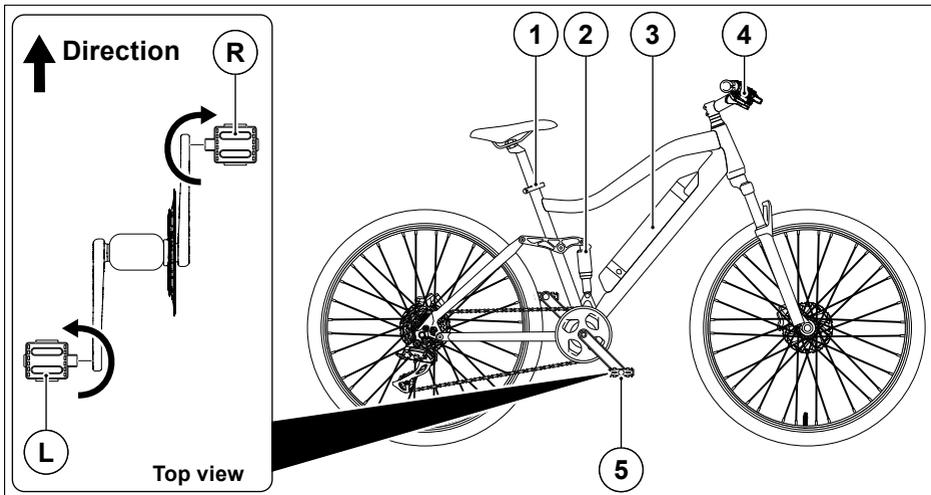


Fig. 3 Commissioning

1. Saddle clamp	4. Handlebars
2. Rear shock absorber	5. Pedals
3. Battery	

For shipping reasons, your new pedelec is pre-assembled. This means that not all components and screws are firmly tightened at the factory. They must be fitted/tightened firmly before commissioning:

- Commission the pedelec immediately after purchase or delivery.
- The pedals, handlebars, handlebar stem and handlebar attachments (e.g. brake lever, gear lever, bell, display/control unit) and saddle clamp must be adjusted and tightened. See "Adjusting the seat position" on page 23. See "Tightening torques" on page 68.

3.1 Final assembly

CAUTION

Risk of injury!

Moving parts can trap or crush body parts.

- ▶ Make sure that no body parts or fingers get caught between moving parts.
- ▶ Wear protective gloves.

NOTE

Risk of damage!

Improper final assembly can damage the pedelec and the components.

- ▶ Carry out work conscientiously and properly.
- ▶ If necessary, have the final assembly carried out by qualified personnel.

The pedelec is pre-assembled and only a few components need to be mounted and adjusted.

1. Open the box.
 - Do not use a sharp object.
2. Remove the pedelec.
3. Park the pedelec safely.
4. Remove packaging material and dispose of properly.
5. Mount the pedals by hand and with mounting grease.
 - Observe the “L” (direction of travel LEFT) and “R” (direction of travel RIGHT) markings.
 - Note the direction of the thread.
6. Tighten the pedals with an open-end spanner WAF 15.
7. Adjust the handlebars and tighten with a 6 mm Allen key. See “Adjusting the handlebars” on page 61.
8. Align the stem at a 90° angle to the front wheel and tighten with a 6 mm Allen key. See “Adjusting the stem” on page 60.
9. Adjust the saddle height. See “Saddle and seat post” on page 57.
10. Check all screws for tightness. See “Tightening torques” on page 68.
11. Check the air pressure of the wheels and adjust if necessary. See “Wheels” on page 54.
12. Fully charge the battery.

3.2 Before the first ride



WARNING

Danger of accident!

If the minimum insertion depth of the seat post or stem is not observed, the seat post or stem may slip or break.

- ▶ Observe the minimum insertion depth of the seat post and stem.
-



CAUTION

Risk of injury!

Muscle tension/joint pain caused by incorrect seat position.

- ▶ Correctly adjust the seat position.
 - ▶ If necessary, have the seat position adjusted by qualified personnel.
-



CAUTION

Risk of injury!

Increased risk of injury due to lack of or limited operability.

- ▶ Correctly adjust the seat position.
 - ▶ If necessary, have the seat position adjusted by qualified personnel.
-

NOTE

Risk of damage!

Failure to observe the minimum insertion depth of the seat post or stem can damage components on the pedelec.

- ▶ Observe the minimum insertion depth of the seat post and stem.
-

3.2.1 Adjusting the seat position

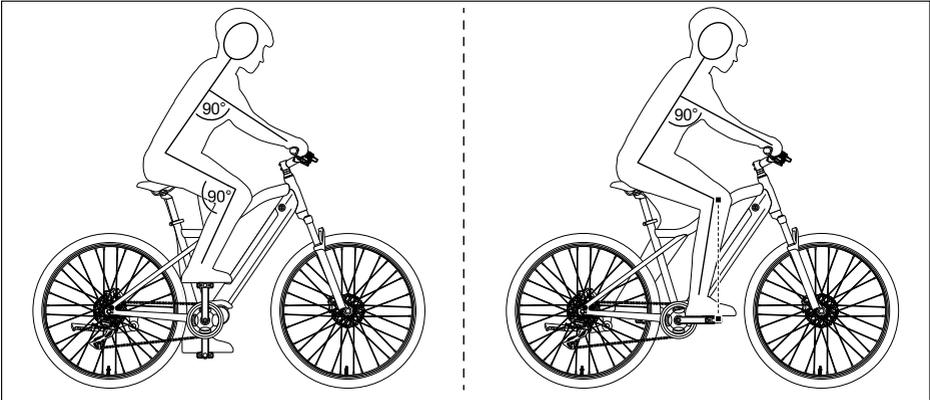


Fig. 4 Optimum seat position

The optimum seat position depends on the cyclist's height, as well as the frame size, intended use and adjustments of the pedelec.

The characteristics of an optimum seat position are as follows:

- The knee angle of the upper leg and arm angle are 90° degrees.
- The front knee is over the axle of the front pedal.
- The arms are relaxed and slightly bent outwards.
- The back is not perpendicular to the seat post.
- The handlebars and all components are adjusted so that all components are safe to operate.
- Watch the video on our website for the correct adjustment of the seat position <https://www.karcher-products.de/index.php/erklaer-videos.html>



3.2.2 Using a helmet

⚠ WARNING

Danger of accident!

Risk of serious injury from falling on the head without a helmet.

► Wear a helmet with a CE mark according to EN 1078.

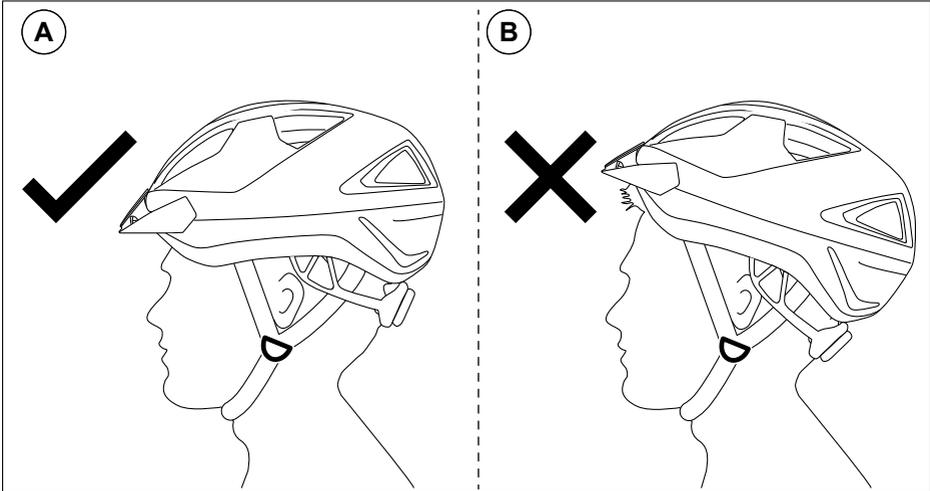


Fig. 5 Bicycle helmet

A. Optimum fit	B. Non-optimum fit
----------------	--------------------

Wear a bicycle helmet even if there is no legal obligation to do so.

- The helmet should be made according to EN 1078.
- The helmet should have a CE marking.
- Ensure that the helmet fits perfectly.

3.3 Before each ride



CAUTION

Risk of injury!

There is an increased risk of injury from material breakage due to wear and tear caused by use and loose screw connections.

- ▶ Check the pedelec and all components before cycling.
 - ▶ Only use the pedelec when it is in proper condition.
-

Check the following components before each ride:

- Check the charge status of the battery; if necessary charge the battery completely.
- Check the function of the front wheel, rear wheel and coaster brakes.
- Check the gear shift for proper function and unusual noises.
- Check the quick release for tight closure.
- Check the frame, fork and seat post for damage and wear.
- Check all screws for tightness. See "Tightening torques" on page 68.
- Check the crank drive for proper function and unusual noises.
- Check the handlebars and stem for damage and wear.
- Check the tyres for sufficient pressure, damage and wear.
- Check the rims and spokes for even spoke tension, damage and wear.

4 Pedelec body

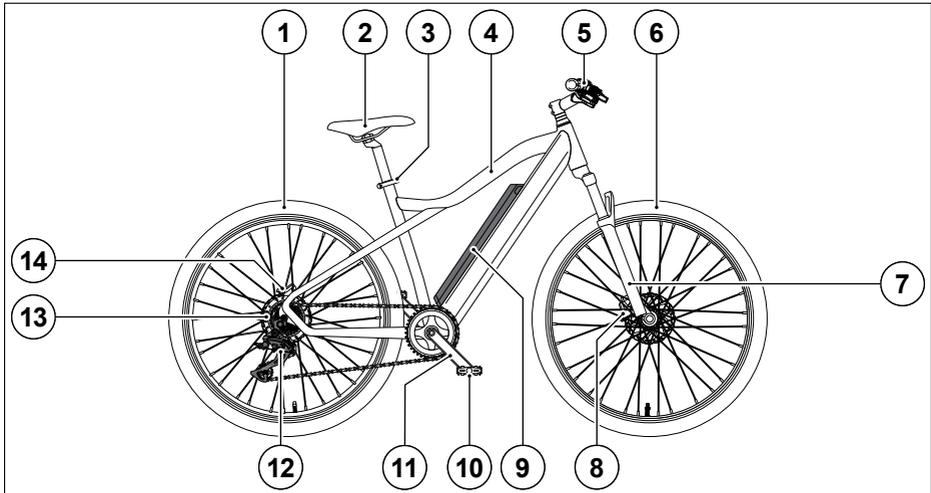


Fig. 6 Pedelec with semi-integrated down tube battery, rear wheel motor and hardtail frame

1. Rear wheel	8. Front disc brake
2. Saddle with seat post	9. Down tube battery semi-integrated
3. Seat post clamp, with quick release if necessary	10. Pedals
4. Frame	11. Crank arm
5. Handlebar with attachments	12. Derailleur gear system
6. Front wheel	13. Rear wheel motor
7. Suspension fork	14. Rear disc brake

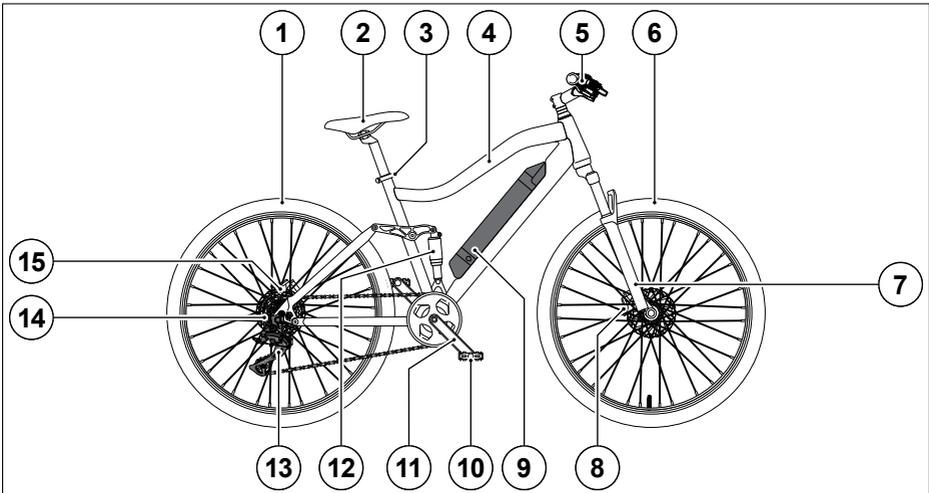


Fig. 7 Pedelec with semi-integrated down tube battery, rear wheel motor and full suspension frame

1. Rear wheel	9. Down tube battery semi-integrated
2. Saddle with seat post	10. Pedals
3. Seat post clamp, with quick release if necessary	11. Crank arm
4. Frame	12. Rear suspension
5. Handlebar with attachments	13. Derailleur gear system
6. Front wheel	14. Rear wheel motor
7. Suspension fork	15. Rear disc brake
8. Front disc brake	

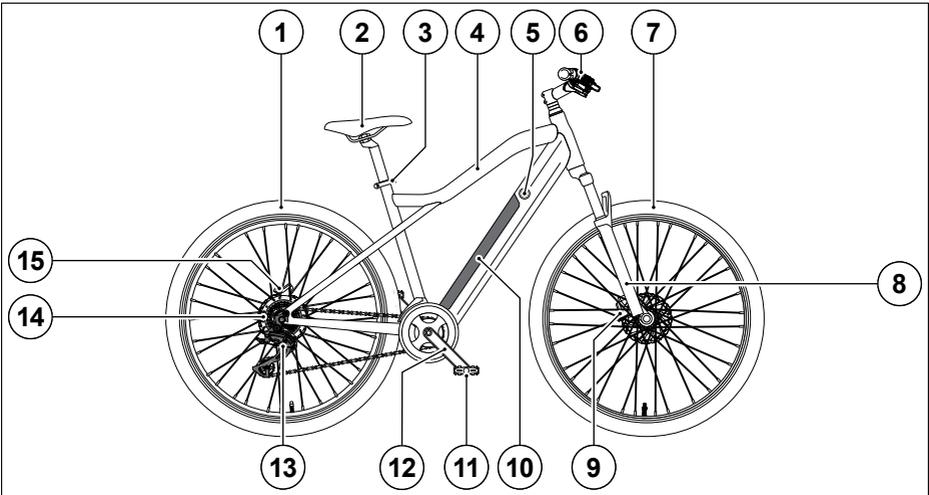


Fig. 8 Pedelec with integrated down tube battery, rear wheel motor and hardtail frame

1. Rear wheel	9. Front disc brake
2. Saddle with seat post	10. Integrated down tube battery
3. Seat post clamp, with quick release if necessary	11. Pedals
4. Frame	12. Crank arm
5. Battery lock	13. Deraileur gear system
6. Handlebar with attachments	14. Rear wheel motor
7. Front wheel	15. Rear disc brake
8. Suspension fork	

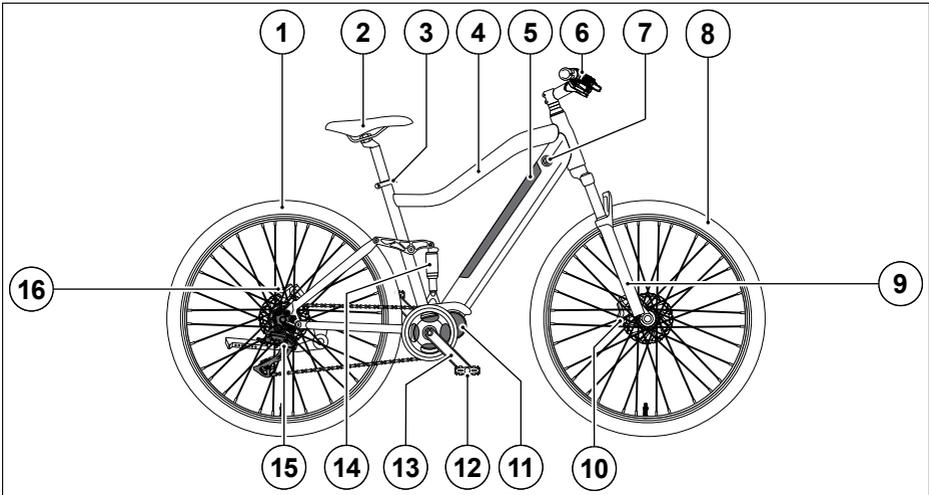


Fig. 9 Pedelec with integrated down tube battery, mid-motor and full suspension frame

1. Rear wheel	9. Suspension fork
2. Saddle with seat post	10. Front disc brake
3. Seat post clamp, with quick release if necessary	11. Mid-mounted motor
4. Frame	12. Pedals
5. Integrated down tube battery	13. Crank arm
6. Handlebar with attachments	14. Rear suspension
7. Battery lock	15. Derailleur gear system
8. Front wheel	16. Rear disc brake

5 Pedelec components

5.1 Battery



WARNING

Danger of explosion!

Improper use or handling can cause the battery to explode.

- ▶ Only operate the pedelec with the original battery.
 - ▶ Never attempt to charge a damaged battery.
 - ▶ Never try to open the battery.
 - ▶ Keep the battery away from fire and water.
 - ▶ Protect the battery from overheating due to direct and indirect sunlight.
 - ▶ Observe country-specific requirements.
-



WARNING

Fire hazard!

Improper handling of the battery or use of an incompatible charger may cause a fire.

- ▶ Operate the pedelec exclusively with the original battery
 - ▶ Observe the loading instructions and loading conditions.
 - ▶ Do not modify or repair the battery.
 - ▶ Only charge the original battery and the provided original charger.
 - ▶ Keep the battery and charger away from flammable materials during charging.
 - ▶ Keep the battery and charger away from metal objects during charging.
 - ▶ Place the battery and charger in a dry, fireproof and well-ventilated place during charging.
 - ▶ Do not leave the battery and charger unattended during charging.
 - ▶ Do not use or charge a damaged and physically intact battery.
 - ▶ Do not short-circuit the battery.
 - ▶ Inform customer service immediately.
-

**WARNING****Danger of accident!**

The handling of the battery by children (< 14 years), persons with sensory, physical or mental limitations (physically disabled or elderly persons with limited abilities) or persons with a lack of experience and knowledge (e.g. older children) can cause a wide variety of accidents.

- ▶ Store the battery out of the reach of children.
 - ▶ Do not use the battery as a toy.
 - ▶ Battery may only be handled by persons with sensory, physical or mental impairments and by children under 14 years of age under supervision.
-

NOTE**Risk of damage!**

Improper handling can damage the battery.

- ▶ Protect the battery from shocks, mechanical influences, impacts and moisture.
 - ▶ Do not use or charge a damaged and physically intact battery.
 - ▶ Contact the customer service immediately.
-

NOTE**Risk of damage!**

Using other chargers may damage the battery.

- ▶ Only use the original charger.
 - ▶ Fully charge the battery during the first charging procedure (LED on the charger lights up green when the battery is fully charged).
-

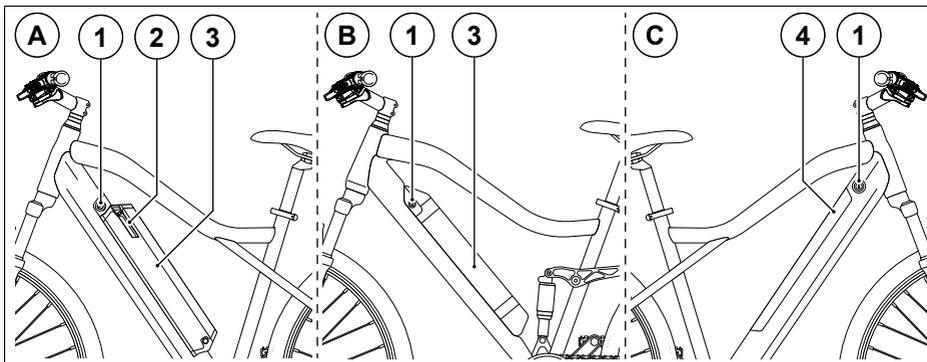


Fig. 10 Removing/inserting the battery

A. Semi-integrated battery variant 1	1. Battery lock
B. Semi-integrated battery variant 2	2. Unlocking lever
C. Integrated battery variant	3. Semi-integrated battery
	4. Integrated battery

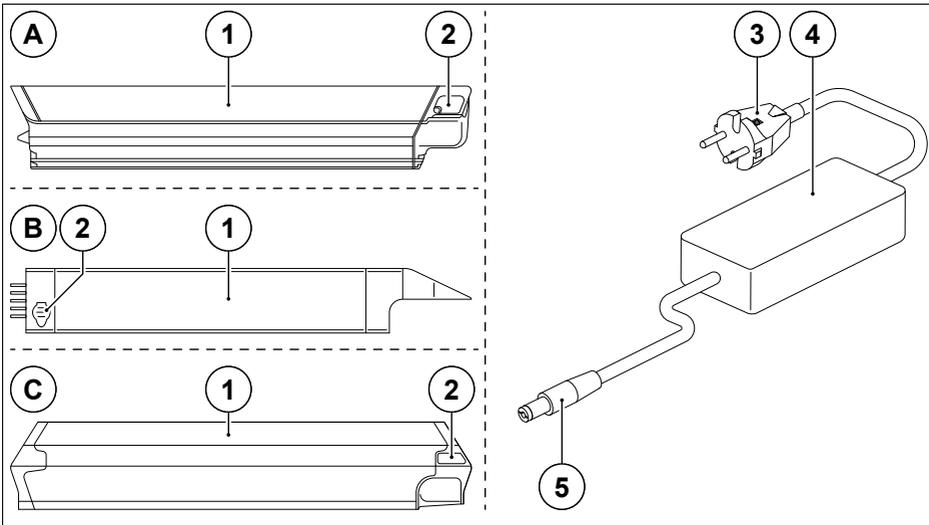


Fig. 11 Charging/activating the battery

A. Semi-integrated battery variant 1	1. Battery
B. Semi-integrated battery variant 2	2. Battery lock
C. Integrated battery variant	3. Charging plug
	4. Charger
	5. Mains plug

Depending on the model, the pedelec is equipped with either a semi-integrated or an integrated battery.

The battery of the pedelec is a lithium-ion battery without memory effect. This means you can recharge the battery at any time, regardless of the charge level, without any loss of battery capacity.

- Fully charge the battery after each trip.
- Switch off the drive system whenever it is not in use.
- Never fully discharge the battery.
- Always recharge the battery during storage (approx. every 3 months).
- Do not expose the battery to high temperature fluctuations.
- Store the battery at room temperature.
- In case of problems with the battery, contact the customer service.
- Battery must not be shipped.

5.1.1 Removing the battery from the pedelec

1. Insert the key into the battery lock.
2. Turn the key to the "Unlock" position.
3. Pull the release lever (depending on the model).
4. Remove the battery.

5.1.2 Inserting the battery into the pedelec

1. Insert the battery.
2. Turn the key to the Off position.
3. Pull the key out of the battery lock.

5.1.3 Activating the battery

1. Insert the key into the battery lock.
2. Turn the key to the On position.
3. Switch on the system via the display. See "Display" on page 37.

5.1.4 Deactivating the battery

1. Switch off the system via the display. See "Display" on page 37.
2. Turn the key to the Off position.
3. Pull the key out of the battery lock.

5.1.5 Battery range

- The range depends strongly on external influences such as driving style, environmental influences (wind, temperature), terrain profile/gradient and tyre pressure.
- In addition, the weight and pedalling cadence of the cyclist are decisive for the range.
- It can be ridden in different assistance levels (up to five different levels depending on the equipment). The higher the selected assistance level, the lower the achievable range.
- The range varies from approx. 20 km to approx. 150 km, depending on the battery type and the above-mentioned influences.
- A very high range can be achieved by permanently selecting a low assistance level and a sporty cycling style with a high pedalling cadence.
- The battery is subject to self-discharge after approx. 3 months. Therefore, please be sure to recharge it.

5.1.6 Battery wear

With advancing age and with each individual charging process, the charging capacity of pedelec batteries slowly decreases. Our pedelec batteries are designed for 500 charging cycles.

Up to this number of cycles, the power reduction can be limited to small increments and 80% of the original charging capacity can be reached if the instructions in this user manual are followed.

After falling below this 80% capacity limit, the battery will then also lose further charging capacity in larger increments.

5.2 Motor



CAUTION

Risk of injury!

Increased risk of burns due to the hot motor.

- ▶ Let the motor cool down completely after use and before touching it.

The motor has an output of 250 W and can be installed in the following positions on the pedelec:

- Rear wheel hub
- Bottom bracket (mid-mounted motor)

5.3 Charger



WARNING

Fire hazard!

Improper handling of the charger or use of an incompatible battery can cause a fire.

- ▶ Observe the loading instructions and loading conditions.
- ▶ Only charge the provided battery.
- ▶ Keep the battery and charger away from flammable materials during charging.
- ▶ Keep the battery and charger away from metal objects during charging.
- ▶ Place the battery and charger in a dry, fireproof and well-ventilated place during charging.
- ▶ Do not leave the battery and charger unattended during charging.

WARNING

Risk of electric shock!

Improper handling of the charger or the power connection may result in an electric shock.

- ▶ Observe the specifications and original operating instructions of the charger.
 - ▶ Do not use a damaged charger.
 - ▶ Contact the customer service immediately.
-

NOTE

Risk of damage!

Charging another battery with the charger may damage the battery and the charger.

- ▶ Only charge the original battery.
-

- Follow the manufacturer's instructions.
- Information on the type plate must correspond to the power supply.
 - If there is no compliance, the charger must not be used.

5.3.1 Connecting the battery to the charger

1. Insert the charging plug of the charger into the charging socket of the battery.
2. Insert the charging plug into the socket.
 - LED red = battery is being charged
 - LED green = battery fully charged

5.3.2 Removing the charger from the battery

1. Remove the charging plug from the socket.
2. Remove the charging plug of the charger from the charging socket of the battery.

5.4 Display

NOTE

Risk of damage!

The display can be damaged by improper use, moisture, shocks and impacts.

- ▶ Do not subject the display to shocks or impacts.
 - ▶ Do not expose the display to moisture or wetness.
 - ▶ Do not disconnect the display connections when the display is on.
-

Depending on the model, the pedelec is equipped with one of the following three display types. Before using the display, the key on the battery must be turned from the Off position to the On position.

5.4.1 KD21C

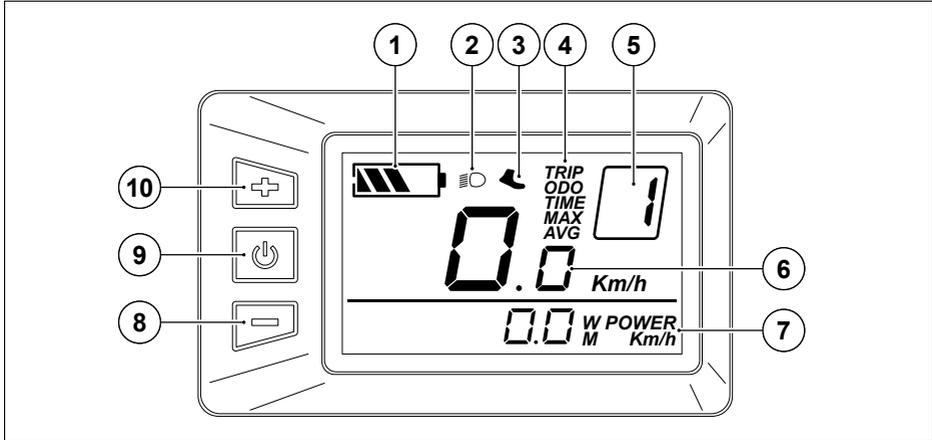


Fig. 12 KD21C

1. Battery charge status	6. Speed display
2. Display lighting	7. Driving information display
3. Push aid display	8. Minus key
4. Cycling information	9. On/Off button / Menu button
5. Assistance level	10. Plus key

Switching On/Off

- Press the On/Off button for approx. 2 seconds.

Setting the assistance level

You can choose between five support levels, with 1 being the weakest and 5 the strongest assistance level. At 25 km/h, the motor assistance switches off.

- Press the Plus button to increase the assistance level.
- Press the Minus button to reduce the assistance level.

Set driving information

- Press the Menu button to switch between daily odometer, total odometer, trip duration, maximum speed or average speed.

Switching the lighting on and off

- Press the Plus button for approx. 2 seconds.

Switching the push aid on and off

- Press the Minus button for approx. 2 seconds.

5.4.2 Ananda D13

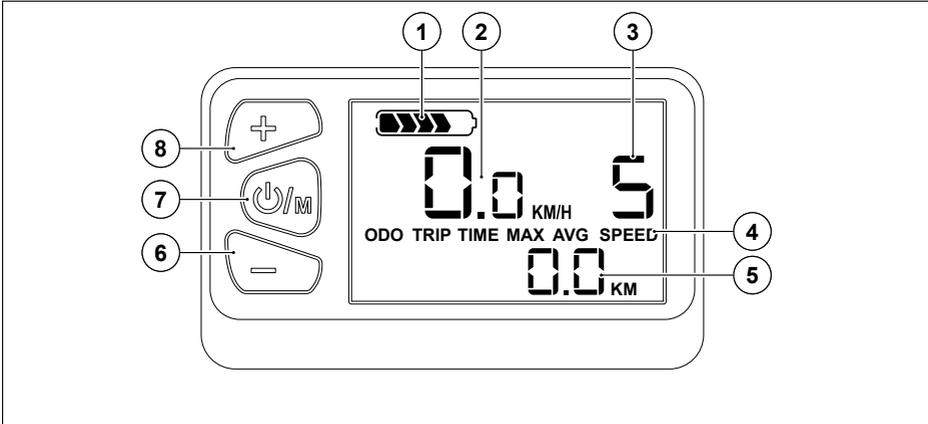


Fig. 13 Ananda D13

1. Battery charge status	5. Cycling information
2. Speed display	6. Minus key
3. Assistance level	7. On/Off button / Menu button
4. Driving information display	8. Plus key

Switching On/Off

- Press the On/Off button for approx. 2 seconds.

Setting the assistance level

You can choose between five support levels, with 1 being the weakest and 5 the strongest assistance level. At 25 km/h, the motor assistance switches off.

- Press the Plus button to increase the assistance level.
- Press the Minus button to reduce the assistance level.

Set driving information

- Press the Menu button repeatedly to switch between daily odometer, total odometer, trip duration, maximum speed or average speed.

To reset the above-listed values (except for total odometer), press and hold the Plus and Minus buttons simultaneously for around five seconds.

Switching the lighting on and off

- Press the Plus button for approx. 2 seconds.

Switching the push aid on and off

- Press the Minus button for approx. 2 seconds.

5.4.3 Ananda D15

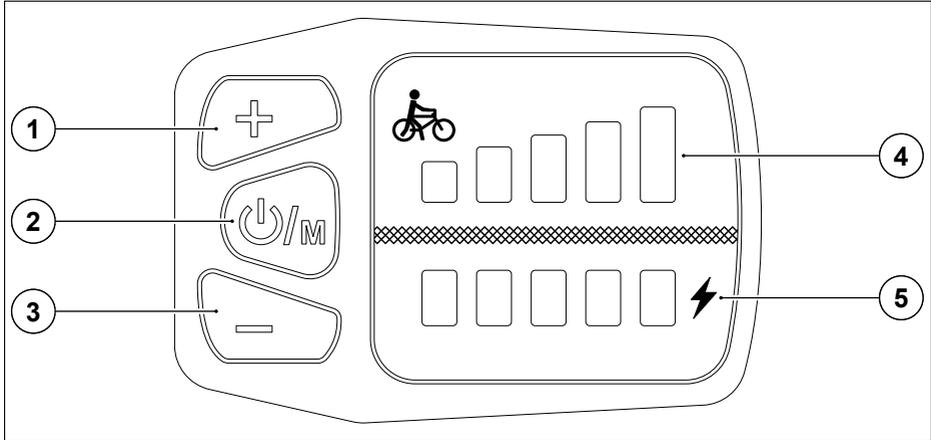


Fig. 14 Ananda D15

1. Plus key	4. Assistance level
2. On/Off button / Menu button	5. Battery charge status
3. Minus key	

Switching On/Off

- Press the On/Off button for approx. 2 seconds.

Setting the assistance level

You can choose between five support levels, with 1 being the weakest and 5 the strongest assistance level. At 25 km/h, the motor assistance switches off.

- Press the Plus button to increase the assistance level.
- Press the Minus button to reduce the assistance level.

Switching the lighting on and off

- Press the Plus button for approx. 2 seconds.

Switching the push aid on and off

- Press the Minus button for approx. 2 seconds.

5.5 Adjustable suspension fork

⚠ CAUTION

Risk of injury!

Accidents can occur due to incorrectly adjusted suspension forks.

- ▶ Have the adjustment carried out by qualified personnel.

NOTE

Risk of damage!

An incorrectly adjusted suspension can cause impact noises and damage to the suspension fork or individual components.

- ▶ Have the adjustment carried out by qualified personnel.

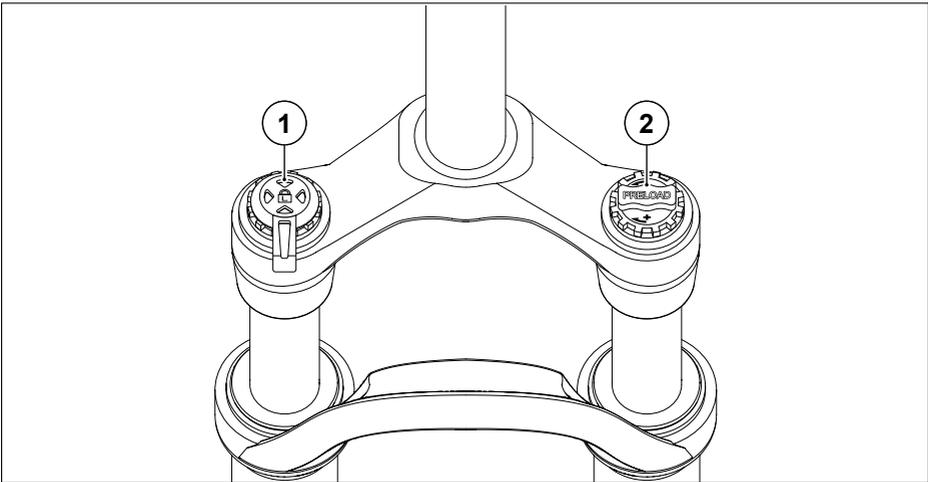


Fig. 15 Adjustable suspension fork

- | | |
|---|--------------------------------|
| 1. Adjustment wheel lock-out (suspension unlocking/locking) | 2. Preload of adjustment wheel |
|---|--------------------------------|

5.5.1 Preload

With the adjustable suspension fork, you can adjust the hardness of the suspension fork to the user's weight by turning the adjustment wheel.

- Turn the adjustment wheel clockwise to increase the spring rate.
- Turn the adjusting wheel anticlockwise to reduce the spring rate.

5.5.2 Lock-out (suspension unlocking/locking)

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

Note that even with the lock-out function activated, the suspension can compress up to 15 mm when the road surface is uneven.

Depending on the model, you operate the lock-out function with a rotary knob on the right stanchion of the suspension fork or via a remote control on the handlebar.

- Turn the setting wheel clockwise or press the lock button on the remote control to activate the lock-out function.
- Turn the setting wheel anti-clockwise or press the unlock button on the remote control to deactivate the activated lock-out function.

5.6 Frame



WARNING

Danger of accident!

Dismantling the shock absorber can cause a wide variety of accidents.

- ▶ Have work on the shock absorber carried out by qualified personnel.
- ▶ Do not disassemble the shock absorber.



CAUTION

Risk of injury!

Accidents can occur due to an incorrectly adjusted rear suspension.

- ▶ Have the adjustment carried out by qualified personnel.

NOTE

Risk of damage!

An incorrectly adjusted rear suspension can cause impact noises and damage to the rear suspension or individual components.

- ▶ Have the adjustment carried out by qualified personnel.
- ▶ Do not use the rear suspension locking function, if fitted, when going downhill or jumping.

NOTE

Risk of damage!

Lack of preservation with a suitable bicycle care product can lead to damage and the formation of flash rust on the frame in air containing salt or ammonia.

- ▶ Clean the frame regularly.
- ▶ Preserve the frame with a suitable bicycle care product at least every 6 months.

The frame of the pedelec is painted with a colourfast lacquer and sealed with a plastic-based clear powder coating.

Depending on the model, you will find the frame number on the control head or on the underside of the bottom bracket.

5.6.1 Frame types

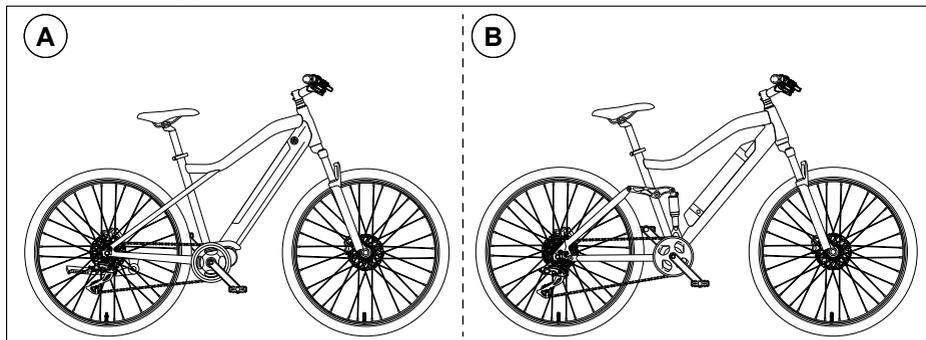


Fig. 16 Frame types

A. Hardtail	B. Full suspension
-------------	--------------------

Depending on the model, the pedelec is either equipped with or without a rear suspension.

5.6.2 Rear suspension

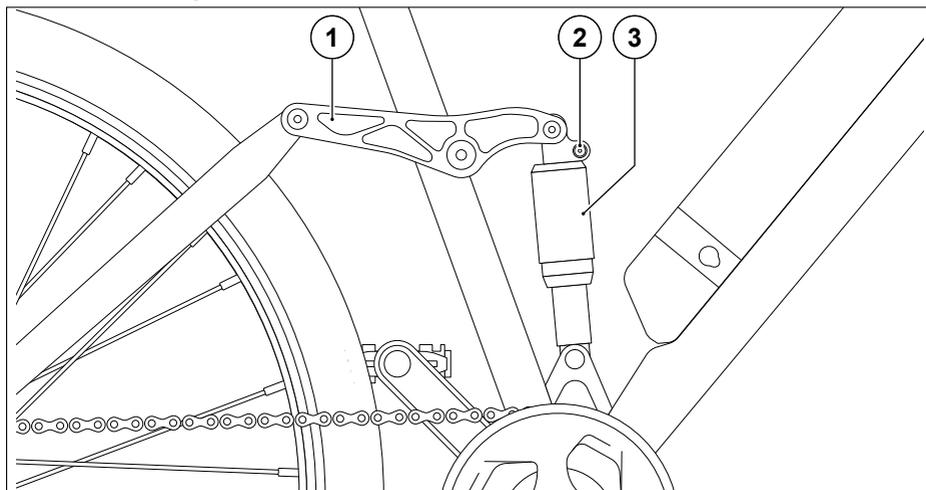


Fig. 17 Rear suspension

1. Deflection	3. Shock absorber
2. Dial	

The rear suspension, which is centrally mounted between the front and rear frames, absorbs shocks at the rear wheel and increases cycling comfort and safety when cycling on uneven surfaces. The rear suspension must be adjusted to the intended use and the cyclist's weight.

You can adjust the hardness of the rear suspension to the cyclist's weight by increasing and decreasing the air pressure in the shock absorber. Increasing the air pressure increases the spring stiffness. Decreasing the air pressure reduces the spring stiffness. For more detailed information, please refer to the manufacturer's instructions for the shock absorber.

The negative suspension controls the deflection in the event of impacts from the ground, also known as sag. The amount of compression when the cyclist is sitting on the bike in the rest position is the negative suspension travel.

The sag setting changes according to the cyclist's weight, suspension travel, cycling style and personal preferences. The correct setting of the sag depends on the shock absorber.

- Adjust the air pressure of the shock absorber to the cyclist's weight using a high-pressure pump; see the manufacturer's instructions for the shock absorber.

Do not use the pedelec with:

- Partial or complete loss of air at the shock absorber,
- Loud noises,
- Oil loss at the shock absorber.

Adjusting the shock absorber hardness

To adjust the shock absorber hardness, follow the instructions in the manufacturer's manual.

1. Push the O-ring on the piston all the way up.
2. Remove the valve cap from the upper part of the shock absorber.
3. Connect the high-pressure air pump to the valve.
4. Increase or decrease air pressure according to cyclist's weight.
5. With the seat post lowered, carefully sit on the bike without bobbing.
6. Dismount carefully and without rocking.
7. Measure the distance between the O-ring and the dust cap.
 - This value gives the sag (= negative spring travel, see above) in millimetres. This value should be 10 mm to 15 mm.
8. Turn the setting wheel for fine adjustment.
 - Turn the adjusting wheel clockwise to slow down the spring-out speed.
 - Turn the adjusting wheel anticlockwise to accelerate the spring-out speed.

5.7 Chain drive

NOTE

Risk of damage!

Incorrectly mounted pedals and a chain that is too tight or too loose can lead to increased wear or damage.

- ▶ Note the pedal assignment.
- ▶ Note the chain tension.

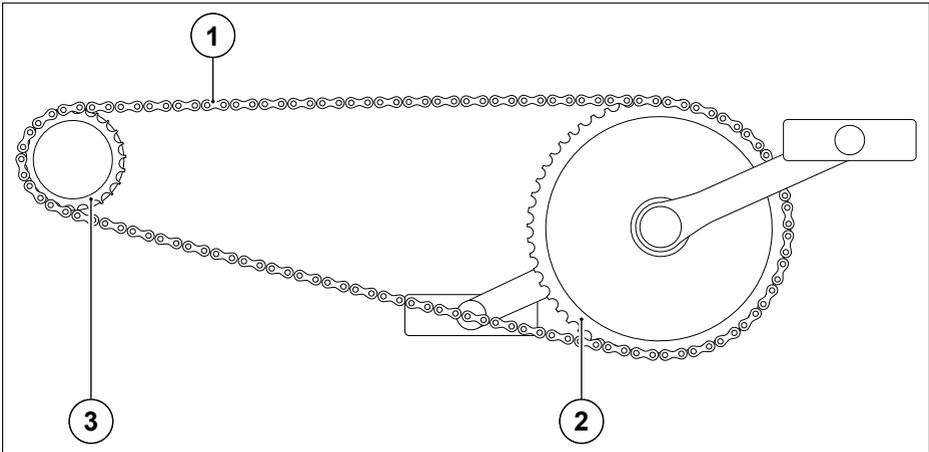


Fig. 18 Chain drive

1. Chain	3. Pinion
2. Sprocket	

The pedelec is equipped with a chain drive. The pedelec is propelled with the feet via the pedals and by the rotating movement of the crank arms.

- Note the pedal assignment.
 - Observe the "L" and "R" markings.
 - Observe the thread direction (left-hand or right-hand thread).
- Note the chain tension. See "Checking the chain tension" on page 71.
- Observe wear of chain drive. See "Checking the chain drive for wear" on page 71.

5.8 Derailleur gear system

WARNING

Danger of accident!

The increased distraction when shifting gears increases the risk of accidents.

- ▶ Familiarise yourself with the gear shift before your first ride.
- ▶ Only operate the gear shift when attention to the traffic is not impaired.

NOTE

Risk of damage!

Increased wear or damage due to incorrect combination of a sprocket and gear rim with a chain that is too tight or too loose.

- ▶ Observe the wiring diagram.
- ▶ Note the chain tension.

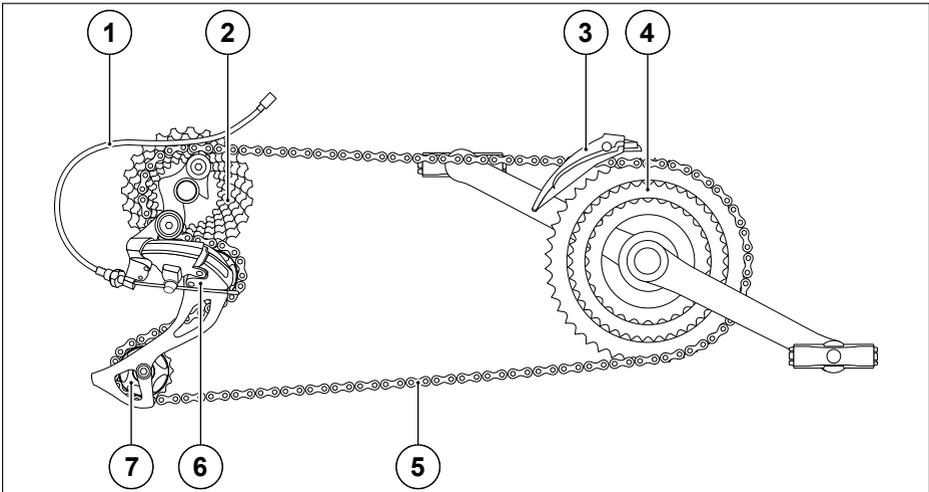


Fig. 19 Derailleur gear system

1. Rear Bowden cable	5. Chain
2. Gear rim cassette	6. Front derailleur
3. Front derailleur	7. Rear derailleur
4. Front sprockets	

Depending on the model, a pedelec with a derailleur gear system has 1 to 3 differently sized sprockets at the height of the pedals and 7 to 12 differently sized pinions on the gear rim cassette on the rear wheel hub. The different gears result from the different sprocket/pinion combinations through which the chain can run.

The front derailleur is attached to the seat tube next to the front sprocket. The front derailleur guides the chain from one sprocket to the other. The rear derailleur is responsible for changing from one pinion to another on the gear rim cassette. The front and rear derailleurs, i.e. the setting of the desired gear, are usually controlled with two control elements on the handlebars.

For optimal cycling characteristics, it is necessary to increase the assistance level and the gear according to the speed of travel, starting at level 1 in first gear. The same principle applies in reverse when shifting down.

- Pedal slowly and without effort when shifting gears.
- Shift down in good time before climbs.
- Only operate switching combinations according to the circuit diagram.
- Avoid excessive skewing of the chain.
- Adjust the gear shift if necessary. See “Adjusting the derailleur gear system” on page 75.
- Check chain tension regularly. See “Checking the chain tension” on page 71.

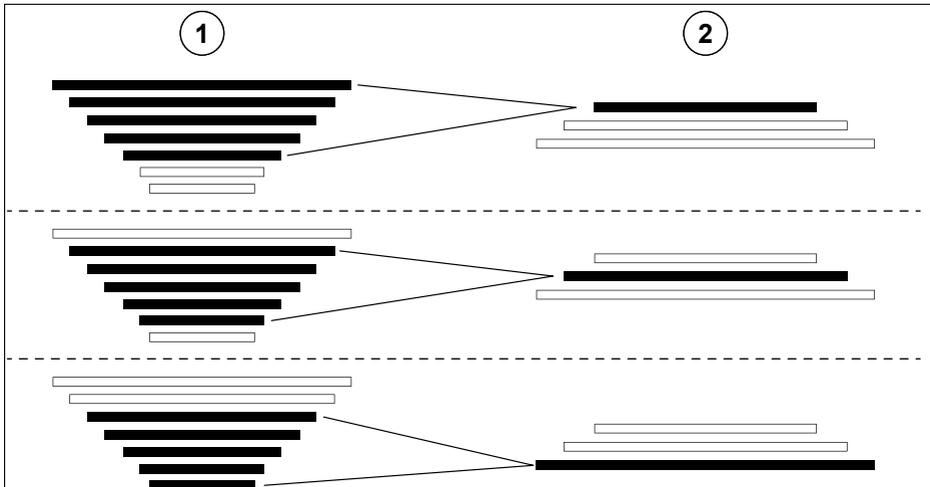


Fig. 20 Circuit diagram

1. Gear rim cassette	2. Front sprockets
----------------------	--------------------

Operation

On the left-hand side of the handlebars is the shift lever for shifting the front sprockets. On the right-hand side of the handlebars is the shift lever for shifting the rear pinions of the gear rim cassette.

Turning the shift lever raises or lowers the gear, depending on the direction of rotation.

High gear ratio (high effort/low pedalling cadence):

If the chain runs through one of the smaller pinions and a large sprocket, pedalling becomes more difficult for the cyclist, but the pedelec covers a greater distance per pedal revolution.

Low gear ratio (low effort/high pedalling cadence):

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

5.9 Chain guard

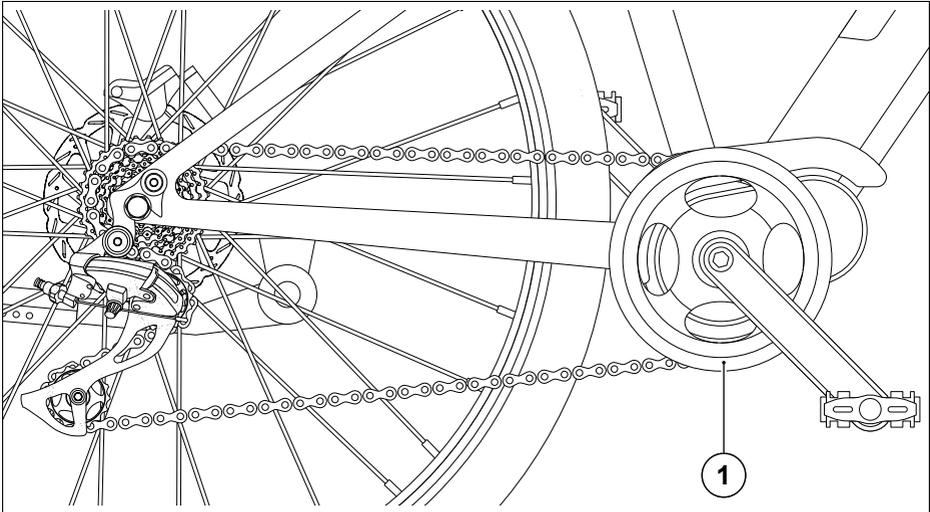


Fig. 21 Front chain guard

1. Front chain guard	
----------------------	--

Depending on the model, the pedelec is equipped with a front chain guard. The front chain guard protects the front sprockets from damage.

5.10 Brakes

WARNING

Danger of accident!

Over-applying the front brake can cause unintended rollovers.

- ▶ Familiarise yourself with the brakes before your first ride.
- ▶ Apply the brakes in a controlled manner.
- ▶ Observe the road surface and weather conditions.

5.10.1 Brake lever assignment

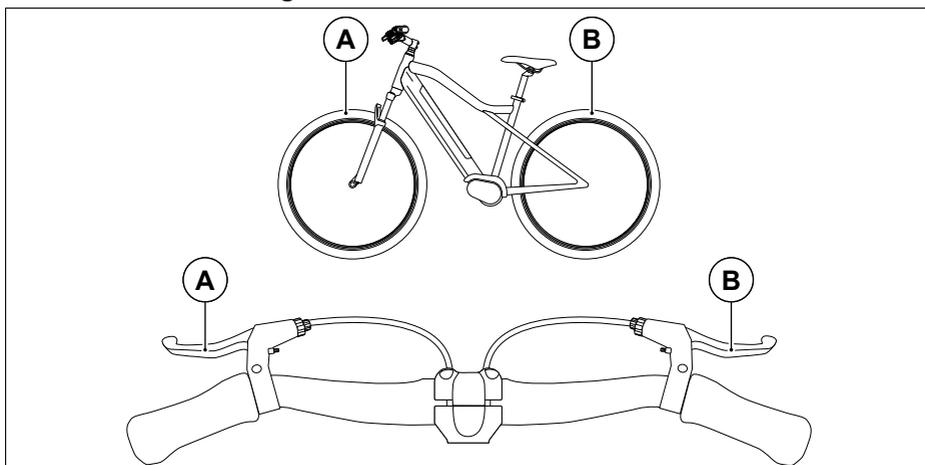


Fig. 22 Brake lever assignment

A. Front wheel	B. Rear wheel
----------------	---------------

Depending on the model, the pedelec is equipped with one or two brake levers. On pedelecs with two brake levers, the left brake lever operates the front brake and the right brake lever operates the rear brake. On pedelecs with only one brake lever, the right brake lever operates the front brake. The rear wheel is braked by applying the coaster brake.

- Familiarise yourself with the brake lever assignment before cycling.
- Adjust the brake lever position. See “Adjusting the brake lever position” on page 51.
- Adjust the brake lever. See “Adjusting the brake lever” on page 52.
- Observe the wear limit of the brake pads.

5.10.2 Adjusting the brake lever position

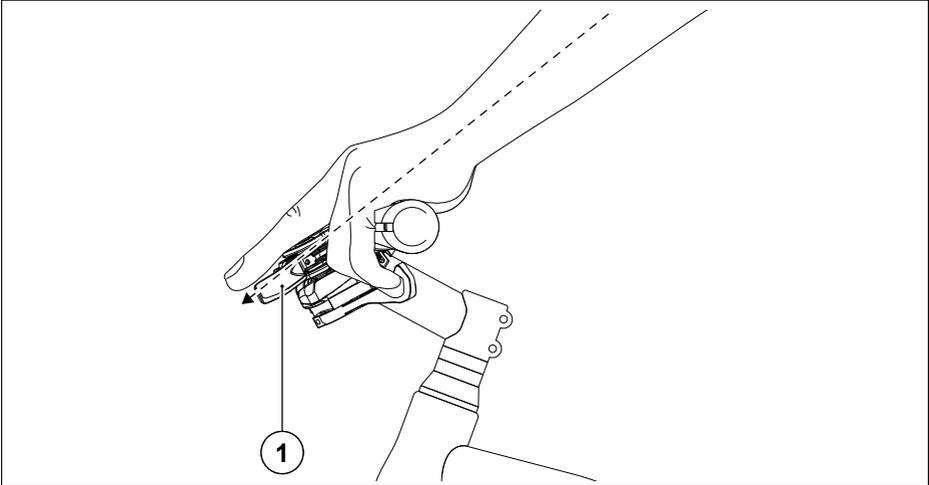


Fig. 23 Brake lever position

1. Brake lever	
----------------	--

The brake lever should be aligned with the cyclist's arm to achieve the optimum braking effect at all times.

- Observe the adjustment of the optimal seating position. See “Adjusting the seat position” on page 23.
1. Loosen the clamping screw of the brake lever.
 2. Adjust the brake lever angle.
 3. Tighten the brake lever clamping screw.

5.10.3 Adjusting the brake lever

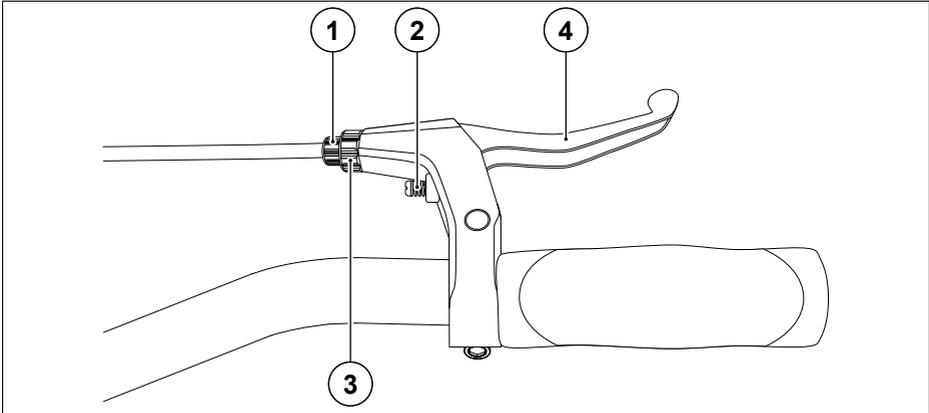


Fig. 24 Brake lever adjustment

1. Knurled nut	3. Lock nut
2. Grip width adjustment screw	4. Brake lever

The brake lever should be aligned with the cyclist in terms of grip width and brake lever travel/braking force in order to be able to achieve the optimum braking effect at all times.

1. Screw in the grip width adjustment screw to reduce the grip width or unscrew it to increase the grip width.
 2. Screw in the knurled screw to increase the brake lever travel and reduce the braking force or unscrew it to reduce the brake lever travel and increase the braking force.
 3. Tighten the lock nut against the brake lever holder to fix the adjustments.
- Watch the video on our website for the correct adjustment of the brake levers: <https://www.karcher-products.de/index.php/erklaer-videos.html>



5.10.4 Disc brake (hydraulic and mechanical)

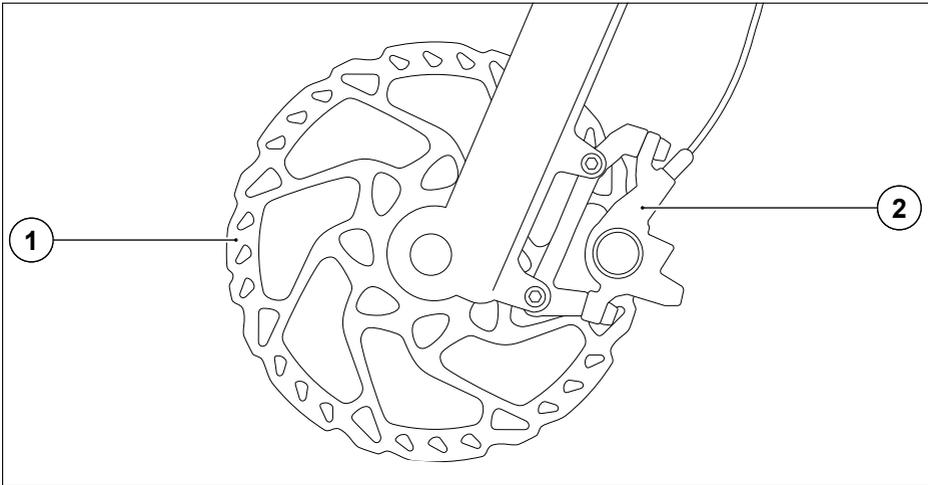


Fig. 25 Rim brake

1. Brake disc	3. Brake calliper
---------------	-------------------

Depending on the model, the pedelec is equipped with mechanical or hydraulic disc brakes front and rear. When the brake lever is operated, brake pistons located in the brake calliper are pressed outwards. The brake pads are pressed against the brake disc by the brake pistons and the pedelec is stopped.

- Brake pads should be between 1 - 2 mm from the rim and should touch the rim first in the direction of travel at the front.
- Use the front and rear brakes as evenly and simultaneously as possible.
- Observe the road surface and take it into account for the braking distance.
- Observe the wear limit of the brake pads.
- Observe the wear limit of the cable or the brake fluid.

5.11 Wheels



WARNING

Danger of accident!

Damage can cause the tyres to burst or suddenly lose air while driving.

- ▶ Carry out a visual and functional check before each journey.
-



WARNING

Danger of accident!

Dirty or missing reflectors significantly reduce visibility in road traffic.

- ▶ Clean dirty reflectors.
 - ▶ Replace missing reflectors.
-



WARNING

Danger of accident!

Wheels that are not properly centred (concentricity) can cause the rims to break while cycling and the rim brakes to not work effectively.

- ▶ Have centring carried out by qualified personnel.
-



CAUTION

Risk of injury!

The wrong tyre pressure can cause falls.

- ▶ Observe the minimum and maximum tyre pressure.
 - ▶ Check the tyre pressure before each journey.
-

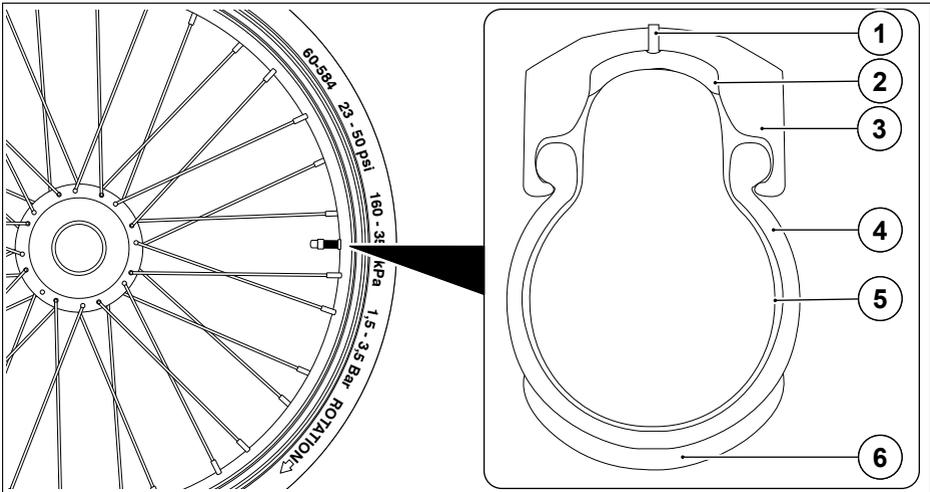


Fig. 26 Wheels

1. Rim	4. Jacket
2. Rim tape	5. Hose
3. Brake flank	6. Tread

Depending on the model, the pedelec wheels are equipped with aluminium box hollow section rims or aluminium double wall hollow section rims, galvanised or stainless-steel spokes or steel free-wheel hubs, branded hub motors and typical tyres.

- Observe tyre information on the sidewalls of the tyre.

5.11.1 Valves

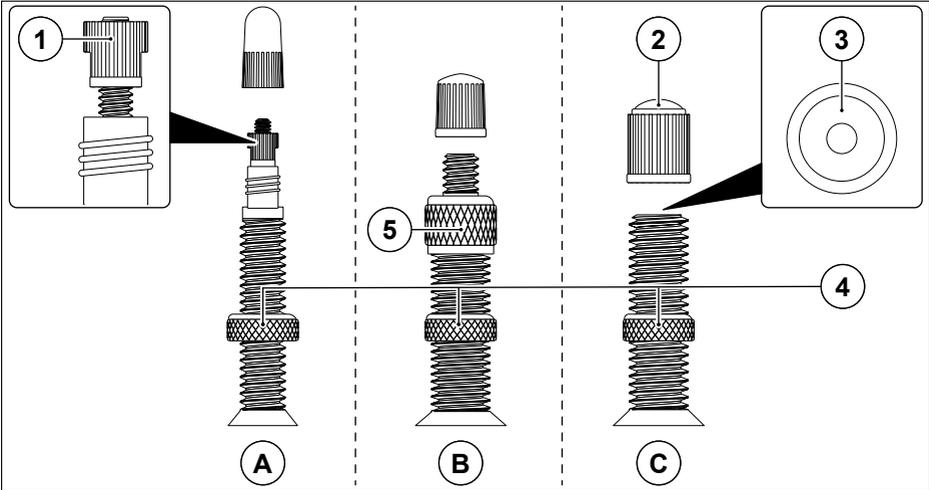


Fig. 27 Valve variants

A. Sclaverand valve	2. Valve cap
B. Dunlop valve	3. Plunger
C. Auto valve	4. Knurled nut
1. Knurled nut	5. Valve nut

Depending on the model, the tubes of the pedelec are equipped with Sclaverand, Dunlop or Auto valves.

- Observe tyre inflation pressure on the sidewalls of the tyre.
- Adjust tyre pressure, within the specified range, according to the terrain and the cyclist's weight

5.12 Saddle and seat post

WARNING

Danger of accident!

Failure to maintain the minimum insertion depth of the seat post can cause the seat post to slip or break.

► Observe the minimum insertion depth.

NOTE

Risk of damage!

Failure to observe the minimum insertion depth of the seat post can damage components on the pedelec.

► Observe the minimum insertion depth.

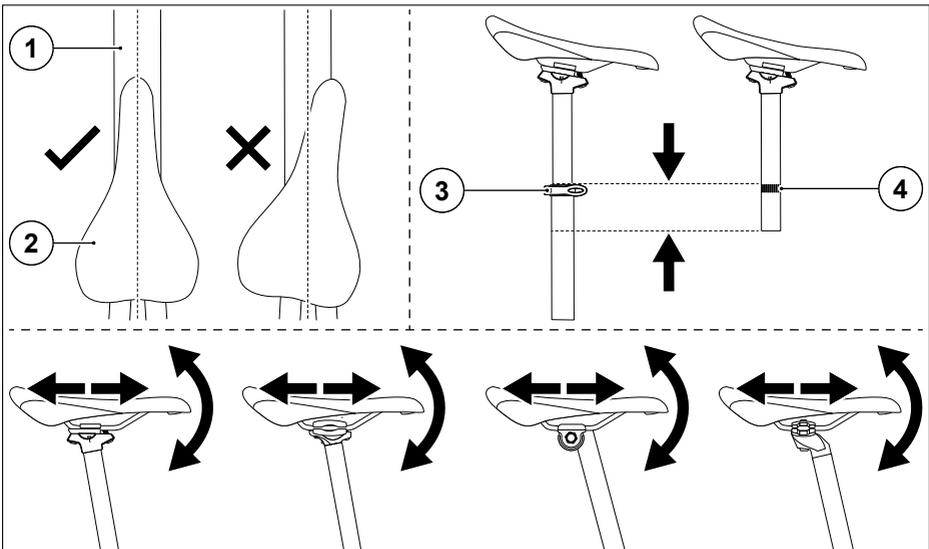


Fig. 28 Saddle and seat post

1. Top tube	3. Quick release
2. Saddle	4. Minimum insertion depth marking

The saddle should be aligned parallel to the top tube and the minimum insertion depth of the seat post must be strictly observed. You can adjust the distance to the handlebars and the inclination of the saddle using the adjustment screw on the saddle.

Depending on the type of saddle, one or more adjustment bolts may be mounted on the saddle.

- Adjust the saddle so that all components on the handlebars can be operated safely.
 - Observe the adjustment of the optimal seating position. See “Adjusting the seat position” on page 23.
1. Open the seat post clamp or quick release. See “Quick release (depending on model)” on page 62.
 2. Push the saddle into the seat tube until the minimum insertion depth marking is no longer visible.
 - Ensure that the saddle is parallel to the top tube.
 3. Close the seat post clamp or quick-release. See “Quick release (depending on model)” on page 62.

5.12.1 Suspension seat post (depending on model)

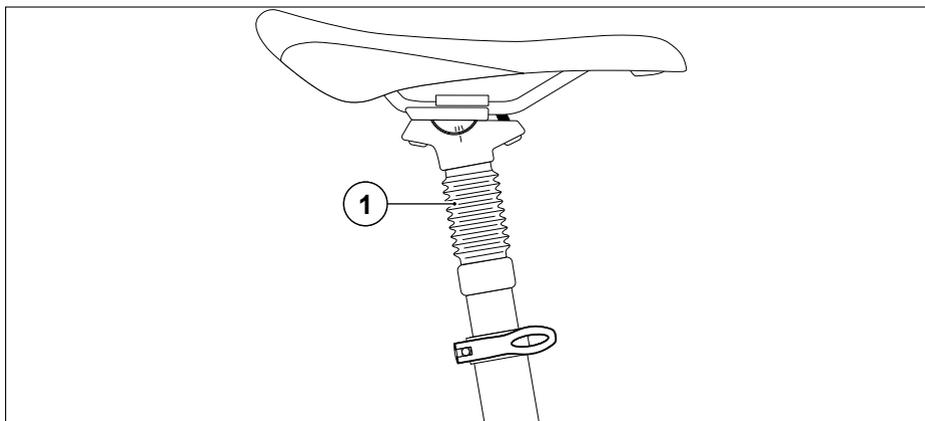


Fig. 29 Suspension seat post

1. Suspension	
---------------	--

The suspension seat post absorbs shocks and road irregularities at the saddle. By turning the adjusting nut inside the seat post, you can adjust the hardness of the suspension to the user's weight. Turning the adjusting nut clockwise makes the suspension harder. Turning the adjusting nut anticlockwise softens the suspension.

1. Dismantle the saddle.
2. Adjust the suspension seat post to the cyclist's weight by loosening or tightening.
3. Mount the saddle.
 - Observe the adjustment of the optimal seating position. See “Adjusting the seat position” on page 23.
 - Note the adjustment of the saddle. See “Saddle and seat post” on page 57.

5.13 Handlebars and stem

WARNING

Danger of accident!

Failure to maintain the minimum insertion depth of the stem can cause the stem to slip or break.

► Observe the minimum insertion depth.

NOTE

Risk of damage!

Failure to observe the minimum insertion depth of the stem can damage components on the pedelec.

► Observe the minimum insertion depth.

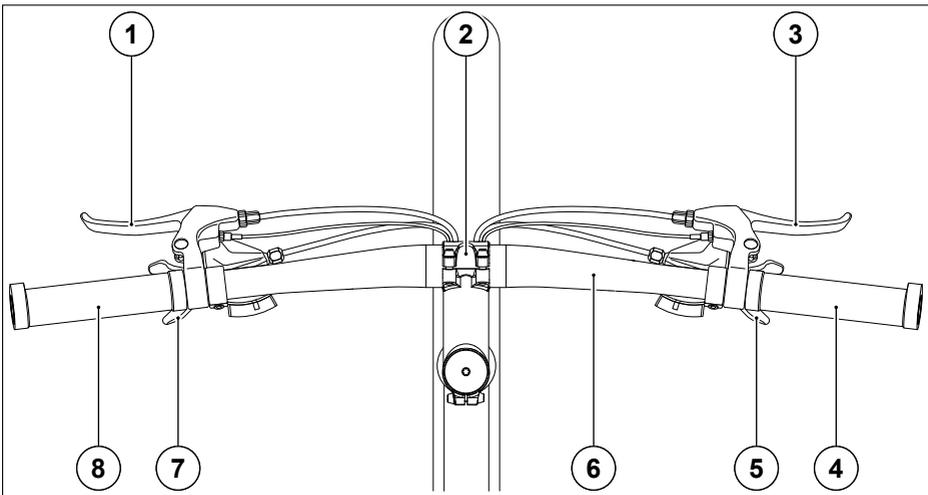


Fig. 30 Handlebars and stem

1. Brake lever of front brake	5. Rear sprocket shifting handle of the sprocket cassette
2. Ahead-set stem	6. Handlebars
3. Brake lever of rear brake	7. Front sprocket shifting handle
4. Right handle	8. Left handle

You will find all the important controls of the pedelec on the handlebars.

Adjust all controls in coordination with the optimum seat position (“Adjusting the seat position” on page 23) so that you can operate them all safely while cycling.

- Observe the adjustment of the stem. See “Adjusting the stem” on page 60.
- Observe the adjustment of the brake lever position. See “Adjusting the brake lever position” on page 51.
- Observe the adjustment of the handlebars. See “Adjusting the handlebars” on page 61.
- Observe the adjustment of the optimal seating position. See “Adjusting the seat position” on page 23.

5.13.1 Adjusting the stem

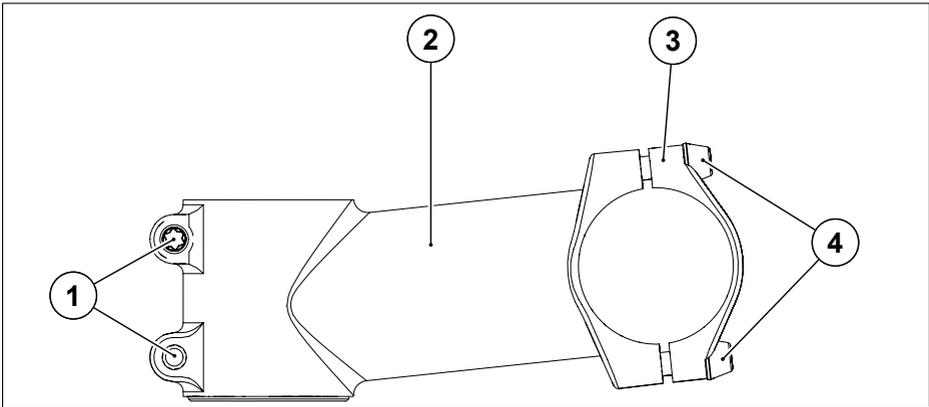


Fig. 31 Adjusting the stem

1. Clamping screws for the steerer tube	3. Front panel of stem
2. A-headset of stem	4. Clamping screw of handlebar clamp

You can adjust the stem and handlebar tilt using the clamping screws for the steerer tube in the stem.

1. Loosen the clamping screws on the front panel of the stem.
2. Adjust the handlebar inclination.
3. Tighten the clamping screws on the front panel of the stem.
4. Loosen the clamping screws of the attachment parts.
5. Adjust the angle of the attachments to the angle of the handlebars.
6. Tighten the clamping screws of the attachment parts. See “Tightening torques” on page 68.

5.13.2 Adjusting the handlebars

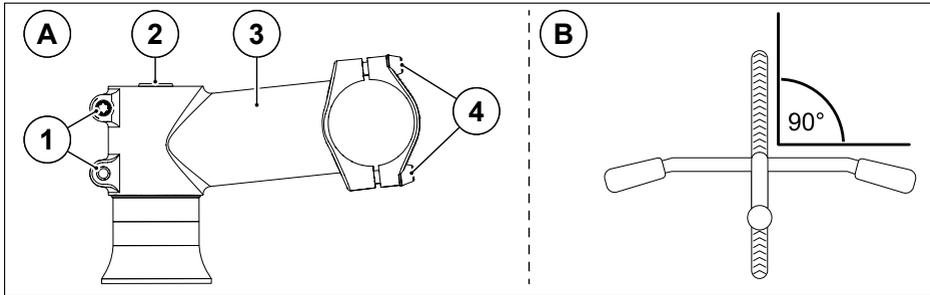


Fig. 32 Adjusting the handlebars

A. Pre-assembly parts	B. Handlebar-front wheel alignment
1. Clamping screws for the steerer tube	3. A-headset of stem
2. Internal clamping screw of stem clamp with cap	4. Clamping screw of handlebar clamp

You can adjust the alignment of the handlebars to the front wheel using the clamping screws for the steerer tube in the stem.

- Observe the adjustment of the stem. See “Adjusting the stem” on page 60.
 - Observe the adjustment of the brake lever position. See “Adjusting the brake lever position” on page 51.
 - Observe the adjustment of the optimal seating position. See “Adjusting the seat position” on page 23.
1. Loosen the clamping screw of the steerer tube.
 2. Adjust the handlebar angle.
 3. Tighten the clamping screw of the steerer tube.

5.14 Quick release (depending on model)

WARNING

Danger of accident!

Unlocked quick releases can cause accidents.

► Before each ride, check that all quick-releases are properly tightened and closed.

NOTE

Risk of damage!

Unlocked quick releases can damage the components of the pedelec.

► Before each ride, check that all quick-releases are properly tightened and closed.

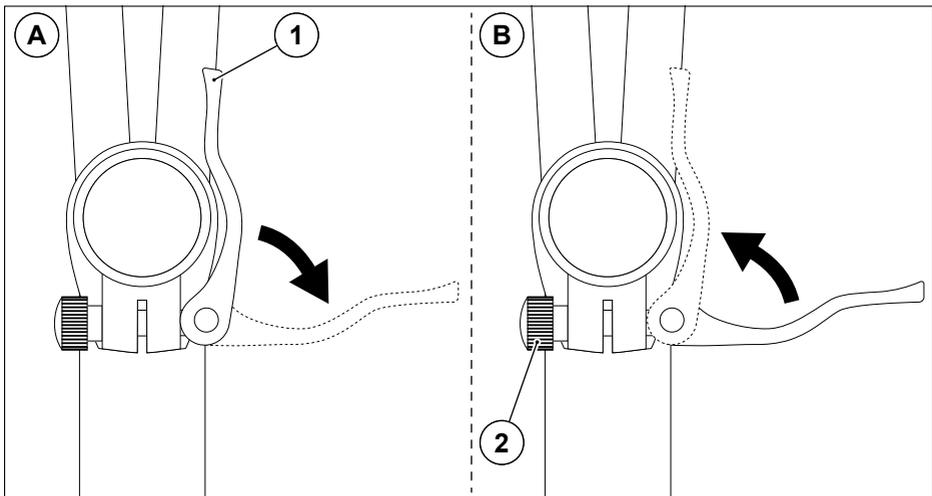


Fig. 33 Quick release

A. Opening the clamping lever	B. Closing the clamping lever
1. Clamping lever	2. Clamping nut

The quick release is used for quick assembly and disassembly of various components on the pedelec. The quick release is opened and closed by folding the tensioning lever open and closed. The clamping nut is used to adjust the pretension of the quick release.

6 Storage

NOTE

Risk of damage!

Improper storage can damage the pedelec.

► Store the pedelec properly.

- Clean the pedelec. See “Cleaning” on page 77.
- Remove the battery and recharge it every 3 months. See “Battery” on page 30.
- Shift to the smallest pinions on derailleur gear systems to reduce the load on the Bowden cables. See “Wheels” on page 54.
- Store the pedelec in a dry, frost-free room without large temperature fluctuations.
- Suspend the pedelec from the frame to avoid damage to the wheels/tyres when stationary.

7 Transport

7.1 Transporting the pedelec

NOTE

Risk of damage!

Incorrect use of bike racks can cause damage to the pedelec and the battery.

- ▶ Only use bike racks suitable for pedelecs.
 - ▶ Mount the bicycle carrier according to the manufacturer's instructions.
 - ▶ Remove the battery before transport.
 - ▶ Secure the pedelec against slipping and falling.
 - ▶ Protect the pedelec, the attachments and all components of the electric drive against moisture.
-

- Find out about the transport conditions for the battery and the pedelec on public transport before you start your journey.
1. Switch off the e-drive and remove the battery.
 2. Attach the pedelec to the bicycle carrier. See the manufacturer's instructions for the bicycle carrier.

8 Malfunction

8.1 E-drive malfunction

Malfunction	Cause	Remedy
Battery does not charge	Plug connection disconnected	Check of plug connections
	Fuse defective	Replace fuse
	Handbrake lever fixed	Release handbrake lever
	Charger not connected correctly	Connect the charger correctly
	Charger defective	Replace charger
Electric drive does not switch on	Peddalling cadence sensor not correctly aligned	Align the pedalling cadence sensor with a distance of 3 mm to the magnetic disc
	Battery not charged	Charge battery
	Battery not inserted correctly	Inserting the battery correctly

8.2 Malfunctions in general

Malfunction	Cause	Remedy
Cracking/creaking bottom bracket	Pedals loose	Tighten the screw to the specified torque
	Bottom bracket loose	
Lighting does not work	Lighting is switched off	Switch on the lighting on the control panel and on the lighting at the front
	Seat/contact of the cable plug connection disconnected/disturbed	Check the cable plug connections and reconnect if necessary
	Bulb defective	Replace bulb
	Side rotor dynamo defective or not switched on	Check position and function of the side rotor dynamo
Brake squeaks / Brake too weak	Brake pads are at the wear limit	Replace brake pads
	Brake is incorrectly adjusted	Brake adjustment
Derailleur gear system does not shift correctly	Derailleur gear system is misaligned	Adjust the derailleur gear system
Hub gear system does not shift correctly	Hub gear system is misaligned	Adjust the hub gear system
Pedals not mountable	Pedals mounted on the wrong side	Pedelec not correctly mounted. See "Commissioning" on page 20

9 Maintenance

By following our maintenance recommendations (in this section) and inspection recommendations (“Inspection certificate” on page 82), you prevent premature wear, reduce the probability of damage and increase the lifespan of your pedelec. Any impairments or defects resulting from non-compliance with important maintenance measures may – depending on the individual case – be excluded from the seller’s warranty obligations.

When lubricating and greasing, use only suitable greases without corrosive substances or alcohols:

- Bearing: Bearing grease
- Chain: Chain oil
- Bowden cables: Bicycle oil/PFTE lubricant
- Hubs: Special grease

9.1 E-drive maintenance schedule

Assembly	Measure	Operating hours/useful life
Battery	Cleaning	According to need
	Function test	Before each journey/at each inspection
Motor	Cleaning	According to need
	Function test	Before each journey/at each inspection
Display	Cleaning	According to need
	Function test	Before each journey/at each inspection
Charger	Cleaning	According to need
	Function test	Before each charging procedure/at each inspection

9.2 General maintenance plan (model-dependent)

Assembly	Measure	Operating hours/useful life
Frame	Cleaning	According to need
Suspension fork/fork	Cleaning	According to need
	Function test	Before each ride
	Oil change	With every inspection
Rear suspension	Cleaning	According to need
	Function test	Before each ride
Suspension seat post	Function test	With every inspection
Brakes and brake lines	Function test	Before each journey/at each inspection
	Check wear limit of brake lining	
	Cleaning	With every inspection
Tyres	Function test	Before each journey/at each inspection
	Cleaning	According to need
Hub gear system	Function test	Before each ride
	Cleaning	After each ride
Rim	Check wall thickness (for rim brakes)	After the second brake pad change
	Check concentricity	With every inspection
Derailleur gear system	Function test	Before each ride
	Cleaning	After each ride
Chain/chain tension	Visual inspection	Before each ride
	Cleaning	With every inspection
Attachment parts	Visual inspection	With every inspection
Lighting	Function test	Before each journey/at each inspection
Inner bearing	Function test, dismantle, grease	With every inspection
Chain (from 1,000 km or 50 operating hours)	Function test	Before each ride
	Lubricate	With every inspection
Spokes	Check voltage	If required
Hubs	Function test, check bearing clearance, grease	With every inspection
Pedals	Function test, check bearing clearance, grease	With every inspection
Screws/nuts	Check for a tight fit	With every inspection
Valves	Check seat	Before each journey/at each inspection
Lacquer	Preserve	Min. every 6 months

9.3 Tightening torques

NOTE

Risk of damage!

Tightening the components with the wrong torque can cause damage to the respective components.

- ▶ Observe the torque table when tightening the components.
 - ▶ If a torque specification is marked on the respective component, this torque is decisive.
-

9.3.1 Tight fit of all screws

Check the tightness of all screws with a torque spanner with the appropriate adjustment range.

9.3.2 Torque table

For professional tightening of the screw connections, the torque values must be observed. For this purpose, you need a torque spanner with an appropriate setting range.

Assembly	Component	Screw	Nm
Handlebar stem	Clamp stem	Handlebar clamp bolt	10-14
	Clamp stem	Handlebar stem tensioning screw (for tensioning the cone)	24-30
	A-head stem	Handlebar clamp	5-9
	A-head stem	Side fork clamping screws	9-11
	A-head stem	A-head claw	2.5-3
	Angle-adjustable stem	Handlebar clamp	5-9
	Angle-adjustable stem	Angle adjustment screw	17-20
	Angle-adjustable stem	Angle-fixing plate with screw	18-30
Seat post	Candle seat post support	Saddle piston	15-22
	Patented seat post	Patented head screw (for fixing and positioning the saddle)	15-20
	Seat post clamp	Clamping screw	8-12
Pedals	Forward in the direction of travel		33-35
Crank arms	Steel	Fastening screws	40-50
	Aluminium	Fastening screws	40-50
Impeller	Axle mounting	Cap nuts	35-50
Brake	V-brake	Brake lever	3-7
	V-brake	Brake body screws	5-8
	V-brake	Brake shoe bolts	5-8
	Disc brake	Brake lever	3-7
	Disc brake	Brake disc mounting	5-6
	Disc brake	Brake calliper mounting 5mm	11-12
	Disc brake	Brake calliper mounting 4mm	6-7
other M4	Strength class 8.8		3.5
other M5	Strength class 8.8		7
other M6	Strength class 8.8		13
other M8	Strength class 8.8		28
other M10	Strength class 8.8		50

9.4 Maintenance



CAUTION

Risk of injury!

Moving parts can trap or crush body parts.

- ▶ Make sure that no body parts or fingers get caught between moving parts.
 - ▶ Wear protective gloves.
-

NOTE

Risk of damage!

Improper maintenance can damage the pedelec and the components.

- ▶ Carry out work conscientiously and properly.
 - ▶ Have maintenance carried out by qualified personnel.
-

9.4.1 Checking the chain drive for wear

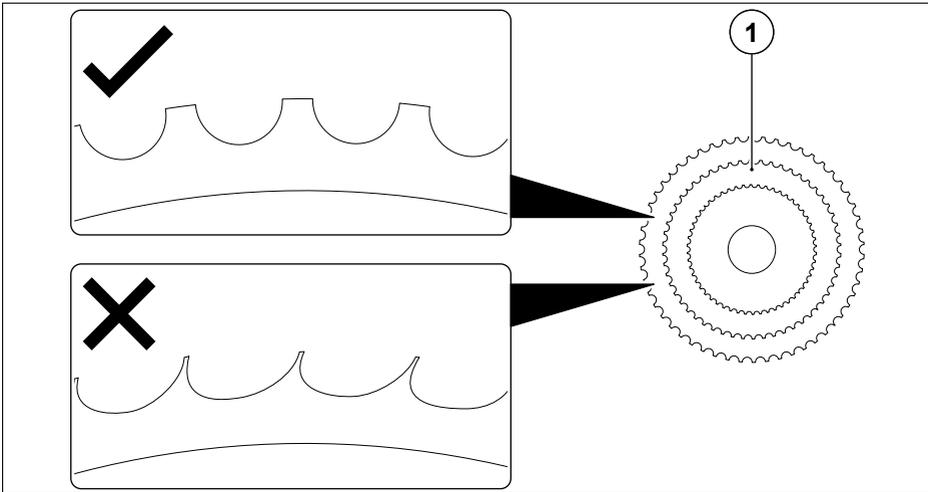


Fig. 34 Gear rim wear

1. Gear rim	
-------------	--

You must not notice any pointed teeth or "shark teeth" on the sprockets and pinions. If this is the case, have the relevant components replaced by qualified personnel.

9.4.2 Checking the chain tension

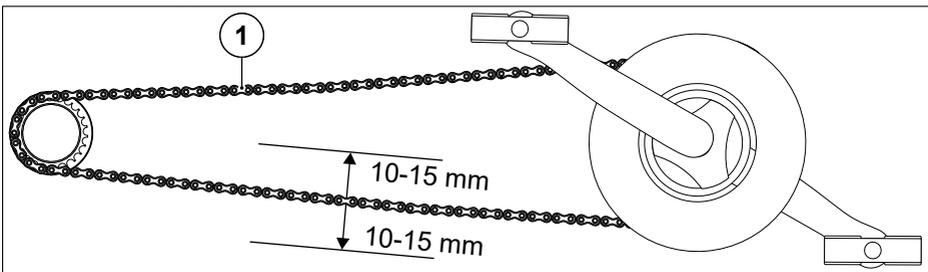


Fig. 35 Checking the chain tension

1. Chain	
----------	--

The chains should be tensioned so that they can be pushed through a maximum of 10 -15 mm upwards or downwards. If this is not the case, have the chain tension adjusted or the chain changed by qualified personnel.

9.4.3 Removing and fitting wheels

To remove the wheels, the pedelec should be fixed in an assembly stand.

Removing the front wheel

1. Unhook the brake cable.
2. Loosen the quick release or cap nut on the front wheel.
3. Remove the front wheel.

Fit the front wheel.

1. Insert front wheel.
2. Tighten the quick release or cap nut on the front wheel.
3. Hook in the brake cable.

Removing the rear wheel

1. Shift the chain to the smallest pinion.
2. Unhook the brake cable.
3. Loosen the quick release or cap nut on the front wheel.
4. Push the rear derailleur backwards.
5. Remove the rear wheel.

Fitting the rear wheel

1. Push the rear derailleur backwards.
2. Insert the rear wheel.
 - Position the chain on the smallest pinion.
3. Tighten the quick release or cap nut on the rear wheel.
4. Hook in the brake cable.

9.4.4 Change tyre/tube

Removing the tyre and inner tube

1. Remove the wheel in question. See “Removing and fitting wheels” on page 72.
2. Open the valve cap.
3. Remove the lower knurled nut and, if present, the upper knurled nut.
 - See “Valves” on page 56.
4. Deflate completely.
5. Press the tyre over its entire circumference from the rim flank to the centre of the rim.
6. Push the tyre lever approx. 5 cm to the right of the valve between the tyre and the rim.
7. Lever the tyre sidewall over the rim and hold the tyre lever in this position.
8. Slide the second tyre lever approx. 5 cm to the left of the valve between the rim and the tyre.
9. Lever the tyre sidewall over the rim with the second tyre lever.
10. Slide the second tyre lever along the rim to release the tyre completely from the rim flank.
11. Remove the valve from the rim.
12. Pull the tyre and inner tube completely off the rim.

Fitting the tyre and inner tube

1. Check rim and tyre for foreign objects and remove if necessary.
2. Check the presence and correct fit of the rim tape.
3. Place the rim with one rim edge in the tyre.
4. Press the tyre sidewall completely over the rim with your thumbs.
5. Insert the valve of the tube vertically into the valve hole of the rim so that it points exactly towards the axis of the wheel.
6. Inflate the tube slightly so that it takes on a round shape and place it completely inside the tyre.
7. Press the tyre as far as possible over the rim with your thumbs.
8. Push the tube inside the tyre with your index fingers so that it does not get caught between the tyre and the rim.
 - Work evenly along the circumference of the tyre to both sides.
9. Check the fit of the inner tube and push the tyre over the rim with a tyre lever.
10. Press the valve into the inside of the tyre.
 - If necessary, realign the valve.
11. Move the half-inflated tyre back and forth several times at right angles to the rolling direction to check that the tube is correctly positioned in the tyre and is not jammed.
12. Inflate the tube to the desired tyre inflation pressure.
 - Observe tyre inflation pressure on the sidewalls of the tyre.
13. Check the correct fit of the tyre using the control ring on the rim flank.
 - The control ring must have an even distance to the rim on the whole tyre.

9.4.5 Adjusting the derailleur gear system

If the adjustment is not successful or noises occur during operation, have the derailleur gear system adjusted by qualified personnel.

Adjusting the derailleur gear system at the front

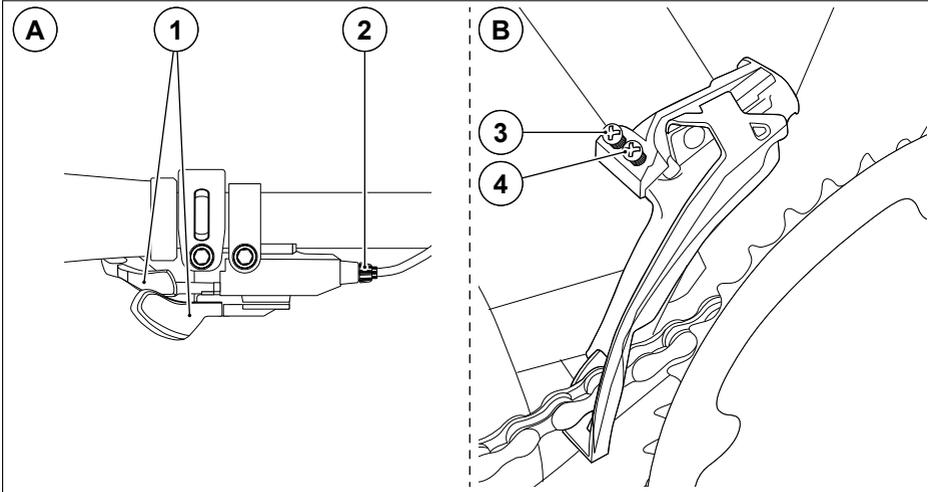


Fig. 36 Derailleur gear system at the front

A. View of the gear lever	2. Knurled nut for fine adjustment
B. Front derailleur	3. Stop screw "High" - largest chain sprocket
1. Gear lever for up/down shifting	4. Stop screw "Low" - smallest chain sprocket

1. Shift the chain to the smallest sprocket.
2. Adjust the distance to the inner chain guide to 0.5 - 1 mm with the stop screw "Low".
3. Shift the chain to the largest sprocket
4. Adjust the distance to the outer chain guide to 0.5 - 1 mm with the stop screw "High".
5. Make fine adjustments using the knurled nut.
6. Carry out a test ride.

Adjusting the derailleur gear system at the rear

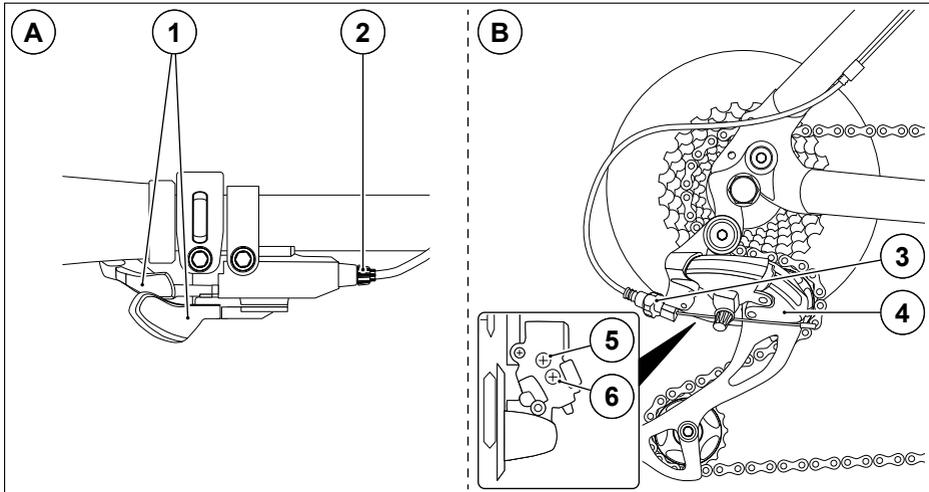


Fig. 37 Derailleur gear system at the rear

A. View of the gear lever	3. Knurled nut for fine adjustment
B. Rear derailleur	4. Rear derailleur
1. Gear lever for up/down shifting	5. Stop screw "High" - smallest gear rim
2. Knurled nut for fine adjustment	6. Stop screw "Low" - largest gear rim

1. Shift the chain to the largest sprocket and the smallest gear rim.
2. Turn the stop screw "High" until the guide roller is exactly under the smallest gear rim.
3. Tighten and fix the shift cable using the tension screw.
4. Shift the chain to the smallest sprocket and the largest gear rim.
 - Make sure that the chain does not touch the spokes.
5. If necessary, adjust the guide roller with the stop screw "Low".
6. Make fine adjustments using the knurled nut.
7. Carry out a test ride.

9.5 Cleaning



WARNING

Risk of electric shock!

Improper handling of the battery, the contacts and the drive during care, maintenance and repair work can result in an electric shock.

- ▶ Remove the battery from the charger.
- ▶ Remove the battery before cleaning the pedelec.
- ▶ Never clean the pedelec and components with running water or other liquids.

NOTE

Risk of damage!

The use of aggressive cleaning agents can damage components of the pedelec.

- ▶ Use suitable cleaning agents.

NOTE

Risk of damage!

Cleaning with a high-pressure cleaner can damage components of the pedelec.

- ▶ Never clean the pedelec with a high-pressure cleaner or water jet.

Clean the pedelec and its components regularly.

- Clean with a damp cloth.
- Use mild detergents.
- Keep electrical components clean.
- Visual inspection of the electrical connections, cables and contacts.
- Preserve movable metal components with a suitable care product.
- Do not preserve the rim and disc brake.

Regular cleaning and care prolong the life of wear parts.

10 Disposal

The following information on electrical and electronic (waste) equipment (10.1) applies to Germany. Users in other countries should inform themselves about local laws.

10.1 Information on waste electrical and electronic equipment

The following information is intended for private households that use electrical and/or electronic equipment. Please observe these important instructions in the interest of environmentally sound disposal of old appliances and your own safety.

1. Information on the disposal of waste electrical and electronic equipment and on the meaning of the symbol according to Annex 3 of ElektroG (German Electrical and Electronic Equipment Act)

According to Section 2 Para. 1 ElektroG, pedelecs are category 4 appliances (large appliances).

Owners of waste appliances must dispose of them separately from unsorted municipal waste. Waste electrical and electronic equipment (WEEE) must therefore not be disposed of as unsorted municipal waste and in particular does not belong in household waste. Instead, these waste appliances are to be collected separately and disposed of, for example, via the local collection and return systems.

Owners of waste electrical and electronic equipment must also separate spent batteries and accumulators that are not enclosed in the waste electrical and electronic equipment, as well as lamps that can be removed from the waste electrical and electronic equipment without destroying it, from the waste electrical and electronic equipment before handing it in at a collection point.

The latter does not apply insofar as the waste electrical and electronic equipment is separated from other waste electrical and electronic equipment in accordance with Article 14 Para. 4 Sentence 4 or Para. 5 Sentences 2 and 3 within the scope of opting out by the public waste management authorities for the purpose of preparing it for reuse.

By means of the symbol in accordance with Annex 3 to the ElektroG, owners can recognise old appliances that are to be collected separately from unsorted municipal waste at the end of their service life. The symbol for the separate collection of electrical and electronic equipment represents a crossed-out wheeled bin and is designed as follows:



2. Free return of waste equipment by distributors

Distributors (any natural or legal person or partnership offering or making electrical and electronic equipment available on the market) with a sales area for electrical and electronic equipment of at least 400 m² (in the case of distribution using means of distance communication, instead with storage and dispatch areas for electrical and electronic equipment of at least 400 m²) and distributors of foodstuffs with a total sales area of at least 800 m², who offer and make electrical and electronic equipment available on the market several times per calendar year or on a permanent basis (in the case of distribution using means of distance communication, instead with total storage and dispatch areas of at least 800 m²) are obliged to take back waste electrical and electronic equipment free of charge from end users as follows:

- a) Return/collection in case of purchase of a new appliance and delivery to a private household

When concluding a sales contract for a new electrical or electronic appliance, the distributor is obliged to take back a waste appliance of the same type that fulfils essentially the same functions as the new appliance free of charge.

If the place of delivery is a private household, the return is implemented by a free pick-up. For this purpose, a waste appliance of the same type with essentially the same functions can be handed over to the delivering transport company when the new appliance is delivered.

If the new appliance is sold exclusively by means of distance communication (Section 312c (2) BGB (German Commercial Code)), the following applies restrictively:

- Free collection of an end-of-life appliance of the same type and function is only possible if it is a category 1 appliance (heat exchangers), 2 (screens, monitors, appliances with screens with a surface area of more than 100 cm²) and/or 4 (large appliances where at least one of the external dimensions is more than 50 cm).
- If instead it is a waste appliance of category 3, 5 and/or 6, free collection does not take place and instead the following letter b) applies to the free return.

- b) Return when buying a new appliance and handing it in elsewhere/return of small appliances

When concluding a sales contract for a new electrical appliance that is not being delivered to a private household and when selling a new appliance of categories 3, 5 and/or 6 exclusively by means of distance communication (Section 312c (2) BGB (German Civil Code)) with delivery to private households, there is the possibility to return a waste appliance of the same type that essentially fulfils the same functions as the new appliance to the distributor free of charge.

The same possibility also exists for waste appliances that are not larger than 25 cm in any external dimension, irrespective of the purchase of a new electrical or electronic appliance. In this case, the return option by the end user to the distributor is limited to 3 waste appliances per appliance type.

In the case of distribution exclusively using means of distance communication (§ 312c para. 2 BGB (German Civil Code)), the return shall be made of the following under the above-mentioned conditions:

- Waste appliances of categories 3, 5 and/or 6
- Waste appliances that are not larger than 25 cm in any external dimension, through suitable return options within a reasonable distance from the respective end user.

Otherwise, the return shall take place at the place of delivery or in the immediate vicinity thereof. Distributors must have set up suitable return facilities for this purpose.

3. Information on the possibilities for returning waste appliances

We currently provide information on the return options we have created for waste electrical appliances at:

<https://www.karcher-products.de/index.php/Entsorgungshinweise.html>

Owners of waste appliances can hand them in within the scope of the possibilities for the return or collection of waste appliances set up and available by public waste management authorities, thus ensuring the proper disposal of waste appliances. If applicable, it is also possible to hand in electrical and electronic equipment there for the purpose of reusing the equipment. For more information, please contact the respective collection or return point.

4. Note on data protection

Some of the old devices to be disposed of contain sensitive personal data (e.g. on a PC or smartphone) that must not fall into the hands of third parties.

We expressly point out that end users of old devices must take responsibility for the deletion of personal data on the old devices to be disposed of.

5. Note on our WEEE registration number

We are registered with the Stiftung Elektro-Altgeräte Register, Nordostpark 72 in 90411 Nuremberg, Germany, as a manufacturer of electrical and/or electronic equipment under the following registration number (WEEE Reg. No. DE): 25822316

10.2 Disposing of the battery



Non-rechargeable and rechargeable batteries must not be disposed of with household waste. Consumers are legally obliged to take non-rechargeable and rechargeable batteries to a separate collection point. Non-rechargeable and rechargeable batteries can be handed in free of charge at a collection point in your municipality/district or in shops so that they can be disposed of in an environmentally friendly way and valuable raw materials can be recovered. In case of improper disposal, toxic ingredients may be released into the environment, causing adverse health effects to humans, animals and plants. Non-rechargeable and rechargeable batteries contained in electrical appliances must be disposed of separately from them whenever possible. Only return non-rechargeable and rechargeable batteries when they are discharged. For lithium-containing non-rechargeable and rechargeable batteries, tape off the terminals before disposal to prevent external short-circuiting. A short circuit can lead to a fire or explosion.

10.3 Disposing of packaging

Dispose of the packaging properly, taking into account the country-specific disposal regulations.

10.4 Disposing of lubricants and care products

Dispose of the lubricants and care products properly, taking into account the country-specific disposal regulations. Follow the manufacturer's instructions on the packaging.

10.5 Disposing of tyres and inner tubes

Dispose of the tyres and inner tubes properly, taking into account the country-specific disposal regulations.

11 Inspection certificate

1. Inspection - After 300 km or 3 months after purchase at the latest

Work carried out / remarks:

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

Material used:

Date, stamp/signature of specialist dealer:

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

2. Inspection - After 2000 km or annually

Work carried out / remarks:

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

Material used:

Date, stamp/signature of specialist dealer:

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

3. Inspection - After 4000 km or annually

Work carried out / remarks:

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

Material used:

Date, stamp/signature of specialist dealer:

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

4. Inspection - After 6000 km or annually

Work carried out / remarks:

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

Material used:

Date, stamp/signature of specialist dealer:

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

5. Inspection - After 8000 km or annually

Work carried out / remarks:

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

Material used:

Date, stamp/signature of specialist dealer:

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

6. Inspection - After 10000 km or annually

Work carried out / remarks:

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

Material used:

Date, stamp/signature of specialist dealer:

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

7. Inspection - After 12000 km or annually

Work carried out / remarks:

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

Material used:

Date, stamp/signature of specialist dealer:

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

8. Inspection - After 14000 km or annually

Work carried out / remarks:

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

Material used:

Date, stamp/signature of specialist dealer:

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

9. Inspection - After 18000 km or annually

Work carried out / remarks:

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

Material used:

Date, stamp/signature of specialist dealer:

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

12 Pedelec passport

The pedelec passport can be used to describe your pedelec to the police or insurance company in the event of theft. Therefore, fill it out completely immediately after purchase and keep it in a safe place.

In the event of a warranty claim, it is helpful if you present the proof of purchase or delivery note and the bicycle passport. This ensures you can easily prove the responsible seller and the time of purchase/delivery and helps us to process your claim.

Frame no:			Model designation:			
Brand:			Key no.:			
EAN:			Purchase price:			
Purchase date:			Frame type:		Men	
Type:			City		Ladies	
	Trekking		Unisex			
	MTB Hardtail					
	MTB Full Suspension					
	Folding bike					
Motor	Front motor					
	Mid-mounted motor					
	Rear motor					
Frame colour:			Rim colour:			
Fork colour:						
Tyre size:			Special equipment:			
Owner			Seller			
Surname:			Surname:			
First name:			First name:			
Street:			Street:			
POSTCODE:			POSTCODE:			
City:			City:			
Phone:			Phone:			
E-mail:			E-mail:			
Luggage carrier:						
Child seat:						
Trailer operation:						
Public road traffic:						

13 Notes

Karcher
Karcher AG