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Introduction

Thank you for choosing the Pedelec Groove 2.0. This Pedelec is equipped with an innovative electric drive that assists you when you are cycling. This will make your trip much more enjoyable if you are riding up hills, carrying loads or riding into the wind.

The purpose of this User Manual is to help you get the most out of your Pedelec Groove 2.0 and use it correctly.

Structure of the User Manual

You will find information on how to use your Pedelec in Chapter 1, “Safety”.

You will find a brief introduction in Chapter 5, “Quick start”.

The most important components of your Pedelec are described in detail in the following chapters.

You will find the technical data for your Pedelec Groove 2.0 in Chapter 12, “Technical data”.

The information in this User Manual specifically refers to your Pedelec Groove 2.0. For general information, on the bike technology, for example, refer to the “Original User Manual | General” (CD).

CD with important information

On the enclosed CD, you will find versions of the “Original User Manual | Pedelec Groove 2.0” in various languages. In addition, the CD also contains the “Original User Manual | General” with general information on bike technology.

You can download the latest version of the User Manual from the Internet. Manuals for the individual bike components are also found there.

You can run the CD using any commercially available PC or laptop. Proceed as follows:

METHOD A:
1. Insert the CD.
2. Double-click on the file shelexec.exe using the left mouse button.
3. Select the desired language.
4. Select “Open User Manual from CD” or “Check for new version of User Manual online”.

METHOD B:
1. Insert the CD.
2. Using the mouse, right-click once on: “Open folder to display files.”
3. Double-click on “Start” using the left mouse button.
4. Select the desired language.
5. Select “Open User Manual from CD” or “Check for new version of User Manual online”.

Printable version of the “Original User Manual | General”

To call up the files, you need the Adobe Reader program. It has been included on the CD or can be downloaded free of charge from www.adobe.com.

If you would like a printed copy of the “Original User Manual | General”, you can have it sent to you free of charge by requesting it from the following address:

Derby Cycle GmbH / Raleigh Univega GmbH
Siemensstrasse 1–3
49661 Cloppenburg, Germany
+ 49 (4471) 966-0
info@derby-cycle.com

Even if you can’t wait to go for a ride, you should read through the “Original User Manual | Pedelec Groove 2.0” and the “Original User Manual | General” (CD) carefully before using your Pedelec for the first time.

The manufacturer accepts no liability for damage resulting from the failure to adhere to this manual.

Use your Pedelec only as intended. Otherwise, there is a risk of technical failure, which can lead to unforeseeable accidents! Improper use may void the warranty and guarantee.

Pass on the manual to anyone who uses, maintains or repairs this Pedelec.
1 Safety

Read all the safety information. Failure to observe the instructions can cause electric shock, fire and/or serious injury. The User Manual contains the following symbols that denote dangers or important information.

**WARNING**

regarding possible physical injury, increased risk of falls or other injuries.

**NOTE**

regarding possible damage to property or the environment.

**IMPORTANT ADDITIONAL INFORMATION**

or special information on using the Pedelec.

1.1 General

If you have reason to suspect a safety problem with your Pedelec, do not ride it, and make sure nobody else can use it until you have it checked by a specialist cycle shop. Safe use is not possible if electrical components or the battery show signs of damage.

Never ride with no hands! This poses an acute risk of falling.

Take the battery out before beginning work on the Pedelec.

Observe the maximum permitted gross weight of your Pedelec, as this could otherwise lead to breakage or failure of safety-relevant components ➔ Chapter 12 „Technical data“.

If you wish to make any adjustments to the ride characteristics of your Pedelec, please consult your specialist cycle shop.

1.2 Statutory requirements

The Pedelec, like all other bikes, must comply with the national regulations for road safety. Please observe the relevant explanations and general information provided in the “Original User Manual | General” (CD).

These statutory requirements apply for a Pedelec:

- The motor is designed only to provide pedalling assistance, i.e. it can only “assist” the rider when he/she turns the pedals.
- The average motor output must not exceed 250 W.
- As the speed increases, the rate at which the motor output reduces must also increase more intensely.
- The motor must switch off once the bike reaches a speed of 25 km/h.

1.2.1 Requirements for the rider

- You do not legally have to wear a helmet. However, in the interest of your own safety, you should never ride without a suitable helmet.
- You do not legally have to have a driving licence.
- You do not legally have to have insurance.
- No age restriction applies for a Pedelec.
- The regulations governing the use of cycle paths are the same as for normal bikes.

These regulations apply to you wherever you are in the European Union. It is possible that different regulations exist in other countries, also inside...
the EU in individual cases. Before using your Pedelec abroad, find out about the applicable legislation in the relevant country.

1.3 Battery

The battery contains chemical substances, which could cause dangerous reactions if the safety information given here is not adhered to.

Avoid contact with liquid leaking from a damaged battery. In case of contact, rinse off the liquid with water. In case of eye contact, consult a doctor after rinsing.

Never attempt to repair your battery. Batteries must not be dismantled, opened or crushed. The improper opening or damaging of the battery poses the risk of serious injury. Opening the battery voids the warranty claim. If your battery is damaged, contact your specialist cycle shop for advice.

Batteries must not be exposed to heat (e.g. radiator) or naked flames. External heat can cause the battery to explode. In addition, high temperatures shorten battery life. When charging, always ensure there is adequate ventilation.

A battery must not be short-circuited. It is dangerous to store batteries in a box or drawer where they can short-circuit one another or can be short-circuited by other conductive materials (paper clips, coins, keys, nails, screws). A short circuit between the battery contacts can cause burns or fire. Short-circuit damage caused in this way voids all guarantee claims.

Batteries must not be exposed to mechanical shocks. Even if a battery shows no visible signs of damage after falling or being knocked, it may be damaged. For this reason, even batteries that seem fine must be taken to a specialist dealer for inspection. Damaged batteries must neither be charged nor used for another application.

Keep the battery away from children.

Use the battery solely for your Pedelec.

Ideally, take the battery out of your Pedelec when not in use. There is a risk of injury through accidentally operating the battery switch.

Batteries not designed for the Pedelec must not be used. The Pedelec operates using low voltage (36 volts). Never attempt to operate the Pedelec using power from a source other than a genuine Pedelec battery. The designations of approved batteries are listed in Chapter 12 „Technical data“.

Never transport damaged batteries. The safety of damaged batteries cannot be guaranteed.

Lithium reacts very strongly upon direct contact with water. Never put the battery into water. Caution is therefore also required in the case of damaged batteries which have become wet, as they may catch fire.

In case of fire, water can be used to extinguish any flames in the vicinity, but never the battery itself. Powder fire extinguishers for metal fires (Class D) are better suited to this task. If the battery can be safely moved outdoors, the fire can also be suffocated using sand.
1.4 Charger

Children must be supervised. This will ensure that children do not play with the charger.

Children and people who, as a result of their physical, sensory or mental capacities, or their lack of experience or knowledge, are not capable of using the charger safely, must not make use of this charger without the supervision or instruction of a responsible person. Otherwise there is a risk of incorrect use and of injury.

Only charge batteries that are approved for your Pedelec. The battery voltage must match the charger’s battery charging voltage. Otherwise there is a risk of fire or explosion.

The charger may only be used to charge the battery supplied. Use of the charger for other purposes is not permitted. Any kind of manipulation of the charger is forbidden.

The mains voltage must correspond to the voltage given on the type plate of the charger. The supply voltage of the charger is given on the type plate on the back of the device.

The charger is only intended for use indoors. The battery may only be charged in a dry, non-flammable environment. During the charging process, the battery and charger must be placed on a flat, non-flammable surface. Battery and charger must not be covered. There must be no highly combustible materials in the immediate vicinity. This also applies when charging the battery on the Pedelec. In this case, you must place the Pedelec so as to prevent any fire from spreading quickly (exercise caution with carpeted floors!).

Only use indoors. Keep the charger away from rain or water. If water gets into a charger, there is a risk of electric shock. If water has nevertheless got into the charger, disconnect it from the mains immediately, and have it checked by a qualified workshop.

The battery may heat up during charging. A maximum temperature of 45°C may be reached. If the battery becomes any hotter than this, stop the charging process immediately. Such a battery may no longer be used, and you must have it inspected by the dealer.

A battery that displays a fault must not be charged any more.

The battery must not be left unattended while charging.

Damaged batteries must not be charged (risk of explosion!).

Do not attempt to modify or take apart the charger. Have repairs carried out only by specialists.

A charger with a damaged mains plug or mains cable must not be connected to the mains and must be replaced by a specialist. The same applies for extension cables that are not in perfect condition.

Do not charge batteries for an extended period if they will not be used.

If you detect smoke or an unusual smell, immediately unplug charger at the wall socket and disconnect the battery from the charger.

No chargers other than those specifically intended for use with the battery may be used. The use of a different charger may cause malfunctions, shortened service life, fire or explosion.

Do not use damaged batteries or chargers (plug, housing, cable).

Do not replace the mains cable. This poses the risk of fire and explosion.

Keep the charger clean. Dirt poses the danger of electric shock.
1.6 Adjustments/maintenance/repair

Take the battery out before beginning work (e.g. assembly, servicing, etc.) on the Pedelec. There is a risk of injury through accidentally operating the battery switch.

When carrying out adjustments and maintenance or when cleaning, avoid crushing cables or damaging them with sharp edges.

Please have all installation and adjustment work carried out by your specialist cycle shop. In case you have to fasten something in place or change something yourself, you will find an exhaustive list at the end of the “Original User Manual | General” (CD) detailing the tightening torques which must always be adhered to.

When replacing the handlebar, ensure that the weights are also changed.

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1.7 Transportation of the Pedelec

Remove the battery before transporting the Pedelec. There is a risk of injury through accidentally operating the battery switch. A suitable storage container can be obtained from your specialist cycle shop.

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1.7.1 The Pedelec and your car

If you transport your Pedelec on a bike rack, ensure that it is designed for the higher weight of a Pedelec. To reduce the load on the rack, and for protection against the weather, the battery must be transported inside the car.

---

1.7.2 The Pedelec on trains

In Germany, you can take your Pedelec with you on trains which are marked with the bike symbol. On German Intercity (IC) and EuroCity (EC) trains, you must book a place...
for your bike in advance. As a rule, you may not take bikes with you on German Intercity Express (ICE) trains.

### 1.7.3 The Pedelec on aeroplanes

Your Pedelec is generally subject to the policies of the respective airline concerning bikes. Batteries are subject to dangerous goods legislation. Therefore, they must not be carried on passenger planes – neither in the cargo hold, nor the cabin. Please contact the relevant airline for detailed information.

### 1.8 Cleaning

**1.8.1 Battery**

Remove the battery before you clean your Pedelec.

Do not use benzine, thinner, acetone or similar agents in the cleaning procedures under any circumstances. Non-neutral cleaning agents can strip the paint and cause discolouration, deformation, scratches or defects. Also avoid using abrasive or harsh cleaners.

Only use household cleaners and disinfectants (isopropyl alcohol) or water. You can obtain suitable cleaning products and additional information from your specialist cycle shop. We recommend you clean your Pedelec with a damp cloth, a sponge or a brush.

**1.8.2 Motor**

Dirt should be removed from the motor of your Pedelec regularly, ideally using a dry brush or a damp (not wet) cloth. Do not use running water such as a hose pipe or even a high-pressure cleaner.

The ingress of water can damage the motor, so ensure that no fluids or moisture enter the motor at any time during cleaning.

Do not clean the motor when it is warm, e.g. immediately after a trip. Wait until it has cooled down. Otherwise, the motor may be damaged.

If you remove the motor, e.g. for cleaning purposes, never hold or carry it by the cables, as there is a risk that they will break.

If you remove the motor from the frame of your Pedelec, check the plug from the motor and battery cable socket for dirt. If necessary, clean carefully with a dry cloth before reconnecting.

**1.8.3 Display**

The housing of the display must only be cleaned with a clean, damp (not wet) cloth.

**1.8.4 Control unit**

The control unit can be cleaned with a clean, damp (not wet) cloth if necessary.
1.8.5 Charger

Always unplug the charger from the wall socket before cleaning to avoid a short-circuit and physical injury.

Make sure that water does not enter the charger when cleaning.

1.9 Riding with luggage

Child seats must not be used with the Pedelec Groove 2.0.

The carrier is only approved for a maximum of 15 kg!

1.9.1 Panniers

We recommend that you do not transport luggage on the carrier, but in panniers at the side. Distribute the luggage evenly between the two panniers. Put heavier items at the bottom, and lighter ones at the top. This will make your ride safer.

1.9.2 Trailers

You may use a trailer with your Pedelec Groove 2.0.

Only use trailers that meet the requirements of the road traffic licensing regulations in your country (the Road Traffic Licensing Regulations (StVZO) in Germany for example). Non-approved trailers can cause accidents.

Trailers adversely affect the handling. Adapt your handling accordingly. Otherwise the bike trailer may tip up or detach and cause an accident.

Practise starting off, braking, cornering and riding on hills with an unladen trailer.

Bear in mind that the gross weight of the bike also includes the trailer.

A bike trailer may increase the braking distance considerably. Failure to observe these points could result in an accident.
2 Warranty regulations

2.1 Warranty periods
The statutory warranty valid at the time of delivery applies to all models.

2.2 Warranty conditions

2.2.1 Conditions
A defect is present under the following conditions:
- Manufacturing, material or information error.
- The cause of the change in the product is not wear or ageing arising naturally or as a result of its functions.
- The damage was not caused by use of the Pedelec for other than the intended purpose.

2.2.2 Exclusions
The warranty is excluded in the following cases:
- In the event of damage caused by improper use or force majeure.
- For all parts subject to function-related wear and tear or ageing to a normal, expected extent, unless this is the result of a defect in the manufacturing process or material.
- In the case of damage caused by incorrect or insufficient care and unprofessional repairs, conversions or replacement of components on the Pedelec.
- In the case of accident damage or damage caused by other external factors, providing this is not attributable to incorrect information or a product error.
- In the case of repairs carried out with used parts or damage that occurs as a consequence of this.
- In the case of damage resulting from competitive use of the product.
- In the presence of special equipment, accessories or non-standard equipment; in particular in the presence of technical modifications.
- If the servicing intervals are not observed.
- Fluctuations in use and battery performance as well as an age-related reduction in capacity are typical and technically unavoidable, and as such do not constitute a fault.

2.2.3 Wear parts
The following are considered wear parts under the statutory warranty:
- Battery
- Tyres
- Brake linings
- Rims in connection with rim brakes
- Sliding bearings / bearings
- Hydraulic oils / lubricants
- Chains and toothed belts
- Chain wheels, sprockets, bottom brackets and jockey wheels
- Paint finishes
- Handlebar tape / handle grips
- Lamps in the lighting equipment
- Motor
- Gear-shift / brake cables

The Groove 2.0 front wheel motor subjects the wear parts to greater stress than occurs on a bike with no drive.

2.2.4 Intended use
Due to their design and components, Pedelecs are intended for use on public roads and paved paths. They can also be used on gentle off-road terrain such as country lanes. Neither the manufacturer nor the dealer is liable for any use above or beyond this or for a failure to observe the safety-related instructions in the User Manual and any resulting damage. This applies in particular to the use of these bikes off-road, when overloaded and after any defects have been improperly removed. Intended use also includes complying with the manufacturer’s conditions for use, service and maintenance specified in the User Manual. Fluctuations in use and battery performance as well as an age-related reduction in capacity are typical and technically unavoidable, and as such do not constitute a fault.
3 Components of the Pedelec

- Saddle
- Battery
- Seatpost
- Handlebar
- Pedal
- Fork
- Motor
- Wheel
- Seatpost clamp (with quick-release lever or screw)
4 First steps

4.1 Checking the tightening torques

Check that all screws and important components are fastened securely and correctly. You will find a table with important screw connections and the prescribed tightening torques in Chapter 12 „Technical data“ of the “Original User Manual | General” (CD).

4.2 Fitting the pedals

It may be that the pedals for your Pedelec have yet to be fitted on delivery:

The right pedal (marked with an “R”) is screwed clockwise into the right crank arm. The left pedal (marked with an “L”) is screwed anticlockwise into the left crank arm. Both pedals are screwed in tightly in the direction of the front wheel using a size 15 open-ended spanner or a suitable Allen key. The tightening torque is 40 Nm.

If the pedals are not screwed in straight, the thread in the crank arm may be severely damaged. This could lead to serious accidents and injuries.

4.3 Adjusting the saddle height

4.3.1 Clamping bolt

If a torque is specified (in Nm) on the seatpost clamp, tighten the clamping bolt to this torque. If no tightening torque is specified, tighten an M6 bolt (dia. 6 mm) and an M5 bolt (dia. 5 mm) to 5.5 Nm.

4.3.2 Quick-release device

For opening, the quick-release lever must be folded back through 180° – you will see the lettering “OPEN”. For closing, fold the quick-release lever back in through 180° – you will see the lettering “CLOSE”.

As a rule of thumb, you can be confident that the quick-release device is sufficiently secure if the lever can only be closed by applying firm pressure with the heel of your hand. You will feel increasing resistance from the lever, beginning when it is at approx. 90°. If the seatpost is not clamped firmly or securely enough, tighten the clamping nut or turn the screw clockwise by another half a turn respectively while the quick-release lever is open. Close the quick-release lever and check that the saddle is securely fastened once more.

Check that all quick-release levers are fastened correctly and securely before every journey and every time you return to your bike having left it unattended for a short time.

With regard to the saddle height, there is a simple test procedure: Whilst sitting on the saddle, the heel of your fully-stretched leg should just reach the pedal in its lowest position. When the ball of your foot is in the same position, your leg should be bent slightly.
5 Quick start

Charge the battery completely before riding for the first time. As required by transport law, the battery leaves the factory with an approximately 30% charge. Charge temperature: 0°C to 45°C.

You can also remove the battery from your Pedelec and charge it elsewhere. For more information, refer to Chapter 6 “Battery”.

1. Open the cover of the charging socket.

2. Connect the plug of the charger to the battery.

3. Plug the charger in at the wall socket.

4. Press the battery button. The battery is fully charged when all the green LEDs on the battery are lit. Pull the plug of the charger out of the charging socket, close the cover and unplug the charger at the wall socket.

Battery information system

5. If you removed the battery for charging, replace it in the battery holder.

The battery must be switched off before it is pushed into the battery housing.

6. Now turn the key clockwise and remove it. The battery is now locked in place.

7. Make sure that the battery is securely positioned and that the key is no longer in the lock.
8. Press the battery switch. The red LED inside it lights up.

9. Press the button to switch the system on.

10. The most recently selected power-assist mode will be indicated. Press the button to select the level of assistance: (slight), (medium) or (strong). Pressing once changes the level of assistance by one level. A box marks the selection: Press the button if you want to ride without assistance. The box disappears.

11. You can now ride off just as you would if you were riding a normal bike. The assistance from the motor begins as soon as the cranks have completed about a quarter of rotation.

Apply the brake before putting your foot on the pedal.

You have assistance from the very first moment. The assistance begins gradually. Practice starting up in a safe location before venturing into the road traffic.

Never ride with no hands! This poses an acute risk of falling!

We recommend that you do not transport luggage on the carrier, but in panniers at the side. Distribute the luggage evenly between the two panniers. Put heavier items at the bottom, and lighter ones at the top. This will make your ride safer.

6 Battery

Your battery is a lithium-ion battery, the ideal type for this application. One of the main benefits is its low weight combined with a high capacity.

6.1 Charging the battery

You can charge the battery whilst it is on the Pedelec ⇒ Chapter 5 „Quick start“.

Alternatively, you can take the battery out of its holder and charge it in a separate location. This is recommended if it is cold outside, in order to charge the battery in a warmer room.

Condensation may form on the charger if the temperature changes suddenly from cold to hot. In case of condensation, wait approximately one hour before connecting the charger to the mains, until it has warmed up to the temperature of the room. Ideally, avoid such situations by storing the charger in the place where it is operated.

The battery can be charged at temperatures between 0°C and 45°C. However, you can maximise a battery's service life by charging it at an ambient temperature of between +10°C and +30°C.

6.1.1 Removing the battery

1. Grip the battery by the handle, insert the key into the lock and turn it anticlockwise. The battery is now unlocked.

The carrier is only approved for a maximum of 15 kg!
Unlocking the battery

Your Pedelec is supplied with two battery keys. Keep one key in a safe place, and get a copy made of the key if necessary.

2. Grip the battery with one hand and pull it backwards out of the Pedelec. Hold the battery tight to avoid dropping it. Place the battery down on a suitable surface, which should be dry, flat and non-flammable.

Removing the battery

3. You should now remove the key and keep it in a safe place to prevent it from breaking off or being lost.

   Please note, the battery is heavy. Hold on to it tightly!

6.1.2 Charging the battery

Before charging the battery, read the information on the charger carefully.

1. Take the charger provided out of its packaging and plug it in at the wall socket (230–240 V). The LED in the charger now lights up green continuously.

To charge the battery safely, the charger must be placed on a suitable surface, which should be dry and non-flammable.

2. Connect the plug of the charger to the battery.

3. Charging begins. The charger’s LED lights up red. You can check the level to which the battery is charged by pressing the battery button. As soon as the LED on the charger lights up green, the battery is fully charged.

4. Unplug the charger at the wall socket once charging is complete.

Damaged batteries must not be charged, and further use is not permitted.

There is no memory effect. You can therefore top up your battery again after every trip. Then you are always ready for the off.

Ideally you should charge the battery at a temperature of between +10°C and +30°C. It takes longer to charge the battery at low temperatures, while the battery will not charge up at temperatures higher than +45°C. If the battery becomes any hotter than this, stop the charging process immediately. Ideally, you should charge and store the battery inside your house or in a warm garage when the outside temperature is low. In this case, you should only fit the battery onto your bike just before using it.
6.1.3 Installing the battery

1. Put the battery back in the battery holder.

The battery must be switched off before it is pushed into the battery housing.

2. Now turn the key clockwise and remove it. The battery is now locked in place.

3. Make sure the battery is firmly in place.

6.2 Battery information system

There is a battery information system with four LEDs and a battery button on the top of the battery. The LEDs light up as soon as you press the battery key. The charge state and capacity of the battery is indicated by the number of LEDs that light up and the way in which they light up.

6.2.1 Checking the charge state

Press the battery button briefly. The LEDs light up and display the current battery charge state.

<table>
<thead>
<tr>
<th>DISPLAY</th>
<th>BATTERY CHARGE STATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>••••</td>
<td>4 LEDs light up</td>
</tr>
<tr>
<td>•••</td>
<td>3 LEDs light up</td>
</tr>
<tr>
<td>••</td>
<td>2 LEDs light up</td>
</tr>
<tr>
<td>•</td>
<td>1 LED lights up</td>
</tr>
</tbody>
</table>

* If the battery is empty, it will work again briefly following a short period of rejuvenation and will then switch back off. It must now be charged.

Check the battery charge level before every trip to make sure it is sufficient for the planned journey.

6.3 Battery management

The battery management monitors the temperature of your battery and warns you of incorrect use.

If an external short-circuit has been caused at the contacts or the charging socket, please consult your specialist cycle shop.

Never leave the battery unattended during charging. Disconnect the charger after use.

6.4 Warranty and service life

Batteries are wear parts. Wear parts come with a two-year warranty.

If a fault occurs during this period, your specialist cycle shop will replace the battery. Normal ageing and battery wear do not constitute a fault.

The service life of the battery depends on different factors. The most important wear-relevant factors are:
• The number of charges

After 1,100 charging cycles, your battery will still have 60% of its initial capacity, providing it has been well looked after. This means 6.6 Ah in an 11 Ah battery and 7.2 Ah in a 15.5 Ah battery. A charging cycle is defined as the sum of the individual charges until the battery has been charged to full capacity once.

For example: You charge the battery with 5 Ah on the first day, 2 Ah on the second day and 4 Ah on the third day; the sum is 11 Ah. The battery has thereby completed one charge cycle.

According to the technical definition, the battery is exhausted when less than 60% of the initial capacity is available. If you can still ride the distances you require with the remaining battery capacity, you can of course continue using it. If the capacity is no longer sufficient, you can take your battery to a specialist cycle shop, which will dispose of your battery and sell you a new one.

• The age of the battery

A battery also ages during storage.

This means that even if you do not use your battery, its capacity reduces. You can expect the battery to age by approximately 3 to 5% each year.

Ensure that the battery does not become too hot. The rate at which the battery ages increases significantly at temperatures above 40°C. Direct sunlight can heat the battery considerably. Be sure not to leave the battery in a hot car, and always stand your Pedelec in the shade during breaks in cycle trips. If you cannot prevent exposure to heat, do not charge the battery until it has cooled down.

A fully charged battery ages at an even greater rate than a partially charged one at high temperatures.

• If you always ride with maximum motor output, your motor will always require a stronger current. Stronger currents cause the battery to age more quickly.

• You can also extend the service life of the battery by using the assistance selectively. Use a low assist level when riding. With lower discharge currents, you conserve your battery.

6.5 Storage

If you do not need your battery for a while, store it at a temperature of +18→+23°C at 50–70% of its full charge capacity. If you don’t use the battery for a relatively long period, we recommend that it is recharged every three to six months.

6.6 Shipping

Never send your battery by post or courier! A battery is a hazardous article which can overheat and catch fire in certain conditions.

The preparation and shipping of a battery may only be carried out by trained personnel.

If you would like to return your battery for repair or replacement, please always arrange this via your specialist cycle shop. Specialist cycle shops can have the battery picked up free of charge and in compliance with dangerous goods legislation.

6.7 Disposal

Batteries must not be disposed of with domestic waste. Consumers are legally bound to dispose of used or damaged batteries at the locations designated for the purpose (battery collection point or specialist cycle shop). The disposal of batteries is clearly regulated in each country’s laws.
7 Charger

If used incorrectly, the charger may be damaged or cause injury.
- Only use the charger in dry rooms.
- Only place the charger in a secure, stable position on a suitable surface.
- Do not cover the charger or place any objects on it, as otherwise it could overheat and catch fire.

Do not use any other charger. Only charge the battery using the charger provided, or a charger approved by us for the purpose.

Read the type plates on the charger before using it for the first time.

You can charge your Pedelec Groove 2.0 directly via a charging socket in the battery. The battery can remain in the Pedelec during the charging process.

Charging the battery

Alternatively, you can take the battery out of its holder and charge it elsewhere ➔ Chapter 6 „Battery“. This is recommended if it is cold outside, in order to charge the battery in a warmer room. The battery can be charged at temperatures between 0°C and +45°C.

8 Display and control unit

![Display and control unit diagram]

**Display**

<table>
<thead>
<tr>
<th>NO</th>
<th>SYMBOL</th>
<th>FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VEL</td>
<td>Display of current speed</td>
</tr>
<tr>
<td>2</td>
<td>ODO</td>
<td>Display of the total kilometres</td>
</tr>
<tr>
<td>3</td>
<td>DST</td>
<td>Display of the trip distance</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Battery charge state indicator</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>Display values (speed, total kilometres, trip distance or error code)</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>Display of the unit (in km/h)</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>Ride in Power mode</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>Ride in Sport mode</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>Ride in Economic mode</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>Activate/deactivate pushing assistance</td>
</tr>
</tbody>
</table>

**Control unit**

Switch the Pedelec on if you want to use the front and rear lights. The front and rear lights are powered by the battery.

The front and rear lights can remain lit for about another two hours after the motor has been switched off.
### 8.1 Switching on and off

#### 8.1.1 Switching on

1. Switch the battery on.

   ![Battery switch](image)

2. Hold the button down for two seconds.

#### 8.1.2 Switching off

1. Hold the button down for two seconds.

2. Switch the battery off.

### 8.2 Assist mode

<table>
<thead>
<tr>
<th>MODE</th>
<th>ASSISTANCE</th>
<th>RECOMMENDATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>🚴</td>
<td>Assistance up to at most 25 km/h</td>
<td>Use for small climbs (bridges etc.)</td>
</tr>
<tr>
<td>🚴</td>
<td>Assistance up to at most 20 km/h</td>
<td></td>
</tr>
<tr>
<td>🚴</td>
<td>Assistance up to at most 15 km/h</td>
<td>For a high range</td>
</tr>
</tbody>
</table>

Press briefly to change the assistance. The different modes change in the following sequence: 🚴, 🚴, 🚴. A box marks the selection: 🚴. You can ride without assistance when no box is displayed.

The most recently selected mode is displayed when you switch back on again.

### 8.3 Pushing assistance

The pushing assistance helps you to push the bike. That is particularly helpful when you are on a steep hill that you cannot manage by pedalling. Proceed as follows to use the pushing assistance:

1. Get off the bike.

2. Push your bike.

3. Press 🚴. Pushing assistance mode starts after three seconds. The 🚴 is now positioned at the 🚴 symbol. Hold the button down until you no longer need the pushing assistance.

Only use the pushing assistance when you are pushing the bike. You must not use the pushing assistance when you are riding! This can cause the motor to "stutter", i.e. to keep starting and stopping.
8.4 VEL (speed), ODO (total kilometres) and DST (trip distance)

When you switch the Groove 2.0 on, the display automatically shows VEL (the current speed). Hold SET down for a second to change the display over to ODO (total kilometres). Hold SET down again for 1 second, in order to change over to DST (trip distance). When you press SET briefly again, you return once more to VEL (the current speed). The selected mode has a black line under it: The display of the values changes, according to what mode you are in.

8.4.1 Resetting the trip distance (DST)

Stop when you want to change the settings. Lack of attention in traffic can lead to accidents.

Select DST (trip distance) with SET. Press MODE+ for two seconds in order to reset the DST (trip distance) to 0 km.

ODO (total kilometres) cannot be reset. On reaching 99999 KM, the Groove 2.0 system returns automatically to 0 KM.

8.5 Adjusting the back-lighting

1. Switch the battery on.
2. Press the button. The back-lighting of the display can only be adjusted when switched on.
3. Hold SET+MODE down simultaneously for three seconds. The abbreviation "bl" appears on the display, along with the current brightness value (1, 2 or 3).
4. Use SET and MODE to choose the value you want.
5. When you have made your decision, hold the button down for three seconds.

8.6 Battery charge indicator

The battery charge indicator shows how much charge is available in the form of a stylised battery. The lower the charge state of the battery, the fewer black segments can be seen.

9 The motor

9.1 Operation

If you switch on the assistance and start pedalling, the motor starts up once the cranks have completed about one quarter of a revolution.

The level of thrust delivered by the motor depends on:

- which level of assistance you have selected.

At the highest assistance level (Power) the motor helps you with the maximum power (250 watts), and up to the maximum permitted speed of 25 km/h. However it does then use the most energy. If you ride at the Sport assist level, the motor produces slightly less power (150 watts). If you have selected Economic, you receive the least amount of assistance (70 watts), but have the battery’s maximum range at your disposal. Each assistance mode supports you up to different switch-off speeds. This function lets you adjust to the speed of other riders (e.g. in a group).
9.2 Range

The distance you can travel using the power assist with the battery fully charged depends on several factors:

- **Selected assist level**
  If you want to cover a large distance with power assist, select the smaller gears, i.e. the ones that are easier to pedal. Also select a low assist level (Economic).

- **How you ride**
  If you are riding in gears that are harder to pedal and select a high assist level, the motor will produce plenty of power to help you along. However, just as with driving a car at high speed, this leads to higher consumption. You will therefore have to recharge the battery sooner. You can conserve battery power by pedalling with even force throughout the complete revolution of the pedals.

- **Ambient temperature**
  If it is colder, you will travel a shorter distance with the same battery charge. To maximise the distance you can travel, keep the battery in a heated room so that it is at room temperature when you fit it on your Pedelec. When the motor is in use, the battery generates enough heat to not lose too much of its power at low ambient temperatures. The battery cells can operate at temperatures of -15°C to +60°C.

- **Technical condition of your Pedelec**
  Make sure the tyre pressure is correct. If you ride your bike with too little air in the tyres, this can significantly increase the rolling resistance, especially on smooth surfaces, e.g. tarmac. If the ground is uneven, as on a country path or gravel track, a somewhat reduced tyre pressure can lead to less rolling resistance. At the same time, the risk of a puncture increases. Please consult your specialist cycle shop about this. The range of your Pedelec also decreases if the brakes are rubbing.

- **Topography**
  Significantly more energy is needed for going uphill. Choose a lower gear, and press strongly on the pedals yourself. You will then achieve a greater range.

9.3 Riding your Pedelec efficiently

You can monitor and influence the cost of your journeys with the Pedelec yourself. You can reduce your consumption and therefore costs by following the tips for increasing the range.

The operating costs for battery-operated power assist are calculated as follows:

- A new battery costs roughly 359 euros.
- You can cover approximately 45 km with one battery charge.
- You can charge the battery roughly 1,100 times.
- $1,100 \times 45 \text{ km} = 49,500 \text{ km}$.
- $359 \text{ euros} : 49,500 \text{ km} = 0.7 \text{ cent/km}$
- You use roughly 0.47 kWh to fully charge the battery. Assuming a unit price of 20 cents / kWh, it costs you 9.4 cents to fully charge the battery.
- It costs you 0.2 cents per kilometre over the average range of 45 km.
- This means the cost of consumption and the battery is a maximum of 0.9 cents / km.

This sample calculation is based on German energy prices. The operating costs may therefore be different in locations where other energy prices apply.
# Troubleshooting

## 10.1 Code indication on the display

If a code appears on your display, first switch the Groove 2.0 system off at the battery. Wait for a moment, then switch it back on. If the error is still there, take the following table as a guide.

<table>
<thead>
<tr>
<th>CODE</th>
<th>CAUSE</th>
<th>ERROR RECTIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PO</td>
<td>You are in a part of the menu that is only relevant to the bike manufacturer.</td>
<td>Hold the button down for three seconds.</td>
</tr>
<tr>
<td>06</td>
<td>The low-voltage protection has triggered.</td>
<td>Recharge the battery. ⇒ <em>Chapter 6.1 “Charging the battery”</em>. Contact your specialist cycle shop if the code continues to appear.</td>
</tr>
<tr>
<td>07</td>
<td>The high-voltage protection has triggered.</td>
<td>Contact your specialist cycle shop.</td>
</tr>
<tr>
<td>08</td>
<td>The Hall sensor is defective.</td>
<td>Contact your specialist cycle shop.</td>
</tr>
<tr>
<td>09</td>
<td>The motor winding is defective.</td>
<td>Contact your specialist cycle shop.</td>
</tr>
<tr>
<td>21</td>
<td>The speed sensor is defective.</td>
<td>Always remove the battery before you start work on the Pedelec (e.g. assembly, servicing etc.). Always remove the battery before you start work on the Pedelec (e.g. assembly, servicing etc.). Always remove the battery before you start work on the Pedelec (e.g. assembly, servicing etc.). Always remove the battery before you start work on the Pedelec (e.g. assembly, servicing etc.).</td>
</tr>
</tbody>
</table>

1. Check that the motor connector is properly plugged in.
2. Check the contacts for dirt and oxidation. Remove both of these with a dry cloth.
3. Carefully bend any contacts that are out of position back into place.

Contact your specialist cycle shop if you need help, or if the error continues to appear.

| 23   | The bike lighting is defective. | Check that all the lighting cables are correctly seated, not crushed, broken or short-circuited. Contact your specialist cycle shop if you need help, or if the error continues to appear. |
| 30   | Faulty communication between the motor, display and battery. | Always remove the battery before you start work on the Pedelec (e.g. assembly, servicing etc.). Always remove the battery before you start work on the Pedelec (e.g. assembly, servicing etc.). Always remove the battery before you start work on the Pedelec (e.g. assembly, servicing etc.). Always remove the battery before you start work on the Pedelec (e.g. assembly, servicing etc.). Check all the plugged connections for dirt and oxidation. Remove both of these with a dry cloth. Contact your specialist cycle shop if you need help, or if the error continues to appear. |

All the segments can be seen, the stylised battery flashes.

The battery is over-charged.

Contact your specialist cycle shop.

No segments can be seen, the stylised battery flashes.

The battery is empty.

Recharge the battery.
11 Removing and fitting the front wheel

Removal:
1. Pull apart the upper and lower halves of the electrical connector that is located at the rear of the fork.
2. Slide the cable tie downwards from the fork, or cut it.
3. Remove the front wheel. ⇒ Chapter 18.2.1 "Original User Manual | General" (CD).

12 Technical data

<table>
<thead>
<tr>
<th>MOTOR</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Definition</td>
<td>Brushless electric motor with gear unit and freewheel</td>
</tr>
<tr>
<td>Output</td>
<td>250 W</td>
</tr>
<tr>
<td>Maximum torque</td>
<td>35 Nm</td>
</tr>
<tr>
<td>Weight of motor</td>
<td>2.88 kg</td>
</tr>
<tr>
<td>Assist levels</td>
<td>70, 150, 250 watts</td>
</tr>
<tr>
<td>Control</td>
<td>Via speed sensor</td>
</tr>
<tr>
<td>Switch-off speed</td>
<td>25 km/h at the highest assistance level</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BIKE TYPE</th>
<th>MAXIMUM PERMITTED GROSS WEIGHT (bike, rider, luggage, trailer + load)</th>
<th>WEIGHT OF RIDER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedelec</td>
<td>130 kg</td>
<td>105 kg max.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LI-ION BATTERY</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage</td>
<td>36 V</td>
</tr>
<tr>
<td>Rated capacity</td>
<td>9 Ah</td>
</tr>
<tr>
<td>Energy</td>
<td>324 Wh</td>
</tr>
<tr>
<td>Weight</td>
<td>2.4 kg</td>
</tr>
<tr>
<td>Permitted charging temperature</td>
<td>0 to 45°C</td>
</tr>
<tr>
<td>Recommended charging temperature</td>
<td>+10 to +30°C</td>
</tr>
<tr>
<td>Recommended storage temperature</td>
<td>+18 to +23°C</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CHARGER</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Charging time</td>
<td>6 to 7 hours</td>
</tr>
<tr>
<td>Number of battery cells</td>
<td>40</td>
</tr>
<tr>
<td>Weight</td>
<td>450 g</td>
</tr>
<tr>
<td>Protection class</td>
<td>only in a dry environment</td>
</tr>
<tr>
<td>Charging temperature</td>
<td>0 to 45°C</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-20 to +40°C</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DISPLAY AND CONTROL UNIT</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Protection class</td>
<td>IP 65 (protected against dust, splashes and water)</td>
</tr>
<tr>
<td>Weight</td>
<td>90 g</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>-20 to +60°C</td>
</tr>
</tbody>
</table>
We hope you thoroughly enjoy using your new Pedelec with Groove 2.0 drive.

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