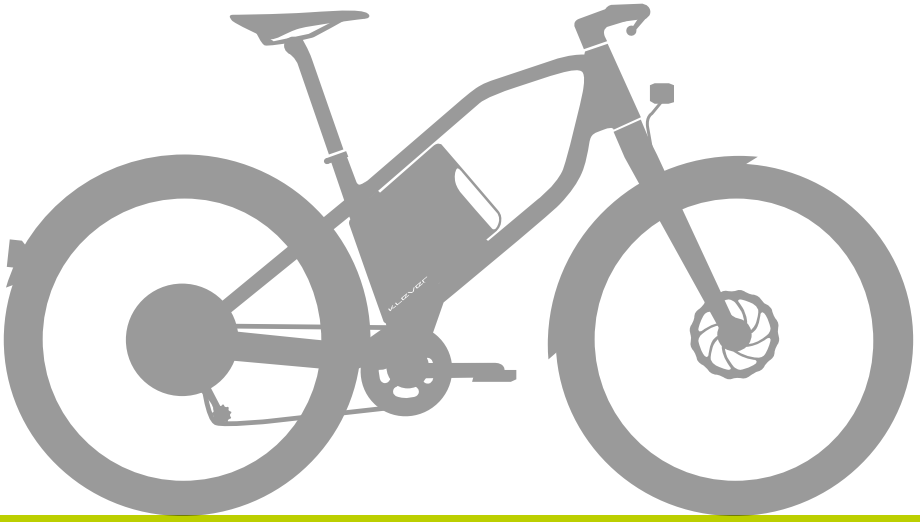
User manual

Model

Klever X



25 km/h

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1. QuickStart

Dear customer,

On the first pages of this comprehensive instruction manual you will find this QuickStart guide, which gives you a quick overview of the main features of the Pedelec.

For further information please read the additional instructions on the following pages. There you will find all important technical details and further relevant information. Should you have any further questions, please ask one of our authorised dealers or contact our technical hotline, whose contact details are at the end of the manual.

Enjoy your Pedelec and we wish you a lot of fun,

The Klever Mobility team.

Image 2

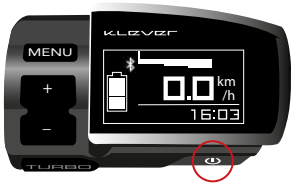

Image 3

Security check:

Before starting the bike please always check the operation of the brakes and the tyre pressure.

Launch of the electric drive

To start the propulsion system the display must be mounted in the bracket. There are three ways to activate the system:

1. Click the LCD-display in its bracket – the system runs for 3 sec through a system check – now the system is activated.

or

2. Just press the start button (Image 3) – after the system check the system is activated.

or

3. When you start pedalling the system will wake up automatically.

Use the + (top left) and - (bottom left) buttons to select the desired level of support. The support level is indicated by the 3 horizontal bars at the top of the display.

0 bar	UL (Ultra Low)	No support; system is activated
1 bar	L (Low)	Low support
2 bars	M (Medium)	Medium support
3 bars	H (High)	Strongest support
The Walk/Turbo (ϟ)-button has 3 functions: 1. Walk-assist when walking next to your Pedelec. 2. Turbo WITHOUT pedalling of the cyclist 3. Turbo WITH pedalling of the cyclist		
1. Actuate the Walk/Turbo (ϟ)-button when walking next to your vehicle.	< 4 km/h	Pushing aid while taking your Pedelec by the hand
2. Turbo mode WITHOUT pedalling of the cyclist.	< 4 km/h	Additional support at standstill
3. Turbo mode WITH pedalling of the cyclist. Activates the Turbo-function, but only when the cyclist is pedalling and the speed is over 4 km/h. Can be activated regardless of the support ratio.	T (Ultra High)	Strongest support

Charging the battery:

Caution! The battery should only be charged with the appropriate, supplied charger (Image 4).

The battery can be charged on (image 7a) and off bike (image 7b). For removal of the battery see section 6.3.3.

Connect the charger with the power cable and the power plug to the wall socket. The LED on the charger shows constant red light. The charger is ready for use (image 6).

Connect the charger plug from the charger to the charging socket on the battery (images 5 + 6 + 7a/7b).

The charging process starts automatically. Once the LED on the charger constantly lights green the operation is complete and the battery is charged.

First pull the plug now, and second, remove the charger plug from the battery charger.

Image 4

Image 5


Image 6


Image 7B


Image 7A

Charging status	Indicator LED Charger	Indicator LED Battery	Remark
	Flashing red	Error	Check connections
	Steady red		Charger is ready
0%	Flashing yellow	Flashing red	Capacity very low; charging starts
<35%	Steady yellow	Flashing red	Normal charging
35 – 75%	Steady yellow	Flashing yellow	Normal charging
75 – 90%	Steady yellow	Flashing green	Normal charging
>90%	Flashing green	Flashing green	Final charging
100 %	Steady green	No LED colour	Fully charged

The charging of an empty rechargeable battery of 570 Wh (from 0% to 96%) will take about 6 hours with the included travel charger.

2. Introduction

Congratulations

With the purchase of a Klever Mobility Pedelec you made the right purchase decision and you got a high-quality product with what you will have much pleasure in everyday life.

Technically and functionally up to date, it is carefully manufactured using the highest quality materials and components. An excellent design and excellent value for money distinguishes this Pedelec.

For a trouble free, pleasurable riding experience with the new product, please read this manual carefully.

Everything you need to know in terms of technical specifications, operation, maintenance and care, has been carefully compiled in this manual.

Please note the additional information in the instructions supplied with the components.

Pay particular attention to sections in bold which are additionally marked with "Caution". The most important information is again summarised. It should be observed to avoid possible accidents and danger to your life and limb.

Bold sections marked with this symbol contain information about this Pedelec and its accessories and its handling.

Operations marked with this sign are to be performed by an authorised Klever dealer. They require a lot of experience and special tools.

Furthermore, if you need any further information or advice, please contact our technical hotline at ++49 (0)223-4933420 (Monday-Friday from 8-17 clock), or contact an authorised retailer.

The latest available information on our products and other technical information and videos can be found on our website: www.klever-mobility.com.

Your Pedelec is equipped according to StVZO (German Road Traffic Licensing Regulations), and you can use it safely on public roads.

The Pedelec is equipped with a bright-sounding bell, a complete lighting system with quality marks for the head light and the tail light with integrated brake light, reflectors and with 2 sets of brakes independently actuating the front and rear wheel.

The additional electric drive is limited to max. 25 km/h, and thus complies with the statutory requirements for an EPAC (electric bike). That means you do not need a liability insurance, license plate nor a driving license. Moreover, it is not mandatory to wear a helmet, even though we strongly recommend to wear one for your own safety.

3. EC Declaration of Conformity CE

The Manufacturer:
Klever Mobility Inc.
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Tucheng Dist.; New Taipei City 236
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Represented in Eurobe by:
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Represented in Benelux by:
Klever Mobility NL b.v.
Afslag 8
3981 PD Bunnik
Tel.: +31 30 210 2905
infoNL@klever-mobility.com

Hereby confirms for the product:

X25 Model year 2018

Conformity with all applicable directives from the European Machinery directive: **2006/42/EC**

The machine also conforms to all the directives from the Electromagnetic Compatibility directive: **2004/108/EC**

In addition, the following harmonised European Standards apply: the **EN 15194 standard** for bicycles with electric pedal support (EPACs) and the **EN-ISO 4210 standard** for city and touring bicycles in which the technical safety requirements and test methods are being described.

Technical documentation by:

Klever Mobility Europe GmbH
Dieselstr. 8
D-50859 Köln

Bastian Petri
Technical Manager

4. Getting started and safety check

Although your Pedelec has been subjected to a final check during assembly and by the dealer, the transport and the time may have caused changes.

Therefore, before your first ride, and every ride, you should consider some important things and check the bike.

1. Make yourself intensely familiar with the Pedelec and the functioning of the electric drive, before the first ride in public traffic.
2. Check the correct setting of the saddle and the handlebars (see section 7.1).
3. Check the correct function of the brakes
4. Check the air pressure and the thread depth of the tyres
5. Check the lighting system for proper operation
6. Check the tightness of the bolts and nuts of the wheels
7. Check the minimum insertion of the seat post

Caution: : Do not start when you identify deficiencies in one of these points. While riding a defective Pedelec this can cause serious accidents and endanger your life. If in doubt, please contact your dealer or our technical hotline.

Your bike suffers wear and tear in everyday riding through extreme weather and road bumps. Through constant dynamic loads all parts of the bike experience material fatigue and wear. Therefore, examine your bike regularly for wear of the components and other changes such as scratches, cracks or discoloration. These symptoms may be signs of damage and a future failure of the accessory. Bring your bike to your dealer regularly and comply with the plan of inspection, so he can fix or replace these parts.

Please note! The everchanging road and weather conditions will constantly fatigue the Pedelec and its components and parts. This may cause fatigue and wear. Therefore, it is recommended to inspect your Pedelec on a regular basis and look for wear of parts and changes in scratches or cracks, or the discolouring of parts. These could possibly indicate damage of the part. Following the inspection plan in section 19, you best bring your X to your Klever dealer for inspection, service, maintenance and repair.

Please note! Make sure to only use original Klever spare parts. In case you are not sure whether to use certain spare parts or not, please contact your official Klever dealer or otherwise call our technical hotline.

5. Behaviour in road traffic

Thanks to the electric auxiliary propulsion you reach high speeds and accelerate much faster than you are used to with a regular bike. Therefore, you should intensively familiarise yourself with the Pedelec only on a traffic free road before you go in public traffic. During riding on the road, you should follow these tips:

- Though it is not compulsory, we strongly recommend to always wear a helmet during riding.
- Make yourself familiar with the traffic rules and stick to the rules.
- Be ready to brake at any time and expect misconduct of others.
- Ride defensively and be considerate to other road users.
- Always keep your bike in a perfect condition.
- Use your bike only in accordance with its intended purpose (see section 13. Intended use).
- Don´t use a mobile phone nor a headset while riding.
- Be sure to observe the maximum weight of 120 kg of the bicycle. (see section 11. Technical Data).
- Please have your Pedelec checked regularly by an authorised Klever dealer, according to the recommended service intervals.

6. The Klever Mobility propulsion – the BIACTRON system

You have purchased a Pedelec that helps you improve your day to day mobility with its electric propulsion system. Slopes can be better managed and the wind resistance can be better overcome.

This electric auxiliary drive consists of the following components: 1. Battery; 2. Motor; 3. Control unit/Display; 4. Motor controller; 5.Torque sensor; 6. Pedal Sensor; 7. Charger (image 8a)

Once you have turned on the system and you start pedalling, the motor will support you as long as you pedal, up to a max. speed of 25 km/h

Due to its maximum speed, the Pedelec rides within the legal framework of the Road Traffic Act and is still considered as a normal bicycle. It is exempt from compulsory insurance and you do not need a license. Likewise, it is not compulsory to wear a helmet, although we strongly recommend it for your own safety.

Image 8A

Image 8

The five (different) levels of support you can select according to the external circumstances (e.g. level four (high level) on climbing uphill or headwind) or your personal preferences. Please note that a high level of support also means a higher consumption of current and reduces the range of the system and the battery.

When you ride faster than 35 km/h, the automatic energy recovery (technical recuperation) is activated. The motor operates as a generator and re-charges the battery.

In case the technical recuperation has been activated, you will hear an acoustic signal. During the process of recuperation, the bars on the display representing the battery state of charge will start to flash and the LED light on the battery will once flash red, yellow and green consecutively.

6.1. Sensors and their function

The Pedelec is equipped with a torque sensor in the dropout, and it is electronically controlled. This sensor accurately measures the change in chain force at every pedal stroke (left or right) and informs the system about the force you exert during pedalling. A computer in the control unit then calculates these values, and manages precisely the amount of support from the motor, hence generating a perfect synergy between cyclist and the Pedelec.

During pedalling, the torque and the pedal sensor measure very sensitively and exactly the rider's input and enable the motor controller to operate the additional support of the motor tailored to the needs and riding conditions of the cyclist.

You can also define the amount of motor support by yourself choosing between the five levels of support (Turbo, High, Medium, Low, Ultra Low).

This makes the system very efficient and economic, saving power consumption and maximising range.

The additional speed sensor sets the power of the electric motor to zero once you have reached 25 km/h. Above 25 km/h the Pedelec works like a conventional bicycle, the only way to maintain the propulsion of the vehicle is by pedalling solely.

The electric motor will only activate if you pedal, therefore, from a standstill, to start, either you have to pedal, or actuate the Walk/Turbo button. Without pedalling by pressing the Walk/Turbo button, the electric motor support will take you to a maximum speed of 4 km/h. The Walk/Turbo button was designed as an aid when starting uphill or in case the bike has to be pushed.

6.2 Levels of support

The propulsion system provides five levels of support. Depending on topography, weather conditions and your own preferences, you can choose the motor support using the plus (+) and minus (-) keys and the boost button on the control panel.

System Level	Support	Driving situation (recommended)
UL (Ultra Low)	No support, system is activated	Downhill
L (low)	Low support	On the plain
M (medium)	Medium support	Slight hill / headwind
H (High)	Strongest support	Steep hill / fierce headwinds
T (High) while pedalling < 25 km/h	Strongest support	Steep ramps / violent gusts
T (High) without pedalling	Starting and pushing aid	Starts on hill / pushing uphill

Please note! In case you actuate the Turbo button, there are 3 options depending on the situation:

1. You walk alongside the Pedelec and/or you push it out of your garage. Make sure the support level you select is L. While pushing the Walk/Turbo button you will activate the Walk-assist mode and you will trigger a moderate electric motor power up to 4 km/h. In this way you can walk with your vehicle comfortably and easily.

2. You are sitting on your Pedelec and intend to start from standstill on a ramp without pedalling. Push the Turbo button and you will get the strongest support up to 4 km/h.

3. You are sitting on your Pedelec and you are pedalling with for instance M level support and you need strongest support momentarily. Push the Turbo button while pedalling and you will trigger the strongest support regardless your speed (from 0 to 25 km/h).

Please note! These 3 options will only function while you keep the Turbo button pushed. As soon as you release the Turbo button, the electric power support will stop. Except in the case of pedalling: in that case after releasing the Turbo button the level of electric power support will go back to the preselected level (level M as the example in option 3).

In order to save battery power, the support level will automatically be limited to the M level when the battery capacity drops to 10%. When the battery capacity drops to 5% the support level will be limited to the L level and in the case of a battery capacity of 2% or less the level will be UL.

6.3 Rechargeable battery

Your Pedelec has a high-quality lithium-ion battery of the newest generation. For technical details, please refer to section 11. Technical data.

The status of the battery can always be checked through the LED light button, next to the charging socket of the battery (image 9). If you press the button, the LED will shine either red, yellow or green. If light stays off, then the battery could be broken. Please have your local dealer check the battery.

Image 9

Red	Capacity < 35%; battery should be charged
Orange	Capacity 35 - 75%; battery can be charged
Green	Capacity > 75%; battery can be charged

The battery is automatically protected from overheating, overcharging and deep discharging. It is very user-friendly, very practical, very easy and simple to handle.

Nevertheless, you should consider some important things in order to maximise the life and performance of the battery. Since the lithium-ion battery has no memory effect, you can charge it at any time, even if it is not completely discharged. In practice, it has been shown that it is even better to charge it again after short distances. Your battery has a lifetime of 700 charging cycles. One charging cycle means a full charge of the battery (0-100% capacity). Partial loads can be done more often.

When the battery is not being used for a long time (more than 2 months), it should be recharged as a low self-discharge is normal. Store the battery, if possible, in a dry, cool and dark place. The ideal storage temperature is between 5-20 ° C.

Avoid exposing the battery to direct sunlight over a long time. Temperatures over a longer period of more than 45 ° C or below - 10 ° C can cause permanent damage. In winter, you should never start with a cold battery. The capacity of a cold battery is significantly reduced and consequently will have a lower range. A battery which is exposed a long time to frost, should be gently heated in the ambient temperature of a heated room, before starting.

Caution! Never place the battery on the heater and never try to heat it with a hair dryer.

In case you need to park the bike outside for a long time during the cold season, remove the battery and store it in a heated room. Since the battery is very easy to remove, this will be no problem. Do not expose the battery to humidity, to prevent corrosion of the charging socket and the plug contacts. Protect the battery against mechanical damage and don´t drop it. Mechanical damage can also cause overheating and battery could catch fire.

Also, the battery should be charged at moderate temperatures (15-25 °C). Avoid charging in direct sunlight or near heaters, as well as charging outside in winter at low temperature. A cold battery should be gently heated to room temperature before charging. Never place the battery on the heater and never heat it with a hair dryer!

Caution! Charge the battery exclusively with the proprietary and dedicated charger which comes with the Pedelec.

Do not use any other type of charging unit since this may damage the battery and may cause overheating or fire. During loading, neither the charger nor the battery should be exposed to humidity, in order to prevent short circuits and electric shocks.

The battery is maintenance-free. Should it be broken or become defective contrary to expectations, seal the contacts with tape and take it to your dealer or contact our technical hotline. Never under any circumstances open up the battery yourself. This is dangerous and could damage the battery and may catch fire. The warranty will be void if you do so!

Do not dispose of batteries into household waste. It must be disposed of properly. It's best to take it to one of our dealers, who can take care of the proper disposal.

Caution!

- ***Charge the battery only with the proprietary battery charger.***
- ***The battery can be recharged any time, even after short trips.***
- ***Avoid temperatures below -10 ° C and above 45 ° C for a long time.***
- ***Never start with a cold battery.***
- ***After an extended period (about two months) of storage, the battery should be recharged.***
- ***Protect the battery from humidity.***
- ***Protect the battery from mechanical damage.***
- ***Never open the battery yourself.***

Used batteries do not belong in the household waste, they must be disposed of properly.

6.3.1 Charging the Battery

You can charge the battery on or off your bike (e.g. important in winter time) (image 11A & 11B) . Charging at any time, even after a partial discharge (e.g. after a short distance of a few kilometres) is possible. There is no need to wait until it is completely discharged, as it has no memory effect.

To remove the battery pack, refer to section 6.3.3.

Caution! Charge the battery only with the supplied and proprietary battery charger.

For the technical data of the charger please read section 11.

Technical data on page 41.

To charge the battery, do the following: You can monitor the charging process on the basis of the indicator LEDs on the charger and battery.

- Connect the power cable to the charger.
- Insert the power plug of the charger into the wall socket, the LED will start to flash red.
- The charger is ready for charging once the LED lights steady red.
- Connect the socket of the charger into the socket of the battery. The charging process will start automatically.
- The LED on the charger switches to flashing yellow light, charging begins.

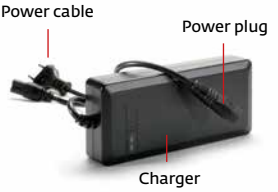

Image 10

Image 11A

Image 11B

- The LED indicator turns to yellow continuous light, the battery ischarged to about 35%. The charging is in progress.
- The LED changes to flashing green, the battery is to about 75-90% charged.
- The LED is on solid green, the battery is now fully charged, the charging is complete.
- Disconnect the power plug from the wall socket.
- Unplug the socket of the charger from the battery socket.

The LED lights on the charger and battery documents the state of the charge process:

State of charge	Charger LED	Battery LED	Note
	Flashing Red		Error detected, reset by re-plugging AC to main
	Steady Red		Ready to be connected to battery
0%	Flashing Yellow	Flashing Red	Recovering battery from very low state of charge
<35%	Steady Yellow	Flashing Red	Normal charging
35 – 75%	Steady Yellow	Flashing Yellow	Normal charging
75 – 90%	Steady Yellow	Flashing Green	Normal charging
>90%	Flashing Green	Flashing Green	Final charging
100 %	Steady Green	No LED	Fully charged

The charging time for a full charge of an empty 570 Wh battery (from 0 to 96% capacity) is about four hours in combination with the included travel charger (from 0 to 100% it takes 6 hours). At a premium price you can buy our fast charger, its charging time is about 2.3 hours.

Make sure that the battery is no longer connected to the charger, after the successful charge process. Likewise, the charger should be disconnected from the power supply.

Battery and charger become warm during charging. Ensure adequate ventilation of the battery and charger. The vents should not be covered. Place the charger and battery on clean surfaces. Prevent contamination of the charging sockets on the charger and the battery. Avoid humidity and direct sunlight.

Attention! If the charger is damaged, please contact an authorised retailer. Never open the charger.

6.3.2 Range

The range specification of the system can only be relative, as it is strongly dependent on the chosen level of support, the technical condition of the bike (oiled chain, optimal tyre pressure, etc.) the total weight of the system (bike, rider and luggage), the topography of the chosen route and the weather (counter-or tailwind, winter or summer).

The lower the selected support level the larger the range of the electric system. The below chart offers a proper indication of the range you may expect under similar conditions:

- Outside temperature between 12-30°C.
- Flat and slightly hilly terrain.
- Total system weight between 95-105 kg (rider's weight 70-80 kg).
- Little to no wind.

Attention: In winter, the range can be up to 30% less capacity due to the lower temperatures.

Accu	Actieradius
360 Wh	50 – 70 km.
570 Wh	80 – 120 km.
850 Wh	120 – 180 km.

6.3.3 Removal and mounting of the battery

Removing the battery

The battery is automatically locked in place with the battery lock and thereby protected from theft. Using the provided key, you can lock and unlock both the battery lock and the ABUS folding lock (accessory option) in order to fully protect your Pedelec against theft.

To remove the battery, first turn off the system using the On/Off button on the display. Turn the key in the battery lock clockwise up to the stop and pull out the battery with the handle diagonally and backwards from its docking station (image 12A). Now you can charge the battery separately or store it safely for a longer break.

Having removed the battery, please don't forget to protect the contact connector with the rubber seal. We advise to always use the rubber seal (image 12B).

Image 12a

Image 12b

Image 13

Mounting the battery in the docking station

Insert the battery carefully into the guide rail, while the groove of the battery casing must be carefully inserted into the guide rail on the bicycle frame, and slide it gently down until you hear the lock engage and the electronic contacts are connected (image 13). For this operation you do not need the key of the lock. The lock will automatically snap in and the battery is now locked, the system is ready for operation and the battery protected from being stolen.

6.3.4 Transport of the battery

The battery is subjected to the Dangerous Goods Legislation. The user can transport the battery by road and train without any further requirements.

When being transported by third parties (e.g. forwarders, post or via air) special requirements on packing and labelling must be observed.

For the preparation of the battery being transported, consulting an expert for hazardous material is absolutely required.

Ship the battery only when the casing is undamaged. Tape or mask off open contacts and pack up the battery in such a manner that it cannot move around in the packing.

Please also observe detailed national regulations.

In every case of transporting a broken or damaged battery, always refer to an authorised bicycle dealer. The dealer can inspect the battery and, in case necessary, forward the broken battery to Klever Mobility.

6.4 Diagnostics and troubleshooting

The system will not turn on.

Check whether the display is positioned firmly in the bracket. Check all connections. Check whether the battery is sitting correctly in the docking station in the frame and whether the battery lock is engaged.

The display is fixed but the system will not turn on.

Check if you have installed the correct display

The system can be turned on, but you do not have support.

Check all connections to the motor.

If it´s not possible to solve the problem, please contact an authorised dealer or our technical hotline.

7. The Pedelec

Image 14

Image 15

Image 16

All other components of your Pedelec are high quality, conventional bicycle components whose handling and operation should be explained here briefly. Important information regarding the adjustment, operation and maintenance of the Pedelec and its accessories are summarised here. You will also find further information in the accompanying user manuals of the component suppliers.

7.1 Adjustment of saddle and handlebar

The X model comes in two frame sizes (M=Medium and L=Large). The adjustment to your body size will be made with the adjustment of the saddle, stem and handlebar. Your dealer can do this on the spot. In order to readjust by yourself or in the case of another cyclist, changing the settings is briefly described below:

Caution: All work described requires mechanic experience and appropriate tools. Use a torque wrench to tighten the bolts and never exceed the maximum torque of the bolts. All the necessary tooling and information on the recommended torques can be found in section 11 Technical Data.

Adjustment of the saddle height

The optimal saddle height is if you touch the pedal with the heel of your stretched leg, when sitting on the saddle.

Or when you bring the ball of the foot to the centre of the pedal, your knee should be slightly bent (image 14).

Loosen with the proper Allen key the seat clamp bolt and move the seat post with the saddle to its proper height. Align the saddle with the frame using the saddle nose and the bottom bracket or top tube as references. Fasten the bolt of the seat clamp again and check the correct height of the saddle. Repeat the process if necessary until you find the correct saddle height.

The distance between saddle and handlebar (by pushing the saddle forward or backward) and the saddle angle are adjusted by the saddle clamping bolts (Image 16) of the seat post. The saddle should generally be positioned horizontally.

Attention: please pay attention to the recommended torques when tightening the saddle clamp bolts (see chapter 11 Technical data).

Caution: The seat post may never be installed over the minimum mark on the seat post. During riding, the post could possibly break which could lead to injuries.

Handlebar adjustment

The handlebar can be adjusted to your body measurements and your personal preferences, by changing the angle of the handlebar (image 17). Your Klever dealer will be happy to set the handlebar to your liking. However, in case you intend to adjust the handlebar by yourself, then proceed as follows:

Loosen the 4 bolts of the front cap of the stem a couple of turns with the proper Allen key and adjust the angle of the handlebar (image 18). Tighten the 4 bolts of the front cap with the correct torque. Please note that the adjustment of the angle of the handlebar may have also altered the position of the brake levers, the display and the shifter.

Image 17

If necessary, you can adjust the position of these components too. Loosen the Allen key bolts and screws of the display, brake levers and shifters. Turn them into the correct position and keep in mind that your hands should be resting on the handlebar in a relaxed way and should not be forced into an unnatural position. Finally tighten the Allen key bolts with the correct torque. You may have to repeat these steps a couple of times in order to find the most suitable and convenient position according to your liking and needs.

Image 18

Caution! Check whether the handlebar is correctly tightened, you should not be able to turn it at all.

7.2 Headset

In order to steer easily and safely, the fork´s bearing in the frame (headset) must function smoothly and be without any play (image 19). During riding, dynamic loads put a lot of stress on the headset.

Therefore, a regular check is indispensable. Pull the front wheel brake with one hand and push the bike gently forward and backward. If you notice a movement between headset and frame, the headset has to be readjusted.

Image 19

Attention: The adjustment of the headset requires some experience. This operation is best left to an authorised and experienced dealer.

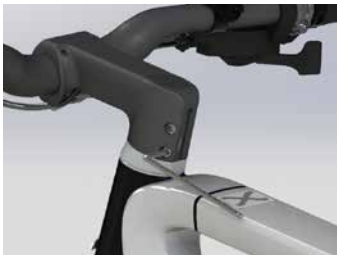

Image 20

If you should make the adjustment by yourself, make the following steps:

1. Loosen the bolts on the side of the stem, clamping the stem to the fork, with an Allen key, (image 20).
2. Carefully remove the top cap of the stem and turn the bolt on top of the fork steerer a quarter if a turn tighter (image 21) .

Attention: This bolt does not serve for screwing and fixing, but only for adjustment of the headset (image 21).

Image 21

3. Make sure the stem and handlebar are in the direction of riding and retighten the 2 clamping bolts firmly.
4. Pay attention to the maximum torque of the bolts, which may not be exceeded under any circumstances.
5. Control the play again and repeat the process if necessary.

If it´s not possible to adjust the headset, this may have many reasons. In this case you should definitely contact an authorised dealer.

Caution: Finally, check the tightness of the stem. A loose stem is dangerous and can lead to an accident.

You can check smooth functioning of the headset by lifting the front of your bike and letting the handlebar swing to the left and right. The front wheel has to be able to move freely and without stopping.

If you feel slight stops in the movement, the bearing is worn and the headset has to be exchanged. This has to be done by a dealer.

Image 22

7.3 The rigid and suspension front fork

The models X Commuter, and X Raw are being equipped with a rigid (non-suspension) front fork.

The model X Comfort and the X Power is being equipped with a suspension front fork, which improves the riding comfort. This front fork is pre-set with factory settings. With a lockout button on the righthand fork leg you can turn off the suspension (image 22). It is best to use the lockout only on smooth and straight roads and always use the suspension on badly paved roads.

For the long-term proper functioning of the front fork regular maintenance is required. Some basic tips for maintenance: clean the smooth surfaces of the stanchion tubes with a cloth and water. After cleaning spray some water-repellent oil on the stanchion tubes for lubrication of the bearings and for a plush suspension function.

Warning! Never use a high-pressure cleaner or aggressive detergent for the maintenance of the front fork. Pay attention to the maintenance instructions in the manual of the fork supplier.

7.4 Brakes

Your Pedelec is equipped with a high-quality hydraulic disc brakes (image 23). The disc brake is characterised by a very good braking performances even under rainy weather and other bad weather conditions. The disc brake is very low maintenance and does not wear the rim. The brake consists of a brake lever with a master cylinder, a hose made of plastic, the brake calliper and the disc mounted on the hub. The brake works with a special, non-toxic mineral oil. While actuating the brake lever, the oil pressure is being transmitted via the hose to the brake calliper and makes the brake pads contact the disc.

Image 23

Attention:
New brake pads must be run in so that they can achieve their optimal deceleration values. By braking at least 30 times from approximately 30 km/h to complete standstill the brake pads will achieve their maximum brake power.

Brake control: The right-hand brake lever controls the rear wheel brake and the left-hand brake lever controls the front wheel brake.

Not properly run in brakes do not reach their optimal deceleration values and are prone to vibrations and loud squeal.

The brake pads and rotors must be regularly checked for wear.

If discs and brake pads are worn, they will need to be replaced. In case the brake performance is getting less and you are losing brake power or you can push the lever through to the handlebar without any braking effect, the brake system must be bled (purged). That and the replacement of worn brake pads and discs should be done by an authorised dealer.

Caution! In case the brake performance is decreasing or the system shows signs of leakage, do not continue to ride your Pedelec and go and see your local dealer immediately.

Attention! Oil or grease on the brake pads and discs can reduce the effect of the brake substantially. Prevent in any case, while cleaning the bike and lubricating the chain that oil or other liquids can contaminate the brake pads and brake discs.

Contaminated brake pads cannot be cleaned and need to be replaced immediately. You can clean the disc with brake cleaner or warm water and a little detergent if necessary.

Please note! Ride more cautiously under humid and rainy conditions because the stopping distance could be longer.

Image 24

Image 25

For more information on disc brakes, brake pads and discs and their wear limit, read the operation manuals supplied by the brake manufacturer.

7.5 Drive train and gearshift

Your Pedelec is equipped with a high-quality 10-speed derailleur drive train currently the most efficient power transfer on the bike. These gears will help you to always use the optimal transmission (pedalling & cadence) independent of terrain (flat or hilly area) and independent of weather (tail- or headwind). That means that you are able to pedal always with an optimal cadence of 60-80 crank revolutions per minute.

The complete system is composed of the bottom bracket, the crankset, the rear derailleur, the chain, the gear shifter and the 10-speed cassette (image 24). With the gear shifter you control the rear derailleur, which ensures that the chain can move on the sprockets of the cassette.

Your dealer has checked your bike before the handover and adjusted the shifter. During the first miles under stress, however, the shift cables could lengthen slightly and the shifter may become misaligned and may have to be readjusted. With the adjustment screw of the rear derailleur, you can readjust the tension of the shift cable (image 25).

With the two positioning screws on the rear derailleur, you can adjust the lower (H screw) and upper end stop (L-screw), to make sure that the chain cannot get between the smallest sprocket and drop out or between the largest

sprocket and spokes of the rear wheel. Please read also the enclosed operating instructions of the manufacturer of derailleur and shifter.

The precise adjustment of the derailleur is difficult and should better be done by an experienced mechanic. If you have any problems with the adjustment of the shifter, please contact your dealer.

The chain should be cleaned and greased regularly (especially after driving in the rain), so it runs as quietly as possible, the friction losses are as low as possible, and the lifetime is maximised.

Clean the chain regularly with a clean cotton cloth and lubricate it afterwards. Some minutes after you have oiled the chain, rub it with the cloth to remove superfluous oil from the outer surface.

Since the chain is one of the parts that wears out on your bike, it should be replaced, if worn. A worn chain has poor shifting characteristics and leads to increased wear of the chain wheel and the sprockets of the cassette.

The control of the chain wear should be carried out at the dealer, who has the necessary tools to measure and replace it.

Caution: A poorly riveted or badly worn chain may break and causes serious falls.

You will find more information in the enclosed operating manual of the chain

7.6 Lighting

Your Pedelec is equipped with high-quality lighting which corresponds with the type regulation and has an official mark: indicated by the letter K. The lighting is supplied by the battery power of the vehicle. The headlight is a LED with high output and standlight function. The taillight is a bright LED too with standlight function. If there is a failure in the lighting system please verify that the light switch on the display is switched to "On", check all contacts at headlight and taillight. Check all cables for damage. If you don't find any errors, you should be looking for repair at an authorised dealer immediately.

Caution: A non-functioning light is illegal and endangers your life on the road. Bicycles without lights are easily overlooked in the dark. You would risk serious accidents.

More information on the headlight and the taillight can be found in the manual from the lighting supplier.

7.7 Wheels and tyres

The wheels are one of the most stressed components of the vehicle. They contact the road, provide propulsion and they absorb the road bumps. Due to the heavy use, they should be regularly checked. All wheels are manufactured with great care and precision. They consist of the hub (ball bearing hub in the front wheel and electric hub motor in the rear), the 2 mm stainless steel spokes and double chamber rims. In unlikely cases of radial and axial play or broken spokes, the wheels should be repaired or re-centred, by an authorised dealer.

For removal and installation of the wheels due to a puncture or in the case of transportation you take the following steps:

Image 26

Image 27

Image 28

Removal of the rear wheel

- Shift the chain to the smallest sprocket on the cassette.
- Turn off the electric drive system and remove the LCD-display from its bracket.
- Remove the bolt of the mounting bracket (cable guide) on the inside of the left-hand chain stay with a T25 Torx key (image 26). Disconnect the motor socket.
- Disassemble the bolt of the mounting bracket (cable guide).
- Loosen the axle nuts in either side of the motor with a 19 mm wrench.
- Remove the screw of the locking washer on the left side of the axle and remove the screw and washer (image 27).
- Now pull the wheel out of the dropout, while pivoting the rear derailleur backwards.
- Block the brake pads of the disc-brake by inserting the enclosed pad separator into the calliper (image 28). This prevents the accidental compression of the pads by the unintended application of the lever while the disc is being removed.
- The assembly of the rear wheel is done in reverse order.
- After having removed the pad separator, make sure to insert the disc carefully between the brake pads during assembly.

Caution: Take care to tighten the axle nuts to the proper torque (40 Nm) and make sure there is sufficient space (at least 5 mm.) between the disc and the motor cable.

Removal of the front wheel

- There are 2 types of front forks: non-suspended (rigid) fork on the models X Commuter, X Raw and a suspension fork on the models X Power and X Comfort.
- For the rigid front fork (image 29): loosen the thru axle counter clockwise with a 6 mm. Allan key. Remove the thru axle completely from the front wheel.
- For the suspension front fork (image 30): first open the lever of the quick release and then turn the thru axle counter clockwise. Remove it from the front wheel.
- Pull the front wheel out of the fork.
- Block the brake pads of the disc-brake by inserting the enclosed pad separator into the calliper (image 28).
- The assembly of the front wheel is done in reverse order.
- During assembly please insert the disc carefully between the two brake pads.
- Pay attention to the correct torque of the thru axle (20 Nm).

Image 29

Image 30

Note: Rotors can be very hot after riding. Let them cool down, before disassembly.

Caution: Check before each ride whether the tyres are still correctly fitted to the wheels.

Tyres

The tyre provides grip and traction and contributes significantly to the smooth running and comfort by absorbing little bumps. The tyre size can be found on the sidewall printed specifically in millimetres and inches:27.5" x 2.40" or 62 - 584 mm. The wheel has a diameter of 584 mm (27.5") and a width of 62 mm (2.40").

The recommended tyre pressure is indicated on the sidewall of the tyres (Schwalbe Super Moto 2,0-4,0 bar; 30-55 Psi)

Regularly check the correct tyre pressure and pressurise your tyres if necessary.

The tyre uses an inner tube with Schrader valve. So, you can check and inflate the tyre at any gas station.

Caution: above-or below, never exceed the recommended range. The tyre and the tube can be damaged and this may lead to sudden loss of air with significant risk of an accident.

Regularly check the tyres for cracks and for its thread pattern height. If you find that cracks or sharp object have damaged the fabric of the tyre or the thread pattern is no longer sufficient, replace the tyres. If in doubt, ask your dealer. He will verify the tyres and if necessary, replace them.

In the case of a flat tyre, you do as follows:

Always use plastic tyre levers.

1. Remove the wheel as described above.
2. Deflate the tyre and push a tyre lever underneath the tyre bead opposite of the valve and lift the tyre over the rim flange.
3. Push the second tyre lever underneath the tyre bead in a distance of approx. 10cm from the first one (image 31) . If the tyre is still very tight around the rim, then use the third tyre lever as well.
4. Now, you can generally lift the tyre over the whole circumference of the rim by moving the lever and the inner tube can be removed.
5. Dip the disassembled and inflated inner tube into a bucket of water in order to discover the leak on the rising air bubbles.
6. Repair the tube according to the instructions on the repair kit or if necessary, replace it. In case of replacement, make sure you buy the correct size inner tube.
7. Check the inside of the tyre for sharp objects that could have caused the puncture and remove them. If the fabric of the tyre is damaged, replace it.
8. Start the mounting of the inner tube by inserting the valve into the valve hole in the rim and inflate the tube with very little air pressure until it is wrinkle-free.
9. Now mount the inner tube without any creases underneath the tyre (image 32)
10. Starting opposite to the valve, lift the tyre bead over the flange of the rim and pull it deep into the rim and lift the rest of the tyre by hand over the rim's shoulder. Use no tyre levers, as this may damage the inner tube.
11. Push up the valve a little back into the tyre, so that the bead of the tyre is correctly seated in the rim.
12. Pull the valve back again and inflate the inner tube to recommended tyre pressure.

Image 31

Image 32

7.8 Luggage carrier and the transport of luggage

Your Pedelec is equipped with a robust and durable aluminium luggage carrier with a nicely integrated LED taillight (image 33).

The carrier is compatible with all standard panniers, and you can use an extensive range of accessories. Check our website for more information.

Please note, however, the maximum load capacity of the luggage rack is 20 kg.

Image 33

Caution: when transporting luggage please ensure that you do not go over the total permitted weight of the Pedelec, cyclist and luggage being 120 kg.

Attention: Please note that the additional weight of luggage changes the handling of the bike and extends the braking distance too.

7.9 Lock and anti-theft protection

Your Pedelec comes with a motor immobiliser combined with an acoustic alarm system. The battery can only be removed from the frame by unlocking the battery lock with the key (see section 6.3.3). With the same key you do not only open the battery lock, but also the ABUS folding lock (which is optional and can be ordered with the identical key number). We recommend to also use a chain lock in order to be able to lock the vehicle to solid fixtures.

7.10 Accessories

Useful accessories can enhance the functionality of your Pedelec and significantly increase your riding pleasure. These accessories are available at your dealer.

Please Note! Accessories must be compatible with your X25 Pedelec. Incompatible accessories may influence and alter the riding characteristics of your Pedelec and can lead to accidents. Best ask your dealer for information and advice.

8. Transport of your Pedelec

You can transport your Pedelec easily by car or train. For transport by car we recommend to use a tow bar bike rack, which is specifically designed for the transport of E-bikes and for heavier loads. Please ask your dealer for more specific recommendations.

Not recommended is the transport on the car roof. The heavier weight and the special frame tubes prevent you from stably fixing the Pedelec on a roof rack. In addition, the weight of the Pedelec is usually higher than the maximum weight limit of the car roof rack.

Prior to transporting your vehicle with a tow bar rack, you should remove the battery pack, the display as well as other non-fixed accessories such as: air pump and panniers. Additional protection should be given to electrical contacts of the bracket of the display and to the battery connector on the frame. This can be done with a plastic bag to protect those parts from moisture and rain. Air flow may cause the moisture to enter into the electric system.

If your car is big enough, then it is best to transport you X on the inside of your car. That offers the optimal protection.

The transportation by air is almost impossible, unless you want to transport the bike without the battery. For airlines these batteries are classified as hazardous goods and consequently will not be transported. To be sure, ask your airline under which conditions the transport of the battery may be allowed. However, this could be quite expensive.

For more information on the transport of the battery, please check section 6.3.4. page 22 Transport of the battery.

9. Maintenance, care and storage

Regular maintenance and care guarantee a longer lifespan of your high-quality Pedelec. You should regularly carry out simple cleaning and care works yourself and let the dealer do the necessary inspections. Never clean the Pedelec with a high-pressure cleaner or a steam cleaner, as water may enter bearings, motor and electronic contacts. Water could damage these parts due to corrosion and short circuits.

Clean your bike with a damp cloth and mild detergent. Please make sure that no electrical contact gets wet. The contacts can be maintained and conserved from time to time with a little care oil (e.g. 1-Step Finish Line) preservation. Contact spray is too aggressive and doesn't preserve.

You should repair varnish damages at once. All parts liable to corrosion should be maintained and preserved by appropriate means. The chain should be lubricated regularly like all other movable mechanical parts such as the joints of the rear derailleur.

Caution: During cleaning and lubrication, avoid contact with oil and fat on the brake pads and brake discs. The stopping power might deteriorate and could represent a serious risk.

Always ensure that the tyres are inflated within the manufacturer's recommended operating pressure, which can be found on the tyre's sidewall. Never go over or under the recommended range of tyre pressure.

The entire electrical system of your Pedelec, such as the motor, the sensors, the wiring harness and the battery are maintenance-free. If you meet unexpected problems with the system, contact our technical hotline (see also Chapter 1 Introduction) or consult an authorised Klever dealer.

Caution: Do not open the motor, the display or the battery. It is dangerous and this will immediately void the warranty.

Storage

The storage of the bike should always be in a dry, covered place to minimise the effects of weather and avoid direct sunlight. In case you do not ride your X in winter, you should consider following:

Store your bike well cleaned, lubricated and well preserved in a dry place and cover it with a tarp. Protect the electrical contacts with a little care oil (e.g. 1-Step Finish Line).

Winter storage in a garage is not ideal. Salt from salt spraying may enter your garage with your car. And this salt could cause corrosion of your bike.

The battery should be stored separately, ideally at a temperature of 10 ° to 15 ° Celsius in a dry place. Please fully charge the battery before the first ride in the spring. After storage for more than two months, it is advised to recharge the battery (see section 6.3.1 Charging of the battery).

10. Disposal and transportation

Disposal

All electronic components, such as motor, display, battery and charger are to be returned to an environmentally friendly recycling. These parts should not be considered household waste or abandoned into the environment.

According to the European Directive 2002/96/EC, defective or no longer usable electrical equipment must be collected separately and returned to an environmentally friendly recycling. The same goes for batteries according to the European Directive 2006/66/EC. Please return broken or defective batteries to an authorised Klever retailer.

Transportation

Only the battery is considered to be hazardous and subject to the Dangerous Goods Legislation requirements during transport or shipping by third parties (agents, air transportation or mail). Please refer to section 6.3.4. Transport of the battery.

The transport of all other parts is not particularly limited.

11. Technical Data

Display / Operating Unit:
Removable and illuminated LCD display, with starter & motor immobiliser and acoustic alarm
5 levels of support
Ultra Low - Low - Medium - High - Turbo – Walk/Starting Aid
Bicycle Computer, display of speed, range and Odometer (Day trip)
Button for: acceleration and walking aid / Turbo function
Battery state of charge with five bars (each bar 20% battery capacity)
Ambient Light sensor
Confirmation by an acoustic beep when a button is pressed

Rechargeable Battery:
Lithium-Ion
1.) 44V/ 8,1 Ah/ 360 Watthour 2.) 44V/ 12,9 Ah/ 570 Watthour 3.) 44V /19,1 Ah/ 850 Watthour
2,7 kilograms 360 Wh / 3,4 kilograms 570 Wh / 5,1 kilograms 850 Wh
Charging level indicator via LED: <35% red / 35-75% yellow /> 75% Green
Allowable discharge temperature: -20 ° C - +50 ° C
Allowable storage temperature (12 months): -20 ° C-+25 ° C (optimal +5 ° C-+20°C)
Allowable charging temperature range: -5 ° C - +45 ° C (optimal+5 ° C- +20 ° C)
Lockable and detachable
Charging time: Quick charger: 360 Wh: 1.5h/ 570 Wh: 2.3h/ 850 Wh: 3.6h Travel charger: 360 Wh: 3.8h/ 570 Wh: 6h/ 850 Wh: 9h
Place of charging: on or off-bike
Charging cycles: 700 (one charging cycle 0-100% capacity)
Range: 1.) 360 Wh battery 50-70 km 2.) 570 Wh battery 80-120 km 3.) 850 Wh battery 120-180 km
Lifetime: after two years or 700 cycles still at least 60% of the original capacity remains

Motor:
Brushless DC motor in the rear hub
Control over torque sensor in the dropout and speed sensor at the bottom bracket
Max. 250 W
Operating voltage 44 V
Support until max. 25km/h
Weight 4.4 kg

Charger (type travel charger)
Input voltage 200-240 V; 47-63 Hz
Output voltage of 48 V
Maximum charge current 2A
Output power: 100 Watt
Charging time: 6h for 570 Wh battery (0-96% capacity)
Size: 167 x 65 x 41 mm. without fan
Weight: 0.6kg (incl. AC adapter)

Recommended tightening torques of the bicycle components:

Stem	Handlebar clamp bolt	M5	Allen key 4 mm	5,5 Nm
Stem	Clamp bolt steer tube	M5	Allen key 4 mm	5,5 Nm
Seat post	Clamp bolt seat post	M6	Allen key 6 mm	6 Nm
Seat post	Clamp bolt saddle	M6	Allen key 5 mm	9,5 Nm
Front wheel	Thru Axle	15 mm axle diameter	Allen key 6 mm	10 Nm
Rear wheel	Bolted axle	12 mm axle diameter	19 mm wrench	30-45 Nm
Rear wheel	Clamp bolt locking washer	M5	Allen key 3 mm	5,5 Nm
Kick Stand	Clamp bolt	M5	Allen key 4 mm	6 Nm
Brake	Clamp bolt brake lever	M6	Allen key 5 mm	6-8 Nm
Brake	Mounting bolt calliper	M6	Allen key 5 mm	9,5 Nm
Brake	Mounting bolt disc	M5	Torx 25 key	5,5 Nm
Shifting lever	Clamp bolt	M6	Allen key 5 mm	6-8 Nm
Carrier	Clamp bolt	M 5	Allen key 4 mm	5,5 Nm
Carrier	Clamp nuts	Hexagon / self-locking	8 mm wrench	5,5 Nm
Pedals			15 mm wrench	35 Nm
Bottom bracket	Bearing cups	BSA Thread	Special bearing tool	60 Nm (50-70)
Crankset	Mounting bolt	M10	Allen key 8 mm	45 Nm
Derailleur	Mounting bolt	M10	Allen key 5 mm	8-10 Nm
Derailleur	Clamp bolt cable	M5	Allen key 5 mm	6-7 Nm
Derailleur	Clamp boltjockey wheels	M4	Allen key 3 mm	2,5-5 Nm
Front light	Clamp bolt	M6	Allen key 5 mm	9,5 Nm

General tightening torques for DIN bolts:

Bolt	M4	M5	M6	M8	M10
Tightening torque in Nm	2,9	5,5	9,5	23	46

The torque indications always refer to the upper limit of the screws resilience.

You should always adjust the torque key to a little more than 50% of the value stated by the manufacturer and tighten the bolt. Check the firm fit. In case the clamping connection is not strong enough, increase the value gradually in steps of 0,5 Nm. If necessary, adjust the maximal value (never exceed it) and loosen the bolt by half a revolution before finally tightening it.

Tools:

1. Allen keys
2. Combination wrenches
3. Sockets and Bits
4. Torque wrench
5. Torx keys
6. Tyre lever

The gross vehicle weight of the bike:

Rider + bicycle + luggage = 120 kg.

Tyres:

Size: 62-584 mm. (27.5"x 2.40")

Recommended tyre pressure: 2,0-4,0 bar (30-55 Psi)

Wheel circumference approximately 2.220 mm. The exact circumference depends on the tyre pressure and the total weight of Pedelec and cyclist.

12. Product liability and warranty

According to European warranty laws you are entitled to a period of 2 years for product liability, duty of care and warranty from the side of the manufacturer. This applies from the date of purchase or delivery (delivery date) of the Pedelec.

The proof is the proof of purchase, which should be stored carefully. You should register your bike on our website:

www.klever-mobility.com.

This product liability for material defects applies to all components of the entire Pedelec.

Warranty claims are granted:

- In case the defect was present prior to the purchase of the Pedelec.
- In case of a material, manufacturing or information defect.
- In case of function-related wear which was not caused by regular tear and wear (see section 14).

Warranty claims are rendered void:

- In case of damages caused by accidents or force majeure.
- In case of damages caused by misuse or improper use.
- In case claims relate to parts which are subject to functional wear (see Chapter 14), except material or product defects.
- In case of damages caused by faulty and inadequate care and maintenance.
- In case of damages caused by faulty and inadequate repairs.
- In case of damage caused by components which were out of specification and assembled after purchase of the bike.
- In case of consequential damage caused by not immediately resolved, earlier identified defects.

In addition, we offer a comprehensive warranty that goes beyond the liability for material defects.

- **Two-year warranty** on all bike components.
- **Three-year warranty** on all drive modules of the electrical system: motor, control unit, display and cabling.
- **Two-year warranty** on the battery (also refer to point 4 and 5 below).
- **Five-year warranty** against frame breakage.

This warranty applies only to the original owner on presentation of proof of purchase (sales receipt or bill showing the purchase date). This warranty covers exclusively material and workmanship errors. In case of justified complaints, the article will be replaced or repaired. Further claims such as: replacement of property damage, downtime, cost of borrowing and renting, travel and transportation costs or loss of profits, are excluded. This warranty does not cover damages caused by misuse function, by wear and tear, by accidental damage, vandalism and by improper assembly or repair.

1. Warranty repairs will be made exclusively by Klever Mobility or an authorised dealer.
2. Costs from a previously executed repair of an unauthorised dealer, will not be reimbursed.
3. Parts replacement or repairs during the warranty period will not result in an extension or a new beginning of the warranty.
4. Each battery is subject to a natural aging process. Regarding the battery Klever Mobility guarantees after two years, or alternatively, after 700 charging cycles a remaining capacity of about 60% of the original capacity.
5. In case you officially register the battery of your Pedelec on our website (www.klever-mobility.com) Klever extends the warranty term of your battery from 2 to 3 years. Within this term we guarantee that your battery still has 50% of its original capacity after 500 charging cycles.
6. The two-year warranty begins on the date of purchase.
7. A warranty claim must be notified immediately.

13. Intended use of your Pedelec

Your Pedelec is designed according to structural requirements for a particular purpose. Thus, the usage is limited to specific areas.

Your Pedelec is designed based on the construction and equipment for use on public roads, normal paved roads.

The bicycle is equipped in accordance with the Road Traffic Regulations. And therefore, it is allowed to ride on public roads. In order to keep your bike always running and roadworthy, regular reviews and inspections are required or necessary repairs should be made immediately. Klever Mobility is not liable in case the Pedelec is used against its originally intended purpose nor for damages resulting from a breach of important instructions in this manual.

This is particularly true in case of damage caused by overloading or off-road riding or by the improper repair of defects. The same applies to non-compliance with the maintenance, operation and maintenance requirements described in this manual.

14. Wear

Your Pedelec consists of many components, which are all subject to normal wear due to their function. Therefore, all the following components should be regularly checked and if necessary replaced immediately:

1. **Brake discs and pads** are put under stress during each braking operation and wear as a consequence. Therefore, they must be periodically inspected and if necessary, be replaced immediately.
2. **Tyre and inner tubes** are subject to a function-related wear and should be checked regularly. Regularly check the air pressure and tread depth. The air pressure should always be at the manufacturer's recommended operating pressure, which is printed on the tyre sidewall. Is the thread profile of the tyre no longer deep enough or the tyre has cracked sidewalls, it should be replaced immediately.
3. **Rims and spokes** are stressed while braking or riding over obstacles. Regularly check the concentricity of the rim and the spoke tension. If the wheel has a radial or axial play, this should be readjusted immediately. In the event of spoke breakage, the broken spoke should be immediately replaced and the wheel has to be centred.
4. **Chain, sprocket, chain wheels and derailleur pulley wheels** wear out normally. Regular cleaning and lubrication of these components will extend their service life substantially. They should, however, in case they are worn be replaced immediately.
5. **Shifting and brake cables** must be maintained regularly and replaced if necessary. Especially in the case if the Pedelec is often parked outdoor and exposed to the weather.
6. **Hydraulic oils and lubricants** change over time and lose their effectiveness. Therefore, all lubrication points are to be regularly cleaned and re-greased in order to minimise the wear.
7. **Paintwork** requires regular care. Check all paintwork for damage and rectify this immediately. Brake and shifter cables can rub the painted surface of the frame. Protect those spots with a transparent foil.

15. Legal requirements for participation in traffic

To participate in public transport, the Pedelec must be equipped according to the national road traffic regulations.

1. Every bike must have a bright sounding bell.
2. Every bike must have two independently functioning brakes.
3. Every bike must have a forward-facing head light with white light and a rearward-facing tail light with red light.
4. The tail light with red light has to be attached on the bike at least 25 cm above the ground.
5. A white reflector has to be mounted on the front, which can be combined with the front light.
6. A red reflector has to be mounted at the back, which can be combined with the tail light.
7. Each pedal has to be equipped with a yellow, front and rear reflector.
8. Each wheel must have at least two white fixed mounted, side reflectors. Alternatively, two white reflective rings may be mounted on the entire wheel circumference of the tyres or rims.
9. It is also allowed to carry battery lighting which has been approved.

16. Regular maintenance – inspection

To keep your Pedelec always roadworthy and updated to the latest technical status, it should be inspected regularly. We recommend after 500 - 1,000 km or within a year to carry out the first inspection. Any further inspections should be carried out after 2-3000 km or once a year.

Inspections should be made by authorised Klever dealers.

Caution: In case inspections are not carried out or done unprofessionally, this may significantly impair the functions of your bike or may even lead to severe, possibly fatal, accidents.

17. FAQ's

How far can I travel with one battery charge?

This depends on the outside temperature, the topography of the terrain, the technical condition and total weight of the bicycle. Tyres with low air pressure or high weight or driving in hilly terrain, reduce the range (see section 6.3.2.).

Battery	Range
360 Wh	50 – 70 km.
570 Wh	80 – 120 km.
850 Wh	120 – 180 km.

This chart offers a proper indication of the range you may expect under similar conditions:

- Outside temperature 12-30°C.
- Flat and slightly hilly terrain.
- Total system weight between 95-105 kg. (rider's weight 70-80) .
- Little to no wind.

Must the battery be empty before I can charge it?

No, you can charge the battery at any time, even if it is only partially discharged.

How can I protect the bike from theft?

Your Speed Pedelec comes with starter and motor block. This electronic block is combined with an acoustic alarm system, to be activated with the Lock-button on the display. The battery can only be removed from the frame by unlocking the battery lock with the key. The same key not only opens the battery lock, but also the ABUS folding lock (which is optional and can be ordered with the identical key number). We recommend to also use a chain lock in order to be able to lock the vehicle to the solid fixtures.

Can I use a child trailer?

You can use a child trailer. Remember, however, that the additional load, will limit the range of the battery.

Can I ride my Pedelec in wintertime?

In general, there is no problem whatsoever to ride your Pedelec at low temperatures. Store your battery in a warm place before you start your journey. Keep In mind that in wintertime at low outdoor temperatures the range may decrease by 30%.

Can I transport the Pedelec via air?

Because the battery is considered to be dangerous, many airlines refuse to transport the battery. In individual cases you may want to ask your airline, under which conditions and costs a transport may be possible.

Do I need an insurance and do I need to wear I helmet?

No, you do not need insurance. Because the electric support will be stopped at 25 km/h, the Pedelec is considered as a normal bike and requires neither insurance nor wearing a helmet. However, we do recommend that you use a helmet for your own safety.

What do I do with a defective battery?

Defective batteries do not belong in household waste and must be disposed of properly. It is best to take it to an authorised dealer.

How many times can I charge my battery?

We guarantee that the battery after 700 full charge cycles or two years from the date of purchase still has 60% of its original capacity. Of course, you can charge the battery more often or use longer than two years. But because of the natural aging process over time the battery loses more and more capacity.

Does the warranty void, in case I do not stick to the recommended regularly inspections?

No, the warranty does not void. We recommend, however, for your own safety to carry out all recommended inspections.

Can I charge the battery with another charger?

Never, the battery may only be charged with the appropriate, supplied charger.

18. Bicycle passport

Fill out immediately all data after purchase in order to present the pass in the case of warranty claims, together with proof of purchase. In case your Pedelec ever gets stolen, these data will facilitate the work of the police.

Name

Street

Postal code / Residence

Tel

Email

Klever model

Frame size

Frame colour

Frame number

Key number

Battery number

Charger number

Date of purchase

Signature

19. Inspection plan

1. Inspection	**Date:**
After 500 - 1,000 km. or no later than 1 year after purchase.	
Date	**Stamp / Signature**
Repairs	
Replaced components	

2. Inspection	**Date:**
After 3,000 – 4,000 km. or no later than 2 years after purchase.	
Date	**Stamp / Signature**
Repairs	
Replaced components	

3. Inspection	**Date:**
After 5,000 – 7,000 km. or no later than 3 years after purchase.	
Date	**Stamp / Signature**
Repairs	
Replaced components	

4. Inspection	**Date:**
After 7,000 – 9,000 km. or no later than 4 years after purchase.	
Date	**Stamp / Signature**
Repairs	
Replaced components	

20. Imprint:

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