LØDEN

# Bicycle Owner's Manual

Version 2.0

Updated Januaray 2021

**This manual contains important safety, performance, and service information. You must read this manual in its entirety before your first ride and retain it for future reference.**

LØDEN

# About this Manual

Thank you for choosing a LODEN compact electric cargo bike as your new ride! Use this guide to help you take care of your bicycle so that it will last for years to come. Read and make sure that you understand each section in this manual. Refer to the cited sections on any issue which you don't completely understand. Your safety is important!

In case of a conflict between the instructions in this manual and information provided by a component manufacturer, always follow the component manufacturer's instructions. If you have any questions or do not understand something, take responsibility for your safety and consult with your local bike mechanic or with LODEN directly.

This manual is not intended as a comprehensive use, service, repair, or maintenance manual. Please contact LODEN or your local bike mechanic for all service, repairs or maintenance inquiries beyond your ability or this manual.

While we recommend that you keep this manual for future reference, it is subject to change at any time. For the most up-to-date version of the manual, visit www.loden-bike.de or contact LODEN using the information below:

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*This manual meets ISO-4210, 16 CFR §1512, and EN 15194 Standards.*

# Contents

# General Warning

Like any sport, bicycling involves risk of injury and damage. By choosing to ride a bicycle, you assume the responsibility for that risk, so you need to know — and to practice — the rules of safe and responsible riding and of proper use and maintenance. Proper use and maintenance of your bicycle reduces risk of injury.

This Manual contains many "Warnings" and "Cautions" concerning the consequences of failure to maintain or inspect your bicycle and of failure to follow safe cycling practices.

- The combination of the safety alert symbol and the word WARNING indicates a potentially hazardous situation which, if not avoided, could result in serious injury or death.
- The combination of the safety alert symbol and the word CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury, or is an alert against unsafe practices.

Many of the Warnings and Cautions say "you may lose control and fall." Because any fall can result in serious injury or even death, we do not always repeat the warning of possible injury or death.

Because it is impossible to anticipate every situation or condition which can occur while riding, this Manual makes no representation about the safe use of the bicycle under all conditions. There are risks associated with the use of any bicycle which cannot be predicted or avoided and which are the sole responsibility of the rider. Remember, use common sense and follow the instructions in this manual for your safety.

# Special Note for Parents

**WARNING: This manual does not cover juvenile or BMX bicycles.**

As a parent or guardian, you are responsible for the activities and safety of your minor child, and that includes making sure that the bicycle is properly fitted to the child; that it is in good repair and safe operating condition; that you and your child have learned and understand the safe operation of the bicycle; and that you and your child have learned, understand, and obey not only the applicable local motor vehicle, bicycle, and traffic laws, but also the common sense rules of safe and responsible bicycling. As a parent, you should read this manual, as well as review its warnings and the bicycle's functions and operating procedures with your child, before letting your child ride the bicycle.

When a child rides in a child seat on the rear of the bicycle, make certain that the child seat has been installed properly and securely (see Section 6D on page 34). Always have your child wear a helmet and secure the seatbelt on the child seat. Under no circumstances should a child seat be mounted on the front stem or stem lifter or a child be allowed to ride on the front platform or in a front basket. Failure to follow this warning could result in serious injury or death.

**WARNING: Make sure that your child always wears an approved bicycle helmet when riding; but also make sure that your child understands that a bicycle helmet is for bicycling only, and must be removed when not riding. A helmet must not be worn while playing, in play areas, on playground equipment, while climbing trees, or at any time while not riding a bicycle. Failure to follow this warning could result in serious injury or death.**

# 1. First

## A. Assembly

If you purchased your bicycle directly from LODEN, it will be shipped to you in a mostly assembled state. However, there are still steps that you or a bike mechanic will need to take before you can ride. Follow the steps below and visit www.loden-bike.de for a complete assembly video.

**WARNING: Assembling your new bicycle correctly is important for your safety and riding comfort. We recommend that you bring your bike to a local bike shop and have a mechanic set it up using these instructions. Even if you have the experience to set up the bike on your own, we recommend having a reputable bike mechanic check your work.**

1. Remove the bike from the box.
   a. Pull to open the top flap of the box.
   b. Slowly lay the box down on its side.
   c. Slide the bike out of the box using the cardboard to protect the bike from the ground, and pull the bike up carefully, resting the front fork on the ground.
   d. Press one foot on the kickstand leg and lift up on the rear rack to pop up the kickstand.
2. Unwrap the bike.
   a. Use scissors to remove the ties holding the front wheel onto the frame.
   b. Carefully remove all protective packing materials except those on the front fork.
3. Install the front wheel.
   a. Tilt the bike backwards to rest it on the back wheel.
   b. Remove the packing material and plastic fork dropout protector from the front fork.
   c. Slide out the plastic brake protector.
   d. Remove the plastic protectors from the sides of the front wheel.
   e. Open the accessories boxes and remove the front wheel axle.
   f. Unscrew the nut and carefully remove it and one spring from the axle.
   g. Insert the axle into the front wheel from the side with the disc brake rotor (so that the cam lever is on the rider's left of the bicycle).
   h. Replace the spring onto the axle with the small end facing the wheel and loosely tighten the nut on the end.
   i. With the steering fork facing forward, insert the wheel between the fork blades, lining up the disc rotor so that it slides evenly into the brake assembly. Push the wheel firmly to the top of the slots in the

fork dropouts and center the wheel rim in the fork. The cam lever should be on rider's left side of the bicycle.

**CAUTION: Be careful not to damage the disc, caliper, or brake pads when inserting the disc into the caliper. Never activate a disc brake's control lever unless the disc is correctly inserted into the caliper.**

j. Hold the tension adjusting nut in one hand and rotate the cam lever clockwise until you can clamp it upwards into the CLOSED position. The lever should now be parallel to the fork blade and curved toward the wheel. To apply enough clamping force, you should have to wrap your fingers around the fork blade for leverage, and the lever should leave a clear imprint in the palm of your hand. If the lever cannot be pushed all the way to a position parallel to the fork blade, return the cam lever to the OPEN position. Then, turn the tension adjusting nut counter-clockwise one-quarter turn and try tightening the lever again.

**WARNING: Riding with an improperly secured wheel can allow the wheel to wobble or fall off the bicycle, which can cause serious injury or death. Ask a professional bike mechanic to ensure your wheel is installed correctly. See Section 4A on page 21 for more information.**

4. Inflate the tires.
   a. Inflate front and rear tires to 30 to 55 PSI (2.00 to 4.00 bar). For more information, see Section 4F on page 27.
5. Adjust the stem and handlebar.
   a. Open the clamp on the stem riser.
   b. Lift the stem all the way up and then rotate the handlebars counterclockwise 90 degrees so that they are perpendicular to the bike.
   c. Lower the stem to your desired height and close the clamp.

**WARNING: Always tighten the clamp correctly. Never ride with the adjustable stem lifter above the minimum insertion level of 70mm. See Section 3B on page 19 for more information.**

   d. Use a Phillips head screwdriver (not included) to loosen the four bolts on the display mount.
   e. Rotate the display mount so that you have access to the four hex bolts holding the handlebar onto the stem.
   f. Loosen all four bolts on the stem cap window with the included 4mm hex key.
   g. Rotate the handlebars to line up the center circle inside the stem cap window.
   h. Tighten all four bolts using the 4mm hex key.

**WARNING: Correct tightening force on fasteners (nuts, bolts, screws) on your bicycle is important. Incorrect tightening force can result in component failure, which can damage the bicycle or cause you to lose control and fall. See Section 7A on page 35 for more information.**

i. Find the Shimano display mount in the accessories box and slide it down onto the mount until it clicks.

j. Adjust the display so that it faces up and towards the rider, then use the screwdriver to tighten the four bolts.

6. Install the pedals.
   a. Find the two pedals in the accessories box. Locate the small markings on each pedal indicating right ("R") and left ("L").
   b. Angle the crank forward, hold the right pedal in your hand, and rotate the included 6mm hex key *counterclockwise* until the bolt is fully tightened.
   c. For the left side, angle the crank foward, hold the pedal in one hand, and turn the 6mm hex key *clockwise*.
7. Install the saddle.
   a. Use the 5mm hex key to loosen the bolt on the seatpost clamp.
   b. Insert the seat post below the minimum insertion level and then use the 5mm hex key to tighten the seatpost clamp securely.

**WARNING: If your seat post is not inserted below the minimum insertion level, as described above, the seat post, binder, or even frame may break, which could cause you to lose control and fall. See Section 3A on page 18 for more information.**

8. Set up the front light.
   a. Use the 4mm hex key to loosen the mounting bolt underneath the front light.
   b. Rotate the light to face forward and tighten the mounting bolt.
   c. Use a Phillips screwdriver to adjust the light angle up or down.
9. Install the front cargo basket or platform.
   a. Loosen the bolts on the sides of the support base with a 6mm hex key.
   b. Place the basket loosely in position on the support base, lining up the holes on the basket or platform with the holes on the head tube and support base.
   c. Make sure the cables are tucked in between the basket and the head tube.
   d. Screw in the bolts loosely with your hand at first, and then tighten all bolts securely with the hex keys (torque to 5 Nm).

e. After the basket is mounted, tighten the bolts on both sides of the headtube with the 6mm hex key.

⚠ **CAUTION: You must install either the LODEN Platform, LODEN Big Basket, or LODEN Small Basket onto the front cargo support. The bicycle is not designed to be ridden without one of these three cargo carriers installed on the front.**

10. Mount the battery.
    a. Approaching the bike from the left side, position the battery at a 45 degree angle (pointly roughly towards 11 o'clock).
    b. Slide it onto the bottom mount, then rotate the top of the battery to the right until it clicks into place on the top mount.
11. Attach the bell.
    a. Locate the bell in the accessories box.
    b. Wrap the bell's plastic mounting ring around the handlebar near one of the grips.
    c. Use a Phillips head screwdriver to tighten the bolt.
12. Attach the front reflector.
    a. Locate the white front reflector in the accessories box.
    b. Wrap the reflector's plastic mounting ring around the handlebar near the center of the handlebars (below the display).
    c. Use a Phillips head screwdriver to tighten the bolt.
13. Install a rear cargo basket or platform (optional).
    a. Place the basket loosely in any position on the rear rack, lining up the holes on basket with the holes on the rear rack.
    b. Screw in the bolts loosely with your hand at first, and then tighten with the 4mm hex key (torque to 5 Nm).

⚠ **CAUTION: The LODEN Rear Rack is only compatible with the LODEN Platform, LODEN Big Basket, or LODEN Small Basket. Installing third-party platforms or baskets is not recommended.**

## B. Bike Fit

- Is your bike adjusted to the right size for you? To check, see Section 3 on page 18. If your bicycle is improperly adjusted to your height, you may lose control and fall. Always make sure to adjust the bike before riding.
- Is the saddle at the right height? If you adjust your saddle height, follow the minimum insertion instructions. See Section 3A on page 18.
- Are the saddle and seat post securely clamped? A correctly tightened saddle will allow no saddle movement in any direction. See Section 3A on page 18.

- Are the stem and handlebars at the right height for you? Are they properly tightened? If not, they need to be adjusted and tightened. See Section 3B on page 19.
- Can you comfortably operate the pedals, steering, shifter, and brakes?
- Do you fully understand how to operate your new bicycle? If not, before your first ride, have LODEN explain any functions or features which you do not understand. Go to www.loden-bike.de for more information and to contact LODEN.

## C. Safety First

Always wear an approved bicycle helmet, properly secured, when riding your bike, and follow the helmet manufacturer's instructions for fit, use, and care. Wear light-colored clothing to increase your visibility to others on the road.

Do you have all the other required and recommended safety equipment, such as lights and reflectors? See Section 2 on page 13. It's your responsibility to familiarize yourself with the laws of the areas where you ride and to comply with all applicable laws. Bikes using public roads are, in most cases, treated the same as motor vehicles. Know and follow the rules of the road.

Do you know how to correctly secure your front and rear wheels? Check Section 4A on page 21 to make sure. Riding with an improperly secured wheel can cause the wheel to wobble or disengage from the bicycle, and cause serious injury or death. Make sure the wheels are securely fastened.

## D. Safety Check

Check the condition of your bicycle before every ride.

**WARNING: Please also read and become thoroughly familiar with the important information on the lifespan of your bicycle and its components in Section 5A on page 30.**

1. Nuts, bolts, screws, and other fasteners: Make sure that the many fasteners on your bicycle are correctly and securely tightened. See Section 7A on page 35 for more information.
2. Make sure nothing is loose: Lift the front wheel off the ground by two or three inches, then let it bounce on the ground. Does anything sound, feel, or look loose? Do a visual and tactile inspection of the whole bike. Any loose parts or accessories? If so, secure them. If you're not sure, ask someone with experience to check. Also, do the same test on the rear wheel.
3. Tires and wheels: Make sure tires are correctly inflated (see Section 4F on page 27). Check by putting one hand on the saddle, one on the intersection of the handlebars and stem, then bouncing your weight on the bike while looking at tire deflection. Compare what you see with how it looks when you know the tires are correctly inflated and adjust if necessary.
    a. Spin each wheel slowly and look for cuts in the tread and sidewall. Replace damaged tires before riding the bike. Make sure this inner

tube is properly inside the tire and the tire is fitted in the rim properly.

b. Spin each wheel and check for brake clearance and side-to-side wobble. If a wheel wobbles side to side even slightly, or rubs against or hits the brake pads, take the bike to a qualified bike shop to have the wheel trued.

**CAUTION: Wheel truing is a skill which requires special tools and experience. Do not attempt to true a wheel unless you have the knowledge, experience, and tools needed to do it correctly.**

c. Make sure the wheel rims are clean and undamaged at the tire bead. Check to make sure that any rim wear indicator marking is not visible at any point on the wheel rim.

**WARNING: Bicycle wheel rims are subject to wear. Riding a wheel that is at the end of its usable life can result in wheel failure, which can cause you to lose control and fall.**

4. Wheel retention system: Make sure the front and rear wheels are correctly secured. See Section 4A on page 21.
5. Brakes: Check the brakes for proper operation (see Section 4B on page 23). Squeeze the brake levers. Are the disc brakes engaging the wheels? All control cables seated and securely engaged? Do not ride the bike until the brakes are properly adjusted by a bicycle mechanic.
6. Drivetrain: Check the belt tension — if the belt feels loose, take the bike to your mechanic to be adjusted. Inspect the belt and sprockets for any worn or missing teeth. See Section 4D on page 25.
7. Seat post: Check that it is properly adjusted and that all bolts are properly tightened. Follow all instructions on the seat post concerning minimum insertion. See Section 3A on page 18.
8. Handlebar and saddle alignment: Make sure the saddle and handlebar stem are parallel to the bike's center line and clamped tight enough so that you can't twist them out of alignment. Check the handlebar by straddling the front wheel and turning the wheel from side to side. If the handlebar stem moves when the wheel contacts your leg, the stem must be tightened. See Section 3B on page 19.
9. Handlebar ends: Make sure the handlebar grips are installed properly, secure and in good condition, with no cuts, tears, or worn out areas. Make sure the handlebar ends and extensions are plugged.

**WARNING: Loose or damaged handlebar grips or extensions can cause you to lose control and fall. Unplugged handlebars or extensions can cut you and cause serious injury in an otherwise minor accident.**

10. Electric system: Make sure that the battery is properly seated in the mounts and has enough charge for your intended ride. Confirm that all wires are connected securely. Turn on the lights and check that both

front and rear lights are illuminated. See Section 4G on page 28 for more information about the e-bike system.

## E. First Ride

When you buckle on your helmet and go for your first familiarization ride on your new bicycle, be sure to pick a controlled environment away from cars, other cyclists, obstacles, or other hazards. Ride to become familiar with the controls, features, and performance of your new bike.

Power on the e-bike system by pressing and holding the power button on the computer display or pressing the power button on the battery. Select the power assist mode using the up and down toggles on the left-hand side of the handlebars. Start on a low-assist mode (Eco) and increase to Normal or High once you are comfortable with the feeling of the motor's support. See Section 4G on page 28 for more information about the e-bike system.

Familiarize yourself with the braking action of the bike. Test the brakes at slow speed, putting your weight toward the rear and gently applying the brakes, rear brake first. Sudden or excessive application of the front brake could pitch you over the handlebars. Applying brakes too hard can lock up a wheel, which could cause you to lose control and fall. Skidding is an example of what can happen when a wheel locks up. See Section 4B on page 23 for more information about brakes.

Practice shifting the gears. Check out the handling and response of the bike and check the comfort. If you have any questions, or if you feel anything about the bike is not as it should be, consult your mechanic before you ride again.

# 2. Safety

## A. The Basics

**WARNING: The country or region in which you ride may require specific safety devices. It is your responsibility to familiarize yourself with the laws of the area where you ride and to comply with all applicable laws, including properly equipping yourself and your bike as the law requires.**

1. Observe all local bicycle laws and regulations. Observe regulations about bicycle lighting, licensing of bicycles, riding on sidewalks, laws regulating bike path and trail use, helmet laws, child carrier laws, and special bicycle traffic laws. It's your responsibility to know and obey regional laws where you are biking.
2. Always wear a cycling helmet which meets the latest certification standards and is appropriate for the type of riding you do. Always follow the helmet manufacturer's instructions for fit, use, and care of your helmet. Make sure that your helmet is snug and level on your head (see Figure 1). Most serious bicycle injuries involve head injuries which might have been avoided if the rider had worn an approved, properly aligned, and properly secured helmet. Some regions have laws requiring helmet use.

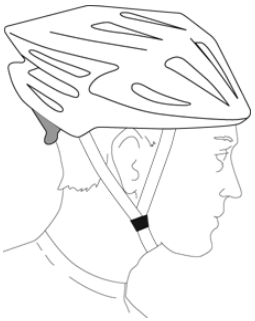

Figure 1

**WARNING: Failure to wear a helmet when riding may result in serious injury or death.**

3. Always do the Mechanical Safety Check (Section 1D on page 10) before you get on a bike.
4. Be thoroughly familiar with the location of the controls of your bicycle (brakes, pedals, steering, shifting) and how to use them them.
5. Be careful to keep body parts and other objects away from the moving belt, the turning pedals, sprockets and cranks, and the spinning wheels of your bicycle.
6. Be sure passengers are secured in approved child carriers and all loads are secured and properly balanced.
7. Always wear:
   a. Shoes that will stay on your feet and will grip the pedals. Make sure that shoe laces cannot get into moving parts, and never ride barefoot or in sandals.
   b. Bright, light colored, visible clothing should be worn at all times while riding, especially between dusk and dawn. Clothing should not be so

loose that it can get caught in the bicycle or snagged by objects on the side of the road or trail.

c. Protective eyewear, to protect against airborne dirt, dust and bugs tinted when the sun is bright, clear when it's not.

8. Ride at a speed appropriate for road and weather conditions. Higher speed means higher risk.
9. Do not ride hands-free. Always keep both hands on the handlebar, except for when using approved hand signals for turning and stopping.

## B. Riding Safety

1. Obey all Rules of the Road and all local and state traffic laws.
2. You are sharing the road or the path with others — motorists, pedestrians, and other cyclists. Respect their rights.
3. Ride defensively. Always assume that others do not see you.
4. Look ahead, and be ready to avoid:
   a. Vehicles slowing or turning, entering the road or your lane ahead of you, or coming up behind you.
   b. Parked car doors opening into the roadway.
   c. Pedestrians stepping out in front of you.
   d. Children or pets playing near the road.
   e. Pot holes, sewer grating, railroad tracks, expansion joints, road or sidewalk construction, debris, and other obstructions that could cause you to swerve into traffic, catch your wheel, or cause you to crash.
   f. There are many other hazards and distractions which can occur on a bicycle ride. Stay focused on riding safely and controlling the bike.
5. Ride in designated bike lanes, on designated bike paths or as close to the edge of the road as possible, in the direction of traffic flow or as directed by local governing laws.
6. Stop at stop signs and obey traffic lights; slow down and look both ways at street intersections. Remember that a bicycle always loses in a collision with a motor vehicle, so be prepared to yield even if you have the right of way.
7. Use approved hand signals for turning and stopping or mount an accessory signaling device on your bicycle.
8. Never ride with headphones. They mask traffic sounds and emergency vehicle sirens, and may distract you from concentrating on what's going on around you, and their wires can tangle in the moving parts of the bicycle, causing you to lose control.
9. Never carry pets or adult passengers on the racks. If mounting a Yepp Maxi Child Seat on the LODEN Rear Rack, make sure that the child seat is correctly and securely mounted (see Section 6D on page 34) and the child is secured and wearing an approved helmet.

10. Never carry anything which obstructs your vision or your complete control of the bicycle, or which could become entangled in the moving parts of the bicycle.
11. Never hitch a ride by holding on to another vehicle.
12. Don't do stunts, wheelies, or jumps.
13. Don't weave through traffic or make any moves that may surprise auto drivers or other people with whom you are sharing the road.
14. Observe and yield the right of way.
15. Never ride your bicycle while under the influence of alcohol or drugs.
16. If possible, avoid riding in bad weather, when visibility is obscured, at dawn, dusk, in the dark, or when extremely tired. Each of these conditions increases the risk of an accident.

## C. Wet Weather Riding

⚠ **WARNING: Wet weather reduces traction, slows braking and reduces visibility, both for the bicyclist and for other vehicles sharing the road. The risk of an accident is dramatically increased in wet conditions, so you must take extra precautions.**

Under wet riding conditions, the stopping power of your brakes (as well as the brakes of other vehicles sharing the road) is dramatically reduced and your tires don't grip nearly as well, especially in turns. This makes it harder to control speed and easier to lose control. To make sure that you can slow down and stop safely in wet conditions, ride more slowly and apply your brakes earlier and more gradually than you would under normal, dry conditions.

## D. Night Riding

Riding a bicycle at night is much more dangerous than riding during the day. A bicyclist is very difficult for motorists and pedestrians to see. Therefore, children should never ride at dawn, at dusk, or at night. Adults who chose to accept the greatly increased risk of riding at dawn, at dusk, or at night need to take extra care both riding and choosing specialized equipment which helps reduce that risk.

⚠ **WARNING: Reflectors are not a substitute for required lights. Riding at dawn, at dusk, at night, or at other times of poor visibility without an adequate bicycle lighting system and without reflectors is dangerous and may result in serious injury or death.**

Bicycle reflectors are designed and placed to pick up and reflect car lights and street lights in a way that may help you to be seen and recognized as a moving bicyclist.

**WARNING: Do not remove any reflectors or reflector brackets from your bicycle. They are an integral part of the bicycle's safety system. Removing reflectors to place lights in their place is also dangerous. Lights require power to operate and must be maintained. Reflectors use other light sources to help identify you as a bicycle. Removing the reflectors reduces your visibility to others using the roadway. Being struck by other vehicles may result in serious injury or death.**

**CAUTION: Check reflectors and their mounting brackets regularly to make sure that they are clean, straight, unbroken, and securely mounted. Have your mechanic repair or replace any bent, loose, or damaged reflectors.**

If you choose to ride under conditions of low light or poor visibility, check and be sure you comply with all local laws about night riding, and take the following strongly recommended additional precautions:

- Wear light colored, reflective clothing and accessories, such as a reflective vest, reflective arm and leg bands, reflective stripes on your helmet, flashing lights attached to your body and/or your bicycle, or any reflective device or light source that moves will help you get the attention of approaching motorists, pedestrians, and other traffic.
- Make sure your clothing or anything you may be carrying on the bicycle does not obstruct a reflector or light.
- Make sure that your bicycle is equipped with functional, correctly positioned, and securely mounted reflectors.

While riding at dawn, at dusk, or at night:

- Always turn on your lights.
- Ride more slowly.
- Avoid dark areas and areas of heavy or fast-moving traffic.
- Avoid road hazards.
- If possible, ride on familiar routes.

If riding in traffic:

- Be predictable. Ride so that drivers can see you and predict your movements. Use hand signals.
- Be alert. Ride defensively and expect the unexpected.

## E. Toe Overlap

Toe overlap is when your toe can touch the front wheel when you turn the handlebars to steer while a pedal is in the forwardmost position. This is common on small-framed bicycles. First, check your foot position on the pedal. Having your heel on the pedal causes toe extension. Pedaling with the arch on the pedal can injure your arch. It is strongly recommended you pedal with the ball of your foot on the pedal surface for better power, balance, and control.

Also, the risk of toe overlap is avoided by keeping the inside pedal up and the outside pedal down when making sharp turns. On any bicycle, this technique will also prevent the inside pedal from striking the ground in a turn, as bicycles lean when turning.

**WARNING: Toe overlap could cause you to lose control and fall. Whether you have overlap or not, you must keep the inside pedal up and the outside pedal down when making sharp turns.**

**CAUTION: Changing tire size or pedal crank arm length affects toe overlap. Consult your bike mechanic before making pedal changes.**

## F. Changing Components or Adding Accessories

There are many components and accessories available to enhance the comfort, performance, safety, and appearance of your bicycle. However, if you change components or add accessories, you do so at your own risk. LODEN may not have tested that component or accessory for compatibility, reliability, or safety on your bicycle. Before installing any component or accessory, including but not limited to a different size tire, rims, a lighting system, a luggage rack, a child seat, a trailer, etc., make sure that it is compatible with your bicycle by checking with LODEN. Be sure to read, understand, and follow the instructions that accompany the products you purchase for your bicycle.

**WARNING: Changing components with anything other than genuine replacement parts may compromise the safety of your bicycle and void the warranty (see Section 7B on page 36 for complete warranty information). Failure to confirm compatibility, properly install, operate, and maintain any component or accessory can result in serious injury or death.**

# 3. Fit

Correct fit of rider and bicycle is an essential element of bicycling safety, performance, and comfort. See the drawing on the shipping box for information on proper sizing or consult LODEN for more information.

**WARNING: If your bicycle does not fit properly, you may lose control, fall, and get hurt. Always make sure you adjust the bike to fit you properly for safety, comfort, and best performance.**

## A. Saddle Position

Correct saddle adjustment is an important factor in getting the best performance and comfort from your bicycle. The saddle can be adjusted in three directions:

**Up and down adjustment.** To check for correct saddle height:

1. Sit on the saddle.
2. Place one heel on a pedal.
3. Rotate the crank until the pedal with your heel on it is in the down position and the crank arm is parallel to the seat tube.

If your leg is not completely straight, your saddle height needs to be adjusted. If your hips must rock for the heel to reach the pedal, the saddle is too high. If your leg is bent at the knee with your heel on the pedal, the saddle is too low.

To make saddle height adjustments:

1. Loosen the seat post clamp.
2. Raise or lower the seat post in the frame seat tube.
3. Make sure the saddle is facing straight forward.
4. Re-tighten the seat post clamp until it's tight and secure.

Once the saddle is at the correct height, make sure that the seat post does not project from the frame beyond its "Minimum Insertion" or "Maximum Extension" mark (see Figure 2).

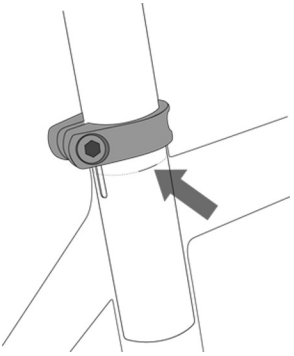

Figure 2

**WARNING: If your seat post is not inserted in the seat tube as described above, the seat post, binder, or even frame may break, which could cause you to lose control and fall.**

**Front and back adjustment.** The saddle can be adjusted forward or back to help you get the optimal position on the bike. If you choose to make your own front and back adjustment, make sure that the clamp mechanism is clamping on the straight part of the saddle rails and is not touching the curved part of the rails with all fasteners tightened securely.

**Saddle angle adjustment.** Most people prefer a horizontal saddle; but some riders like the saddle nose angled up or down just a little. If you choose to make your own saddle angle adjustment and you have a single bolt saddle clamp on your seat post, it is critical that you loosen the clamp bolt sufficiently to allow any serrations on the mechanism to disengage before changing the saddle's angle, and then that the serrations fully re-engage before you securely re-tighten the clamp bolt.

**WARNING: When making saddle angle adjustments with a single bolt saddle clamp, always check to make sure that the serrations on the mating surfaces of the clamp are not worn. Worn serrations on the clamp can allow the saddle to move, causing you to lose control and fall. Always tighten fasteners to the correct torque. Fasteners that are too tight can stretch and deform. Fasteners that are too loose can move, wear excessively and fatigue. Either mistake can lead to a sudden failure of the bolt or component, causing you to lose control and fall with possible injury. Small changes in saddle position can have a substantial effect on performance and comfort. To find your best saddle position, make only one adjustment at a time.**

**WARNING: After any saddle adjustment, be sure that the saddle adjusting mechanism is properly seated and tightened before riding. A loose or improperly mounted saddle clamp or seat post clamp can cause damage to the seat post, or can cause you to lose control and fall. A correctly tightened saddle adjusting mechanism will allow no saddle movement in any direction. Regularly check to make sure that the saddle adjusting mechanism is properly tightened.**

**WARNING: Some claim that extended riding with a saddle which is incorrectly adjusted or which does not support your pelvic area correctly can cause short-term or long-term injury to nerves and blood vessels, or other serious problems. If your saddle causes you pain, numbness or other discomfort, listen to your body and stop riding until you get components properly and safely adjusted. Contact LODEN or see your mechanic about saddle adjustment or a getting recomendations for a different saddle to improve rider comfort.**

## B. Handlebar Height and Angle

LODEN bicycles are equipped with a Satori adjustable stem for better rider comfort and control. To make adjustments:

**Vertical adjustments.** Release the clamp at the bottom of the stem adjuster and lift up and down to fit your comfort level, keeping it below the minium insertion level of 70mm.

**Stem angle adjustments.** Use a 4mm hex key on the stem to loosen the bolts. After adjusting the angle, make sure to re-tighten the bolts until they are fully tightened.

**Handlebar angle.** After adjusting the stem angle, you might notice that the handlebar rotation is not correct. To adjust the handlebar rotation, use a 4mm hex key wrench to loosen the four stem cap bolts on the front of the stem, rotate the handlebar to a comfortable position, and securely tighten the bolts on the stem cap.

**WARNING: Always tighten the clamp correctly. Never ride with the stem lifter above the minimum insertion level of 70mm. Always tighten all bolts according to the torque values listed in Section 7A on page 35.**

**WARNING: An insufficiently tightened stem clamp bolt or handlebar clamp bolt may compromise steering action, which could cause you to lose control and fall. Place the front wheel of the bicycle between your legs and attempt to twist the handlebar/stem assembly. If you can twist the stem in relation to the front wheel, turn the handlebars in relation to the stem, or turn the bar end extensions in relation to the handlebar, the bolts are insufficiently tightened. Do not ride the bicycle until these components are securely tightened.**

# 4. Tech

It's important to your safety, performance, and enjoyment to understand how things work on your bicycle. We urge you to ask a professional to do the things described in this section before you attempt them yourself. If you have even the slightest doubt about something in this manual, talk to LODEN.

## A. Wheels

Bicycle wheels are designed to be removable for easier transportation and for repair of a tire puncture. The wheel axles are inserted into slots called "drop-outs" in the fork and frame. LODEN wheels are secured using a hollow axle with a shaft ("skewer") running through it which has an adjustable tension nut on one end and an over-center cam on the other.

It is very important that you understand the type of wheel securing method on your bicycle, that you know how to secure the wheels correctly, and that you know how to apply the correct clamping force to safely secure the wheel. Ask a professional to help you understand how to install and remove your wheels safely. Apply the correct technique for clamping your wheel in place. Each time, before you ride the bike, check that the wheel is securely tightened.

The clamping action of a correctly secured wheel must emboss the surfaces of the dropouts at the contact point in the front or rear of the unit.

**WARNING: Riding with an improperly secured wheel can allow the wheel to wobble or fall off the bicycle, which can cause serious injury or death. Ask a professional bike mechanic to ensure your wheel is installed correctly.**

**Cam action mechanism.** The wheel hub is clamped in place by the force of the over-center cam pushing against one dropout and pulling the tension adjusting nut, by way of the skewer, against the other dropout (see Figure 3). The amount of clamping force is controlled by the tension adjusting nut. Turning the tension adjusting nut clockwise while keeping the cam lever from rotating and increases clamping force; turning it counterclockwise while keeping the cam lever from rotating reduces clamping force. Less than half a turn of the tension adjusting nut can make the difference between safe clamping

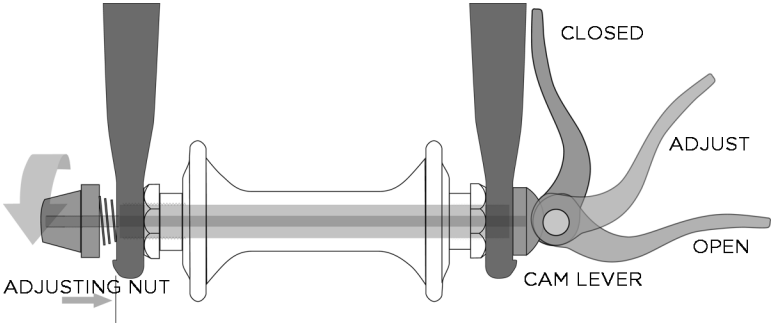


Figure 3

force and unsafe clamping force. Learn how to use this device before the first ride and always be sure the wheel is clamped securely.

**Removing a disc brake front wheel.**

1. Move the cam lever from the locked or CLOSED position to the OPEN position (see Figure 3 on page 21).
2. Loosen the tension adjusting nut enough to allow removing the wheel from the dropouts. Avoid removing the tension nut completely as the springs could fall out and get lost.
3. Pull the wheel straight out of the fork to avoid damaging the disc rotor. You may need to tap the top of the wheel with the palm of your hand to release the wheel from the front fork.

**Installing a disc brake or rim brake front wheel.**

1. Move the cam lever to the OPEN position so that it curves away from the wheel (see Figure 3 on page 21).
2. With the steering fork facing forward, insert the wheel between the fork blades, llining up the disc rotor so that it slides evenly into the brake assembly. Push the wheel firmly to the top of the slots in the fork drop-outs and center the wheel rim in the fork. The cam lever should be on rider's left side of the bicycle.

⚠ **CAUTION: Be careful not to damage the disc, caliper, or brake pads when re-inserting the disc into the caliper. Never activate a disc brake's control lever unless the disc is correctly inserted into the caliper.**

3. Hold the tension adjusting nut in one hand and rotate the cam lever clockwise until you can clamp it upwards into the CLOSED position. The lever should now be parallel to the fork blade and curved toward the wheel. To apply enough clamping force, you should have to wrap your fingers around the fork blade for leverage, and the lever should leave a clear imprint in the palm of your hand. If the lever cannot be pushed all the way to a position parallel to the fork blade, return the cam lever to the OPEN position. Then, turn the tension adjusting nut counter-clockwise one-quarter turn and try tightening the lever again.

⚠ **WARNING: Securely clamping the wheel with a cam action retention device takes considerable force. If you can fully close the cam lever without wrapping your fingers around the fork blade for leverage, the lever does not leave a clear imprint in the palm of your hand, and the serrations on the wheel fastener do not emboss the surfaces of the dropouts, the tension is insufficient. Open the lever; turn the tension adjusting nut clockwise a quarter turn; then try again. Holding the nut with one hand and turning the lever like a wing nut with the other hand until everything is as tight as you can get it will NOT clamp a cam action wheel safely in the dropouts.**

**WARNING: Your bike is equipped with an internally-geared hub in the rear wheel. The removal and reinstallation of internally-geared hubs requires special knowledge. Do not attempt to remove or reinstall the rear wheel on your own — consult a bicycle mechanic first. Incorrect removal or assembly can result in gear failure, which can cause you to lose control and fall.**

## B. Brakes

**WARNING: Riding with improperly adjusted brakes, worn brake pads, or wheels on which the rim wear mark is visible is dangerous and can result in serious injury or death.**

**Brake controls.** It's very important to your safety that you learn and remember which brake lever controls which brake on your bike. This varies depending on the country — in the U.S., Germany, and most other countries the right lever operates the rear brake and the left lever operates the front brake. In ther United Kingdom and Japan, however, the left lever operates the rear brake and the right lever operates the front brake. Excessive pressure on the front wheel brake can cause a pitch over accident and rider injury.

To check how your bike's brakes are set up, squeeze one brake lever and look to see which brake, front or rear, engages. Now do the same with the other brake lever. Make sure that your hands can reach and squeeze the brake levers comfortably and always begin brake activation with the rear brake. Check that both brake levers stop before hitting the handlebar.

**How brakes work.** The braking action of a bicycle is a function of the friction between the braking surfaces. LODEN bicycles are equipped with hydraulic disc brakes (see Figure 4). To make sure that you have maximum friction available, keep the disc rotor and caliper clean and free of dirt, lubricants, waxes, or polishes. Also remember when riding in wet conditions that water is a lubricant, so apply brakes earlier to add extra stopping distance to have a safe stop. In addition to reducing friction, moisture or other contaminants on the disc rotors or pads can cause the brakes to squeal.

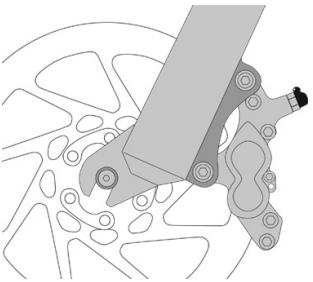

Figure 4

Brakes are designed to control your speed, not just to stop the bike. Maximum braking force for each wheel occurs at the point just before the wheel "locks up" (stops rotating) and starts to skid. Once the tire skids, you actually lose most of your stopping force and all directional control. You need to practice slowing and stopping smoothly without locking up a wheel. The technique is called progressive brake modulation. Instead of jerking the brake lever to the position where you think you'll generate appropriate braking force, squeeze the lever, progressively increasing the braking force. If you feel the wheel begin to lock up, release pressure just a little to keep the wheel rotating just short

of lockup. It's important to develop a feel for the amount of brake lever pressure required for each wheel at different speeds and on different surfaces. To better understand this, experiment a little by walking your bike and applying different amounts of pressure to each brake lever, until the wheel locks.

When you apply one or both brakes, the bike begins to slow, but your body wants to continue at the speed at which it was going. This causes a transfer of weight to the front wheel (or, under heavy braking, around the front wheel hub, which could send you the rider over the handlebars).

**WARNING: Applying brakes too hard or too suddenly can lock up a wheel, which could cause you to lose control and fall. Sudden or excessive application of the front brake may pitch the rider over the handlebars, which can result in serious injury or death.**

A wheel with more weight on it will accept greater brake pressure before lockup; a wheel with less weight will lock up with less brake pressure. So, as you apply brakes and your weight is transferred forward, you need to shift your body toward the rear of the bike, to transfer weight back on to the rear wheel; and at the same time, you need to both decrease rear braking and increase front braking force. This is even more important while descending a hill, because descents shift weight forward.

Two keys to effective speed control and safe stopping are controlling wheel lockup and weight transfer. Practice braking and weight transfer techniques on flat surfaces first. Try a parking lot early in the day to avoid traffic and crowds.

**WARNING: Disc brakes are extremely powerful. Take extra care in becoming familiar with how these brakes work and exercise particular care when using them.**

**CAUTION: Exercise care in touching the disc rotor and caliper. Disc rotors have sharp edges, and both rotor and caliper can get very hot after extended use.**

Everything changes when you ride on surfaces with loose materials like sand, dirt, gravel, and leaves or in wet weather: it will take longer to stop. Tire adhesion is reduced, so the wheels have less cornering and braking traction and can lock up with less brake force. Moisture or dirt on the brake pads also reduces their ability to grip. The way to maintain control on loose or wet surfaces is to go more slowly. A bike with cargo weight becomes even more difficult to control, so it is even more critical to practice and apply all these safe braking techniques.

**CAUTION: If replacing worn or damaged parts, use only manufacturer-approved genuine replacement part of the type found on the unit when purchased. LODEN bicycles come with Shimano B01S resin disc brake pads.**

## C. Handlebars and Grips

LODEN bicycles are equipped with a Satori adjustable stem, Satori trekking-style handlebars, and Ergon grips. The Satori stem includes a 70mm adjustable stem riser and an angle-adjusting stem. For stem and handlebar fit and adjustment procedures, see Section 3B on page 19.

**Handlebar rotation.** The Satori stem riser also easily rotates 90 degrees so that the handlebars can fold up flat with the bike for convenient storage or transportation. To utilize this feature, follow the steps below:

1. Loosen the clamp on the stem riser.
2. Lift the stem all the way up (past the minimum insertion mark) and then rotate the handlebars to the the desired position. Rotating counterclockwise will place the handlebars in the side folding position (in line with the bike frame). Rotating clockwise will return the handlebars to the riding position (perpendicular to the bike frame).
3. Lower the stem below the minimum insertion mark and tighten the clamp after adjusting.

**Headset tightening.** Occasionally, the headset will become loose. If you notice wobbling in the headset, please follow the steps below to adjust:

1. Check the tightness by pressing firmly on the front brake, placing your other hand over the area where the stem meets the top of the head tube, and gently rocking the bike forward and backward. If you see or feel the headset sliding forward and backward over the head tube, or hear a clicking noise, then the headset needs to be tightened.
2. Loosen the two bolts on the clamp base with a 4mm hex key.
3. Loosen the bolt on the tightening ring with a 3mm hex key.
4. Rotate the tightening ring counterclockwise and then slide the clamp base all the way down. You should notice small silver pins sticking out of the top of the clamp base and touching the tightening ring.
5. Press firmly down on the stem and tighten the two bolts on the clamp base, ensuring that the handlebars are lined up with the front wheel.
6. Tighten the headset by rotating the tightening ring clockwise. You will see the silver pins pressing down onto the headset. You can also push the 3mm hex key into the bolt to rotate the tightening ring further.
7. Once the ring is as tight as possible, use the 3mm hex key to securely tighten the bolt.
8. Check the headset tightness again using the procedure in Step 1.

## D. Drivetrain

Your bicycle has a Shimano Nexus Inter-5E internally-geared hub combined with the Gates Carbon Drive belt system, so the drivetrain will have:

- A 5 speed rear internally geared hub with specific rear belt sprocket.
- A front belt sprocket.
- One shifter.
- A Gates Carbon Drive belt.

Proper belt tension is required for safe operation of the Gates Carbon Drive System. Lack of tension can cause the belt to jump teeth and increase wear on the bearings and internally geared hub. Tension is measured using the frequency of the belt. For internally-geared hubs, proper tension is 35-50 Hz (28-40 lbs). Tension can be measured using the Gates Krikit Gauge, Eco Tension Tester, or by using the Gates Carbon Drive mobile app.

To adjust the tension, loosen the four bolts on the left and right sides of the lower section of the rear dropout. Then, adjust the tensioning bolt inside the small hole that faces backwards until the belt has reached proper tension. Tighten the four bolts on dropout and adjust the shifter cable, if needed, using the nut on the gear shifter.

⚠ **WARNING: Adjusting tension on belt drive systems is complex. We recommend taking the bike to your local mechanic to have it adjusted.**

## E. Shifting Gears

The vocabulary of shifting can be pretty confusing. A downshift is a shift to a "lower" or "slower" gear, one which is easier to pedal. An upshift is a shift to a "higher" or "faster" gear, which is harder to pedal. The shifter will show the current gear selected. On belt drive systems, all shifting occurs inside of an internally-geared rear hub. Shifting to a lower gear is for accelerating from a stop and climbing, and is called a downshift. Shifting to a higher gear is for speed and is called an upshift.

**Shifting the internally-geared hub.** The internally-geared hub is shifted via the right shifter. Pedaling in the higher gears requires greater pedaling effort, but takes you a greater distance with each revolution of the pedal cranks. Using the lower gears requires less pedaling effort, but takes you a shorter distance with each pedal crank revolution. A unique advantage of internally-geared hubs is that they can be shifted while stopped, across the full range of gears, which is very useful in the event of a quick stop where you don't have time to downshift.

**Which gear should I be in?** The numerically lowest gear (1) is for the steepest hills. The numerically largest gear (5) is for the greatest speed. Find the "starting gear" which is right for your level of ability — a gear which is hard enough for quick acceleration but easy enough to let you start from a stop without wobbling — and carefully test upshifting and downshifting to get a feel for the different gear combinations. Such testing is best done in a smooth level area with no auto traffic present. Test first at slower speeds, then at higher speeds. Learn to anticipate the need to shift, and shift to a lower gear before the hill gets too steep. If you have difficulties with shifting, the problem could be mechanical adjustment. See your mechanic for help.

**What if it won't shift gears?** Under higher pedal forces, the internally-geared hub may not shift, or may not initiate a shift event. In this case, lower pedal forces or briefly stopping pedaling will allow an easier shift event and less impact to the drivetrain once the shift occurs. If shifting one click repeatedly fails to result in a smooth shift to the next gear, chances are that the mechanism is

out of adjustment. We recommend taking the bike to your local mechanic to have it adjusted.

**WARNING: The removal and reinstallation of internally-geared hubs requires special knowledge. Incorrect removal or assembly can result in gear failure, which can cause you to lose control and fall. Please see a mechanic for any adjustment.**

## F. Tires and Tubes

**Tires.** LODEN bicycles come with Schwalbe Big Ben Plus tires. The front tire is 20 x 2.15 in. (55-406 mm) and the rear tire is 26 by 2.15 in. (55-559 mm), which is the maximum compatible size for the LODEN racks and baskets.

Size and pressure ratings are marked on the sidewall of the tire. The part of this information which is most important to you is tire pressure, measured in pounds per square inch (PSI) or bars. Schwalbe Big Ben Plus tires should be inflated to 30 to 55 PSI (2.00 to 4.00 bar). The best and safest way to inflate a bicycle tire to the correct pressure is with a hand or foot bicycle pump which has a built-in pressure gauge.

**CAUTION: Pencil type automotive tire gauges can be inaccurate and should not be relied upon for consistent, accurate pressure readings. Instead, use a high quality dial gauge.**

**WARNING: Never inflate a tire beyond the maximum pressure marked on the tire's sidewall or the wheel rim. If the maximum pressure rating for the wheel rim is lower than the maximum pressure shown on the tire, always use the lower rating. Exceeding the recommended maximum pressure may blow the tire off the rim or damage the wheel rim, which could cause damage to the bike and injury to the rider and bystanders. Always check for proper pressure with a good tire gauge after inflating. Be sure the tire is properly seated on the rim and that the tube is not pinched between the tire and rim. Incorrect inflation can cause an accident with rider injury.**

**WARNING: There is a safety risk in using gas station air hoses or other air compressors. They are not made for bicycle tires. They can inflate the tube in your tire very rapidly, which could cause the tube to explode, with possible injury to the person inflating the tire or while riding.**

Tire pressure is given either as maximum pressure or as a pressure range. How a tire performs under different terrain or weather conditions depends largely on tire pressure. Inflating the tire to near its maximum recommended pressure gives the lowest rolling resistance but also produces the harshest ride. High pressures work best on smooth, dry pavement.

Very low pressures, at the bottom of the recommended pressure range, give the best performance on smooth, slick terrain such as hard-packed clay, and on deep, loose surfaces such as deep, dry sand.

Tire pressure may be low if the bike has been sitting idle in storage. Tire pressure that is too low for your weight and the riding conditions can cause a blowout of the tube by allowing the tire to deform sufficiently to pinch the inner tube between the rim and the riding surface. Blowouts could cause accidents and injure rider.

**Tire valves.** There are two primary kinds of bicycle tire valves: The Schraeder valve and the Presta valve. The bicycle pump you use must have the fitting appropriate to the valve stems on your bicycle. LODEN tires are outfitted with Presta valves (see Figure 5).

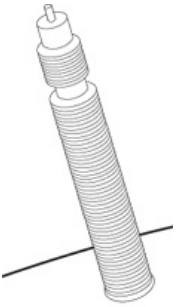

**Figure 5**

To inflate a Presta valve tire using a Presta headed bicycle pump, remove the valve cap, unscrew (counterclockwise) the valve stem lock nut, and push down on the valve stem to free it up. Then push the pump head onto the valve head and inflate. To inflate a Presta valve with a Schraeder pump fitting, you'll need a Presta adapter (available at your bike shop) which screws on to the valve stem once you've freed up the valve. The adapter fits into the Schraeder pump fitting. Close the valve after inflation. To let air out of a Presta valve, open up the valve stem lock nut and depress the valve stem.

**Tubes.** Bicycle tire inner tubes come in sizes corresponding to the width and diameter of the tire. Always use tubes equipped with Presta valves and sizing that matches the tires on front and rear wheels.

⚠ **WARNING: We highly recommend that you carry a spare inner tube when riding, unless the bike is fitted with tubeless tires. Patching a tube is an emergency repair. If you do not apply the patch correctly or apply several patches, the tube can fail, resulting in possible tube failure, which could cause you to lose control and fall. Replace a patched tube as soon as possible.**

## G. Electric Pedal-Assist System

This bike is equipped with a Shimano STEPS E6100 pedal-assisted electric bike (e-bike) system, which includes a motor, battery, switch unit, various sensors, and a computer display. E-bikes are also known as a pedelec (pedal electric cycle) or EPAC (electrically power assisted cycle).

When a rider starts to pedal, the motor kicks in to provide assistance and then stops when the rider stops pedalling. During operation, the A-weighted emission pressure at the rider's ears is less than 70 dB(A).

Generally, pedal-assisted e-bikes are viewed by the law the same way as conventional bicycles and can be ridden on public streets, bike lanes, and bike paths. But different countries, states, or municipalities may have specific laws, rules, or guidelines regulating the use pedal-assisted e-bikes.

**CAUTION: Laws regarding pedal-assisted e-bikes vary from country to country and place to place. Please consult local regulations before riding your bike.**

This section will cover the basics about this system, but for further information and common error codes, please consult the Shimano E6100 manual included with your bicycle.

**Battery.** This bike comes with a Shimano high-capacity 504Wh lithium-ion battery. This battery is rated to 1,000 cycles, meaning that after 1,000 charge/discharge cycles, the battery capacity will still be above 300Wh.

Please remove the battery when performing maintenance on the bicycle. Do not plug in the battery to charge if the bicycle is wet. The battery is rated to a temperature range of 14°F to 122°F (-10°C to 50°C) during discharge and 32°F to 113°F (0°C to 45°C) while charging. Always charge the battery indoors.

The battery is equipped with a lock and key that matches the frame lock. Please keep these keys somewhere safe and write down the key number stamped on the side of the key in case you need to replace it.

**WARNING: Follow all instructions printed on the label of the battery charger. Failure to follow these instructions may cause the battery to overheat, burst, or ignite.**

**Motor assist levels.** The Shimano STEPS E6100 system includes a 250 watt mid-drive motor with four assist levels: Walk, Eco, Normal, and High. These modes are toggled using the control switch mounted on the left side of the handlebar. Walk Assist Mode (or start-up assistance mode) allows the rider to move the bicycle up to 3.7 mph (6 km/h) without pedalling. Eco mode provides 70% support, Normal mode provides 150% support, and High mode provides 230% support. All assist levels provide support only up 20 mph (or 25 km/h in the EU).

**WARNING: Most regions have strict regulations governing the speed of e-bikes to prevent dangerous situations. Altering or manipulating the electrical management system to change the speed of your e-bike is strictly prohibited.**

**Lights.** LODEN bicycles come with a white front light and a red rear light powered by the e-bike battery. To turn the lights on and off, press the headlight button on the right side of the computer display. Make sure to adjust angle of the front light to properly illuminate the path in front of you and be visible to other road users. If one or both of the lights does not illuminate when turned on, check that the red and white electric cables are properly inserted into the back of the lights. If a cable has fallen out or looks loose, take your bicycle to a bike shop to have the cables repaired or replaced.

**CAUTION: Some regions have specific regulations about bicycle lighting. Consult your local laws before riding at night.**

# 5. Service

**WARNING: Bicycle are no longer simple products. Technological advances have made bicycles and their components more complex, and the pace of innovation is increasing. It is impossible for this manual to provide all the information required to properly use, repair and/or maintain your bicycle. In order to help minimize the chances of an accident and possible injury, the owner and rider must check and maintain the unit. It is also critical that you have any repair or maintenance which is not specifically described in this manual performed by your mechanic. Equally important is that your individual maintenance requirements will be determined by everything from your riding style, amount of use, proper storage, to geographic location. Consult LODEN or your mechanic for help in determining your maintenance requirements.**

**WARNING: Many bicycle service and repair tasks are best performed by persons with special knowledge and tools. Do not begin any adjustments or service on your bicycle until you have learned from this manual and/or one of the many books on bicycle service and repair and/or your mechanic on how to properly complete them. Improper adjustment or service may result in damage to the bicycle or in an accident which can cause serious injury or death to riders and passengers.**

## A. Service Intervals

Some service and maintenance can and should be performed by the owner and requires no special tools or knowledge beyond what is presented in this manual. The following are examples of the type of service you should perform yourself. All other service, maintenance, and repair should be performed in a properly equipped facility by a qualified bicycle mechanic using the correct tools and procedures specified by the manufacturer. LODEN bicycles come with a limited warranty. Visit www.loden-bike.de to learn more.

1. Break-in period: Your bike will last longer and work better if you break it in before riding it hard. Control cables and wheel spokes may stretch or “seat” when a new bike is first used and may require readjustment by you or your mechanic. Your Mechanical Safety Check (Section 1D on page 10) will help you identify some things that need readjustment. But even if everything seems fine to you, it’s best to take your bike back to your mechanic for a checkup. Professionals typically suggest you bring the bike in for a 30 day checkup. Another way to judge when it’s time for the first checkup is to bring the bike in after three to five hours of hard riding, or about 10 to 15 hours of on-road or more casual

off-road use. But at any time if you think something is wrong with the bike, take it to your mechanic or contact LODEN before riding it again.

2. Before every ride: Mechanical Safety Check (Section 1D on page 10)
3. After every long or hard ride, if the bike has been exposed to water or grit, or at least every 100 miles: Clean the bike by using a damp, well wrung out cloth to gently wipe down all surfaces. Allow to completely dry before riding or charging the battery. Do not lubricate the carbon drive belt. Note that areas where there is salt, sand, or high moisture will necessitate more frequent maintenance.

⚠ **CAUTION: Although the e-bike system is waterproof under normal conditions (including heavy rain), please do not use high pressure washers when cleaning the bicycle.**

4. After every long or hard ride or after every 10 to 20 hours of riding:
   a. Squeeze the front brake and rock the bike forward and back. Everything feel solid? If you feel a clunk with each forward or backward movement of the bike, you probably have a loose headset. Have your mechanic check it. If the brakes are pressed tightly and the wheel still rolls, adjustment is needed.
   b. Lift the front wheel off the ground and swing it from side to side. Feel smooth? If you feel any binding or roughness in the steering, you may have a tight headset. Have your mechanic check it.
   c. Grab one pedal and rock it toward and away from the centerline of the bike; then do the same with the other pedal. Anything feel loose? If so, have your mechanic check it.
   d. Inspect the drive belt and sprockets. Is the belt missing any teeth? Are the sprocket teeth thin and worn? Time to take it to your mechanic to be replaced. Check the belt tension — if the belt feels loose, take the bike to your mechanic to be adjusted.
   e. Take a look at the brake pads. Starting to look worn, thin, or not hitting the disc brake pads properly? Time to have your mechanic adjust or replace them.
   f. Carefully check the control cables and cable housings. Any rust, kinks, or fraying? If so, have your mechanic replace them if needed.
   g. Squeeze each adjoining pair of spokes on either side of each wheel between your thumb and index finger. Do they all feel about the same? If any feel loose, have your mechanic check the wheel for spoke tension and trueness.
   h. Check the tires for excess wear, cuts, or bruises. Have your mechanic replace them if necessary.
   i. Check the wheel rims for excess wear, dings, dents, or scratches. Consult your mechanic if you see any rim damage.
   j. Check to make sure that all parts and accessories are still secure, and tighten any which are not.

k. Check the frame, rear rack, and baskets, particularly in the area around tube joints; the handlebars; the stem; and the seatpost for any deep scratches, cracks, or discoloration. These are signs of stress-caused fatigue and indicate that a part is at the end of its useful life and needs to be replaced. See your mechanic for help.

5. As required: If either brake lever fails the Mechanical Safety Check (Section 1D on page 10), don't ride the bike. Have your mechanic check the brakes and repair as needed.

⚠ **WARNING: Like any mechanical device, a bicycle and its components are subject to wear and stress. Different materials and mechanisms wear or fatigue from stress at different rates and have different life cycles. If a component's life cycle is exceeded, the component can suddenly and catastrophically fail, causing serious injury or death to the rider. Scratches, cracks, fraying, and discoloration are signs of stress-caused fatigue and indicate that a part is at the end of its useful life and needs to be replaced. While the materials and workmanship of your bicycle or of individual components may be covered by a warranty for a specified period of time by the manufacturer, this is no guarantee that the product or component will last the term of the warranty. Product life is often related to the kind of riding you do and to the treatment to which you subject the bicycle. The bicycle's warranty is not meant to suggest that the bicycle cannot be broken or will last forever. It only means that the bicycle is covered subject to the terms of the warranty.**

## B. If Your Bicycle Sustains an Impact

First, check yourself for injuries, and take care of them as best you can. Call someone for help or seek medical care if necessary.

Next, check your bike for damage. After any crash, take your bike to your dealer for a thorough check. Bike helmets also need to be checked after impact as they may begin to crack or separate and be unable to protect you. Replace any helmet that has had a serious impact.

⚠ **WARNING: A crash or other impact can put extraordinary stress on bicycle components, causing them to fatigue prematurely. Damage from impact or heat radiation onto composite components may be invisible to the user. In the event of an impact or exposure to high heat, composite components should be inspected by a mechanic and replaced if necessary. Components suffering from stress fatigue can fail suddenly and catastrophically, causing loss of control, serious injury, or death.**

# 6. Cargo

## A. Intended Use of Compact Cargo Bicycles

**WARNING: Understand your bike and its intended use as a light duty cargo transport. Using the bicycle for other purposes can be hazardous. Using your bike the wrong way is dangerous.**

**INTENDED** to be ridden on paved roads, smooth gravel roads, and improved trails with moderate grades where the tires do not lose ground contact. Intended to carry moderate amounts of cargo.

**NOT INTENDED** for off-road, mountain bike, cyclocross, for touring with racks or panniers, or for any kind of jumping. Do not ride on extremely rough surfaces, even if paved. Not intended to carry extremely heavy, oversize, loose, or hazardous materials. Not intended to carry pets or adult passengers.

## B. Weight and Recommended Loads

The empty weight of the bicycle (including rear rack and front platform) is 58.5 lbs / 26.5 kg. The total load is 300 lbs / 135 kg. This includes the rider, attachments such as child carriers or racks, a child passenger, and all cargo. The rear rack, platform, and baskets are individually rated and rated for a combined cargo load (including attachments and one child passenger):

| **Individual Racks:** | **COMBINED Front and Rear Racks:** |
|---|---|
| REAR: 55 lbs / 25 kg<br>*or*<br>FRONT: 55 lbs / 25 kg | (55 lbs / 25 kg Rear + 22 lbs / 10 kg in Front)<br>*or*<br>(55 lbs / 25 kg Front + 22 lbs / 10 kg in Rear) |

**WARNING: Do not exceed the maximum load of 300 lbs / 135 kg. Failure to follow this limit could damage your bicycle and cause an accident with injuries to the rider or passenger.**

**WARNING: Loading the front and rear of the bike to capacity will severely affect performance and safety of the bike and rider. Keep weight towards the center of bike (between the axles). Familiarize yourself with the front/back weight distribution you plan to use before beginning to ride to ensure a safe ride. Follow the steps below for guidance. Failure to follow this warning could result in serious injury or death.**

## C. Loading and Unloading Cargo

Understanding how to load and unload cargo from your bicycle will help you to make the most out of the LODEN compact electric cargo bike. This bicycle is designed to carry cargo, but please follow the warnings and steps below to ensure you are safe.

1. Always use the kickstand to park the bike while loading and unloading.
2. Load cargo as close to the center of the bike as possible (between the front and rear axles). Keep heavier objects lower and closer to the center. Use accessories such as nets and bungee cords to secure cargo tightly in place so that it will not move or loosen as the bike vibrates.
3. Use extreme caution on take-off, braking, turning, and stopping with a loaded bike. We recommend using the lowest gear ("1" on the shifter) when starting to ride so that it is easier to pedal.
4. Familiarize yourself with the Shimano STEPS system and its different levels of assist. The 3 pedal-assist modes provided by the STEPS system can help with take-off and riding, but note that accelerating too fast can be dangerous. See Section 4G on page 28.
5. If the loads are too heavy to allow the bike to be maneuverable, dismount and walk the bike. For extra support, use the Shimano STEPS Walk Assist Mode.
6. Practice with small loads, at slow speeds, and with no traffic before fully loading the bike (according to the max cargo loads listed above). Be careful when riding through traffic and always follow road rules.
7. Apply the rear brakes first and then use both front and rear for gentle, smooth braking. Do not break suddenly! Heavy loads extend stopping distance, so allow ample time and distance for brakes to take effect.
8. Use the step-through geometry of the bike to your advantage: when stopping, step forward off the seat and put your feet down firmly. Always mount and dismount with care.

## D. Child Seat Mounting

The LODEN Rear Rack is compatible with the Yepp Maxi Child Seat. A single child seat can be mounted in one of two locations: the second window from the back of the rack (A) or the window at the very back of the rack (B; see Figure 6). Mounting the seat in spot A is preferred for weight balance. Total weight of the child seat plus the child cannot exceed 55 lbs / 25 kg. Make sure to follow all instructions provided by the child seat manuacturer and see the "Special Note for Parents" on page 5.

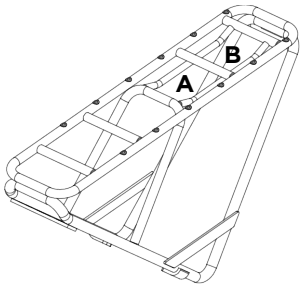


**Figure 6**

**WARNING: Exposed springs on the saddle of any bicycle fitted with a child seat can create a pinch point and potentially cause serious injury to the child.**

## E. Cargo Trailers

LODEN bicycles are compatible with many bike trailers and can be mounted using the kickstand mounting holes on the chainstay. Follow all instructions and load limits provided by the trailer manufacturer.

# 7. Appendices

## A. Torque Values

Correct tightening force on fasteners — nuts, bolts, screws — is essential for the rider's safety. Too little force, and the fastener may not hold securely. Too much force, and the fastener can strip threads, stretch, deform, or break. Either way, incorrect tightening force can result in component failure, which can cause serious personal injury or death.

Correctly tightening a fastener requires a calibrated torque wrench. A professional bicycle mechanic with a torque wrench should torque the fasteners on your bicycle. If you choose to work on your own bicycle, you must use a torque wrench and the correct tightening torque values.

See below for a list of recommended torque values. Torque values are also printed on some components and in component manuals. If there is a conflict between this manual and the component manufacturer, consult with LODEN or the component manufacturer's customer service for clarification.

| Component | Nm | lbf.in | kgf.cm |
|---|---|---|---|
| **Handlebar area** | | | |
| Stem - clamp base | 5-6 | 45-53 | 51-61 |
| Stem - tightening ring | 3-4 | 27-36 | 31-41 |
| Stem - adjustable stem to riser | 9-10 | 80-89 | 92-102 |
| Stem - adjustable stem | 14-15 | 125-134 | 143-153 |
| Stem - handlebar clamp | 5-6 | 45-53 | 51-61 |
| Grips to handlebar | 5 | 45 | 51 |
| Brake lever to handlebar | 6-8 | 53-71 | 61-82 |
| Shifter to handlebar | 2 | 18 | 20 |
| **Seat area** | | | |
| Saddle rail clamp | 8-10 | 71-89 | 82-102 |
| Seat post clamp | 5 | 45 | 51 |
| **Drivetrain** | | | |
| Pedal into crank | 35 | 312 | 357 |
| Crank arms | 12-14 | 107-125 | 122-143 |
| Sliding dropout bolts | 25 | 223 | 255 |
| **Brakes** | | | |
| Brake caliper to frame | 7-10 | 62-89 | 71-102 |
| Disc rotor to hub | 4-6 | 36-53 | 41-61 |
| **Other** | | | |
| Fender mounting bolts | 6 | 53 | 61 |
| Platform and baskets | 5 | 45 | 51 |

## B. Warranty

**What is covered.** LODEN bicycles come with a limited 2-year warranty against defects in materials and workmanship to the original purchaser of the bike on the frame, fork, racks, and baskets. Most Shimano components also come with a limited 2-year warranty.

**What is not covered.** The warranty is NOT valid on tires, tubes, valves, rims, spokes, nipples, brake pads, handlebar, seat tube, pedals, kickstand, cogs, hubs, saddle, grips, drive belt, cables, fenders, lights, paint finish, decals, nuts, bolts, or cable housing.

The warranty does NOT cover defects resulting from normal wear and tear and material fatigue, improper assembly or maintenance, overloading, misuse, abuse, neglect, accidents, alterations or modifications, irregular maintenance, non-professional repairs, improper adjustments, welding, bonding, repainting, addition of components not originally intended to be compatible with LODEN bicycles, or anything else beyond LODEN's control.

**How to submit a warranty request.** To submit a warranty claim, please contact LODEN directly. You will be asked to provide a detailed description of the issue and send supporting evidence such as clear pictures or video.

In the event of damage during shipping, immediately inspect your package and bike and report the damage to the delivery person and company. Take pictures or video of the damage immediately upon delivery and contact LODEN for further instructions.

LODEN will carefully examine each warranty claim in order to make a determination its validity. If we determine that a defect on the frame, fork, racks, or baskets is the result of defective materials or workmanship and is therefore covered under this warranty, LODEN will, as its sole option, repair or replace the defective part. Assembly or disassembly, transportation costs and/or freight charges, and any additional labor costs related to the replacement of parts is not covered under this warranty.

**Terms of warranty.**

- This warranty is only valid for original purchaser of the bike and is not transferable.
- LODEN's liability under this limited warranty shall never exceed the amount of the original purchase.
- This limited warranty is expressly provided in lieu of or instead of all other warranties, including any alleged implied warranties of merchantability or fitness for a particular purpose, and are limited to the same duration as the expressed warranty herein. Some states do not allow the exclusion or limitations of implied warranties, incidental or consequential, so the above limitations and exclusions may not apply to you.
- The warranty will be void as a result of improper use of the bike beyond its original intent, such as aggressive riding, use for competition or racing, stunts, tricks, jumping, or damage due to the rider's lack of experience, competence, or technical skill.

## C. Declaration of Conformity

Declaration of Conformity for states within the European Union, according to EC directive 2006/42/EC on machinery (Annex II A).

This declaration relates exclusively to the machinery in the state in which it was placed on the market and excludes third-party components which are added and/or operations carried out subsequently by the final user. The declaration is no longer valid if the product is modified.

Herewith, we declare, that 2021 LODEN One pedelec complies with all essential requirements of the Machinery Directive 2006/42/EC and Directive 2004/108/EC relating to electromagnetic compatibility.

The following technical standards were used:

- EN 15194:2017 — Electrically power assisted cycles (EPAC)

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