

sinch®

owners manual

Thank you for purchasing a SINCH bicycle!

Please register your bike online at www.sinchbikes.com

Registering your bike online serves as proof of ownership for any future warranty issues, and provides a record of the serial number in case your bike is ever lost or stolen. You must still produce your original sales receipt.

All attempts by Sinch Bikes will be made to retain this information for our customers. However, we remind you that keeping this owner's manual and recording the information here on this inside cover as well as attaching your sales receipt to the owner's manual is the best way to ensure you will have this information at your disposal in case your bike is ever lost or stolen or has a warranty issue.

It's a SINCH

Date of purchase / /
Day Month Year

Your First Name Last Name

Email Address

Street Address

City

Post Code Country

Phone

Date of birth / /
Day Month Year Gender ☐

Bike Model Size Colour

Bike Serial # Order #

Battery Lock Key #

Bicycle Owner's Manual

This manual meets AS-NZS 1927:2010 standards with added text in regards to electric bicycles.

IMPORTANT: This manual contains important safety, performance and service information. Read it before you take the first ride on your new bicycle, and keep it for reference.

This manual is designed to be read together with separate and specific user manuals, that we provide, that has details on your electric bike's drive system and functions. Be sure to read all provided documents before your first ride.

Additional safety, performance and service information for specific components such as suspension or pedals on your bicycle, or for accessories such as helmets or lights that you purchase, may also have been packaged with your bike or with the accessories you bought. Make sure that your authorised dealer has given you all the manufacturers' literature that was included with your bicycle or accessories. 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 authorised dealer or the bicycle's manufacturer.

NOTE: This manual is not intended as a comprehensive use, service, repair or maintenance manual. Please see your authorised dealer for all service, repairs or maintenance. Your authorised dealer may also be able to refer you to classes, clinics or books on bicycle use, service, repair or maintenance.

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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.


Your electric bicycle is designed for use by riders that must have the physical coordination, reaction time and mental capability to ride and manage traffic, road conditions, sudden situations and also respect the laws governing bicycle use where they ride, regardless of age.

If you have an impairment or disability such as a visual impairment, hearing impairment, physical impairment, cognitive/language impairment, or a seizure disorder, consult your physician before riding any bicycle.

Warning and caution statements

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.

The word **CAUTION** used without the safety alert symbol indicates a situation which, if not avoided, could result in serious damage to the bicycle or the voiding of your warranty.

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.

You should save this manual, along with any other documents that were included with your bicycle, for future reference. However, all content in this manual is subject to change or withdrawal without notice. Visit www.sinchbikes.com to download the latest version. We make every effort to ensure the accuracy of its documentation and assumes no responsibility or liability for any errors or inaccuracies that may appear herein.

A special note for parents

As a parent or guardian, you are responsible for the activities and safety of your 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.

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

Section 1: First

NOTE: We strongly urge you to read this Manual in its entirety before your first ride. At the very least, read and make sure that you understand each point in this section, and refer to the cited sections on any issue which you don't completely understand. Please note that not all bicycles have all of the features described in this Manual. Ask your authorised dealer to point out the features of your bicycle.



WARNING

Your bicycle comes with additional manuals and documents provided by the manufacturers of the bicycle's drive system and other components. You should read each of them before riding your bike for the first time.

Bike fit

- ▶ Is your bike the right size? To check, see "Standover height" on page 18. If your bicycle is too large or too small for you, you may lose control and fall. If your new bike is not the right size, ask your authorised dealer to exchange it before you ride it.
- ▶ Is the saddle at the right height? To check, see "Saddle position" on page 19. If you adjust your saddle height, follow the Minimum Insertion instructions in "Saddle position" on page 19.
- ▶ Are saddle and seatpost securely clamped? A correctly tightened saddle will allow no saddle movement in any direction. See "Saddle position" on page 19.
- ▶ Are the stem and handlebars at the right height for you? If not, see "Handlebar height and angle" on page 21.
- ▶ Can you comfortably operate the brakes? If not, you may be able to adjust their angle and reach. See "Control position adjustments" on page 22 and "Brake reach" on page 23.
- ▶ Do you fully understand how to operate your new bicycle? If not, before your first ride, have your authorised dealer explain any functions or features which you do not understand.

Safety first

- ▶ Always wear an approved helmet when riding your bike, and follow the helmet manufacturer's instructions for fit, use and care.
- ▶ Do you have all the other required and recommended safety equipment? Proper attire such as helmets, bright clothing, protective glasses, and sturdy shoes are recommended even where not demanded by law. See the section discussing "Safety" on page 7. It's your responsibility to familiarise yourself with the laws of the areas where you ride, and to comply with all applicable laws.
- ▶ Do you know how to correctly secure your front and rear wheels? Check "Wheels" on page 24 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.

- ▶ If your bike has toeclips and straps or clipless ("step-in") pedals, make sure you know how they work (see "Pedals" on page 36). These pedals require special techniques and skills. Follow the pedal manufacturer's instructions for use, adjustment and care.
- ▶ Do you have "toe overlap"? On smaller framed bicycles your toe or toeclip may be able to contact the front wheel when a pedal is all the way forward and the wheel is turned. Read "Pedals" on page 36 to check whether you have toeclip overlap.
- ▶ Does your bike have suspension? If so, check "Bicycle suspension" on page 37. Suspension can change the way a bicycle performs. Follow the suspension manufacturer's instructions for use, adjustment and care.
- ▶ Because electric bicycles are so different from regular bikes, additional steps are needed to ride them safely. Please be sure to read "Riding an electric bike" on page 50.

Mechanical safety check

Routinely check the condition of your bicycle before every ride.

Nuts, bolts screws & other fasteners

Because manufacturers use a wide variety of fastener sizes and shapes made in a variety of materials, often differing by model and component, the correct tightening force or torque cannot be generalized. To make sure that the many fasteners on your bicycle are correctly

tightened, refer to "Fastener Torque Specifications" on page 55 of this manual or to the torque specifications in the instructions provided by the manufacturer of the component in question. 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 specifications from the bicycle or component manufacturer or from your authorised dealer. If you need to make an adjustment at home or in the field, we urge you to exercise care, and to have the fasteners you worked on checked by your authorised dealer as soon as possible.



WARNING

Correct tightening force on fasteners – nuts, bolts, screws– on your bicycle is important. 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 you to lose control and fall.

- ▶ Make sure nothing is loose. Lift the front wheel off the ground by two or three inches, then let it bounce on the ground. 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.

Tyres & Wheels

- ▶ Make sure tyres are correctly inflated (see “Tyres” on page 44). 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 tyre deflection. Compare what you see with how it looks when you know the tyres are correctly inflated; and adjust if necessary.

- ▶ Tyres in good shape? Spin each wheel slowly and look for cuts in the tread and sidewall. Replace damaged tyres before riding the bike.

- ▶ Wheels true? 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.



WARNING

Wheels must be true for rim brakes to work effectively. 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 the job correctly.

- ▶ Wheel rims clean and undamaged? Make sure the rims are clean and undamaged at the tyre bead and, if you have rim brakes, along the braking surface. 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.

Ask your authorised dealer about wheel rim wear. Some wheel rims have a rim wear indicator which becomes visible as the rim's braking surface wears. A visible rim wear indicator on the side of the wheel rim is an indication that the wheel rim has reached its maximum usable life. 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.

Brakes

- ▶ Check the brakes for proper operation (see “Brakes” on page 30). Squeeze the brake levers. Are the brake quick-releases closed? All control cables seated and securely engaged? If you have rim brakes, do the brake pads contact the wheel rim squarely and make full contact with the rim? Do the brakes begin to engage within an inch of brake lever movement? Can you apply full braking force at the levers without having them touch the handlebar? If not, your brakes need adjustment. Do not ride the bike until the brakes are properly adjusted by a professional bicycle mechanic.

Wheel retention system

- ▶ Make sure the front and rear wheels are correctly secured. See “Wheels” on page 24.

Seatpost

- ▶ If your seatpost has a quick release fastener for easy height adjustment, check that it is properly adjusted and in the locked position. See “Seatpost quick release clamp” on page 29.

Handlebar and saddle alignment

- ▶ Make sure the saddle and handlebar stem are parallel to the bike's centre line and clamped tight enough so that you can't twist them out of alignment. See “Saddle position” on page 19 and “Handlebar height and angle” on page 21.

Handlebar ends and grips

- ▶ Make sure the handlebar grips are secure and in good condition. If not, have your authorised dealer replace them. Make sure the handlebar ends and extensions are plugged. If not, have your authorised dealer plug them before you ride. If the handlebars have bar end extensions, make sure they are clamped tight enough so you can't twist them.



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.

VERY IMPORTANT SAFETY NOTE:

Please also read and become thoroughly familiar with the important information on the lifespan of your bicycle and its components on page 60.

First ride

When you buckle on your helmet and go for your first familiarisation 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.

Familiarise yourself with the braking action of the bike (see “Brakes” on page 30). 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.

If your bicycle has toeclips or clipless pedals, practice getting in and out of the pedals. See the paragraph about toeclips on page 4 and the paragraph about clipless pedals on page 36.

If your bike has suspension, familiarise yourself with how the suspension responds to brake application and rider weight shifts. See the paragraph about suspension on page 4 and “Bicycle suspension” on page 36.

Practice shifting the gears (see “Shifting gears” on page 33). Remember to never move the shifter while pedaling backward, nor pedal backwards immediately after having moved the shifter. This could jam the chain and cause serious damage to the bicycle.

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 authorised dealer before you ride again.

www.sinchbikes.com

Section 2: Safety

The basics

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. Most serious bicycle injuries involve head injuries which might have been avoided if the rider had worn an appropriate helmet.

Fig 2.1



WARNING

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

WARNING

Be sure to read the Electric Bikes section on page 46 for important safety information related to electric bikes.

- ▶ Always do the Mechanical Safety Check “Mechanical safety check” on page 4 before you get on a bike.
- ▶ Be thoroughly familiar with the controls of your bicycle: brakes (“Brakes” on page 30); pedals (“Pedals” on page 36); shifting (“Shifting gears” on page 34)
- ▶ Be careful to keep body parts and other objects away from the sharp teeth of

chainrings, the moving chain, the turning pedals and cranks, and the spinning wheels of your bicycle.

- ▶ Always wear:
 - ✓ 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.
 - ✓ Bright, visible clothing that is not so loose that it can be tangled in the bicycle or snagged by objects at the side of the road or trail
 - ✓ Protective eyewear, to protect against airborne dirt, dust and bugs — tinted when the sun is bright, clear when it's not
- ▶ Don't jump with your bike. Jumping a bike, particularly a BMX or mountain bike, can be fun; but it can put huge and unpredictable stress on the bicycle and its components. Riders who insist on jumping their bikes risk serious damage, to their bicycles as well as to themselves. Before you attempt to jump, do stunt riding or race with your bike, read and understand “Extreme, stunt or competition riding” on page 13.
- ▶ Ride at a speed appropriate for conditions. Higher speed means higher risk.

Riding safety

- ▶ Obey all Rules of the Road and all local traffic laws.
- ▶ You are sharing the road or the path with others — motorists, pedestrians and other cyclists. Respect their rights.
- ▶ Ride defensively. Always assume that others do not see you.
- ▶ Look ahead, and be ready to avoid:
 - ✓ Vehicles slowing or turning, entering the road or your lane ahead of you, or coming up behind you
 - ✓ Parked car doors opening
 - ✓ Pedestrians stepping out
 - ✓ Children or pets playing near the road
 - ✓ 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 have an accident
 - ✓ The many other hazards and distractions which can occur on a bicycle ride
- ▶ 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.
- ▶ Stop at stop signs and 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.
- ▶ Use approved hand signals for turning and stopping.
- ▶ Never ride with headphones. They mask traffic sounds and emergency vehicle sirens, 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.
- ▶ Never carry a passenger, unless it is a small child wearing an approved helmet and secured in a correctly mounted child carrier or a child carrying trailer.

WARNING

Check the drive system manufacturer's manual, or other system manual included with your bike, for warnings regarding trailer usage.

- ▶ 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.
- ▶ Never hitch a ride by holding on to an other vehicle.
- ▶ Don't do stunts, wheelies or jumps. If you intend to do stunts, wheelies, jumps or go racing with your bike despite our advice not to, read “Extreme, stunt or competition riding”.

- ▶ Think carefully about your skills before deciding to take the large risks that go with this kind of riding.
- ▶ Don't weave through traffic or make any moves that may surprise people with whom you are sharing the road.
- ▶ Observe and yield the right of way.
- ▶ Never ride your bicycle while under the influence of alcohol or drugs.
- ▶ If possible, avoid riding in bad weather, when visibility is obscured, at dawn, dusk or in the dark, or when extremely tired. Each of these conditions increases the risk of accident.
- ▶ Always take along some kind of identification, so that people know who you are in case of an accident; and take along some cash for food, a cool drink or an emergency phone call.
- ▶ Yield right of way to pedestrians and animals. Ride in a way that does not frighten or endanger them, and give them enough room so that their unexpected moves don't endanger you.
- ▶ Signal with voice or bell when passing.
- ▶ Don't block the trail. Move your bike off to the side of the trail if you stop.
- ▶ Walk your bike up and down access ramps.
- ▶ Be prepared. If something goes wrong while you're riding off-road, help may not be close.
- ▶ Before you attempt to jump, do stunt riding or race with your bike, read and understand "Extreme, stunt or competition riding" on page 13.

Off-road safety

We recommend that children not ride on rough terrain unless they are accompanied by an adult.

- ▶ The variable conditions and hazards of off-road riding require close attention and specific skills. Start slowly on easier terrain and build up your skills. If your bike has suspension, the increased speed you may develop also increases your risk of losing control and falling. Get to know how to handle your bike safely before trying increased speed or more difficult terrain.
- ▶ Wear safety gear appropriate to the kind of riding you plan to do.
- ▶ Don't ride alone in remote areas. Even when riding with others, make sure that someone knows where you're going and when you expect to be back.

Off-road respect

Obey the local laws regulating where and how you can ride off-road, and respect private property. You may be sharing the trail with others — hikers, equestrians, other cyclists. Respect their rights. Stay on the designated trail. Don't contribute to erosion by riding in mud or with unnecessary sliding. Don't disturb the ecosystem by cutting your own trail or shortcut through vegetation or streams. It is your responsibility to minimize your impact on the environment. Leave things as you found them; and always take out everything you brought in.

Off-road electric bicycles

Riders of off-road electric bikes must take additional precautions, and follow additional rules of trail etiquette.

- ▶ Maintain a minimum of 3 metres behind the bike in front of you.
- ▶ Be mindful of electric assist on level and downhill grades if people are visible on the trail.
- ▶ Be mindful of electric assist if small children or pets are within 50 metres.
- ▶ Be aware that your extra speed, and the extra weight of your bike mean you must be more careful, especially around other trail users.

Electric bike safety

Because electric bicycles are so different from regular bikes, additional steps are needed to ride them safely. Please be sure to read "Riding an electric bike" on page 50.

Wet weather riding



Wet weather impairs traction, braking and visibility, both for the bicyclist and for other vehicles sharing the road. The risk of an accident is dramatically increased in wet conditions.

Under wet conditions, the stopping power of your brakes (as well as the brakes of other vehicles sharing the road) is dramatically reduced and your tyres don't grip nearly as well. 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. See also "Brakes" on page 30.



Wet weather may lessen the grip of the rider's feet on the pedals. If your feet slip off the pedals, it could lead to a fall.

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 choose to accept the greatly increased risk of riding at dawn, at dusk or at night need to take extra care both riding and choosing specialised equipment which helps reduce that risk. Consult your authorised dealer about night riding safety equipment.



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 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.

! CAUTION

Check reflectors and their mounting brackets regularly to make sure that they are clean, straight, unbroken and securely mounted. Have your authorised dealer replace damaged reflectors and straighten or tighten any that are bent or loose.

The mounting brackets of front and rear reflectors are often designed as brake straddle cable safety catches which prevent the straddle cable from catching on the tyre tread if the cable jumps out of its yoke or breaks.

! WARNING

Do not remove the front or rear reflectors or reflector brackets from your bicycle. They are an integral part of the bicycle's safety system.

Removing the reflectors reduces your visibility to others using the roadway. Being struck by other vehicles may result in serious injury or death.

The reflector brackets may protect you from a brake straddle cable catching on the tyre in the event of brake cable failure. If a brake straddle cable catches on the tyre, it can cause the wheel to stop suddenly, causing you to lose control and fall.

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

- ▶ Purchase and install battery or generator powered head and tail lights which meet all regulatory requirements and provide adequate visibility.
- ▶ 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... 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 correctly positioned and securely mounted reflectors.
- ▶ While riding at dawn, at dusk or at night:
 - Ride 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.
 - Be alert. Ride defensively and expect the unexpected.

Luggage Racks/ Rear Carrier

We have fitted to some of our models a specific rear rack. These racks are designed for a maximum load that will be displayed on the rack. Under no circumstances should you attempt to modify your carrier, its mounting points or exceed the maximum load value as this may damage your bike and result in a fall and injury. In these cases, your bike or rack will not be covered by warranty.

When your luggage rack is loaded, the behaviour of your bike will be affected. Weight is added to the rear of the bike and this will modify the handling and braking of your bike. In order to keep a good level of balance on the bike, divide the load as evenly as possible on both sides of the bike. Take time to get used to how your bike behaves when loaded and adapt to this different feeling. Also think to check the gap between the tire and mud guard when the bike is loaded. It should always be a minimum of 6mm. If you wish to mount a child carrier or a trailer on your luggage rack, ask your retailer for advice. He/she will be able to inform you which will be compatible with your racks. When you attach panniers to your rack, ensure it is securely fixed and don't leave any straps loose as these risk getting trapped in the wheels and causing a fall. Note that any panniers fixed to the rack should not conceal lights and reflectors. Regularly check that the bolts holding your luggage racks are tight in order to avoid any unwanted incidents. Hold the rack and try to move it forward and back in order to check that all fixation points are secure and tight.

NOTE: Certain racks also come with the MIK HD mounting system, which means you can attach a compatible child seat or MIK compatible bag.

Transporting Children or a Load

Before riding on your bike when it is loaded or carrying a child in a child seat, you should always check several points:

- ▶ The pannier or child seat has been correctly installed.
- ▶ The child should be correctly strapped in according to the recommendations by the manufacturer of the seat and wearing a helmet.
- ▶ The load should be shared evenly across the bike.
- ▶ The bags and load should not be able to slide or move.
- ▶ The load should not be greater than the total authorized weight.
- ▶ Nothing should be able to become trapped between the spokes in the wheel, nor obscure the lights and the reflectors. Your authorised dealer will be able to advise you for the purchase of an accredited child carrier that is compatible with your Sinch bike.

Vehicle racks

Misuse of vehicle racks could result in a potentially hazardous situation which, if not avoided, could result in serious injury or death. Be sure to read and follow the instructions provided by the rack's manufacturer for more complete safety information.

CAUTION

Misuse of vehicle racks could result in damage to your bicycle, vehicle, or other property.

Especially when dealing with electric bikes, caution must be used when mounting a bicycle on a vehicle rack.

- ▶ Be aware that your electric bike is considerably heavier than a normal bicycle. Check the instructions provided by the manufacturer of your vehicle rack for information on maximum carrying capacity.
- ▶ If you cannot comfortably lift your bicycle onto a vehicle rack by yourself, you should request assistance. Never try to lift an electric bike onto a roof-mounted vehicle rack without assistance.
- ▶ When mounting your electric bicycle on a vehicle rack, always remove the battery first. A battery installed on a bicycle that is mounted on a vehicle may be damaged by water intrusion, suffer an impact to the battery housing, or even fall off the bike and become a projectile.

Extreme, stunt or competition riding

Whether you call it Aggro, Huckling, Freeride, North Shore, Downhill, Jumping, Stunt Riding, Racing or something else, if you engage in this sort of extreme, aggressive riding you will get hurt, and you voluntarily assume a greatly increased risk of injury or death.

Not all bicycles are designed for these types of riding, and those that are may not be suitable for all types of aggressive riding. Check with your authorised dealer or the bicycle's manufacturer about the suitability of your bicycle before engaging in extreme riding.

When riding fast down hill, you can reach speeds achieved by motorcycles, and therefore face similar hazards and risks. Have your bicycle and equipment carefully inspected by a qualified mechanic and be sure it is in perfect condition. Consult with expert riders, area site personnel and race officials on conditions and equipment advisable at the site where you plan to ride. Wear appropriate safety gear, including an approved full face helmet, full finger gloves, and body armor. Ultimately, it is your responsibility to have proper equipment and to be familiar with course conditions.

WARNING

Although many catalogs, advertisements and articles about bicycling depict riders engaged in extreme riding, this activity is extremely dangerous, increases your risk of injury or death, and increases the severity of any injury. Remember that the action depicted is being performed by professionals with many years of training and experience. Know your limits and always wear a helmet and other appropriate safety gear. Even with state-of-the-art protective safety gear, you could be seriously injured or killed when jumping, stunt riding, riding downhill at speed or in competition.

WARNING

Bicycles and bicycle parts have limitations with regard to strength and integrity, and this type of riding can exceed those limitations.

We recommend against this type of riding because of the increased risks; but if you choose to take the risk, at least:

- ▶ Take lessons from a competent instructor first.
- ▶ Start with easy learning exercises and slowly develop your skills before trying more difficult or dangerous riding.
- ▶ Use only designated areas for stunts, jumping, racing or fast downhill riding.
- ▶ Wear a full face helmet, safety pads and other safety gear.
- ▶ Understand and recognize that the stresses imposed on your bike by this kind of activity may break or damage parts of the bicycle and void the warranty.

- ▶ Take your bicycle to your authorised dealer if anything breaks or bends. Do not ride your bicycle when any part is damaged. If you ride downhill at speed, do stunt riding or ride in competition, know the limits of your skill and experience. Ultimately, avoiding injury is your responsibility.

Changing components & adding accessories

There are many components and accessories available to enhance the comfort, performance and appearance of your bicycle. However, if you change components or add accessories, you do so at your own risk. The bicycle's manufacturer 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 tyre, a lighting system, a luggage rack, a child seat, a trailer, etc., make sure that it is compatible with your bicycle by checking with your authorised dealer. Be sure to read, understand and follow the instructions that accompany the products you purchase for your bicycle. See also "Intended use of your electric bicycle" on page 59 and "The lifespan of your bike and its components" on page 60.

WARNING

Failure to confirm compatibility, properly install, operate and maintain any component or accessory can result in serious injury or death.

WARNING

Exposed springs on the saddle of any bicycle fitted with a child seat can cause serious injury to the child.

WARNING

Changing the components on your bike with other than genuine replacement parts may compromise the safety of your bicycle and may void the warranty. Check with your authorised dealer before changing the components on your bike.

WARNING

Choking hazard: Some bicycle accessories may present a choking hazard to small children. Keep these accessories away from small children.

After an accident

WARNING

After an accident, you must consider your bike unsafe to ride until you follow the instructions in this section. Failure to follow the instructions in this section could lead to component failure, injury, or death.

WARNING

Before performing ANY service,

inspection, or maintenance on your electric bicycle, you should first remove the battery. Failure to remove the battery could lead to the bicycle turning on unexpectedly, causing serious damage or injury.

If you have to perform maintenance that requires the battery to be installed, you must be sure that even if the bicycle wheel, chain, or other drivetrain components begin moving unexpectedly, they will not be in a position to cause injury or damage.

- ▶ Be sure to read, understand, and comply with the drive system user manual. Do not disassemble or attempt to service components unless explicitly allowed by the manufacturer.
- ▶ Check the rechargeable battery. If the rechargeable battery is no longer properly in its holder or shows any damage, do not use your bike any longer, at least not in assistance mode. Switch off the motor and the battery separately, if necessary. A damaged battery can lead to a short-circuit or a sudden failure of the electric assistance right at the moment when you need it.

Damage to the outer housing of the rechargeable battery can result in the entry of water or moisture and that can lead to short circuits or electric shocks. The rechargeable battery could catch fire or even explode! In such a case contact your authorised dealer immediately.

- ▶ Check whether the wheels are still firmly fixed in the dropouts and whether the rims are still centred with respect to the frame or fork.

Spin the wheels and observe the gap either between the frame and tyre or between the brake pads and rim sides.

If the width of the gap changes markedly and you have no way to true the wheel where you are, you will need to release the rim brake a little so that the rim can run between the brake pads without touching them. Please note that in this case the brakes may not act as powerfully as you are used to.

For more information, see “Wheels with quick release systems” on page 25, “Brakes” on page 30, and “Wheels” on page 24 of this manual.

- ▶ Check that handlebars and stem are neither bent nor broken and that they are level and upright. Make sure the stem is firmly fixed on the fork by trying to turn the handlebars relative to the front wheel. Briefly lean on the brake levers to make sure the handlebars are firmly fixed in the stem.

Realign the components, if necessary, and carefully tighten the bolts to ensure reliable clamping of the components. The maximum torque values are printed directly on the components or specified in the enclosed operating instructions.

For more information see the section discussing “Fit” on page 18, especially “Handlebar height and angle” on page 21.

- ▶ Check whether the chain still runs on the chainrings and the cassette. If your bike fell over to the chain side, check that the gears function properly. Ask somebody

to lift the bike by the saddle and carefully shift through all the gears. Pay particular attention when shifting to the small gears and make sure the rear derailleur does not get too close to the spokes as the chain climbs onto the larger sprockets.

If the rear derailleur or the dropouts/derailleur hanger are bent, the rear derailleur may collide with the spokes. This can result in damage to the rear derailleur, the rear wheel and the frame. Check the function of the front derailleur, as a displaced front derailleur can throw off the chain, thus suddenly interrupting the drive of the bike.

For more information, see “Shifting gears” on page 34.

- ▶ Make sure the saddle is not out of alignment, using the top tube or the bottom bracket shell as a reference. If necessary, open the clamp, realign the saddle and re-tighten the clamp.

For more information, see “Seatpost quick release clamp” on page 29 and “Saddle position” on page 19.

- ▶ Let your bike bounce on the ground from a low height. If there is any rattling, see where it comes from. Check the bearings, the bolts and the proper seating of the battery and the connectors, as necessary.
- ▶ Check the display. Are all the values displayed as usual? Do not use your bike if the display shows an error message or a warning. If necessary, switch off the system and wait at least 10 seconds before checking it again.

Do not set off on your bike with drive assistance if the control element shows a warning. In such a case contact your authorised dealer immediately.

You can find further information in the corresponding chapter of the system manual of the drive manufacturer.

- Finally, take a good look at the whole bike to detect any deformation, color changes or cracks. Ride back very carefully by taking the shortest route possible, only if your bike went through this check without any problems. Do not accelerate or brake hard and do not ride your bicycle out of the saddle. If you are in doubt about the performance of your bike, have yourself picked up by car, instead of taking any risks.

Back home you need to recheck your bike thoroughly once again. The damaged parts must be repaired. Ask your authorised dealer for help.

WARNING

Deformed components, especially those made of aluminum, can break without previous warning. They may not be repaired, i.e. straightened, as the imminent risk of breakage will remain. This applies in particular to the fork, the handlebars, the stem, the cranks, the seat post and the pedals. When in doubt, it is always recommendable to have these components replaced, as your safety comes first. Ask your authorised dealer for help.

Section 3: Fit

NOTE: Correct fit is an essential element of bicycling safety, performance and comfort. Making the adjustments to your bicycle which result in correct fit for your body and riding conditions requires experience, skill and special tools. Always have your authorised dealer make the adjustments on your bicycle; or, if you have the experience, skill and tools, have your authorised dealer check your work before riding.

WARNING

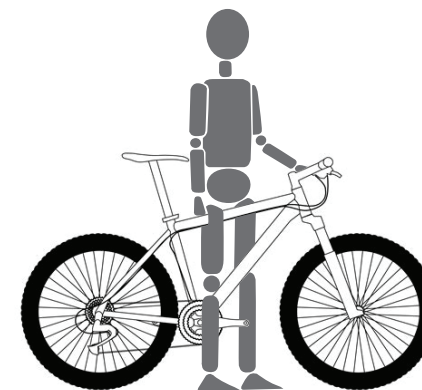
If your bicycle does not fit properly, you may lose control and fall. If your new bike doesn't fit, ask your authorised dealer to exchange it before you ride it.

Standover height

Diamond frame bicycles

Standover height is the basic element of bike fit. It is the distance from the ground to the top of the bicycle's frame at that point where your crotch is when straddling the bike. To check for correct standover height, straddle the bike while wearing the kind of shoes in which you'll be riding, and bounce vigorously on your heels. If your crotch touches the frame, the bike is too big for you. Don't even ride the bike around the block. A bike which you ride only on paved surfaces and never take off-road should give you a minimum standover height clearance of two inches (5 cm). A bike that you'll ride on unpaved surfaces should give you a minimum of three inches (7.5 cm) of standover height clearance. And a bike that you'll use off-road should give you four inches (10 cm) or more of clearance.

Fig 3.1



Step-through frame bicycles

Standover height does not apply to bicycles with step-through frames. Instead, the limiting dimension is determined by saddle height range. You must be able to adjust your saddle position as described in "Saddle position" on page 19 without exceeding the limits set by the height of the top of the seat tube and the "Minimum Insertion" or "Maximum Extension" mark on the seatpost. fig. 3.1

Saddle position

Correct saddle adjustment is an important factor in getting the most performance and comfort from your bicycle. If the saddle position is not comfortable for you, see your authorised dealer.

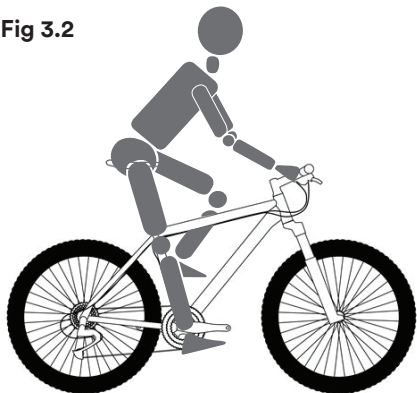
The saddle can be adjusted in three directions:

1. Up and down adjustment. To check for correct saddle height (fig. 3.2):

- ▶ Sit on the saddle;
- ▶ Place one heel on a pedal;
- ▶ 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.

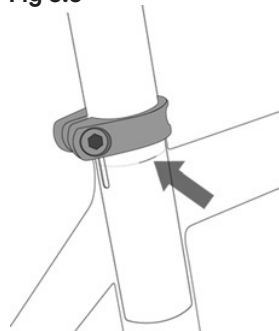
If your leg is not completely straight, your saddle height needs to be adjusted. If your hips must rock for the heel to reach the pedal, the saddle is too high. If your leg is bent at the knee with your heel on the pedal, the saddle is too low.

Fig 3.2



Ask your authorised dealer to set the saddle for your optimal riding position and to show you how to make this adjustment. If you choose to make your own saddle height adjustment:

Fig 3.3



- ▶ Loosen the seatpost clamp.
- ▶ Raise or lower the seatpost in the seat tube.
- ▶ Make sure the saddle is straight fore and aft.
- ▶ Re-tighten the seatpost clamp to the recommended torque ("Fastener Torque Specifications" on page 61 or the manufacturer's instructions).

Once the saddle is at the correct height, make sure that the seatpost does not project from the frame beyond its "Minimum Insertion" or "Maximum Extension" mark (fig. 3.3).

! WARNING

If your seatpost is not inserted in the seat tube as described in the paragraph about saddle adjustment on page 19, the seatpost may break, which could cause you to lose control and fall.

2. Front and back adjustment. The saddle can be adjusted forward or back to help you get the optimal position on the bike. Ask your authorised dealer to set the saddle for your optimal riding position and to show you how to make this adjustment. 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, and that you are using the recommended torque on the clamping fastener(s) ("Fastener Torque Specifications" on page 61 or the manufacturer's instructions).

3. Saddle angle adjustment. Most people prefer a horizontal saddle; but some riders like the saddle nose angled up or down just a little. Your authorised dealer can adjust saddle angle or teach you how to do it. If you choose to make your own saddle angle adjustment and you have a single bolt saddle clamp on your seatpost, 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 tighten the clamp bolt to the recommended torque ("Fastener Torque Specifications" on page 61 or the manufacturer's instructions).

! 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. Bolts that are too tight can stretch and deform. Bolts that are too loose can move and fatigue. Either mistake can lead to a sudden failure of the bolt, causing you to lose control and fall.

Note: If your bicycle is equipped with a suspension seatpost, the suspension mechanism may require periodic service or maintenance. Ask your authorised dealer for recommended service intervals for your suspension seatpost.

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 saddle clamp or seatpost clamp can cause damage to the seatpost, or can cause you to lose control and fall. A correctly tightened saddle adjusting mechanism will allow no saddle movement in any direction. Periodically check to make sure that the saddle adjusting mechanism is properly tightened.

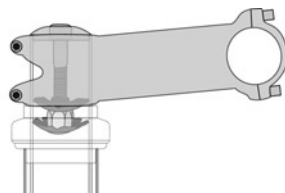
If, in spite of carefully adjusting the saddle height, tilt and fore-and-aft position, your saddle is still uncomfortable, you may need a different saddle design. Saddles, like people, come in many different shapes, sizes and resilience. Your authorised dealer can help you select a saddle which, when correctly adjusted for your body and riding style, will be comfortable.

Some people have claimed 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 even impotence. If your saddle causes you pain, numbness or other discomfort, listen to your body and stop riding until you see your authorised dealer about saddle adjustment or a different saddle.

Handlebar height and angle

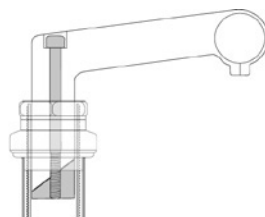
Your bike is equipped either with a “threadless” stem, which clamps on to the outside of the steerer tube, or with a “quill” stem, which clamps inside the steerer tube by way of an expanding binder bolt. If you aren’t absolutely sure which type of stem your bike has, ask your authorised dealer. If your bike has a “threadless” stem (fig. 3.5)

Fig 3.5



your authorised dealer may be able to change handlebar height by moving height adjustment spacers from below the stem to above the stem, or vice versa. Otherwise, you’ll have to get a stem of different length or rise. Consult your authorised dealer. Do not attempt to do this yourself, as it requires special knowledge. If your bike has a “quill” stem (fig. 3.6) you can ask your authorised dealer to adjust the handlebar height a bit by adjusting stem height. A quill stem has an etched or stamped mark on its shaft which designates the stem’s “Minimum Insertion” or “Maximum Extension”. This mark must not be visible above the headset.

Fig 3.6



! WARNING

A quill stem’s Minimum Insertion Mark must not be visible above the top of the headset. If the stem is extended beyond the Minimum Insertion Mark the stem may break or damage the fork’s steerer tube, which could cause you to lose control and fall.

! WARNING

On some bicycles, changing the stem or stem height can affect the tension of the front brake cable, locking the front brake or creating excess cable slack which can make the front brake inoperable. If the front brake pads move in towards the wheel rim or out away from the wheel rim when the stem or stem height is changed, the brakes must be correctly adjusted before you ride the bicycle.

! WARNING

Some bicycles are equipped with an adjustable angle stem. If your bicycle has an adjustable angle stem, ask your authorised dealer to show you how to adjust it. Do not attempt to make the adjustment yourself, as changing stem angle may also require adjustments to the bicycle’s controls.

! WARNING

Always tighten fasteners to the correct torque. Bolts that are too tight can stretch and deform. Bolts that are too loose can move and fatigue. Either mistake can lead to a sudden failure of the bolt, causing you to lose control and fall.

Your authorised dealer can also change the angle of the handlebar or bar end extensions.

! WARNING

An insufficiently tightened stem clamp bolt, handlebar clamp bolt or bar end extension clamping 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.

! WARNING

Be aware that adding aerodynamic extensions to handlebars will change the steering and braking response of the bicycle.

Control position adjustments

The angle of the brake and shift control levers and their position on the handlebars can be changed. Ask your authorised dealer to make the adjustments for you. If you choose to make your own control lever angle adjustment, be sure to re-tighten the clamp fasteners to the recommended torque (“Fastener Torque Specifications” on page 61 or the manufacturer’s instructions).

Brake reach

Many bikes have brake levers which can be adjusted for reach. If you have small hands or find it difficult to squeeze the brake levers, your authorised dealer can either adjust the reach or fit shorter reach brake levers.

WARNING

The shorter the brake lever reach, the more critical it is to have correctly adjusted brakes, so that full braking power can be applied within available brake lever travel. Brake lever travel insufficient to apply full braking power can result in loss of control, which may result in serious injury or death.

Section 4: Tech

It's important to your safety, performance and enjoyment to understand how things work on your bicycle. We urge you to ask your authorised dealer how to do the things described in this section before you attempt them yourself, and that you have your authorised dealer check your work before you ride the bike. If you have even the slightest doubt as to whether you understand something in this section of the Manual, talk to your authorised dealer. See also Appendix A, B and C.

Wheels

Bicycle wheels are designed to be removable for easier transportation and for repair of a tyre puncture. In most cases, the wheel axles are inserted into slots, called "dropouts" in the fork and frame, but some suspension mountain bikes use what is called a "thru axle" wheel mounting system.

If you have a mountain bike equipped with thru axle front or rear wheels, make sure that your authorised dealer has given

you the manufacturer's instructions, and follow those when installing or removing a thru axle wheel. If you don't know what a thru axle is, ask your authorised dealer. Wheels are secured in one of three ways:

1. A hollow axle with a shaft ("skewer") running through it which has an adjustable tension nut on one end and an over-centre cam on the other. (quick release system, fig. 4.1 & fig. 4.2)
2. A hollow axle with a shaft ("skewer") running through it which has a nut on one end and a fitting for a hex key, lock lever or other tightening device on the other. (through-bolt, fig. 4.3)
3. Hex nuts or hex key bolts which are threaded on to or into the hub axle. (bolt-on wheel, fig. 4.4) Your bicycle may be equipped with a different securing method for the front wheel than for the rear wheel. Discuss the wheel securing method for your bicycle with your authorised dealer.

Fig 4.1

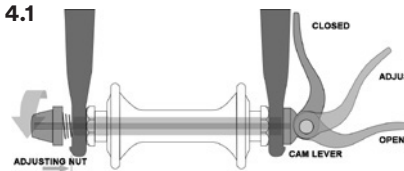


Fig 4.3



Fig 4.2

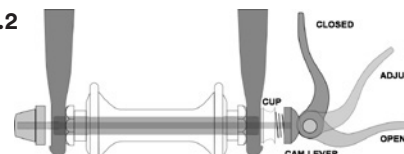
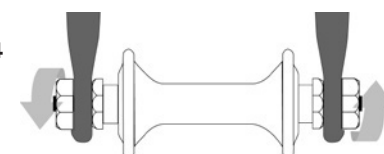


Fig 4.4



WARNING

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 that safely secures the wheel. Ask your authorised dealer to instruct you in correct wheel removal and installation, and ask him to give you any available manufacturer's instructions.

Riding with an improperly secured wheel can allow the wheel to wobble or fall off the bicycle, which can cause serious injury or death. Therefore, it is essential that you:

1. Ask your authorised dealer to help you make sure you know how to install and remove your wheels safely.
2. Understand and apply the correct technique for clamping your wheel in place.
3. Each time, before you ride the bike, check that the wheel is securely clamped. The clamping action of a correctly secured wheel must emboss the surfaces of the dropouts.

Front Wheel Secondary Retention Devices

Most bicycles have front forks which utilize a secondary wheel retention device to reduce the risk of the wheel disengaging from the fork if the wheel is incorrectly secured. Secondary retention devices are not a substitute for correctly securing your front wheel.

Secondary retention devices fall into two basic categories:

1. The clip-on type is a part which the manufacturer adds to the front wheel hub or front fork.
2. The integral type is molded, cast or machined into the outer faces of the front fork dropouts.

Ask your authorised dealer to explain the particular secondary retention device on your bike.

WARNING

Do not remove or disable the secondary retention device. As its name implies, it serves as a back-up for a critical adjustment. If the wheel is not secured correctly, the secondary retention device can reduce the risk of the wheel disengaging from the fork. Removing or disabling the secondary retention device may also void the warranty.

Secondary retention devices are not a substitute for correctly securing your wheel. Failure to properly secure the wheel can cause the wheel to wobble or disengage, which could cause you to lose control and fall, resulting in serious injury or death.

Wheels with quick release systems

There are currently two types of quick release wheel-retention mechanisms: the traditional quick release (fig. 4.1) and the second type of quick release (fig. 4.2). Both

use a quick release action to clamp the bike's wheel in place.

Adjusting the traditional quick release mechanism (fig. 4.1)

The wheel hub is clamped in place by the force of the quick release pushing against one dropout and pulling the tension adjusting nut, by way of the skewer, against the other dropout. The amount of clamping force is controlled by the tension adjusting nut. Turning the tension adjusting nut clockwise while keeping the quick release lever from rotating increases clamping force; turning it counter-clockwise while keeping the quick release lever from rotating reduces clamping force. Less than half a turn of the tension adjusting nut can make the difference between safe clamping force and unsafe clamping force.

WARNING

The full force of the quick release action is needed to clamp the wheel securely. 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 quick release wheel safely in the dropouts. See also the first WARNING in this Section on page 25.

Adjusting the quick release mechanism (fig. 4.2)

The quick release system on your front wheel will have been correctly adjusted for your bicycle by your authorised dealer. Ask your authorised dealer to check the adjustment every six months. Do not use this front wheel on any bicycle other than the one for which your authorised dealer adjusted it.

Removing and Installing wheels

WARNING

If your bike is equipped with a hub brake such as a rear coaster brake, front or rear drum, band or roller brake; or if it has an internal gear rear hub, do not attempt to remove the wheel. The removal and re-installation of most hub brakes and internal gear hubs requires special knowledge. Incorrect removal or assembly can result in brake or gear failure, which can cause you to lose control and fall.

CAUTION

If your bike has a disc brake, exercise care in touching the rotor or caliper. Disc rotors have sharp edges, and both rotor and caliper can get very hot during use. Removing a disc brake or rim brake front wheel

1. If your bike has rim brakes, disengage the brake's quick-release mechanism to increase the clearance between the tyre and the brake pads (See "Brakes" on page 30, fig. 4.6 through fig. 4.10).
2. If your bike has quick release front wheel retention, move the cam lever from the locked or CLOSED position to the OPEN position (fig. 4.1 & fig. 4.2). If your bike has through-bolt or bolt-on front wheel retention, loosen the fastener(s) a few turns counterclockwise using an appropriate wrench, lock key or the integral lever.
3. If your front fork has a clip-on type secondary retention device, disengage

it and go to step (4). If your front fork has an integral secondary retention device, and a traditional quick release system (fig. 4.1) loosen the tension adjusting nut enough to allow removing the wheel from the dropouts. If your front wheel uses a cam-and-cup system, (fig. 4.2) squeeze the cup and cam lever together while removing the wheel. No rotation of any part is necessary with the cam-and-cup system.

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



If your bike is equipped with a front disc brake, be careful not to damage the rotor, caliper or brake pads when re-inserting the rotor into the caliper. Never activate a disc brake's control lever unless the rotor is correctly inserted in the caliper. See also "Brakes" on page 30.

1. If your bike has quick release front wheel retention, move the cam lever so that it curves away from the wheel (fig. 4.2). This is the OPEN position. If your bike has through-bolt or bolt-on front wheel retention, go to the next step.

2. With the steering fork facing forward, insert the wheel between the fork blades so that the axle seats firmly at the top of the fork dropouts. The cam lever, if there is one, should be on rider's left side of the bicycle (fig. 4.1 & fig. 4.2). If your bike has a clip-on type secondary retention device, engage it.

3. If you have a traditional quick release

mechanism: holding the cam lever in the ADJUST position with your right hand, tighten the tension adjusting nut with your left hand until it is finger tight against the fork dropout (fig. 4.1). If you have a cam-and-cup system: the nut and cup (fig. 4.2) will have snapped into the recessed area of the fork dropouts and no adjustment should be required.

4. While pushing the wheel firmly to the top of the slots in the fork dropouts, and at the same time centring the wheel rim in the fork:

a) With a quick release system, move the cam lever upwards and swing it into the CLOSED position (fig. 4.1 & fig. 4.2). 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.

b) With a through-bolt or bolt-on system, tighten the fasteners to the torque specifications in "Fastener Torque Specifications" on page 61 or the hub manufacturer's instructions.

NOTE: If, on a traditional quick release system, the lever cannot be pushed all the way to a position parallel to the fork blade, return the lever to the OPEN position. Then turn the tension adjusting nut counter-clockwise one quarter turn and try tightening the lever again.

5. With a through-bolt or bolt-on system, tighten the fasteners to the torque specifications in "Fastener Torque Specifications" on page 61 or the hub manufacturer's instructions.

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Securely clamping the wheel with a quick release 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. See also the first WARNING in this Section on page 25.

6. If you disengaged the brake quick release mechanism before removing the wheel, as described above, re-engage it to restore correct brake pad-to-rim clearance.

7. Spin the wheel to make sure that it is centred in the frame and clears the brake pads; then squeeze the brake lever and make sure that the brakes are operating correctly.

Removing a disc brake or rim brake rear wheel

1. If you have a multi-speed bike with a derailleur gear system: shift the rear derailleur to high gear (the smallest, outermost rear sprocket). If you have an internal gear rear hub, consult your authorised dealer or the hub manufacturer's instructions before attempting to remove the rear wheel. If you have a single-speed bike with rim or disc brake, go to step (4) below.

2. If your bike has rim brakes, disengage the brake's quick-release mechanism to

increase the clearance between the wheel rim and the brake pads (see "Brakes" on page 30, fig. 4.6 through fig. 4.10).

3. On a derailleur gear system, pull the derailleur body back with your right hand.

4. With a quick release mechanism, move the quick-release lever to the OPEN position (fig. 4.2). With a throughbolt or bolt on mechanism, loosen the fastener(s) with an appropriate wrench, lock lever or integral lever; then push the wheel forward far enough to be able to remove the chain from the rear sprocket.

5. Lift the rear wheel off the ground a few inches and remove it from the rear dropouts.

Installing a disc brake or rim brake Rear Wheel



If your bike is equipped with a rear disc brake, be careful not to damage the rotor, caliper or brake pads when re-inserting the rotor into the caliper. Never activate a disc brake's control lever unless the rotor is correctly inserted in the caliper.

1. With a quick release system, move the cam lever to the OPEN position (see fig. 4.1 & fig. 4.2). The lever should be on the side of the wheel opposite the derailleur and freewheel sprockets.

2. On a derailleur bike, make sure that the rear derailleur is still in its outermost, high gear, position; then pull the derailleur body back with your right hand. Put the chain on top of the smallest freewheel sprocket.

3. On single-speed, remove the chain from the front sprocket, so that you have plenty of slack in the chain. Put the chain on the rear wheel sprocket.

4. Then, insert the wheel into the frame dropouts and pull it all the way in to the dropouts.

5. On a single speed or an internal gear hub, replace the chain on the chainring; pull the wheel back in the dropouts so that it is straight in the frame and the chain has about 6 to 12mm of up-and-down play (Fig 4.5)

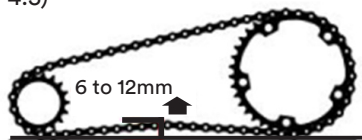


Fig 4.5

6. With a quick release system, move the cam lever upwards and swing it into the CLOSED position (fig. 4.1 & fig. 4.2). The lever should now be parallel to the seat stay or chain stay 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.

7. With a through-bolt or bolt-on system, tighten the fasteners to the torque specifications in “Fastener Torque Specifications” on page 61 or the hub manufacturer’s instructions.

NOTE: If, on a traditional quick release system, the lever cannot be pushed all the way to a position parallel to the seat stay or chain stay, return the 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 quick release retention device takes considerable force. If you can fully close the cam lever without wrapping your fingers around the seat stay or chain stay 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. See also the first WARNING in this Section on page 25.

8. If you disengaged the brake quick release mechanism before removing the wheel, as described above, re-engage it to restore correct brake pad-to-rim clearance.

9. Spin the wheel to make sure that it is centred in the frame and clears the brake pads; then squeeze the brake lever and make sure that the brakes are operating correctly.

Seatpost quick release clamp

Some bikes are equipped with a quick release seatpost binder. The seatpost quick release binder works exactly like the traditional wheel quick release fastener (“Wheels with quick release systems” on page 25). While a quick release binder looks like a long bolt with a lever on one end and a nut on the other, the binder uses an over-centre quick release to firmly clamp the seatpost (see fig. 4.1).

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WARNING

Riding with an improperly tightened seatpost can allow the saddle to turn or move and cause you to lose control and fall. Therefore:

1. Ask your authorised dealer to help you make sure you know how to correctly clamp your seatpost.

2. Understand and apply the correct technique for clamping your seatpost.

3. Before you ride the bike, first check that the seatpost is securely clamped.

Adjusting the seatpost quick release mechanism

The action of the quick release squeezes the seat collar around the seatpost to hold the seatpost securely in place. 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 increases clamping force; turning it counter-clockwise 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 and unsafe clamping force.

WARNING

The full force of the quick release is needed to clamp the seatpost securely. 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 the seatpost safely.

WARNING

If you can fully close the quick release lever without wrapping your fingers around the seatpost or a frame tube for leverage, and the lever does not leave a clear imprint in the palm of your hand, the tension is insufficient. Open the lever; turn the tension adjusting nut clockwise a quarter turn; then try again.

Brakes

There are three general types of bicycle brakes: rim brakes, which operate by squeezing the wheel rim between two brake pads; disc brakes, which operate by squeezing a hubmounted disc between two brake pads; and internal hub brakes. All three can be operated by way of a handlebar mounted lever. On some models of bicycle, the internal hub brake is operated by pedaling backwards. This is called a Coaster Brake.

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.

- ▶ 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 may result in serious injury or death.
- ▶ Some bicycle brakes, such as disc brakes (fig. 4.6) and linear pull brakes (fig. 4.7), are extremely powerful. Take extra care in becoming familiar with these brakes and exercise particular care when using them.
- ▶ Some bicycle brakes are equipped with a brake force modulator, a small, cylindrical device through which the brake control cable runs and which is designed to provide a more progressive application of braking force. A modulator makes the initial brake lever force more gentle, progressively increasing force until full force is achieved. If your bike is equipped with a brake force modulator, take extra care in becoming familiar with its performance characteristics. Some brake force modulators are adjustable. If you don't like the feel of your brakes, ask your authorised dealer about adjusting the brake force modulation.
- ▶ Disc brakes can get extremely hot with extended use. Be careful not to touch a disc brake until it has had plenty of time to cool.
- ▶ See the brake manufacturer's instructions for operation and care of your brakes, and for when brake pads must be replaced. If you do not have the manufacturer's instructions, see your authorised dealer or contact the brake manufacturer.
- ▶ If replacing worn or damaged parts, use only manufacturer approved genuine replacement parts.

Brake controls and features

It's very important to your safety that you learn and remember which brake lever controls which brake on your bike. Traditionally, the right brake lever controls the front brake and the left brake lever controls the rear brake; but, to make sure your bike's brakes are set up this way, 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. If your hands are too small to operate the levers comfortably, consult your authorised dealer before riding the bike. The lever reach may be adjustable; or you may need a different brake lever design.

Most rim brakes have some form of quick-release mechanism to allow the brake pads to clear the tyre when a wheel is removed or reinstalled. When the brake quick release is in the open position, the brakes are inoperative. Ask your authorised dealer to make sure that you understand the way the brake quick release works on your bike (see fig. 4.7 through fig. 4.9) and check each time to make sure both brakes work correctly before you get on the bike.

Fig 4.6



Fig 4.7

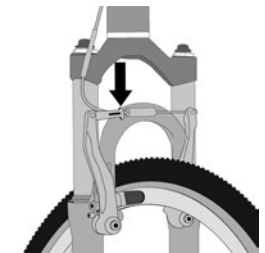


Fig 4.8

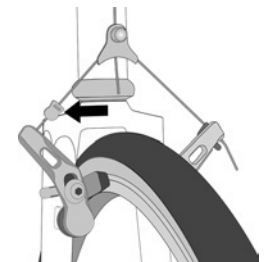
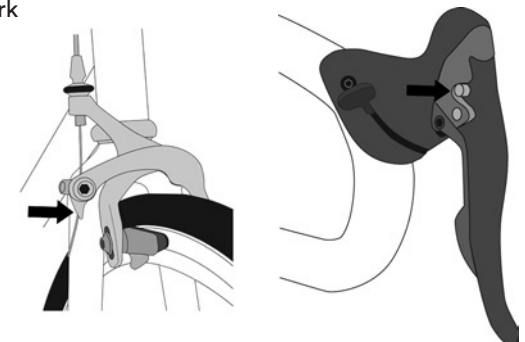


Fig 4.9

Fig 4.10



How brakes work

The braking action of a bicycle is a function of the friction between the braking surfaces. To make sure that you have maximum friction available, keep your wheel rims and brake pads or the disc rotor and caliper clean and free of dirt, lubricants, waxes or polishes.

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 tyre 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 flying over the handlebars).

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 on descents, because descents shift weight forward.

Two keys to effective speed control and safe stopping are controlling wheel lockup and weight transfer. This weight transfer is even more pronounced if your bike has a front suspension fork. Front suspension “dips” under braking, increasing the weight transfer (see also “Bicycle suspension” on page 37). Practice braking and weight transfer techniques where there is no traffic or other hazards and distractions.

Everything changes when you ride on loose surfaces or in wet weather. It will take longer to stop on loose surfaces or in wet weather. Tyre 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 reduces their ability to grip. The way to maintain control on loose or wet surfaces is to go more slowly.

Shifting gears

Your multi-speed bicycle will have a derailleur drivetrain (see “How a derailleur drivetrain works” on page 34), an internal gear hub drivetrain (see “How an internal gear hub drivetrain works” on page 35) or, in some special cases, a combination of the two.

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How a derailleur drivetrain works

If your bicycle has a derailleur drivetrain, the gear-changing mechanism will have:

- ▶ A rear cassette or freewheel sprocket cluster
- ▶ A rear derailleur
- ▶ Usually a front derailleur
- ▶ One or two shifters One, two or three front sprockets called chainrings
- ▶ A drive chain

Shifting Gears

There are several different types and styles of shifting controls: levers, twist grips, triggers, combination shift/brake controls and push-buttons. Ask your authorised dealer to explain the type of shifting controls that are on your bike, and to show you how they work.

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”, harder to pedal gear. What’s confusing is that what’s happening at the front derailleur is the opposite of what’s happening at the rear derailleur (for details, read the instructions on Shifting the Rear Derailleur and Shifting the Front Derailleur below). For example, you can select a gear which will make pedaling easier on a hill (make a downshift) in one of two ways: shift the chain down the gear “steps” to a smaller gear at the front, or up the gear “steps” to a larger gear at the rear. So, at the rear gear cluster, what is called a downshift looks like

an upshift. The way to keep things straight is to remember that shifting the chain in towards the centreline of the bike is for accelerating and climbing and is called a downshift. Moving the chain out or away from the centreline of the bike is for speed and is called an upshift.

Whether upshifting or downshifting, the bicycle derailleur system design requires that the drive chain be moving forward and be under at least some tension. A derailleur will shift only if you are pedaling forward.



Never move the shifter while pedaling backward, nor pedal backwards immediately after having moved the shifter. This could jam the chain and cause serious damage to the bicycle.

Shifting the Rear Derailleur

The rear derailleur is controlled by the right shifter.

The function of the rear derailleur is to move the drive chain from one gear sprocket to another. The smaller sprockets on the gear cluster produce higher gear ratios. Pedaling in the higher gears requires greater pedaling effort, but takes you a greater distance with each revolution of the pedal cranks. The larger sprockets produce lower gear ratios. Using them requires less pedaling effort, but takes you a shorter distance with each pedal crank revolution. Moving the chain from a smaller sprocket of the gear cluster to a larger sprocket results in a downshift. Moving the chain from a larger sprocket to a smaller sprocket results in an upshift. In order for the derailleur to move the chain from one

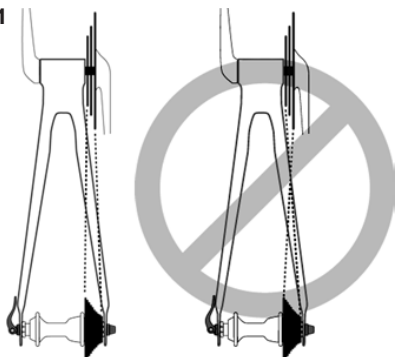
sprocket to another, the rider must be pedaling forward.

Shifting the Front Derailleur

The front derailleur, which is controlled by the left shifter, shifts the chain between the larger and smaller chainrings. Shifting the chain onto a smaller chainring makes pedaling easier (a downshift). Shifting to a larger chainring makes pedaling harder (an upshift).

Which gear should I be in?

Fig 4.11



The combination of largest rear and smallest front gears (fig. 4.11) is for the steepest hills. The smallest rear and largest front combination is for the greatest speed. It is not necessary to shift gears in sequence. Instead, 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 experiment with upshifting and downshifting to get a feel for the different gear combinations. At first, practice shifting where there are no obstacles, hazards or other traffic, until you’ve built up your confidence. 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 authorised dealer for help.



Never shift a derailleur onto the largest or the smallest sprocket if the derailleur is not shifting smoothly. The derailleur may be out of adjustment and the chain could jam, causing you to lose control and fall.

What if it won’t shift gears?

If moving the shift control one click repeatedly fails to result in a smooth shift to the next gear chances are that the mechanism is out of adjustment. Take the bike to your authorised dealer to have it adjusted.

How an internal gear hub drivetrain works

If your bicycle has an internal gear hub drivetrain, the gear changing mechanism will consist of:

- ▶ A 3, 5, 7, 8, 11 speed or possibly an infinitely variable internal gear hub
- ▶ One, or sometimes two shifters
- ▶ One or two control cables
- ▶ One front sprocket called a chainring
- ▶ A drive chain

Shifting internal gear hub gears

Shifting with an internal gear hub drivetrain is simply a matter of moving the shifter to the indicated position for the desired gear ratio. After you have moved the shifter to the gear position of your choice, ease the pressure on the pedals for an instant to allow the hub to complete the shift.

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Which gear should I be in?

The numerically lowest gear (1) is for the steepest hills. The numerically largest gear is for the greatest speed.

Shifting from an easier, “slower” gear (like 1) to a harder, “faster” gear (like 2 or 3) is called an upshift. Shifting from a harder, “faster” gear to an easier, “slower” gear is called a downshift. It is not necessary to shift gears in sequence. Instead, find the “starting gear” for the conditions — a gear which is hard enough for quick acceleration but easy enough to let you start from a stop without wobbling — and experiment with upshifting and downshifting to get a feel for the different gears. At first, practice shifting where there are no obstacles, hazards or other traffic, until you’ve built up your confidence. 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 authorised dealer for help.

What if it won’t shift gears?

If moving the shift control one click repeatedly fails to result in a smooth shift to the next gear chances are that the mechanism is out of adjustment. Take the bike to your authorised dealer to have it adjusted.

Pedals

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, and 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.

NOTE: Changing tyre size or pedal crank arm length affects toe overlap.



Toe Overlap could cause you to lose control and fall. Ask your authorised dealer to help you determine if the combination of frame size, crank arm length, pedal design and shoes you will use results in pedal overlap. Whether you have overlap or not, you must keep the inside pedal up and the outside pedal down when making sharp turns.

Some bicycles come equipped with pedals that have sharp and potentially dangerous surfaces. These surfaces are designed to add safety by increasing grip between the rider’s shoe and the pedal. If your bicycle has this type of high-performance pedal, you must take extra care to avoid serious injury from the pedals’ sharp surfaces. Based on your riding style or skill level, you may prefer a less aggressive pedal design, or chose to ride with shin pads. Your authorised dealer can show you a number of options and make suitable recommendations.

Toeclips and straps are a means to keep feet correctly positioned and engaged with the pedals. The toeclip positions the ball of the foot over the pedal spindle, which gives maximum pedaling power. The toe strap, when tightened, keeps the foot engaged throughout the rotation cycle of the pedal. While toeclips and straps give some benefit with any kind of shoe, they work most effectively with cycling shoes designed for use with toeclips.

Your authorised dealer can explain how toeclips and straps work. Shoes with deep treaded soles or welts which might make it more difficult for you to insert or remove your foot should not be used with toeclips and straps.

! WARNING

Getting into and out of pedals with toeclips and straps requires skill which can only be acquired with practice. Until it becomes a reflex action, the technique requires concentration which can distract your attention and cause you to lose control and fall. Practice the use of toeclips and straps where there are no obstacles, hazards or traffic. Keep the straps loose, and don't tighten them until your technique and confidence in getting in and out of the pedals warrants it. Never ride in traffic with your toe straps tight.

Clipless pedals are another means to keep feet securely in the correct position for maximum pedaling efficiency. They have a plate, called a "cleat," on the sole of the shoe, which clicks into a mating spring-loaded fixture on the pedal. They only engage or disengage with a very specific motion which must be practiced until it becomes instinctive. Clipless pedals require shoes and cleats which are compatible with the make and model pedal being used.

Many clipless pedals are designed to allow the rider to adjust the amount of force needed to engage or disengage the foot. Follow the pedal manufacturer's instructions, or ask your authorised dealer to show you how to make this adjustment. Use the easiest setting until engaging and

disengaging becomes a reflex action, but always make sure that there is sufficient tension to prevent unintended release of your foot from the pedal.

! WARNING

Clipless pedals are intended for use with shoes specifically made to fit them and are designed to firmly keep the foot engaged with the pedal. Do not use shoes which do not engage the pedals correctly.

Practice is required to learn to engage and disengage the foot safely. Until engaging and disengaging the foot becomes a reflex action, the technique requires concentration which can distract your attention and cause you to lose control and fall. Practice engaging and disengaging clipless pedals in a place where there are no obstacles, hazards or traffic; and be sure to follow the pedal manufacturer's setup and service instructions. If you do not have the manufacturer's instructions, see your authorised dealer or contact the manufacturer.

Bicycle suspension

Many bicycles are equipped with suspension systems. There are many different types of suspension systems — too many to deal with individually in this Manual. If your bicycle has a suspension system of any kind, be sure to read and follow the suspension manufacturer's setup and service instructions. If you do not have the manufacturer's instructions, see your authorised dealer or contact the manufacturer.

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! WARNING

Failure to maintain, check and properly adjust the suspension system may result in suspension malfunction, which may cause you to lose control and fall.

If your bike has suspension, the increased speed you may develop also increases your risk of injury. For example, when braking, the front of a suspended bike dips. You could lose control and fall if you do not have experience with this system. Learn to handle your suspension system safely. See also "Brakes" on page 30.

! WARNING

Changing suspension adjustment can change the handling and braking characteristics of your bicycle. Never change suspension adjustment unless you are thoroughly familiar with the suspension system manufacturer's instructions and recommendations, and always check for changes in the handling and braking characteristics of the bicycle after a suspension adjustment by taking a careful test ride in a hazard-free area.

Suspension can increase control and comfort by allowing the wheels to better

follow the terrain. This enhanced capability may allow you to ride faster; but you must not confuse the enhanced capabilities of the bicycle with your own capabilities as a rider. Increasing your skill will take time and practice. Proceed carefully until you have learned to handle the full capabilities of your bike.

! WARNING

Not all bicycles can be safely retrofitted with some types of suspension systems. Before retrofitting a bicycle with any suspension, check with the bicycle's manufacturer to make sure that what you want to do is compatible with the bicycle's design. Failing to do so can result in catastrophic frame failure.

For optimal durability and functioning, check the specific notices of each manufacturer delivered with this manual in order to correctly carry out the settings and maintenance of components. Also ensure you adapt the settings to your size and your type of riding.

Fork lockout system

Some forks are equipped with a system to lockout the suspension. Each brand has

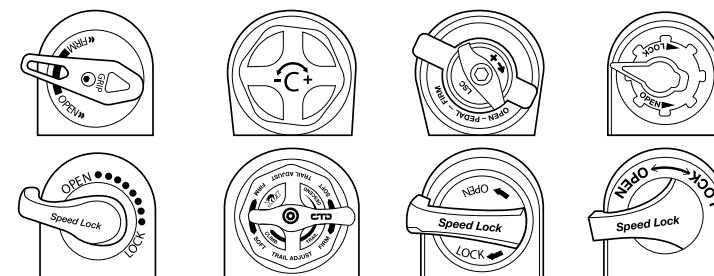


Fig 4.12

Different systems of fork lockouts

its own type of lockout but the principle remains very similar from one brand to another. When the system is locked, the fork movement is blocked in order to guarantee better pedaling efficiency. However, the fork is not 100% locked in order not to damage the suspension if the fork stays locked out on rough ground. The levers are on the right leg of the fork. The following figure presents different models of lockout systems.

! WARNING

A badly carried out setting can make you lose control of your bike or damage components. Ask your authorised dealer for advice. They have the necessary experience to help you find the correct settings. You can also refer to the manufacturers notice.

To unlock a suspension fork turn the locking lever in the direction indicated by the arrow with the description "OPEN" until it stops. (See the example on Figure 4.13).

To lock a suspension fork, turn the locking lever in the direction indicated by the arrow with the description "lock" or "firm" until it stops. (See the example on Figure 4.14).

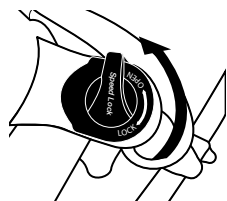


Fig 4.13

Locking lever in open position

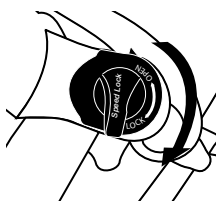


Fig 4.14

Locking lever in close position

! WARNING

Do not forget to unlock the system when the terrain becomes rougher in order not to damage the fork!

Shock lockout system

As with telescopic forks, rear shocks are equipped with a lockout system for suspension. When the system is locked, the movements of the shock are locked in order to guarantee better pedaling efficiency. However, the shock is not 100% locked in order not to damage the suspension if the shock stays locked out on rough ground.

To lock or unlock your shock you simply need to follow these steps:

- 1) Find the blue lever on the shock. You will see a padlock logo in open or closed position on the lever.
- 2) If the padlock is open, it means that your shock is in open position (Figure 4.15)
- 3) If the padlock is closed, it means that your shock is locked out (Figure 4.15)

To move from one position to the other, you simply need to move the blue lever with your index finger in the direction indicated by the arrows in Figure 4.15.

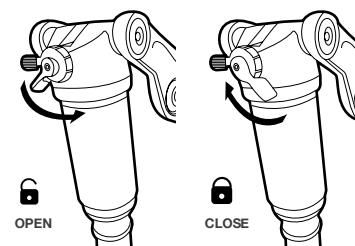
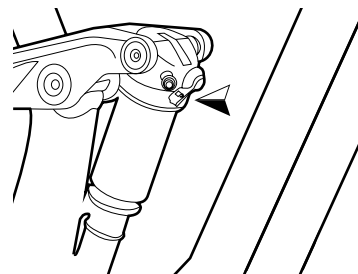


Fig 4.15 Open position (left) and closed (right) of the shock

! WARNING

The pressure exerted by your finger to move the lever should be very light; you do not need to force the mechanism. In case of a problem, contact your authorised dealer. You can also refer to the manufacturer's notice.

Shock lockout system

In order to fully benefit from your bikes potential, the suspension should be set up for your weight. This is a technical procedure that can be carried out by your authorised dealer if you do not have the necessary knowledge or material.

This setting is commonly called "SAG", which corresponds to the compression of the suspension under the weight of the cyclist. The level of SAG varies according

to the type of fork and the type of usage of the bike. The SAG is a value expressed as a percentage, and defines the length of displacement of the stanchions in relation to the fork or shock body, caused by your body weight when you are seated on the bike.

Example:

My fork has 160 mm of travel (which means the stanchions are 160mm long). The recommended SAG is 25%. To convert this SAG value into millimeters you just need to use the following formula:

$$\text{SAG [in mm]} = \text{SAG [en \%]} \times \text{Travel [in mm]}$$

Which in this example case gives us: $\text{SAG [in mm]} = 25\% (0.25) \times 160 \text{ mm} = 40 \text{ mm}$

So, my body weight pushes the stanchions into the legs by 40 mm

The SAG is calibrated by setting the pre-stress of the shock or the air pressure in the pneumatic cartridge depending on the type of fork. To set up fork SAG carry out the following steps:

For Coil spring with oil damping

1. Sit on the bike in a normal position and wearing your usual riding kit (helmet, bag and accessories...). You can lean against a wall in order to avoid any abrupt movements on the bike.

2. Step off your bike gently to avoid a harsh movement and measure the "SAG".

A SAG that is too weak indicates that the pre-stress of the adjustment lever towards the «-». Inversely, a too high level of SAG indicates that the spring's pre-stress is too weak, and you should therefore turn the adjustment lever towards «+».

Repeat these steps until you find the right level.

Other settings can be carried out so you benefit as much as possible from your suspension system. Refer to the dedicated notice or to your authorised dealer.

If your fork is not equipped with a rubber O-ring that you can use to see the SAG position, you can place a plastic zip tie on the fork stanchion which will carry out the same function.

For suspension models with Air/Oil cartridge system

Before starting, ensure you have a high pressure pump and your usual riding gear.

1. Place the rubber O-ring against the fork leg.

2. Sit on the bike in a normal position and wearing your usual riding kit (helmet, bag and accessories...). You can lean against a wall in order to avoid any abrupt movements on the bike.

3. Step off your bike gently to avoid a harsh movement and measure the "SAG" (Figure 4.17). A SAG that is too weak indicates that there is too much pressure in your fork. You should therefore take out air from your suspension. Inversely, a too high SAG indicates that there is not enough, you

should therefore, add air. To do this:

4. Unscrew the valve cap to access the fork valve that enables you to adjust the air pressure as in the following figure:

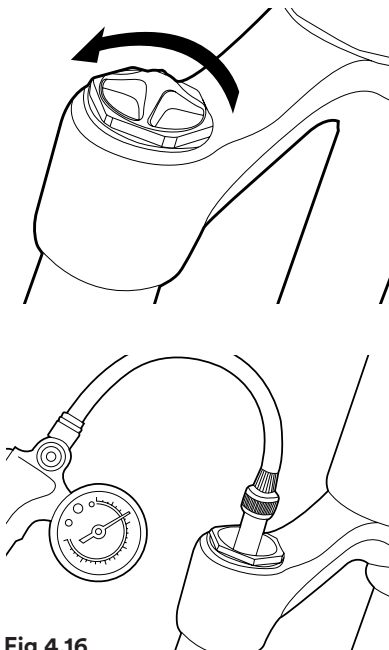


Fig 4.16

5. Using a high pressure pump, adjust the fork's air pressure in order to get the desired SAG as in the figure above. Be careful to not pass the maximum air pressure that your fork can handle! This value can be found in the manufacturer's notice.

6. Sit on the bike as described previously and check the SAG. Repeat these steps until you find the right level.

Other settings can be carried out so you benefit as much as possible from your suspension system. Refer to the dedicated notice or go to your authorised dealer.

If your fork is not equipped with a rubber O-ring that you can use to see the SAG position, you can place a plastic zip tie on the fork stanchion which will carry out the same function.

Setting the pre-tensioning of the rear shock (SAG)

Before starting, ensure you have a high pressure pump and your usual riding gear.

The process to set the SAG on your shock is very similar to that of your fork. You simply need to follow these steps:

- ▶ Place the rubber O-ring against the shock's body.
- ▶ Sit on the bike in a normal position and wearing your usual riding kit (helmet, bag and accessories...). You can lean against a wall in order to avoid any brusque movements on the bike.
- ▶ Step off your bike gently to avoid a harsh movement.

Your Sinch is equipped either with a sticker indicating the level of SAG with a red sliding scale. The ideal SAG has been reached when the O-ring is aligned with the red scale as in Figure 4.17. If the O-ring has gone further than this mark your shock needs more air. Inversely, if the ring has not reached the mark, there is too much air in your shock.

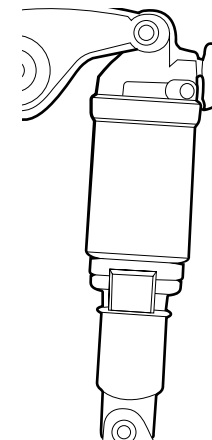


Fig 4.17 SAG Adjuster

To adjust the level of air in your shock:

- ▶ Unscrew the valve cap to access the shock's valve that enables you to adjust the air pressure (Figure 4.18)
- ▶ Using a high pressure pump, adjust the shock's air pressure in order to attain the desired level of SAG. Be careful to not go over the maximum air pressure level that your shock can cope with!

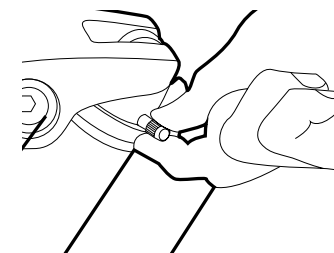


Fig 4.18 Removing the valve cap

Setting the rebound on your fork and on your shock

Shocks, pneumatic forks and some hydraulic forks are equipped with a dial that enables easy adjustment of the rebound level. On the shock, this dial is situated in the same position as the lockout lever (Figure 4.19). On the forks, this dial is usually placed under the right fork leg and can be found thanks to the sticker marked “rebound” (Figure 4.19). This is usually in the color red.

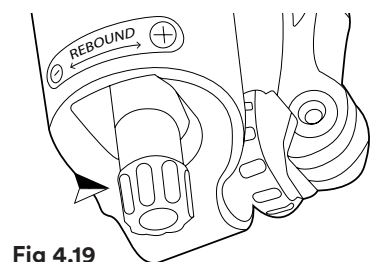
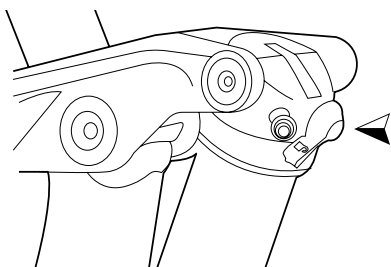


Fig 4.19

The rebound of your suspension controls the speed at which the stroke returns to neutral after a shock. The perfect setting is therefore not always easy to find and can depend on several different factors: your riding ability, the terrain on which you are riding, as well as your riding style. Don't hesitate to go to your local authorised dealer to help you set this up.

NOTE : This setting should be carried out after you have adjusted your SAG (see preceding paragraphs).

If you would like your suspension to be more lively (to be closer to that of a spring), you should turn the dial in the direction that is indicated with a “+”. You should be able to feel that your suspension is more reactive and comes back quickly to its initial position.

Conversely, if you would like your suspension to be less lively, then you should turn the dial in the direction that is indicated with a “-”.

NOTE: The images used may have a different signification depending on the brand. Do not hesitate to consult the notice provided by the manufacturer of your fork.

Here is a little more advice to help you set up your fork:

- ▶ The symptoms of a too slow rebound: during a passage of numerous big shocks one after the other, as in a rocky descent or steps, your suspension will push down without having the time to come back to its original position. You will need to increase the rebound of your suspension.
- ▶ The symptoms of a too fast rebound: the behavior of your suspension will resemble that of a spring, your bike will lose contact with the ground during a rough part of trail. Your bike will lose grip and therefore will under perform. You will need to decrease the rebound of your suspension.

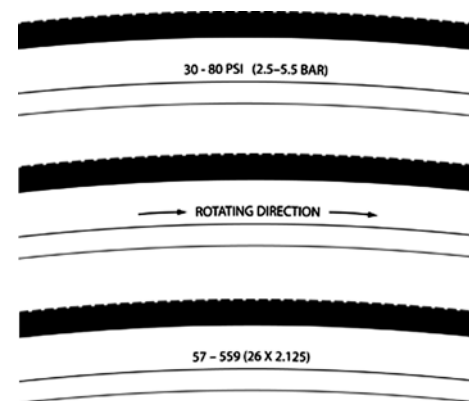
Tyres and tubes

Tyres

Bicycle tyres are available in many designs and specifications, ranging from general-purpose designs to tyres designed to perform best under very specific weather or terrain conditions. If, once you've gained experience with your new bike, you feel that a different tyre might better suit your riding needs, your authorised dealer can help you select the most appropriate design.

The size, pressure rating, and on some high-performance tyres the specific recommended use, are marked on the sidewall of the tyre (see fig. 4.2). The part of this information which is most important to you is Tyre Pressure.

Fig 4.2



WARNING

Never inflate a tyre beyond the maximum pressure marked on the tyre's sidewall. Exceeding the recommended maximum pressure may blow the tyre off the rim, which could cause damage to the bike and injury to the rider and bystanders.

The best and safest way to inflate a bicycle tyre to the correct pressure is with a bicycle pump which has a built-in pressure gauge.



WARNING

There is a safety risk in using gas station air hoses or other air compressors. They are not made for bicycle tyres. They move a large volume of air very rapidly, and will raise the pressure in your tyre very rapidly, which could cause the tube to explode. fig. 4.2

Tyre pressure is given either as maximum pressure or as a pressure range. How a tyre performs under different terrain or weather conditions depends largely on tyre pressure. Inflating the tyre 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.

Tyre pressure that is too low for your weight and the riding conditions can cause a puncture of the tube by allowing the tyre to deform sufficiently to pinch the inner tube between the rim and the riding surface.



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

Ask your authorised dealer to recommend the best tyre pressure for the kind of riding you will most often do, and have them inflate your tyres to that pressure. Then, check inflation as described in “Mechanical safety check” on page 4 so you’ll know how correctly inflated tyres should look and feel when you don’t have access to a gauge. Some tyres may need to be brought up to pressure every week or two, so it is important to check your tyre pressures before every ride. Some special high-performance tyres have unidirectional treads: their tread pattern is designed to work better in one direction than in the other. The sidewall marking of a unidirectional tyre will have an arrow showing the correct rotation direction. If your bike has unidirectional tyres, be sure that they are mounted to rotate in the correct direction.

To convert tyre pressure from pounds-force per square inch (PSI) into Kilopascals (kPa) use the following conversion chart:

P.S.I.	kPa	P.S.I.	kPa
10	68.9	70	482.6
20	137.9	80	551.6
30	206.8	90	620.5
40	275.8	100	689.5
50	344.7	110	758.4
60	413.7	120	827.4

Tyre Valves

There are primarily two kinds of bicycle tube valves: The Schrader Valve and the Presta Valve. The bicycle pump you use must have the fitting appropriate to the valve stems on your bicycle. The Schrader valve (fig. 4.21) is like the valve on a car tyre. To inflate a Schrader valve tube, remove the valve cap and clamp the pump fitting onto the end of the valve stem. To let air out of a Schrader valve, depress the pin in the end of the valve stem with the end of a key or other appropriate object.

Fig 4.21

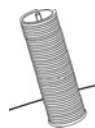


Fig 4.22



The Presta valve (fig. 4.22) has a narrower diameter and is only found on bicycle tyres. To inflate a Presta valve tube using a Presta headed bicycle pump, remove the valve cap; unscrew (counter-clockwise) the valve stem lock nut; and push down on the valve stem to free it up. Then push the pump head on to the valve head, and inflate. To inflate a Presta valve with a Schrader 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 Schrader 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.

Section 5 Electric Bikes

Electric bike components

Motors

Electric bicycles can be built with various types of motors, which differ in strength, efficiency, rotational speed, mounting location, and other factors. Electric motors are generally mounted on bicycles in one of 3 locations: the front wheel, the rear wheel, or centrally around the bottom bracket.

Motor power

Electric bike motors are generally classified by wattage and torque. Watts are a measurement of the capacity of the motor to do work. A motor that is consuming more watts feels more powerful and usually reaches higher speeds, but drains the battery faster. Torque is measured in Newton-meters and is a measurement of the rotating force produced by the motor. This is most felt when starting from a standstill or climbing a hill.

Does it charge the battery when I pedal?

Generally, no. Like electric cars, some electric bikes are able to push a small amount of power back into the battery as the wheel spins. This is called regeneration. When a motor is regenerating power, its drag increases significantly, slowing the bike down. For this reason, “regen” mode is usually triggered when the rider depresses the bike’s brake lever.

Only direct drive hub motors can be used to regenerate power because they are always engaged (the coils inside the motor are always moving). Geared hub motors freewheel (their coils remain stationary when not powered), so they cannot generate power. Centre drive motors cannot generate power for the same reason: the spinning wheel is mechanically disengaged from the electrical system except while the motor is running.

Pedal-assist sensors

Most electric bikes use pedal assist sensors to naturally combine the motor’s effort with the rider’s. The most common sensors electronically measure pedal crank rotation (cadence), pedal pressure (torque), or wheel speed. Many bikes make use of all three types together.

Battery capacity gauges

Most electric bikes have a gauge that indicates remaining battery charge. The gauge may be either on the battery itself or on an LCD display near the handlebars, or elsewhere.

Battery care & safety



WARNING

Failure to properly use, charge, and store your battery as instructed will void the warranty and may cause a hazardous situation. Before using your battery for the first time, read this section of the manual in its entirety.

Proper maintenance and care of batteries will maximize their lifespan and capacity.

Your electric bicycle uses a Li-Ion (lithium-ion) battery. Various types of lithium-ion batteries include LFP (Lithium Iron Phosphate), LMO (Lithium Manganese Oxide), and others. Lithium-ion is a very userfriendly type of battery when cared for properly. Even with proper care, however, rechargeable batteries do not last forever. Every time the battery is discharged and subsequently recharged, its relative capacity decreases by a small percentage. You can maximize the life of your battery by following the instructions in this guide.

What to do when you receive your new battery

- ▶ Batteries are not shipped with a full charge. You should charge your battery for 4-6 hours as soon as possible after you receive it.

General use and FAQ

- ▶ Most electric bikes are equipped with a five-minute sleep function. If no activity is detected after five minutes, the bike will go into “stasis” mode to conserve battery power. Simply cycle the bike off then on

again to re-activate the battery.

- ▶ The rated output capacity of a battery is measured at 25°C. Any variation in this temperature will alter the performance of the battery. High temperatures especially reduce overall battery life & run time.

Do I need to “break-in” my battery?

No. Although battery break-in may be necessary with some products, our battery packs go through the break-in process before they leave the manufacturer.

Is it normal that the battery gets warm when recharging?

Yes, it is normal that the battery will become warm to the touch during the recharging process. This is because of the pack's internal resistance and losses in energy conversion efficiency from electric energy to chemical energy.

How long will my battery last before needing replacement?

Average battery life depends on use and conditions. Even with proper care, rechargeable batteries do not last forever. Conservatively, a Li-Ion battery will last about 500–750 cycles. A partial charge/discharge counts fractionally against those numbers; running the battery down halfway then recharging it completely uses up one half of a charge cycle. “End of useful life” refers to the point at which a battery can no longer supply 70% of its original rated capacity in ampere-hours. After this point, the aging process will accelerate and the battery will need to be replaced.

Does my battery have a “memory”?

No, Li-Ion batteries do not have any memory. Partial discharge/charge cycles will not harm the battery's capacity or performance. It is OK to charge the battery as often as is convenient.

Charging

- ▶ Be sure to read any documentation included with the battery charger, or printed on the charger itself.
- ▶ Improper use of the battery charger can cause a fire resulting in severe injury or death, and property damage.
- ▶ After a ride, fully recharge your battery as soon as it has cooled to room temperature. A lithium-ion battery left in a discharged condition will deteriorate much faster than a fully charged battery.
- ▶ Do not block the fan vent on the charger while charging the battery. This can cause the charger to overheat.
- ▶ The battery charger supplied with this battery is for INDOOR use only.
- ▶ Avoid any contact with water or other fluids while charging the battery. If the battery, charger or any connections become wet, immediately unplug the charger and thoroughly dry all components prior to charging the battery.
- ▶ Use only the battery charger supplied with this battery. If you use any other battery charger, you will void the

warranty, you may damage the battery, and you could cause a fire resulting in severe injury or death, and property damage.

- ▶ Never charge a battery continuously for longer than 12 hours.
- ▶ Charge your battery during the day and only in rooms which have a smoke or a fire detector; but not in your bedroom. During the charging process, place the battery on a non flammable surface such as metal, ceramic, or glass.

Storage

When storing your battery for a long period of time (longer than two months):

- ▶ Remove the battery from the bike.
- ▶ Lithium-ion batteries are best stored at a 40–60% charge level. During long term storage, recharge your battery to 40–60% every 90 days. Determine charge level using either the built-in charge indicator on the battery pack, or the battery gauge on the bike. Batteries slowly self discharge when left unused for a long period of time; if the battery cells are allowed to reach a critically low voltage, their lifespan and capacity will be permanently reduced.
- ▶ Always disconnect your charger from the wall outlet and battery before storing the battery.
- ▶ Avoid storing your battery in extreme temperatures, whether hot or cold.

- ▶ Batteries are best kept in a cool, dry place. Do not allow your battery to accumulate condensation, as this could cause corrosion or a shortcircuit.
- ▶ The recommended storage temperature for Li-Ion batteries is between 0–25°C.

Transport

- ▶ Lithium-ion batteries are subject to many regulations, and are often considered dangerous material by carriers. Be sure to check for relevant laws, and ask the carrier for approval prior to shipping a lithium-ion battery, or transporting it by air.

Disposal

- ▶ Be friendly to the environment! Be sure to recycle your old batteries at a local battery-recycling centre. Do not throw them in the Rubbish!

Safety

- ▶ Use only the battery provided with your bicycle. Even if it is physically possible to connect another type of battery, it is dangerous and potentially damaging to do so.
- ▶ **DO NOT** use this battery with any other vehicle or appliance. Use of this battery with any other product will void the warranty, and may create a hazardous condition that could cause a fire resulting in severe injury or death, and property damage.
- ▶ Never disassemble the battery or open the battery case. There is a risk of electric shock and damage to the

battery.

- ▶ **Never short circuit the discharge terminals of the battery. A short circuit will damage the battery and could cause a fire resulting in severe injury or death, and property damage. When handling the battery outside the bicycle, be aware of conductive materials that may short the battery terminals, such as coins, nails, etc.**
- ▶ **Never crush or puncture the battery. A punctured or crushed battery could catch fire or explode, which could lead to serious injury or death.**
- ▶ **Protect the battery from water or other moisture. If the battery becomes wet from rain during use, dry it as soon as possible. Remove the battery from the electric bicycle before washing the bicycle. Clean the battery with a dry or slightly moist rag; do not submerge or spray with pressurized water.**
- ▶ **Keep the battery away from excessive heat 40°C or higher and/or open flames. Avoid long term exposure to direct rays from the sun.**
- ▶ **Protect the battery from materials that may contaminate the charge port or the output port, such as dirt and sand; the ports may be difficult or impossible to clean out.**
- ▶ **To avoid damage to the battery, never subject it to intense physical shock or severe vibration.**



CAUTION

Riding an electric bike

Safety



Because electric bikes are faster and heavier than normal bicycles, they require extra caution and care while riding. Failure to heed the following safety instructions could lead to a crash, injury, or death.

- ▶ Before your first ride, familiarise yourself with the model-specific operation instructions included with your bike.
- ▶ Before traveling on streets or around others, practice riding in a safe area away from pedestrians and traffic (such as a driveway or empty parking lot).
- ▶ Always use the lowest assist setting until you are comfortable with the bike and feel confident controlling the electric assist. See the specific operation instructions included with your bike for more information.
- ▶ When mounting your bike, make sure not to step on the pedals until you are sitting on the saddle and gripping the handlebars tightly. If you apply pressure to the pedals, or move them, the motor assistance might switch on suddenly and result in an uncontrolled start of your bike.
- ▶ Always wear a helmet, closed-toe shoes, and eye protection when riding.
- ▶ Never ride at a speed outside your comfort zone, or that you feel may be

unsafe for the given conditions.

- ▶ Keep your hands on the brake levers, and remember that they will always slow or stop the bike if pulled.
- ▶ Heavy electric bikes take longer to slow down; leave extra space for stopping safely.
- ▶ Electric bikes are heavier than normal bicycles. For this reason parking, pushing, lifting and carrying the bike is more difficult. Bear this in mind when loading your bike into a car and unloading it, or when mounting it on a bicycle carrier system.
- ▶ Remember that all the information in this manual referring to bicycle safety also applies to your electric bike.



Make no modifications to the bike's electrical system that are not explicitly approved by the manufacturer.

Range

Many factors affect the range that you will experience with the bicycle. These include:

- ▶ Battery state-of-charge.
- ▶ Mode setting.
- ▶ Tyre inflation pressure.
- ▶ Adjustment of the wheel bearings and brakes (tight bearings or a dragging brake shoe will adversely affect range).
- ▶ Rider weight (it takes more energy to accelerate a heavier person).
- ▶ The speed at which you travel, and local wind conditions (air resistance increases exponentially with speed).
- ▶ Terrain (road surface and hills; traveling on a soft surface, such as dirt or gravel, or climbing a hill uses energy faster).
- ▶ Lots of starts and stops (full power from a standing start draws the most amperage from the battery).

How to maximize your range

- ▶ Fully charge your battery before each ride. Enjoy the health benefits available from cycling. Every watt of power that you provide is one watt less that the battery has to provide. Make your bicycle a true human/electric hybrid!
- ▶ Check your tyre pressure regularly and inflate the tyres to the maximum pressure printed on the tyre sidewall.

- ▶ Have your bicycle serviced periodically to ensure that the bearings turn freely and the brakes do not rub the rims (or rotors, for a disc brake) when they are not applied.
- ▶ Minimize the weight that you carry. Ride at slower speeds.
- ▶ Accelerate gently. Assist the system by pedaling as you accelerate to your cruising speed.

As your battery ages, it will gradually lose capacity. With proper care and maintenance, your Li-ion battery will retain up to 70% of its capacity for at least 500 discharge/recharge cycles. As capacity diminishes, you will notice a gradual drop-off in maximum range capability. When range falls to an unacceptable level, contact your authorised dealer for information regarding purchasing a replacement battery.

Hills

A hilly terrain will reduce the distance your fully charged battery will assist you.

Weather conditions

Your electric bike is built with components that are sealed against dust and water, and can safely operate in most weather conditions. To ensure the longest life of your components, avoid submerging the parts in water.



To avoid risk of electric shock and property damage, never submerge any of the bike's electrical components in a water.



Electric bikes are faster and heavier than normal bikes. When riding in wet weather, you should use extra caution. You are more likely to fall from a wet road surface when traveling at high speed. Heavy electric bikes also take longer to slow down, and the required stopping distance in wet weather is even greater; be sure to leave ample room for stopping, and brake gently and evenly to avoid falling.

Riding an off-road electric bicycle

See “Off-road safety” on page 9

Riding a centre-drive bike Operation

A centre drive system outputs power through the bike's normal drivetrain, the rider needs to be more active in controlling motor output than on a bike with a hub motor. This is done by shifting the bicycle's gears.

Just like on a car with a manual transmission, the rider needs to cycle through first gear, second gear, third gear, and so on, until the desired speed is reached. Each gear shift up increases speed but reduces torque and acceleration.

Unlike a car, though, the gear selection is not critical. You can just as easily start pedaling with the bike in 6th gear, but for the best acceleration and performance it's a good idea to start in a low gear and shift up as you gain speed.

Hills

If your objective is not to reach maximum speed but to efficiently ride up a hill, you should consider that the system will give you more torque when in a lower gear. Shift down when you encounter a steep hill; the motor will be put under less strain, and your battery's range will increase.

Extending the life of your drivetrain

A centre drive motor can put extra stress on drivetrain components such as the chain, cassette, derailleur, and derailleur hanger if not ridden with care. The best way to avoid excess wear on the drivetrain is to avoid shifting under load.

Shifting under load means to shift the derailleur while the motor or rider is pulling hard on the chain. The extra chain tension keeps the derailleur from shifting effectively and can cause damage to the drivetrain.

To shift properly, make sure you ease up just before and just after you shift. Let the chain drop into place fully before you start pedaling again.

Shifting under load can cause the chain or other drivetrain components to break suddenly, leading to a crash.

Electric bike care

This section contains instructions that must be followed to avoid damage to the bike or electrical components.

Like any bicycle, you should take care of your electric bike to extend its life and keep it operating smoothly. In addition to following the instructions in “Service” on page 54, mind the following instructions for keeping your electric bike like new.

- Maintain your batteries as described in “Battery care & safety” on page 47. This

is especially important when storing batteries unused for long periods of time.

- Periodically inspect your bike’s wiring and electrical connectors for damage. Frayed or heatdamaged wires, loose plugs, or bad connections could eventually cause damage to the system.
- Store your bike indoors. A bike left outside in the weather will deteriorate very quickly. Never cover a stored bike with plastic as condensation buildup could cause damage to electrical components. Battery packs especially should be kept in a temperature controlled, dry environment.
- Review all component manuals and exercise caution before applying any chemicals, paint, or cleaning agents to the electrical components of the bike.

Electric bike service

If you have any questions, issues, or concerns, please contact your local authorised dealer.

Section 6: Service



WARNING

Technological advances have made bicycles and bicycle components more complex, and the pace of innovation is increasing. It is impossible for this manual to provide all the information required to properly repair and/or maintain your bicycle. In order to help minimize the chances of an accident and possible injury, it is critical that you have any repair or maintenance which is not specifically described in this manual performed by your authorised dealer. Equally important is that your individual maintenance requirements will be determined by everything from your riding style to geographic location. Consult your authorised dealer for help in determining your maintenance requirements.



WARNING

Many bicycle service and repair tasks require special knowledge and tools. Do not begin any adjustments or service on your bicycle until you have learned from your authorised dealer 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.



WARNING

Before performing ANY service, inspection, or maintenance on your electric bicycle, you should first remove

the battery. Failure to remove the battery could lead to the bicycle turning on unexpectedly, causing serious damage or injury.

If you have to perform maintenance that requires the battery to be installed, you must be sure that even if the bicycle wheel, chain, or other drivetrain components begin moving unexpectedly, they will not be in a position to cause injury or damage.

If you want to learn to do major service and repair work on your bike:

1. Ask your authorised dealer for copies of the manufacturer’s installation and service instructions for the components on your bike, or contact the component manufacturer.
2. Ask your authorised dealer to recommend a book on bicycle repair.
3. Ask your authorised dealer about the availability of bicycle repair courses in your area.

We recommend that you ask your authorised dealer to check the quality of your work the first time you work on something and before you ride the bike, just to make sure that you did everything correctly. Since that will require the time of a mechanic, there may be a modest charge for this service.

We also recommend that you ask your dealer for guidance on what

spare parts, such as tyres, inner tubes, light bulbs, batteries, patch kits, lubricants, etc., it would be appropriate for you to have once you have learned how to replace such parts when they require replacement.

Service intervals

Some service and maintenance can and should be performed by the owner, and require 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.

- ▶ 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 your authorised dealer. Your Mechanical Safety Check (page 4) 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 the authorised dealer for a checkup. Authorised dealers 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 offroad use, or about 10 to 15 hours of on-road or more casual off-road use. But if you think something is wrong with the bike, take it to your authorised dealer before riding it again.
- ▶ Before every ride: Mechanical Safety Check (page 4).
- ▶ After every long or hard ride; if the bike has been exposed to water or grit; or at least every 200 kilometres: Clean the bike (first consult the drive system manufacturer’s user manual for specific cleaning instructions or warnings) and lightly lubricate the chain’s rollers with a good quality bicycle chain lubricant. Wipe off excess lubricant with a lint-free cloth. Lubrication is a function of climate. Talk to your authorised dealer about the best lubricants and the recommended lubrication frequency for your area.
- ▶ After every long or hard ride or after every 10 to 20 hours of riding:
 - 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 authorised dealer check it.
 - 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 authorised dealer check it.
 - Grab one pedal and rock it toward and away from the centreline of the bike; then do the same with the other pedal. Anything feel loose? If so, have your authorised dealer check it.
 - Take a look at the brake pads. Starting to look worn or not hitting the wheel rim squarely? Time to have the authorised dealer adjust or replace them.

- Carefully check the control cables and cable housings. Any rust? Kinks? Fraying? If so, have your authorised dealer replace them.
- 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 authorised dealer check the wheel for tension and trueness.
- Check the tyres for excess wear, cuts or tears. If you are unsure whether your tyres are worn or damaged, ask your authorised dealer, who can replace them if necessary.
- Check the wheel rims for excess wear, dings, dents and scratches. Consult your authorised dealer if you see any rim damage.
- Check to make sure that all parts and accessories are still secure, and tighten any which are not.
- Check the frame, particularly in the area around all welds; 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 also “The lifespan of your bike and its components” on page 60.



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 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 submit 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. Please be sure to read “Intended use of your electric bicycle” on page 59 and “The lifespan of your bike and its components” on page 60.

- ▶ As required: If either brake lever fails the Mechanical Safety Check (page 4), don’t ride the bike. Have your authorised dealer check the brakes.
- ▶ If the chain won’t shift smoothly and quietly from gear to gear, the derailleur is out of adjustment. See your authorised dealer.

- ▶ Every 25 (hard off-road) to 50 (on-road) hours of riding: Take your bike to your authorised dealer for a complete checkup.

If your bicycle sustains an impact

For information on necessary service after an accident, see “The lifespan of your bike and its components” on page 60 and “After an accident” on page 15.



WARNING

A crash or other impact can put extraordinary stress on bicycle components, causing them to fatigue prematurely. Components suffering from stress fatigue can fail suddenly and catastrophically, causing loss of control, serious injury or death

Sinch Warranty

Every new Sinch bicycle comes with our Sinch customer care warranty program. Our warranty program provides the original purchaser of a Sinch bike warranty against defects in materials and workmanship as per below: Your Sinch bike is covered by the following extensive Warranty

Warranty for Life Time for:

- ▶ Frames and rigid forks for the lifetime of the original owner.

Warranty for 5 Years for:

- ▶ Sinch rear suspension frames are guaranteed against manufacturing or material defects for a duration of 5 years.

Warranty for 2 Years for:

- ▶ In the case of Commercial use the guarantee for frames and rigid forks is limited to 2 years.

Warranty for 1 Year for:

- ▶ Paint finish and decals
- ▶ All other original parts unless stated in the warranty of the original manufacturer

Exceptions to Warranty

- ▶ Normal wear and tear
- ▶ Damage resulting from misuse
- ▶ Not maintaining the bicycle, or not following the guidelines within this user guide.
- ▶ Accidental or deliberate damage.
- ▶ Installation of components, parts, or accessories not originally intended for or compatible with the bicycle as sold
- ▶ Labour charges for part replacement or changeover
- ▶ Failure to meet service schedule.

- ▶ Failure to produce an invoice or proof of purchase.
- ▶ The warranty is void in its entirety if there is any modification of the frame, fork, or components.
- ▶ The warranty is limited to the repair or replacement of the defective item.
- ▶ The warranty extends from the date of purchase and is offered only to the original purchaser and is not transferable.
- ▶ Sinch Bicycles is not responsible for incidental or consequential damages.
- ▶ Bikes used for commercial activities, including those in rental, demo or security fleets.
- ▶ Any claim against this warranty must be made through an authorised dealer

For customers in Australia

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

How to process a warranty claim

Contact your local Sinch authorised dealer to process a warranty claim

Important: Treat charging a lithium battery

as a potential fire risk. Make sure your bike and charger are not on or leaning against a flammable surface and preferably placed on a fire-rated surface.

Appendix A: Intended use of your electric bicycle



Understand your bike and its intended use. Choosing the wrong bicycle for your purpose can be hazardous. Using your bike the wrong way is dangerous.

No one type of bicycle is suited for all purposes. Your retailer can help you pick the “right tool for the job” and help you understand its limitations. There are many types of electric bicycles, and variations within each type.

There are also bicycles that mix features. Some may be suitable for more than one purpose, but there will always be trade-offs. Within each of type of bicycle, one can optimize for certain purposes. Visit your bicycle shop and find someone with expertise in the area that interests you. Do your own homework. Seemingly small changes such as the choice of tyres can improve or diminish the performance of a bicycle for a certain purpose.

MAXIMUM WEIGHT FOR BICYCLES AND ACCESSORIES

Bicycles	Maximum weight with cargo (1)
Non-folding bicycles	120 kg
Folding bicycles	100 kg
Bicycles with carbon-fiber wheels (3)	100 kg
Accessories	Maximum carrying weight (2)
Luggage racks (front)	10 kg
Luggage racks (rear)	20 kg

1. Maximum carrying weight includes the weight of the rider (plus clothing, riding gear, etc), any added accessories and any cargo being carried. The weights listed are for general reference only; check the documentation included with your bike for specific weight limits.
2. Maximum carrying weight includes any attached battery, even if integrated into the rack. Always check if the manufacturer's recommended weight is marked on the rack itself, or included in separate documentation, and do not exceed that recommendation.
3. Unless otherwise noted; check the instructions provided by the bike and wheel manufacturer.

Appendix B The lifespan of your bike and its components

Nothing lasts forever, including your bike

When the useful life of your bike or its components is over, continued use is hazardous.

Every bicycle and its component parts have a finite, limited useful life. The length of that life will vary with the construction and materials used in the frame and components; the maintenance and care the frame and components receive over their life; and the type and amount of use to which the frame and components are subjected. Use in competitive events, trick riding, ramp riding, jumping, aggressive riding, riding on severe terrain, riding in severe climates, riding with heavy loads, commercial activities and other types of non-standard use can dramatically shorten the life of the frame and components. Any one or a combination of these conditions may result in an unpredictable failure.

All aspects of use being identical, lightweight bicycles and their components will usually have a shorter life than heavier bicycles and their components. In selecting a lightweight bicycle or components you are making a tradeoff, favoring the higher performance that comes with lighter weight over longevity. So, If you choose lightweight, high performance equipment, be sure to have it inspected frequently.

You should have your bicycle and its components checked periodically by your

authorised dealer for indicators of stress and/ or potential failure, including cracks, deformation, corrosion, paint peeling, dents, and any other indicators of potential problems, inappropriate use or abuse. These are important safety checks and very important to help prevent accidents, bodily injury to the rider and shortened product life.



Frequent inspection of your bike is important to your safety. Follow the Mechanical Safety Check on page 4 of this Manual before every ride.

Periodic, more detailed inspection of your bicycle is important. How often this more detailed inspection is needed depends upon you.

You, the rider/owner, have control and knowledge of how often you use your bike, how hard you use it and where you use it. Because your authorised dealer cannot track your use, you must take responsibility for periodically bringing your bike to your authorised dealer for inspection and service. Your authorised dealer will help you decide what frequency of inspection and service is appropriate for how and where you use your bike.

Ignoring this WARNING can lead to frame, fork or other component failure, which can result in serious injury or death.

Appendix C

Fastener Torque Specifications

Correct tightening torque of threaded fasteners is very important to your safety. Always tighten fasteners to the correct torque. Bolts that are too tight can stretch and deform. Bolts that are too loose can move and fatigue. Either mistake can lead to a sudden failure of the bolt. Always use a correctly calibrated torque wrench to tighten critical fasteners on your bike. Carefully follow the torque wrench manufacturer's instructions on the correct way to set and use the torque wrench for accurate results. In case of a conflict between the instructions in this manual and information provided by a component manufacturer, consult with your authorised dealer or the manufacturer's customer service representative for clarification.

COMPONENT	RECOMMENDED TORQUE VALUE	
	IN-LB	NM
Headset, Handlebar, Seat area		
Handlebar Binder bolt	150-180	16.9-20.3
Seat fixing bolt (seat rail binder)	174-347	19.7-39.2
Stem handlebar binder bolts (2)	174-260	19.7-29.4
Stem wedge (binder) bolt – quill type for threaded headset	174-260	19.7-29.4
Threaded headset locknut	130-150	14.7-16.9
Threadless stem clamp bolts	120-144	13.6-16.3
Crankset, Bottom Bracket, Pedal area		
Chainring bolt (aluminum)	44-88	5.0-9.9
Chainring bolt (steel)	70-95	7.9-10.7
Crank bolts	305-391	34.5-44.2
Pedal (into crank)	307-350	34.7-39.5

COMPONENT	RECOMMENDED TORQUE VALUE	
	IN-LB	NM
Deraillleur, Shift lever area		
Front derailleur cable pinch bolt	44-60	5.0-6.8
Front derailleur clamp mount	44-60	5.0-6.8
Rear derailleur cable pinch bolt	35-45	4.0-5.1
Rear derailleur mounting bolt	70-86	7.9-9.7
Shift lever (MTB thumb-type)	22-26	2.5-2.9
Shift lever (SRAM "grip-shift" type)	17	1.9
Rack area		
Bicycle rack to frame (6mm bolts)	88.5 1	10
Wheel area		
Wheel axle nuts to frame/fork	360-390	29.4-44.1
Brakes		
Brake cable pinch bolt (linear pull)	53-69	6.0-7.8
Brake caliper (linear pull) to frame/fork	45-60	5.1-6.8
Brake lever (MTB type) to handlebar	53-69	6.0-7.8
Brake pad to caliper	50-70	5.6-7.9
Brake caliper (disc) to frame/fork	60-90	6.8-10.2
Disc rotor to hub	35-55	4.0-6.2

Service Schedule

1st service - after 100-300 kilometres or 5 - 15 hours of use at the latest or after three months from date of purchase.

Order no: _____ Date: _____

Replaced or repaired parts:

Bike drive unit software updated: ☐

Stamp and signature of the Sinch Experience Centre: _____

2nd service - after 2,000 kilometres or 100 hours of use at the latest or after one year from date of purchase.

Order no: _____ Date: _____

Replaced or repaired parts:

Bike drive unit software updated: ☐

Stamp and signature of the Sinch Experience Centre: _____

3rd service - after 4,000 kilometres or 200 hours of use at the latest or after two years from date of purchase.

Order no: _____ Date: _____

Replaced or repaired parts:

Bike drive unit software updated: ☐

Stamp and signature of the Sinch Experience Centre: _____

Service Schedule

4th service - after 6,000 kilometres or 300 hours of use at the latest or after three years from date of purchase.

Order no: _____ Date: _____

Replaced or repaired parts:

Bike drive unit software updated: ☐

Stamp and signature of the Sinch Experience Centre: _____

5th service - after 8,000 kilometres or 400 hours of use at the latest or after four years from date of purchase.

Order no: _____ Date: _____

Replaced or repaired parts:

Bike drive unit software updated: ☐

Stamp and signature of the Sinch Experience Centre: _____

6th service - after 10,000 kilometres or 500 hours of use at the latest or after five years from date of purchase.

Order no: _____ Date: _____

Replaced or repaired parts:

Bike drive unit software updated: ☐

Stamp and signature of the Sinch Experience Centre: _____

Service Schedule

7th service - after 12,000 kilometres or 600 hours of use at the latest or after six years from date of purchase.

Order no: _____ Date: _____

Replaced or repaired parts:

Bike drive unit software updated: ☐

Stamp and signature of the Sinch Experience Centre: _____

8th service - after 14,000 kilometres or 700 hours of use at the latest or after seven years from date of purchase.

Order no: _____ Date: _____

Replaced or repaired parts:

Bike drive unit software updated:

Stamp and signature of the Sinch Experience Centre: _____

9th service - after 16,000 kilometres or 800 hours of use at the latest or after eight years from date of purchase.

Order no: _____ Date: _____

Replaced or repaired parts:

Bike drive unit software updated:

Stamp and signature of the Sinch Experience Centre: _____

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