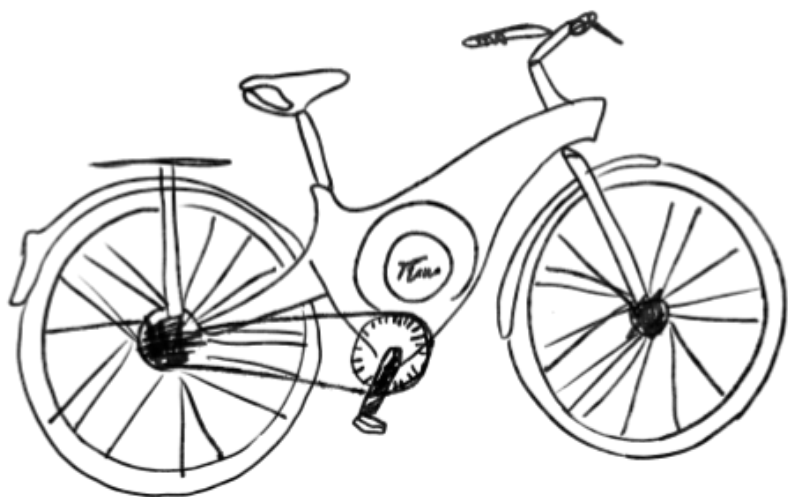


Tiller

ROADSTER RIDER MANUAL



MOVE WITH PURPOSE

Thank you and welcome

Thank you for choosing a Tiller Rides Roadster. You have not only chosen to ride one of the most advanced e-bikes on the planet but you are now also part of the Tiller Rider Community.

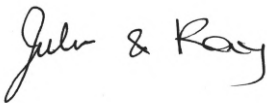
Roadster was the name given to the first bikes that were used for transport and we have carefully designed your Roadster to make everyday transport a breeze.

Our dream is that your Roadster becomes an integrated part of your everyday life so you can enjoy all the health, wellbeing and cost saving benefits it affords while reducing your footprint on the planet. What a Win - Win - Win!

This manual will show you how to safely ride your Roadster and how to maintain it so that it is a joy to use for many years.

Welcome aboard the Tiller Rider Community and have fun out there!

Kind Regards

A handwritten signature in black ink that reads "Julian & Ray". The script is fluid and cursive, with the first letters of "Julian" and "Ray" being capitalized and prominent.

Julian Ilich & Ray Glickman
Co-Founders

Contents

Using this manual	1
Icons	1
The owner's responsibility	2
Vehicle laws apply	2
General warnings	3
Unboxing your Roadster	4
Getting to know your Roadster	5
Roadster components	7
Tiller Rides app	8
Setting up to ride	9
Attach handlebars	9
Fit the front wheel	10
Attach pedals	13
Adjust seat position	13
Adjusting seat height	14
Adjusting seat forward-aft position	15
Adjust brake lever	17
Fit your helmet	18
Wear bright visible clothing	20
Learn safe riding tactics	20
Safety checks before you ride	21
Riding a Roadster	27
Max rider weight and load carrying	27
Using the brakes	27
Changing gears	28
Control Switch	29
Electronic system modes	30

Shipping Mode	30
Pairing Mode	30
Ride Mode	30
Armed Mode	30
Sleep Mode	31
Pedal assist	31
Power and speed limits	31
Controlling power assist level	31
The inbuilt and app displays	32
Lights	33
Brake light	34
The bell	35
Using the stand	35
USB device charging	40
Walk Assist	40
Activating Walk Assist	41
Terrains that you can ride a Roadster	42
Using the anti-theft features	43
The 'eVin' ID	43
The Quicktether	43
Extra security using the lock hole	44
Using the electronic security system	45
Turning on the alarm	46
Auto-arm	46
Preventing false alarms	46
Disarming the alarm	46
Battery charging, removal and care	47
Charging your battery	48
Charging safety	50
Removing your battery	50
Maximising battery lifespan	53

Battery storage	54
Carrying things	54
Using the rear carrier	54
Using trailers	59
Other accessories	61
Spare parts	62
Ongoing care, inspection and maintenance	62
Belt care, inspection and maintenance	62
Belt care	63
Belt inspection	65
Brake care, inspection and maintenance	66
Brake disc care	66
Brake pad inspection and maintenance	67
Brake oil level inspection and maintenance	68
Seat area care, inspection and maintenance	69
Saddle care and inspection	69
Clamp and seat post care and inspection	70
Removing or changing anti-theft seat post	71
Handlebar area care, inspection and maintenance	71
Tyre care, inspection and maintenance	72
Caring for your tyres	72
Tyre inspection	73
Tyre maintenance/replacement	73
Internally geared hub care, inspection and maintenance	86
Internally geared hub care and adjustment	86
Internally geared hub maintenance	87
Pedal care and maintenance	88
Pedal care	88
Pedal inspection	88
Pedal maintenance	88

Front and rear light care, inspection and maintenance	89
Storing your Roadster	89
Cleaning your Roadster	90
Bucket or spray?	90
Suitable cleaning products	90
General lubrication	90
End of life recycling	91
Your 2-year or 20,000km warranty	95
The Tiller Rides promise	95
Warranty details	95
Cease and inform	95
Do not fix	96
What the warranty doesn't cover	96
Fair wear and tear	96
Other things not covered by warranty	97
Claiming your warranty	97
Warranty related freight costs	97
Australian Consumer Law	97
Compliance with standards	98
Servicing schedule	98
Do It Yourself (DIY) servicing	99
APPENDIX A:	100
Fastener Torques	100
Approximate Torque Conversion	101





Using this manual

The information contained in this manual is important for safely operating your Roadster. We recommend that you read the complete manual, paying particular attention to any warnings and checks denoted with icons. Please ensure that anyone riding your Roadster is familiar with the safety information in this manual.

Following the guidance in this manual will ensure your Roadster is safe to use, however, please ensure you always obey your local road traffic rules/laws and be wary of other road users.

Icons

The following icons are used in this manual to identify certain types of important information.

	WARNING: Potential for injury due to mechanical or electrical hazard
	TELLTALE: These are things to keep an eye on that will tell you if something is worn or degraded beyond acceptable level
	CHECK: Something to check now and again
	TIP: Smart safety or other tips that will enable you to maximise enjoyment of your Roadster

The owner's responsibility

Your Roadster has been carefully designed to conform to the relevant design standards in the country you bought it in to ensure that it is safe to use. Now that it is yours it becomes your responsibility to ensure it is maintained in good working order. This manual provides all the information required to do this, however, please check our website **tillerrides.com** or contact customer support if there is something that you do not understand.

Please ensure that you are familiar with the relevant local laws in your state or country and follow them when riding your Roadster.

Vehicle laws apply

The roadster has been designed in order to meet regulations which classify it as a bicycle and not a road vehicle. However, to ensure safe riding, please abide by road safety rules such as signalling, respecting signage and traffic lights, etc.

General warnings



WARNING: Your Roadster's frame is constructed from high grade aluminium and is designed to last a very long time. In the event that there is a cause of significant overloading of the frame, such as riding it on rocky terrain or a crash, the frame may crack. It is good practice to monitor the frame for any cracks, deformation or changes. If any appear, immediately stop riding and contact Tiller Rides for a full assessment.



WARNING: Your Roadster is a quality machine made from a range of mechanical and electrical components. However, some parts may eventually wear out and need replacing. If you don't feel competent in monitoring the bike's wear and tear you should have your bike inspected as per the service schedule provided in this manual or after an event that may have overloaded the frame, front forks, handlebars, seat post, wheels or brakes.



WARNING: This manual contains all the information on the maintenance that can be performed on the Roadster by people not directly certified by Tiller Rides. Any other operations, either on the mechanical or electrical systems, is considered 'tampering' and may make your Roadster unsafe and may also void your warranty. Please refrain from tampering with your Roadster.



WARNING: This manual contains instructions on a range of mechanical and electrical checks and procedures required to maintain a Roadster. If you do not know how to competently perform the required operations please refrain from 'having a go' and instead seek a qualified e-bike technician to do it or train you how to do it.



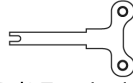
WARNING: Fixings on the Roadster have been fitted with threadlocker to prevent them loosening. Threadlocker has been supplied in order to be applied when required (refer to APPENDIX A), including installing the front wheel during unboxing.

Unboxing your Roadster

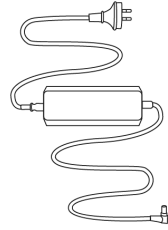
In the box, you'll find the following items along with your Roadster.



15mm Spanner



Belt Tensioning
Pin Spanner



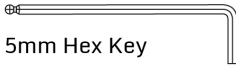
Charger



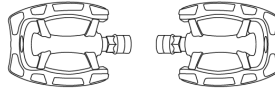
6mm Hex Key



Torque it up tool



5mm Hex Key



Pedals



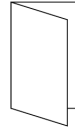
4mm Hex Key



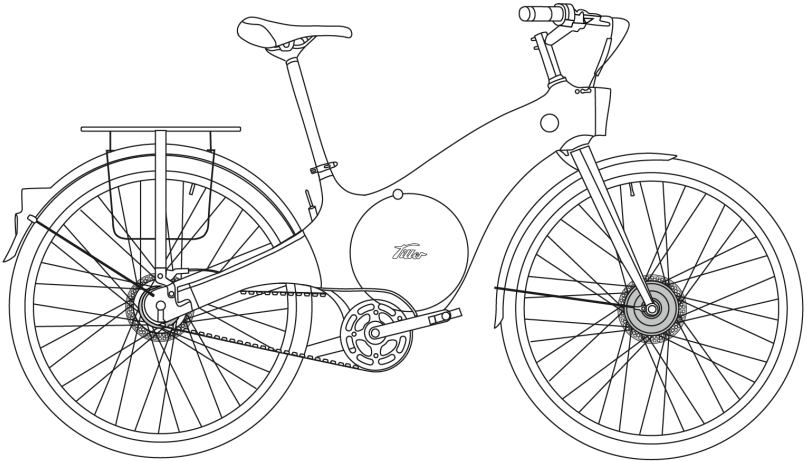
3mm Hex Key



Medium strength
threadlocker



Manual

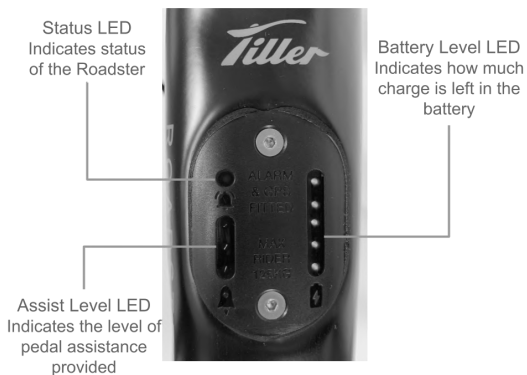
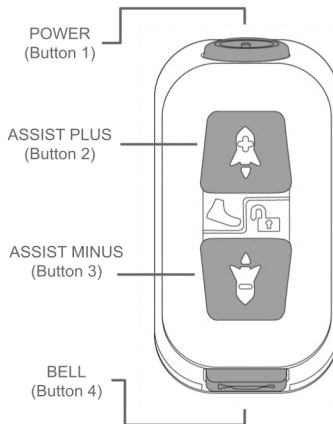


Roadster

Getting to know your Roadster

The Roadster is the ultimate urban transportation choice. When you ride the Roadster you are helping to reduce your carbon footprint and staying active all while enjoying the journey. The Roadster is much more than just a bike, it's a lifestyle.

The switch controller is found on your left handle and controls your Roadster. On the frame, you'll find the display which shows your Roadster's status, assist level and battery level.



The Roadster is packed with features that make riding easy, like:

- USB phone charging to make sure you're never stranded.
- The QuickTether integrated locking mechanism to quickly and easily lock up your Roadster.
- A mobile app to track your odometer, speed and the location of your Roadster.

Roadster Features

Avoid seat-theft with a **non-removable seat post**

Always have the right carrier for the job with **lockable click-on / click-off rear carrier attachments**

No more dirty pant legs or dresses with the **greaseless belt drive**

Easily park your bike anywhere using the **integrated double stand**

Never worry about running out of power with a **long range battery** (80-120 km)

Use your Roadster for any occasion with the **stylish pressed-aluminium frame**

Travel day or night with **integrated LED lights**

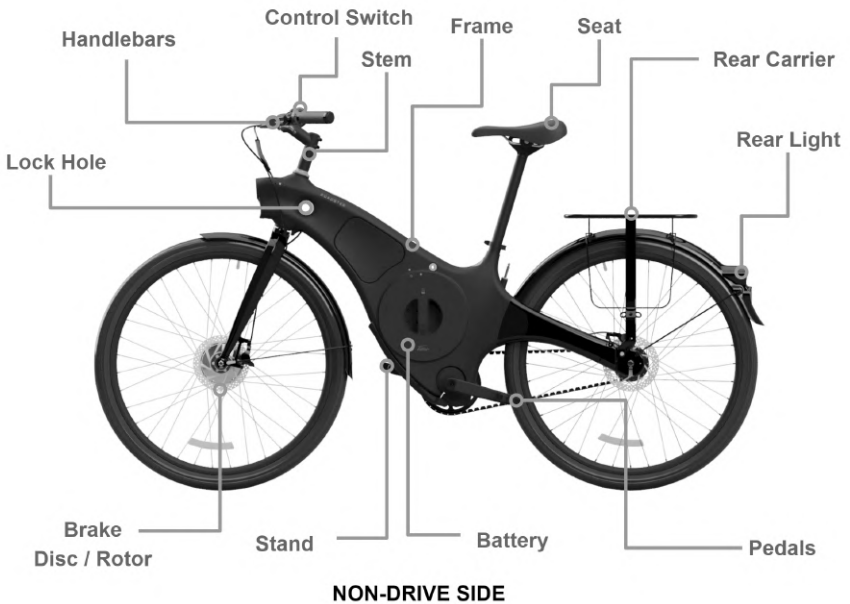
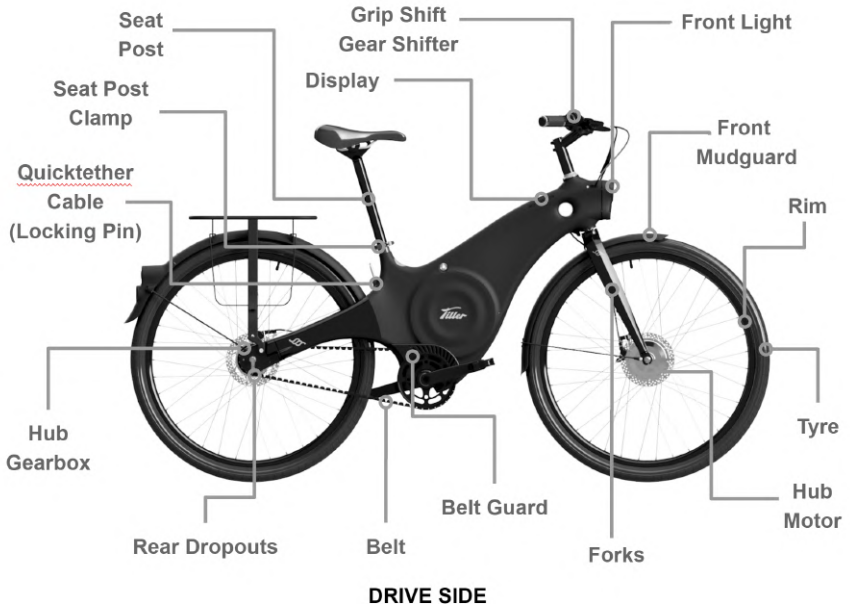
Have no fear of theft with a **keyless lock, motion sensing alarm and GPS tracking system**

Hydraulic disc brakes will stop you quickly and confidently in any weather

Smooth electric assist makes riding easy for even the most inexperienced riders



Roadster components



Tiller Rides app

Your Roadster has an app that will walk you through the pairing process. Download the app from the App Store or Google Play. Simply search “Tiller Rides” or scan the QR codes below.

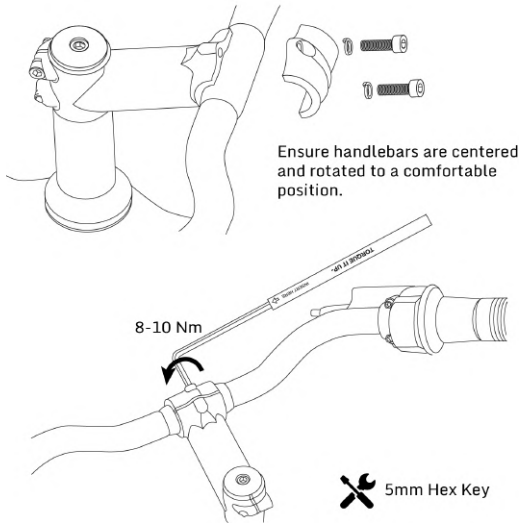


Setting up to ride

Refer to the quickstart guide to assemble your Roadster.

Attach handlebars

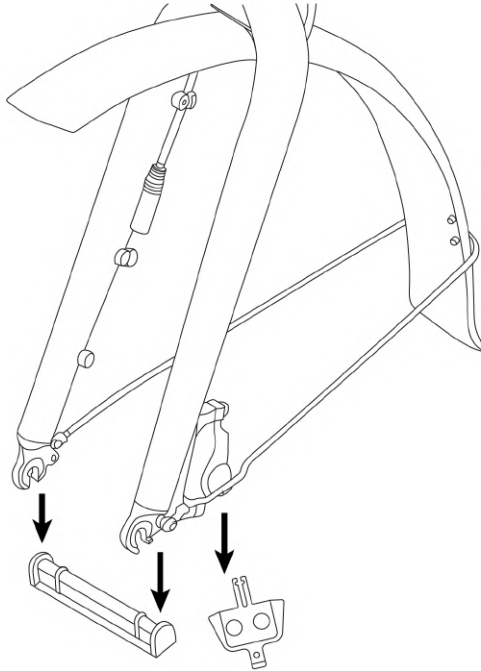
Ensure handlebars are centred and rotated to a comfortable position. Use a 5mm hex key to fix the handlebars in position by screwing the two screws on the faceplate. Press down on the handlebars to ensure they do not rotate.



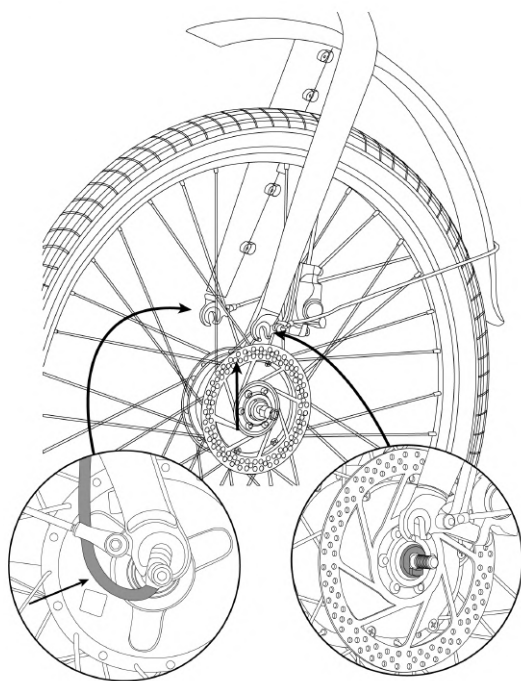
WARNING: Do not flip your Roadster upside down, this may damage the control switch.

Fit the front wheel

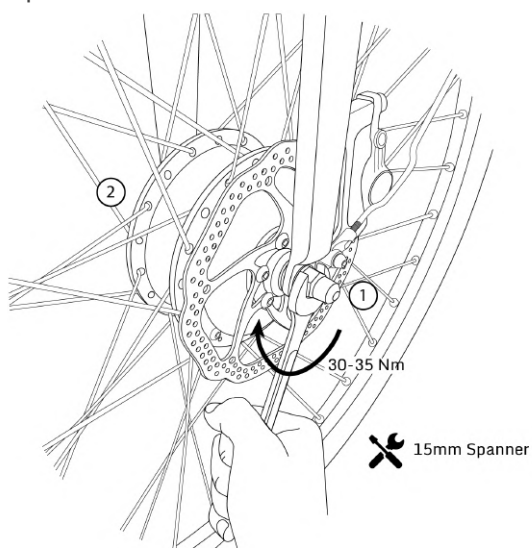
First, remove the protection components from the front forks and calliper. Loosen the nuts on the wheel to make a gap for the forks to be inserted.



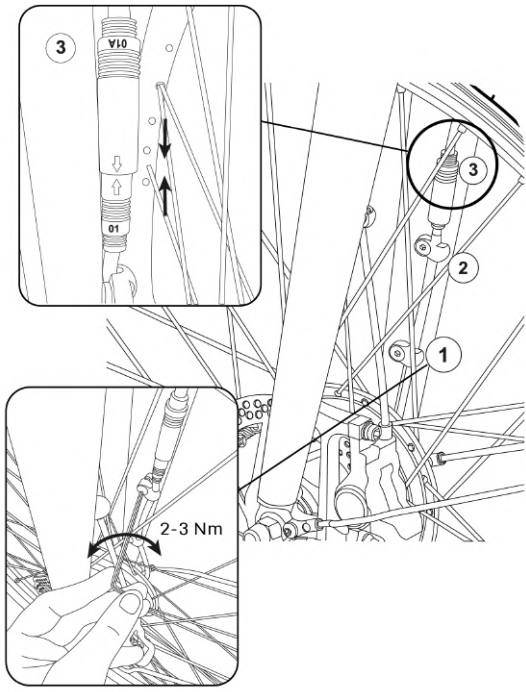
Next, take the front wheel and line it up with the front forks, ensuring that the cable and anti-rotation washer on the front wheel are both pointing down (i.e. not getting pinched by the forks. Ensure that the brake disc slides into the calliper.)



Once the wheel sits in the forks correctly, tighten the nuts on the axle using a 15mm spanner.

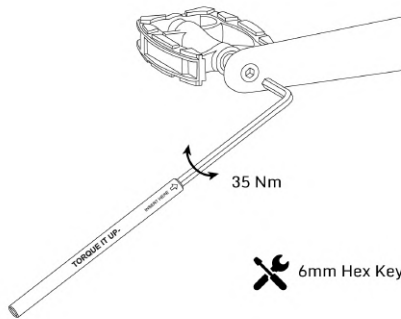
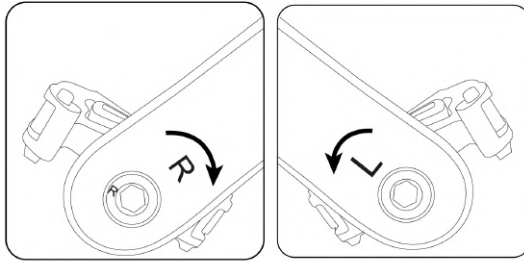


Lastly, connect the motor cable from the front wheel to the bike, ensuring the arrows align. Use a 3mm hex key to make sure that the cable is held to the fork and not loose.



Attach pedals

Take the left and right pedals from the toolbox and attach them to the appropriate crank arms. They will have an “L” or “R” stamped near the hex key slot to make sure you have the right ones. Apply a couple drops of medium strength threadlocker and use a 6mm hex key to tighten them.



Once your Roadster is assembled, it is time to adjust it to suit your size and prepare yourself to ride safely.

Adjust seat position

Your Roadster has a one-size-fits-all frame. It has been designed with a large seat position adjustment range so that riders of all shapes and sizes can move the seat into a comfortable position.

Because the Roadster has electric assist, there is less need to be in a forward leaning racing-like position to deliver maximum power to the pedals. Instead, we recommend a more upright ‘comfort’ or ‘relaxed’ position. The following instructions will show you how to achieve your desired seat height and seat forward-backwards positions.

Adjusting seat height

When adjusting seat height, the goal is to have it high enough so that your legs can straighten out as much as possible, but low enough so that you can touch the ground when on the seat – which is important for stopping at traffic lights.

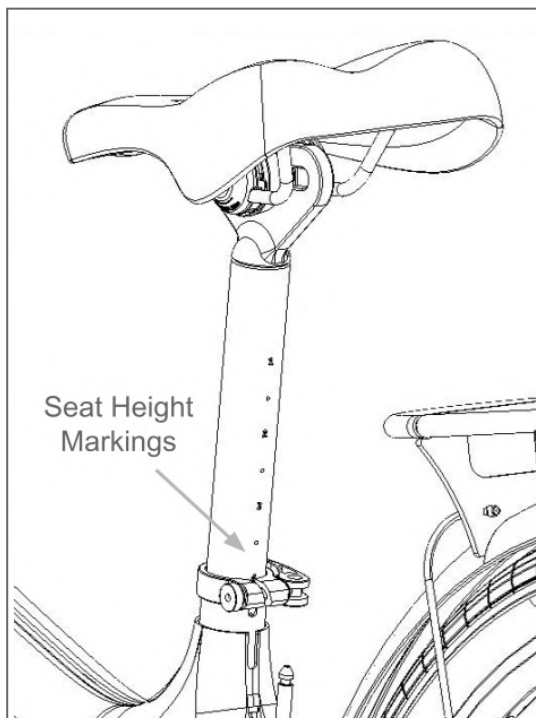
We recommend adjusting the seat as high as possible so that you can comfortably balance the bike when sitting on the seat using one or two feet. The minimum saddle height is 830mm and the maximum is 1170mm.



Adjusting the seat height:

1. Open the quick-release lever on the seat clamp
2. With hands on the seat, slide up or down to the desired position
3. Close the quick-release lever on the seat clamp
4. Sit on the seat and check that it doesn't slide down. If it does slide down:
 - a. Release the quick-release lever on the seat post clamp, then;
 - b. Tighten the thumb nut on the seat post clamp a little, then;
 - c. Re-close the seat clamp **until the handle is up against the clamp body** (i.e. not sticking out at an angle), then;
 - d. Check the seat doesn't slide down once seated.

5. Once you have your seat height correct, take note of the 'height number' just above where the seat post disappears into the frame. Remember this for next time you adjust the seat.



WARNING: Your Roadster has an anti-theft seat post that prevents it being removed from the bike but also ensures enough seat post is in the frame to support heavier riders. If for some reason the anti-theft device fails, ensure that the seat post is always inserted beyond the minimum insertion depth on the seat post.

Adjusting seat forward-aft position

Your Roadster has a special Tiller Rides designed seat post topper that enables the seat to be moved forward and aft around 80mm. The following steps will enable you to adjust the forward-aft position to enable you to achieve the desired amount of forward lean.

STEP 1: Loosen the seat clamp bolt using the 6mm Allen Key and the Torque-It-Up extender. Just loosen it enough for the seat to slide.

STEP 2: It is ideal to have the seat applying minimal rotational force to the seat clamp. Start by sliding the seat so that the clamp is in the middle of the seat rail.



STEP 3: Slide the seat clamp forward or aft in the slot in the seat post topper to the desired position.



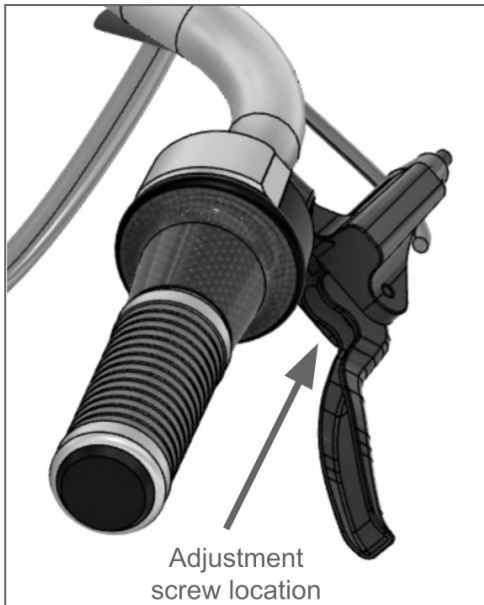
If it hits the end of the slot and you require more movement, side the seat in the clamp. Once in the desired position, tighten the seat clamp bolt back up to 20Nm.



STEP 4: Check the clamp is tight enough by sitting on the seat with both feet on the ground and put all your weight on the front and rear of your seat to make sure the seat doesn't rotate.

Adjust brake lever

The brake level is preset to a distance from the handles that should suit most people. To adjust the lever, find the adjustment screw in the lever mechanism. Using a 2mm hex key rotate the screw and the lever should move closer or further away from the handles.



You should be able to reach the lever comfortably with your fingers and ensure the lever does not clash with the handles when fully pressed.

Fit your helmet

Riding any bike or e-bike has an element of risk. After reviewing the best and latest global medical research, it is clear that if you fall off a push bike or e-bike, a helmet will significantly reduce your potential to sustain a head injury. Wearing a helmet is a legal requirement to ride on public roads in Australia.

It is important to find a helmet that:

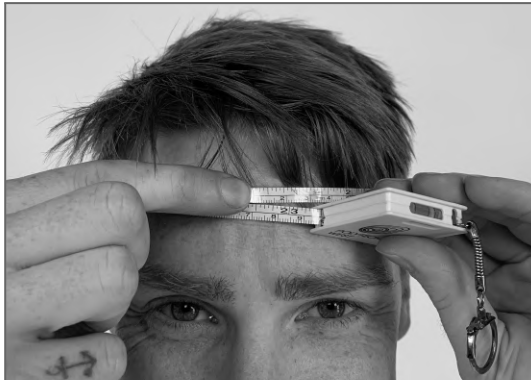
- Fits well
- Has maximum head coverage
- Meets the standard in the country of use (e.g. AZ/NZS 2063 in Australia/New Zealand and EN1078 in Europe)
- Has some sun protection – especially in Australia
- Suits your style

We have carefully selected a range of helmets that meet all these requirements and you can purchase them at the Tiller Rides brand stores or online at tillerrides.com.

Selecting and fitting a helmet

It is also important that a correctly sized helmet is selected and that it is correctly fitted. To do this you need to:

1. Measure the circumference of your head and select a helmet of the correct size.



2. Adjust the size so that it fits firmly on your head, and so if twisted side-to-side, moves the skin on your forehead. Some helmets have adjusters that allow you to adjust the size once on your head.



3. Adjust the depth of the helmet so that it is as low as possible over your forehead but not so low that it impedes your vision.



4. Adjust the strap so that it is the right length and will hold the helmet on your head in the event of an accident. To do this, adjust the strap length until there is a middle finger sized gap

between the strap and your chin with your mouth closed. When you open your mouth it should pull the helmet down slightly.



Wear bright visible clothing

Making yourself as visible as possible on the road will help other road users see you. High visibility clothing is one option, however, simply wearing bright and light coloured clothing, especially at night, is better than wearing darker colours.

Learn safe riding tactics

There are a range of tactics you can use on the road to make your riding safer. Here are just a few we think make a big difference:

1. **Make sure your brakes work well** - and you know how to use them.
2. **Cover your brakes** - this means keeping a finger or two over the brake lever when in places you may need to stop quickly – for example, when riding past parked cars.
3. **Take the safest routes** - if there are bike paths then these are usually the safest. If bike paths are not available, then backstreets and footpaths (if your jurisdiction permits) can often ensure you avoid busy intersections etc.
4. **Always use lights at night** - thankfully the Roadster has them built in and always on when you are moving faster than 6km/hr.

5. **Give parked cars a wide berth** - just in case someone opens a door, steps out from between two cars or drives off without looking or indicating.
6. **Always wear a helmet** - and ride cautiously even though you may feel safer with the helmet on.
7. **Slow down and indicate when turning** - remember that you are riding a vehicle and road rules in your jurisdiction apply. Indicating enables other road users to know what you are doing.
8. **Use your bell** - especially when approaching pedestrians from behind.
9. **Keep your distance from other bikes** - so that you don't get caught up on each other.
10. **Beware of grooves, edges and cracks** - so your tyres don't get caught in them.
11. **Adjust riding style in the wet** - reduce braking force and allow greater braking distance, take corners slower.

Safety checks before you ride

Your Roadster has been designed for minimal maintenance – but not *no* maintenance. Over time things may come loose or something may be damaged that affects your safety. It is good practice to carry out the following quick basic checks **before each ride**, including the first ride:

1. Check brakes
2. Check tyres
3. Check bell
4. Check lights
5. Check wheels spin freely

All of the quick checks you need to conduct on your Roadster are explained below, refer to the service schedule for the frequency of each check. If you do not feel comfortable with any of the tasks detailed in this instruction manual, please feel free to contact our support team by visiting tillerrides.com.

CHECK 1: Brakes

CHECK 1A: With the bike stationary, squeeze the brakes as if you were braking and test that they stop the bike from being pushed forward. The brake levers should feel firm and not be able to touch the grips. Before your first ride, squeeze the brakes a few times in case braking fluid has

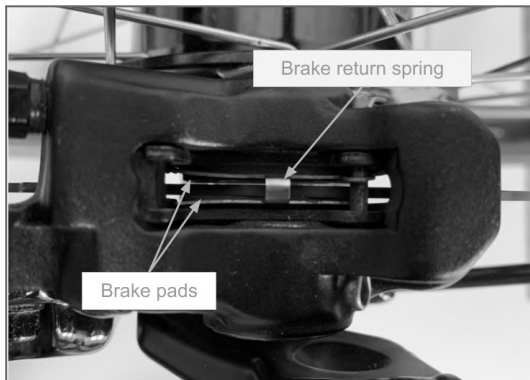
settled during transport. If the brakes feel 'squishy' it is likely that there is an air bubble in the hydraulic line.

CHECK 1B: To check if there is any oil on the brake pads or disc, walk your Roadster slowly on level ground before applying the front and then rear brake (separately), this should stop the bike. The brakes should feel like they are grabbing the disc and sound like a rough surface on a smooth one. If the brakes don't grab easily and there is a loud squeak it is likely there is oil on the disc. You can use a white tissue to wipe the disc to check.



WARNING: An air bubble in the brake line or oil on the disc are both serious safety concerns. If you suspect either of these issues please contact the Tiller Rider Support Team or take your bike to a bike mechanic who is qualified to work on hydraulic brakes.

CHECK 1C: Once you have successfully completed CHECK 1A and 1B, ride the bike at around 10km/hr and apply the brakes with moderate pressure. Listen for a metal-on-metal grinding sound that may suggest the brake pads are worn out and the metal backing plate is now rubbing on the disc. The brakes won't be working as effectively as they used to. To confirm this, use a torch to view the brake pads and see what thickness is remaining. If one or both of the brake pads has less than 0.5mm of pad remaining please arrange to have them changed by the Rider Support Team or a bike mechanic who is qualified to work on hydraulic brakes.



CHECK 2: Tyres

Your Roadster is manufactured with all weather, puncture resistant balloon tyres. Balloon tyres are wide and have a high profile to absorb bumps, but they must be run at the right pressure.

CHECK 2A: Using a pressure gauge or pump with a pressure gauge on it, check that the tyres are inflated to between 35-40 PSI (ideally at 35 PSI). This pressure gives good bump absorption and a low rolling resistance that will maximise your battery range. If you don't have a pressure gauge, squeeze the tyre with your fingers – it should feel firm but not hard.

CHECK 2B: Roll your bike forward one wheel rotation while inspecting the tyre for bald spots and visible damage such as cracks, cuts or bulges.

CHECK 3: Steering

It is essential that your steering is free and straight. The following checks will ensure this. Also be aware that when the bike is fully loaded the steering will be slightly less responsive.

CHECK 3A: Hold both grips, turn the handlebars side-to-side about 60 degrees each way until the steering hits the 'anti-rotation stop'. The steering should be free to move throughout the range. If there is resistance, inspect to see what is preventing movement – it is most likely the motor cable, brake, gear or control cables.

CHECK 3B: Straddle the bike and turn the handlebars until the stem is pointing forward. Look down at the front wheel – it should also be pointing straight forward.

If the steering isn't free and you can't easily rectify, or the steering isn't aligned, please contact the Rider Support Team or take your bike to a qualified bike mechanic.

CHECK 4: Wheels

CHECK 4A: One at a time, lift the front and back wheel off the ground and spin. While spinning check that:

1. The wheel spins freely and the brake pads aren't rubbing enough to rapidly slow the wheel down.
2. The rim isn't bucked/wobbling side to side by more than 3 of mm.

CHECK 4B: Check that the wheel nuts are tight. If you find that they are loose, apply a medium-strength threadlocker and retighten to 30-35Nm.

If the brake pads are rubbing excessively, the wheel is buckled, the wheel bearings appear to be loose, or you find broken spokes, please contact the Rider Support Team or take your bike to a qualified bike mechanic.

CHECK 5: Bell

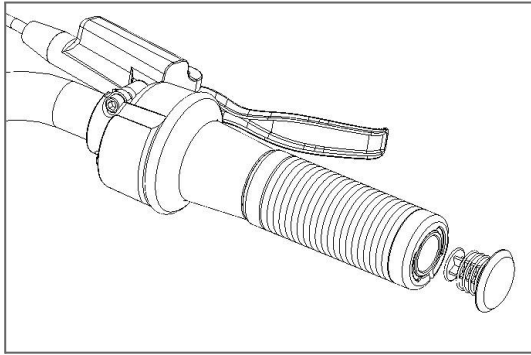
With your Roadster turned on and in 'Ride' mode, press the bell button on the Control Switch (the rearmost button). The bell should sound.

CHECK 6: Handlebars and seat

CHECK 6A: Straddle your Roadster and sit on the front part of the seat. Put all your weight down as far forward as possible and then as far backwards as possible and ensure that the seat doesn't slide down or rotate forward or backward. If it slides down: tighten the seat post clamp (see maintenance section of this manual). If it rotates forward or back: tighten the seat clamp (see maintenance section of this manual).

CHECK 6B: While straddling your Roadster, push down with all your weight on the rear part of the handlebar grips. If the handlebar rotates downward, tighten the stem faceplate bolts with the 5mm Allen Key and Torque-It-Up to a maximum torque of 8Nm as detailed in the maintenance section of this manual.

CHECK 6C: Check that the handlebar ends are plugged with the plastic stopper. If they are missing, contact the Rider Support Team to send replacement handlebar stoppers.

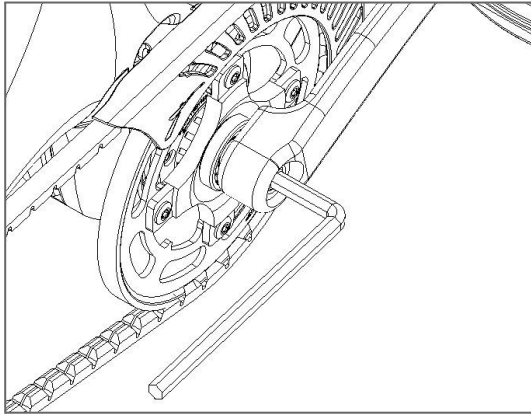


CHECK 7: Pedals and cranks

CHECK 7A: Check that the pedals are not coming loose by checking to see if there is a gap between them and the cranks that connect the pedals to the front sprocket axle. If there is a gap, tighten the pedals using the 6mm Allen Key to 35-40Nm, applying medium strength threadlocker.



CHECK 7B: Grasp each pedal one at a time and pull outwards with reasonable force. If there is movement where the crank attaches to the main shaft the crank is likely to be coming loose. If it feels loose, use the 8mm Allen Key paired with the 'Torque-It-p' extension to tighten the crank bolt to 35-40Nm.



CHECK 8: General inspection

CHECK 8A: While straddling your Roadster (not sitting on seat) lift the front wheel 5cm off the ground and drop it. Listen for any loose components.

CHECK 8B: Briefly look over the entire bike to ensure that there are no visible signs of damage (cracks or dents) or loose components. If any components are loose, tighten them while taking care not to over tighten the fixings (see torque table in Appendix A).

Significant Impact Inspection

In the event of an incident that may cause high stress on the bike, such as a crash, the bike should no longer be ridden and inspected by a Certified Tiller Rides Service Agent.



TIP: Because the Roadster's frame is very different to a typical bike frame, please do not have it assessed by a regular bike mechanic.

Riding a Roadster

Max rider weight and load carrying

Your Roadster has been designed for a **maximum rider weight of 125kg**. Riders above this weight may cause premature frame failure and potential serious injury.

The rear carrier on your Roadster is robust and able to carry a high load, however, please ensure it is not loaded beyond the maximum safe load carrying capacity marked on the carrier.



WARNING: The maximum permissible total weight of Roadster (bike weight + rider + luggage) is 160kg.

Using the brakes

Your Roadster has hydraulic brakes that are effective in rain, hail or shine. Brakes are applied by pulling on the levers on the handlebars – with the left lever being for the rear brake and right lever for the front brake.





WARNING: Hydraulic brakes are very effective so be sure to apply them gradually so that you don't skid the back tyre or lock the front wheel and cause yourself to go over the handlebars.



TIP: Reduce your braking force and allow a longer braking distance in wet weather or on gravel or loose ground.

Changing gears

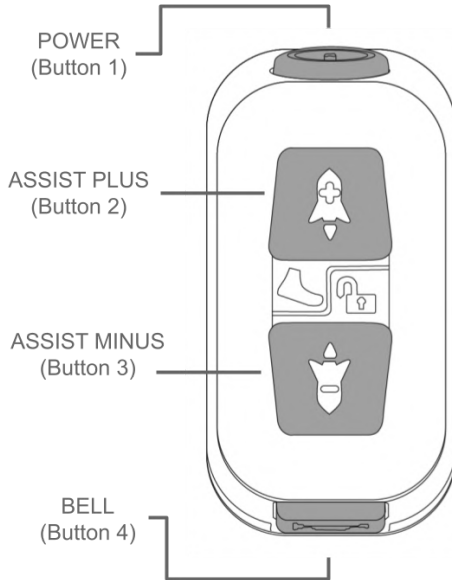
The gears can be changed without removing your hands from the grips using the right hand grip shifter. There are 5 gears, with gear 1 needing the least effort to pedal and gear 5 needing the most. Because of the electric assist you will find that you will mostly use gears 3, 4 and 5 on the flat and 1 and 2 when going up steep hills. **To prevent damage to your gearbox it is recommended that you decrease pedalling effort when changing gears.**



TIP: When pulling up to traffic lights or finishing riding for the day, return the gears to 3 before stopping so you are ready to take off again.

Control Switch

The Control Switch is situated on the left hand side of the handlebars and is the primary user interface for operating the bike.



Button	Button Number	Short Press	Long Press (while stationary)
Power	1	Light Mode Toggle	Power ON/OFF
Assist Plus	2	Assist UP	Walk Assist
Assist Minus	3	Assist DOWN	QT Lock Toggle
Bell	4	Warning Bell	Arm

Electronic system modes

The Roadster can be put into a range of modes as follows:

Shipping Mode

When you first receive your Roadster it will be in shipping mode. This mode prevents the bike from turning on accidentally while shipping. To exit shipping mode you must press and hold the Power, Assist Plus and Assist Minus buttons at the same time. This will put the bike into Pairing Mode.

Pairing Mode

Once the Roadster exits Shipping mode it will enter Pairing Mode. The first Rider to pair with the bike will become the bike Owner (ownership can be transferred in the app.) Once Pairing is complete the bike will enter Ride Mode.

Ride Mode

When the bike exits Pairing Mode, wakes from Sleep Mode, or is disarmed, it will go into Ride Mode – which as the name suggests is the mode for riding. You can tell if your Roadster is in Ride Mode because the Battery and Assist lights on the Display will be on.

Armed Mode

If your Roadster is in Ride Mode and the bell button (aka button 4) is pressed and held down it will go into Armed Mode. To protect itself from theft, the Roadster will also auto-arm itself after 5 minutes if left in Ride Mode with no button presses or movement. To unarm, enter the 4 button pin used when pairing the Roadster. On the 5th incorrect unarming attempt, the Roadster will lock out unarming attempts for 5 minutes.



TIP: If your Roadster is locked out, you can still unarm it by using the Proxima function (holding down the bell button with your phone nearby) or by unarming through the app.

In Armed Mode, the motion sensing alarm is on and the central locking of all removable components is activated. This is the mode you would park the Roadster in if you wanted it to prevent theft. See a more detailed explanation of the anti-theft system elsewhere in this manual.

Sleep Mode

Use Sleep Mode if you want to prevent the Roadster from auto-arming or just want it to go into a low power mode for storage. From Ride Mode you can enter Sleep Mode by holding down the power button (aka button 1) until the display powers off. In this mode the Roadster will use minimal power and won't alarm.

Pedal assist

Your Roadster has an electric motor in the front wheel hub which is connected to the battery via a motor controller that can deliver varying amounts of power to assist with riding.

The Roadster is referred to as a pedelec type of electric bike, which means that the electric assistance is activated via the pedals rather than a throttle. It has three levels of pedal assist, and off, which can be selected via the Control Switch.

What is special about the Roadster, as compared to cheaper e-bikes, is that the power assist is proportional to the force you put on the pedal rather than just ON when you turn the pedals and OFF when you stop. This is made possible by a **torque sensor** in the pedal crankshaft and creates a beautiful smooth and intuitive ride.

Power and speed limits

Your Roadster is designed to the current Australian and European pedelec design standards (EN15194) which require the power assistance to be a maximum of 250 Watts and assistance to cut out at 25 km/hr.

For safety, this design standard requires Tiller Rides to prevent riders from modifying these limits. Tampering with or modifying these limits will increase stress on the product, is potentially dangerous and will void warranty.

Controlling power assist level

The control panel near your left hand enables you to control the power assist levels without letting go of the grip.

To increase power assist press the Assist Plus button (aka button 2). To decrease power assist press the Assist Minus button (aka button 3).

The blue lights on the display indicate the level of assist, no lights means no assist, 3 lights means level three - maximum assistance. Level 1 is the default level, every time you wake your bike from sleep it will start in level 1.

The inbuilt and app displays

Your Roadster has an inbuilt display to enable you to see the current battery charge level, level of power assist, status of the alarm and if there are any faults in the electronics.



LED	Pattern	Indication
Red Status Light	Pulsing	Armed
	Slow flashing	Fault detected OR Motion detected while armed
Green Battery Lights	Lowest LED flashing	Less than 10km range left
	Rising levels	Battery is charging

The Tiller App also contains a dashboard that connects to your Roadster via bluetooth and shows real time information such as speed, trip distance, odometer, CO2 saved, battery level, range remaining (approx), bike firmware notifications etc.



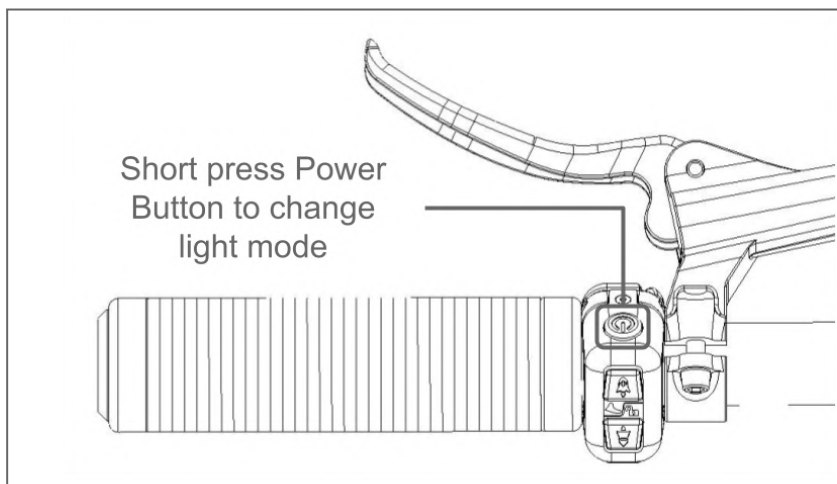
TIP: We recommend fitting a phone holder to the stem or handlebars to use the app while riding. You can even charge and ride using the USB outlet!



Lights

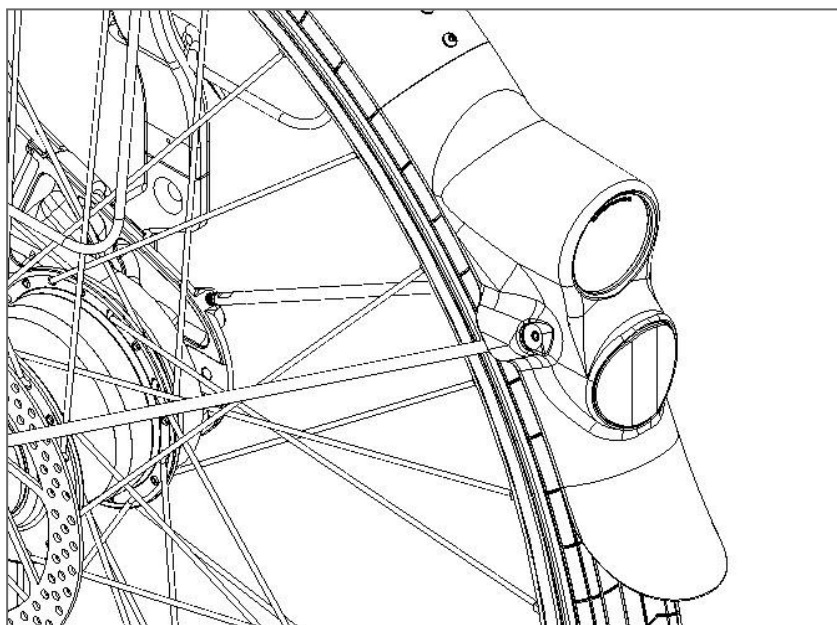
The front and tail lights on your Roadster automatically turn on once you reach 6km/hr and so are a safety feature for both night and day.

Because a front flashing light is the most visible to other road users, the front lights will auto-start in flashing mode. The tail light will always stay in flashing mode, however, to switch the front between 'flashing' and 'on' modes, press the Power button – aka button 1. Also use this button to turn the lights 'off' when the Roadster is stationary.



Brake light

Another safety feature on the Roadster is that the tail light changes from flashing to 'on' and slightly brighter under braking to alert riders and cars behind you that you are slowing down.

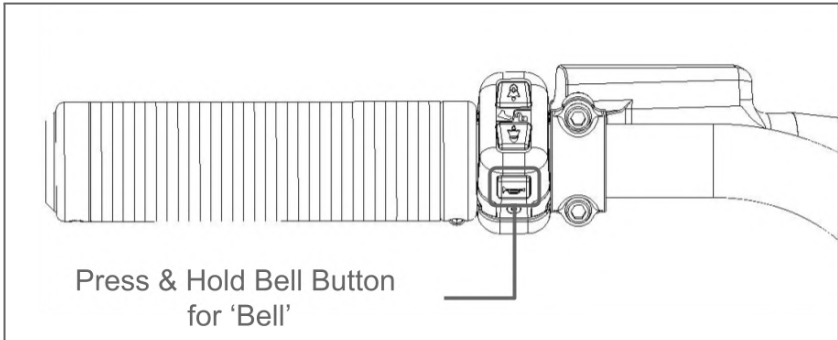


WARNING: When securing luggage to the Roadster, ensure that reflectors and lights are not obstructed.

The bell

Your Roadser is fitted with an electronic bell to warn pedestrians, animals, and other riders of your approach.

To activate the bell, hold down the Bell button (aka button 4) on the Control Switch. The bell will ring continuously until you release the button.



Using the stand

Your Roadster has an integrated wide double stand that folds up into the frame, making things like parking or loading up with shopping easier. The stand also holds your Roadster vertically so that the bike won't move in the wind and accidentally trigger the motion sensing alarm.



WARNING: The Roadster stand is strong but it hasn't been designed to be used with a rider sitting on the seat. Please do not sit on the bike with the stand deployed.



WARNING: It would be dangerous if the Roadster's stand were to deploy while riding. Regularly inspect the stand for damage to the stand legs; if the two legs are loose or aren't moving together, or the springs are not holding the legs up in the stand recesses with a firm force, stop riding and contact the Rider Support Team.

Deploying the stand:

STEP 1: Stand next to the bike and grip the handlebar and seat.

STEP 2: Rotate the pedal anticlockwise until it and the crank are just above the stand.



STEP 3: While holding the steering straight, use the side of your foot to push down on the tab on the stand leg until the stand feet hit the ground.



STEP 4: Once the stand feet are on the ground, put your foot in front of the stand leg and with a hand on the back of the seat pull the bike forward **slowly** until the stand is fully deployed.



TIP: Ensure you park your Roadster on level ground so that it won't wobble in the wind and accidentally trigger the motion sensing alarm.

Retracting the stand

STEP 1: Take hold of your Roadster via the handlebar grip and the front of the seat.

STEP 2: Put your foot behind the stand.



STEP 3: With the handlebars straight, pull the Roadster backwards until the stand legs pass past their lowest point and start moving upwards.

STEP 4: Use your foot under the stand leg to lift it up towards the frame. At some point it will automatically retract up into the stand recesses in the frame.





TIP: Avoid colliding the mudguard with the stand legs by ensuring the front wheel is straight when folding or unfolding the stand.



TIP: Avoid colliding the pedal crank arms with the stand legs by ensuring arms are parallel with the ground when folding or unfolding the stand.

USB device charging

To enable you to charge your electronic devices while you ride there is a USB-C outlet at the front of the bike near the handlebars.



WARNING: To avoid potential for an accident caused by entanglement with the USB charging cord, use a cord that is between 500mm and 700mm long. These can be obtained from the Tiller Rides online store.

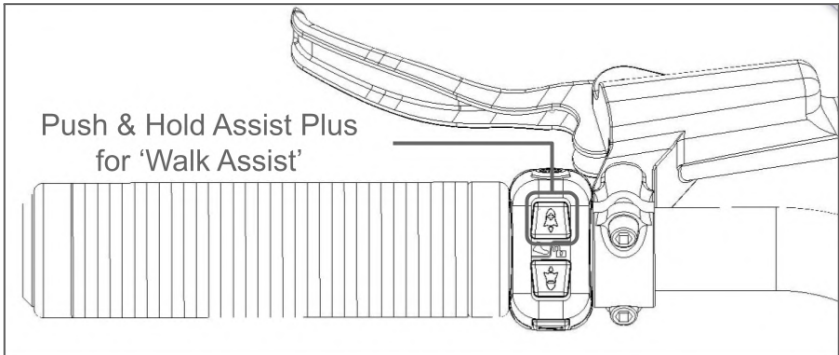
Walk Assist

If you need to walk your Roadster with a heavy load on it or need to walk it up a stairs ramp (see image below) you can use the Walk Assist function. Walk Assist propels the bike along at around 6km/hr.



Activating Walk Assist

Walk Assist is activated by holding down the Assist Plus button when the bike is stationary. To stop Walk Assist just release the button.



Terrains that you can ride a Roadster

Your Roadster has been designed for urban use. This includes smooth roads, paved footpaths and gravel paths that are flat.



WARNING: Off-road or stunt riding will void the warranty, may damage the bike and could result in an injury.

Using the anti-theft features

To minimise the worry of leaving your Roadster alone in the street or out of sight anywhere, your Roadster has a sophisticated onboard anti-theft system.

The 'eVIN' ID

Your Roadster has a unique 'eVIN' (electronic vehicle identification number) on the inside of the right rear stay. This number is also stored inside the Roadster's electronics and is used to identify the Roadster electronically on the cloud-based server it is connected to.

This number is part of the anti-theft system because the current owner needs to approve the transfer of the eVIN to a new owner. As a thief won't be able to do this, the Roadster is unsellable on the secondhand market by anyone other than the owner.

The Quicktether

The Quicktether is an onboard tethering cable used to ensure your Roadster can't be easily wheeled away when parked.

The Quicktether also provides an easy way to lock your helmet to the bike.

To use the Quicktether:

1. Grasp the locking pin behind the seat post
2. Pull upwards to extract the length of cable needed
3. Wrap it around an immovable object
4. Plug the locking pin into the Quicktether lock in the frame



To release the pin from the Quicktether lock either:

1. **Disarm the alarm** - the locking mechanism will cycle to the unlocked position for 10 seconds and release the Quicktether locking pin.
2. **Hold down the Power Assist Minus button** for 3 seconds while in Ride Mode.



TIP: The Quicktether should be considered the first line in theft defence with the roadsters alarm and GPS tracking supporting this. In situations where there is a high risk of theft or the bike is being left for a long period of time it is recommended that the bike be locked with a stronger additional lock. See the next section for details on this.

Extra security using the lock hole

Some bike thieves carry a tool to cut steel cables so if you are in a high theft area or leaving your Roadster out of sight or beyond where you can hear the alarm for a long time, you may want to use a heavy duty physical lock instead of, or coupled with, the Quicktether.

We recommend using either a D-Lock or a folding lock, and we sell a small range of these via our website.



D-Lock



Folding lock

The lock hole at the front of the bike is the safest way to secure your Roadster with a heavy duty lock. Locking through the rear wheel and forward rear mudguard is also secure.



Using the electronic security system

The electronic security system in your Roadster consists of three main elements:

- A motion sensing alarm
- Digitally connected GPS tracking system
- Battery lock

When you arm the security system the battery is locked into place and the motion sensing alarm is activated. Should a thief attempt to steal your Roadster, the movement will cause the alarm to give them two warnings before sounding the alarm. Once the alarm sounds the GPS location is

tracked and communicated to the owner and any shared riders via the mobile app.

While an experienced bike thief may have tools to cut even the heaviest duty physical locks, the alarm and GPS tracking system is much more difficult to overcome. In addition, if your Roadster is successfully stolen and somehow the GPS system is disabled, the electronics will be locked until the correct code is entered. This makes your Roadster unusable and unsellable which is a major deterrent to theft.

Turning on the alarm

There are two ways to arm your Roadster and turn on the motion sensing alarm system.

1. Turn it on from the Lock screen in the App
2. Press the Bell button for more than 3 seconds while stationary in Ride Mode.

To indicate that the alarm is on your Roadster will make a sound, the front light will flash and the red light on the display will begin pulsing in a slow heartbeat pattern.

Auto-arm

If you forget to arm the alarm system, your Roadster is designed to auto-arm itself after several minutes if left in Ride Mode and no button presses are received.

Preventing false alarms

To ensure the alarm doesn't sound accidentally, be careful to park your Roadster in a way that prevents it from being moved by the wind or other people parking bikes nearby. Parking it on level ground on the double stand is one of the best ways to prevent false alarms.

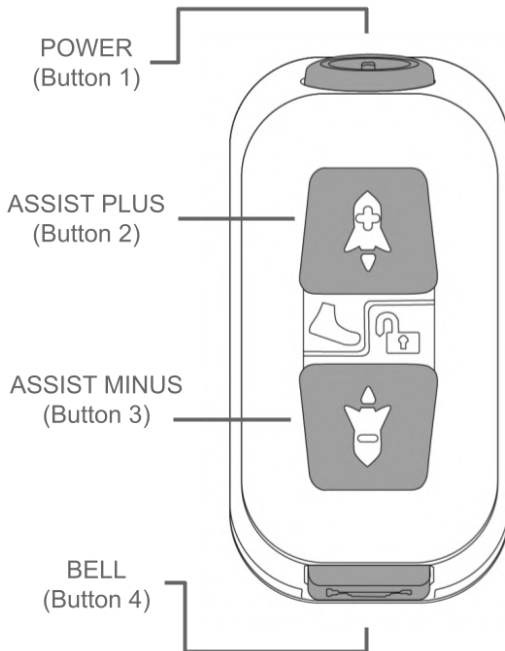
Disarming the alarm

You can disarm the alarm by:

1. Disarming it via the Lock screen in the App. This disarms the bike via Bluetooth or via a mobile data connection. A short delay may occur if disarmed via a mobile data connection.
2. Entering your 4 digit code into the Control Switch with the forward most button being the number 1 and the rearmost button being the number 4.

3. Activating the Proxima feature in the App and pressing the Bell button when your smartphone is near the bike.

When the alarm is disarmed the central locking system will move into the 'Unlocked' position for 10 seconds during which the Quicktether can be removed from the lock.



Battery charging, removal and care

Your Roadster battery contains high quality lithium ion cells and with a full charge will enable you to travel around 90km on full assist – depending on hills climbed, weight of the rider, wind and tyre pressure.

Your Roadster is supplied with a battery charger that will charge the battery from empty to full in 9 hours (i.e. overnight). **Ensure you follow all instructions on the label of the battery charger.**



WARNING: Do not leave the battery in direct sunlight or in places of high temperature (for example, inside a car on a hot day) as this will reduce the battery life span and may be a fire hazard.

Charging your battery

The battery can be charged in or out of your Roadster. To commence charging:

STEP 1: Simply plug the charger into a mains power outlet – ideally one that is supplied with renewable energy so you can reduce your carbon emissions. The light on the charger will be GREEN to show it is on.



STEP 2: Plug the outlet plug into the charging port on the battery. If the battery isn't fully charged the light on the charger will go RED. The battery indicator on the bike will also show that the battery is being charged.



STEP 3: Once charging is complete all five battery level lights on your Roadster will be illuminated and the light on the charger will also go GREEN. At this point remove the charger from the bike and replace the battery charging port rubber bung to prevent the terminals from corroding.



TIP: Your battery charger status light will be GREEN when the charger is not connected to the Roadster and also when the battery is fully charged. If you are unsure if the battery is charged or for some reason it isn't connecting to the battery, put the bike in Ride Mode and check the battery level display.

Charging safety

Your Roadster battery contains a lot of power when charged. To reduce the risks associated with charging it, ensure that you:

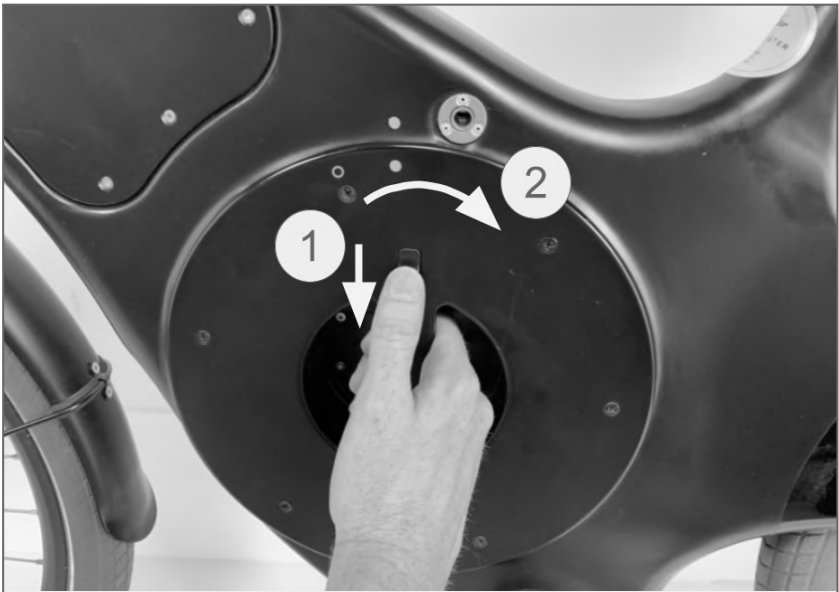
1. Only use the charger provided with your Roadster battery and follow any instructions on the battery charger
2. Charge the battery away from flammable materials
3. Charge the battery indoors or in a sheltered area away from sunshine, heat and rain.
4. Charge the battery in temperatures between 0°C and 40°C

Removing your battery

To remove your battery put the bike into Ride or Sleep Mode so that the battery lock is disengaged.

To remove the battery:

STEP 1: Pull down on the battery unlocking slider and listen carefully for the locking pin to click back into the frame.



STEP 2: Rotate the battery about 15 degrees clockwise until it hits a stop. If it won't rotate clockwise it may be that the battery lock pin hasn't retracted on its spring. To fix this, rotate the battery slightly anticlockwise

and listen for the battery pin to retract and then try rotating clockwise again.

STEP 3: Once the battery hits the rotation stop, pull outwards and the battery will come out of the frame.

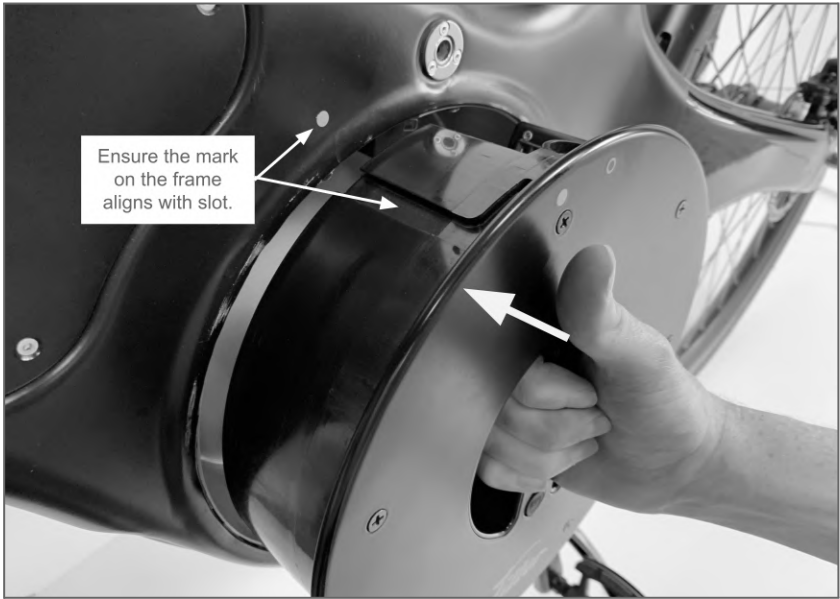


Installing your battery

To install the Roadster's battery:

STEP 1: Hold your battery in an orientation so that the handle is nearly vertical and the unlocking slider is towards the top.

STEP 2: Line up the top left slot in the battery pack with the full circle dot on the frame.



STEP 3: Start moving the battery pack inward – keeping it level – and if needed, rotate small amounts back and forth until the locating pins locate into the slot in the battery pack. Once the pins line up, keep the battery pack level and push it completely into the frame.



STEP 4: Once the front cover of the battery pack is up against the frame all around (i.e. level), rotate the battery pack anticlockwise about 15 degrees or as far as it will go. The full dot on the battery should be lining up with the full dot on the frame and you should hear a small click as the battery lock pin drops down into place.



Maximising battery lifespan

Your Roadster battery contains the highest quality cells from leading lithium ion cell manufacturers. These manufacturers estimate that the cells should last at least 500 cycles before the charged capacity drops by 20%.

To ensure you get at least 500 cycles before this amount of capacity drop, please follow the following recommendations:

1. **Use as much battery capacity as possible between charges,** however **avoid discharging below 20%** capacity where possible. If the battery is completely discharged, then recharge at the next available opportunity, do not leave the battery for prolonged periods of time in a discharged state.
2. **Don't leave the battery sitting on charge** for days on end. The cells don't like being held at the fully charged battery voltage for extended periods of time.

3. **If going on holidays** or not using your Roadster for more than a couple of weeks **discharge the battery to about 40%** of charge (i.e. two lights on the display) rather than leaving fully charged.
4. Heat damages lithium ion batteries so **avoid charging your bike while it is in the sun or in a hot environment**. If it is hot outside, take your battery to a cooler space for charging, or charge overnight when it cools down.

Battery storage

Store Roadster batteries in a semi-discharged state (see maximising lifespan section) and in a sheltered area away from sunlight, heat, humidity and rain. Store the battery in ambient temperatures between -20°C and 45°C for periods less than three months. If storing the battery between three months to one year, store between -20°C and 20°C.

Carrying things

As the ultimate urban mobility solution, your Roadster is also designed to carry a range of loads.

Using the rear carrier

The rear carrier is designed to be a sturdy platform for a range of load carrying devices to be attached. The rear carrier is rated to carry up to 60kg in vertical weight, however, it is important that the 160kg max permissible load of the entire Roadster (Rider + Bike + Carriers) is not exceeded. Carriers that can be attached include child seats, panniers and baskets.



WARNING: Check the Roadster's rear carrier strength and geometry meets the mounting requirements of any off-the-shelf luggage carrier before attaching it.



WARNING: Your Roadster may behave differently, particularly by way of steering and braking, when the rear carrier is loaded. To reduce this effect, it is best to evenly distribute the load between the two sides of the luggage carrier.



WARNING: Ensure that any luggage or child seat feature fitted to the luggage carrier is securely fitted in accordance with the

manufacturer's instructions and that there are no loose straps that can get caught in the wheel.



WARNING: Do not modify the rear carrier in any way as this may reduce the strength and make it unsafe to use.



WARNING: Regularly inspect the two carrier-to-dropout screws and monitor for any forward movement that may indicate that the mudguard-to-frame screws have become loose.

Installing the Thule-Yepp Maxi child seat

The rear carrier has been specifically designed to easily attach the innovative and comfortable Thule-Yepp Maxi child seat. We selected this seat to design the rear carrier around because of its simple mounting system.

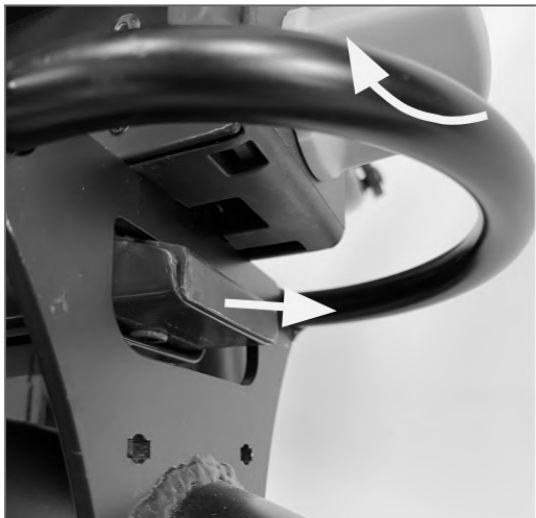


Please follow these steps to attach the Thule-Yepp Maxi child seat:

STEP 1: Slide the front 'V' of the child seat mounting mechanism into the rear slot in the middle crossmember on the rear carrier.



STEP 2: Lower the rear part of the child seat carrier mounting mechanism down into the rear carrier and rotate the locking dial clockwise 5-6 times until the rear 'V' slides out and locks into the rear slot in the rear carrier. Ensure the locking tab clicks out.



STEP 3: Wriggle the seat to ensure it is not loose and is fully locked in place. If not, repeat STEP 2 until the child carrier is firmly attached.

STEP 4: Install the backup ratchet loop around the seat post.



Using panniers

Pannier bags are a great way to carry things on your Roadster as they keep the weight low and can be easily removed and carried into a shop, your home or workplace.

Panniers with mounting hooks or clips that can attach to a 12mm diameter or greater shaft can be fitted. Please follow the mounting instructions provided by the pannier manufacturer.



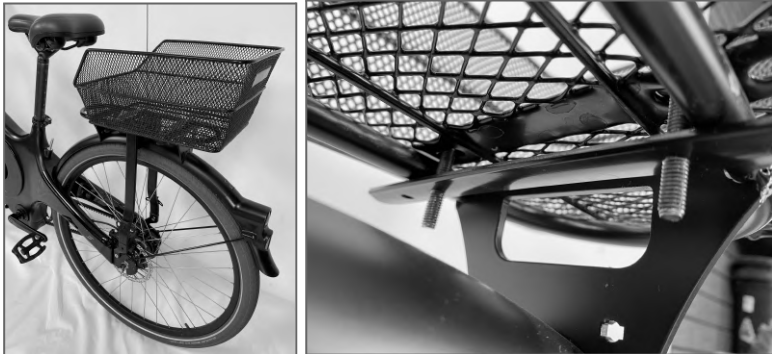
TIP: Mount the panniers far enough backwards so the rear of your foot doesn't hit them while riding.



Using an off-the-shelf rear basket

A basket mounted on the rear carrier is an easy way to carry around items, especially things like bags of shopping, handbags or backpacks.

Most off-the-shelf rear baskets have a mounting system that will enable it to be firmly attached to the Roadster's rear carrier. If you aren't sure how to do this, visit the support page on our website for how-to videos, call our Rider Support line or ask your local bike shop to assist.



Using trailers

Another way of carrying larger loads, including children, is in a bike trailer. There are a number of brands that make these and most of them use one of three attachment systems that can all be installed on the Roadster.

Axle mounted trailers

The most common trailer requires a mount that is permanently attached under the left hand axle nut. The trailer itself is then attached and detached from this mount as required.

To attach the trailer mount:

STEP 1: Remove the rear axle nut by turning it anticlockwise with a 15mm spanner – see your toolkit.

STEP 2: Install the trailer mount as per the manufacturer's instructions.

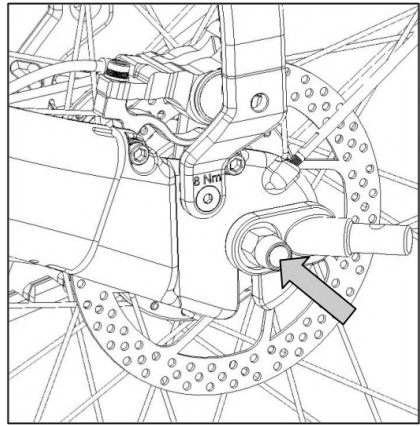
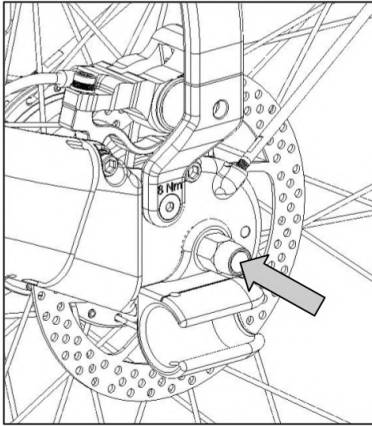
Thule 'EZ-Hitch'
Trailer Mount



Common
Trailer Mount

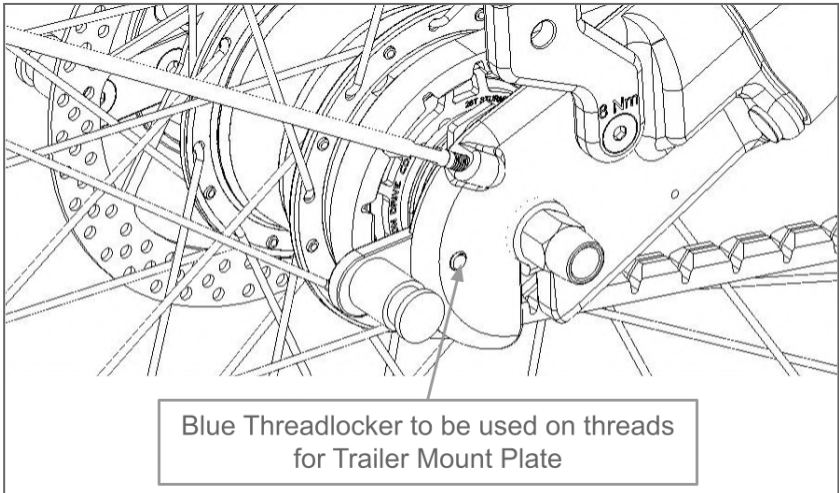


STEP 3: Reinstall the axle nut and tighten to 30-35Nm.



One-wheel trailers

There are a range of one-wheel trailers that need two mounting points to attach so they are stable. The Roadster has been designed to have special mounts attached to the rear dropouts to enable this style of trailer to be attached.



Because each of the one-wheel trailers has a slightly different mounting mechanism, you will need to order the correct mount from Tiller Rides at tillerrides.com.



WARNING: To ensure these mounts don't become loose, use a medium-strength thread locker on the mounting screw.



Other accessories

Your Roadster has been designed with a comprehensive set of features built in. In addition to the toolkit supplied with your Roadster, there are some accessories that you may find useful that aren't currently built in. These include:

1. Panniers
2. Rear basket
3. Strong physical lock
4. A pump (manual or electric)

5. Puncture repair:
 - a. tube repair kit
 - b. tyre repair canister (seals leaks and inflates tyres on the road)
 - c. spare tube

Please see the Tiller Rides website tillerrides.com for accessories that we have researched and recommend.

Spare parts

To minimise the amount of time off the road waiting for spares, we recommend holding the following parts:

1. Spare tube
2. Spare brake pads

Ongoing care, inspection and maintenance

Your Roadster is built to a very high quality, however, like any machine, some parts will wear out over time and will need replacing before the design life of the bike is reached and it needs to be recycled.

In addition to the regular pre-ride checks, the following parts should be monitored on an ongoing basis and maintenance performed to ensure your Roadster is reliable and remains safe to ride.



WARNING: Tiller Rides has selected each part of the Roadster carefully to balance function, aesthetics, cost and, most importantly, safety. Please use same-brand replacement parts to ensure safety is maintained and the warranty isn't voided. Genuine/same-brand parts can be ordered via tillerrides.com.

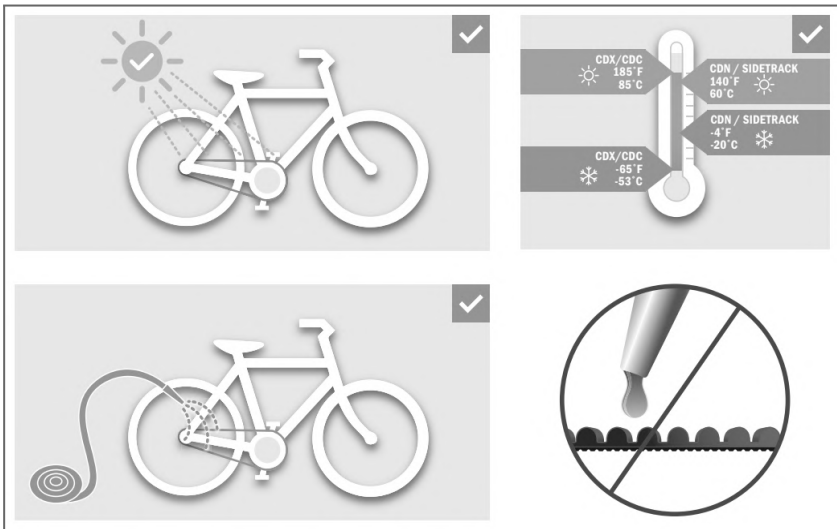
Belt care, inspection and maintenance

The belt and sprockets that drive your rear wheel is of a high quality and should last many thousands of kilometres. Belt drive manufacturers often say that belts will last up to four times the life of a chain. Despite this, sunlight, grit and other factors will wear the belt and sprockets over time.

Belt care

There are several things you can do to ensure your belt lasts as long as possible (Images from the 2021 Gates Tech manual):

1. **Do not oil it:** Your belt does not require greasing like a chain and the grease is likely to damage the belt material.
2. **Keep it out of the sun:** While the belt is designed to handle an amount of UV ray exposure, minimising direct sun exposure is recommended.
3. **Keep it clean:** Keeping grit and debris off your chain will ensure the belt surface isn't damaged. Clean your belt with water – no other solvents should be used.
4. **Keep at the right temperature:** Your belt should be kept between -53°C and 85°C . It is likely to be damaged outside these temperatures.



Above image courtesy of Gates Carbon Drive Technical Manual

5. **Keep it at correct tension:** The belt is designed to be operated at a specific tension so it doesn't skip on the sprockets and is not overstressed. The tension can be checked and adjusted using

the Gates Carbon Drive smartphone app (QR codes below) which will allow you to check the tension.



Android



Apple

To adjust the belt tension follow these steps:

STEP 1: Loosen the two (2) bolts on the eccentric bottom bracket using the 4mm Hex Key. Remove each bolt and apply a drop of medium-strength (blue) thread locker to the thread of each bolt.



STEP 2: Before the threadlocker goes off (approx 10-20 mins) insert a pin spanner into the two pin spanner holes in the left hand bottom bracket cap and rotate anticlockwise to tighten, or clockwise to loosen. Check the tension using the Gates Carbon Drive App as you do this until it is correct.

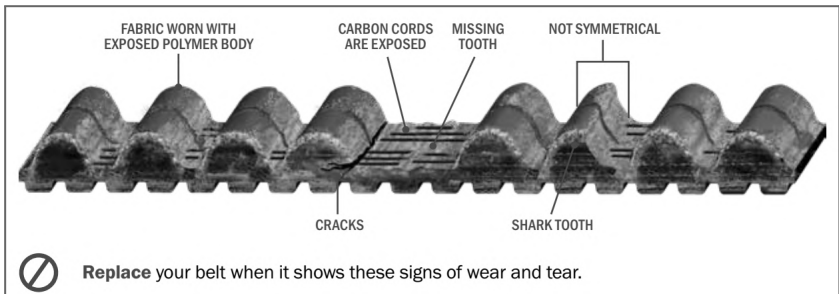


STEP 3: While maintaining the tension on the belt, retighten the bottom bracket bolts to 6-7Nm.

Belt inspection

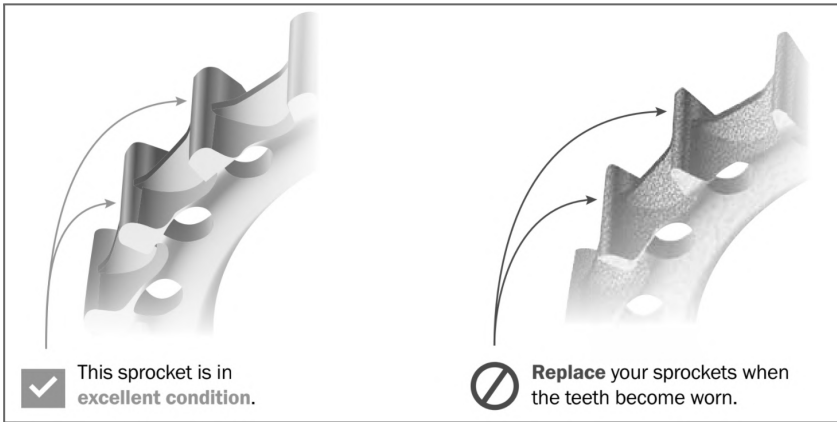
The inspection telltales to monitor for belt and sprocket health are below courtesy of the 2021 Gates Technical manual:

Belt Telltales



Above image courtesy of Gates Carbon Drive Technical Manual

Sprocket Telltales



Above image courtesy of Gates Carbon Drive Technical Manual

If your belt or sprockets need replacement please see the tillerrides.com website to order new parts or go to a local bike shop that carries the correct parts. Only install genuine parts.

Brake care, inspection and maintenance

Your Roadster has hydraulic brakes that use oil to move the force applied to the brake lever on the handlebars down to the brake pads to stop the bike.

The following inspection and maintenance will ensure the braking system is working effectively.

Brake disc care

For your braking system to work it is important that the disc itself is straight and true. The disc is reasonably strong, however, it can be damaged if it is struck – when parking in metal bike racks, for example.

If the brake disc has visible damage, or is bent and rubbing on the calliper when spun, contact a certified hydraulic brake repair agent.

Brake pad inspection and maintenance

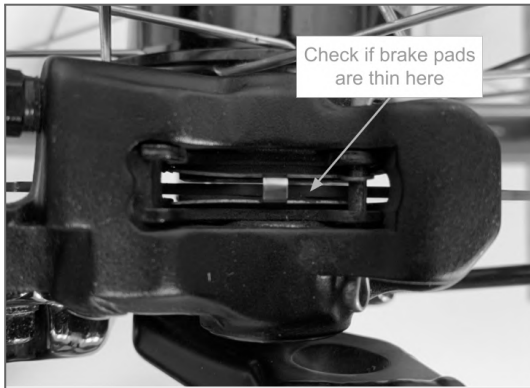
Brake pads are the item most likely to need regular replacement on the Roadster. The length of time between changes depends on how often and hard you brake and whether you rely on the front or rear brakes more.



WARNING: Brake pads and discs can get very hot as a result of braking, especially hard braking. Ensure you let your discs and brake pads cool down before performing any maintenance.

The telltales to monitor your need for brake pad replacement are:

- Lack of braking power
- A loud metal-on-metal squeal coming from the brake
- Visual inspection shows the brake pads are very thin



If your brake pads need replacement please have them changed by a Certified Tiller Rides Service Agent or a qualified bike mechanic experienced with hydraulic brakes.

Zoom Brake Pad style



Brake oil level inspection and maintenance

Over time, the hydraulic mineral oil that is used to operate the brakes can leak out of the system and cause the brakes to lose some or all braking power.

The telltales that the hydraulic oil level is low are:

- The brake levers will pull in up against the grips and no amount of pumping the lever can stop this occurring.



If your brake oil needs topping up please contact a Certified Tiller Rides Service Agent or a qualified bike mechanic experienced with hydraulic brakes.

Seat area care, inspection and maintenance

The seat area on your Roadster is essential for a comfortable riding experience. The following care, inspection and maintenance will ensure many years of comfortable riding.

Saddle care and inspection

Your Roadster's saddle is a wide and comfortable design. It is made using a vacuum forming process (rather than stretching sewn vinyl over a foam core) that produces a saddle with no sewn seams that can come undone. The result is a durable wear and water resistant saddle that will last a long time.

Caring for your saddle

To maximise the lifetime of your saddle:

- Park your Roadster on its stand – this prevents saddle damage caused by leaning it up against walls or striking the road when it falls over.
- Don't sit on your saddle with clothes that have sharp objects on them or in your back pockets.

Inspecting your saddle

Your saddle is strong and unlikely to fail under normal conditions, however, if it starts feeling loose or unstable, inspect the underside for possible cracked plastic base or fatigue cracks in the metal seat rails. If you find any abnormalities, immediately replace your seat – you can find a replacement at tillerrides.com.

Clamp and seat post care and inspection

To enable a large seat height adjustment the Roadster has a longer than normal seat post and a quick release seat post clamp for easy adjustment.

Caring for your seat post

The tight sliding fit between the seat post and the seat tube that it slides into is prone to wear and getting stuck due to mild corrosion. To prevent both of these a light 'smear' of grease should be maintained in this joint.

To apply grease to this area:

STEP 1: Release the seat post clamp to enable the seat post to slide.

STEP 2: Lift the seat post to its uppermost position and apply a smear of grease to the lower 100mm of the post.



TIP: Use a light coloured grease so it has less chance of staining clothes etc. if it was to get on them.



STEP 3: Slide the post in and out of the bike a few times to spread the grease down into the joint.

STEP 4: Slide the post to the uppermost position and use a rag to wipe off any excess grease on the seat post so it doesn't get on clothes.

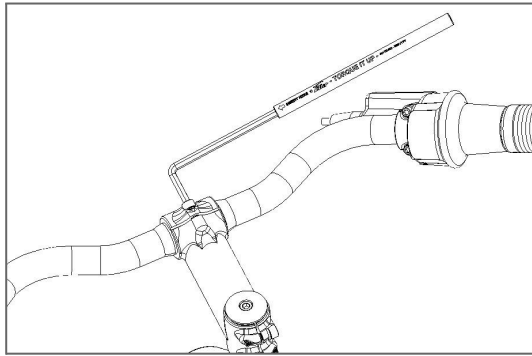
Removing or changing anti-theft seat post

The seat post on your Roadster has been designed such that despite it having quick release height adjustment it can't be easily removed from the frame and hence prevents on-the-street seat theft.

To remove or change your seat post, contact Tiller Rides support via our website tillerrides.com. Otherwise see a Tiller Rides certified technician or qualified bike mechanic.

Handlebar area care, inspection and maintenance

Tighten the handlebar clamp bolts with the 5mm Allen Key and Torque-It-Up up to a maximum torque of 8 - 10Nm.



Tyre care, inspection and maintenance

Your Roadster has high quality all-weather puncture resistant balloon styled tyres on it. These are designed to grip in all situations, absorb road vibration and, if properly cared for, should last up to 10,000 kilometres.

Caring for your tyres

The following care instructions will ensure your tyres last as long as possible and have minimal cost, hassle and environmental impact.

1. **Maintain tyre pressure** - Low tyre pressure significantly affects tyre wear and will also reduce the range you get out of a battery. The optimum tyre pressure for your Roadster to balance out shock absorbance, battery range and life is 35 PSI / 240 Kpa / 2.4 Bar. Refer to the table below for min and max tyre pressures.

Tyre Pressures	PSI	kPa	Bar
Minimum	35	240	2.5
Maximum	70	480	5



WARNING: Over inflating your tyres can cause the tyre to explode and cause injury. Under inflating can cause dangerous handling and cause injury. Never inflate a tyre above or below the recommended tyre pressure marked on the sidewall of the tyre.

2. **Minimise how hard you brake** - Tyre wear is proportional to how much braking force is used so it is best from both a tyre wear and safety perspective to minimise braking force by braking smoothly.
3. **Minimise skidding** - If you brake so hard that your tyres skid this can be unsafe and will accelerate tyre wear.
4. **Keep tyres out of the sun** - UV rays from the sun will degrade the tyre material so it is best to keep them out of the sun where possible by parking it undercover or in the shade. This will also prolong the life of other parts of your Roadster.
5. **Avoid puncture situations** - Your tyres can be damaged from riding over things like glass or sharp rocks, hitting sharp edges on curbs, or riding over thorny prickles.

Tyre inspection

Even if you practise the best of tyre care, your tyres will always wear with use. Tyres are the key component connecting the bike to the road. Safe tyres are essential for safe riding and the Roadster's tyres must be regularly inspected for damage or excessive wear. The telltales to monitor for tyre replacement are:

- **Balding of the tyre** - especially in the centre. This indicates that the all-weather nature of the tyre is compromised and so it will have less grip in the wet.
- **Ability to see the puncture protection layer or reinforcing in the tyre** - this is a sign that the tyres have reached the end of life and need to be changed.
- **Bulging of the tyre** - this is an indication of damage to the internal reinforcing.

If your tyres need replacement, please see the tyre maintenance/replacement section.

Tyre maintenance/replacement

Your Roadster has been designed to enable the tyres to be easily replaced at the end of their life.

Replacing the front tyre

To replace the front tyre you will need the following:

1. A new tyre – you can order this from the Tiller Rides online store at tillerrides.com
2. Two tyre levers
3. 3mm Allen Key (ballend) (see toolkit)
4. 15mm ring spanner (see toolkit)
5. Medium-strength threadlocker (often blue)

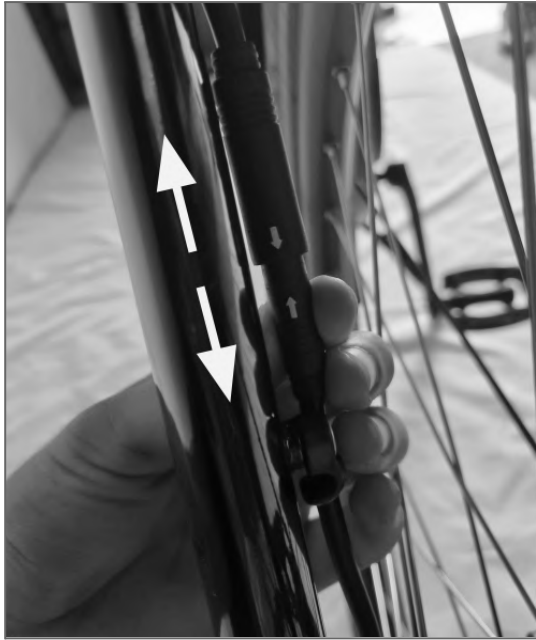
The process to remove and replace the front tyre is below; however, this will require moderate mechanical skill so if you don't feel competent in undertaking this task please see a certified Tiller Rides repairer or take this manual to a local bike mechanic.

STEP 1: Place the Roadster on its stand.

STEP 2: Remove the lower two (2) front motor cable clamps using the 3mm Allen Key from the toolkit.



STEP 3: Disconnect the motor cable plug by carefully pulling it apart.



STEP 4: Loosen the two front wheel locking nuts by rotating them anticlockwise using the 15mm ring spanner. Continue to wind them out by hand until the nuts can be removed from the wheel axle.



STEP 5: Holding the front wheel on the ground, grasp the Roadster's stem and lift the forks off the wheel. Once the wheel is clear of the forks, lower the bike down and rest it on the front forks on a piece of rag (or similar) to avoid scratching the paint.



TIP: While the front wheel is off, don't press the front wheel brake lever as this will push the brake pads in and prevent you installing the tyre again. If you accidentally do this you will need to carefully pry the brake pads apart with a soft tool like a tyre lever.

STEP 6: Replace the tyre by:

STEP 6A: Release all the pressure in the tube by pressing the valve pin with a small implement such as a small Allen Key.

STEP 6B: Use the tyre levers to remove the worn tyre from the rim – be careful not to damage the tube.

STEP 6C: Install the new tyre halfway onto the rim by fitting only one of the tyre beads onto the rim.

STEP 6D: Partially inflate the tube and take hold of the valve and insert it into the valve hole. Put the cap back onto the valve so it doesn't come back out of the hole and feed the remainder of the tube up into the tyre.

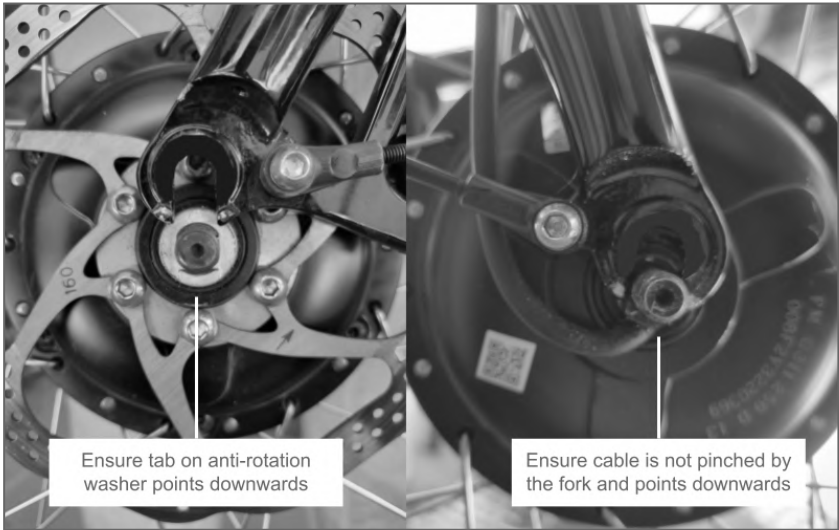
STEP 6E: Using just your hands, push the second side of the tyre bead onto the rim (if you use levers be sure not to 'pinch' the tube as this is likely to put a hole in it).

STEP 6F: Commence slowly inflating the tyre and as you do it check that the tyre bead is seated evenly on the rim all round and on both sides. This may require some pushing and prodding of the tyre while at a low pressure. Stop inflating and adjust if it isn't fully seated all round.

STEP 6G: Inflate the tyre to the recommended tyre pressure (between 35 and 40 PSI) with a lower pressure providing greater shock absorption but slightly lower range.

STEP 7: Reinstall the front wheel by doing the following. This is often easier if undertaken by two people:

1. Take the Roadster off its stand.
2. Oriente the wheel such that the disc is on the correct side.
3. Rotate the wheel so that the motor cable exits the motor shaft at the bottom.
4. Spread the lock washer so it is up against the nut and the anti-rotation washer is on the keyed motor shaft on the disc side.
5. Place the wheel under forks and lower the forks down onto the axle making sure you aren't damaging the motor cable and that the anti-rotation washer inserts into the slot in the fork.



STEP 8: Reinstall the front wheel nuts by:

1. Removing the wheel nuts,
2. Adding a drop of medium-strength thread locking compound to the thread, and
3. Reinstall the wheel nuts.
4. Finger-tighten while pressing down on the handlebars to ensure the forks are fully engaged.
5. Tighten the wheel nuts to 30-35Nm with the 15mm ring spanner (i.e. the round end).

STEP 9: Plug the motor cable into the upper motor cable plug ensuring you line up the two arrows and only apply force once you feel it going together.



STEP 10: Reinstall the motor cable clamps using the 3mm Allen Key and tighten to 2-3Nm.

Replacing the rear tyre

To replace the rear tyre you will need the following:

1. A new tyre – you can order this from the Tiller Rides online store at tillerrides.com
2. 2 x tyre levers
3. Bottom bracket pin spanner (see toolkit)
4. 15mm ring spanner (see toolkit)
5. Pliers (often blue) (owner supplied)

The process to remove and replace the rear tyre is below, however, this will require moderate mechanical skill so if you don't feel competent in undertaking this task please see a certified Tiller Rides repairer or take this manual to a local bike mechanic.

STEP 1: Place your Roadster on its stand.

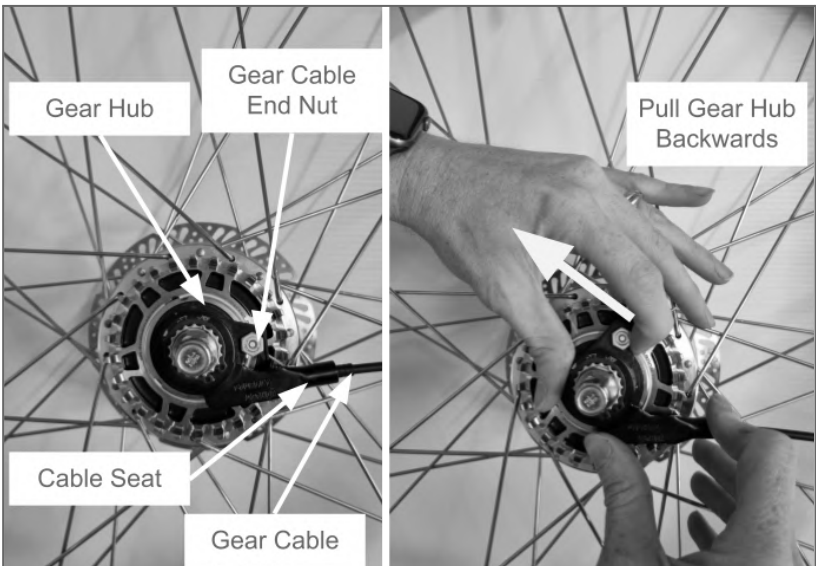
STEP 2: Loosen the two eccentric bottom bracket clamping bolts one turn using the 4mm Allen Key.



STEP 3: Using the pin spanner, rotate the bottom bracket cap anticlockwise until the belt is as loose as it will go before lifting the belt off the rear sprocket and moving it to the side.



Note: The images in steps 4 and 5 are for illustration purposes **only**, these actions must be carried out with the wheel in position on the frame.



STEP 4: Put the gear shifter into 5th gear and remove the gear cable by rotating the gear hub counter-clockwise and then removing the end nut from its slot.

STEP 5: Remove the gear cable from the seat by pulling on the end of the cable. The gear cable should now be hanging free.



STEP 6: Using the pin spanner, rotate the bottom bracket cap anticlockwise until the belt is as loose as it will go before lifting the belt off the rear sprocket and moving it to the side.



STEP 6: Undo the rear axle nuts by rotating them anticlockwise using the 15mm ring spanner.

STEP 7: Grasp the rear carrier and carefully lift the back of the Roadster up and clear of the wheel. **You will need to push the belt out of the way but be careful not to bend it sideways.** This is usually easier if performed by two people.



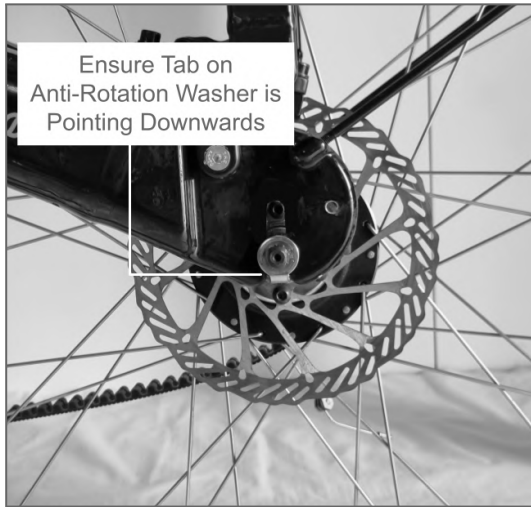
TIP: While the rear wheel is off don't press the rear brake lever as this will push the brake pads in and prevent you installing the wheel again. If you accidentally do this you will need to carefully pry the brake pads apart with a soft tool like a tyre lever.

STEP 8: Change the tyre using the same procedure as detailed in the front tyre replacement procedure.

STEP 9: Reinstall the rear wheel by doing the following. This is often easier if undertaken by two people:

1. Take the Roadster off its stand.

2. Orient the wheel such that the disc is on the correct side and the anti-rotation washer tab is down and it is up against the nut.



3. Lift the rear end of the Roadster, position the wheel under the frame and commence lowering.
4. When the dropouts are about 100mm above the rear axle, carefully slide the belt over the rear sprocket.
5. Continue lowering the frame and install the rear axle into the dropouts with the lock washer between the nut and the dropout on both sides.
6. Check the anti-rotation tab is seated in the dropout slot.



7. Apply medium-strength threadlocker and finger-tighten the wheel nuts before tightening them to 30-35Nm using the 15mm ring spanner.
8. Reinstall the gear cable using the reverse procedure used to remove it (see above).

STEP 10: Tighten the belt by following the procedure in the Belt care, inspection and maintenance section.

Recycling your used tyres

At the time of writing this manual, bicycle tyres are not fully recycled but instead downcycled into roadfill, rubberised running tracks and playground surfaces, adhesives and other products. While not fully recycled, the downcycling has a net environmental benefit by reducing the use of new materials.

To find the nearest place to recycle your tyres:

- Using your preferred internet search engine, search for 'Bicycle tyre recycling'.
- In Australia go to **tyrecycle.com.au** and enter your postcode to find the nearest dropoff centre.
- Ask your local bike shop.

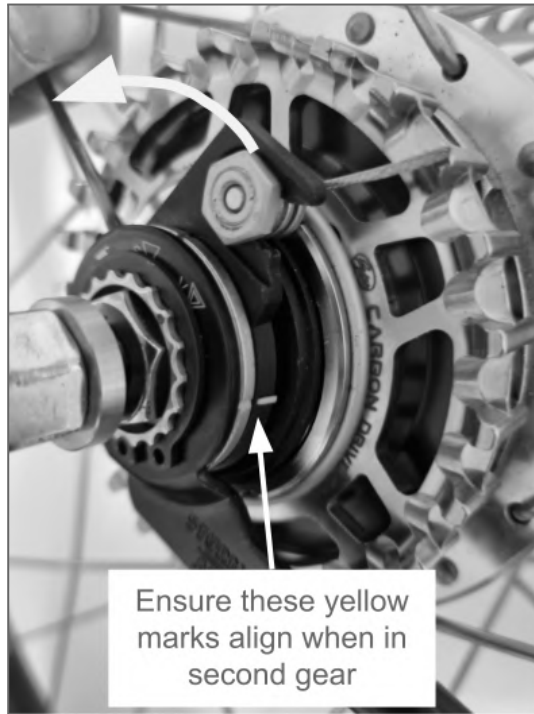
Internally geared hub care, inspection and maintenance

The rear hub gearbox on your Roadster is a high quality part and because the gears are internal and away from dirt and water they don't need as much maintenance as a regular derailleur system. With correct care, inspection and maintenance, it can last a very long time.

Internally geared hub care and adjustment

Inside your internal gear hub are a number of gears which mesh together to create different gear ratios. These gears can be damaged if power is applied when they aren't properly meshed together. To prevent this happening the following care should be taken:

1. While the gears are internal, they don't have a rubber seal protecting the gears from water ingress. If water were to get in it can cause the lubricating grease to deteriorate. For this reason you need to keep the gearbox away from water as much as possible (don't squirt it directly).
2. Significantly reduce pedal power when changing gears – even when riding up a hill.
3. Adjust the gear changer if gears are slipping during normal use. To do this use the following method to retune the Sturmey Archer 5-Speed rear hub.
 1. Move the gear shifter to number 2.
 2. Rotate the shifter cable adjuster until the yellow mark on the cone locator is aligned with the yellow mark on the cable drum (see figure below).



3. Move the gear shifter back to number 5 and then return it to number 2.
4. Rotate the pedal cranks a full turn.
5. Check that the yellow mark on the cable drum is aligned with the yellow on the cone locator. If it isn't, repeat steps 1 to 4 until they are aligned.

Internally geared hub maintenance

The internal gear hub is low maintenance but not *no* maintenance. To service the internally geared hub, please visit a Certified Tiller Rides Service Agent or qualified bike mechanic as per the Servicing Schedule in this manual.

Pedal care and maintenance

Because pedals can make contact with the ground on a sharp turn, or when riding next to a curb, they can get damaged to an unsafe level. Pedal bearings are also exposed to water when riding in the rain and so also need to be inspected and maintained.



WARNING: If the pedals are bent, cracked or broken, then cease riding the Roadster immediately and replace the pedals.

Pedal care

Getting water in the bearings and damaging them through contact with the ground or a curb are the main ways to reduce pedal life. To prevent this:

- Lubricate the bearing annually to ensure the bearings aren't dry. To do this place four (4) drops of general purpose oil into the gap where the pedal shaft disappears into the pedal.
- Avoid spraying the pedals directly, riding through big puddles or riding immediately after heavy downpours when the road has lots of water on it.
- Stop pedalling when going through sharp turns and instead roll through them while keeping the pedal on the side you are leaning into in the up position.
- Keep the cranks horizontal, with pedals in the 3 and 9 o'clock position, when going up or down curbs to avoid contact.
- Avoid riding too close to curbs where the pedal could make contact.

Pedal inspection

The telltales to monitor for pedal maintenance or replacement are:

- Pedals are loose on the shaft (i.e. movement other than rotation about the pedal shaft axis).
- Pedals don't rotate freely (even if greased properly won't free-spin more than a couple of rotations).
- Pedals are cracked or damaged and have sharp edges.

Pedal maintenance

If a pedal is badly damaged it will most likely need replacing because it is difficult to get spares for each of the pedals parts. You can order new pedals at tillerrides.com.

If the bearing in the pedal is no longer spinning freely, the pedal bearings can be replaced. To do this take your Roadster to a certified Tiller Rides repairer or a qualified local bike mechanic as they will be able to disassemble it and free it up with new ball bearings and grease lubricant.

Front and rear light care, inspection and maintenance

The front and rear lights are designed to not require maintenance over the lifetime of the Roadster. However, issues may arise that require servicing or replacement.



WARNING: Remove the main battery before doing any maintenance on the front or rear light.

The assembly of these lights is moderately complex and involves electrical wiring that needs to be installed the correct way to avoid shorting and possible fires. Assembly also involves correctly seating seals so they keep the water out. For this reason we only recommend servicing by a Certified Tiller Rides Service Agent.

If you just require a replacement light housing or LED globe, go to the spare parts area on the Tiller Rides website at tillerrides.com.

Storing your Roadster

To maximise the life of your Roadster it is best to store it in a dry cool environment such as inside or undercover away from sun and rain. It is also important to store it away from volatile fuels that could ignite with a spark and corrosive materials such as battery acid and swimming pool chemicals.

To reduce thermally induced degradation of the battery cells and electronics, your Roadster should ideally be stored between 5°C and 40°C. It is therefore best to minimise the amount of time it is left in the sun as the dark coloured versions can generate internal temperatures 10-20 degrees higher than ambient temperature.

If you have just ridden in the rain, thoroughly dry your Roadster with a towel, especially on the metal components.

Cleaning your Roadster

Regular cleaning will help keep your Roadster in good condition, make it last longer and look better and provide an opportunity to inspect the frame and components for potential problems. This is especially true after riding on a dusty road or in the rain or snow where the frame becomes splattered with road grit. The belt is especially sensitive to operating with grit on it. It can be cleaned with water and a light brush.

Bucket or spray?

It is recommended to use a bucket and sponge/soft brush to clean your Roadster.



WARNING: Do not use high pressure spray as it may cause paint damage and/or force water through important seals.

If you need to use some form of spray to remove grit, it is best to just use a low pressure hose. To avoid damage to bearings or filling the Roadster up with water, do not spray with a high pressure hose.

Suitable cleaning products

To ensure you don't create a chemical reaction between the paint or other finishes, use a mild detergent like dishwashing detergent for example.



WARNING: Strong detergents, or rust cleaners, may damage the Roadster paint or other finishes that over time may render the bicycle unsafe for use. Tiller Rides only recommends the use of mild detergents for cleaning your Roadster.

General lubrication

Your Roadster has many moving parts that rely on lubrication to prevent excessive wearing of parts. Many of these parts have sealed bearings in them which can't be lubricated. Refer to the servicing schedule section of this manual for lubrication maintenance recommendations. If you ride your Roadster on dusty roads or in the rain these lubrication intervals will shorten.




WARNING: Do not lubricate the belt as this may damage the material and will hinder effective transmission of power by causing slippage.

End of life recycling

Your Roadster has been designed to have a low environmental impact throughout its entire life. This low impact is achieved by recycling any parts that you replace during its life and recycling the entire bike at its end of life.

Many of the plastic moulded parts have a recycling symbol on them to assist with identifying the material; however, the following is a guide on what each part is made of and how to recycle them.

Part	Type of Material	How to Recycle
<ul style="list-style-type: none"> ● Frame ● Forks ● Rear carrier ● Seat post ● Mudguards 	<p style="text-align: center;">6061 Aluminium</p>	<ul style="list-style-type: none"> ● Return to Tiller Rides OR ● Household recycling or take to metal recycler
<ul style="list-style-type: none"> ● Stand 	<p style="text-align: center;">A383 Cast aluminium</p>	<ul style="list-style-type: none"> ● Take to metal recycler
<ul style="list-style-type: none"> ● Crank arms ● Seat post clamp ● Front sprocket ● Brake calipers ● Brake levers (Zoom) 	<p style="text-align: center;">Aluminium</p>	<ul style="list-style-type: none"> ● Household recycling or take to metal recycler
<ul style="list-style-type: none"> ● Bolts and screws ● Quicktether cable ● Spokes ● Front mudguard Stay ● Rear carrier pannier support ● Quicktether mechanism metal parts ● Rear sprocket 	<p style="text-align: center;">Stainless Steel</p>	<ul style="list-style-type: none"> ● Return to Tiller Rides ● Household recycling or take to metal recycler

<ul style="list-style-type: none"> ● Battery 	Lithium ion	<ul style="list-style-type: none"> ● Return to Tiller Rides ● Local battery recycling centres
<ul style="list-style-type: none"> ● Front light housing ● In bike battery connector housing ● Control panel housing ● Battery housing ● Belt guard ● Front & rear light lenses ● Battery ring liner 	<p>Plastic – Please see part marking on part for the type of plastic</p>  <p>OTHER</p>	<ul style="list-style-type: none"> ● Return to Tiller Rides ● PP can often be recycled in household recycling ● 'Other' often requires being taken to a special plastics recycling centre – it can't be put into your household recycling bin
<ul style="list-style-type: none"> ● Quicktether locking mechanism plastics 	POM / Acetyl	<ul style="list-style-type: none"> ● Return to Tiller Rides ● Special plastics recycling centres – this usually can't be put into your recycling bin
<ul style="list-style-type: none"> ● Quicktether cable conduit 	Nylon	<ul style="list-style-type: none"> ● Return to Tiller Rides ● Special plastics recycling centres – this usually can't be put into your recycling bin
<ul style="list-style-type: none"> ● Motor 	Aluminium, Plastic, Copper, Steel	<ul style="list-style-type: none"> ● Return to Tiller Rides ● Pull apart to separate metals and take to metal recycler
<ul style="list-style-type: none"> ● Internal hub gear 	Aluminium, Steel	<ul style="list-style-type: none"> ● Return to Tiller Rides ● Pull apart to separate metals and take to metal recycler

<ul style="list-style-type: none"> ● Main electronics ● Quicktether servo ● Internal cables ● Electronics in the battery 	<p>Aluminium, Circuit Board, Cables, Polycarbonate</p>	<ul style="list-style-type: none"> ● Local e-waste recycler for cables, circuit board and servo ● Household recycling for the aluminium housing ● Special plastics recycling centres for the polycarbonate – this usually can't be put into your recycling bin
<ul style="list-style-type: none"> ● Tyres 	<p>Rubber, Steel</p>	<ul style="list-style-type: none"> ● Tyre recycling services – in Australia search for Tyre Recycling – example: tyrecycle.com.au
<ul style="list-style-type: none"> ● Pedals 	<p>Unknown plastic, Steel axle</p>	<ul style="list-style-type: none"> ● Steel axle can go in household recycling or to metal recycler ● Unknown plastic – household recycling
<ul style="list-style-type: none"> ● Torque sensor / main crank axle 	<p>Steel</p>	<ul style="list-style-type: none"> ● Steel axle can go in household recycling or to metal recycler
<ul style="list-style-type: none"> ● Seat 	<p>Steel, Plastic, Foam</p>	<ul style="list-style-type: none"> ● If you can separate you can recycle the steel. ● The plastic and foam are an unknown material at the time of writing this manual so can't be recycled
<ul style="list-style-type: none"> ● Belt 	<p>Rubber composite, carbon fibre</p>	<ul style="list-style-type: none"> ● This is not recyclable – goes to landfill
<ul style="list-style-type: none"> ● Brake hydraulic cables 	<p>Plastic</p>	<ul style="list-style-type: none"> ● This is not currently recyclable – goes to landfill
<ul style="list-style-type: none"> ● Gear cable 	<p>Plastic and steel</p>	<ul style="list-style-type: none"> ● General household recycling or metal recycler

<ul style="list-style-type: none"> ● Front and rear reflector 	<p>X plastic and Y plastic friction welded together</p>	<ul style="list-style-type: none"> ● Reuse if possible ● The two different plastics makes this hard to recycle, if you can separate, take to special plastics recycling centre – this usually can't be put into your household recycling bin
---	---	--

Note: The customer is responsible for covering the shipping costs of returning components to Tiller Rides for recycling.

Your 2-year or 20,000km warranty

The Tiller Rides promise

A fusion of function, aesthetics, comfort and technology, the Roadster has been designed to deliver you an unrivalled riding experience. Built to a high standard with carefully chosen materials, safety and quality is at the heart of every Roadster. The Roadster has been designed to last.

In the unlikely event that you have a problem with your Roadster, we want you to know that it is our goal to be there to help you resolve any problem and get you back on the roads and paths of your city.

That is our Tiller Rides promise.

Warranty details

Your Roadster comes with a Tiller Rides 2-year or 20,000km warranty (whichever comes first) which covers any mechanical or electrical failures resulting from faulty or defective design, materials, workmanship or parts – even if you bought the Roadster second hand.

Fix or Replace: Tiller Rides will fix any manufacturing related faults or defects that are discovered in the first two years of ownership free of charge. Your Roadster will be repaired with genuine parts, however, Tiller Rides will use its discretion as to whether new or reconditioned parts are used.

If a warranty related fault cannot be fixed, your Roadster will be replaced with a new Roadster if the problem has been experienced since new.

All parts removed during a warranty related repair become the property of Tiller Rides.

Cease and inform

Because of the potential for a safety risk or further damage to your Roadster as a result of a fault, you must cease using your Roadster as soon as you find a warranty related defect.

To ensure you don't pass the 2-year warranty cut-off date, please inform Tiller Rides as soon as you find anything you think is a warranty related defect.

Do not fix

Repairs performed by a non Tiller Rides servicing agent may void your warranty. Roadster owners must therefore not carry out any mechanical or electrical repair work on a warranty related defect without first obtaining consent from Tiller Rides.

What the warranty doesn't cover

Fair wear and tear

We have built the Roadster to provide many years of reliable service, however, as with all mechanical and electrical devices parts will wear with use. The warranty therefore does not cover ordinary wear and tear. Some of what are considered wearable parts which are not covered by warranty (unless due to a manufacturing defect) includes:

- Tyres
- Rims
- Spokes
- Inner tubes
- Flat tyres
- Loose electrical wiring
- Brake pads
- Drive belt
- LED lights
- Handlebar and handle grips
- Gear shift cable, brake cables, throttle cables
- Hub Motor
- Hub Gearbox

Other things not covered by warranty

The warranty does not cover damage or failure of your Roadster as the result of:

1. Negligent use
2. Misuse or abuse
3. Damage as the result of an accident
4. Improper adjustment, calibration or operation by the owner
5. The use of accessories including consumables or hardware, which were not manufactured by or approved in writing by Tiller Rides
6. Any contamination or leakages caused or induced by the Owner
7. Any modifications which were not authorised in writing by Tiller Rides
8. Any use or operation of the Roadster outside of the physical or environmental specifications of the Products
9. Inadequate or improper maintenance or repair of the Products

Claiming your warranty

To claim your warranty, contact Tiller Rides customer support. Visit **tillerrides.com**, find the support page and follow the instructions. Please ensure you keep the original box for shipping, a new box can be supplied at an additional cost.

Warranty related freight costs

If you need to send your Roadster to a warranty repair centre, Tiller Rides will cover up to \$100 (AUD) of freighting related costs, unless otherwise agreed.

Australian Consumer Law

This warranty is additional to any other rights or remedies of the consumer under the Australian Consumer Law.

Tiller Rides' products come with guarantees that cannot be excluded under the Australian Consumer Law. You may be entitled to a replacement, refund or compensation for any other reasonably foreseeable loss or damage. You may also be 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.

Compliance with standards

The Roadster is compliant with the following standards:

- EN15194:2017
- EN14764:2005
- EN14872:2006
- AS1927:1998

Servicing schedule

Your roadster requires periodic servicing, please refer to the table below for the service and frequency required. If you do not feel comfortable performing the Do It Yourself (DIY) servicing, then visit a Certified Tiller Rides Service Agent or qualified bike mechanic. If performing the DIY servicing please check the website (tillerrides.com) for 'How To' videos.

Service Item	Frequency	Carried out by	DIY Section Reference
Check brakes	Weekly	DIY (Do It Yourself) or Certified Tiller Rides Service Agent	Safety checks before you ride
Check tyres (35-40 PSI)			Safety checks before you ride
Check stand fixing bolts	Every 6 months or 1000km	DIY (Do It Yourself) or Certified Tiller Rides Service Agent	See next section
Tune shifting			Internally geared hub care and adjustment
Check brake pad wear			Brake care, inspection and maintenance
Inspect and clean frame			Post incident check Cleaning your Roadster
Drain and recharge battery			See next section
Check wheel spins freely			Safety checks before you ride

Lubricate motor gears	5 years or 5,000 km	Certified Tiller Rides Service Agent	
Internal geared hub service and regrease			
Gear cable inner check (replace as required)			
Check for damaged spokes	Annually	DIY (Do It Yourself) or Certified Tiller Rides Service Agent	See next section
Lubricate pedal bearing			See next section
Replace tyres	As required	DIY (Do It Yourself) or Certified Tiller Rides Service Agent	Tyre maintenance /replacement

Do It Yourself (DIY) servicing

If you feel competent to service your bike for items listed as 'DIY', then below are guides on:

Check stand fixing bolts - Check the tightness of the stand bolts (2-3 Nm) with a 3mm hex key.

Drain and recharge battery - Allow your battery to discharge completely and recharge completely.

Check for damaged spokes - Gently squeeze adjacent spokes around the front and rear wheel to check that they have even tension and none are loose, bent or broken.

Lubricate pedal bearing - Put four (4) drops of general purpose oil into the gap where the pedal axle goes into the pedal.

APPENDIX A:

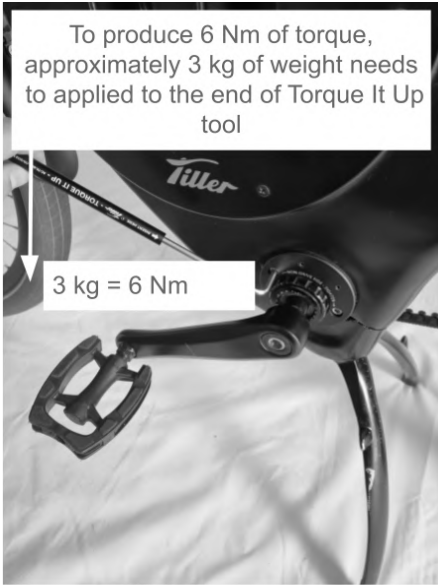
Fastener Torques

Roadster Part	Tool	Recommended Torque
Top Cap Screw (Headset)	5mm Hex Key	6 - 8 Nm
Stem Faceplate Screws	5mm Hex Key	8 - 10 Nm
Stem Fork Securing Screws	5mm Hex Key	8 - 10 Nm
Eccentric Bottom Bracket Belt Tightener	4mm Hex Key	6 - 7 Nm
Seat Post Topper Clamp	6mm Hex Key	20 Nm
Pedal Attachment Bolt	6mm Hex Key	35 - 40 Nm
Crank Arm Bolt	8mm Hex Key	35 - 40 Nm
Front Wheel Nuts	15mm Ring Spanner	30 - 35 Nm
Rear Wheel Nuts	15mm Ring Spanner	30 - 35 Nm
Brake Lever Fixing Screws	4mm Hex Key	3 - 4 Nm
Control Switch Fixing Screws	1.5mm Hex Key	0.6 - 0.8 Nm
Sturmey Archer Shifter Screw	1.5mm Hex Key	1 - 2 Nm
Mudguard Collar Screw	5mm Hex Key	2 - 3 Nm
Rod End Screw (Rear Light)	3mm Hex Key	2 - 3 Nm
Cable Guide Screws	3mm Hex Key	2 - 3 Nm
Front/Rear Brake Mounting Screws	5mm Hex Key	6 - 8 Nm
Stand Screw	3mm Hex Key	2 - 3 Nm
Front Mudguard Stay to Fork Bolts	4mm Hex Key	2 - 3 Nm

Rear Carrier to Dropout Bolts	4mm Hex Key	8 Nm
Trailer Mount Plate Screws	4mm Hex Key	8 Nm

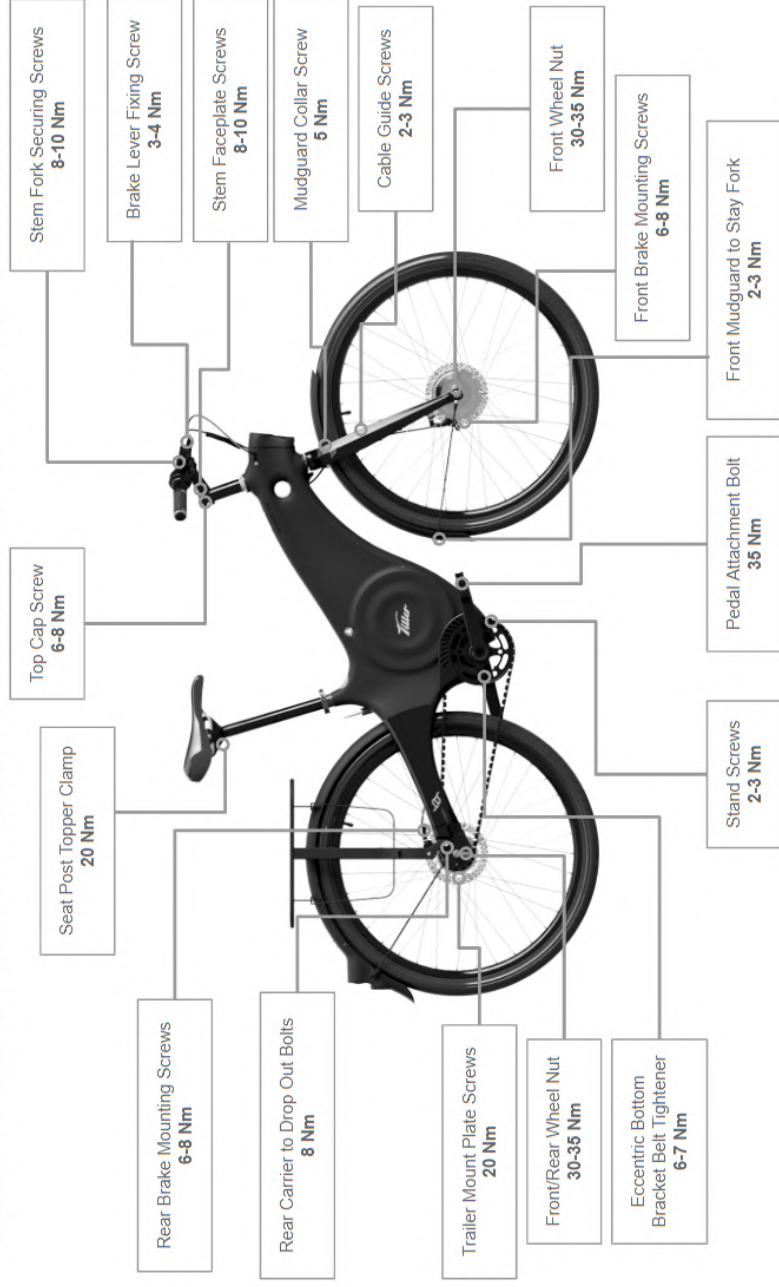
Approximate Torque Conversion

As a guide, the following loads are applied to the Torque it up and the 15mm spanner will create the mentioned torques.



Torques and Threadlocker

To ensure important bolts, screws and nuts do not become loose, it is important to follow torque recommendations and apply threadlocker. It is recommended to apply medium strength threadlocker to all of the locations in this diagram.



Tiller



MOVE WITH PURPOSE