



## **USER MANUAL**

### **TUI-mid Step-Through ebike**



PLEASE READ CAREFULLY



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## Safety Instructions

Thank you for purchasing an **evinci** electric bike, designed by NZEBIKES. Your **TUI** trekking bike features the most recent innovation in technology and applies to the AS/NZ standard. For safety reasons, it is most important that you read this User Guide BEFORE you operate the bike. Improper handling can reduce its riding performance and most importantly, pose danger to your safety and health!

NZEBIKES is continuously updating and innovating this product. The printed manual may therefore not always include the latest updates. However, we shall make sure that our online manual will always be up to date on [evinci.nz/support](http://evinci.nz/support).

We want also encourage you to **register** your bike with your frame serial number. This allows us to help you finding your bike in case of theft, as we get contacted by the police when bikes are recovered.

Your frame serial number is stamped into bottom of the motor, starting with "YPK...".



To register just go to our **evinci** website ([evinci.nz](http://evinci.nz)) and click on "Login/Register" to create an account with your details. You may register up to two bikes within the same account.

## Symbols

Please pay particular attention to information next to one of the symbols shown below as it can be very important for your safety.



### WARNING

This symbol indicates that improper handling poses a risk to your health and safety



### ATTENTION

This indicates that improper handling could damage components and make void the warranty.



### NOTE

Points out to useful tips

## Introduction

You have decided in favour of a Pedelec (Pedal Electric Cycle) - a bicycle that is equipped with an electric motor to give you additional assistance when riding. With this bicycle, you can make better progress in headwinds, when transporting heavy loads or on steep slopes.

You can select the level of power assistance required according to the weight of your load and/or the prevailing road conditions, the effectiveness of the power assistance depends on your pedal power and the level of assistance selected. Before switching on the electric assistance system, please read the chapter "Charging the battery". The battery must be fully charged before you go for a ride the first time.

### ***Mode of operation and extent of electronic power assistance***

As soon as you turn on the electric assistance system and begin pedalling or pushing the throttle, electronic power assistance is available. Depending on the selected assistance level the motor will add a certain amount of power to assist you. The amount of support is also proportional to the force pushed into the pedals thanks to the torque sensor integrated into the mid drive motor system. An average rider can easily reach on flat tracks up to 110km out of a 16Ah battery.

### ***Modes of support***

This ebike comes with two different riding modes.

**Torque:** will support the rider using torque sensing. Choose out of 5 levels how much the motor should add to your ride.

**Cadence:** enables pedal-assist mode, which reacts as soon as you start moving the pedals. You will get a fixed amount of assistance depending on selected level between 1 and 5. This can be useful for commuting or when having a medical condition with your joints.

## What comes with the bike?

- 240V mains charger
- Manual

## Optional accessories

- PowerBuddy: a 12V direct charger. Allows charging your battery through your car or RV battery without an additional inverter.
- Rear basket

You can order these accessories through your local dealer.

## Components



1	Colour Display	5	Battery Charge Port
2	Control Buttons	6	Battery Lock
3	Throttle	7	Mid-Drive Motor
4	Dropper Post Control		

## Basic Safety Tips



Always pull the brakes and hold the handlebar firm and straight before taking off to make sure you stay in control of the bike when power assistance is in action!

### *For your road safety*

- Always wear a suitable bike helmet
- Wear bright clothing or reflective elements to be seen better by other road users
- Wear shoes with a non-slip sole
- Wear close-fitting clothing on your legs or wear trouser clips
- Wear bicycle gloves



*Ref (1)*

## How to use your charger

Your **TUI** comes with a 3Ah quick charger to charge your battery. Please do not use any other charger.

The typical time to charge a 16Ah battery if it is empty is about 6 hours.



*If you want to charge your battery from a car or motor home (12V systems), NZEBIKES or your retailer can supply a special charger called PowerBuddy for this purpose.*

If you use your bike regularly you can recharge the battery whenever you have use it.

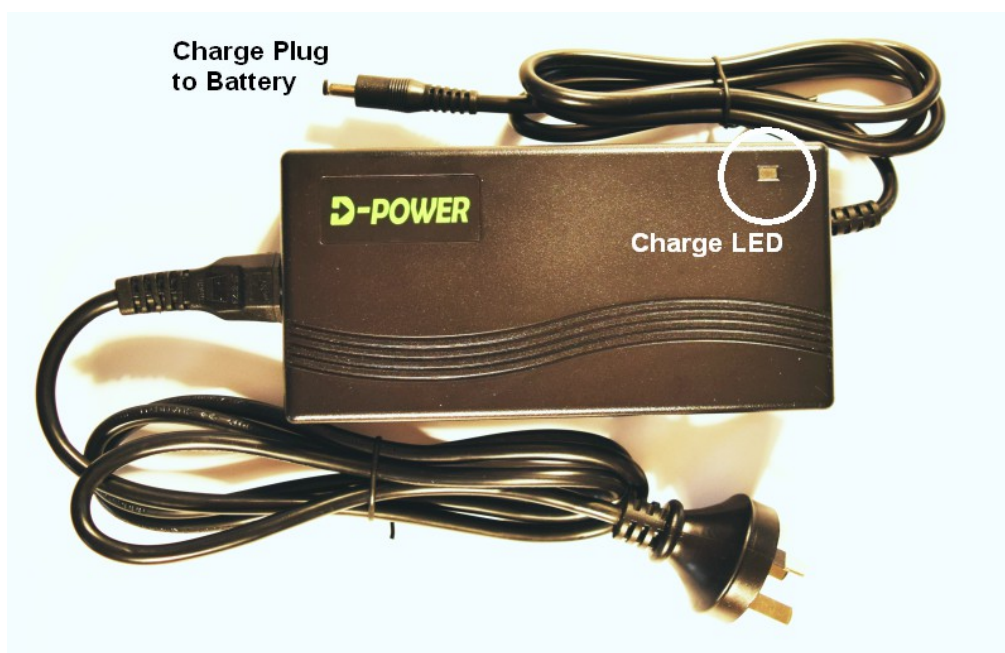
Before you use the charger the first time please read the following notes regarding safety carefully!



- Keep the charger away from children!
- to prevent any possible injury, this charger should only be used for the original lithium battery which is supplied together with the **TUI** e-bike

- Any other battery is not compatible and risks to explode while charging, causing serious injury to people as well as damage to other equipment
- Using this charger for batteries not supplied by Evinci could risk catching fire, provoke electric shock and/or cause serious injury
- Please make sure that the charger is always kept dry and does not get wet at any time.

The charger LED (1) indicates the battery status:



LED	STATUS
green	the battery is not connected
red	the battery is charging
green	the battery is charged, the charger has switched off



*Before using your battery the first time, it has to be charged once overnight for at least 12 hours.*



## Safety notes concerning the battery



- Keep the battery out of reach for children
- Never try to open the battery. Apart from this being dangerous, all warranty will be void
- Do not provoke a shortcut circuit with metal gadgets
- Remove the battery from the bike when transporting on an external bike rack
- Do not dip the battery in water or any other liquid
- Do not keep the battery close to heat or open fire
- A battery needs to be recycled after use, never throw it in an open fire as it could explode
- If the battery is damaged because it has been dropped or because of a biking accident, there might be a risk of an internal short-circuit. Immediately stop using a damaged battery.

To maximise the use of this battery, please consider the following:

The battery will not charge when exposed to temperatures below +0°C or above +60°C. It is therefore recommended to keep the battery at room temperature before charging it.

The charger operates with a microcomputer system with automated control functions. It automatically stops charging when the battery is full. It cannot be damaged by overcharging.

None the less, we strongly recommend to always disconnect the power plug from the wall socket after the battery is charged as power surges, i.e. lightning, through the grid can damage the charger or battery electronics!

### ***Longterm Storage***

When storing the battery for a long period of time, e.g. over winter (>3 months) it is important to keep it in a dry and cool place. Furthermore it is from advantage when the battery is not fully charged for longtime storage. If possible try to discharge to about 80% (~38-39V) by riding the bike before. A fully charged battery, when not used for a long time, will deteriorate much faster and loses its capacity.



## Charging the battery



You may charge the battery on the bike or remove it to a more convenient place. Li-Ion battery have no memory effect, this means you can top them up as you go

1. Open the rubber cover and connect the charger plug to the battery
2. Connect the power cord to a mains socket
3. Make sure to neatly close the charge port with the rubber cover to prevent water and dust from getting in



*The charger will get warm while charging – do not cover while in use as it might cause a malfunction.*

### **How to remove and insert the battery**

1. Removal: if the battery is locked, first unlock the battery
2. Lift the seat post to it's maximum setting
3. Push the battery from below upwards till it unlocks from the rail. Move it away from the rail and pull it upwards out
4. Insert: Slide the battery into the battery rail, make sure it sits in it's correct position (keep it away from the rail till reaching the lowest point). Secure it in the frame with the battery frame lock



*Make sure the battery is fully inserted into the battery rail and locked to prevent theft.  
Keep one of your keys safe – there are no replacement keys!*

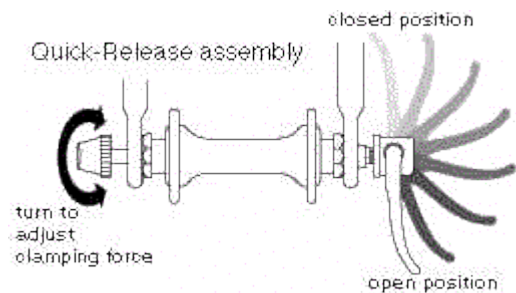
## Before starting to ride

### ***Mount or dismount front wheel***

For easy transport, you may remove the front wheel using the quick release at the front wheel axle.

To remove the wheel open the lever to release the pressure. Now hold the lever and turn the nut on the other side about 8-9 times – do not remove the nut! You should be now able to lift the wheel out of the fork.

To mount the wheel repeat procedure the other way round. Hold the lever pointing parallel to the fork in the open position (downwards), turn the nut till you feel a slight resistance. Try to close the lever – if it is too hard to do so, loosen the nut a small bit and try again.



*Before every ride make sure the quick release is tightened properly. To fail so can lead to serious injuries!*

### ***Adjust seat height***

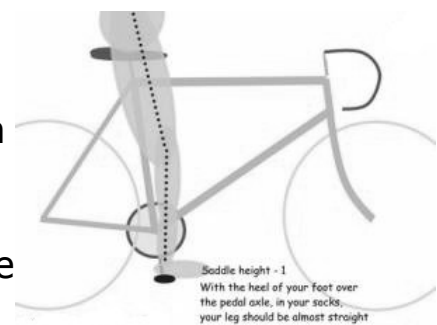
This bike is equipped with a convenient “dropper” seat post. On the left hand side of the handlebar is a lever which releases the seat post which will then be pushed up to it's maximum height. Or if you sit on it (or push down by hand), it will “drop” to the lowest position to make it easier to get on and off.

Once mounted you may set the desired height by using the lever, letting the seat pushing itself up to the height you want to have it. It will lock in once you release the lever.

To change the range of the dropper seat post open the clamp and extend the post to the height you need. Make sure to guide the remote cable so it doesn't get stuck!

### ***How to find the correct saddle height?***

1. Sit on the bike saddle
2. Try to reach pedal with your heel when it is in the bottom position. Your knee should be more or less fully straightened out
3. Place the ball of your foot on the centre of the pedal. If your knee is now slightly bent, the saddle height is correct



### **Adjusting the saddle angle**

Best riding comfort is found when the saddle is horizontal, some riders prefer a slight forward angled seat.



*Never angle a seat backwards as it can quickly lead to back pain or physical injuries*

1. Loosen the clamping screws anti-clockwise
2. Tilt the saddle to the required angle
3. Tighten the clamping screw clockwise. Make sure that the screws are tightened firmly (10 NM)



### **Adjust the stem and handlebar**

The models TUI+ and FALCON+ allow an easy and tool free adjustment of the handlebar in regard of angle and reach. Push lock lever in direction of arrow and lift clamp arm. Adjust height and angle to your requirements. Push clamp arm back into lock position. The clamp pressure can be adjusted with an Allen key.

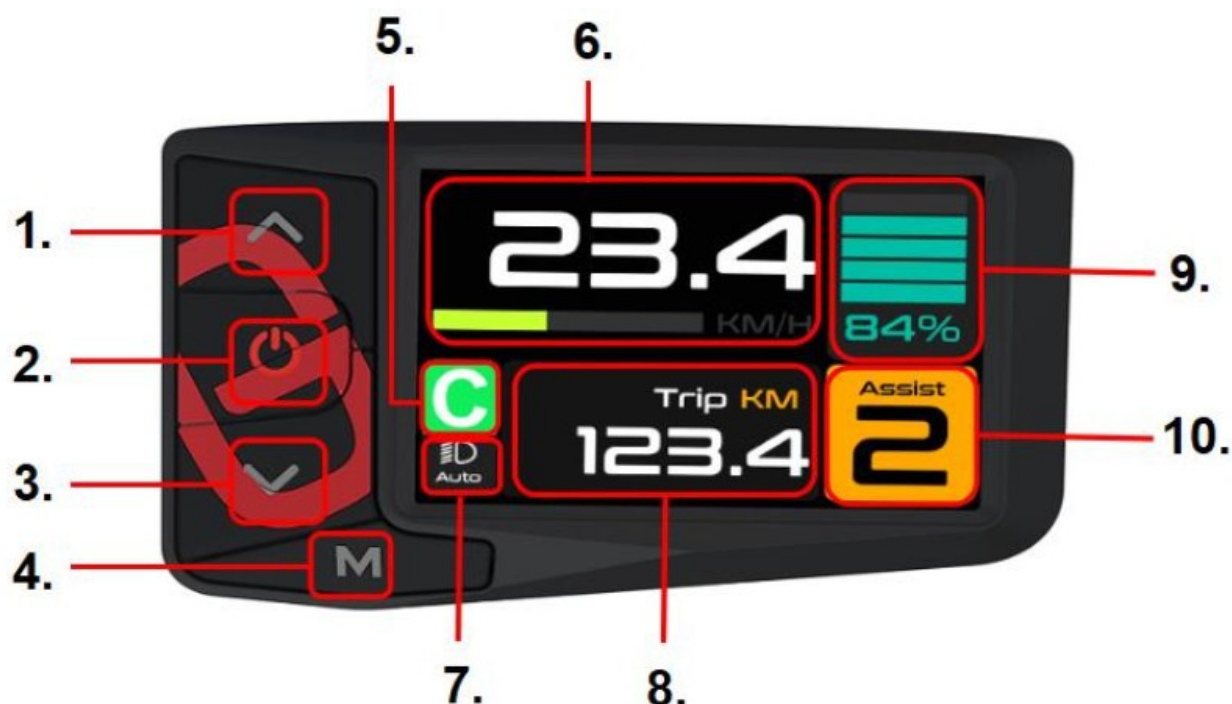


Make sure to lock the clamp arm properly

### **Check tire pressure**

It is very important to maintain the correct tire pressure. Too low pressure will decrease the range and can lead to rim or tire damages when riding over kerbs. The recommended tire pressure is 40 psi.

## Operation



- Turn the display on by pushing the (I) button
- Select the desired assistance level with the UP or DOWN buttons. Start riding.
- Use the throttle as desired to add additional power to the selected assistance
- To change the riding mode (torque/cadence) push the (M) button once
- When finished riding press the (I) button for 3 sec to turn the system off (it will also turn off after 10 min when not in use)

No.	Definition
1.	UP button
2.	POWER button
3.	DOWN button
4.	M(Setting) button
5.	Ride Mode <b>C</b> : Cadence sensor mode <b>T</b> : Torque sensor mode
6.	Real-time speed
7.	Light
8.	<b>Trip</b> : Single-time distance <b>Odo</b> : Total distance Maximum speed Average speed
9.	Remaining battery capacity
10.	PAS level indication

**Battery Level:** The display shows the battery level with 5 segments. Each level is about 20% of power. On the last bar it will flash and the battery should be recharged as fast as possible.

Below 10% the controller or battery might turn off when a higher load is applied, i.e. riding uphill.

### **POWER:**

The grey bar beneath the speed shows how much power the motor consumes. This allows the rider to see how efficient he or she is riding, less bars mean the battery capacity will last further.

**Assist:** your selected level of assistance. 0 = no support, 5 = max support

**KM/H:** shows your current riding speed

**TRIP:** accumulates until next ride, auto reset after 10m riding.

**ODO:** the total distance you have travelled with this bike (can't be reset)

**Lights:** to turn the LED lights of your bike on or off push the ON/OFF (I) button (<1sec).

**Error Code:** if there is a problem in the electrical system you might encounter a Error code message. Please refer to the Troubleshooting section or ask your dealer for assistance.

**Walk assistance:** you can activate the motor to support you pushing the bike up a hill. Press and keep depressed the DOWN button. After 2 seconds the motor will start with a maximum speed of 6kph.



*Walk assistance is not supposed to be used while riding the bike*

**Start Up Password:** you can lock the display with a password, this prevents usage of your ebike.

Press "M" for 2 seconds to enter the settings menu. Navigate to password option. Press "M" again to enter into the password menu. The default password is "0000". Choose with UP or DOWN a number from 0 to 9, press "(I)" to confirm each digit. Select "ON" to activate the password function. ***DO NOT FORGET THIS PASSWORD!***



**USB Charging:** This display has an USB port below the mounting bracket. Remove the Rubber Protector and plug in your USB cable. To power the port the display must be turned on and then press "UP" for 2 sec. An USB icon will appear on the display to confirm that the port is powered up.



*Always close the port cover  
when not in use*

### **Throttle**

The left hand side half-throttle allows the rider to add power to the selected assistance level. This can be useful when starting or to give you an extra boost when riding up a hill.



*The throttle shall not be used to operate this ebike like a motorbike. Using the throttle consistently in a wrong gear combination can lead to motor overload and voids the warranty.*



## Gears



*Only change gears while pedalling otherwise the derailleur might get damaged*

Your TUI ebike is equipped with a high performance Shimano 9-gear system. Since this ebike uses a mid drive motor which supports the crank, it is essential to choose the right gear depending on your riding situation. I.e. the motor will not be able to support you adequately up a hill if you have selected a much too high gear, similar as if you would try to get up a steep hill in a manual car in gear five.

If you have to adjust gears before riding, i.e. to start in first gear, lift the rear wheel using the side stand and turn the crank while changing the gears.

As a rule of thumb, gears on a mid-drive bike are changed and used similar to a car with a manual gearbox.

You will start in 2<sup>nd</sup> gear, on a flat road you will choose gear 6 or 7 to pedal along. Uphill go back to 3 or for steeper hills gear 1. If you ride faster or downhill choose higher gears.

While you change gears a sensor will reduce the motor power to avoid as much as possible too high forces and nasty noises. You can help with this process by reducing your pedal power with each gear change. Your chain and cassette will thank you with a higher life expectancy.

The assistance level chosen on the display will assist you up to a certain speed and adds motor power according to how much you push into the pedals.

Choose the assistance level and gear according to your needs and riding style.

Watch your crank revolutions, if you have the feeling you have to push too hard at too low revolutions, change to a lower gear. If you pedal very fast with less effort, choose a higher gear or reduce the assistance level.



*When you intend to stop it is good practice to change the gear back to a low gear so you may start without any problems. This can easily be done while braking and slowly pedalling as the motor will not push you further.*

**Frequent riding in gear 9 on maximum support will reduce the life span of the rear cluster cog due to high wear and tear**



## Brakes

We recommend always using both brakes at the same time – this allows the rider to take the best control over the braking process without stressing the front or rear brake. To brake efficiently, your front brake is there to stop you and the back brake is there to shave off speed. Roughly 70-80% of your stopping power comes from the front brake. Leaving 20-30% for the back brake.



*Please note that this bicycle uses high performance hydraulic brakes with motor cut-out. To engage the motor cut-out a certain amount of brake force is required.*

## Maintenance

Your **TUI** e-bike needs regular maintenance as any other normal pushbike. All bike shops can help you with these maintenance steps. There is no maintenance of the electrical components necessary.

### Brakes

This bike uses hydraulic brakes which are self-adjusting. If you feel that the brake force gets lower or the way you have to press the brake levers exceed 50% of X (Fig 1) most likely the brake pads have to be replaced. Please see your local bike shop.

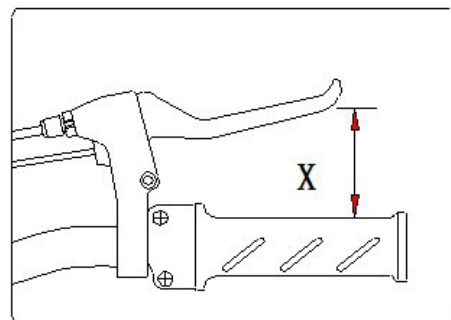


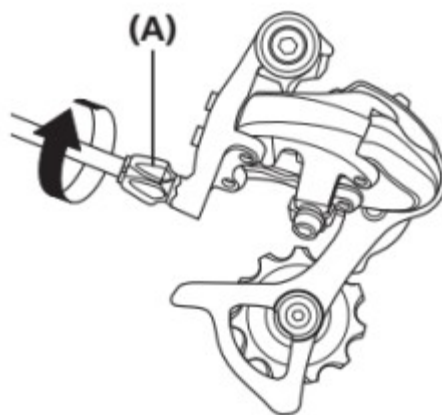
Fig 1

### Gears

Our **TUI** bike uses a solid and easy to maintain Shimano Deore derailleur system.

After a while it can happen that gears do not perfectly change anymore or you experience a rattling noise while pedalling. This is normal due to the nature of the used control wire hulls which can get compressed over time. To re-adjust it is usually enough to slightly tighten the gear wire.

For the rear derailleur turn (A) anti-clockwise while turning the pedals till the rattle goes away.



## Safety points

We recommend a 12-month interval service or every 1000 km.

Important checkpoints are:

- Quick-release front and rear axle
- headset
- stem clamp
- seat post clamp
- brake caliper screws
- spoke tension



Spoke tension has to be checked on a regular interval. Failing can cause spoke breakage and will void the warranty

## Repairing a puncture in the rear wheel

Since the rear wheel comes with a quick release axle it is very easy to remove the wheel.

Before removing the wheel change manually into the highest gear (9), this reduces the tension on the chain and makes it easier to pull the chain from the cluster.

For all other steps please follow the same instructions as for the front wheel.

## Troubleshooting

Problem	Resolution
The Battery is charged but the display won't turn on	<ol style="list-style-type: none"><li>1. Check plug going from display to frame harness, unplug once and plug back together.</li><li>2. If possible measure voltage at the battery socket (left and right pin). If no voltage can be measured, take the battery to your retailer.</li></ol>
The Charger is plugged in, but LED stays green	Try to use another charger, otherwise it might be a battery fault, please take the battery to your retailer
Getting Error 07 after turning bike on	Check the throttle lever – it might be jammed or otherwise engaged. Unplug if error persists.
Getting Error 05 after turning bike on	Check both brake levers, must be in neutral position when powering up. Unplug cable coming from brake to disengage cut-out switch. See your dealer for adjustment.
Error 02, 06	Internal motor signal issue, see dealer
Error 03	Motor is stalling. Please make sure not to use the throttle in too high gear at a hill since the motor won't be able to start up.
Error 08	Controller error, see dealer
Error F/15	Communication issue, check cables to display, If persist, see dealer (display/cable/controller error)

## Glossary

### ***BMS***

BMS is an electronic circuit for battery monitoring. It increases a battery pack's safety by making sure that all cells are operated within the permitted voltage range only. When current is too high, the temperature is too high or one line of batteries inside the battery is outside the permitted voltage range the charge output will be switched off. This avoids the total discharge of the battery during

normal operation. An integrated balancer ensures that any differences in voltage between single cells are equalised. In case of a problem with the charging device, the BMS makes sure that the battery cannot be overcharged. A capacity gauge may be included to display the remaining capacity.

### ***Controller***

The controller is the heart of any electric bicycle. It has the power electronics to drive the motor and a microprocessor. The controller processes all input signals coming from the different sensors and it talks to the display on the handlebar. The microprocessor runs the firmware, which is the piece of software telling the controller what to do. Firmware updates can be applied to improve or add functions.

### ***Display***

The display is usually mounted to the handlebar and allows the rider to readout vital information about the e-bike system and control the functions in the controller. There are different kinds of displays with LED, LCD or TFT interfaces.

### ***Hall sensor***

Hall sensors are used in motors, cadence sensors, brake switches, and throttles. Inside the motor, they determine the motor direction and submit it to the controller so the motor will turn in the right direction right at the start. Inside the Pedal Assist System they detect if the magnetic disc is rotating. Inside the throttle, they measure how far the throttle is rotated. A Hall sensor can be of the analogue or digital kind. Functional principle: When hall sensors are passing by a magnetic field they emit an initial voltage, which is proportional to the product of magnetic field strength and current (Hall Effect). They are named after their inventor Edwin Hall.

### ***Torque Sensor***

The torque sensor measures the force generated by the rider when pushing into the pedals. Our sensor measures values between 1 to 80Nm and adds motor support according to the selected support level.

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### **References**

Ref (1): Ministry of Health NZ, Website

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