

BSP Titan N5

User manual





Enjoy your daily ride

Your everyday e-bike.

Find out what you can do with it.

Register your bike.

Take a photo of the number of your new e-bike key or write it down in this manual.
If we have that number, we can provide you with a new key in case you lose this one.

Model e-bike _____

VIN number _____

Key number _____

Date of purchase _____

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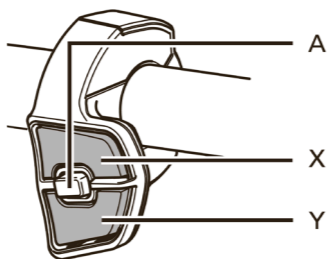
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1. Controls & Display

1.1 Controls

Switch	Switch unit function assignment	Operation
X	Gear shifting	Shifts up each time pressed.
	Assist	Increases assistance each time pressed.
Y	Gear shifting	Shifts down each time pressed.
	Assist	Decreases assistance each time pressed.
A	Gear shifting	Switches between auto and manual
	Assist	Assist Switches the cycle computer display.

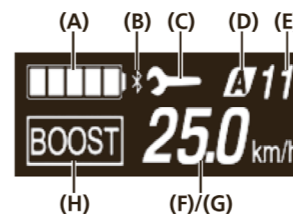
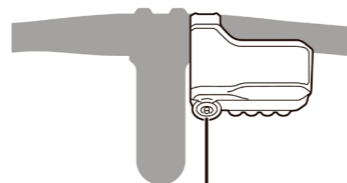


The function of the switch can be configured using the Shimano E-Tube Project app if the user prefers a different setting than the factory default.

1.2 Basic operation

This section describes how to use the cycle computer and switch units.

The functions assigned to switches when riding can be changed from those described here. For details, please contact your place of purchase or a local bicycle dealer for assistance.



1.3 Cycle computer basic screen

SC-E7000

Displays the status of the power assisted bicycle, traveling data.

- (A) Battery level indicator**
Displays the current battery level.
- (B) Bluetooth display**
Displayed when connected over Bluetooth.
- (C) Maintenance alert**
Indicates that maintenance is required. Contact your place of purchase or a bicycle dealer if this icon is displayed.
- (D) Gear shifting mode***
Displays current gear shifting mode as [A] (Auto) or [M] (Manual).
- (E) Gear position (Only displays when electronic gear shifting is in use)**
Displays the currently set gear position.
- (F) Current speed**
Displays the current speed.
The display can be switched between [km/h] and [mph].
- (G) Travel data display**
- (H) Assist mode display**
Displays the current assist mode. (Assist mode automatically switches to [ECO] as remaining battery capacity declines. The switch to [ECO] occurs earlier if a battery-powered light is connected.)

* Only for electronic gear shifting with internal geared hub. [M] will always be displayed for rear derailleur models.

2. The battery

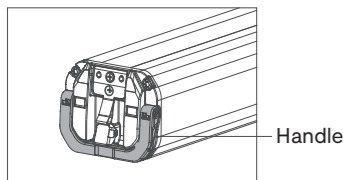
Together with the motor, the battery can be considered the heart of your e-bike.

This section shows how to use and maintain it well.

2.1 Placing and removing the battery

When taking out the battery from the frame, be aware of the weight and watch out for frame damage. When inserting the battery in the frame, make sure your battery is aligned properly to avoid any contact issues. You will hear a "clicking" sound when lowering the battery in place letting you know that the battery is positioned and locked correctly.

i If you encounter any problem when placing the battery, check the troubleshooting tips in chapter 7.



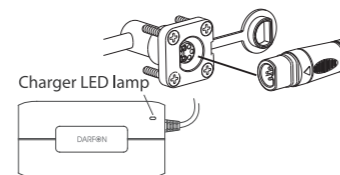
2.2 Charging your battery

Several charging options are available for your e-bike. Depending on the way you use and store your bike on a regular basis, you will find your ideal charging solution(s) in the table below.

Options	characteristics
In-bike charging	<ul style="list-style-type: none">· No need to remove battery· Ideal if you park your e-bike in a garage/shed that has electricity nearby
Off-bike charging	<ul style="list-style-type: none">· Facilitates charging on the go (office, when travelling etc.)· Ideal if you park your e-bike outside

The average charge duration will be:
504 Wh: 4½ hours (empty up to ~95% charge)

2.3 Charger LED indicator



Charger Status	LED
Only AC in (not connected)	Green
Charging	Red
Full charged	Green
Battery abnormal	Orange blinking

2.4 Charging essentials

In the table below we listed some information on how to best charge your battery, divided into key essentials and tips.

Key essentials

Charging can be carried out at any time regardless of the amount of charge remaining, but you should fully charge the battery at the following times.

Be sure to use the special charger when recharging the battery at these times.

The battery is not fully charged at the time of purchase. Before riding, be sure to charge the battery until it is fully charged. If the battery has become fully spent, charge it as soon as possible. If you leave the battery without charging it, it will cause the battery to deteriorate.

If the bicycle will not be ridden for a long period of time, store it away with approximately 70% battery capacity remaining. In addition, make sure the battery doesn't become completely discharged by charging it at least every 6 months.

Don't charge your battery in sub-zero temperatures. If you have a non-heated shed, please take the battery out of the e-bike and recharge it indoors.

Don't charge the battery in direct sunlight. Make sure that the environment temperature is below 40 °C.

Always charge the battery in a dry and well-ventilated area.

Tips

First insert the charging plug into the e-bike or battery socket before connecting the charger to the mains. Don't forget to disconnect your charger when not in use. Disconnect the (travel) charger from both battery and socket when the battery is full.

It is normal for any charger or battery to get warm during charging, so do not cover them up with anything while charging.

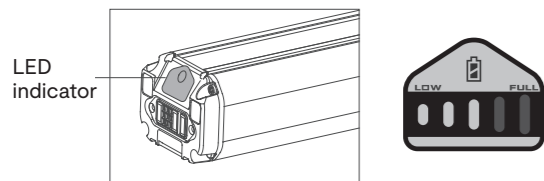
Keep your charger clear. Unplug the power cord and clean the charger with a dry cloth to remove dust and dirt. The charger cannot be self-repaired in case of any defects or damages. Please contact your dealer regarding this matter.

!! Ignoring the key essentials can destroy your battery quickly. A damaged battery sent for warranty will be investigated for such misuse. Extensive signs of misuse may void warranty. Please contact your dealer for more information.

2.5 LED indicator

Charging the battery while installed into the bicycle

1. Insert the battery charger power plug into the outlet.
2. Insert the charging plug into the charging port on the bike frame.



On the side of the battery, you will find a LED indicator. The indicator displays the battery status as follows:

Status	LEDs
Power off	○ ○ ○ ○ ○
Display time out	5s later after pressing LED button * Support on standby/ discharge mode
Charging	Scrolling
Full charged	● ● ● ● ●
Going to shut down	● ○ ○ ○ ●
0% - 5%	☼ ○ ○ ○ ○
5% - 20%	● ○ ○ ○ ○
20% - 40%	● ● ○ ○ ○
40% - 60%	● ● ● ○ ○
60% - 80%	● ● ● ● ○
80% - 100%	● ● ● ● ●

2.6 Battery error LED indicator

Error Status	LED Display
No error	○ ○ ○ ○ ○
Soft Start Fail	○ ● ● ● ○
Charger Fail	☼ ● ● ● ●
OCD Protection	● ○ ○ ○ ○
SCD Protection	● ● ○ ○ ○
OV Protection	● ● ● ○ ○
UV Protection	● ● ● ● ○
OTD Protection	○ ● ○ ○ ○
OTC Protection	○ ● ● ○ ○
UTD Protection	○ ● ● ● ○
UTC Protection	○ ○ ● ○ ○
Open Wire PF Protection	○ ○ ● ● ○
Cell Unbalance PF Protection	○ ○ ○ ● ○
OCC Protection	○ ● ● ● ○
AFE Fault PF Protection	● ○ ○ ○ ○

2.7 Battery usage and storage

Using and storing your battery in a proper way is very important to maintain good battery health. Please find our key essentials and tips on battery maintenance to get the most out of it over the coming years.

Key essentials

Immediately charge your battery after you have driven it empty. A battery without charge can be damaged in days.

Charge your battery from time to time, also during winter or when you don't necessarily use it. A battery will need a charge every 3 months minimum, but we advise to charge it every month.

When transporting your bike outside the car, please check the maximum weight of the carrier. If needed remove the battery and cover the bike.

Tips

To increase battery lifespan, we recommend to drive it (almost) empty and charge it back to full rather than partially recharging it every time you used the e-bike.

If you are not using the battery for a while, try to store the battery with approximately 50% charge (2-3 bars) left, if possible at 10-15 degrees. Try to charge it every month.

!! Ignoring the key essentials can destroy your battery quickly. A damaged battery send for warranty will be investigated for such misuse. Extensive signs of misuse may void warranty. Please contact your dealer for more information.

!! The electric system will use (very little) energy when turned off. It is advised to remove the battery from the bike if the bike is not used for a longer time.

!! The battery is sealed and therefore resistant to rain. However, do not to expose the battery to excess amounts of water.

2.8 Range

The total distance that you can travel on a single battery charge is called the range. The range depends on the capacity of the battery and the energy consumption of the motor. The exact range of your bike is hard to predict due to many variables that influence it. The average estimated range that you can expect is displayed in below table:

Mid- engine, 60Nm	
504Wh battery	40 – 80 km

!! Our tests have been carried out on flat terrain, at temperatures of approximately 20 °C, at an average speed of 20 km/h with a driver having a weight of approximately 75 kg.

If you are experiencing reduced range compared to the values above keep the following in mind:

Power level and own input

The higher the power level, the more support the bike gives you, the more energy you are using, and the lower your range will be. Next to that your own input can increase or decrease your overall range.

Even 2 people with the same bike in the same setting and comparable physical features can have completely different ranges dependent on your own input. In general; the lighter the biking seems to go, the less input you provide, the more energy the system is using.

Stopping and starting

Traffic lights will decrease your range significantly. Accelerating the e-bike from stillstand consumes a relatively large amount of energy and drains the battery faster.

Single long journey vs multiple short journeys

From our experience, a single long journey will consume less energy compared to multiple shorter trips due to the continuity of the trip.

Weight

The total mass on the bike decreases your range exponentially. For example, adding 10 kg of groceries can result in a 10% decrease in range.

RPM/input

Your pedaling rate, or Rotations Per Minute (RPM) influences the range of the battery. In general, a higher RPM results in more range, so remember to switch into lower gears as much as possible when accelerating or climbing a hill. Think of shifting down like in a car, where you would not be able to drive away in a higher gearing.

Tire pressure

Tire pressure has a large influence on the range of your battery and the comfort of your ride. When driving an e-bike, you will not notice that your tires slowly deflate as the motor will compensate for this. However, deflated tires will greatly decrease your range. You can find the minimum and maximum allowed tire pressure on the sides of your tire and set the pressure according to your preference. As a reference, you should be able to slightly compress the side of the tire with your thumb when pressing firmly. Remember to inflate your tires every two weeks. The tires on your bike are suitable for almost all types of terrain, with good grip on wet asphalt as well.

!! Check your tire pressure every 2-4 weeks.

Environmental influences

Cold temperatures have a noticeable effect on battery range. The battery capacity is measured at around 25 °C and will (temporarily) decrease when it is colder. At 0 °C a fully charged battery only holds 70% of its maximum capacity and at -10 °C this can even drop to 50%. Take into account that your battery might also shut down faster in winter.

Seating position

A taller person or a more upright seating position will create more drag. Especially on higher speeds air resistance will decrease your range significantly. Effects such as wind, rain or off-road terrain etc. can decrease your range even more.

i Your bike is fitted with a power meter and with this you can see how much energy your motor is currently using. You can use this to see what effect a lower gearing and head wind can have on your usage without you even noticing. Try to get the usage down as far as possible to get as far as possible!

!! At BSP we try very hard to keep our range estimation as accurate as possible. However, because of so many factors it is very difficult to predict. We advise to drive the battery near empty a few times in different circumstances and power levels to familiarize yourself with the batteries potential in combination with your driving behavior to learn your personal maximum range.

2.9 Battery Lifespan

The lifespan of the battery depends on how and how much you use it. By following the tips and tricks in this manual, you can easily enjoy your battery for years. Keep in mind however that batteries will always degrade with use. A decrease between 5-15% per year is considered normal.

The battery pack can, under ideal conditions, be fully charged and discharged around 1000 to 1500 times, whereby its performance will slowly decline with (intensive) usage. When the life-expectancy of the battery has been reached, it could be in need for a replacement.

Batteries, chargers, accessories and packaging must be recycled in an environmentally responsible manner.

Do not dispose of them with household waste, but hand them in at the designated disposable locations of the municipality. Your dealer can also help you to dispose your battery safely.

3. Components

3.1 Brakes

To prevent any surprises while driving, please familiarize yourself which brake lever operates which brake (front and rear). The left lever will operate the front brake, while the right lever will operate the rear brake. It is important to never apply any grease or cleaning agents on braking pads or rotors as it can cause noise while braking and diminish braking functionality.

3.2 Regular inspections before riding the bicycle

Before riding the bicycle, check the following items. If any problems are found, consult your place of purchase or a distributor.

>> Do the front and rear brakes work correctly?

>> Are there any abnormal noises?

>> Is the braking performance abnormally strong?

>> Is the braking performance abnormally weak?

>> Does the brake cable have any rust?

!! We advise to familiarize yourself gradually with the full stopping potential of your bike. In that way you are preparing yourself for an eventual emergency stop without losing control of your bike.

!! A full stop on a front- or rear-brake alone could potentially make you lose control of your bike. Always make use of both brakes simultaneously. For very strong braking keep your arms straight and your weight back to counteract potential tilting of the bike.

!! Braking distances may increase in wet weather. Extra caution is advised.

3.3 Belt drive

The BSP Titan is equipped with a belt drive. Belt drives are quiet, very durable and easy to maintain because of their stable tension throughout their use. A properly installed and used belt can last up to 25.000 km without the need for maintenance or replacement.

Maintenance

As you do not need to lubricate a belt, it is a lot cleaner compared to a chain. As a result, no chain guard is needed when using a belt drive. If needed, you can clean the belt with water. Do not use a high-pressure cleaner, as this could cause damage to other parts of the bicycle.

Belt tension

Proper belt tension is key to optimal performance. If the belt is too tight, it can cause drag and damage the hub. If the belt is too loose it can skip teeth and slip. If you notice either of those two effects, the belt tension should be adjusted. Contact your dealer to get your belt checked.

!! In case any teeth are broken or other signs of damage from the belt, please contact your dealer directly.

!! Changing and tensioning a belt requires training and special tools. Let this be done by an expert alone.

4. Take care of your e-bike

To prolong the lifespan of your bike, BSP advises you to perform some basic maintenance yourself next to scheduling check-ups at your dealer on a regular basis.

4.1 Maintenance

BSP advises you to schedule a major check-up for your e-bike at least once a year. The first maintenance check-up is recommended after driving 250 km or 3 months after purchase. Performing a check-up on regular basis will decrease the possibility of unnecessary damage to the bike and lowers the amount of money spend on repairs.

You can keep your bicycle in a good shape by doing some basic maintenance yourself, and in the next sections we will provide you with some tips in doing so.

!! Don't ignore the first service check-up. Parts as cables and spokes will stretch after first use. i.e. Not retensioning spokes at first service can result in spoke-breakage.

Cleaning

To make your bike look like new again, you can clean the bike with lukewarm water and a soft brush. Cleaning the bike on a regular basis will also prolong the lifetime of the product. Please refrain from using large amounts of water near the electronics and the battery (compartment). When cleaning the bicycle it is best to remove the battery.

!! Don't use a high-pressure water beam to clean the bicycle. A too powerful beam of water can damage the electronics of the bike. Water damage voids warranty.

Treatment

Next to the regular cleaning of the bike, we advise you to grease uncoated metal components (such as the front fork, pedals etc.) with acid-free Vaseline (spray) to prevent oxidation and rust. Rotating parts, such as the chain, chainwheels and axes need grease or oil on a regular basis as well. You can consult your dealer in helping you with this.

i If your bike has a belt drive, do not grease the belt. It is intended to run without any grease. Instead, clean your belt regularly with lukewarm water.

Please find below some quick tips and tricks to maintain your e-bike:

>> Take care that there will be no dirt in between the motion sensor and the rotating part. You can clean it with water and a sponge when dirt

>> Check the tire tension and tire profile

>> Check for wear and tear on the brakes and brake pads, replace or adjust them if needed

>> Check the spoke tension, visit your dealer when you notice that spokes are bend or the wheel is damaged

>> Maintain all rotating and (electrical) connection parts with acid-free Vaseline (spray)

4.2 General maintenance

For major check-ups or in case your bike needs urgent repairs, please visit your dealer. Below you can find an overview of some checkups you can perform weekly or monthly to keep everything running smoothly.

Once a week:

>> Does the pedal assistance function properly?

>> Do all the gears shift smoothly?

>> Is the chain properly tensioned?

>> Are both brakes still working properly?

>> Is your saddle positioned at the right height? Do you still sit in a comfortable way?

>> Is the handlebar set to a comfortable position and aligned perpendicular to the front wheel?

>> Are there any broken spokes?

>> Are the tires pressurized according to their specifications? Is there still enough profile on the tires to ensure enough grip?

>> Do the lights still work? Is the headlight positioned correctly? Are the surfaces of the reflectors on the e-bike and on the sides of the tires clean and visible?

Once a month:

>> Does the e-bike need to be cleaned?

>> Is there any visible damage dealt to the e-bike?

>> Is the kickstand well fixated? Does it function properly and is it greased?

>> Are the bolts and screws on the brakes still tightened? Is there any wear and tear visible on cables, brakes or tires?

>> Does the e-bike make unfamiliar noise when driving?

>> Are the seat post and the stem positioned and tightened properly?

>> Are the seat post and stem well-greased (using acid-free Vaseline)?

>> Is there any slack in the bearings on the front fork?

>> Are all bolts, nuts and other small metal parts well greased?

>> Does the lock run smoothly and is it greased?

>> Is the bell properly working? Is it mounted at the right position?

>> Are both the pedals greased properly?

!! Always go for a test drive after performing maintenance.

4.3 Major maintenance

We suggest scheduling minor maintenance sessions every 3 months and major maintenance once a year with your dealer. To get an idea of what your dealer might have to look into, we listed the following items:

Every 3 months

>> Checking the rims and tires (dents in the rims, spoke tension, tire pressure, tire profile)

>> Tighten all mounting parts / bolts and nuts if necessary

>> Checking the brakes for wear and tear, adjust the cable tension and check the brake functionality

>> Checking the headset for slack, check the stem and adjust where necessary

>> Clean the chain and tension it when required. Lubricate the chain

>> Checking the electrical system: fully charge the battery, clean the motion sensor. Maintaining contact points such as the battery contacts with acid-free Vaseline

>> Checking the complete drive train of the e-bike for any malfunctioning components

Once a year:

>> Disassemble, degrease, lubricate and re-assemble the following parts:

- chain and cassette
- hubs
- bottom bracket
- gear and brake cables
- headset
- stem
- seat post

>> Check and lubricate:

- gears and shifter
- brakes and levers
- lock
- kick stand

>> Check the spoke tension (and adjust if needed)

>> Check and re-align the tires. Adjust the tire pressure

>> Check the cranks and pedals and adjust if needed

>> Check the functioning of all lights and reflectors

>> Check the saddle (damage, padding)

>> Provide the e-bike with a protective (wax) layer

>> Test drive the e-bike to check all functionality

!! WARNING: As with all mechanical components, EPAC is subjected to wear and high stresses. Different materials and components may react to wear or stress fatigue in different ways. If the design life of a component has been exceeded, it may suddenly fail, possibly causing injuries to the rider. Any form of crack, scratches or change of coloring in highly stressed areas indicate that the life of the component has been reached and should be replaced.

!! The A-weighted emission sound pressure level at the driver's ears is less than 70 dB(A).

!! In case wheels need to be replaced, keep a max. torque of 37 Nm. For other components on the E-bike, please observe the torque values indicated on the components.

5. Troubleshooting

5.1 Error code W013

Torque sensor initialization was not completed successfully.

When you put your foot on the pedal (the force sensor senses force) and the bicycle is turned on, the bicycle gives an error 13.

This is not harmful, but causes the bicycle to stop working.

If the error occurs: Take your feet off the pedals, Turn the bicycle off and on again.

5.2. Warranty

The frame comes with a 5-year warranty by default. For electrical components and the battery, we offer a 2-year warranty. The warranty terms and conditions can be found on our website.

- !! Improper use of the bike can put yourself and others at risk. With improper use, warranty will expire as well.
- !! Do not use any other battery with your e-bike than the one provided by BSP.
- !! Maintenance check-ups for you e-bike you can always be requested from your BSP dealer.
- !! By replacing type-approved components with different models, the type-approval is cancelled for the entire bike. Only allow your dealer to replace components on your bike

Colophon

Manual electric bicycles.

BSP reserves the right to make changes in specifications and / or prices without notice. This manual has been compiled with great care. BSP cannot be held responsible for any inaccuracies whatsoever.

i Your bike may differ from the illustrations in this manual.

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