TITAN RACING

eBIKE OWNER'S MANUAL

TITAN RACING

Congratulations on purchasing your new TITAN RACING eBike! We are confident that your bicycle will exceed your expectations for value and ride quality, providing you with endless hours of cycling enjoyment. Each frame and component has been custom specified and designed to enhance your riding experience.

We strongly encourage you to read our Titan Racing owner's manual first to enjoy your new bicycle and familiarise yourself with your bicycle for safety reasons too. Read owner's manual: *https://www.titanracingbikes.com/wp-content/uploads/2018/07/Titan-Racing-Owners-Manual-Web.pdf*

Please use the bicycle only for the intended purpose it was made for. If you have questions or problems regarding your new TITAN RACING bicycle, please contact your authorised dealer.

⚠ IMPORTANT

Please ensure that your TITAN RACING bicycle is completely assembled and working when purchasing from your authorized TITAN RACING dealer. This is very important for the optimum performance and safety while riding your bicycle.

It is important to understand the basics of riding a bicycle and to always obey the laws and regulations when riding your bicycle on public roads. It is equally important to exercise common sense when cycling.

CONTENTS

Getting started 6

Switching on the battery 7

Procedure for charging 8

Battery removal 9

The display 10

Assist ratio gear 11

6Km/h assistance function 11

Error code display 11

Using and maintaining the electric hub motor 12

Using and maintaining the battery charger 12

Maintaining the controller 13

Trouble shooting 14

Circuit diagrams 18

Technical specification 21

Warranty and guarantee 22

BEFORE YOUR FIRST RIDE

This information should be read by anyone before their first ride of this bicycle.

The model instructed in this manual is made with “start aid”. This electric assistance system will help riders to save energy, while they enjoy their easy sports.

Here is the function of the so-called “start aid”: when you long-press the down button for display for seconds, the bike can be started at speed of 6 km/h. After the bike moving forward, you can easily pedal on and release the “start aid” button.

Also, you can pedal 3/4 rounds of the chain wheel to start the motor without using the “start aid” button.

IMPORTANT SAFETY CAUTIONS

- We strongly advise wearing an approved helmet, which meet European/USA Standards.
- Obey local road rules when riding on public roads.
- Be aware of traffic conditions.
- Have your bike serviced only by local authorized bicycle shops. Regular servicing will ensure a better and safe riding performance.
- Ensure regular maintenance is carried out on the bike according to the owner’s manual.
- Do not open or attempt to maintenance on any electrical components.
- Contact your local bicycle agent for qualified service and maintenance if needed.
- Never ride under the influence of intoxicating drugs or alcohol.
- We strongly recommend using a lighting system, when riding in the dark, fog or poor visibility.
- When cleaning this bike, please wipe surface with a soft cloth. For the very stubborn dirt, you can wipe it with a little neutral cleaning agent.

⚠ WARNING

Do not wash this electric bike by directly spraying water, to avoid water entering electric components, which may result in the damage of the electric components causing the electric assistance system not to function normally.

⚠ IMPORTANT

You should always wear a helmet when ever riding your bicycle.

OPERATION

Your new electric bicycle is a revolutionary transporting means, applied with alloy aluminum frame, Lithium battery, a super high efficient electric hub motor and controller with pedal assistance system, to make biking easy. It is important for you to learn the following guidelines in order to get the best possible experience with your electric bicycle.

Checking Before Riding

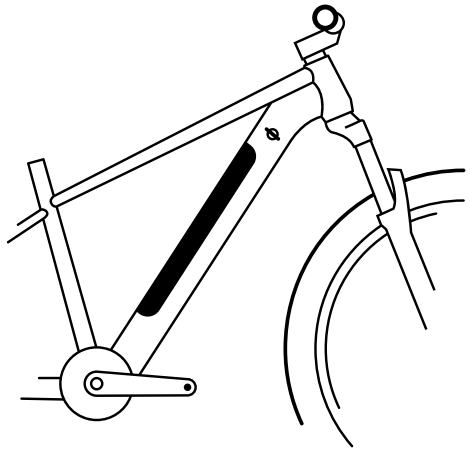
- Please ensure tires are fully inflated to 45psi, before riding. Remember, the performance of the bike is directly related to the weight of the rider and baggage/load, together with the stored energy in the battery.
- Charge overnight, prior to riding the next day.
- Apply chain oil periodically and clean if dirty or gummed up, using a degreaser, then wipe clean and oil bicycle chain again.

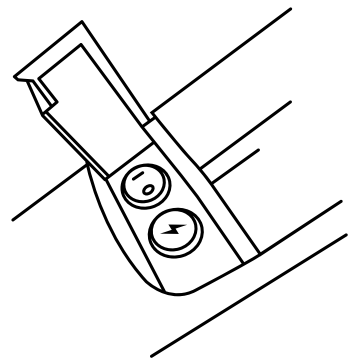
⚠ WARNING

As with all mechanical components, the bicycle 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.

SWITCHING ON THE BATTERY

The battery is integrated into the downtube and can be taken out easily by switching the key.





Before riding, open the cover on the downtube of the frame, located below the battery base. Press the first switch to turn on/off the battery. The second port with the protective plastic cover is charging port.

PROCEDURE FOR CHARGING

Please charge the bike battery according to the following procedure:

STEP 1

Make sure the display is turned off. Then open the charging socket cover, which is situated at the down tube near to cranksets.

STEP 2

Insert the charger output plug into the battery securely and then, plug the main cable of the charger into a reachable AC outlet.

STEP 3

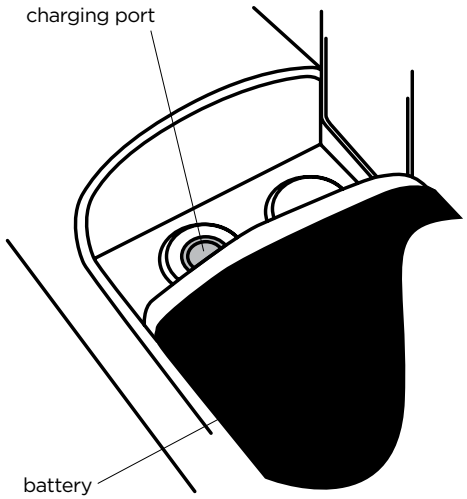
When charging, the LED on the charger will become red, showing the charging is on. It becomes green after the battery is fully charged.

STEP 4

To finish charging, you must disconnect the charger input plug first from the AC outlet, and after that, disconnect the charger output plug from the battery. Finally, close the cover on the charging socket and check the socket cover is secure.

ABOUT BATTERY CHARGING

Before using the bike for the first time, fully charge the battery. A normal charge lasts 5-6 hours (for bikes with a battery with a capacity of 8.8Ah or 14 Ah).



The charger port is positioned nearby the crank, please refer to the picture above.

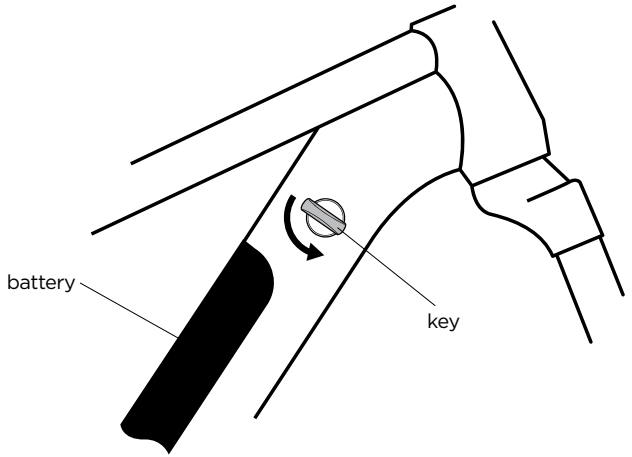
⚠ WARNING

You should only use the charger provided with the electric bike, otherwise damage could occur to your battery and void the guarantee. When charging, both battery and charger should be a minimum of 10cm away from the wall, or under a condition of ventilation for cooling. Place nothing around the charger, while in use!

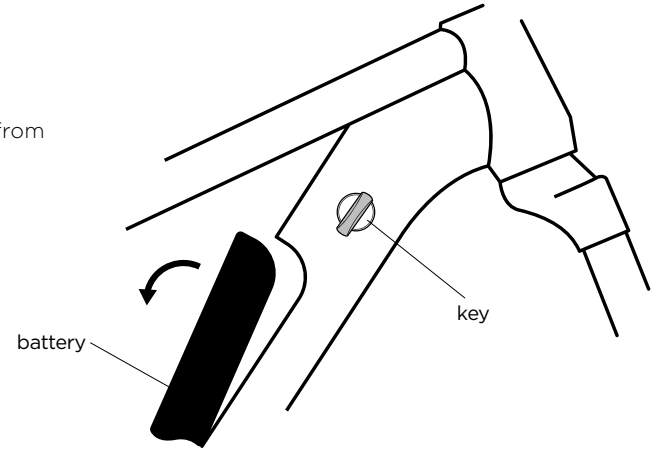
BATTERY REMOVAL

If required, the battery can be removed from the bike. First, be sure the bike is turned off. The display must be off and the button nearby the charging port must be in the “0” position.

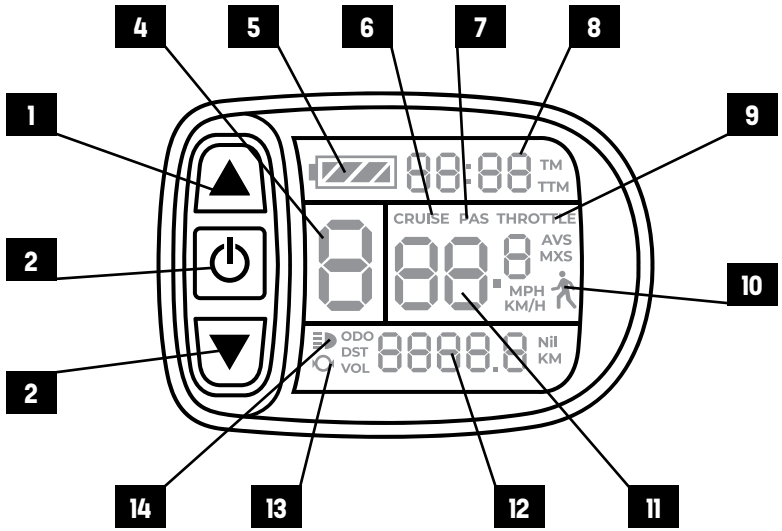
Insert the key in the lock and turn it to unlock the battery box.



Remove the battery from the frame of the bike.



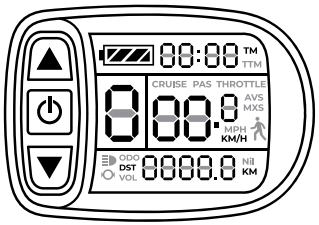
THE DISPLAY



1. UP button
2. Power on/off button
3. DOWN button
4. PAS level (assistance-level indication)
5. Battery capacity indicator
6. CRUISE function (not available with this model)
7. Power-assisted function (PAS)
8. Single trip time (TM) / Total trip time (TTM)
9. Throttle display (not available on all models)
10. 6km/h push power assistance
11. Speed indicator: Riding speed unit (km/h or MPH) / Max speed (MXS) / Average speed (AVS)
12. Distance (km or MPH) / Trip distance (DST) / Total distance (ODO) / Battery voltage (VOL)
13. Brake alert
14. Frontlight indicator (not available on all models)

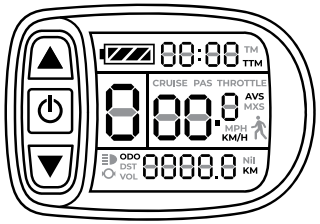
⚠ NOTE

Note: the battery will be connected to the system only when the button nearby the charging port of the bike will be on "|" position. This button activates/deactivates the connection of the battery to the electric system of the bike.



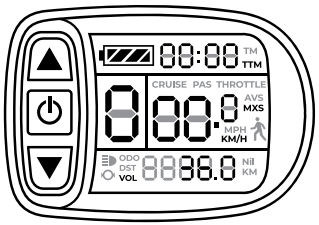
SCREEN 1: DISPLAY LOOK AT START-UP

From the display at the start-up, shortly press the on/off button to get the display to screen 2 (in the riding condition, the display will return to the start-up look after 5 seconds).



SCREEN 2

From screen 2, shortly press the on/off button to get screen 3 (in the riding condition, the display will return to the start-up look after 5 seconds).



SCREEN 3

ASSIST RATIO GEAR

When riding, press the UP or DOWN keys to modify the power/speed gear (from 1 to 5). Gear 1 is for minimum power. Gear 5 is for the highest power. Gear 0 means no assist. *(See point 4 on the display)*

6KM/H ASSISTANCE FUNCTION

When the bike is stopped and the display is turned on, hold the DOWN key to activate the speed function of 6Km/h. This function is activated when the relative symbol flashes on the display.

The bike will move forward when the DOWN key is hold pressed. This function is useful when the user must push the bike by hand on a climb or on uneven terrain. If pushing faster than 6km/h, the function automatically deactivates. Do not use this function when riding the bike. Be careful when this function is turned on.
(See point 10 on the display)

ERROR CODE DISPLAY

01: throttle abnormality (not valid for all models);
03: motor hall signal abnormality;
04: torque sensor signal abnormality;
05: axis speed sensor abnormality;
06: motor or controller has a short circuit abnormality.

Error codes flashes on the display. Once the fault is removed, the display will exit from the fault code display interface and return to the main screen look.

ADVANTAGES OF A LITHIUM BATTERY

Your electric bicycle is equipped with a high-quality lithium battery, which is light and creates no pollution to the environment, as a typical green energy source.

As well as the above features, lithium batteries have the following advantages:

- Charging without memory effect
- Big electric energy capacity, small volume, light in weight, with large current output, suitable for high power vehicles.
- A long life span.
- A wide working range of temperatures: -10°C to +40°C

USING AND MAINTAINING THE ELECTRIC HUB MOTOR

• To avoid damaging the motor, it is better to start the motor working after the bike has been pedaled from a standstill. Under the usual conditions, our intelligent e-bikes are programmed in our factory, to start the electric assistance when pedaling 3/4 circle of the chain wheel.

• Do not use the bike in a rainstorm or thunderstorm. Nor use the bike in water. Otherwise, the electric motor may be damaged.

•Avoid any impact towards the hub motor, otherwise, the casting alloy aluminum cover and body may break.

• Make a regular check on the screws on both sides of the hub motor, fasten them even if it is slightly loose.

USING AND MAINTAINING THE BATTERY CHARGER

Before charging the battery, please read the bike owner's manual and the charger manual accompanied with your bike, if any. Also, please note the following points regarding the battery charger.

To ensure a longer battery life and protecting it from damage, please use and maintain it according to the guidelines below:

• This charger is forbidden to be used in an environment with explosive gas and corrosive substances.

• Never strongly shake, punch and toss this battery charger, to protect it from damage.

• It is very necessary to protect the battery charger from rain and moisture.

• This battery charger should be normally used under temperature, ranged between 0°C to +40°C

• ALWAYS charge the battery after riding your bike;

• If the bike is ridden less frequently, then a long and full charge each month will be necessary for assisting battery life and capacity.

• If the battery will be not used and stored for quite a long time, it is necessary to be fully charged every month, and make a full discharge and recharge every three months.

• Lithium battery should be used at the places which remain between - 10°C to +40°C in temperaturen, 65±20% in moisture and stored under normal temperature 0°C to +40°C, 65±20% in moisture.

• It is necessary to check the cable connection to the motor regularly, to ensure that the hub motor functions normally.

⚠ WARNING

• The battery life may be reduced after long storage without regular charging as instructed above, due to long natural over-discharge;

• Never use any metals directly to connect the two poles of the battery, otherwise, the battery will be damaged due to a short circuit.

• Never put the battery near a fire or heat it.

• Never strongly shake, punch and toss the battery.

• When the battery pack is removed from the bike, keep it out of reach of children, to avoid any unexpected accident.

MAINTAINING THE CONTROLLER

It is very important to take care of this electronic component, according to the following guideline: Pay more attention to protect from rain and soaking water, which may damage the controller.

⚠ NOTE

In the case that the controller box does get soaked by water, please switch off the power immediately and pedal without electric assistance. You can pedal with electric assistance as soon as the controller is dried up!

Pay more attention to protect from any strong shaking and punching, which may damage this controller.

The controller should be working under the temperature ranged from - 15°C to +40°C.

⚠ WARNING

You may not open the controller box. Any attempt to open the controller box, modify or adjust the controller will void the warranty. Please ask your local dealer or authorized service to repair your bike.

SIMPLE TROUBLE SHOOTING

The information below is for purpose of explanation, not as a recommendation for the user to carry out the repair. Any remedy outlined must be carried out by a competent person who is aware of the safety issues and sufficiently familiar with electrical maintenance.

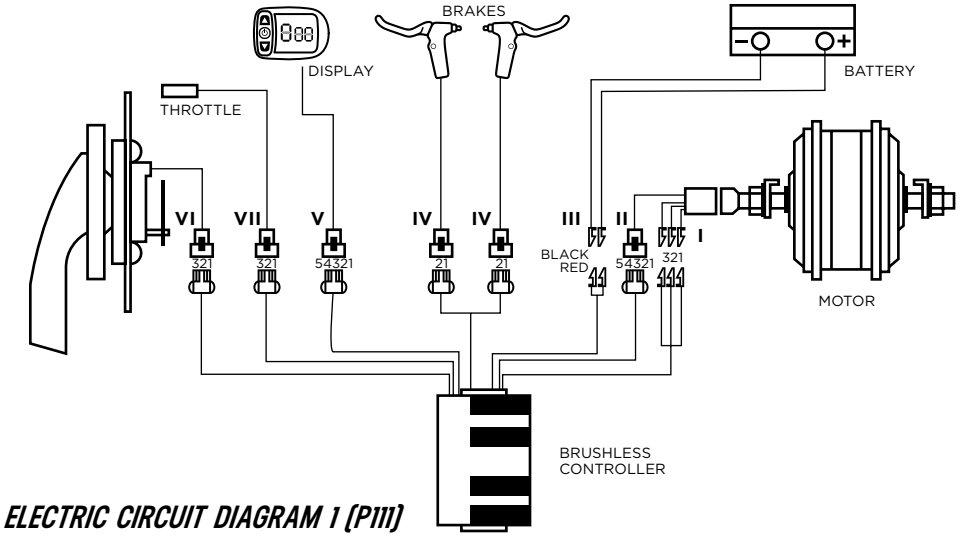
TROUBLE DESCRIPTION	POSSIBLE CAUSES	TROUBLESHOOTING METHOD
After switching on the main battery, the motor does not generate assistance when pressing the “6km/h” button or pedaling.	The motor cable waterproof connection joint is loose.	Check if the connection is securely fixed. If loose, join them tightly.
	The brake lever has not returned all the way, which causes power off.	Make sure the brake lever comes back to its normal position without braking.
	The battery Fuse is broken.	Open the battery pack top handle, and check if the fuse is broken. If yes, please contact your authorized dealer for installing a new fuse.
The distance per charge becomes short (Note: Performance of the bike battery is directly related to the weight of the rider and any baggage/load).	Charging time is not enough.	Please charge the battery according to the charging instructions.
	The environment temperature is so low that it affects the battery working.	In winter or under 0°C, you should store the battery in a warmer room.
	Frequently going up slopes, or going against the wind, or riding on the poor road conditions.	It will be normal if the riding conditions are improved as regular.
	The tires have failed to be inflated.	Pump the tires and ensure tires are fully inflated to 45psi for your bike.
	Frequently braking and starting.	It becomes normal when the riding situation becomes better. Not to worry about such trouble.
	The battery has been stored without use for quite a long time.	Make regular battery chargings according to this instruction manual.

TROUBLE SHOOTING

TROUBLE DESCRIPTION	POSSIBLE CAUSES	TROUBLESHOOTING METHOD
After plug the power outlet, no charger indicator LED is bright.	Trouble from the power outlet.	Check and repair the power outlet.
	Poor contact between charger input plug and power outlet.	Check and insert the power outlet securely.
		If the above has no effect, please contact your authorized dealer.
After charging 4-5 hours or more, the charge indicator LED is still RED, while the battery is still not full. (**Note**: it is very important to charge your bike strictly according to this instruction manual to avoid any damage occurring to your bike.	Environment temperature is 40°C and above.	Charge the battery in an area under 40°C, or according to the charging instructions in this manual.
	Environment temperature is under 0°C.	Charge the battery in a room according to the charging instructions in this manual.
	Failed to charge bike after riding, resulting in over-discharge.	Please contact your authorized dealer and try to recover the electric capacity.
	The output voltage is too low to charge the battery.	No charging when the power supply is lower than 100V.

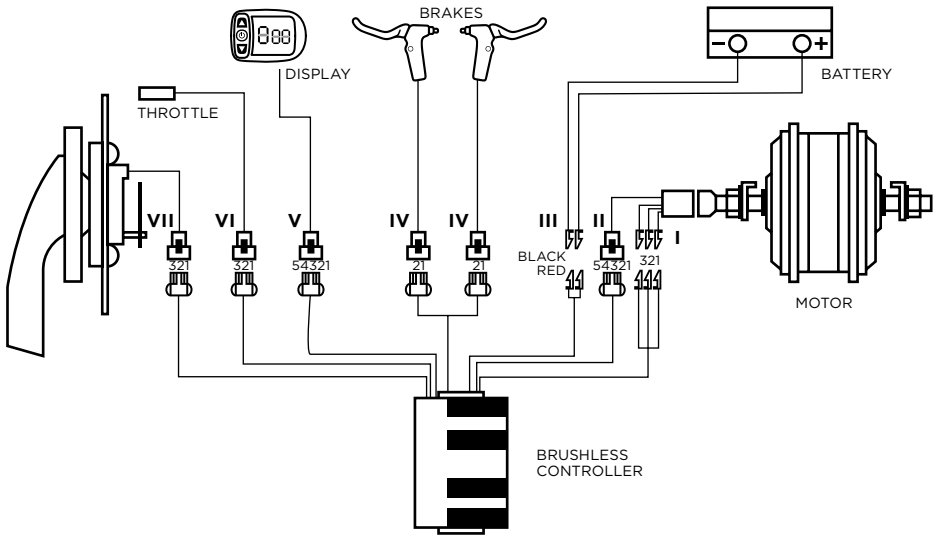
DIAGRAM AND SPECIFICATION

Here are the main technical specification details regarding the bike. SUNGENS reserves the right, without further notice, to make modifications to the product. For further advice, please contact your vendor.



ELECTRIC CIRCUIT DIAGRAM 1 (P111)

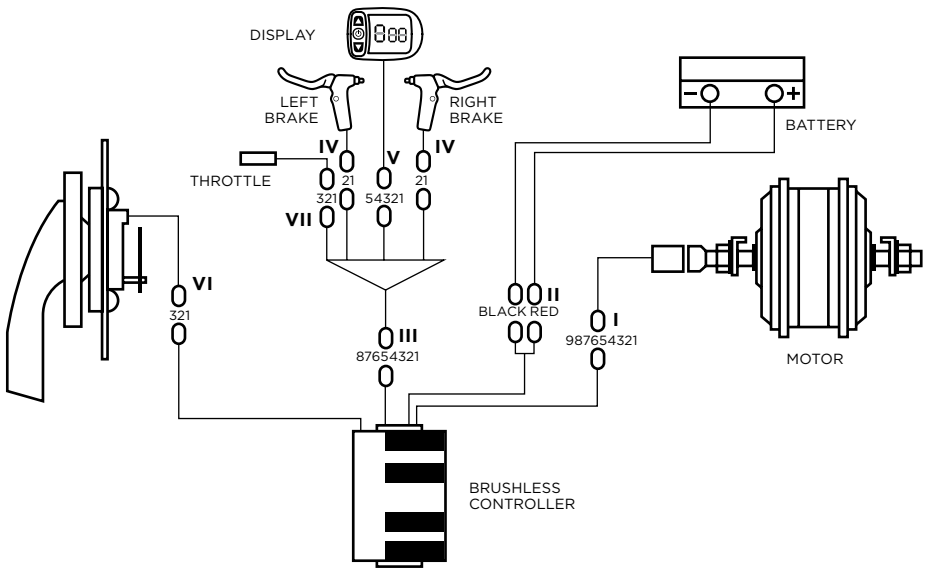
I. Motor 3 phase wire is connected with motor 1. Green (motor HA) 2. Yellow (motor HB) 3. Blue (motor HC)	**II.** Motor 1. Red (+5V) 2. Yellow (motor HB) 3. Green (motor HA) 4. Blue (motor HC) 5. Black (ground) 6. White (wheel speed sensor)	**III.** Power wire is connected with the power 1. Red (+5V) 2. Black (ground)
IV. Brake lever wire is connected with the brake lever 1. Blue (ground) 2. Red (brake lever signal)	**V.** Displayer 1. Red (+36V) 2. Blue (lock) 3. Black (ground) 4. Green (signal) 5. Yellow (A/D)	**VI.** Light 1. Red (+5V) 2. White (signal) 3. Black (ground)
VII. Power wire of the speed sensor is connected with the controller 1. Blue (speed signal wire) 2. Red (+5V) 3. Black (ground)		



ELECTRIC CIRCUIT DIAGRAM 2 (P103, P112, P123)

I. Motor 3 phase wire is connected with motor 1. Green (motor HA) 2. Yellow (motor HB) 3. Blue (motor HC)	**II.** Motor 1. Red (+5V) 2. Yellow (motor HB) 3. Green (motor HA) 4. Blue (motor HC) 5. Black (ground)	**III.** Power wire is connected with the power 1. Red (36V) 2. Black (ground)
IV. Brake lever wire is connected with the brake lever 1. Blue(ground) 2. Red(brake lever signal)	**V.** Displayer 1. Red (+36V) 2. Blue (lock) 3. Black (ground) 4. White (signal of display) 5. Green (signal of display)	**VI.** Power wire of the speed sensor is connected with the controller 1. Blue (signal) 2. Red (+5V) 3. Black (ground)
VII. Throttle 1. Red (current source of throttle +5V) 2. White (signal) 3. Black (ground)		

CIRCUIT DIAGRAMS



ELECTRIC CIRCUIT DIAGRAM 3 (P102)

I. Motor wire is connected with motor 1. Green (motor HA) 2. Yellow (motor HB) 3. Blue (motor HC) 4. Red (+5V) 5. Yellow (motor H2) 6. Green (motor H3) 7. Blue (motor H1) 8. Black (ground) 9. White (wheel speed signal)	**II.** Power wire is connected with the power 1. Red (36V) 2. Black (ground)	**III.** 1. Yellow (display signal ZF) 2. Green (display signal IL) 3. Blue (lock wire) 4. Black (-) 5. Red (+) 6. White (brake signal) 7. Purple (5V) 8. Grey (throttle)
	IV. Brake lever wire is connected with the brake lever 1. White (brake signal) 2. Black (5V)	**V.** Display wire is connected with the display 1. Yellow (display signal ZF) 2. Green (display signal IL) 3. Blue (lock wire) 4. Black (-) 5. Red (+)
VI. Power wire of the speed sensor is connected with the controller 1. Blue (speed signal wire) 2. Red (+5V) 3. Black (ground)	**VII.** Throttle 1. Grey (+5V) 2. Purple (signal output) 3. Black (ground)	

TECHNICAL SPECIFICATION

GENERAL TECHNICAL DATA FOR ELECTRIC BIKES

Maximum speed with electric assistance	25KM/H
Over current protective value	18+/-1A (under 36V)
Under voltage protective value	31V+/-0.5V (under rated 36V)

TECHNICAL DATA REGARDING YOUR BIKE MOTOR

Motor Type	Brushless without starry gears with Hall
Rated power	300-350W
Maximum output power	350W
Rated voltage	36V

TECHNICAL DATA REGARDING YOUR BIKE BATTERY AND CHARGER

Battery type	Lithium Battery
Voltage	36V
Capacity	12.8AH

WARRANTY AND GUARANTEE

GUARANTEE ON TITAN RACING BIKES

Your TITAN RACING BIKE carries a 5-Year Multi-User Warranty from the purchase date of the original owner. This warranty is transferable to all subsequent owners within its 5-year lifespan. In order to take advantage of Titan Racing's unique 5-year multi-user warranty, the original owner must:

- Register the bike online within 30 days of purchase. To register your bike visit: www.titanracingbikes.com/register-your-bike/
- Keep the original proof of purchase.
- Pass on the proof of purchase to subsequent owner(s).

In the event that a warranty claim arises, the current owner will need to substantiate the claim by providing the proof of purchase along with the affected product being claimed. If the bike is not registered, the multi-user warranty is not applicable and the standard 5-year warranty remains valid to the original owner only.

Warranty claims will only be accepted if:

- The bicycle has been used ONLY for its intended purpose.
- Had an inspection during its first 500km or the first six months after purchase.
- The original spec has not been changed/adapted.
- The bicycle has had its suspension system serviced required service intervals.

In a warranty-activating event, TITAN RACING BIKES reserves the right to provide a frame of the current successor model in an available colour or, if no such frame is available, a higher grade model.

Warranty claims for suspension forks, Shimano components or other branded accessories will not be processed by TITAN RACING BIKES, but by the component manufacturer's national distributor. Your direct contact in any case should be your TITAN RACING dealer, who will assist in this regard.

The warranty does not cover labour and transport cost, nor does it cover follow-up costs resulting from defects.

The warranty does not apply to bikes that have been used for jumps or have been subjected to any other kind of overstress.

The warranty does not cover damage resulting from:
- Wear and neglect (insufficient care and maintenance).
- Accidents or overstress caused by overloading, incorrect mounting or improper treatment.
- Damage resulting from changes to the bicycle (e.g. mounting or alteration of additional components).

Diligent compliance with the manufacturers' mounting instructions and the prescribed maintenance intervals is crucial for your bike to enjoy a long service life and good durability of the bicycle's components.

Email info@titanracingbikes.com

CAPE TOWN OFFICE

Tel +27 (0)21 852 0509 | **Fax** +27 (0)21 851 9562
Address Building 3, Devon Bosch, Bottelary Road, Koelenhof, Stellenbosch, 7605, South Africa

JOHANNESBURG OFFICE

Tel +27 (0)11 362 3357 / 6378 | **Fax** +27 (0)11 362 5267
Address 40 First Street, Springs, 1559, South Africa

www.**titanracingbikes**.com

titanracingbikes.com