



## **OWNER'S MANUAL**

**Thank you for your purchase of our new Electric Motorcycle  
Model Novox C20**

**This Manual gives you information about the general operation and maintenance methods of your new Electric Motorcycle.**

**In order to enable your Electric Motorcycle to enjoy a long and trouble-free life, please read this manual carefully, paying particular attention to the "Running-In" section, this can make your riding safer and more comfortable.**

### **ATTENTION!!!**

**Any work carried out on the E-motorcycle during warranty period by any person other than authorized dealers shall result in the warranty becoming void.**

**Driving the E-motorcycle is very quiet. Pay special attention to this when riding near other vehicles and pedestrians and make use of your horn if you think you are not being noticed.**

**In order to improve the quality of our product constantly, we reserves the right to make any changes to its models at any time, though the essential features described and illustrated herein shall remain unaltered and thereforer declines liability for any errors encountered in the manual as a result of said changes.**

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# Driving Way

A good driving way will bring you much benefit, please always remember that Electric Motorcycle is not Petrol Motorcycle, they have a great difference on the features and performance, DO NOT compare them simply, DO NOT drive it in a way to drive Petrol Motorcycle, you must learn to know the Electric Motorcycle works under electric motor and battery, the BATTERY is its only power supply, this is not same with Petrol Motorcycle working under petrol-engine, so it is very very important to learn the new driving skills as follows, and always remember them in your mind when you are ready to drive or driving:

## 1. Correct Starting Way

When you are ready to turn the Accelerating Handlebar to start your E-motorcycle, please always remember: DO NOT turn it to the Max. Position suddenly or very quickly, this is a very bad driving way for Electric Motorcycle, it may damage your battery or shorten its life too much, because battery power comes from its chemical reaction inside, if you accelerate it too fast, the battery needs to release a very big current in a short time, but such too big current will produce a risk to break electrode plate or damage it.

The very correct starting way is to turn the Accelerating Handlebar slowly and slightly, after some distance by a drive, then turn it to your needed position.

## 2. Good Driving Way

During the course of your driving on a road, DO NOT always drive it at its Max. Speed, a top speed will need a big current to supply, if your Electric Motorcycle always works under the biggest current, the battery power will be finished fast, the running range will be much shorter compare to its range at a economic speed(30Km/h).

While you are driving it, DO NOT always grip the Accelerating Handlebar tightly at a high position, loose it to a low position from time to time, it will be better for your battery, because battery can get a time to recover, and you also can spare some battery power, because your E-motorcycle can still keep on going at its inertial speed, almost no change!

### **3. Economic Driving Speed:**

**After our long time's drive and testing on road, we found the best economic driving speed was at 30-35Km/h. At such speed to drive,you can enjoy both a quiet driving feeling and a long running range,moreover both the motor and battery will work very well in this condition, they can always develop their function finely and safely, because the current is only about 8-9 ampere at such speed, this is a very benefical current for battery, motor, controller and other electric parts, the most important one is that you can get your vehicle to the max.running range!**

# **Your Safety**

Keep safety in the forefront of your mind and observe the rules of the highway code when using your Electric Motorcycle. Please pay particular attention to the following guidelines:

## **1. Regular Checks**

Always inspect your Electric Motorcycle before every ride! Please see the checklist on page 10 for further details.

## **2. Clothing and Wearing**

Always wear the appropriate clothing when riding, including eye protection, helmet and reflective gear(Depending on the time of day you are riding)

## **2. Know Your Electric Motorcycle**

Ensure you have read and understood the information enclosed in this Manual before taking your Electric Scooter on the road. It is important that you are confident with the operation of your Electric Motorcycle for your safety and the safety of those around you.

## **4. Speed limits**

Always drive within the Speed Limit and in accordance with road conditions, weather and your own riding skills.

### **WARNING:**

- (1) Stopping distance increase in wet weather!**
- (2) Keep a safe distance from other vehicles on the road!**
- (3) Do not make an abrupt turning while accelerating!.**
- (4) It is better to make front and rear brake simultaneously. Sharp braking and sudden turning are the main causes for side-slide and turning over which may give a rise to danger.**

## Frame & Motor Number

Please note down the **Frame Number** and **Motor Number** at the bottom of this page.

When your Electric Motorcycle needs a service or repair, these numbers will help you get a fast and efficient service.

### Position of the Number:



**My Motor Number:**

**My Frame Number:**

## Technical Specification

Completely Built-Up Vehicle	Modle		TM-300	Motor	Model	brushless	Charger	Power	AC220 V
	Size		1830*660*1100		Rated power (w)	2.0Kw		Frequency	50 Hz
	Wheel Size		3.00-10		Rated revolutions (r/min)	500	Controller	Output (V)	59~63
	Wheelbase		1320(mm)		Rated voltage (v)	48		Voltage Protection	42v
	Gross Weight		116 (kg)		Max torque output(N.M)	45		Over -current Protection	50A
	Rated Load		75kg	Battery-1	Type	silicone	Battery-2	Type	Li-ion
	Max. Speed		<45 km/h		Capacity (AH)	40		Capacity (AH)	40
	Battery-1	Max. range	60Km @ 45Km/h 90Km @ 30Km/h		Rated voltage	48		Rated voltage	48 / 60
		Battery-2	Max. range		100Km @ 45Km/h 150Km @ 30Km/h	<b>Noted:</b> <b>your battery type depends on your own purchased E-motorcycle</b>			

### Special instruction:

The running range per charge refers to the max. range tested under condition of the National Standard and Formulation after being charged fully. In fact it depends on loading, road status, wind direction, temperature, times of brake and start, tyre pressure, whether charging properly and your driving ways.

With more your driving time, the battery capacity will be down, so the running range will be decreased, but this is normal, because this is one of the battery's chemical features, any kind of battery have the same feature.

## Name of Parts



1. Rear view mirror
2. Speedometer
3. Headlamp
4. Left handlebar
5. Accelerating handlebar
6. Right turning light
7. Left turning light
8. Switch key
9. Disc brake
10. Tyre
11. Front telescopic absorber
12. Kick Stand
13. Main stand
14. Motor
15. Rear suspension
16. Rreflector
17. Tail light
18. Saddle lock
19. Luggage carrier
20. Saddle
21. Safety starting device
22. Drum brake
23. Drum brake adjuster
24. Frame number cover

# Controls

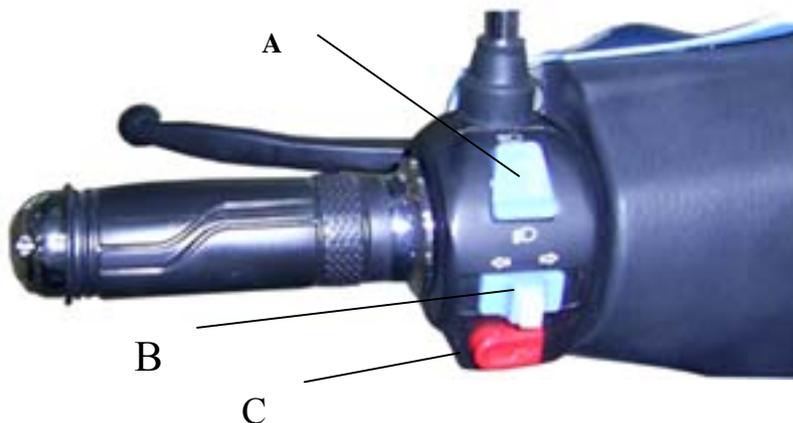


## 1. Rear Brake Lever

Squeeze Lever to apply rear brake

**Noted: The Electric Circuit will be disconnected automatically when the Rear Brake Lever is griped closely!**

## 3. Switches on the Left Handle



**A. Switch of the Dimmer:**

Press it to change the High Beam and Dipped Headlight

**B.Switch of the Turning Lights:**

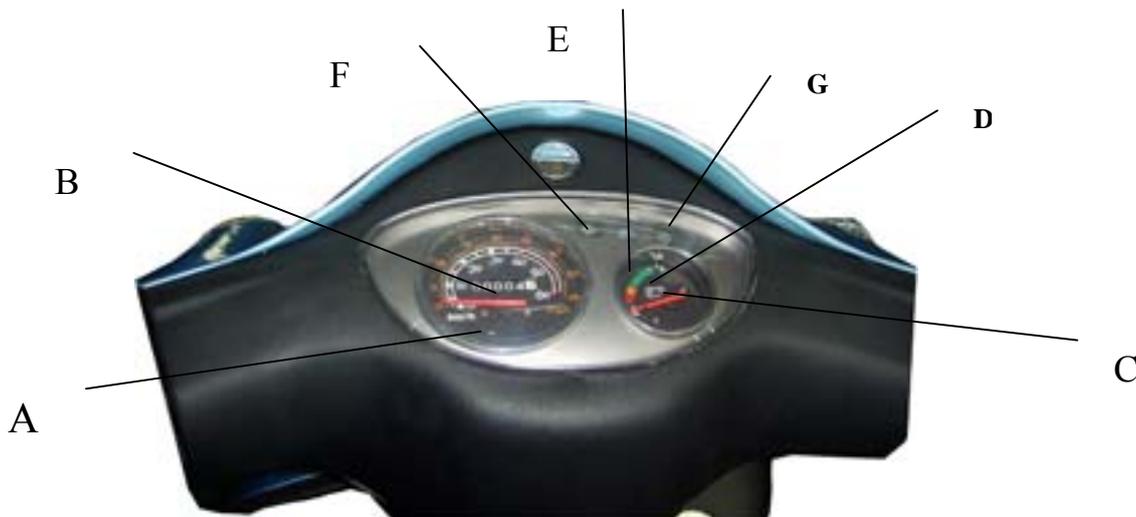
Turn it to the left, Left Winker bright

Turn it to the right, Right Winker bright

When the Switch is pushed back to the middle, the Winker will stop working.

**C.Horn:** Press down this Button on which a “Horn Symbol” is marked, the Horn will sound.

**3. Speedometer&Indicator**



**A.** Speedometer, indicating the speed Expressed in miles and Kilometer per hour

**B.** Odometer, indicating the Accumulated Range your run by your Electric Motorcycle

**C.** Power Indicator Light (red)

**D.** Power Meter, showing the volume of the Battery Power. When the battery is fully charged, the meter indicator points at the “H” Position of the Blue area.. It is safe to drive when meter indicator is at the blue area; It means that there is only 30 percent of the total volume when the indicator points at the Yellow area, the battery should be charged. Never ride when the indicator moving to red zone, otherwise it will shorten reduce the battery life or produce a potential damage to the battery!

**E.**Dimmer indicator light(Blue)

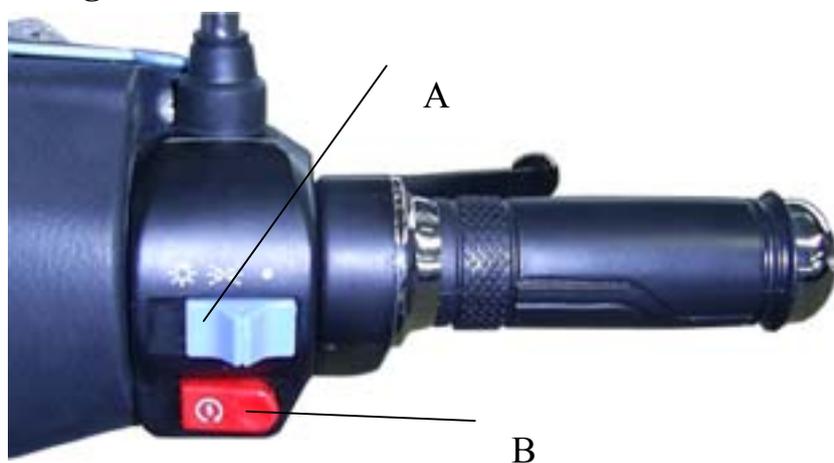
**F&G.** Flashing Indicator(green) for Left Turning or Right Turning

#### **4. Front Brake Lever**

Squeeze Lever to apply front brake

**Noted: The Electric Circuit will be disconnected automatically when the Rear Brake Lever is griped closely!**

#### **5. Switches on the Right Handle**

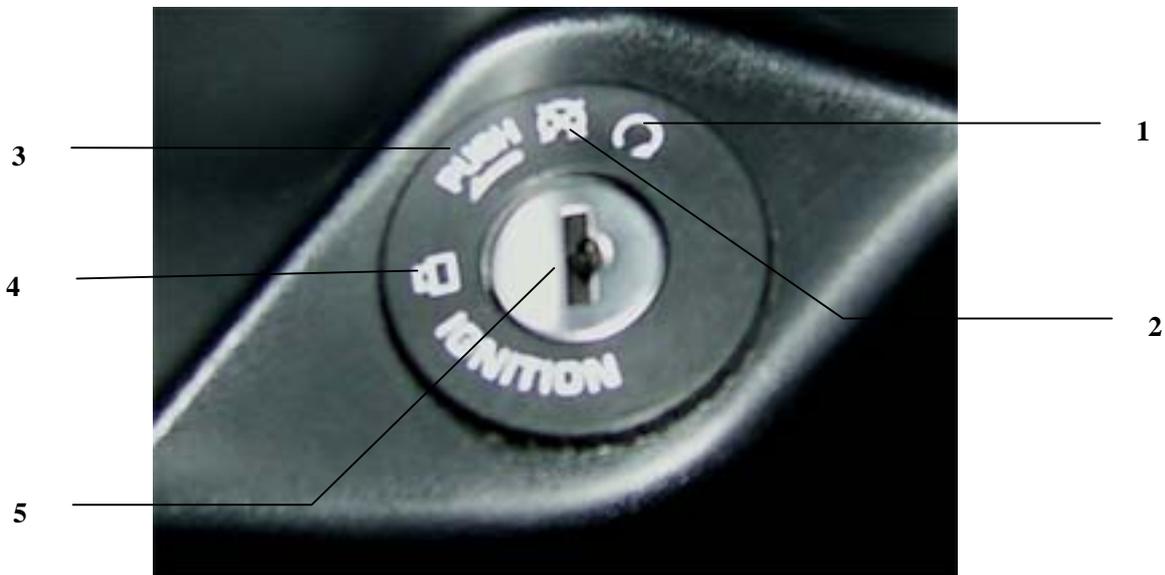


A. Headlamp Switch: When this Button is pushed to the leftmost position,all lights are switched off;  
When the Button is pushed to the middle, the Position Lights both at front and rear will be turned on;  
When this Button is pushed to the rightmost position, headlamp starts to work.

B. Powerboost Button(45Km/h) or Horn Button(25Km/h):

When you are climbing up a upslope way, please press this button, you will get an Acceleration,which will last for 5 minutes only!Noted:this is only designed for 45Km/h speed one, it is Horn Button for 25Km/h speed one.

## 6. Starting Switch



1. “ON” position
2. “OFF” position
3. “PUSH” position when you want to lock the Steering Handle
4. Steering Lock
5. Switch-Key Hole

The Starting Switch is located on the right-hand side near the steering head, turn the Switch Key to the right, to get the E-motorcycle ready for riding.

**ON** – the electric circuit is connected, motor is ready to run, Lights can be operated, Key can not be withdrawn.

**OFF** - the circuit will be cut off, Lights can not be operated, Key can be withdrawn.

**STEERING LOCK** –in order to lock the steering, turn the handlebar as far as to the left as it will go with the key turned to the position indicated as “Steering Lock”, press the key, release it and then set it to “Lock”. Remove the key!

**Noted: The Switch Key is used to enable the Starting Switch, the steering lock and**

**the saddle lock.**

**The E-motorcycle comes with two keys(one as a spare).**

### **Locking/Unlocking The Saddle:**

The Saddle lock is located on the rear fairing.

In order to unlock the saddle, insert the Switch Key and turn it anti clockwise,then lift it.

To lock the saddle,simply lower it and press down until it locks in place.

**WARNING:Before locking the saddle, be sure you not have left the keys in the saddle-box by mistake**

### **7. Accelerating Handlebar**

Rotate the Speed Handle to control riding speed!

**ATTN: In order to drive your Electric Motorcycle as far as possible, please DO NOT always drive it at the Max. Speed, you are strongly recommended to drive it at a economic speed: 30-35Km/h**

**WARNING:**

- 1. DO NOT rotate the Speed Handlebar suddenly when the Switch Key is turned on. Always rotate the Speed Handle slowly to accelerate, especially at the beginning of the start.**
- 2. DO NOT press the Accelerating Button while you drive it on a flat road.**

### **8.Operating Instruction**

**Starting:**Turn the switch key to the right position “ON”, then the lights on the dashboard comes on.

**Stopping and Parking:**Release the Accelerating Handlebar, stop the E-motorcycle by pulling on the brakes, set the Switche Key to “Close”, this causes the power supply to be cut off and the e-motorcycle disabled.

**Brakes:**In order to ensure the brakes work perfectly, measures the distance the lever travels before the brake’s braking action actually starts.

The free play at the very end of the brake has to be approx. 5-10mm,if this is not the case,contact an authorized dealer for a check and possible adjustment

**Noted:**The E-motorcycle also features an effective motor brake, which starts working automatically when the brake is gripped!

## **Checks Before A Ride**

### **Always Check the Following Descriptions Before A Ride**

No.	Items of checking	Content of checking
1	Steering	Operating flexibly. Tight with its fixed parts
2	Handlebars	Do not feel loosen
3	Brakes	Cables not frayed. Lever feels firm. Shut-off on work
4	Tyres	Correct tyre pressure. No visible cracks
5	Power	Sufficient Power for your journey
6	Lights	All in working order
7	Horn	Operating correctly
8	Accelerating Handlebar	Rotates smoothly and accelerates swiftly
9	Bolts & Nuts	Not loosen or missing
10	Motor	Working correctly; motor screw/ nut are fastened closely
11	Controller	Not damaged or broken
12	Terminal Box	All cables and wires in a good connection
13	Circuit Breaker	Not disconnected
14	Charger	Recharge in a good function
15	Kick-stand switch	Switch on working, the screw fastened

## Battery Package

### **Battery Compartment:**

The battery compartments is located under the saddle and in the rear part and designed to house four high-power silicon batteries of 40AH/12V or 50AH/48V Li-ion battery, connected in series.

The batteries are accessible by lifting up the saddle compartment.

### **Before opening the Battery Compartment:**

- **Remove the Switch Key**
- **Use the set of quick contacts, supplied with, to fit the batteries**
- **Keep in mind that each connection must be made between a negative pole(-) and a positive pole(+)**
- **Do not do any operation to Li-ion batteries without our appointed technician, as it is complicated to be operated by ordinary user, will request for a professional skills.**

### **Battery Management:**

The “Low Charge” yellow warning color is to indicate the status of the batteries charge is low.

If the needle enters the red zone, it means that a maximum distance is less than 10Km.

If this colors, the best thing to do, is to stop riding as soon as possible and to look for a place where the E-motorcycle can be parked for charging the batteries.

**Noted: A too deep discharge will shorten the life time of the batteries!**

**Do not let the batteries, which are in a low charge condition, even for a short period of time, without being recharged!**

### **Take good care of your batteries:**

**The lifetime of the batteries depends on the degree of discharging at each time, the number of charging/discharging cycles and the state of tension during stand-by time.**

Take good care, by regular recharging after use, ensuring that the batteries remain constantly on maximum tension.

Disconnect the batteries, if the E-motorcycle will not be used during a longer period of time.

Control regularly the voltage and if too low, charge the batteries.

Even if a battery is not used, it will slowly loose tension.

### **Li-ion Battery:**

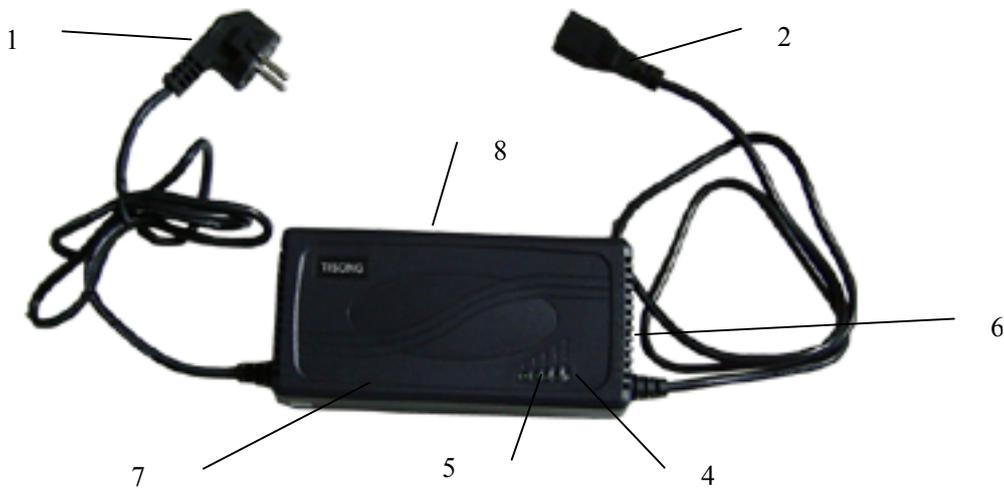
Our supplied 50AH/48V Li-ion Battery is high-power capacity one, it has a high-precision controlling system, which includes BMS(Battery Management System) and VBS(Voltage Balance System).

Please take a great attention: **DO NOT** do any operation privately, in case any problem with the battery, please seek for a help from our authorized dealers or distributors, they will send experienced technician to check and service for you on time!

## Battery Charger

The battery charger ensures the safe charging of the batteries. To protect your batteries, do not use other battery chargers. We supply two kinds of Battery Charger: 5A/48V or 10A/48V, as to your own one, please refer to it along with your e-scooter!

**Noted: The below Illustrated-1 Charger is our 10A/48V charger only for eco-battery or lead-acid battery, the Illustration-2 is only for Li-ion battery. Your charger depends on your purchased scooter type.**



**Illustration 1 (5A/48V)**



**Illustration 2 ( 6A/60V )**

1. Output plug (DC 48V or 60V)
2. Input plug (AC 220V)
3. Handle strip
4. Power indicator
5. Charge indicator
6. Blower
7. Charger shell
8. Instruction label

**The Technical Parameter:**

Input voltage:110VAC/220VAC

Frequency:47-63Hz

The charged battery voltage:48V or 60V

Output current:5A DC or 6A/60V

Efficiency:70-93%

Charge time:4 hours

Insulate resistance:Input-Output  $\leq 500M\Omega$

Protective function:over-current,over-voltage, over-heat, short-circuit, battery-polarity anti-connected.

**Operating Enviroment:**

1. Above the sea-level:  $\leq 2000M$
2. Surrounding temperature:  $-10^{\circ} C \sim 50^{\circ} C$
3. Surrounding humidity: 5% ~70%RH
4. Storage temperature:  $-10^{\circ} C \sim 60^{\circ} C$
5. Without conductive dust
6. Without explosive dust
7. Without corrosive gas and steam damaged to metal and isolator
8. Keep away from rain and snow
9. Mounting slope $\leq 5^{\circ}$

**Pay Special Attention to The Following:**

Avoid any damage to the power cord and if this nevertheless has occurred, replace it immediately by a new one.

If you have to use a power cord extention, be sure that this one is appropriate to the required Amperage for charging the batteries.

Never use it near inflammable gas!

Never touch the inside of the Charger in order to prevent an electric shock or burns.

Never modify the charger yourself in order to prevent accident or instrument failure.

Disconnect the charger promptly when a charge is completed, even the charger can stop to work automatically after a full charge.

Do not use the battery charger to recharge batteries others than belonging to the E-motorcycle!

If you have got the impression that the battery charger is not functioning well, do not try to service it yourself, but contact your dealer of the E-motorcycle!

## How to Charge

### How to charge the battery and take attention:

1. To protect your batteries, do not use other battery chargers
3. Turn **Switch Key** to “OFF” before a charge
4. Open the saddle box, turn off the **Circuit Breaker** before a charge!
3. Please firstly put the “**Output Plug**” of the charger into the **Charging Socket** on E-motorcycle , then put the “**Input Plug**” of the charger into electrical outlet (220V), the **Power indicator** will become green, which means the charger is connected rightly, and when the **Charge-indicator** turns red, that means charge is going on.



Charging Socket, only for  
battery charging!

48V DC or 60VDC

5. After the battery (40AH/12Vx4) is charged over 90%, the **Charge-indicator** will become yellow, when the batteries are fully charged, the **Charge-indicator** will become green, and the Blower will stop automatically, this means the battery is charged fully!
6. After a full charge, please pull out the “**Input Plug**” from the electrical outlet(220V) firstly, then pull out the “**Output Plug**” from the charging socket.

**WARNING:**

- (1) Always keep the Children away while the battery is being charged!**
  - (2) Avoid the charger bump with vehicle as there is a small Blower inside the charger.**
  - (3) Don't dismantle it privately!In case of any problem with charger, please send it to the appointed Maintenance & Service place on time, or seek for a help from our distributor.**
  - (4) Charge it in a dry and well-ventilated place, make sure the temperature is not higher than 40 degree**
  - (5) The charging socket is only for a use to charge the battery, do not use it for any other aim!**
7. If you don't drive your Electric Motorcycle for a long time, please charge it fully before a storage, and pay a check every 6 months,make sure the battery capacity is enough!

**Running-In**

To maximise the efficiency of your Electirc Motorcycle motor, it is recommended that you follow the speed limitations shown in the below table, during the "Running-In" period.

<b>Distance (miles)</b>	<b>Speed Limitation (mph)</b>
<b>0-125</b>	<b>25</b>
<b>125-500</b>	<b>30-35</b>
<b>500-700</b>	<b>35-40</b>

# Maintenance & Service

## 1. Examination of Operating Functions

Check the front fork ,and shake the handle lever up and down to see if there is bend and crack in the fork and some noise involved due to bend, check the fork axle to see if there is something loosen

## 2. Checking and Adjusting the Brake

- (1) Grip the handle brake until resistance engender, check the variable amount to see if it is in the normal range,
- (2) Ride on dry ground with lower speed, check the front and rear brake 's effect respectively by separate operation
- (3) Check the handlebar is in the correct position or not. Adjust it in the (10—20mm).

## 3. Tyre Inspection

Wrong tire pressure will accelerate tire tearing, which can affect the stability, Therefore you should check the tire pressure and tire decorative more frequently as it has an influence on the performance of the vehicle.

- (1) Tyre Normal Pressure

Front wheel: 250Kpa

Rear wheel : 250Kpa

- (2) Tyre Decorative

Replace the tires whose decorative has a height only of 1mm as excessive tearing will result in declining of stability and accidents caused by uncontrollability

## 4. Checking the Lights

- (1) Checke the light conditions by operating the switch of headlight, winker and taillight light
- (2) Let the light shine on the wall to check the brightness and orientation of the beam
- (3) Press the switch of the winker to inspect the flasher.
- (4) Examine all kinds of lens to see to it that there is no discolor, damage, loosen etc happened.

## 5. Checking the Lubricating Conditions

Ensure the amount of the lubricating oil in every parts of the vehicle is sufficient. (Revolving parts such as front fork and its accessories must have a cleaning and lubricating every year or half ,. ....is recommended)

## **6. Battery Maintenance**

Maintenance free Eco-battery is recommended, using correctly or not will affect greatly on life of battery.

- (1) It is favourable to charge the battery when the power volume indicator points to the red zone, which means the battery is almost discharged completely. For example, if the battery is charged until it discharge completely, its life cycle would reach to 350 times; however if you start to charge the battery when only 30% of the volume is discharged, its life cycle will reach to 300 times, the degree of a discharge will produce an influence to battery life.
- (2) Do not make battery over-discharged, that will shorten battery life, especially discharge the battery excess, it may damage the battery, then you can not get it recovered again!
- (2) Do not turn the throttle grip very quickly when you want a start or acceleration. It will increase a risk to over-discharge under a over-load driving, which can affect the battery' life greatly!
- (3) Our specialized charger is strongly recommended to use, otherwise, it may produce a damage or serious influence to battery life or stability! Our charger is especially developed out to match our eco-battery!
- (4) If the battery is stopped to use for a long time, please keep it in the condition of full charge.

## Regular Maintenance

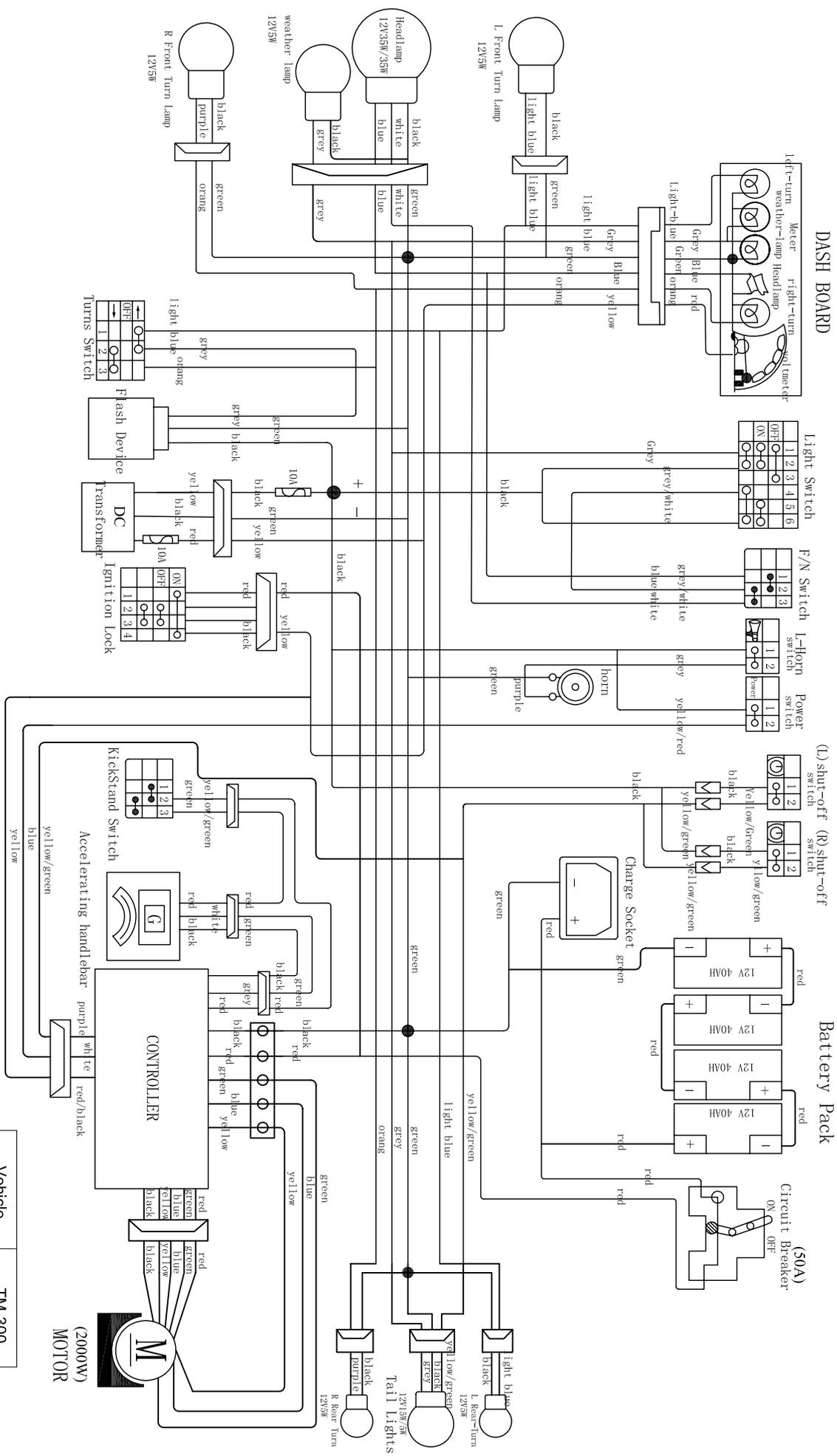
Frequency (whichever comes first)	Miles	800	1600	4,800	9,500	14,500	19,000
	Month	1	2	12	24	36	48
<b>Battery</b>		check	check	check	check	check	check
<b>Motor</b>		check	check	check	check	check	check
<b>Controller</b>		check	check	check	check	check	check
<b>Charger</b>		check	check	check	check	check	check
<b>Terminal Board</b>		check	check	check	check	check	check
<b>Circuit Breaker</b>		check	check	check	check	check	check
<b>Brakes(Front and Rear)</b>		check	check	check	check	check	check
<b>Brake Shut-off</b>		check	check	check	check	check	check
<b>Safety-start device</b>		check	check	check	check	check	check
<b>Front Fork&amp;Steering</b>		check	check	--	check	--	check
<b>Rear suspension</b>		check	check	--	check	--	check
<b>Tyres</b>		check	check	check	check	check	check
<b>Lights</b>		check	check	check	check	check	check
<b>Cables</b>		check	check	check	check	check	check
<b>Nuts &amp; Bolts</b>		fasten	fasten	fasten	fasten	fasten	fasten

**We recommend these checks are carried out by an authorized garage.**

**Service more frequently when riding in dusty areas.**

# TISONG GROUP CO., LTD

## No.8 Fuyuan South Rd., Linhai, Zhejiang, China 317000



Vehicle	TM-300
CIRCUIT DIAGRAM	
Drawing NO.	TM-300-39