



ELECTRIC SCOOTER



OPERATING INSTRUCTION

HUZHOU DAIXI ZHENHUA TECHNOLOGY TRADE CO., LTD

Contents

Introduction

Chapter I Safety Information.....	1
Chapter II Installation and Function Description.....	4
of the Scooter.....	4
Chapter III Use of the Scooter.....	14
Chapter IV Transportation of the Scooter.....	17
Chapter V Routine Maintenance of the Scooter.....	17
Chapter VI Trouble Shooting.....	22
Chapter VII Technical Parameter.....	26
After-sale Service.....	29
Warranty of Parts.....	30
Electrical wiring diagram.....	32

To Our Distinguished User,

Thank you very much for your selection and use of Zhenhua ZHZ Electric Scooter.

Please read this manual carefully before using the scooter and use your scooter as per the instructions.

This manual gives brief introduction to the overall structure, technical features, driving operation, and technical maintenance of the Scooter: ZHZ409/ZHZ409C/ZHZ413/ZHZ413S/ZHZ409T.

As we keep improving our product, the actual structure may change. Thank you for your understanding.

Your precious suggestions for our product will be highly appreciated. We will keep improving Zhenhua Electric Scooter for a better applicability and perfection.

Warnings and Tips:

- Please read the following instruction before using the product.
- Please obey local traffic regulations when using the product.

Chapter I Safety Information

Please read this instruction carefully before using the scooter for the understanding of the precautions and scooter performance. Failure to follow the instructions may lead to scooter damage or serious personal injury.

1. Do not try to refit the scooter or use the scooter for other purpose. Our company cannot

guarantee the safety of modifications and assume responsibility for your modifications.

2. In the event you feel dizzy, your vision is impacted, or your thinking/ physical coordination is influenced due to health reasons or medication, do not operate the scooter; or you shall inform the doctor of your symptom to confirm whether you are eligible for safe operation.

3. No drunk driving.

4. Do not set the electric switch OFF before the scooter stops stably on smooth ground.

5. Do not try to climb over steps or other obstacles higher than 65mm for ZHZ409T or 80mm for ZHZ413/ZHZ413S .

6. Do not stop the scooter when climbing a slope. Avoid unexpected safety accidents caused by slipping out of control.

7. For the stability of the scooter and your safety, do not drive on the slope steeper than 12° for ZHZ409/ZHZ409C/ZHZ409T or 18° for ZHZ413/ZHZ413S .

8. Be careful when you reverse or turn around on the slope.

9. Please drive strictly in accordance with the local traffic regulations, do not tow the other vehicle or use the scooter under load heavier than the parameter.

10. Power off the scooter when it is not in use, which prolongs the service life of the battery and protects you from accident.

11. Please use grounded socket. Socket not grounded may lead to electric shock.

12 . Slow down when you make a turn.

Drive inside the scooter and do not stretch your legs or arms out of the scooter to avoid accidents when driving.

14. Please drive with caution on the slope or wet/ slippery ground where the braking distance might be longer.

15. Please drive with caution in bad weather or ponding.

16. Do not charge the battery under the exposure of sun in summer and charge the battery indoors in winter when the outdoor temperature is lower than 10°C. Do not charge in a flammable and explosive environment.

17. Do not use the music entertainment system when driving the scooter, for it may cause distraction and traffic accident.

18. Do not park the scooter in ponding, wet place or any other place that may be exposed to rain. Ponding and water can affect the normal life of electrical control systems.

Important Information Concerning Electromagnetic Interference (EMI)

Electromagnetic interference (EMI) refers to the potential adverse impact on the scooter controller by the electromagnetic wave produced by external electromagnetic energy source (radio station and TV station broadcasting, wireless transceiver, garage opener, cell phone and etc.) . The external interference may lead to automatic release of electromagnetic brake, automatic movement, or movement towards unintentional directions, in worse cases, permanent damage of control system may be caused.

The scooter can resist certain EMI intensity which is called interference resistance capacity. Your scooter has been test, which has the interference resistance capacity of 20v/m. But in case of thunderstorm, the electric lock should be turned off as soon as possible in the event of lightning.

Do not use portable CB transceiver or communication device like cell phone when the scooter is started.

Be careful and stay away from electromagnetic wave release equipment like radio, TV station, or etc.

Turn off the electric switch for your safety in case of exception during the use.

Be careful, any refitting of the existing electrical circuit or addition of any other electric attachment may make your scooter more vulnerable to EMI.

Warning:

Even if the interference resistance capacity reaches 20 v/ m, some precautionary measures shall be followed to protect your scooter from external electromagnetic wave source.

Chapter II Installation and Function Description of the Scooter

Before using the scooter, please read this chapter for a better understanding of the components, settings, control box adjustment as well as safe and smooth operation of the scooter. The scooter consists of the following components as shown in Pic. (1) for ZHZ409 and ZHZ413S.



Pic (1) ZHZ409



图 (1) ZHZ413S

Battery Charging

Charging Procedure

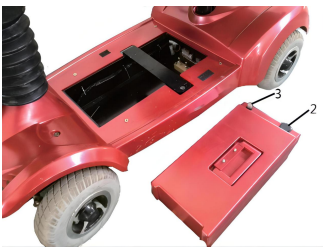
(1) Connect the three-pin plug of the charger with the power supply. Please refer to ZHZ409 Pic. (2) and (3), and the LED light of the charger turns red for ZHZ409/ZHZ409C/ZHZ409T. Or refer to ZHZ413S Pic. (2), and the LED light of the charger turns red for ZHZ413/ZHZ413S.

TIPS: In the case the battery box is not removed, the connection between the charger and ① or ② can both charge the battery. In the case the battery box is removed, the battery can only be

That the scooter runs under excessive load or steps over big obstacles may cause excessive current and the current overload breaker ③ will function automatically to cut the power and protect the motor. In such case, please turn off the electric switch and press the black button of the overload breaker ①③ to recover the function and then turn on the electric switch for normal driving. (Note: Such situation is due to the scooter overload, please reduce the load or avoid the obstacle) .



Pic (2) ZHZ409



Pic (3) ZHZ409



Pic (2) ZHZ413S

Vehicle anti-theft

Vehicle vibration anti-theft is controlled by remote control, see pic (3).

① Anti-theft lock switch and remote shutdown.

Press it once to activate the anti-theft alarm mode, and the MP3/radio mode will be automatically turned off;

Press it again to release the anti-theft alarm mode, and the MP3/radio mode is still off; To turn on MP3/Radio mode, a short press

② is required.

To turn off the MP3/radio, two short presses ① are required.

② Play/Pause and function transitions.

Short press to realize play and pause functions;

Long press to switch between MP3 and radio modes.

③ Short press to play the previous song, long press this button to gradually increase the volume.

④ Short press to play the next song, long press to decrease the volume gradually.



Pic (3)



Pic (4)



Pic (5)

Anti-theft lock of the battery just for ZHZ409C

Insert the key in keyhole ①, see Pic. (4), turn the key clockwise to lock the battery and anticlockwise to unlock the motor.

Place the brake release lever in Drive Mode, insert the key in keyhole①, see Pic. (5) , turn the key clockwise to lock the motor and anticlockwise to unlock the motor.

Control and Adjust

Before driving, it is recommended that you understand how to operate the scooter and adjust some parts to increase the safety and comfort of the operation. The operating system is shown in the pic (6) for ZHZ409C.



Pic (6) for ZHZ409C



Pic (6) for ZHZ409T



Pic (6) for ZHZ409/ZHZ413/ZH413S

①Speed control button - to regulate the max speed of the scooter. Please start at a low speed and tune the knob gently till you think proper. Spin the button anticlockwise (signal of turtle) to decelerate and spin the button clockwise (signal of rabbit) to accelerate for ZHZ409/ZHZ409C/ZHZ409T/ZHZ413/ZHZ413S.

②Horn – Press this button the horn will work and the horn will stop when you release the button. The function might be needed when you get near blind corner or reverse the scooter for ZHZ409/ZHZ409C/ZHZ409T/ZHZ413/ZHZ413S.

③Status Indicator - The status indicator functions normally when the scooter is in good status and the flashing indicator means scooter failure. The flashing frequency differs from each other as per different failure. Refer to Controller Failure Code for failure instruction for ZHZ409/ZHZ409C/ZHZ409T/ZHZ413/ZHZ413S.

④Battery indicator - This gauge displays the battery level. When in the green area, the battery is fully charged; in the yellow area, the battery needs to be charged; in the red area, the battery needs to be charged immediately. NOTE: The battery level display may temporarily drop when the vehicle is driving on a slope, this is normal for ZHZ409/ZHZ409C/ZHZ409T/ZHZ413/ZHZ413S.

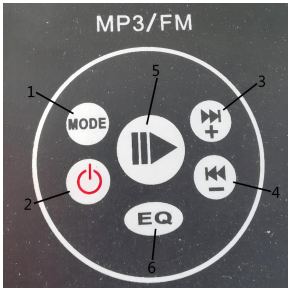
Battery saver function – to save the electric energy, the power will be disconnected if the scooter is not in use for 10minutes. If you need to use the scooter, turn on the electric switch again from ON to OFF and then to ON again for ZHZ409/ZHZ409C/ZHZ409T/ZHZ413/ZHZ413S.

⑤ Operating handle – pull back the right handle, the scooter moves forward; pull back the left handle, the scooter moves backwards; the wider the range is, the higher the speed will be, and vice versa. Take care not to pull both handles at the same time for ZHZ409/ZHZ409C/ZHZ409T/ZHZ413/ZHZ413S.

⑥ Headlight button - press the headlight button, the headlights are on; press the headlight button again, the headlights are off for ZHZ409/ZHZ409T/ZHZ413/ZHZ413S.

⑦Turn signal button - turn left, the left turn signal is on; turn right, the right turn signal is on for ZHZ409/ZHZ413/ZHZ413S.

⑧Schematic diagram of the function keys of the MP3/FM remote control panel, see the figure below for ZHZ409/ZHZ413/ZHZ413S.



①MP3 and FM function conversion

Short press to switch between MP3 and radio modes.

②Power on / off / siren horn sound.

In MP3/radio mode, short press to turn on and off.

③ Short press for the next song, long press for the volume to gradually increase.

④ Short press for the previous song, long press for the volume to gradually decrease.

⑤Play / Pause.

Short press to play and pause.

⑥Sound effect processing, can transform six different music effects.

Short press to switch to the next music effect, and so on.

MP3/FM jack function see the figure below for ZHZ409/ZHZ413/ZHZ413S.

①USB socket - support U disk insertion to play MP3 audio files; Supports charging mobile phones.

②TF card socket - support TF card insertion to play MP3 audio files.

③Audio jack - through a 3.5mm male-to-male audio cable, it supports other multimedia playback tools to play audio signals through the vehicle's MP3 speakers.



④Power indicator hole - When MP3/FM is working, the blue power indicator light is on.

Armrest Adjustment

The seat of your scooter is equipped with armrest and you can adjust the width between the armrest for most comfortable sitting. See Pic. (7) for armrest adjustment:

- (1) Loosen the knob ① on the frame and pull it outwards
- (2) Adjust the armrest ② to the proper place
- (3) Tighten the knob to fix the armrest
- (4) Same method to adjust the armrest on the other side.



Pic (7)

Warning:

The left and right armrests of the scooter cannot bear excessive force, please pay attention when using it, otherwise it will be damaged.

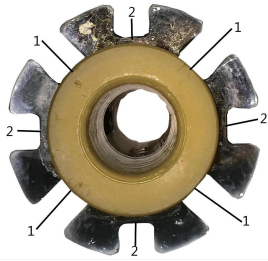
Seat Adjustment

Refer to Pic. (8) for removing and installing the seat:

Removal – pull the lever ③ upwards and rotate the seat for 45°, when the lever moves to slot ①, you can remove the seat by lifting it.

Installation -- pull the lever ③ upwards, when the lever moves to slot ①, aim and insert the seat, release the lever and complete the installation.

Note: When the lever is in slot ②, you will not be able to remove or install the seat.



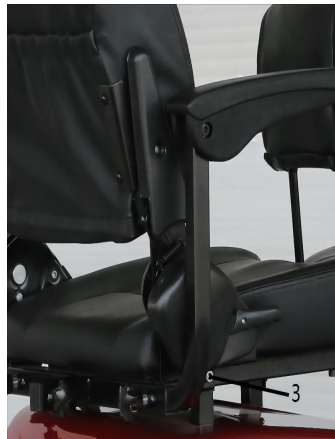
Pic (8)

ZHZ413S:

For seat removal and installation, see the figure below:

Installation - fix the seat with three bolts①②③and tighten with an Allen key;

Removal - remove the①②③three bolts and the seat can be removed.



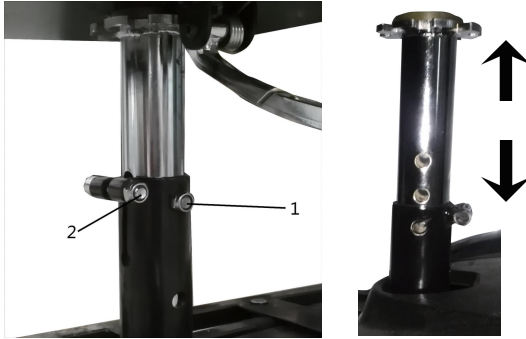
Seat Height Adjustment

The seat height can be adjusted manually. There are several holes for height adjustment under the seat. See Pic. (9)

- (1)Remove the seat, loosen the bolt ①under the seat, and lift the seat.
- (2) Hold the lever with one hand and pull out the bolt 1 with another hand.

(3) Loosen the nut-lock ② and adjust the seat post to proper height as indicated by the arrow. Insert the bolt ① under the seat, tighten the nut, and then fix the nut-lock

② to ensure stability and reliability of the seat post.



Pic (9)

Seat Rotation

The seat can be rotated for 360°, for each 45°, there will be tooth for locking.

You may use this function for easier removal and installation of seat. See Pic. (10)

- (1) Pull the lever ① upwards and rotate the seat after unlocking
- (2) Rotate the seat to proper position.
- (3) Release the lever ①, rotate the seat repeatedly and gently to recover the lever ①.



Pic (10)

Forehead Angle Adjustment

(1) Hold the forehead and adjust the hand shank ① anticlockwise (see Pic. 11) to loosen the forehead.

- (2) Adjust the forehead to a proper position.
- (3) Rotate the hand shank ① clockwise and fix the forehead.
- (4) After the forehead is fixed, pull and rotate the adjustment handle ① to the outside of the handle, and adjust the handle ① to a suitable position separately.

WARNING:

Before adjusting the faucet or seat, remove the key from the electric lock. Do not attempt to adjust the faucet or seat while the vehicle is moving.



Pic (11)

Chapter III Use of the Scooter

After you know the components and the operation of the scooter whose battery is full, you may use the scooter after the following instruction. See the following for details:

Service Environment

(1) The scooter is to be used on flat ground while it is not to be used on bad roads, in the rain or the water.

(2) Ambient temperature: $-15^{\circ}\text{C}\sim 40^{\circ}\text{C}$

(3) Relative humidity: $\leq 85\%$

(4) Air pressure: $86\sim 106\text{Kpa}$

Getting on and off the scooter

For a more comfortable and easier access, please refer to the following suggestions:

(1) Lift the armrest for free access to the scooter and make sure the armrest is restored before driving.

(2) The pedal enables easier access to the scooter.

(3) You may also rotate the seat for 90° and restore the seat after getting on.

(4) As for the ZHZ413S, the small front seat can be lifted forward from the rear of the seat, which is convenient for loading and unloading passengers in the rear seat

Caution:

Do not set the electric lock ON or have the key in the electric lock when getting on or off the scooter.

Scooter Driving

Please read the following carefully before driving. Before driving:

(1) Read the safety information carefully.

(2) Check the battery to see whether it's charged fully (the battery shall be charged fully before long distance driving)

(3) Check the electric equipment connection of the scooter.

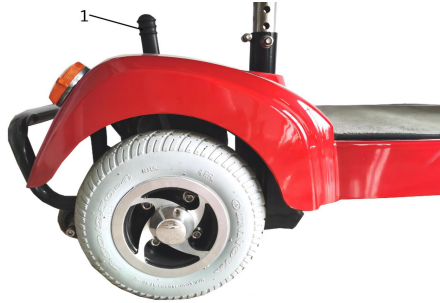
(4) Check whether the motor and brake release lever function normally, whether the brake is activated, see pic (12). ① is "Push Mode" and "Drive Mode" release lever.

(5) Confirm whether the electromagnetic brake is sensitive and reliable.

(6) Confirm the firmness of connection between the fastener (bolt, nut), especially the adjustment lever of the forehead.

(7) Adjust the turn handle to proper position for comfortable driving.

(8) Check whether the armrest is laid down.



Pic (12)

Warning:

Please stop the operation in the event of any exception of the said items. Keep in mind to check the scooter before driving. Neglect or carelessness may cause accident or injury.

Speed Setting

The speed of the scooter can be adjusted through speed control button (as in Pic. 6) when the scooter is in movement. Low speed setting (signal of turtle) reduces the max speed and high speed setting (signal of rabbit) increases the max speed. As you are using the scooter for the first time, select a relatively low speed and adjust the speed after you get used to it.

Driving on Slope

(1) It is suggested you slow down when you go up/down the slope.

(2) Do not make a turn when driving on the slope, which may cause turnover.

(3) Keep a low speed and do not park at will when going up/down the slope. Do not drive on the slope steeper than 12°

(4) Keep a steady and low speed on the slope and do not stop or start the scooter at will.

(5) Please lean forward for scooter stability when going up a slope.

Corner and Making a Turn

Please slow down when you make a turn or get near a corner.

Stones and Obstacles

Do not try to climb over steps or other obstacles higher than 5cm for ZHZ409/ZHZ409C/ZHZ409T or 7cm for ZHZ413/ZHZ413S.

Brake Release Lever

The scooter is featured for its Pushing Mode, while you can push the scooter with your hand. For switching to Pushing Mode, turn the key to OFF, find the brake release.

lever on the rear cover (as in Pic. 12)

Pull the lever forwards into Pushing Mode for easily pushing the vehicle by hand.

Pull the lever backwards into Driving Mode for meshing the brake

As the scooter is in Pushing Mode, the brake and the motor will not function.

Driving

Pull back the right handle (as in Pic. 6), the scooter moves forward; pull back the left handle, the scooter moves backwards; the wider the range is, the higher the speed will be, and vice versa. Take care not to pull both handles at the same time.

Pay attention to the road condition and keep the scooter at proper speed to control the brake distance.

Note: If emergency stop is not a must, please operate the handle gently.

Warning:

Try not to use Pushing Mode when the scooter is on the slope, as it may cause scooter failure or sliding and hurt you. If the scooter is on the slope and in Pushing Mode at the same time, do not sit in the scooter.

Chapter IV Transportation of the Scooter

Automobile transportation – put every component of the scooter in the car and be careful not to scratch or stain any part.

Air transportation – in the case of air transportation of this scooter, please call the airline company 24 in advance to ensure whether they accept such scooter and whether such scooter needs to be disassembled during the transportation, because the airline company do not accept batteries.

Take this manual with you when you are traveling, which may act as reference when you need to disassemble or assemble the scooter.

Before leaving the airport, remember to test the performance of the scooter. Report the exception to the airline company if there is any.

When traveling outside China, you may need different charger or adapter. You may turn to customer service or authorized service center for the solutions, where you can also get the charger or adapter you need.

Warning:

To protect you from safety accident or personal injury, do not sit in the scooter during transportation

Chapter V Routine Maintenance of the Scooter

Routine Maintenance

Regular maintenance of your scooter prolongs effectively the service life of the scooter and may find potential problems that may influence the service and operation. For your convenience, the items that require regular maintenance are listed as follows:

Seat – the seat and its back can be washed with mild suds. The chemical detergent shall be avoided which may damage the surface of the seat. Exposure to strong sunlight may reduce the service life of seat surface, however it is normal aging.

Cover of the scooter body – the cover of the scooter may be rinsed gently with wet towel after being soaked in suds. The chemical detergent shall be avoided which may cause fading of the scooter body.

Warning:

Do not wash the scooter with water, because the water may enter electric system and cause permanent damage.

Electric component –the after-sale service of the rear axle, controller and charger shall be provided by your dealers. Unauthorized disassembly or damage the seal will invalidate the warranty.

Electromagnetic brake – if the electromagnetic brake functions normally and the brake release lever is placed in Driving Mode, you won't be able to move your scooter whether the key of the electric lock is ON or OFF.

Warning:

For your safety, we suggest that you check the brake of the scooter and battery power before each time you use it.

Operation of brake – as you release the operating lever when you are driving the scooter, the scooter shall lose speed rapidly and stop gently. If you find any exception during normal

driving/deceleration, stop using the scooter and contact your dealer or designated service point.

Wheel – the scooter is equipped with solid tires and aluminum hub for HZ409/ZHZ409C/ZHZ409T or pneumatic tires and aluminum hub for ZHZ413/ZHZ413S. The tires shall be checked regularly for deformation, firmness, and whether is excessively worn on the tire surface. Damaged tires shall be replaced in a timely manner.

Battery – please charge your battery correctly (see the section of battery charging). Keep the battery in dry and cold-proof places and keep the battery and its connecting line clean.

The vehicle – please check the scooter regularly for screw firmness or parts intactness.

Make necessary adjustment or contact the customer service if there is any exception.

That some users use the scooter for a long time every day or discharge the battery almost completely will shorten the service life of the battery. Battery with relatively low operating frequency or battery that is not discharged deeply may have a longer service life.

Use and Maintenance of Battery

(1)The battery shall be checked for damage, crack, or other packing exceptions before use, while the battery surface shall also be cleaned.

(2)The battery shall be connected correctly, the contact shall be ensured and polarity casing shall be checked for its firmness to the electrode.

(3)The battery shall be charged promptly after use. The storage of battery with insufficient voltage is prohibited.

(4)The battery shall not be discharged deeply, discharge depth of 30%-50% is accepted, generally depth higher than 80% is not suggested (this is very important). Deeply discharging affects the using time of the battery.

(5)Fire, soaking, overheat, strenuous vibration, collision, or short-circuit of positive & negative electrode of the battery is prohibited and the service temperature shall not exceed between 45°C and -20°C.

(6)Generally, the charging shall not last for 20 hours.

(7)When the batteries leave the factory, the capacity of each group is matched. Please do not mix the new and old batteries, different models and different manufacturers without authorization. This will not only damage the using time of the battery, but may also cause burning..

(8)Only use the charger provided by the company to charge the battery. Using an unmatched charger can cause catastrophic accidents such as battery explosion and combustion. For this reason, the battery should always be checked for overheating, bulging and smoking when charging the battery and the charger. If it happens, you should

immediately cut off the power supply, stop charging, and contact the seller or the designated service company in time to find out the reason, and continue to use after troubleshooting (normal battery and charger surface temperature should be lower than 70°C).

(9) The battery shall be charged once a month if it is not in use (this is very important).

(10) The temperature will affect the battery capacity. That is to say, the same set of batteries can be used for 4 hours in summer and only 3 hours in winter.

Warning:

Do not start the vehicle in a flammable and explosive environment, and it is strictly forbidden to charge and discharge the vehicle in a flammable and explosive environment, otherwise it will cause the disaster of site combustion and explosion.

Controller Maintenance

Controller of the scooter is an unrepairable part. Do not open and repair the controller or modify the control, which may damage the controller and invalidate the warranty. The controller is suggested to be used in dry and clean conditions under normal temperature. To protect the controller from failure, the controller shall be cleaned regularly to remove the dirt, especially the corrosive material on its surface.

Use of controller in the environment with excess moisture or overload is prohibited.

Procedure for Cleaning Controller

- (1) Disconnect and remove the battery.
- (2) Clean the dirt or corrosive material on the connecting line, wipe the controller with wet cloth and dry the controller before connecting it.
- (3) Make sure the connection is secure.

Rear Axle Maintenance

(1) Do not try to open, repair, or modify the rear axle, which may damage the rear axle and invalidate the warranty.

(2) Overload or blockage of the motor for a long time is prohibited.

(3) Clean regularly the dirt or corrosive material on the motor surface, especially the dirt on the outgoing line of the motor.

(4) Exposure to water or other dust is prohibited. Passing through ponding deeper than 5cm will bring water into the motor, which may damage the motor permanently.

(5) Do not start or stop the motor frequently, which may reduce the service life of the motor and electromagnetic brake or damage the motor and electromagnetic brake.

Use and Maintenance of the Charger

(1) The charger has high voltage inside, please do not repair or open the charge by yourself.

(2) The charger is to be exclusively used for charging of this scooter.

(3) Input voltage of the charger is AC 100V-240V.

(4) It is prohibited to use the battery in high humidity or high temperature environment.

(5) Connect the output plug with the charging port in the first place and then insert the plug in the socket when charging.

(6) When the battery is fully charged, the charger will stop functioning automatically. The charger shall not be connected to the scooter for long time.

(7) In the case of overheat (hotter than 70 °C), sparkle, or smoking of the charger, quickly unplugging the charger, and contacting the dealer or designated maintenance point in time to solve the problem.

(8) In the event the battery needs to be charged directly, new plug shall be purchased.

Chapter VI Trouble Shooting

As your scooter has any failure, please check as per the following instructions. (Note: These solutions are exclusively to be used by the distributors, who will be the assistance provider). Please report the details of failure and flashing frequency of the indicator to the supplier. Such information is the basis to confirm the scooter failure.

Failure	Possible Cause	Solution
Failure to start up	1. The electric switch is not ON	1. Turn the electric switch ON
	2. The scooter is in Pushing Mode	2. Place the brake release lever in Driving Mode
	3. Low battery	3. Charge the battery
	4. The power is shut for energy saving mode	4. Turn the electric switch off and on to re-start the scooter
	5. Damaged operating potentiometer	5. Replace the operating potentiometer
Scooter shaking when driving	1. Damaged tire	1. Replace the tire
	2. Loose seat	2. Check the firmness or intactness of the components
	3. Loose lever	3. Tighten the nut for lever fixing
	4. Loose tire	4. Tighten the nut for tire fixing
	5. Damaged carbon brushless of motor	5. Replace the carbon brushless of motor
Shortening of battery time	1. Insufficient charging time	1. Prolong the charging time properly
	2. Damaged battery	2. Test the battery capacity or replace the battery when necessary
	3. Low temperature reduces service time of battery	3. Charge the battery fully under room temperature
Unstable scooter speed	1. Forwarding/ Reversing Operating lever potentiometer failure	1. Contact the customer service or local authorized service center.
	2. Bad contact of plug or wire	2. Repair or replace
	3. Damaged carbon brushless of motor	3. Replace the carbon brushless of motor

Failure of LED light on the charger	1. Incorrect plugging in of connecting line	1. Check for correct connecting line of the battery pack and the socket. 2. Contact the customer service or local authorized service center.
	2. Damaged charger	2. Contact the customer service or local authorized service center.
Failure of brake release lever Recovery	1. Corrosion or rust	1. Lubricate the steel ball of the brake. Caution: the brake pad shall be free of the lube
Failure of status light when the electric switch is ON	1. Bad connection of wire	1. Connect the wire correctly
	2. Damaged status light	2. Replace the status light component
	3. Damaged controller	3. Contact the agency for controller replacement
Failure of headlight and turn light after pressing the headlight and turn light button when the electric switch is ON and the scooter can start up normally	1. Broken bulb	1. Replace the bulb
	2. Damaged connector of the headlight and turn light	2. Check the connector
	3. Broken headlight button and turn light switch	3. Check the switch and button
Failure to stop when the scooter starts up while the status light is not flashing	1. The operating lever is not restored in middle position	1. Turn off the electric switch promptly to stop the scooter and contact the agency
	2. Damaged brake system	2. Contact the agency
Red status light flashing when the electric switch is ON	1. The battery needs charging	1. Charge the battery
	2. The hand shank of electromagnetic brake is not at the bottom	2. Place the hand shank of electromagnetic brake back in the lower part
	3. The operating lever is not in the middle position	3. Place the operating lever back in middle position and contact the agency
	4. Damaged controller	4. Contact the nearest agency
Turn on the electric	1. Bad wiring harness	1. Contact the agency

switch, the status light is on but not flashing; when you pull the operating lever, the scooter keeps still or takes some time to move or moves at unstable speed.	2. Damaged motor	2. Contact the nearest agency
	3. Damaged controller	3. Contact the agency
Failure of scooter start up when you pull the operating lever as the electric switch is ON	1. Battery is being charging	1. Unplug the charging port
	2. Damaged electric equipment	2. Contact the agency for repairing

Controller Failure Judgement

The controller for this scooter includes internal diagnostic program for failure recognition and trouble shooting. As this program detects failure, the status light on the instrument panel flashes with certain frequency for failure recognition. The interpretation of the continuous flashing and the remedies are as follows:

Continuous Flashing Frequency of LED Status Light	Failure Interpretation
● ● ●	Potentiometer failure
● ● ● ●	Speed limit potentiometer failure
● ● ● ● ● ●	Over voltage of battery
● ● ● ●	Controller failure
● ● ● ● ●	Brake failure
● ● ● ● ● ●	Controller failure
● ● ● ● ● ● ● ●	Potentiometer failure or suspension failure
● ● ● ● ●	Controller failure
● ● ● ● ● ● ●	Motor failure or electromagnetic brake failure
● ● ● ● ● ● ● ●	Controller failure
● ● ● ● ● ● ● ● ●	Controller failure

Chapter VII Technical Parameter

Primary technical parameter of this scooter

Item	ZHZ409C	ZHZ409	ZHZ413	ZHZ413S	ZHZ409T
Max Speed km/h	8	8	15	15	8
Rated Load LB	264.6	220.5	330.7	661.4	220.5
Total Weight LB	123.5 (Including the battery)	160.9 (Including the battery)	238.1 (Including the battery)	260.1 (Including the battery)	105.8 (Including the battery)
Brake Mode	Electromagnetic brake	Electromagnetic brake	Electromagnetic brake	Electromagnetic brake	Electromagnetic brake
Brake Performance IN	≤78.7	≤78.7	≤78.7	≤98.4	≤78.7
Parking Performance	12°	12°	12°	12°	12°
Obstacle Height IN	≤2.6	≤2.6	≥3.3	≥3.3	≤2.6
Ditch Breadth IN	≤3.9	≤3.9	≤6.5	≤6.5	≤3.9
Climbing Ability	≤12°	≤12°	≥12°	≥12°	≤12°
Min Turning Radius IN	33.5	33.5	55.1	70.9	33.5
Distance with full battery IN	944881.9± 157480.3	Around 944881.9	Around 1574803.2	Around 1574803.2	944881.9± 157480.3

Caution :

The driving speed and distance per charge may change due to the terrain, climate, the driver's weight or attenuation of the battery capacity. The fully charged itinerary listed above is for reference only.

Dimension of this scooter

Item	ZHZ409C	ZHZ409	ZHZ413	ZHZ413S	ZHZ409T	Description
Total length L IN	46.5	46.5	55.1	65	46.5	The horizontal distance between the front and rearmost end of the scooter (including the front and rear bumper)
Total breadth B IN	24.6	24.6	26.6	26.6	24.6	Horizontal distance between the two outermost sides of the scooter
Total height H IN	39	45.3	50.4	49	39	The height from the ground to the peak of the scooter
Distance between shaft IN	30.9	30.9	33.3	43.1	30.9	Center distance of the front and rear wheels
Distance to the ground IN	3.1	2.4	2.8	2.8	2.4	Connector for front turn of the front axle
Front wheel Tread IN	15.7	15.7	22.4	22.4	15.7	The average distance of the front and rear center line of the two wheels
Rear wheel Tread IN	16.9	16.9	22.4	22.4	16.9	The average distance of the front and rear center line of the two wheels
Wheel (Rear)	9"x2.8"	2.80/2.5-4	4. 10/3.5-6	4. 10/3.5-6	9"x3"	PU Solid tires/pneumatic tires
Wheel (Front)	9"x2.8"	2.80/2.5-4	4. 10/3.5-6	4. 10/3.5-6	9"x3"	PU Solid tires/pneumatic tires

Technical Parameter of Electrical Equipment and Rear Axle Assembly of this scooter

Rear Axle Assembly	Parameter Description	ZHZ409C	ZHZ409	ZHZ413	ZHZ413S	ZHZ409T
	Rated Voltage	24V	24V	24V	24V	24V
	Rated Power	0.25KW	0.25KW/0.35KW	0.5KW/0.8KW	0.8KW	0.25KW
Battery	Rated Capacity	20AH	20Ah	40Ah-50 Ah	40Ah-50Ah	20AH
	Rated Voltage	12V	12V	12V	12V	12V
	Number	2	2	4	4	2
Charger	Input	110V-240V 50/60HZ	110V-240V 50/60HZ	110V-240V 50/60HZ	110V-240V 50/60HZ	110V-240V 50/60HZ
	Output	24V3A	24V3A	24V5A	24V5A	24V2.0A
Controller	Model	S-Drive 45A/70A	S-Drive 70A	S-Drive 120A	S-Drive 120A	45A
	Max Current	45A/70A	70A	120A	120A	45A

Note: Due to our continuous product improvement, some data in this manual may have changed.

After-sale Service

To the distinguished customer,

Thank you for selecting the Zhenhua ZHZ Scooter of our company.

In order to be responsible to consumers and to make you feel at ease and use it with confidence, our company makes the following regulations for product after-sales service:

I. Warranty

(1) In the event of safety performance failure (the products fail to comply with safety requirements, have personal safety/property hazard, do not have the due service performance, or have other design/manufacturing/processing defect and cause quality problem and lead to accessory damage) within one year (including) after the sales date (the invoice date shall prevail) even you follow the instructions, you may choose to replace or repair the product for free;

(2) In the event of performance failure due to quality problem within one year after the sales date (the invoice date shall prevail), you may choose to replace or repair the product; if you choose the replacement, please take your scooter to the seller and the seller will replace it for free with new product of the same model and same specifications or the new product whose performance is not lower than the previous one.

(3) In the event of repeated failure of the main parts (motor, controller, reduction gearbox, brake system) within the warranty period and the said parts fail to function normally after repairing for twice, you may have your product replaced by a new one of same model and specification in the presence of the maintenance record and certificate provided by the maintenance company after our after-sale service management department makes confirmation; in the case of replacement by a same model, a depreciation cost (2% for the whole scooter) as per regulations will be charged; in the case of replacement by a different model, the insufficient part after depreciation will be supplemented.

Warranty Period of Main Parts

Description	Three Guarantees	Depreciated On Rate/ day	Performance Failure	Remark
Whole Vehicle	Two years	2‰		1. In the case the conditions for scooter replacement are met, the damaged scooter, charger, battery are replaced respectively 2. Consumable parts such as fuses, charging sockets, light bulbs, mirrors, tires, etc. are not covered by the 2-year insurance. Scratches on the seat cushion, backrest, plastic parts, etc. are not covered by this insurance.
Motor	Two years	2‰	Failed magnetic steel, burned coil	
MP3/FM	Two years	2‰	Failure for normal function	
Reduction Gearbox	Two years	2‰	Shell crack, oil leak	
Battery	Half a year	5‰	Shell crack, oil leak, capacity lower than 60%	
Charger	Two years	3‰	Failure for charging, normal charging disabled	
Controller	Two years	3‰	Normal driving disabled	
Indicating Instrument, Panel	Two years	2‰	Failure for normal displaying	
Frame, front fork, steering shaft, handlebar, seat support, turntable	Two years	2‰	Natural snap, sealing off, crack, tortuosity, or fracture of critical parts	

Note:

For vehicles used in public places, the warranty period is 1 year.

II. Things Not Under Warranty

(1) Damage due to improper use, maintenance, or storage (especially regulations governing battery. For example, your fail to drive under rated load which causes frame fracture and you fail to maintain the scooter and battery in designated places for a long time);

(2) Damage due to authorized disassembly or disassembly in other unauthorized places, which breaks the original failure status and disables failure identification and analysis.

(3) Three Guarantees Certificate (service card) or valid invoice not available;

(4) Model of Three Guarantees Certificate differs from the actual product model; the vehicle information differs from the registration;

(5) Damage due to force majeure and improper use of damaged;

(6) Quick-wear parts or consumables are not under the warranty (like brake pad, fuse, charging port, brake cable, bulb, rear view mirror, plastic parts, inner/outer tube, carbon brush and etc.)

(7) The warranty expires.

III. Warranty principles

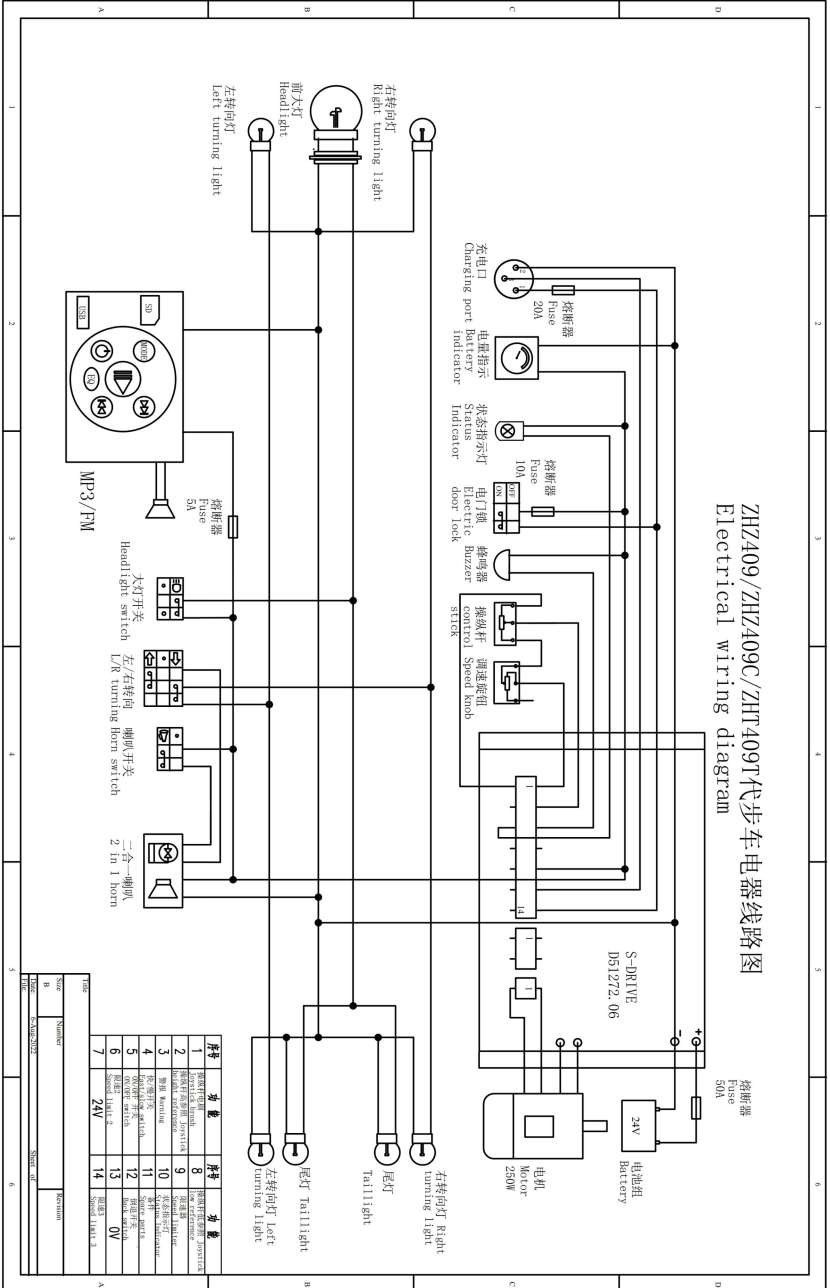
(1) Company will provide considerate and intimate service for the failure under the warranty.

(2) Company will also be responsible for the maintenance and repairing of the failure not under the warranty while necessary charges will be collected.

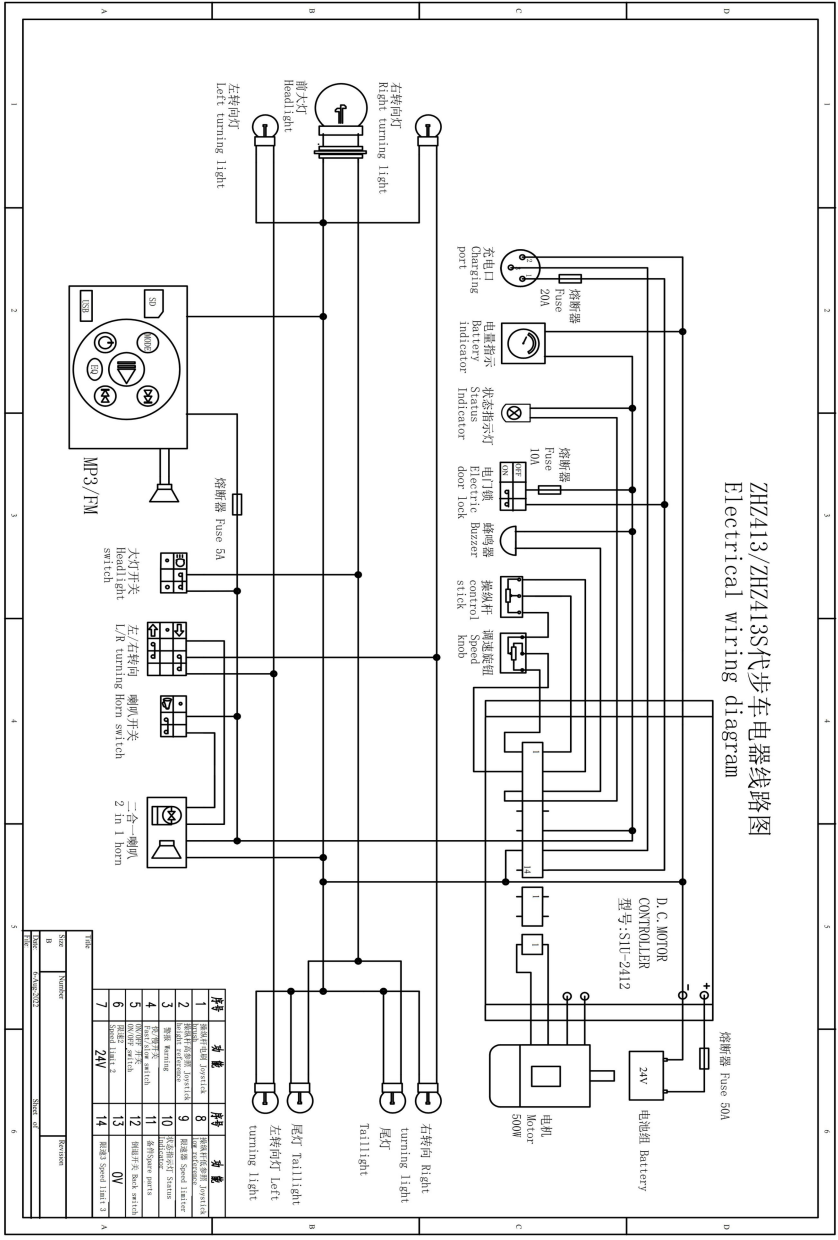
(3) The interpretation right shall belong to Company as the law permits.

Note: Please do not use non-original parts, using unmatched parts will bring unpredictable consequences to your use safety, performance and product life, especially controllers, chargers, motors, batteries, Electrical components such as electric disc brakes, their mismatch will cause combustion and explosion.

Electrical wiring diagram



ZHZ413/ZHZ413S代步车电器线路图
Electrical wiring diagram



序号	数量	名称	数量	名称
1	1	熔断器 50A	1	熔断器 50A
2	1	熔断器 20A	1	熔断器 20A
3	1	熔断器 10A	1	熔断器 10A
4	1	熔断器 5A	1	熔断器 5A
5	1	转向灯	2	转向灯
6	1	大灯	2	大灯
7	1	喇叭	1	喇叭
8	1	转向灯	1	转向灯
9	1	大灯	1	大灯
10	1	转向灯	1	转向灯
11	1	大灯	1	大灯
12	1	转向灯	1	转向灯
13	1	大灯	1	大灯
14	1	转向灯	1	转向灯