

GREEN THE WORLD

**OPERATION MANUAL  
STREET LEGAL ELECTRIC VEHICLE**



Thanks for purchasing our electric vehicle. This manual contains information for proper operating and maintaining and caring of your electric vehicle. A thorough understanding of this manual will help you to obtain maximum enjoyment from this electric vehicle. Please keep it properly for future reference.

**Important Information:**

Particularly important information is distinguished by the following notations:

**WARNING!**

Fail to follow Warning instructions could result in severe injury to the vehicle occupants, bystanders or persons inspecting or repairing the vehicle.

**CAUTION!**

Fail to follow Caution instructions could cause damage to the vehicle.

**Special Notices:**

**Because the seat & backrest wrapping film may stick to the seat vinyl and cause seat vinyl fading or being stained, please remove the seat & backrest wrapping film when you start to use the vehicle!**

**If you have to stock the vehicle for a long time, please also remove the seat & backrest wrapping film.**

## Pictures for reference!!



EG2028KR



EG2028HR



EG2028KSZR



EG2048KR



EG2048HSZR



EG2048HR



EG2048HCXR



EG2020ASZR



EG2040ASZR



EG2040HCXR

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# 1 . OVERVIEW

This vehicle is manufactured under the EU standard and requirement of category L7e. It's a street legal vehicle, and can be driven on public road after registered in local transportation authority. It's ideal vehicle for short travel.

### WARNING!

Before drive the vehicle on public road, please always register it in local transportation authority and get the license plate. Only drive the vehicle in the proper public road.

### WARNING!

Please always be sure of whether there is any restriction in the area where you intend to use the vehicle to avoid any unpleasant experience.

### IMPORTANT LABELS

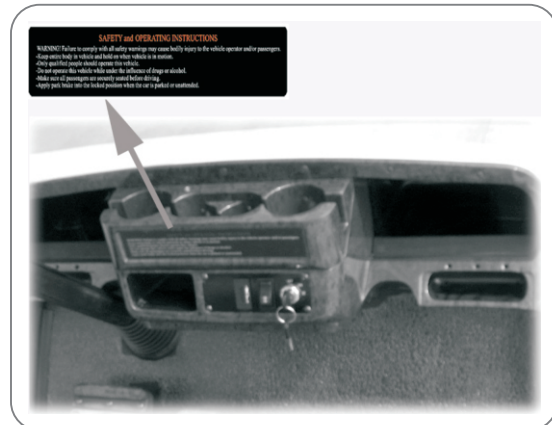
#### SAFETY LABEL

Read carefully and understand the contents on the safety label attached on the vehicle.

#### SAFETY and OPERATING INSTRUCTIONS

- WARNING! Failure to comply with all safety warnings may cause bodily injury to the vehicle operator and/or passengers.
- Keep entire body in vehicle and hold on when vehicle is in motion.
  - Only qualified people should operate this vehicle.
  - Do not operate this vehicle while under the influence of drugs or alcohol.
  - Make sure all passengers are securely seated before driving.
  - Apply park brake into the locked position when the car is parked or unattended.

Label Above is attached on the dash panel as below:



### Vehicle Information (Name Plate)

The name plate is either at the low part of the dashboard as below Fig.2 shows or at the back of the front seat pot as below Fig.1 shows:

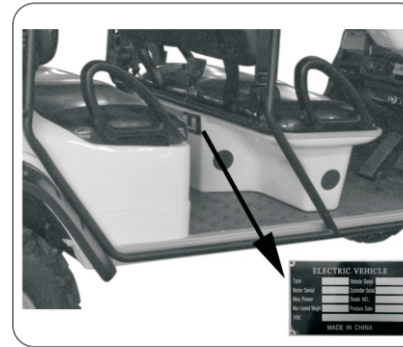


Fig.1

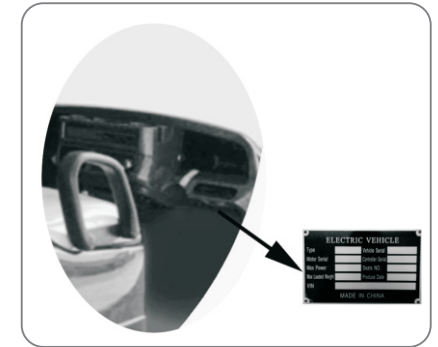
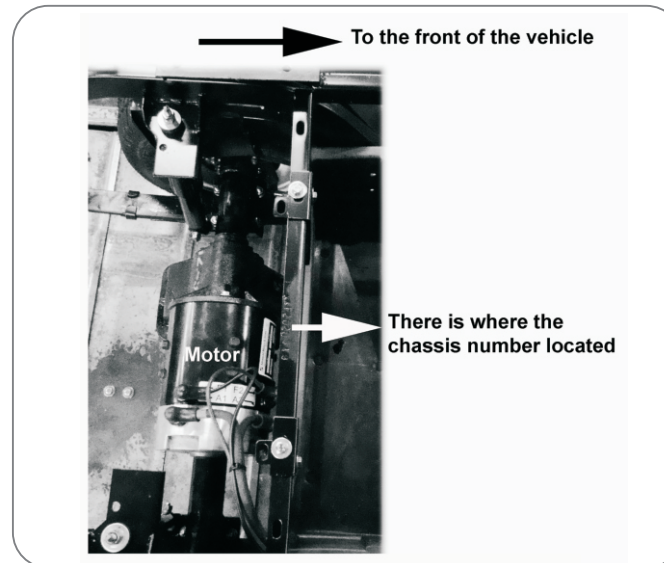


Fig.2

### Chassis number of the vehicle

The position where the chassis number is located showed as below picture.





## 2. SAFE OPERATION INSTRUCTIONS

Our electric vehicle is designed for simple operation; however, please make sure to observe following safe operation instructions:

### BEFORE OPERATING THE VEHICLE:

- ALWAYS read this first before you start driving the vehicle.
- ONLY authorized people should drive this vehicle, from the driver's side ONLY.
- Do not drive this vehicle on public road before it's registered and adhered with the license plate.
- Drive the vehicle ONLY in areas where it is allowed to use by law or local regulations and the conditions are safe to do so.
- DO NOT allow more than the designed people on the vehicle.
- DO NOT overload the vehicle in any case, otherwise the motor may be damaged, the vehicle may also lose control and/or the driver and passengers will be positioned in danger.
- DO NOT operate the vehicle while under the influence of alcohol or drugs, otherwise, their effect on vision and judgment will put the driver and passenger in danger.
- DO NOT make the vehicle climb any slope beyond its gradeability.
- DO NOT overtake other vehicles at crossroads, in blind areas or in any dangerous areas.
- Always fasten the safety belt properly before the vehicle moves under following instructions:
  - 1) Be certain the seat belts are latched securely and are free from twists;
  - 2) Position the shoulder belt across the top of the shoulder. Do not place the shoulder belt under an arm;
  - 3) Loose fitting safety belts significantly reduce protection. Keep belts snug and positioned low on the hips;
  - 4) Do not exceed the recommended number of occupants for the vehicle;
  - 5) Bench seats are designed for two occupants only.

### WHILE OPERATING THE VEHICLE

- Keep your entire body inside the vehicle, keep seated and hold on while the vehicle is moving.
- Do not start the vehicle until all occupants are securely seated.
- Keep your hands on the steering wheel and your eyes on the path you are going.
- Always back up slowly, and watch the back carefully.
- Avoid starting or stopping suddenly.
- Avoid turning the steering wheel too sharply at high speed.
- Always drive slowly up or down on the incline.
- Do not make any modification or addition which may affect the capacity or safety of the vehicle
- Children are not allowed to play in the vehicle. Children should be seated between adults and protected by them when the vehicle is moving.

## 3. TECHNICAL DATA

The data below have been confirmed by an independent authority lab.

### Form 1: Classification of Products

	Model number
<b>short chassis serials</b>	EG2028KR(01,02,04)
	EG2028KSZR(01,02,04)
	EG2028HR(01,02,04)
	EG2020ASZR(01,02,04)
<b>long chassis serial</b>	EG2048KR(01,02,04)
	EG2048HSZR(01,02,04)
	EG2048HR(01,02,04)
	EG2048HCXR(01,02,04)
	EG2040ASZR(01,02,04)
	EG2040HCXR(01,02,04)

Remark: 01,02,04 means different version of electrical configurations, details refer to form 2.

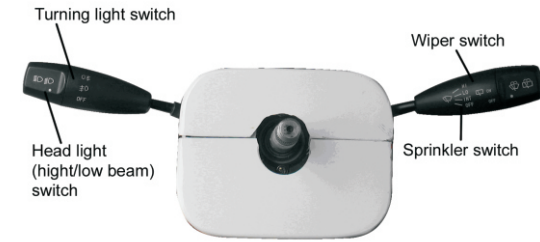
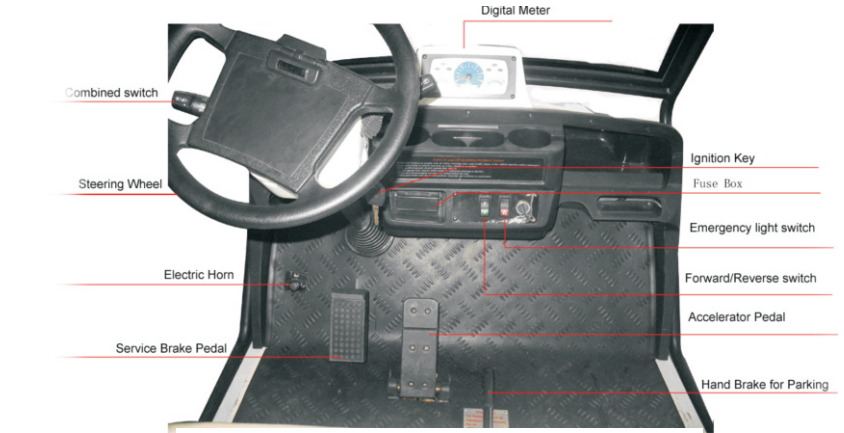
### Form 2: Electrical Configurations of different version

Version	Motor Model.	Rated power/rotate	voltage rating	Controller Model
01	AC Motor:ZJP5-100L-4J	5KW/3520rpm	33V	1236
02	DC Motor:XQ-5.3	5.3KW/3000rpm	48V	1268
04	AC Motor:S432271GK	5KW/3100rpm	33V	ACE2

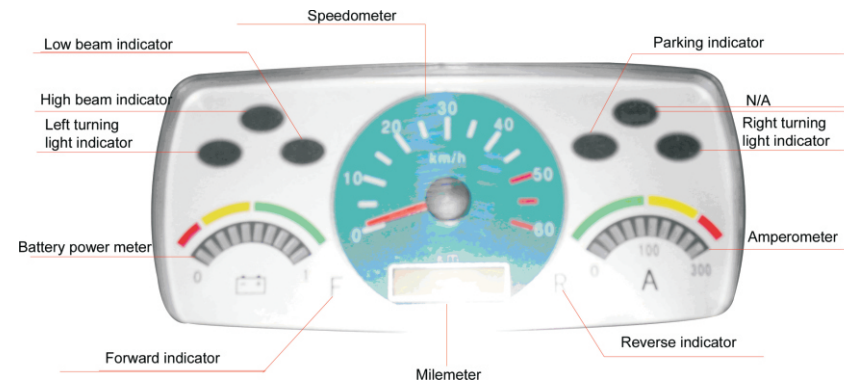
Model	Variant	Max. speed (km/h)	Seating No.	Overall Dimensions (mm)	Max. loading Weight	Maximum Gradeability	Braking Distance (v=20km/h)
EG2028KR	01	40km/h	2	2400x1200x1850	150kgs	20%	≤5m
	02						
	04						
EG2028KSZR	01	40km/h	4	2960x1200x1850	300kgs	20%	≤5m
	02						
	04						
EG2028HR	01	40km/h	2	2650x1200x1850	300kgs	20%	≤5m
	02						
	04						
EG2020ASZR	01	50km/h	4	3015x1290x2060	300kgs	20%	≤5m
	02						
	04						
EG2048KR	01	40km/h	4	3150x1200x1850	300kgs	20%	≤5m
	02						
	04						
EG2048HSZR	01	40km/h	4	3710x1200x1850	450kgs	20%	≤5m
	02						
	04						
EG2048HR	01	40km/h	4	3400x1200x1850	450kgs	20%	≤5m
	02						
	04						
EG2048HCXR	01	40km/h	2	3365x1200x1850	450kgs	20%	≤5m
	02						
	04						
EG2040ASZR	01	50km/h	4	3765x1290x2060	450kgs	20%	≤5m
	02						
	04						
EG2040HCXR	01	50km/h	2	3420x1290x2060	450kgs	20%	≤5m
	02						
	04						

## 4. CONTROLS

### 1) Schematic Figure of controls



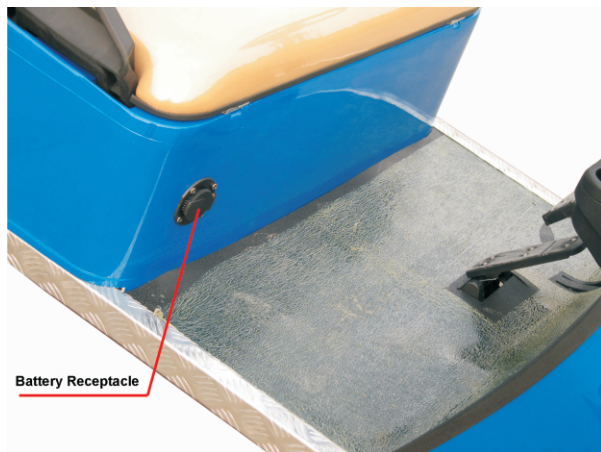
Combination Switch



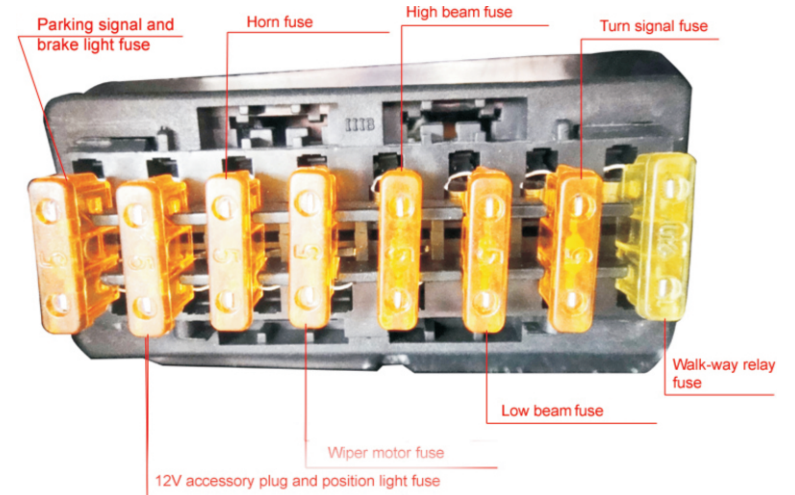
Digital Meter



Tow/Run switch for 1268 controller



Charging receptacle location



Fuse Box

- |                           |                        |
|---------------------------|------------------------|
| 1) Ignition key           | 8) Battery power meter |
| 2) Forward/reverse switch | 9) Tow/Run switch      |
| 3) Emergency light switch | 10) Combined switch    |
| 4) Accelerator pedal      | 11) Electric Horn      |
| 5) Brake pedal            | 12) Digital Meter      |
| 6) Hand brake for parking | 13) Battery receptacle |
| 7) Steering wheel         |                        |

## 2) Functions of Controls

### Ignition key

The Ignition key is used to switch on the electrical system of the vehicle.

The ignition key has three position, insert the key to let it on the first position; turn it clockwise to the second position to engage the 12V accessory system (including the headlight, turn signal, taillight, brake light, horn, wiper and digital meter); turn it clockwise further to the third position to engage the motor and to drive the vehicle.

To switch the power off, turn the key counterclockwise to first position and pull out the key.

**NOTE:** only when pull out the key, the 12V accessory system will be powered off completely.

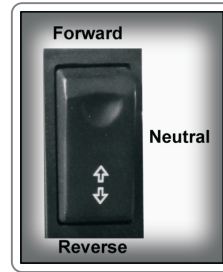


### Forward/reverse switch

This switch is a three-position switch, depressing the upper part gets the vehicle move forwards while depressing the lower part gets the vehicle move backwards, and the middle is neutral.

**WARNING!** This switch must be fully depressed into the proper position, or the electric system and motor will be damaged.

**NOTE:** the buzzer will beep when the lower part of this switch is depressed to give warning to the people around your vehicle.



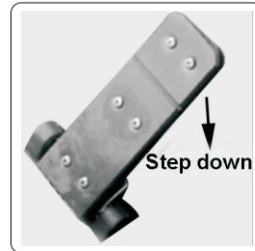
### Emergency light switch

Whenever need to stop the vehicle aside the road because of emergency case, switch on the emergency light button.



### Accelerator pedal

The accelerator pedal is used to control the speed to move the vehicle. Step it down slowly to increase the speed. The vehicle will speed up with the gradual stepping down of the accelerator pedal, eventually reaching the full speed when the pedal is stepped down to the bottom. The vehicle slows down with the releasing of the pedal. When the pedal is fully released, electric brake will function, and the vehicle will stop.

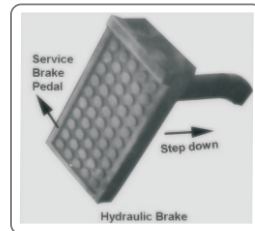


### Service Brake pedal

Step down service brake pedal to decelerate the vehicle and finally stop the vehicle if needed.

### **WARNING!**

**It is prohibited to step down both the brake pedal and the accelerator pedal all together; otherwise this type of operation will damage the motor badly.**



### Hand brake for parking

The hand brake is used for parking. The hand brake pedal should be engaged into parking position whenever the vehicle is left unattended: pull up the hand brake to the end position in order to park the vehicle completely. This operation will make the vehicle stay in parking position when this vehicle is unattended.



### **WARNING!**

**Do not drive the vehicle when the hand brake is engaged! Always check and release the hand brake before driving. Failed to do this will cause motor burn.**

### How to engage and disengage the parking brake?

**To engage the parking brake,** pull up the hand brake lever to the end;



**To disengage the parking brake,** pull up the hand brake lever to the end and then press down the button on the top of the brake lever, with the button being pressed down, push down the brake lever to the bottom.





### Steering wheel

The steering wheel is used to control the driving direction. Please avoid any sudden and big turning.

### Battery Power Meter

The battery power meter is combined in the digital meter. There are 10 divisions in this meter (from 0 to 1). This meter will fall from higher division to low ones as the battery discharges. When it reaches yellow area, you shall recharge the battery.

When it reaches red area, you shall stop the vehicle and recharge the battery immediately.

**NOTE:** please refer to your Battery Chargers Owners Manual for how to recharge the batteries.

### WARNING!

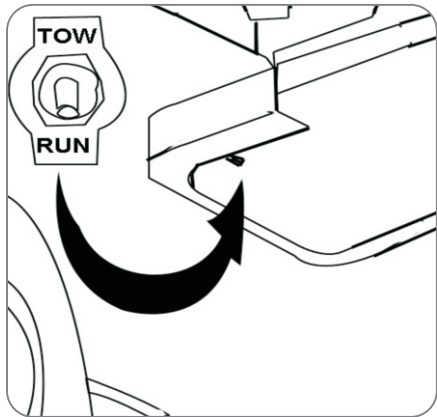
Drive the vehicle when battery power meter reaches red area will damage the batteries.

### TOW/RUN SWITCH (available for Curtis 1266 and 1268 controller)

Before operating the vehicle, make sure the TOW/RUN switch is in RUN position.

Make sure the TOW/RUN switch is in the TOW position if towing the vehicle.

The TOW/RUN switch is located under the seat on the passenger side of the rear body as showed below picture



**NOTE:** The vehicle with AC system doesn't have that switch

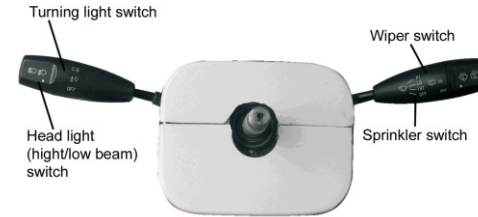
**NOTE:** When the TOW/RUN switch is on the 'RUN' position, the vehicle will beep when push the vehicle to remind you.

### WARNING!

**Whenever the RUN/TOW switch is moved from the RUN position to the TOW position, please move it back to the RUN position, there is a delay of approximately 30 seconds before the vehicle will run.**

### Combined Switch

The left lever of the switch is used to switch on/off the lighting system including headlight, front turn signal, rear turn signal, taillight; the right lever is to control the wiper.



### Left lever

- 1) The top button of the lever is used to control the headlight, turn to the first position, the position light will be on; turn to the second position; the low beam will be on.
- 2) Push the lever to the front to engage the right turning light when planning to turn and drive the vehicle to the right.
- 3) Push the lever to the rear to engage the left turning light when planning to turn and drive the vehicle to the left.
- 4) Pull the lever to the top to engage the high beam light. The lever will be back to the middle automatically when leaving it.
- 5) Press down the lever to engage the high beam light.

### Right lever

Turn the top button to the on Position to engage the wiper motor, push the lever to the front to the LO and HI position to start the wiper. Pull up the lever to start the wiper sprinkler.

**NOTE:** There are three speed position signals on the right lever—INT, LO and HI, but the wiper motor only has one speed, so we didn't connect the power to the INT position and LO and HI position in the same speed.

### Electric Horn

To be controlled by foot.

### Digital Meter

The digital meter includes: indicators for high/low beam, turning signal, forward/backward and parking brake, speedometer, milemeter, amperometer, battery power meter.

## 5. OPERATION

### OPERATION FOR VEHICLE WITH MECHANICAL BRAKE SYSTEM

#### STARTING:

- a) Insert the key and turn it to the third position to switch on the power.
- b) Press the forward/reverse switch and lock it to the desired position.

#### CAUTION!

- Do not shift from Forward ↑ to Reverse ↓ while the vehicle is moving.
- c) Release the hand parking brake and step down the accelerator pedal slowly and smoothly, the vehicle will start to move.

#### WARNING!

**Do not step down the accelerator pedal when turning on the power key, otherwise, the vehicle may suddenly start moving.**

#### WARNING!

**If the accelerator pedal is stepped down before the power key is switched on, the car will not run. In this case, you should release the accelerator pedal first, then turn the power key to ON position, then step down the accelerator pedal again, the vehicle will start moving.**

#### CAUTION:

**Slow down the speed of the vehicle to less than 15km/h before turning the vehicle!**

#### STOPPING:

To stop the vehicle, gradually press down on the brake pedal. When the vehicle stops, apply the hand parking brake and turn the power key to OFF position and pull out the key, press the F/R switch to the neutral position.

#### CAUTION:

Do not hold the vehicle on an incline with the accelerator, please use the brake.

## 6. MAINTENANCE

Users should perform regular maintenance to insure the vehicle in good performance.

### MAINTENANCE OF BATTERY

**WARNING! Battery electrolyte is poisonous and dangerous, and it may cause sever burns, injury, etc.. Always wear protective clothing, gloves, and goggles when handling batteries, electrolyte, and charging your battery. KEEP OUT OF REACH OF CHILDREN.**

#### 1)Cleaning

- a. The exterior of the battery, the connection wires and bolts should always be kept clean and dry. When cleaning, please make sure all vent caps are tightly in place. Clean the battery top with a cloth or brush and solution of baking soda and water. When cleaning, do not allow any cleaning solution, or other foreign matter to get inside the battery. This should be done every week.
- b. Clean battery terminals and the inside of cable clamps using a post and clamp cleaner. Clean terminals will have a bright metallic shine. This should be done when it is necessary.
- c. Reconnect the clamps to the terminals and thinly coat them with petroleum jelly (Vaseline) to prevent corrosion.

**WARNING!** Before you disconnect any battery cable from any terminal on the battery, please always remove the power by disconnecting the main battery cable from the controller.

#### 2) Checking the terminals and nuts

The connection of the battery should always be kept in good condition. Please check every week on whether any battery cable terminal or nut has become loose in order to prevent any sparkle or damage to terminals. Please check every week on whether any battery cable is damaged or not, the damaged battery cable should be replaced immediately.

#### 3) No foreign matter

Do not place any objects on the battery and do not connect the positive pole to the negative pole. This may cause a short circuit, dangerous spark or may cause damage to the battery or injury to your body.

#### 4) Recharging

a. As long as you use the vehicle, regardless of how long you have used it, the battery shall be recharged fully on the same day. Any delay on the re-charging will cause negative effect on the battery. **Notes:** the lead-acid battery does not develop a memory, so no need to be fully discharged before recharging. b. If the vehicle is going to be kept unused for a certain long time, the battery shall be fully recharged first. After that, the battery shall be fully recharged every 2 weeks.

**c. When driving, the driver shall be always aware** of the drop level of the battery power from the battery power meter, any drop means the battery power is diminishing. Besides, the driver shall estimate the distance needed to be taken, and recharge the battery at a proper time in case that the car cannot get back to the recharging station in time for recharging.

**WARNING!** Please make sure the battery is recharged before the battery power meter shows 20% power left inside the battery. Over-discharged battery will have a very short service life and will make the recharging very difficult.

**WARNING!** During recharging, the car shall be parked in a well-ventilated area with the fill caps tightly secured. Keep far away from any flame and sparks to avoid any explosion or fire that could cause physical injury or damage to the property.

**WARNING!** In summer time, when the battery is hot, don't recharge the battery immediately. Only charge the battery when it cools down. And also don't charge the battery in the sunshine.

**WARNING!** In winter time, when the temperature is too low, charge the battery in a warm place.

**WARNING!** At the end of the battery's life, its capacity will decrease dramatically. When changing new group of batteries, shall use the batteries of same brand, same model, same capacity and similar voltage (difference be less than 0.02V). Equalizing charging is requested for the new group of batteries.

**CAUTION:**

Equalizing charge is requested every month for the batteries when they are used.

**5) Checking the liquid level**

During the use of the battery, the water inside electrolyte will be consumed because of electrolysis and volatilization, and that will cause liquid level be dropped, therefore it's a must to check the liquid level frequently, we recommend check it every week. Add distilled water if the liquid level is under the standard.

**6) Battery installation**

**WARNING!**

**When working with the battery, DO NOT put wrenches or any other metal objects across the battery terminals, otherwise, an arc can occur, and it may cause explosion of the battery and physical injury.**

Battery is installed or replaced only by the qualified electrician.

**7) BATTERY CHARGING**

**WARNING!**

**Before you use the charger, please read the operation manual provided with the charger.**

**WARNING!**

**Explosive hydrogen gas is produced while battery is charged. Only charge the battery in well-ventilated areas.**

**WARNING!**

**Before using the charger, please check if the battery charger you are getting to use is correctly rated as per your local AC electricity network.**

**WARNING!**

**When using new battery, make sure new battery is in same specifications as original one and is appropriate in application.**

**The following is the charging steps:**

- 1) Turn the ignition key to OFF position and pull out it.
- 2) Connect the DC output plug to the vehicle receptacle first; then connect it to your local AC power outlet.

**WARNING!**

**Do not disconnect the DC output cord from the battery receptacle when the charger is ON, otherwise an arc could occur which may cause an explosion.**

- 3) The charger will turn off automatically when the battery is charged fully.

**WARNING!**

**The battery receptacle is combined with a security switch which can cut off the power of the vehicle when the battery is being charged (when the charger is off-board charger), so the vehicle cannot be started as long as the DC plug is plugged into the battery receptacle. When the charger is onboard charger, the vehicle can be drive when it's being charged, so don't drive the vehicle when it's being charged.**

- 4) After the charger turns off, disconnect the plug on the AC charging cable from the AC power outlet first, and then disconnect the DC output plug from the vehicle receptacle.

- 5) It is prohibited to open the housing of the charger.

- 6) Only qualified electrician is allowed to open the housing of the charger.

- 7) The charger should be stored in safe and dry room with good ventilation.

- 8) The charger should be packed properly if not used for long time.

- 9) Read carefully the operation manual for the charger for detailed operation instructions.

When the battery is fully charged, if keeping it to connect with charger, every 8 hours, the charger will charge the battery 8 minutes to maintain the battery, after 20 hours, equalizing charge will start and last 2 hours. Equalizing charge can also be started manually by pressing down the "STOP" button for 5 seconds when charging. Equalizing charge will start in 1 hour when the battery is fully charged.

## Maintenance of the Traction Motor

**WARNING!** No explosive gas vapor is in the air, otherwise, it may cause severe injury and damage to your body and property if the explosive gas vapor contacts the sparks generated from the motor.

- 1) For DC motor, the carbon brush should be checked every 3 months to see if it is worn or not as it is an easily worn part. If it is not replaced in time before it becomes worn out, it will damage the motor badly. The brush spring shall also be checked when checking the carbon brush.
- 2) Do not keep the motor running idly for long periods of time. Any idle running of the motor should be avoided.
- 3) Removal of mud, sand and other clinging objects shall be done frequently to facilitate the heat-radiation.
- 4) Periodically use the low pressure air to remove the dust from the carbon brush and the commutator. Periodically check the connection of the carbon brush and the commutator.

### Main malfunction and possible reason of DC motor

Item	Symptoms	Possible Causes
1	All copper plates turn black.	The pressure of brush is incorrect.
2	The commutating copper turns black in a certain order and in groups.	Short circuit happens between the commutating copper or among the armature coil; poor welding or disconnection happens between the commutating copper and the armature coil.
3	The commutating copper turns black disorderly.	The central line of the commutator deviates or its surface is not round and not smooth.
4	The brush wears out, changes colors and breaks.	The motor vibrates; the clearance between the brush and its holder is too big; the clearance between the brush and commutator is too big; the mica between different commutator extrudes; the brush is made by wrong materials; the brush is wrong in type.
5	Big sparkles	The motor is over-loaded; the commutator are not clean, not round or not smooth; mica or some commutator extrude; the brush is not ground properly; the brush is big in pressure; the brush is wrong in type; the brush is jammed in the brush holder; the brush holder become loose or vibrating; the polarity and sequence of magnetic poles become wrong.
6	The brush and its wires get hot.	Big sparkles from the brush; poor contact between brush and soft wires; small section area of soft wires.
7	The brush is noisy	The surface of the commutator is not smooth.

**AC Motor is Maintenance free!**

## Maintenance of the Controller:

### CAUTION

Only qualified electrician is allowed to do the maintenance for the controller.

### WARNING!

There are no user serviceable parts inside the controller. No attempt should be made to open, repair, or otherwise modify the controller. Doing so may damage the controller and will void the warranty.

### CLEANING

It is recommended that the controller be kept clean and dry and that its fault history file be checked and cleared periodically.

Periodically cleaning the controller exterior will help protect it against corrosion and possible electrical control problems created by the dirt, grime, and chemicals that are part of the operating environment and that normally exist in battery powered systems. Please use the following cleaning procedure for routine maintenance:

- 1) Turn the power key to OFF position.
- 2) Remove power by disconnecting the battery.
- 3) Discharge the capacitors in the controller by connecting a load (such as a contactor coil or a horn) across the controller's B+ and B- terminals.
- 4) Remove any dirt or corrosion from the connector areas. The controller should be wiped clean with moist rag. Dry it before reconnecting the battery. The controller should not be subjected to pressured water flow from either a standard hose or a power washer.
- 5) Make sure the connections are tight, but do not over-tighten them.

### Faulty History File

The handheld programmer (to be ordered separately) can be used to access the controller's fault history file. The programmer will read out all the faults the controller has experienced since the last time the history file was cleared. Faults such as contactor faults may be the result of loose wires; contractor wiring should be carefully checked. Faults such as overtemperature may be caused by operator habits or by overloading.

After a problem has been diagnosed and corrected, it is a good idea to clear the fault history file. This allows the controller to accumulate a new file of faults. By check the new history file at a later date, you can readily determine whether the problem was in deed fixed.

Or checking the problems according the flashing way of the STATUS light on the top of the controller, please refer to the details mentioned our service manual which is available separately.

**Please contact your local dealer or a qualified electrician to work on the problems related to the motor, controller or electrical system of the vehicle when you are not able to fix them.**



### Maintenance of Rear Axle:

While using your vehicle, the rear axle should be maintained daily, periodically and randomly.

1. Periodic maintenance means the driver should do some daily maintenance before, in or after driving to prevent something unexpected happens. The maintenance is focused on clearance and examine as followed:

- 1) Clean the dust and mud on the cover to keep the axle clean
- 2) Check all the connections are in good condition, in case there is any damage, if any contact sticks or there is any travel in the contact.
- 3) Check the gear oil is enough or not, and add some in time if it is not.
- 4) Check if there is any link in the connection and transmission units or any unusual sound inside the axle;
- 5) Check the brake drum, the exterior temperature and smell, it should be adjusted and repaired in time if there is any problem.
- 6) Check if the breather valve ventilate or not in case the oil linked;
- 7) Check if there is any section in the parking brake cable broken or loosen, replace a new one if there is necessary.

2. Periodic maintenance: The axle should be done first grade maintenance, second grade maintenance and third grade maintenance

First grade maintenance focuses on lubricate, fixation and gear oil replacement.

Second grade maintenance focuses on check, adjustment and gear oil replacement.

Third grade maintenance focuses on the whole part cleaning, assembly and gear oil replacement.

Maintenance in each grade should follow the requirement.

Periodic maintenance following sheet:

Period	Grade
Every Month	Do first grade maintenance as required above
Every 2 months	Do second grade maintenance as required above
Every a half year	Do third grade maintenance as required above

### Malfunction and troubleshooting

Symptom(s)	Possible cause(s)	Troubleshooting
The axle housing gear and bearing are damaged untimely and there is too much noise on the final drive	1. The gear oil is insufficient or used improperly	Fill some oil or replace new oil
	2. The bearing is not assembled correctly	Assembly correctly
	3. Adjust the brake shoe pin shim or the interval.	Adjust or replace
	4. The gear between axle 1 and 2 is not touched tightly	Adjust correctly
	5. The final drive is too noisy: 1) Check if there is any impurity 2) check the if the gear is damaged	Remove the impurity, replace the gear
	6. Axle 1 strikes heavily	Adjust or replace a new one
	7. The rear axle is out of shape (check if it is over loaded)	Replace
Lack of breaking force	1. There is interval between the brake shoes and drum.	Adjust the interval
	2. There is oily dirty on the brake shoes or drum.	Remove the impurity
	3. There is air in brake pipe	Dispel the air
	4. The brake pipe leaks.	Repair the pipe
	5. The brake shoes are over-rubbed.	Replace a new one
	6. The brake cable is too long or is blocked.	Adjust the brake cable
The brake is difficult to release completely	1. The brake pedal is not bounces back smoothly	Replace a new one
	2. The brake shoe is out of shape	Refit or replace
	3. There is some block on the transmission unit' s replace	Refit or replace
The oil leaks	1. The Oil Seal is damaged	Replace a new one
	2. Too much Oil	Adjust the oil lever

### Wheel Replacement

#### **WARNING!**

**Before doing anything on the wheel and tire, please make sure the power key is positioned on OFF position.**

**Please read the tire manufacturer's instructions and never exceed their recommendation.**

**Protect face and eyes from escaping air when removing the valve core.**

**Be sure the mounting/demounting machine is anchored to floor.**

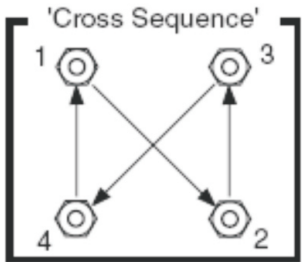
**Wear safety equipment when mounting/demounting the wheel and tire.**

To remove a wheel on the vehicle:

- 1) Blocking the wheel, then loosen the wheel nuts
- 2) Use a jack to lift the vehicle, and then remove the wheel nuts and the wheel.

To install a wheel on the vehicle:

- 1) Use a jack to lift the vehicle, and then put the wheel onto the wheel hub with lug nuts.
- 2) Finger tighten the lug nuts, then tighten lug nuts to 50-85ft.lbs.(70-115Nm) in 20ft.lbs.(30Nm) increments following the 'cross sequence' pattern



3) Remove the jack.

If the tire is flat, remove the wheel and inflate the tire to the maximum recommended pressure for the tire. Immerse the tire in water to locate the leak and mark with chalk. Place tire plug according to the manufacturer's specifications.

### Brake Adjustment

#### WARNING!

**If you have any problem with the brakes, please consult our dealers. Brake failure can result in serious accident or physical danger.**

The brakes on the vehicle are self-adjusting one.

Before you operate the vehicle, please press down on the brake pedal several times

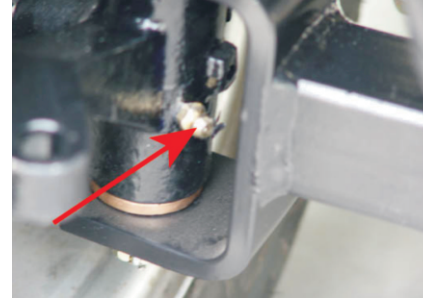
to make sure the brakes are functioning properly.

Check and replace the brake shoe periodically.

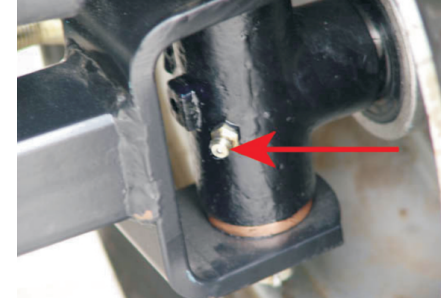
## 7. LUBRICATION

1) Use 90GL hypoid gear oil of 1 liter for the rear end.

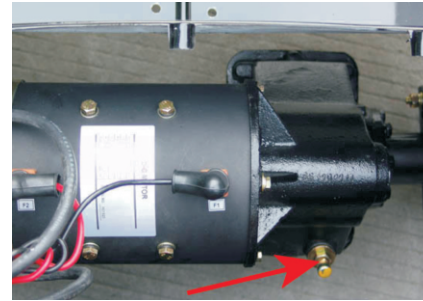
2) Lubrication points: a. Spindle assembly (driver side and passenger side) ;  
b. Middle shaft; c. Rear end;



Spindle (Passenger Side)



Spindle (Driver Side)



Rear End



Middle Shaft

## 8. RUNNING-IN OF NEW VEHICLE

In order to guarantee the performance of the vehicle and enhance its reliability and working life, its parts should experience a certain period of running-in before it works under peak load. Each new vehicle is required to give one month of running-in time or 1000kms running-in distance, detail procedure is as per the following.

1. Before running-in, shall check the capacity of oil, electrolyte and brake oil, if any insufficiency is found, shall fill it accordingly.
2. The tire pressure shall comply with the rated pressure marked on the tire.
3. Limit the speed of the vehicle to control the current of the vehicle under 40A during driving.
4. Often check and tighten regularly the fixing parts of each connecting points.

## 9. PERIODIC MAINTENANCE CHARTS

Regular maintenance is required for the best performance and safe operation of the vehicle.

### WARNING!

**Make sure to turn off the power key and apply the park brake when you do the maintenance unless otherwise specified. If the owner is not familiar with the maintenance of this vehicle, this work should be done by the dealer from who you get your vehicle:**

1D – per day 1W – per week 1M – per month 1Q – per quarter 1Y – per year

Item	Descriptions	1D	1W	1M	1Q	1Y
Battery	1. Check the liquid level. Please add the distilled water if necessary.	Y				
	2. Charge the battery	Y				
	3. Tighten the nut on the battery cable		Y			
	4. Check if the battery is over-discharged (the battery power meter is flashing)	Y				
	5. Check the liquid density of the battery, standard density should be $1.275 \pm 0.005$ (25°C).		Y			
	6. Check if the battery is charged fully by 3 ways: a) using the hydrometer; b) checking the battery power meter;	Y				
	7. Clean the surface of battery		Y			
Charger	8. Observe the charging status, check if the charger plug becomes hot.	Y				
	9. Clean the surface of the charger. Do not get any water inside the charger.		Y			
Controller	10. Check if all terminals are tightened properly. Please do this after the power is off.				Y	
	11. Clean the surface of the controller.				Y	
	12. Check if the solenoid is in order, checking its touching point.					Y
Motor	13. Check if any water gets in. Check if it becomes too hot.	Y				
	14. Check if the carbon brush should be replaced.					Y
	15. Check if the accelerator pedal works well and if it can be released freely and automatically.				Y	
Chassis and body	16. Check if the brake drum and the brake shoe should be replaced or not.				Y	
	17. Check if the hand brake functions. (applicable for vehicle with hand brake).				Y	
	18. Check if the hose and tube for the brake liquid leaking. (applicable for vehicle with hydraulic brake).			Y		
	19. Check if the brake liquid inside the brake liquid tank is enough. (applicable for vehicle with hydraulic brake).			Y		
	20. Check the air pressure inside the tire, check if the tire surface is worn, check if the nuts are tightened properly.		Y			
	21. Check if the shock absorber has any oil leaking, flat or abnormal noise.			Y		
	22. Check if there is oil leaking on the gear box and the rear end.		Y			
	23. Add the lubricant inside the wheel hub, steering system.				Y	
	24. Adjust the toe-in of the front end				Y	
	25. Clean the body and seat				Y	

After above maintenance, drive the vehicle to check if the vehicle works properly.

# 10. STORAGE

Please follow the steps as below when the vehicle is stored.

1. Check the liquid level inside the battery; recharge it fully before storing the vehicle.

**WARNING!**

**Please charge the battery once a month if your vehicle will be stored more than one month.**

2. Turn the power key to OFF position, remove the key, and store the key in a safe position.
3. Move the tow switch into TOW position on the controller cover.
4. Check the tire pressure to make sure its pressure is set to recommended pressure.
5. Clean the exterior of the vehicle and apply the rust inhibitor.
6. Cover the vehicle with a breathable cover and store it in a dry, safe and well-ventilated place.
7. If the vehicle is planned to store for a longer time, then please check the liquid level inside the battery once a month, recharge the battery

# 11. WIRING DIAGRAM

1)Wiring diagram for vehicle (AC system) with Curtis controller 1236, 5KW motor (FIG. 1)

2)Wiring diagram for vehicle (DC system) with Curtis controller 1268, 5.3KW motor (FIG.2)

3)Wiring diagram for vehicle(AC system) with Zapi controller ACE2 5KW motor (FIG.3)

This manual tries to be as sound and elaborate as possible in literal and figurative description as well as technical description on the basis of existent data. At the same time, our company reserves the right to alter the content of this manual and this manual is subject to change without prior notice; in addition, our company has the final say on the interpretation of this manual.

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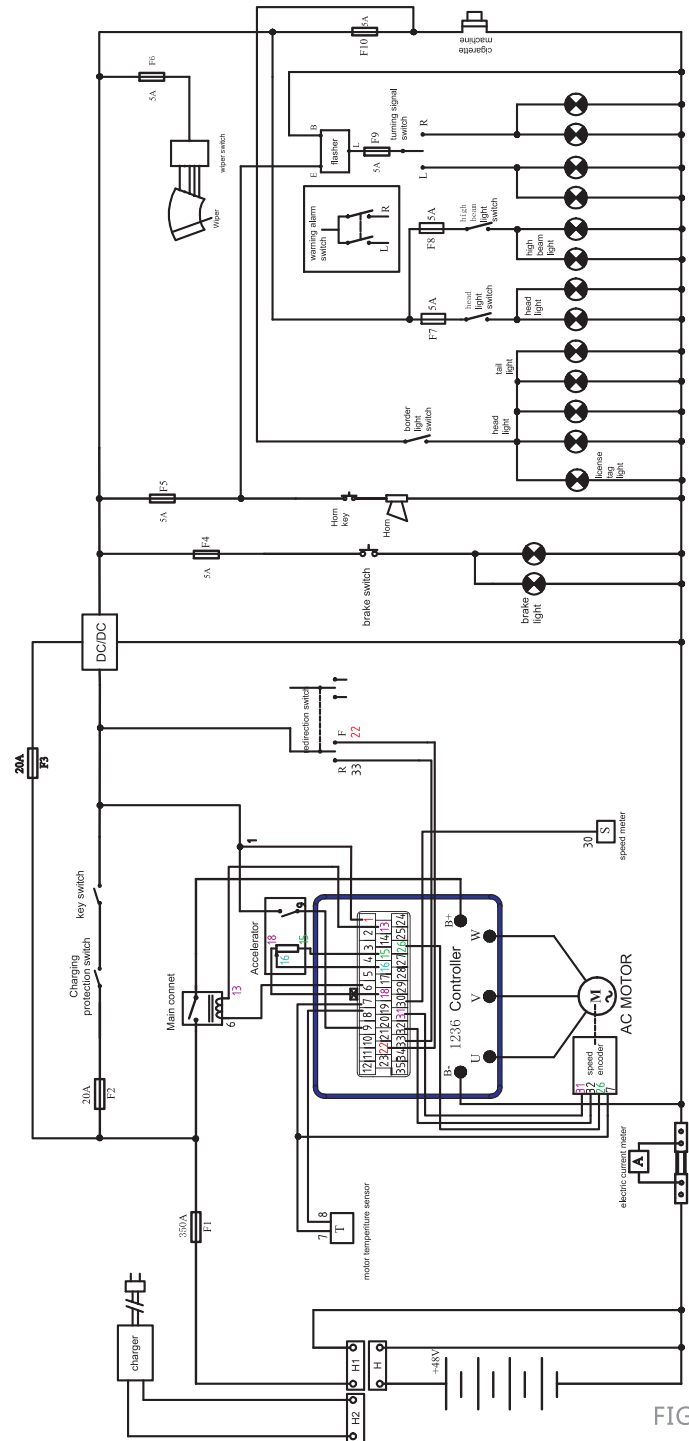


FIG.1

FIG.1



