

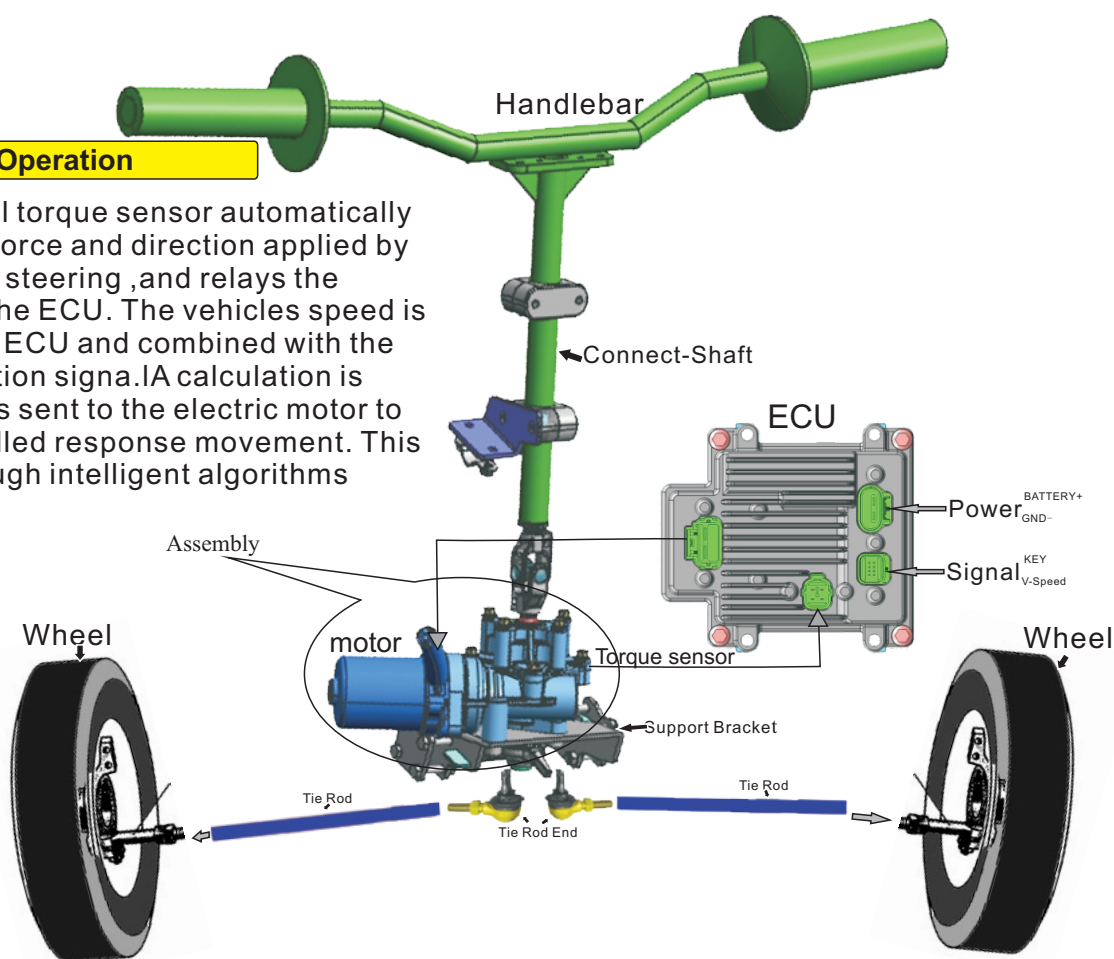
Tianjin Deco Automotive Parts CO., LTD

Electric Power Steering Installation Instruction

PAEPS-7001 CFMoto X8 / Terralander 800EFI 2012

System Operation

The internal torque sensor automatically measures the force and direction applied by the driver while steering, and relays the information to the ECU. The vehicle's speed is also sent to the ECU and combined with the force and direction signal. A calculation is made and this is sent to the electric motor to create a controlled response movement. This is all done through intelligent algorithms.



The Tianjin Deco Automotive Parts CO., LTD (Referred to Tianjin Deco) is one of 7 sub-companies of Tianjin HuanYu (Investment) Group Corporation which is a big group involving metal stampings, electric power steering system EPS, catalytic converters and other products. The main company, HYGP was founded in 1988, with rubber and plastic products as the leading products. The Tianjin Deco was founded in 2009, located in Tianjin, China. We focused on the development and production of electric power steering since 2001. Over the years, our company has grown from its humble beginnings in a little house to our current 3500 m² factory that has independent production workshop, assembly and controller production line and test facility. By keeping designing new production we have developed a variety of full-featured, robust products for gasoline vehicle, electric vehicle and ATV/UTV and so on.

According to requirements of customers, the waterproof EPS system is manufactured and currently we are just a company which can promise a truly waterproof in our country. These products have exported to the United States, Canada and South Korea.

In order to better serve the automotive industry, the company can provide technology application and integration of the overall solution for users based on the automobile electrical power steering system.

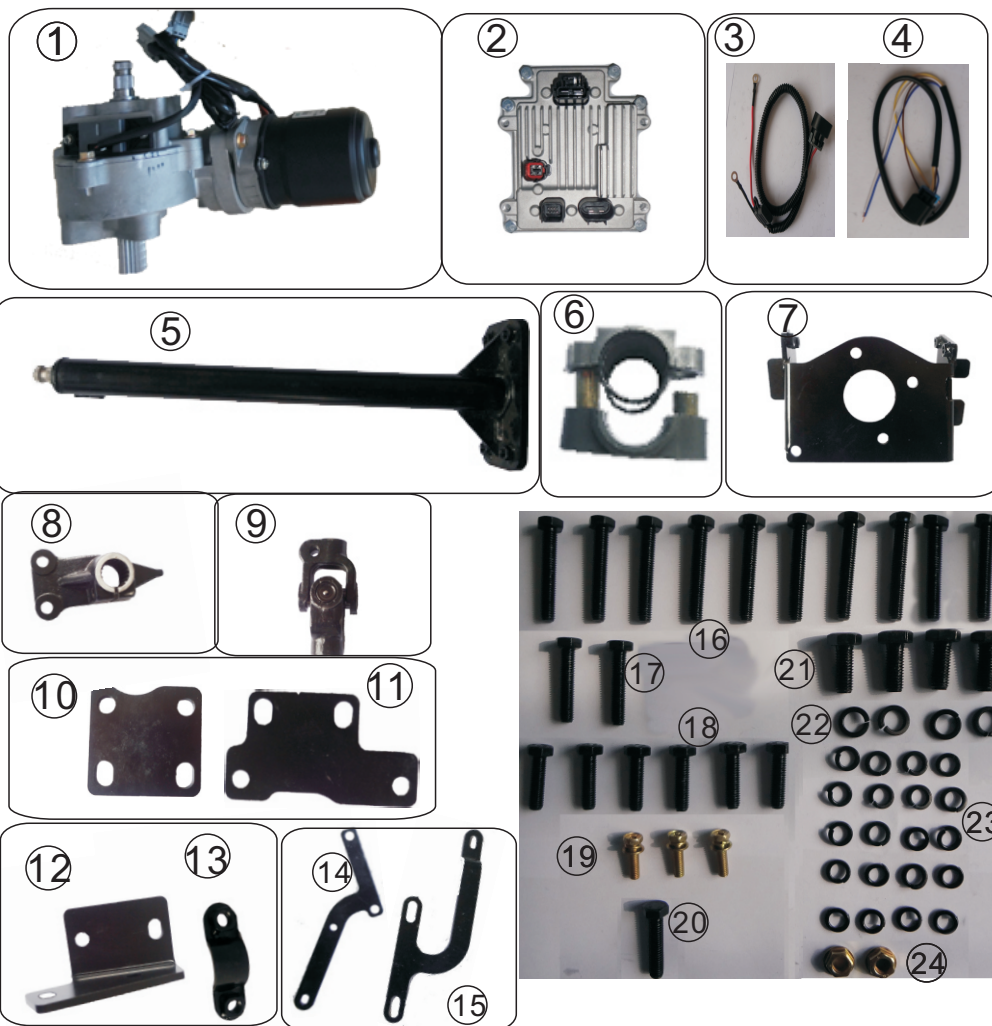
We insist in the principle of serve as the basis, the quality as survival, technology as development. Over the years we've built our reputation by keeping improving products quality. And now we are enjoying an excellent reputation. We have obtained the CE certification in June 2013.

PAEPS-7001 Component

NO.	Name	Qty
1	Assembly	1
2	ECU(controller)	1
3	Power Wire	1
4	Signal Wire	1
5	Up-Connect-Shaft	1
6	Bracket for shaft	1
7	Bracket for Assembly	1
8	Lower Fork	1
9	Universal joint	1
10	Mounting Plate 1	1
11	Mounting Plate 2	1
12	Mounting Bracket	1
13	Bolt plate	1
14	Support Bracket 1	1
15	Support Bracket 2	1
16	M8*50 Screws	10
17	M8*40 Screws	2
18	M8*30 Screws	6
19	M6*20 Screws	3
20	M8*35 Screws	1
21	M10*25 hex bolt	4
22	M10 Spring Washer	4
23	M8 Spring Washer	20
24	M8 Screw nut	2

Installation Essentials

* Check to be sure all the parts are present before starting installation. Firstly understand the part name and Installation location.
 *First check-Inspect vehicle to ensure it is complete in good condition. Then remove negative lead from the battery to protect the electronic circuit.



Removal: Keep all original hardware removed from machine.

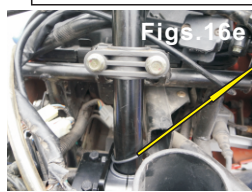
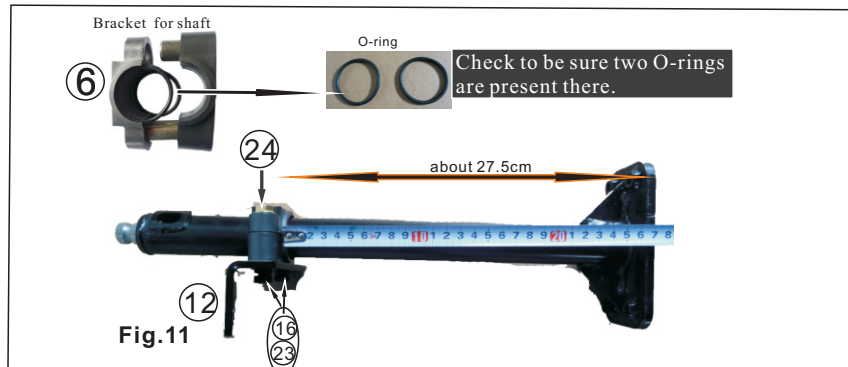
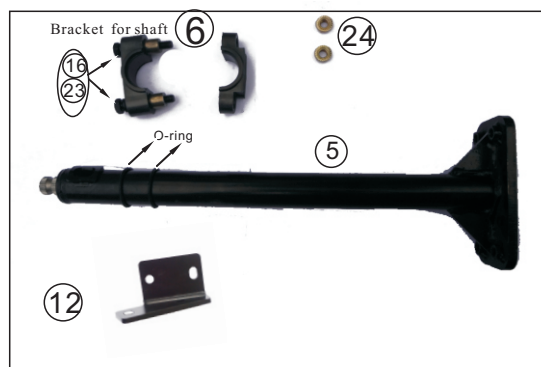
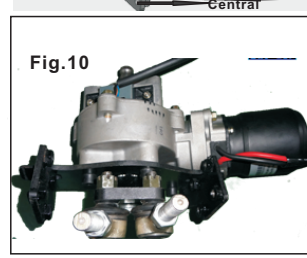
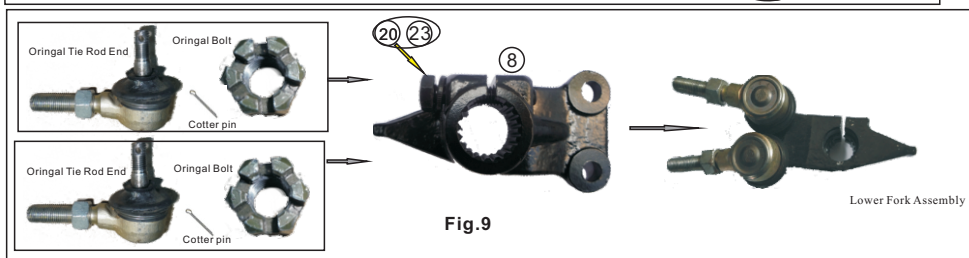
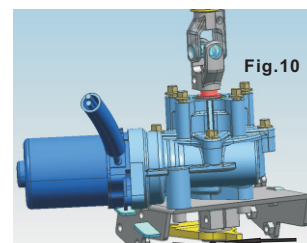
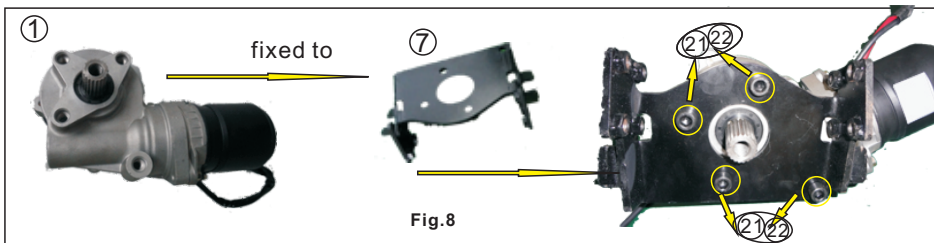
1. Raise front of machine, secure with jack stands
2. Remove Handlebar Cover, Meter Cover, Rack, and Cover as Fig. 1 .
3. Remove Handlebar Block . Place Handlebar out of way. See Fig. 2 .
4. Remove Steering Bearing. See Fig. 3.
5. Turn Tie Rods counterclockwise . Remove Tie Rods from Lower Fork . See Fig. 4a-c.
6. Pull Connect-Shaft out from top of machine.
7. Remove Shock Absorber. See Fig. 5 .
8. Remove Voltage Regulator. See Fig. 6 . Then you can see the bracket as the Fig. 7.

Installation: Do not tighten hardware unless noted.

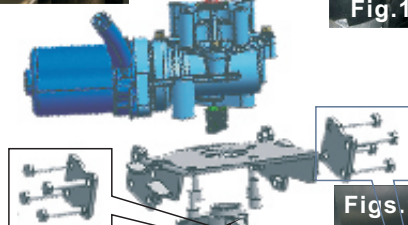
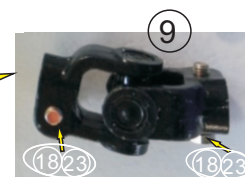
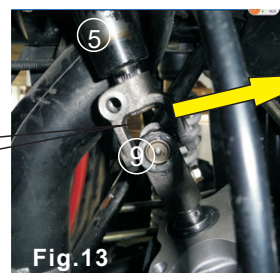
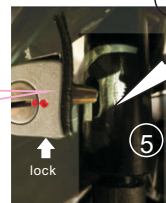
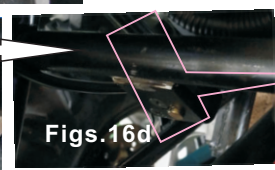
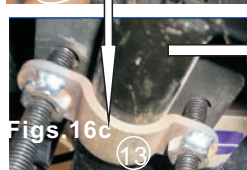
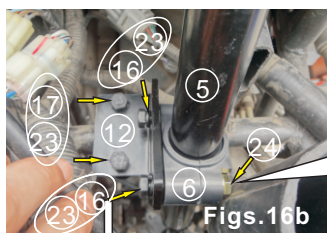
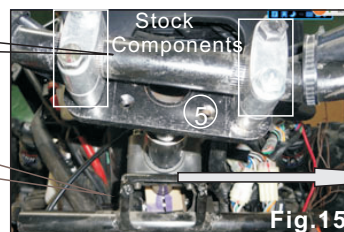
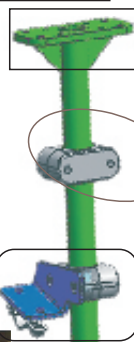
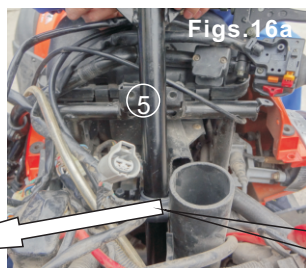
1. Fix the Assembly (1) to the Bracket for Assembly (7) as Fig. 8.
2. Reinstall Tie Rod Ends to Lower Fork(8) with original hardware(in Figs. 4c). We call it Lower Fork Assembly . See Fig. 9.
3. Install Lower Fork Assembly to Assembly(1) as Fig. 10
4. .Install the Bracket for shaft(6) to the Up-Connect-Shaft(5) in the suitable location as Fig 11.
4. Fix Assembly onto machine .See Fig. 12a-d.
5. Install Universal joint(9) to Assembly as Fig. 13.
6. From top of machine, insert Up-Connect-Shaft (5) and connect it with Universal joint(9) .as Fig. 13.
7. Fix Up-Connect-Shaft (5) with the stock Bracket for shaft and hardware of vehicle .as Fig. 14.
8. Keep the Lower Fork Assembly and the Up-Connect-Shaft central. Use original hardware to reinstall Handlebar to Up-Connect-Shaft (5). Then tighten them with Screws .See Fig. 15.
9. Fix Up-Connect-Shaft (5) with the Bracket for shaft(6) supplied by factory . Mounting Bracket(12)、Bolt plate(13) . See Figs. 16a-d. Make sure two O-rings are in the Notch of Bracket for shaft after you stall .See Figs. 16e.
10. Keep the Lower Fork Assembly in the most central, then Connect the Tie Rods to Tie Rod End and wheel. Adjust the Tie Rod to make the two wheels straight. See Figs. 17a-f.
11. Fix ECU(2) onto machine .See Fig. 18a-d.
12. Connect the Power and Signal wires as Fig. 19a-e.
13. Rotate handle in both directions 10 times to insure there is not any clash then tighten all the bolts.



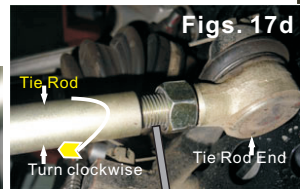
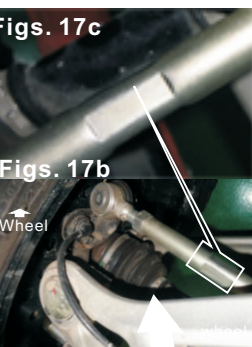
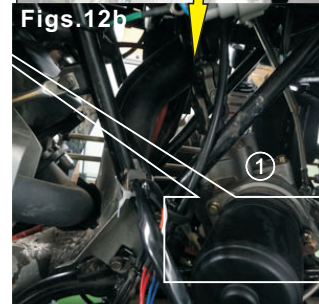
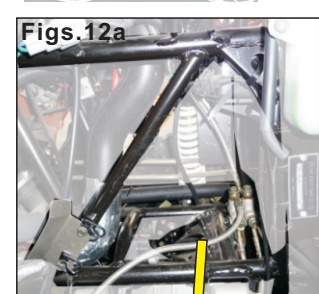
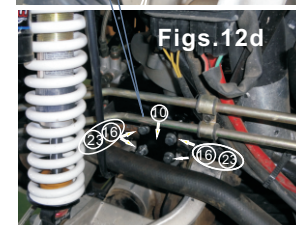
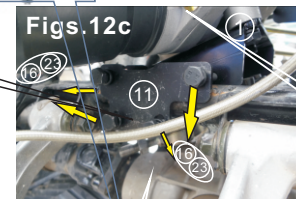
Installation illustrations



Make sure Two O-rings are in the Notch of Bracket for shaft . This is forbidden.



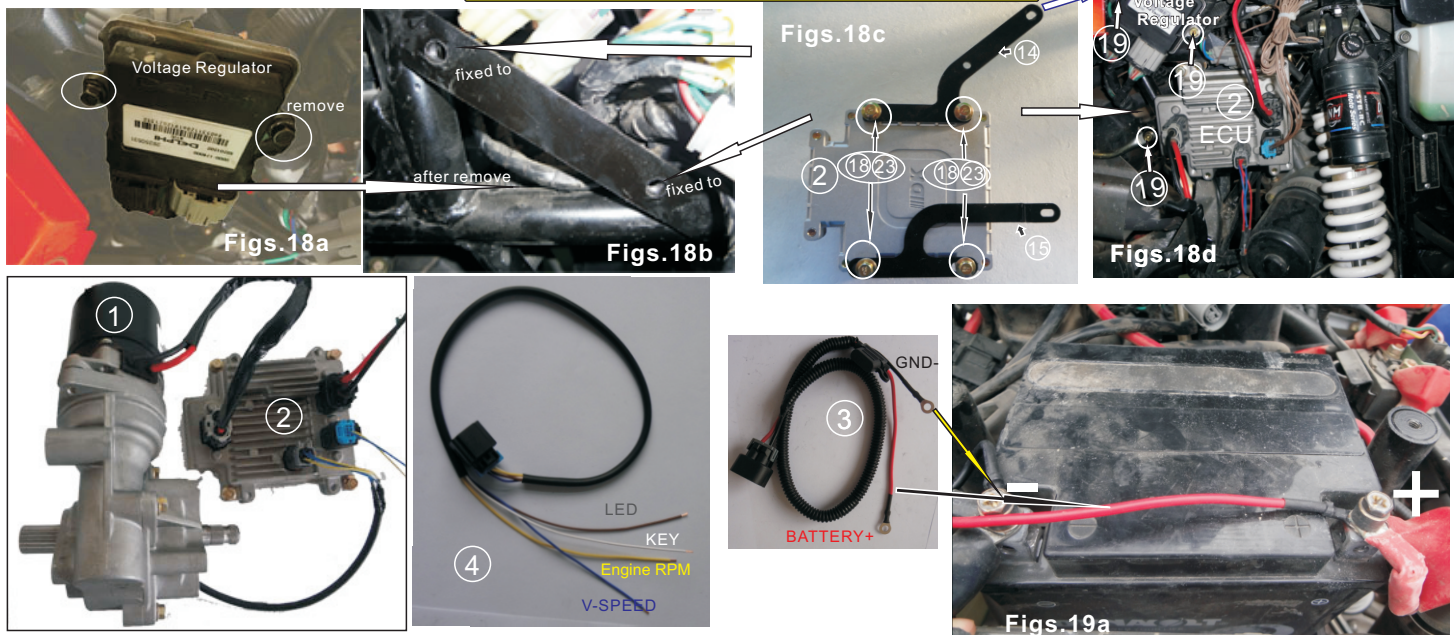
After keeping it in the most central, then adjust the Tie Rod to make the wheel straight .



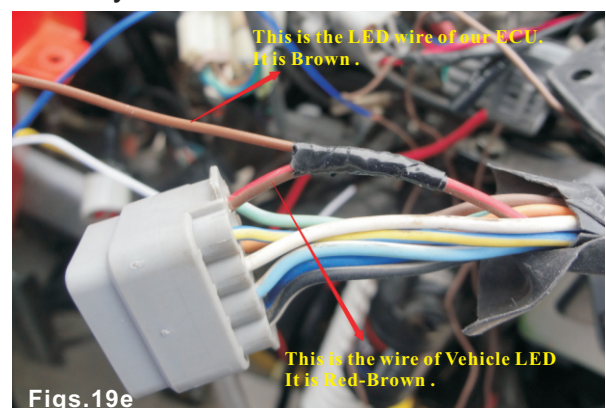
Interface definition

Name	Colour	Type of signal	Connecting Location
BATTERY	Red	12V/35A	Connect to positive of Power source
GND	Black		Connect to negative of Power source
KEY	White	12V/0.1A	connected with the Black wire of your vehicle
V_SPEED	Blue	5V Pulse signal	connected with the Yellow-White wire of your vehicle
Engine RPM	Yellow		connected with the Red-Yellow wire of your vehicle
LED	Brown		connected with the Red-Brown wire of your vehicle

connection instruction




Tip: The Ignition wire of CFmotorX8 is black as the picture shows. And you can look for this wire from Keyhole.














Electronic Fault Diagnosis Table

Start the vehicle and view the fault light (B), the light should turn on for one second then turn off, if the light remains on you have an incorrect connection in the system --repeat the steps from the beginning to find the fault.

If there is a malfunction with an electronic part, the system will create a code to identify the problem. Each fault code is displayed by a series of flashes with a fault light. Fault codes show with a light. Every fault code is composed of double digits, each double digit is indicated by a series of long and short flashes of light. Each long flash represents a tens digit and is 2 seconds in length and each short flash represents a single digit and is 1 second in length. There will be a 3 seconds space between the long flashes and the short flashes. For example: long flash \ long flash \ space \ short flash represents the code number 21. Multiple fault codes will be shown in order of the codes created by faults, one after another. For example: long flash \ space \ short flash \ short flash \ space \ long flash \ long flash \ space \ short flash \ short flash, this would be code 12 and 22.

Example: light ON OFF 

Code	Diagnosis content	fault code wave	Suggestion
21	Main torque sensor disconnection		1. Check sensor wiring harness 2. Replace ECU
22	Main torque sensor output error (voltage is too high or low)		
23	Vice torque sensor disconnected		
24	Vice torque sensor output error (voltage is too high or low)		
25	Main and vice torque difference is too large		
26	Main torque sensor inner fault		Exchange ECU
35	Current sensor zero offset is too large		
32	Motor disconnected		Re-insert wire of the motor
33	Current of ECU is over the limit		Exchange ECU
34	One side of motor has no assistance		
36	Motor voltage abnormal		1. Check motor wire 2. Check motor plu

System Cautions

Electric power steering is a system which highly precision, sensitive and energy-saving, environmental protection and high-performance. In order to ensure the performance of the steering system, and improve the life of the steering system, we must insist on strict compliance with the following rules:

1. Do not dismantle the control box because you may change the parameters of the sensors and create an imbalance between the power to the right and left steering.
2. Maintain a good battery, loss of battery power will result in heavy steering.
3. Pack all electrical connections with dielectric grease where possible to help against corrosion especially in damp humid conditions.
4. Do not tap into the EPS electrical harness for any other aftermarket components. This will affect the power supply to the system and create problems.
5. Connector of the system must be in good contact: avoid laying connectors in damp, high temperature environment to ensure its good conductive;
6. The controller must not be near high temperatures and protected from moisture.
7. When steering your machine and reaching maximum turn angle, do not hold that maximum position for longer than 3 seconds to ensure you do not overheat the electric motor and controller.
8. When motor is working, you must not insert or extract the connector of controller, motor and sensor to protect them from its shocks of the current.