

Service Procedure for:

eGO[®] Cycle Helio[™] Cycle



Motor Replacement

Models applicable:

EC-100 EC-200 EC-200EU EC-300

Revision date: 06/04/2003 03:16:55 PM

TIME NEEDED:

45 min.

SKILLS REQUIRED:

TOOLS and EQUIPMENT REQUIRED:

Allen wrenches:

- 2mm
- 3mm
- 4mm
- 5mm
- 6mm

Open end wrenches:

- 8mm
- 10mm
- 12mm
- 13mm
- 15mm

Other tools:

PARTS REQUIRED:

- New eGO2 Motor

OVERVIEW:

To replace a motor, you will remove the batteries, remove the rear wheel, remove the motor mount, disconnect the wiring from the vehicle, and remove the motor from the mount. Then you will install the new motor, tension the primary belt, and reinstall the motor mount into the chassis.

Preparation & Safety:

- Always Wear EYE protection during any Service Procedure
- Make sure the Key is REMOVED from the switch
- Make sure the AC plug is not Plugged in
- Remove all watches, rings, jewelry from your hands

PROCEDURE DESCRIPTION:

A) Remove the batteries:

Follow step 'A' of the '**Battery Removal / Installation**' procedure

B) Remove the rear wheel:

Follow steps 'A' and 'B' of the '**Rear Wheel Removal / Installation**' procedure

C) Remove the motor and mount:

Follow step 'C' of the '**Motor Mount Removal / Replacement**' procedure

D) Remove the dash panel:

1. Remove the six machine screws from the sides of the dash panel using the 3mm allen wrench.
2. Remove Dash Panel and set aside to allow access to Contactor and Controller. (Do not disconnect any wires from the dash - the wires are long enough to allow you to set the dash aside the chassis without having to remove wires.)

E) Disconnect the motor wires:

1. There are four wires that connect to the motor to the chassis, 2 RED wires (connected together and ending in a single ring terminal) and 2 BLACK wires (connected together and ending in a single ring terminal.)
2. Disconnect the RED motor wire ring terminal from the Contactor (silver cylinder located near the top of the dash cavity) using a 13mm wrench. Leave all other wires attached to the Contactor.
3. Disconnect the BLACK motor wires from the 'M1' terminal post of the Controller (large blue rectangular box in the lower right of the dash cavity) using a 10mm wrench. Leave to leave all other wires (B+ & B-) attached to the Controller.

F) Remove the old motor from the motor mount:

Note: The procedure below refers to 'nuts/bolts'. There are two motor mounting styles covered by this description. One motor style has threaded STUDS attached

to the motor - secured to the mount using nuts. The other motor style has threaded HOLES in the motor end cap - secured to the mount with bolts. Both motors use the same holes on the motor mount.

1. Remove the two 13mm nuts/bolts that hold the motor in position on the motor mount - swing the motor toward the large motor mount pulley to loosen the belt, remove the belt.
2. Remove motor from mount.

G) Install the new motor on the motor mount:

1. Insert the motor into the mount assembly - align the motor STUDS/HOLES (depending upon the motor mounting style) with the previously used holes on the mount.
2. Place lock washers on the motor STUDS (or mounting bolts) and finger tighten the motor nuts (or mounting bolts) to secure the motor to the mount.

H) Install and adjust the primary belt: Follow steps 'F' and 'G' of the '**Primary Belt Replacement/Adjustment**' procedure

I) Reconnect the Motor Wires:

1. Connect the RED motor wire ring terminal to the Contactor (silver cylinder located near the top of the dash cavity) using a 13mm wrench. Be sure that the wires run under the chassis cross bar.
2. Connect the BLACK motor wire ring terminal to the 'M1' terminal post on the Controller (large blue rectangular box in the lower right of the dash cavity) using a 10mm wrench. Leave all other wires attached to the Controller. Be sure that the wires run under the chassis cross bar.

J) Install the motor mount, rear wheel and belt, and batteries :

1. Install motor mount: Follow step 'D' of the '**Motor Mount Removal / Replacement**' procedure.
2. Install and adjust rear wheel: Follow steps 'C' through 'E' of the '**Rear Wheel / Drive Belt Removal, Installation, Adjustment**' procedure .
3. Install batteries: Follow step 'B' of the '**Battery Removal / Installation**' procedure

K) Replace Dash Panel:

1. Replace the Dash on the chassis and align screw holes (be sure that wires are not pinched between the dash and the chassis.)
2. Replace the six 3mm allen screws on the sides of the Dash, do not tighten until all screws have been positioned properly
3. Tighten the screws (Note: These screws do not need to be more than snug with the 3mm allen wrench.)

Testing:

NOTE: BREAK IN PERIOD !!!!

A newly installed motor should be treated to gentle riding for the first 4 to 6 hours of use. In the first 4 to 6 hours of riding, do not attempt steep or long hills (either up or down) and do not accelerate OR decelerate quickly. You may ride at full speed, but accelerate and decelerate gently. This break in period allows the motor brushes to 'wear in' and properly connect with the commutator. This procedure will increase efficiency, decrease heat, and increase the life of the motor.

Belt Tension:

1. If you hear a belt skipping noise (popping noise) during acceleration or deceleration, first adjust the secondary drive (outside belt) belt tension using the 'Tension' section of step 'D' above. Make small tension adjustments and test ride between adjustments.
2. If skipping continues after adjusting the secondary belt tension - then the primary (internal belt) belt is skipping. See the '**Primary Belt Replacement and Adjustment**' procedure.

Troubleshooting:

See the troubleshooting section of the:

'Primary Belt Replacement and Adjustment' procedure

'Rear Wheel / Drive Belt Removal, Installation, Adjustment' procedure

'Battery Removal/Installation' procedure