



EW-36

Service & Repair Manual



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Customer Diagnosis

Complete Loss of Power:

- 1.) If the scooter has no power when turned on, the first thing to check is that the circuit breaker underneath the seat* is flipped to the on position. If the circuit breaker is labeled with an “I” and an “O”, the “I” is the on position.
- 2.) Check that the light on the charger turns from green while plugged just into the wall outlet, to red when plugged into the scooter and wall outlet.

If neither of these steps returns power or the charger light is staying green, please contact EWheels service department directly for assistance.

Loss of Throttle Response:

- 1.) If the throttle does not respond when turned, the first thing to check is the current battery charge. Look at the battery indicator when the scooter power is turned on. If the scooter is not displaying a full charge, please fully charge the machine.
- 2.) The only feature of the EW-36 that can cut off power to the motor is the brake sensors that are within the brake handles. To check the brake sensors, pull the brake handle while looking at the taillights with the scooter's power turned on. If the sensors are working correctly, the brake lights will illuminate when the brake handle is pulled and turn back off when the brake handle is released.

3.) If the above steps have been followed and the machine is still not driving, the next step is to reset the controller (brain) for the scooter. Turn the circuit breaker to the off (“O”) position, and let it sit in the off position for a minimum of three hours to allow for the controller (brain) to restart.

If following these steps still do not allow the scooter to drive, please contact EWheels service department directly for assistance.

**If unsure on how to open the seat, please check page 8 of the owner’s manual.*

Section 2 – Technician Diagnosis Guide

Always follow all steps thoroughly in the customer diagnosis guide before proceeding to technician diagnosis guide

All Possible Tools Needed:

- 1.) Metric wrench set
- 2.) Metric socket wrench set
- 3.) Metric hex wrench set
- 4.) Phillips head screwdriver set (#1, #2, #3)
- 5.) Multimeter or voltage tester
- 6.) Floor jack (optional, not needed)
- 7.) Solder pen and solder
- 8.) Shrink wrap tubing
- 9.) Zip ties (any length or color)
- 10.) Box cutter
- 11.) Wire stripper

Complete Loss of Throttle Response:

Checking Connections

Start by checking all connections on both ends of the wire harness, focusing specifically on the three-wire throttle connector and motor wires. Make sure no pins are pulling out of the backside of any connectors, and that the pins on the female side of connectors are not folded over to the side of the connectors.

There are very rare instances where a short in the accessory wiring can cause the machine not to drive. To ensure this is not the issue, please leave lights, turn signals, and all other accessories turned off.

A continuity test can be run on each side of connectors to ensure there is not an issue with the connector pins making proper contact. Connections can be checked by separating the connecting pins, one separated the pins can be folded or pulled out of the connectors.

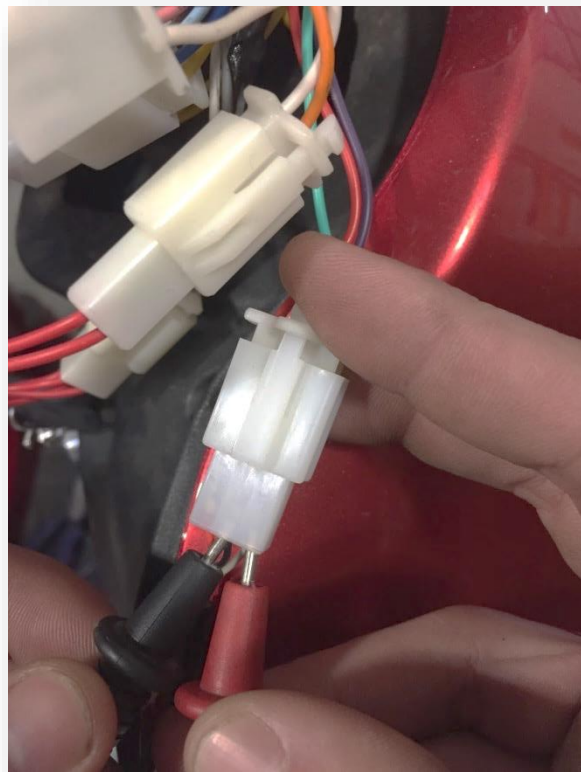


Testing the Throttle:

The throttle responds via a hall effect positioning sensor. The sensor increases its output voltage the more the throttle is pulled. To test this sensor, start by turning the scooter on. Next, set your multimeter to DC 20 volts (or closest setting). While leaving the scooter powered on, and ensuring the throttle to harness, harness to controller, and controller to motor connections are plugged in, insert the multimeter red lead into the throttle connections red wire, and the black multimeter lead into the throttle connections black wire. The voltage reading should be around .82 volts when the throttle is not being pulled (no load).

If you are getting the correct voltage with the power turned on, without pulling the throttle (no load), then the next step is to check the throttle voltage under load (while pulling the throttle). The voltage should increase to around 3.51 volts under full load (while fully rotated). The scooter should engage forward when the voltage rating hits approximately 1.54 volts. If all steps above are followed, and the scooter is not driving, the throttle is not the component causing the problem.

If the throttle is not working properly, please contact EWheels service department directly for a replacement.



Testing the Rheostat (Speed Knob/Potentiometer):

To test that the rheostat (speed knob/potentiometer) is working properly, you can disconnect it from its wire harness connection, and try to see if a throttle response returns. This removes all the limitation and ohm resistance from the positioning sensor in the throttle.

The rheostat can also be tested with a multimeter. The rheostat will have an OHM rating of 100k if it is a sport EW-36, which is marked on the rheostat itself. Set your multimeter to OHM 100K (or closest setting above 100K) and use the two ports with the wires soldered on to obtain an OHM reading. Twist the knob with your leads attached, and check that the rheostat varies from approximately 0, to the 100k OHM's it is rated for.

If the rheostat (speed knob/potentiometer) is not working properly, please contact EWheels service department directly for a replacement.



Testing the Wire Harness:

To test that the wire harness is working properly, visually inspecting and running continuity checks will be necessary. Touch your leads together to see if your specific multimeter beeps when there is continuity.

If your leads are long enough, you can run test of both ends of each wire on the wire harness. If your leads are not long enough to reach both ends of the harness, you can find something conductive to cross the pins of two wires in a connector that are located right by each other (screwdriver tip, paperclip, or any other conductive item you have available to you). Doing this will allow for one multimeter lead to receive the voltage being sent from the other multimeter lead, which helps to verify there are no breaks in the wires being tested. If crossing connections, ensure that the power is turned off, and that both ends of the wire harness are not plugged in.

Focus on testing the throttle wires, rheostat (speed knob/potentiometer), and brake sensors, which all pertain to drivability issues. Testing accessory wiring is not needed when diagnosing drivability issues.

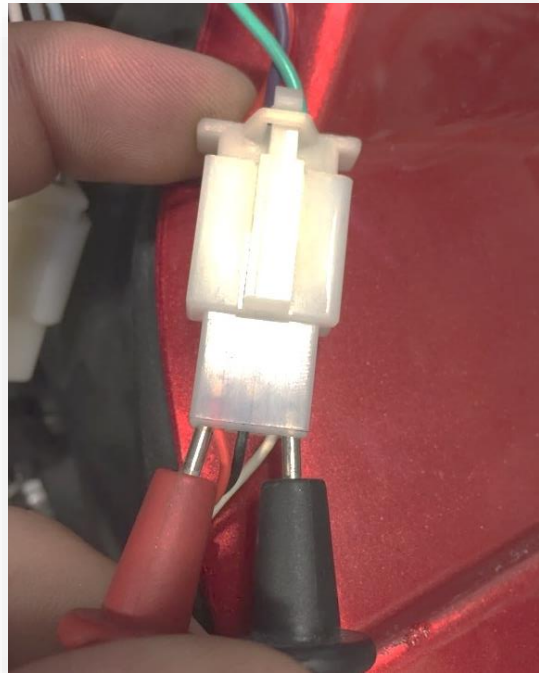


If the wire harness has breaks that are not able to be repaired, please contact EWheels service department directly for a replacement.

Testing the Controller:

To test that the controller is working properly, checking the output voltage for the throttles positioning sensor will be necessary. Leave the scooter power turned on while testing, but **Do Not** cross the throttle wires or a short may occur which can cause damage, personal injury, or death.

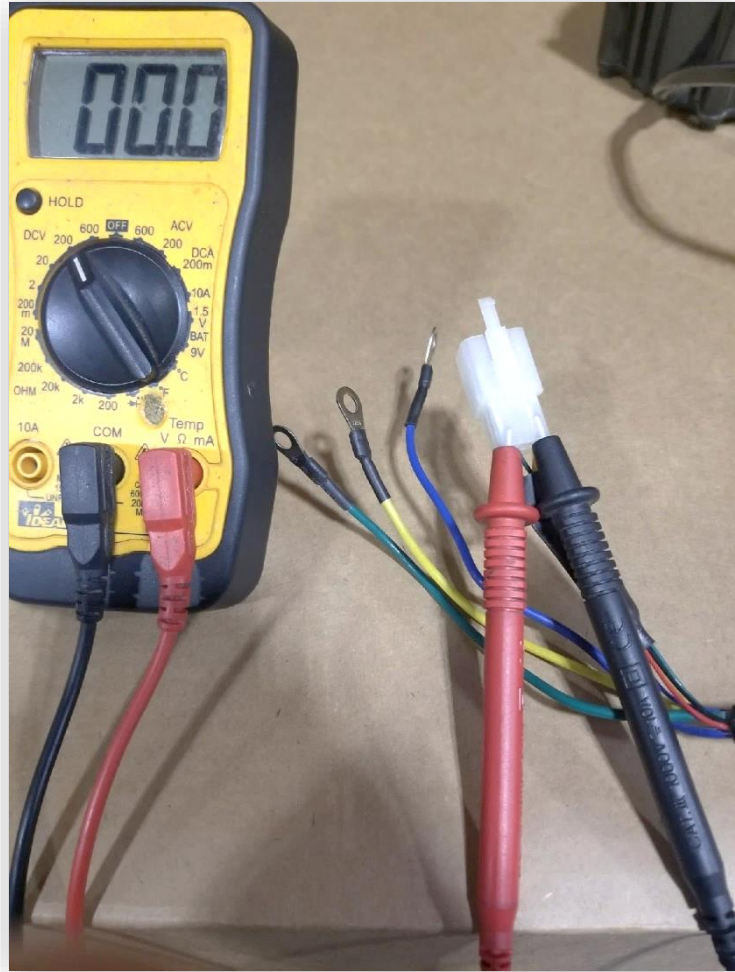
Use the two outside wires of the three prong throttle wires on the harness, shown in the picture, to obtain a voltage reading. Set the multimeter to DC 20 (or closest setting higher than 20). If the controller is working properly, it should be emitting approximately 3.48 volts while plugged into the harness with the scooter power turned on, or approximately 4.99 volts with the harness connection unplugged. If there is no voltage under load, this means the controller has failed and needs to be replaced.



To test that the controller is emitting the proper voltage to the motor, connect your multimeter to any color combination on the motor phase wires where they connect at the yellow junction box. Set your meter at DC 50 or higher, and test under load (with the scooter power turned on, while pulling the throttle). The voltage should start at 0 and increase between 2.5-3.6 volts while under full load (holding the throttle pulled at the way).

Continued next page

Next, check that the controller is supplying the motor Hall Effect sensors with the proper voltage, which is approximately 4.95-5 volts. Leave the scooter powered on and the connector connected. This reading should be obtained at the black and red, yellow and green, and green and blue sensors wires while not under load.



If the controller is not working properly, please contact EWheels directly for a replacement.

Testing the Motor

Start by testing the resistance at the motor phase lines using all color combinations. If your meter displays any resistance levels other than infinite/zero, then the motor needs to be replaced.

Next, check that the Hall Effect positioning sensor's voltage is decreasing when the wheel is being rotated. Rotate the wheel by hand, not with the throttle.

While under a full load (with the throttle pulled all the way) the motor should respond if the controller, harness, and throttle have already been tested, and the brake sensors and rheostat have already been checked. If not, the motor needs to be replaced.



Going internal with the motor to determine if the differential, transfer case, motor hall sensors, or other internal components is the issue is not recommended for field service technicians. Typically, the labor costs for disassembling, testing, and reassembling will exceed the cost for a replacement motor. If the control unit is emitting the proper power to the motor under load, the brake sensor is not activated, and the rheostat is unplugged, and the motor is not engaging, replacement is recommended.

Intermittent or Random Loss of Throttle Issue

The scooter could be intermittently driving, or not consistently accelerating for three different reasons. It could be a loose connection, a tension issue in the brake handle, or an issue with the batteries under load.

1. Loose Connection

For random loss of throttle response while driving, start by checking both ends of the wire harness connections for a loose wire pin or connector. Focus on wiring pertaining to drivability (throttle, brake sensors, motor wires, speed knob wires).

2. Brake Tension

Lack of tension in the brake handle is the most likely culprit to cause random loss of throttle response while driving. The brake cables can slightly stretch out during normal usage, and the brake pads will wear from normal usage. When the cable stretches and the brake pads wear, this can cause the brake handle to become loose and have a slight amount of play, which can cause the brake sensor to activate while riding randomly. To test if there is a lack of tension in the brake handle, use one finger, and tap the brake handle towards the hand grip with the scooter power turned on. If the brake lights turn on and off while you tap the handle with a single finger, then this is the issue.



Continued next page

Brake Tension Continued- Increasing tension in the brake lines will eliminate this issue. The right-hand brake controls the front brake. The left-hand brake controls the back brakes. Tighten the adjustment nut on the effected handle to eliminate the issue.



3. Battery Load Issue

If the scooter is fully charged, but the battery charge indicator dips from high down to low when the throttle is pulled, this indicates there is an issue with the batteries. Testing the voltage of the batteries may indicate if the batteries are charged or not but, does not indicate if there is an issue with the batteries. To properly test, a load tester like the one in the photo below must be used.

A load tester will be required to properly test the batteries under load. However, if the batteries are multiple years old, the scooter has issues accelerating, or if you experience any of the symptoms above, then load testing can be skipped to avoid additional cost if needed. Sealed lead acid batteries have a typical life span of 2-3 years which all depends on how they are maintained. If the batteries are within this time frame and experiencing any of the above issues, replacement of all four (4) batteries is recommended.

Testing the Charging System

To test the charging system, a multimeter or voltage tester will be required. If the scooter is not recharging properly, testing the output voltage of the charger, and voltage at the charger port, will help narrow down the issue may be.

1. Testing the Charger

To test the output voltage of the charger, plug the chargers power supply directly into a wall outlet, but not into the scooter. Set your multimeter to DC 200 or higher and insert a multimeter lead into each of the two parallel prongs as shown in the photo below.

If the charger is working properly, it should be emitting anywhere from 54 volts, to 57 volts.

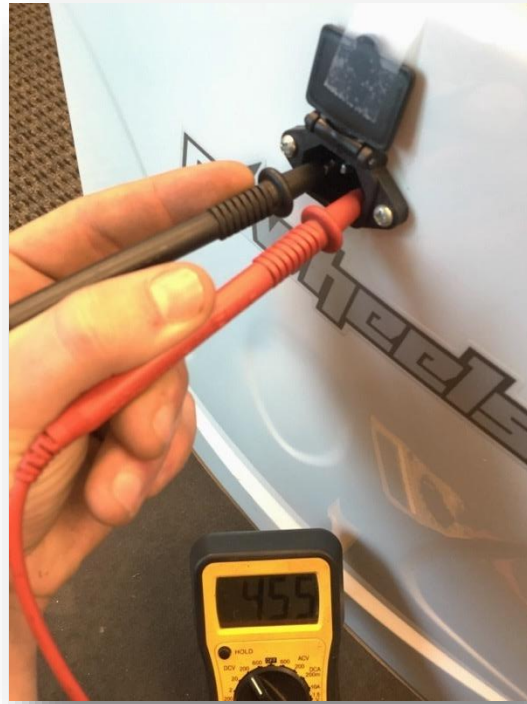
If the charger is not working properly, please contact EWheels service department directly for a replacement.



2. Testing the Charger Port

If the charger is emitting the proper voltage, the next item to test is voltage at the charger port. Set the multimeter to DC 200 volts, or closest setting higher than 200 volts, and use the two parallel prongs to obtain a voltage reading from the two parallel charger port prongs as shown in the photo below. Do not cross the multimeter leads or charger port prongs, or damage and injury could occur.

This voltage reading will vary depending on the current charge of the scooter's batteries. If there is no voltage reading at all, this would indicate the batteries are completely discharged, or there is a wiring or connection issue somewhere between the charger port leading back to the batteries. Run continuity test on the battery terminal wires, wire harness connections, and charger port wiring to determine which is the issue.



If the charger port, battery terminal wiring, or wire harness need to be replaced, please contact EWheels service department directly.

Section 3- Upkeep and Maintenance

Daily Checks Before Riding

1. Charge Level

Make sure there is enough charge in the batteries to complete the distance you intend to travel. If you are going to be traveling more than half the rated capable mileage, a full charge is recommended. Never let the batteries become completely depleted or sit for an extended period uncharged. Doing so will damage the batteries, decrease the capable mileage, and shorten the useable life span of the batteries. Periodically check the charge indicator needle while using the scooter.



2. Brake Tension

Check tension in the brake lines by squeezing either brake handle to see if it can travel and touch the hand grip. If it is, tension will need to be added to the brake lines. Test both handles for a lack tension.

3. Tire Pressure

Visually inspect the tires on all three wheels to make sure they all have ample tire pressure. If the scooter has a tire that appears to be low, adding air to the tire will be required. Inspect the tire is between 30-35 PSI daily.

A tire with ample pressure will appear like the one to the right. Checking the exact PSI (pounds per square inch) with a gauge is recommend monthly, opposed to daily.



A tire with a loss of tire pressure will appear like the one photo to the left. If the tire appears to of lost pressure, testing the PSI (pounds per square inch), and adding air to the tire will be necessary.



When the PSI (pounds per square inch) is less than 15 pounds, and air is added to the tire, it is recommended to avoid use for 24 hours. Check the pressure 24 hours after it was added, to make sure the tire does not have a leak. If the tire does have a slow leak, spraying soapy water on the tire can help locate the area where the air is leaking from. If there is a hole on the tire from a puncture, a “tubeless tire repair kit” can be used to repair the hole in the tire. EWheels directly does not sell “tubeless tire repair kits”, but they can be obtained at local stores or online.

If tires or wheels need to be replaced, please contact EWheels directly for a replacement.

Monthly Checks

It is recommended monthly to check that the rear axle securing nuts, front axle bolt, seat bolts, headset bolt, transaxle to swing arm bolts, and the motor to axle bolts.

There are four bolts that on the rear axle that secures the back wheel on either side. Use a 19MM wrench to remove.



The front axle bolt will be a 12mm on the axle bolt, and a 14mm on the axle nut.



The seat is securing by two bolts, and the seat latch. The seat bolts are a 5mm hex head bolt on the bolt side, and 10mm on the nut side. Avoid overtightening or the seat will not be able to be lifted easily.

The headset bolt is a 12mm on the bolt side, and 14mm on the nut side. Turn the handlebars to either side to be able to gain access to the nut side.



There are two transaxles to swing arm bolts on each side of the scooter. The bolt side is a 12MM, and the nut side is a 13MM. Make sure the bolts are tight on each side. If there is a gap between the axle bracket and the swing arm, this is normal. If overtightened bolts from the transaxle to swing arms can potentially snap.

There are five bolts on each side axle that securing the axle housing to the differential/motor assembly. Make sure all bolts are tightened with the same amount of pressure to avoid potential oil leaks.



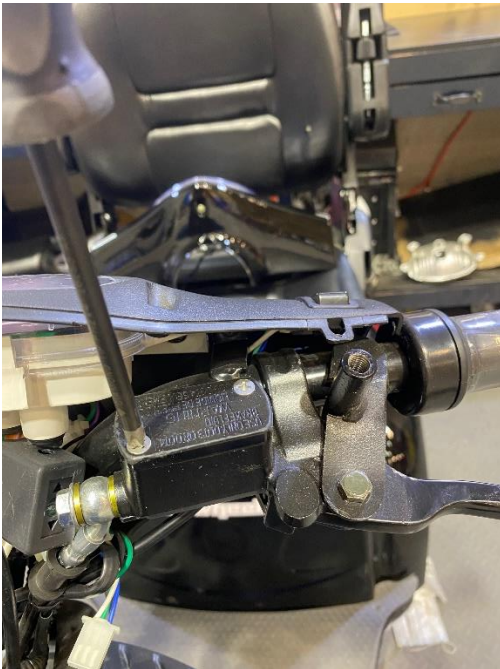
Checking the hydraulic brake fluid is good to do to make sure there is enough brake fluid to stop the unit. You want to use (DOT 3) brake fluid for this if needed to add any. You need to remove the headlight shroud as shown and then remove the 2 screws on the brake reservoir. Once complete repeat steps backwards



- Remove all 7 philip screws with a screw driver.



- Remove both screws to get access to the brake fluid



- Using DOT 3 brake fluid to add if needed.

Yearly Maintenance

It is recommended to change the transaxle oil between from one to three years. Unlike a gasoline engine, the motor does not require a specific amount of oil to operate properly. It is strictly the lubrication method to avoid overheating in the differential assembly. There is a drain and fill bolt on the top and bottom of the motor. Drain old oil, replace fill bolt, and use 10W-30 motor oil to refill the transaxle, with approximately ½ quart.



Section 4- Body Panel Removal and Disassembly

Body Panels

There is a total of seven removable painted body panels on the EW-36. Removing paneling may be required for gaining access to different parts of the scooter for normal maintenance or diagnosing issues. See below for specific panel removal.

Headset panel

Start by removing the mirrors. The headset panel has seven securing screws. Six are on the black guard panel side, where the black guard panel, and painted headlight panel meet.

The seventh headset bolt is located directly underneath the headlight lens. This should be the last screw removed to take off the headlight panel.



Sliding Front Plate

The front sliding plate has a total of two securing screws.

Once these two screws are removed, the plate can now be removed. Grab the top of the plate and push downwards towards the front wheel fender.



Front Body Shroud

To remove the front shroud, the sliding front plate must first be removed. There is a total of nine securing screws. Start by removing the six screws where the front body shroud meets the black guard panel.



Next, remove the two screws that join together the front body shroud to the running boards.



The final screw to remove is located underneath where the sliding plate was. Once removed, the panel will be loose, and can be removed.

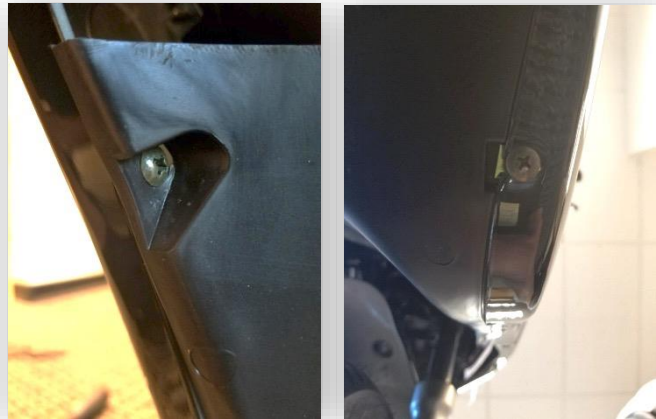


Running Boards (Side Skirts)



To remove either running board, there are a total of seven securing screws. Five of the securing screws are located where the running board meets the black floorboard. To see these securing screws, you will have to remove the floor mat.

There are two more screws that secure the running board to the mud guard. One is facing the ground, and the other is in a recessed hole on the mud guard. Turning the wheel in either direction will assist with removing the screw in the recessed hole.



The final screw to remove is where the running board connects to the front body shroud. Removing this final screw will allow for the running board to be removed. Slide the running board away from the floorboard to avoid breaking the running board tabs.



Front Wheel Fender

To remove the front wheel fender, removing the front wheel will be necessary. Once the front wheel is removed, there will be a total of two securing screws, and one securing bolt.

The two screws are 10MM and are located on both sides of the front wheel fender.



The last bolt is located underneath the front wheel fender, going upwards towards the front fork tube. The nut head as a 10MM, and the bolt is a 5MM hex head.

Main Body Shroud

To remove the main body shroud, power to the machine must be turned off via the circuit breaker, and the seat and storage box underneath the seat need to be dismantled or unplugged. Make sure these things are done before proceeding.

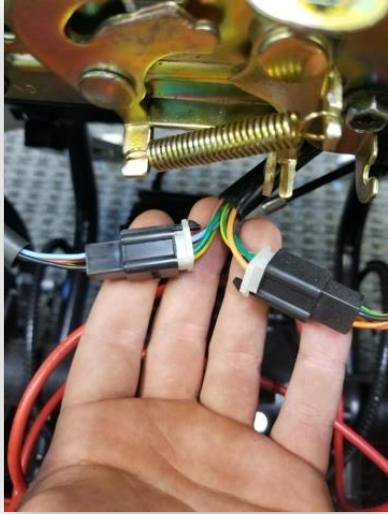
There is a total of twelve securing bolts, three wire harness connections, and one latch cable that will need to be removed or unplugged before the main body shroud can be lifted off the scooter.

There is a total of six 5MM hex head screws that connect the storage box to the frame of the machine. Removing these six screws will allow for the storage box to be pulled straight up and out. If the box is catching on the body shroud when pulling upwards, push the side of the storage box wall inwards on the side that has the circuit breaker mounted. This will allow for the circuit breaker mounting screws to clear the body shroud. The seat does not have to be removed to be able to remove the storage box but can be removed to open the workspace.



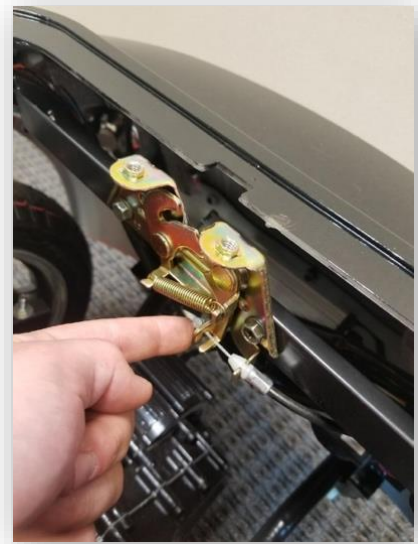
Unplugging the wire harness connection for the charger port. It is a clip style connector.





Next, unplug the connection for each side taillight wiring from the wire harness.

Then remove the seat latch cable end pod from the seat latch mechanism.



Once the cables end catch has been removed, the seat latch cable housing can be pulled away from its mounting point.

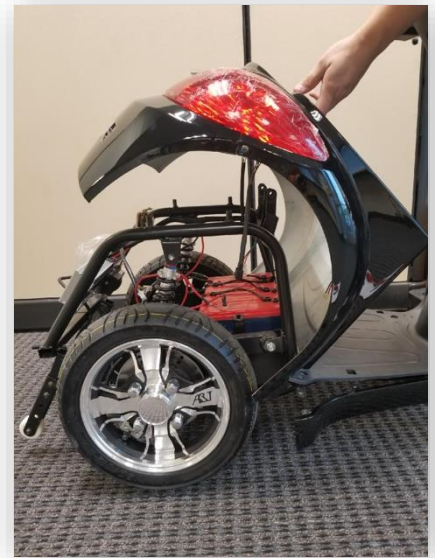
Next to remove are the six bolts and screws on the floorboard that secure the main body shroud to the frame, and floorboard.

There are two more bolts securing the main body to the frame in the back. They are located on the back panel, where the rear bumper portion secures the frame, right underneath the license plate cover.





Once all these steps have been followed, the main body shroud can now be lifted off. Tilt the main body shroud's back end towards the front of the scooter, without lifting the front end. Then, the lip of the main body shroud will be able to clear the floorboard and be pulled off. Removal of the floorboard is not necessary but may be preferred to avoid accidental damage.



Back Bumper (Attached to Main Body Shroud)

The body shrouds underneath the seat consists of two body panels pieces. The larger fender well portion (main body shroud), and the back lower bumper portion (rear bumper shroud). The rear bumper shroud secures to the main body shroud with five screws, and two clip nuts.



There is a screw and clip nut on each side of the main body shroud where the rear bumper shroud connects. Remove the screw, and the clip nut will remain on the rear bumper shroud.

There are three more screws near where the license plate would be located on the inside of the shroud. Removing these will allow for the main body shroud and rear back bumper to be separated.



Storage Box underneath the Seat

There is a total of six 5MM hex head screws that connect the storage box to the frame of the machine. Removing these six screws will allow for the storage box to be pulled straight up and out. If the box is catching on the body shroud when pulling upwards, push the side of the storage box wall inwards on the side that has the circuit breaker mounted. This will allow for the circuit breaker mounting screws to clear the body shroud. The seat does not have to be removed to be able to remove the storage box but can be removed to open the workspace.



Section 5 – Parts Replacement Guide

**Wear and Tear Item Replacement (Tires, Brake Pads, Bulbs, Batteries,
Back and Front Shocks, Axels, Motor and Throttle)**

Tires - The tires or tubes may need to be replaced every 6 months - 3 years, depending on usage. The back wheels are secured by a single wheel securing nut located in the middle of the wheel. It is a 24mm nut.



A jack or stand will be needed to remove the front tire. The front wheel is secured by the front axle bolt. On the bolt side, it is a 12mm. On the nut side, it is 14mm.

Once the nut is removed, the axle bolt can be pulled through. Hold the front wheel as the axle bolt is being pulled out.





When the axle bolt is removed, the front wheel will be loose, but still connected by the front brake assembly, and brake cable. The brake housing with cable will simply slide out of the front drum brake portion of the front wheel.

Brake Pads - The brake pads may need to be replaced every 6 months - 3 years, depending on usage. To replace the brake pads, remove the front and back tire.

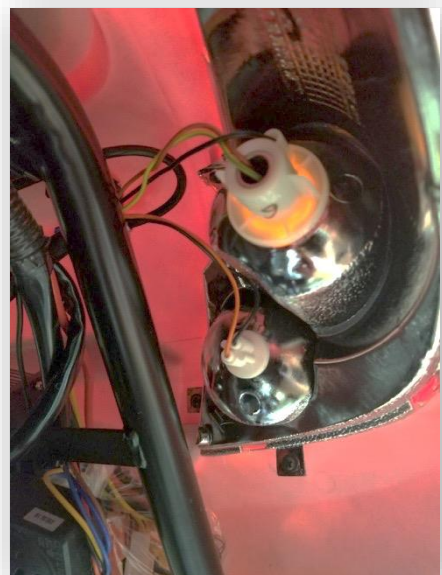
The brake pads are held onto the axle's pad catch, and to the actuating brake arm with spring tension. Pull the two sides brake pads away from each other to remove, and duplicate the reinstall the pads



brake
tension
of the
new



Brake Light, Turn Signal, Speedometer, and Headlight Bulbs - Replacing the bulbs may be necessary every 3 months - 3 years, depending on usage. Replacing bulbs varies based on the location of the bulb.



Rear bulbs - To remove either the dual filament brake light bulb, or the single filament rear turn signal bulb, removing the rear tires may be necessary.

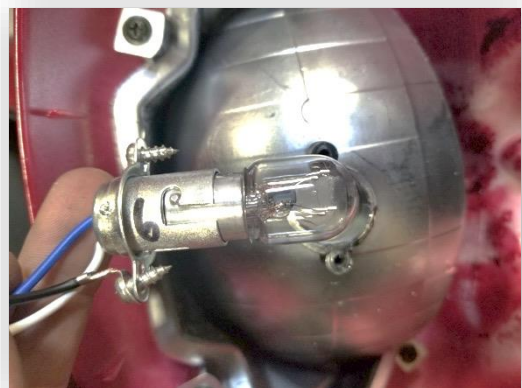
The sockets for the bulbs are housed in the taillight assembly with a twist type catch. Twist to remove the taillight or turn signal socket and replace the bulb.

Front Bulbs - There are bulbs in the front headlight assembly, speedometer display, and lower front turn signal areas. To replace the speedometer or headlight bulbs, start by removing the front headlight body panel.

The headlight bulb is screwed into the headlight bulb via two (2) #1 Philips head screws. Remove the screws and replace the bulb in the twist style socket.



To remove the lower turn signal bulbs, start by removing the front sliding plate. Once removed, turn the installed bulbs wiring with socket out of the light assembly, and pull the old bulb out, and push the new one in



It is also possible to replace the front turn signal bulbs, and rear taillight assembly bulbs without removing any tires and or panels. Doing so may save time but makes the working space much tighter. For the rear lights, reach a hand between the tire and main body shroud, and twist the affected socket out, and replace the bulb. For the front turn signal bulbs, reach a hand between the front body shroud, and front wheel fender, and twist the affected socket out, and replace the bulb.

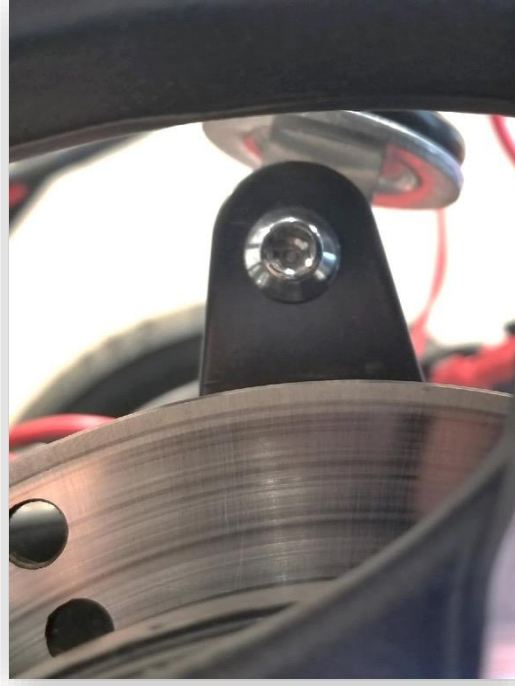
Batteries - The batteries may need to be replaced every 2 - 3 years, depending on how they are maintained. To replace the batteries, first start by removing the storage box located underneath the seat. Once removed, the batteries will be exposed. There is a securing bar across the top of the batteries. To remove this bar, remove the two 10mm bolts that secure the bar.



The batteries are wired in a positive to negative series. There is one wire harness wire that connects the first batteries positive. From there, the batteries are wired with two sided terminal wires that connect battery number one's remaining positive, to battery number two's negative. This sequence is continued until there is only battery number four's positive terminal available without a wire connected. Finish the battery wiring by connecting the remaining wire that is connected to one of the sides of the circuit breaker, to batter number four's remaining positive terminal. Refer to the photo below for a visual reference.



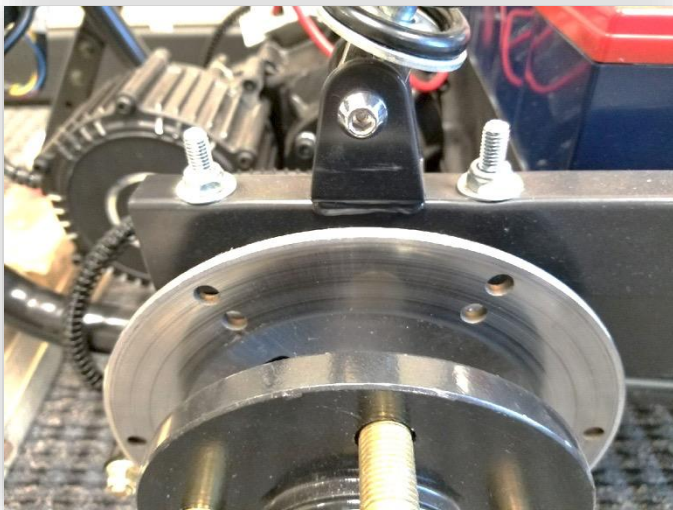
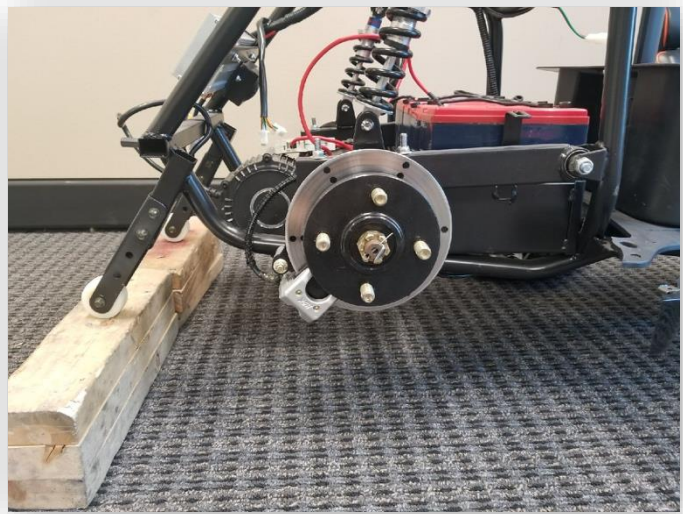
Back Shocks - removing the storage box underneath the seat will be necessary. Replace the shocks separately to avoid frame to frame contact. The top, and bottom bolt for the rear shocks are 5mm hex head (Allen wrench) screw with internal nut.



Transaxle, Motor, or Axle Replacement

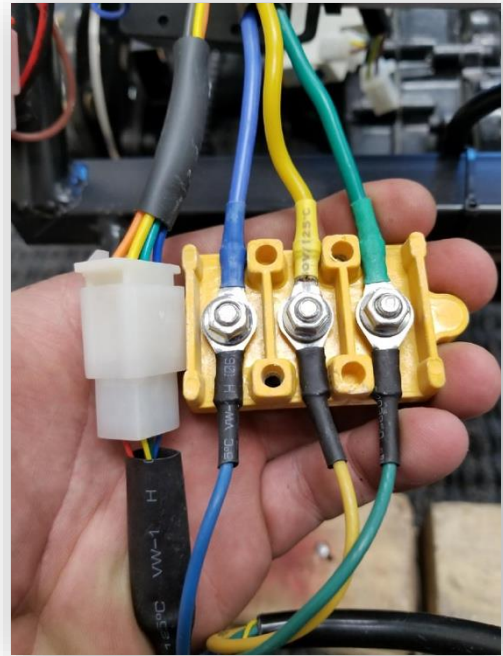
Transaxle - The transaxle refers to the entire motor, differential, axle assembly. The motor and axles can be replaced separately. Follow both the motor, and axle replacement guide for full transaxle replacement.

Motor - To remove the motor, you must first start by removing both rear wheels. The anti-tip wheels will act as a jack so the body panels will not make contact with the ground. Using a floor jack can help raise the work surface higher but is not necessary.



Once the rear wheels are removed, the next step is to remove the four 10mm axle to swing arm bolts. These bolts secure the transaxle assembly to the swing arms.

Once the transaxle has been dropped from the swing arms, the next step is to disconnect the motor wires. The three heavier gauge motor phase wires will be connected to the controller unit in a yellow junction box. The thinner gauge motor hall sensors will be housed in a clip style connector. Disconnect all the motor wires before proceeding.



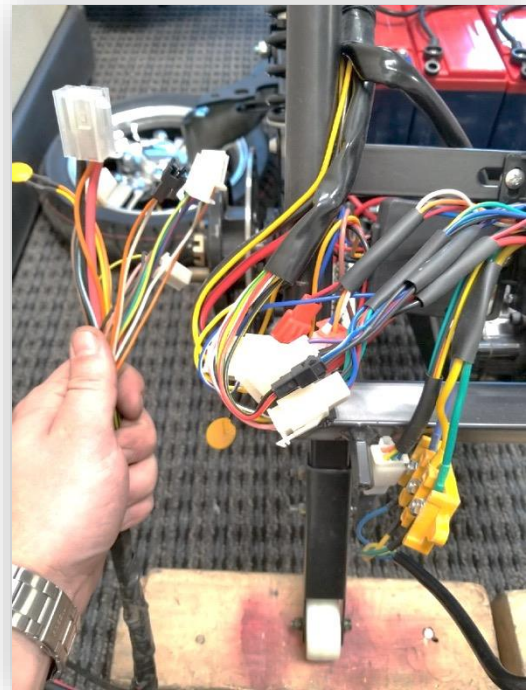
The final step is to remove either side axle assembly. When either axle is removed, the remaining axle that is still connected to the motor will have room to be able to drop away from the frame. Both axles are secured by five 6mm hex (Allen wrench) bolts. Ensure the motor to axle seal is salvaged is just the axle or motor is being replaced.

Motor Oil - The EW-36 uses 5W-30 motor oil (synthetic or non-synthetic). If completely empty, refill the motor with up to ½ quart of oil.

Wire Harness and Brake Cable Replacement

Wire Harness - The wire harness runs the length of the machine, from front to back. Replacing the wire will require removing the seat, storage box underneath the seat, main body shroud, headlight body panel, and front sliding plate.

Running the replacement harness next to the previous harness is recommended to avoid mismatching the wire harness connectors. As you unplug one connection from the old harness, plug the connector immediately into the new harness's identical connector to avoid confusion.



Once all connections have been replaced, remove the old wire harness and the entirety its mounts. Zip tie the new harness to the frame at the same points the old harness was mounted. Test that all functions of the scooter are working as they should prior to reinstalling the body paneling.

Front Brake Cable - Removing the headlight body panel will be necessary to replace the front brake cable. Once done, the brake handle cable mount will be exposed. Before you remove the cable from the handle, first remove the adjusting nut, spring, and mounting spacer.



Once the brake cable hardware is removed, the brake line will have no tension. Remove the cable from the brake handle next by turning the barrel adjuster with securing washer to the point where the adjuster and washers cut outs match up with the cut out for the brake handle.

Once lined up, pull the brake cables housing away from the handle until the cable and cable housing can be slid out from the handles housing.



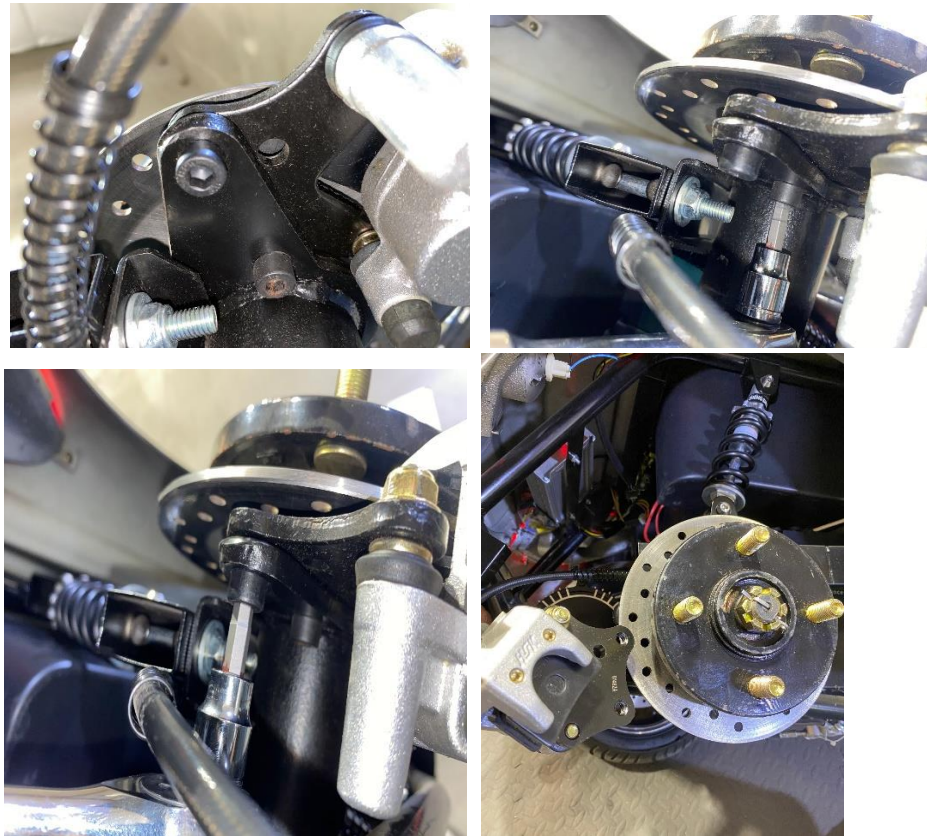
Changing Rear Brakes and Rear Caliper Removal - Removing the headlight body panel will be necessary to replace the rear brake line.



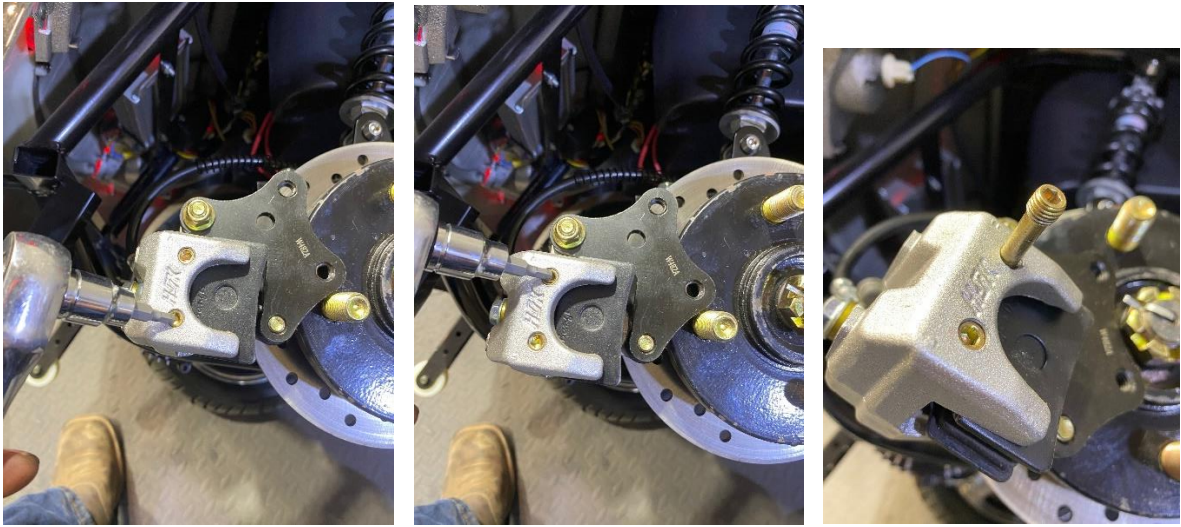
Remove the rear wheel as well to get to the caliper.



Remove the 2 bolts holding the rear caliper on.



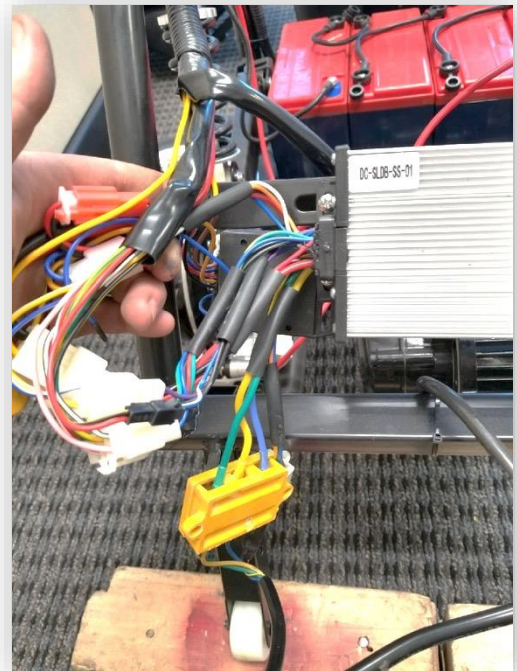
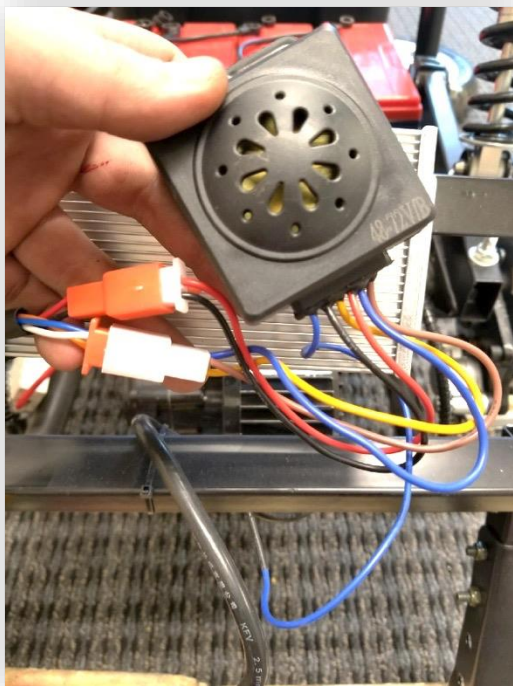
Remove the 2 gold allen wrench bolts to remove the brake pads.



In this photo you can see the brake pads having cut out/ groove for the brake pads to sit in the caliper on the 2 bolts. This is how to change the brakes on the unit.

Controller (Brain) And Security Alarm System Replacement

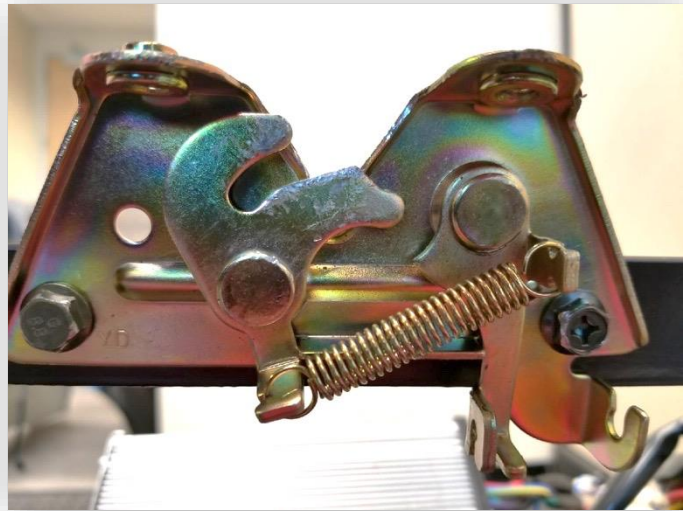
Controller – To remove or replace the controller, the seat, storage box and the main body shroud must be removed. Once removed, the controller will be exposed. All EWheels controllers will be plug and play (no modifications required) replacements. If any connector differences occur, please contact EWheels service department.



Security Alarm System – The alarm system plugs directly into the controller via two connectors. When replacing, separate the original alarm system connectors, dismount, and install the replacement using the same controller connectors.

Seat Latch and Seat Latch Cable Replacement

Seat Latch – To replace the seat latch, the seat and storage box must be removed. Once removed, dismantle the seat latch cable and remove the two seat latch screws. Use the original screws to install the replacement seat latch.

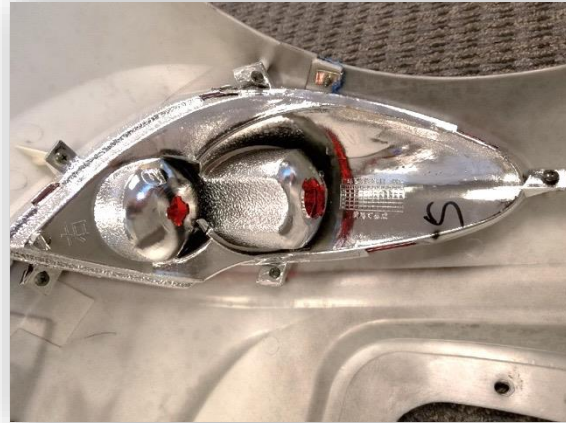


Seat Latch Cable – To replace the seat latch cable, the seat and storage box, and main body shroud must be removed. Once removed, dismantle the original seat latch cable from the seat latch release lock cylinder, and install the replacement seat latch cable into the original seat latch release lock cylinder. Reinstall the main body shroud and hook the new cable to the seat latch.

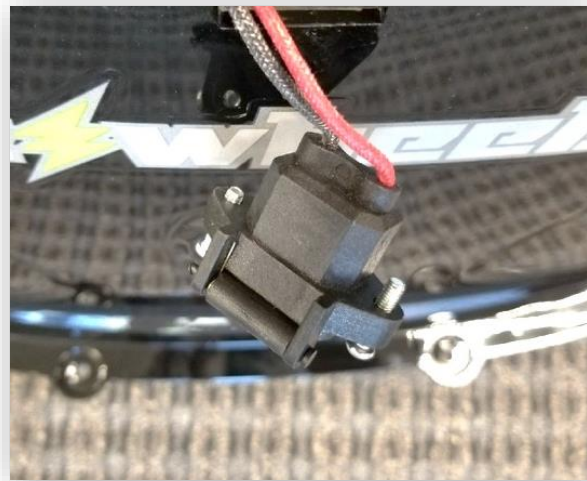


Taillight Assembly and Charger Port Replacement

Taillight Assembly Replacement – To replace the taillight assembly, the seat, storage box, and main body shroud must be removed. Once removed, take out the 5 securing screws that connect the taillight assembly to the main body shroud.



Charger Port Replacement – To replace the charger port, the seat and storage box must be removed. Once removed, take the two screws that secure the charger part to the main body shroud out. Disconnect the original charger port from the wire harness and install the new charger port.



Front Turn Signal Fob and Ignition Replacement

Front Turn Signal Fob Replacement – To replace the front turn signal fob, the front sliding plate and front body shroud must first be removed. Once removed, replace the original front turn signal fob with the replacement main body shroud using the three mounting screws.



Ignition Replacement – To Replace the ignition set, the front sliding plate, front body shroud, and front bodyguard must be removed.



Headlight Fob, Speedometer, Throttle and Brake Handle Replacement

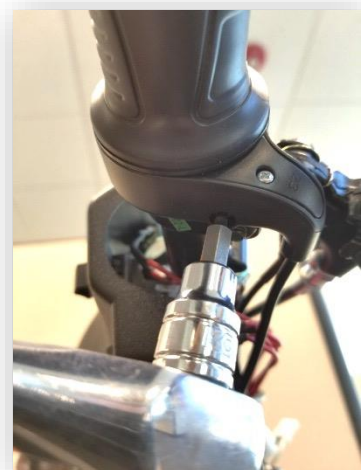
Headlight Fob – To replace the headlight fob, start by removing the headlight shroud. Once removed, take out the five screws that secure the headlight fob to the headlight shroud. Transfer over the existing headlight wiring to the new headlight fob.



Speedometer Replacement – To replace the speedometer, start by removing the headlight shroud. Once removed, separate the original speedometer's electrical connector and take out the three securing screws that mount the speedometer to the front tiller guard. Save the original speedometer's dash bulbs to save for future replacements.



Throttle Replacement – To replace the throttle, start by removing the headlight shroud. Once removed, separate the original throttle's electrical connector, and loosen (but do not remove) the 3.5 MM set screw for the original throttle.





Right (Front) Brake Handle Replacement – To replace the right brake handle, start by removing the headlight shroud. Once removed, separate the brake handle's electrical connector. Once separated, remove any tension from the brake line by taking off the adjustment nut on the opposite end of the brake cable. Then, remove the cable from the brake handle as demonstrated in the photos below.



Left Brake Handle Replacement - To replace the left brake handle, start by removing the headlight shroud. Once removed, take off the securing nut and bolt. Both the nut and the bolt are 10MM.

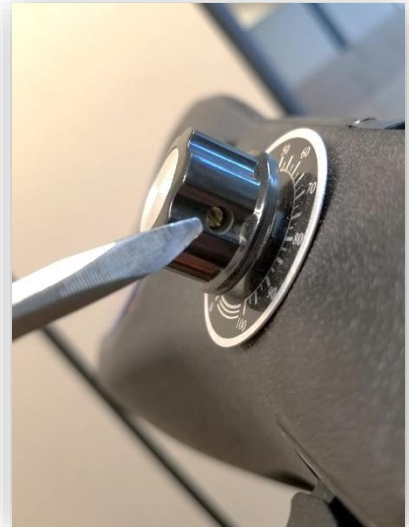


The tension relies off the pressure from the brake line. There are no tensioned springs on the left-hand brake handle.

Speed Knob and Button Replacement

Speed Knob Replacement –

To replace the speed knob, start by loosening the set screw for the speed knob using a small flat head screwdriver. Install the replacement knob and tighten the new set screw.

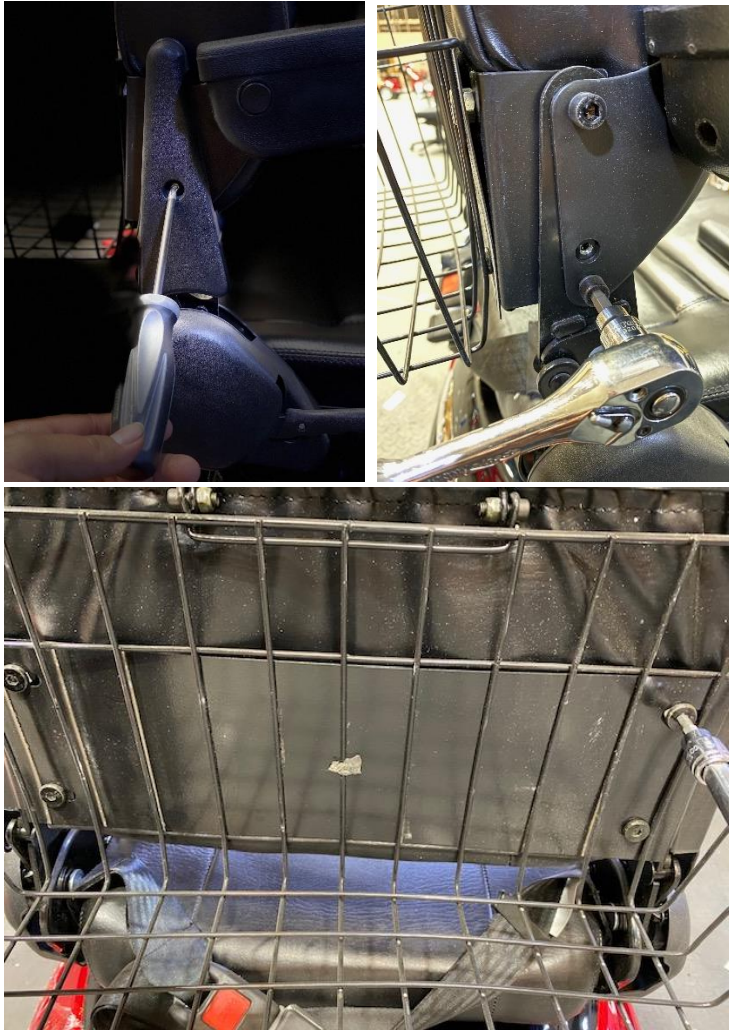


Button Replacement – To replace the high/low beam, turn signal, forward/reverse, or horn button, start by removing the headlight shroud. Once removed, locate the button you intend to replace, and separate the electrical connector. Then, dismount the original button by depressing the push clamps on each side of the button. A flat head screwdriver can help to depress the push tabs easier.



Seat Backrest, Seat Bottom, Arm Rest, and Basket Replacement

Seat Backrest Replacement – To replace the backrest, start by removing the basket and triangle seat mechanism covers. Once removed, take out the four 5MM Allen wrench basket bolts, and two 6MM Allen wrench bolts on each side of the seat.



Remove the 4 bolts as shown in the photo using a long extension and ratchet with a 6mm allen wrench socket.

Bottom Rest Replacement

Step One -To replace the bottom portion of the seat start by removing the both seat mechanism covers with a Phillips screw driver.



Lifting the seat up may make it easier to get to the screw on the bottom side. You will slide this plastic cover off of the lever on the seat as shown in the photo.

Step Two - Remove the 2 bolts holding the seat mechanism on each side of the seat. You can remove them with either tool as shown in both photo's.



(The back rest will the come off once all bolts are removed on each side in above photo)



Step Three – Remove all 4 bolts using a **13mm** socket with a ratchet. Be careful as there are 4 spacers as well that will be

Arm Rest Replacement – To replace the armrest, start by removing the mechanism covers on the side of the seat the armrest is being replaced. Then, take out the two 6mm hex head bolts, and install the new armrest. This is for both sides of the seat.



Floorboard, Mud Guard and Horn Replacement

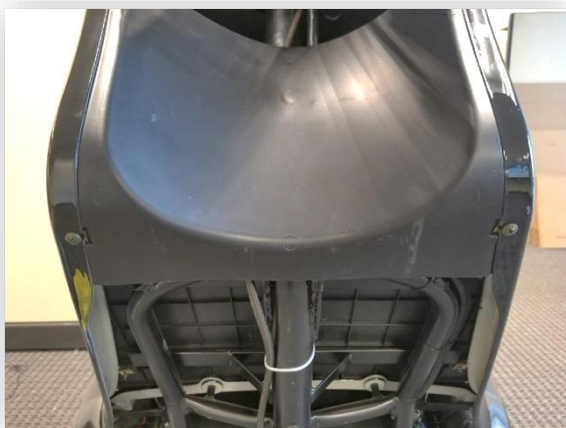


Floorboard Replacement – To replace the floorboard, starting by removing the 12 bolts that are visible on the floorboard.

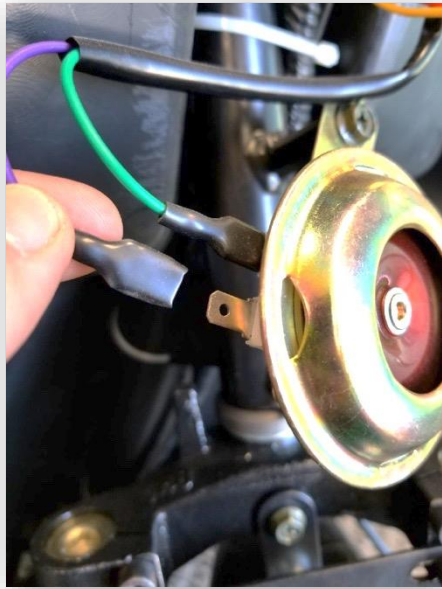


Then, pull each side running board out of the floorboard assembly just like in the photo.

Mud Guard Replacement – To replace the mud guard, the four securing screws must be removed. Once removed, the mud guard can be removed and replaced.



Horn – To replace the horn, start by removing the front body shroud and sliding front plate. Once removed, unplug the electrical connectors that plug in the horn. Then, use a 10MM wrench or flat head screwdriver to remove the bolt that secures the horn to the frame.



Rear Wheel Assembly Replacement – To replace the back-wheel assembly, start by jacking up the back of the scooter underneath the frame. Then, remove the four 19MM wheel securing nuts, and install the new back wheel assembly.



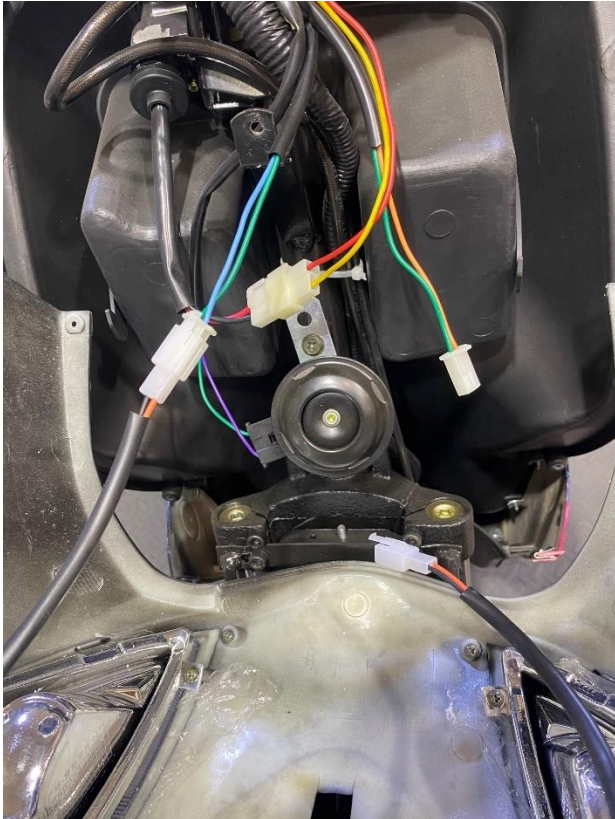
Front Wheel Assembly Replacement

Front Wheel Assembly Replacement – To replace the front wheel assembly, start by jacking up the front of the scooter, underneath the frame. Then, remove the front axle bolt, and slide the front brake assembly out of the front wheel. (*Refer to the top of Section 5*)

Front Body Shroud Guard, Front Tiller Guard

Front Body Shroud Replacement – To replace the front body shroud, remove the 3 phillip screws going along the side, remove the last one on the underside of the front nose. The last screw will be behind the front sliding which has to be removed as well.





Next Step - Unclip Blinker Connectors

Black Tiller Guard Removal

First - Remove the headlight first with a Phillips screwdriver as shown in photos. Then there will be a total of 3 screws to be removed for this shroud to be removed, 2 of them on the inside and 1 on the outside of it as well.



Key Note - The speedometer can be removed as well if needed once this has been completed. A 10mm socket and ratchet can also be used to remove the outside bolt.

Wire Harness Layout + N 25=2

