

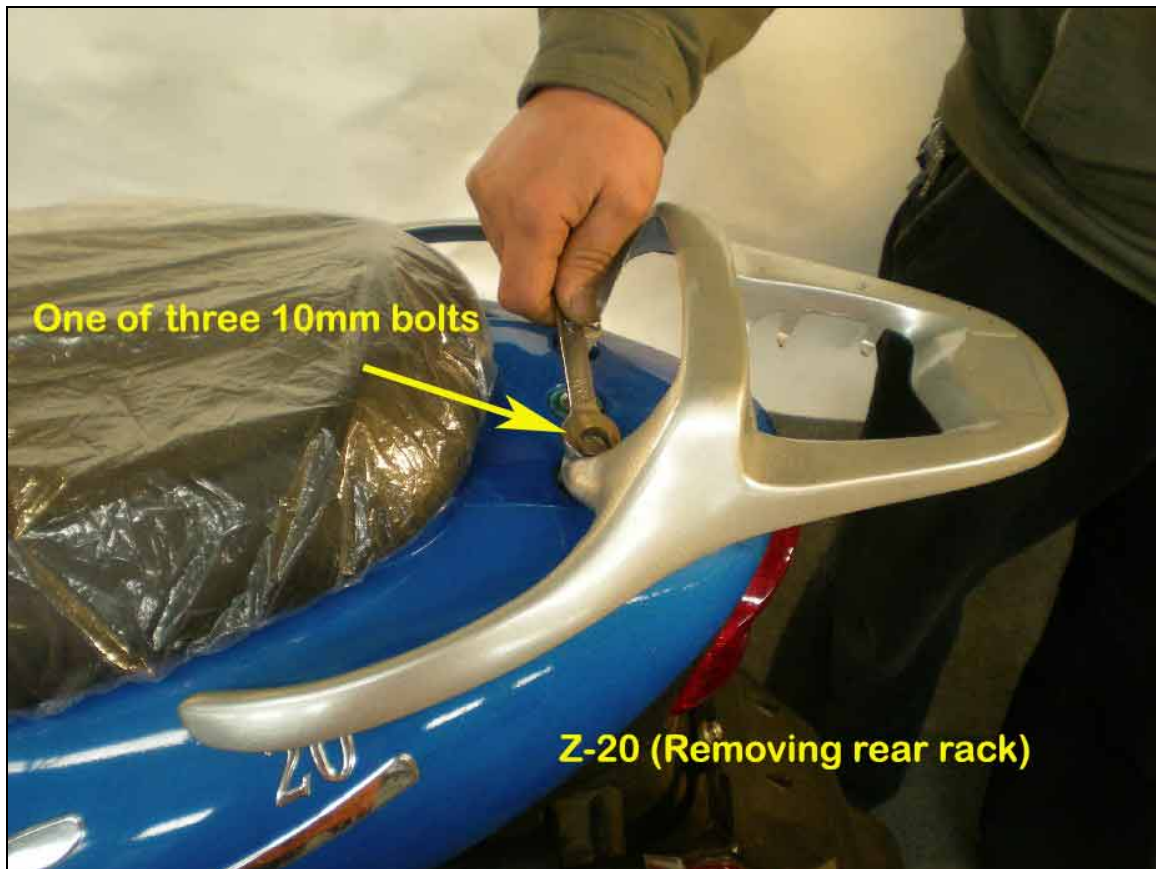
Replacing the Controller on a Z-20

The following is a sequence of photographs that show how to take apart the Z-20 EVTA Electric Motorcycle so that the controller may be replaced.

NOTE: It is important to point out that the Z-20 is powered by a set of five 12V batteries which in series deliver 60V to the controller and motor and that measures need to be taken to insure that an accident, which can result in serious injury, does not occur. We recommend that insulated tools be used and that the batteries remain covered with the rubber protective covering whenever possible as well as the circuit breaker kept on the OFF position.

To begin with, place the motorcycle (scooter) on its permanent or parking stand on a dry, stable, and flat floor with room enough around it to be able to work on it from all sides. Once the bike is on its stand and you have turned both the ignition key and circuit breaker to the OFF position, you can begin to take it apart.

The first step is to take off the rear rack (If you have a rear trunk on, you need to remove it first)





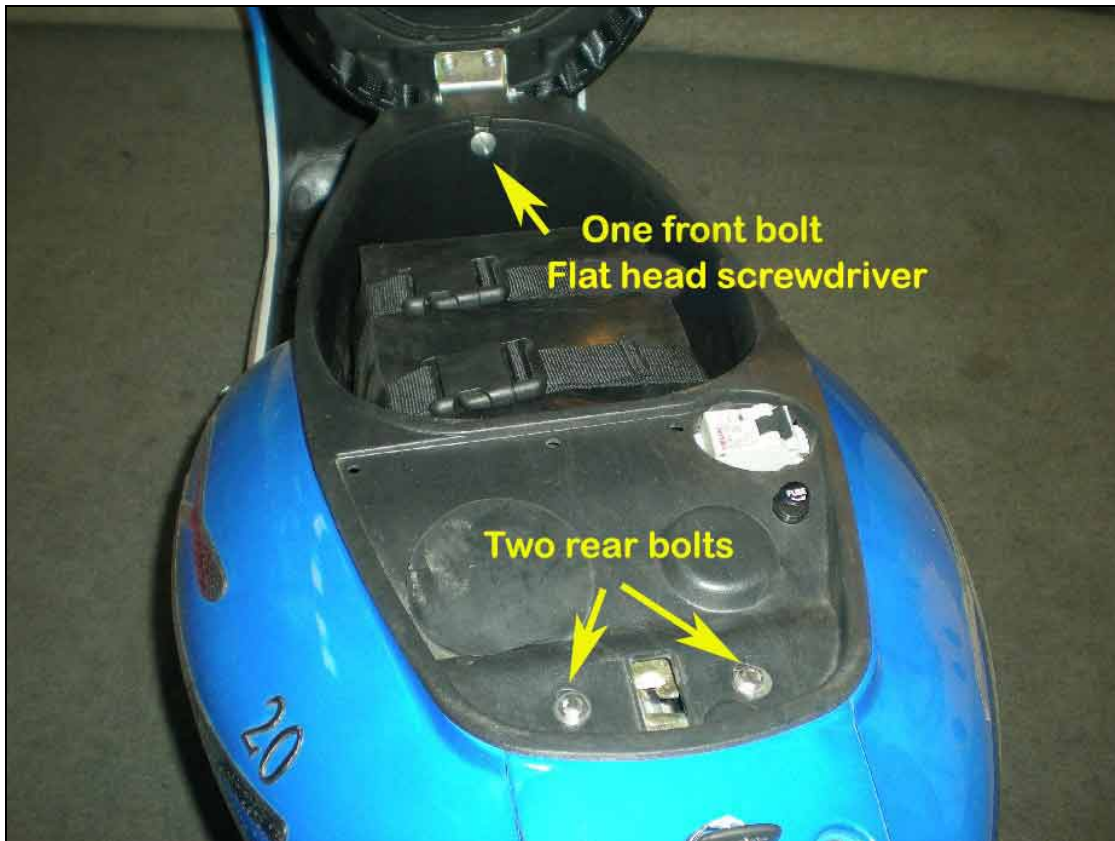
There are three bolts holding the rear rack, take all three completely out.



Put the rack and three bolts to the side



Use the key to open the seat.



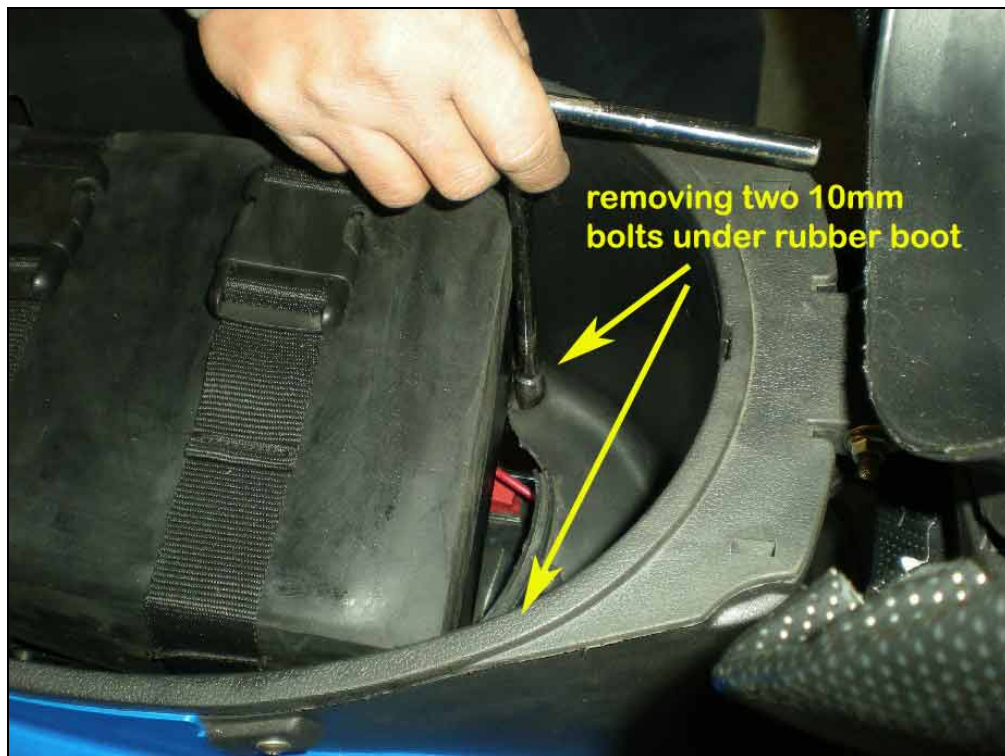
With the seat now open, now there are two nuts and one bolt that need to be removed; one in the front and two on the back.



The two rear nuts are both 10mm



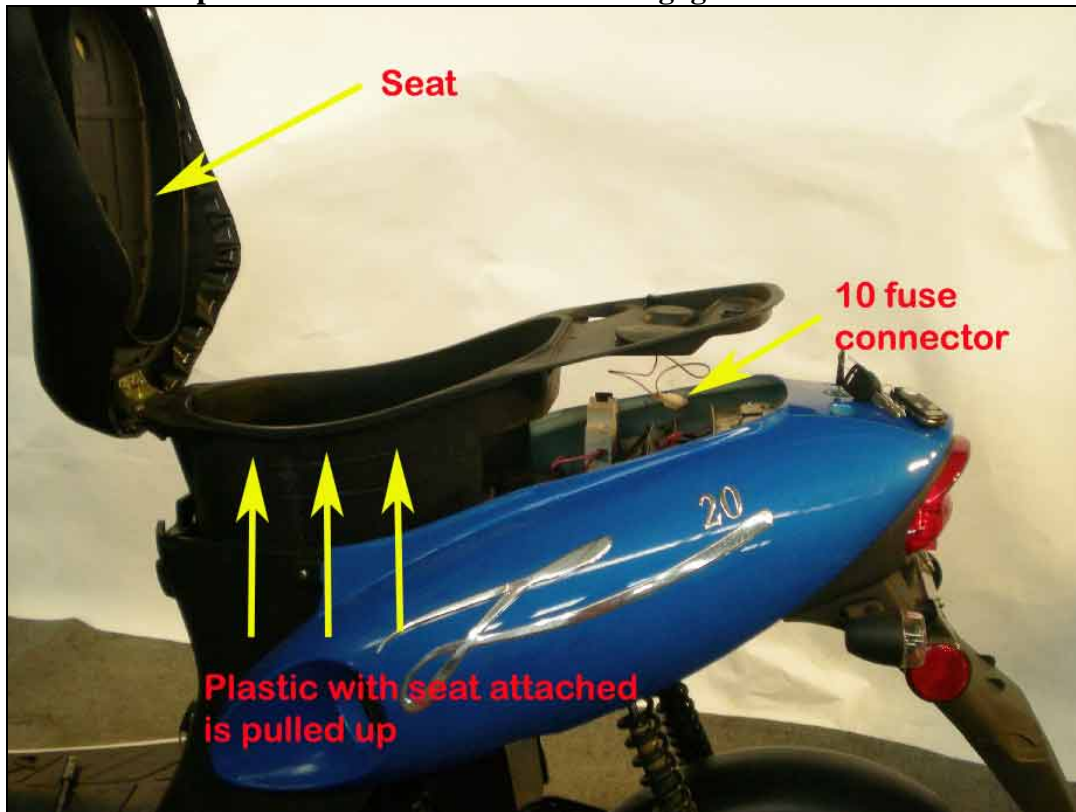
The rubber boot in front of the batteries has to be removed by pulling it out.



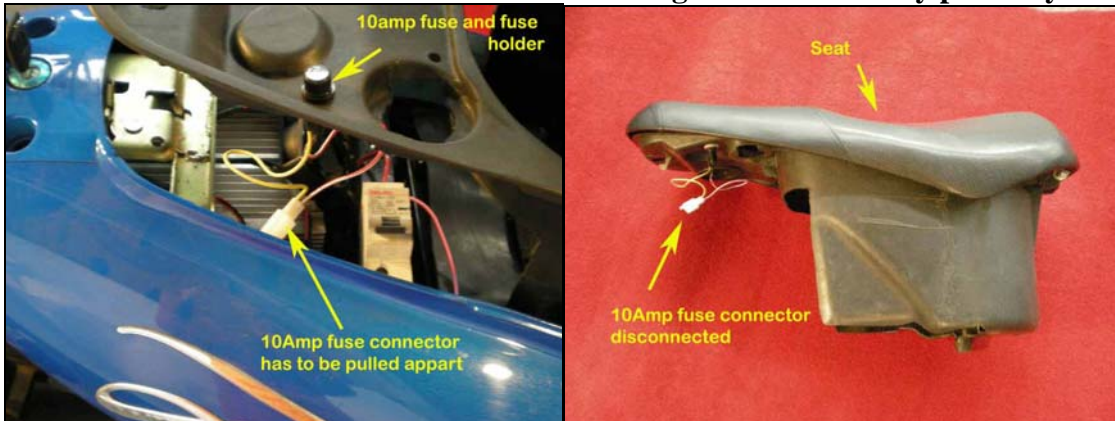
Under the boot there are two more bolts and they too need to be removed.

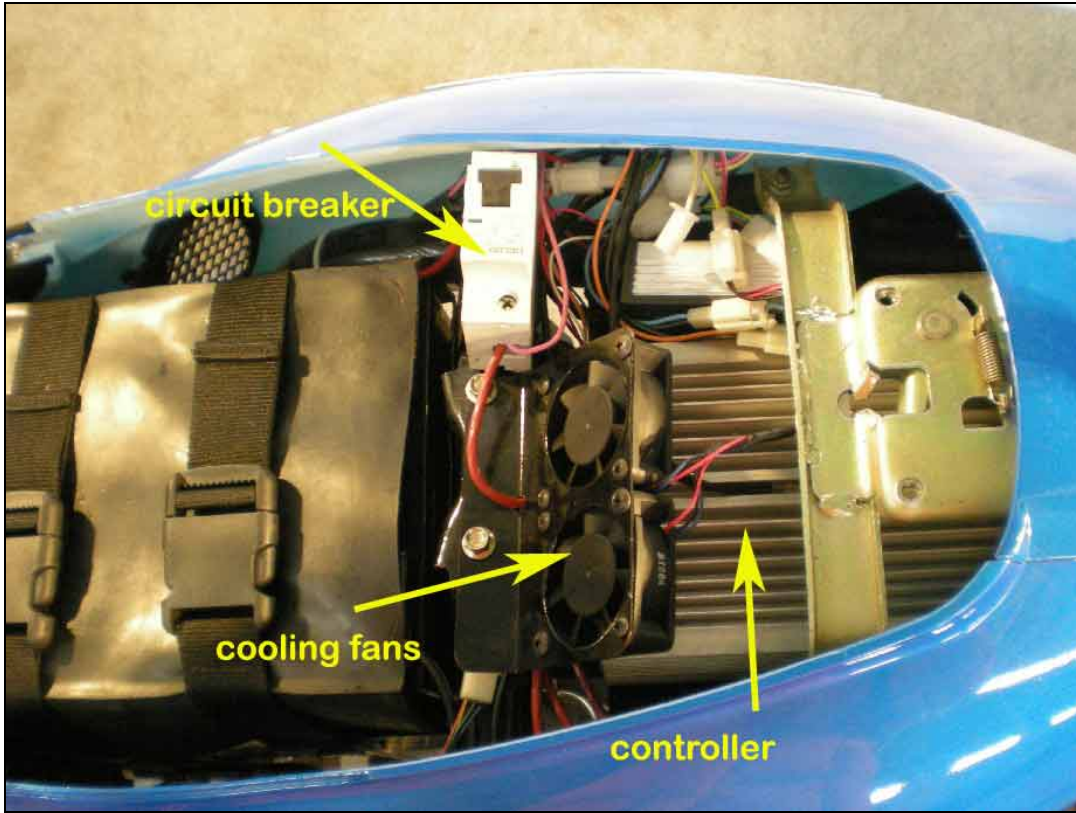


These are the nuts and bolts removed from under the seat. Now the entire seat and plastic assembly can be pulled straight up and out. Note: The 10 amp fuse connector needs to be disengaged.

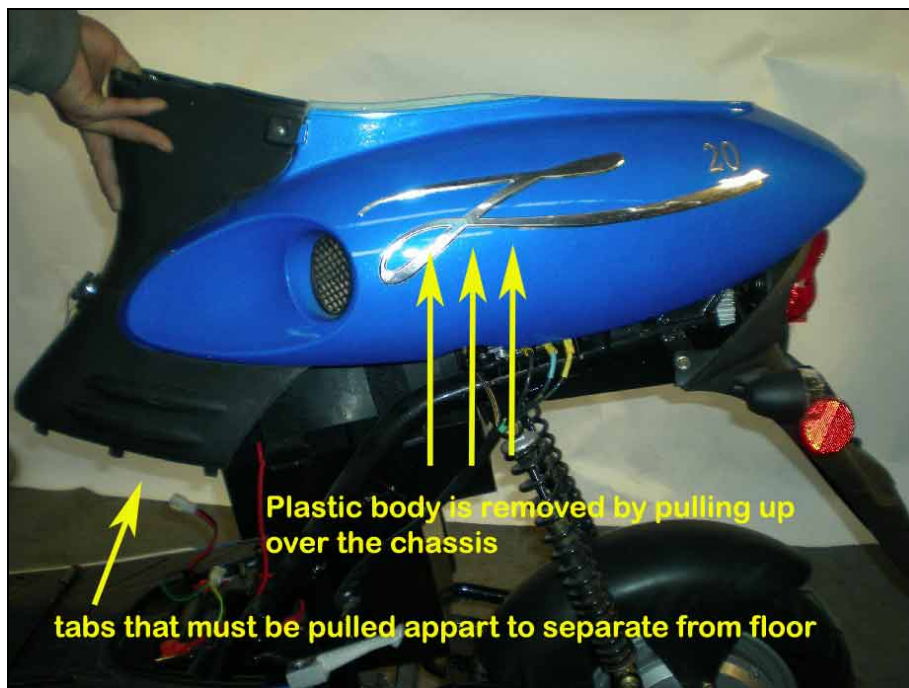


The 10A fuse connector can be reached after lifting the seat assembly part way





The next step is to remove the plastic body, but there are a lot of things that could be checked, tightened and tested without going any further. The plastic body has to have the tabs that are on the floor pulled apart before it can be removed up and over the chassis. The charging plug must also be disconnected.



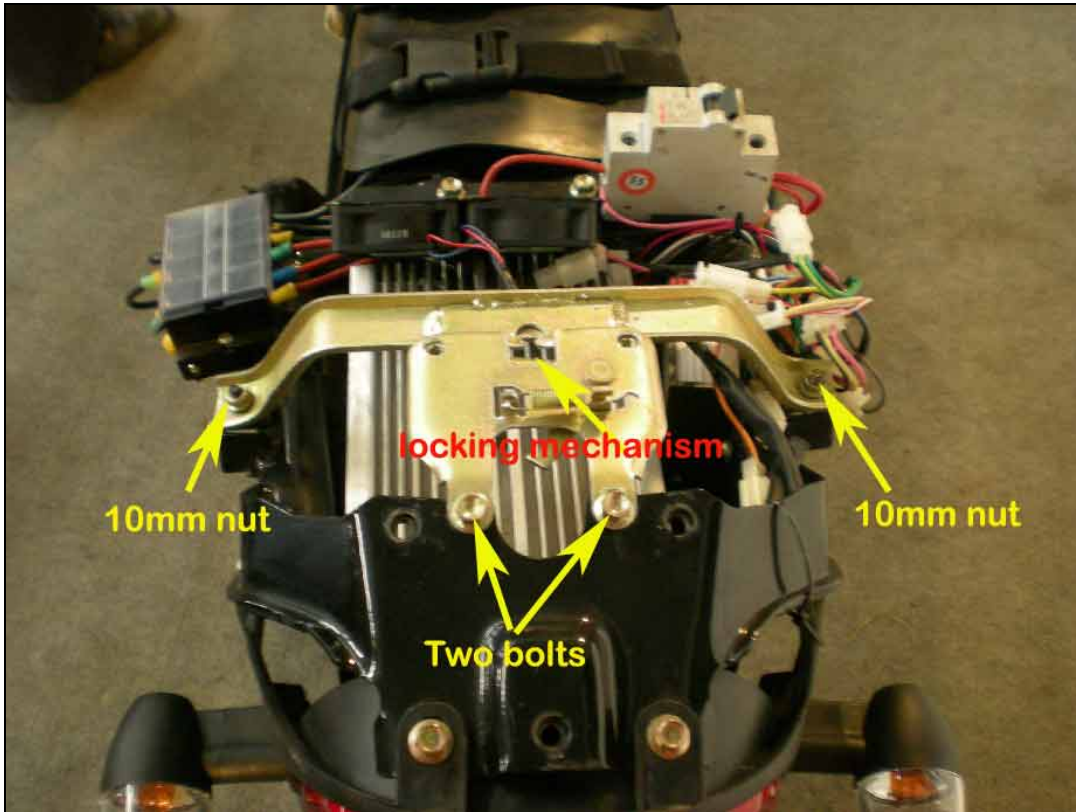


Plastic body (removed)

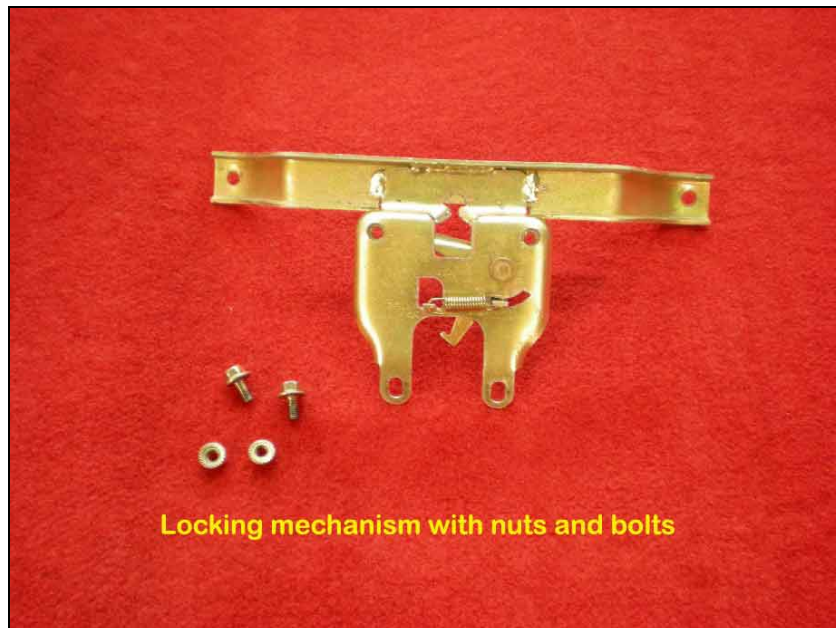


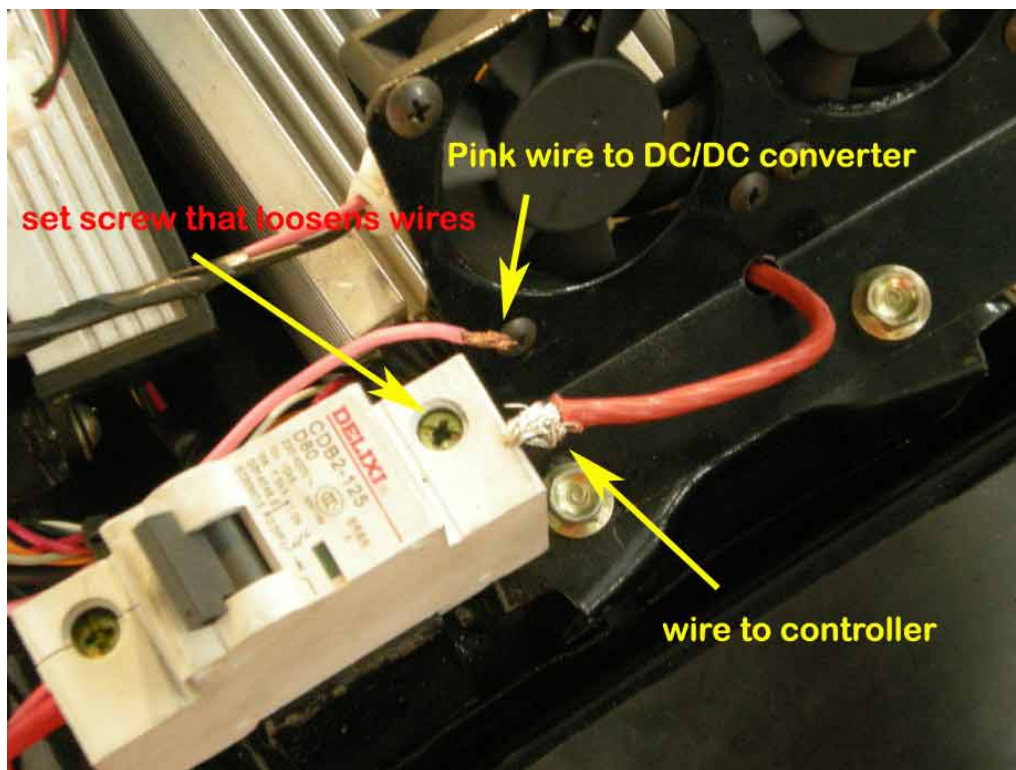
View of rear of Z-20 without plastic covering

The next step is to take out the seat locking mechanism so you can reach the controller and other electrical parts.

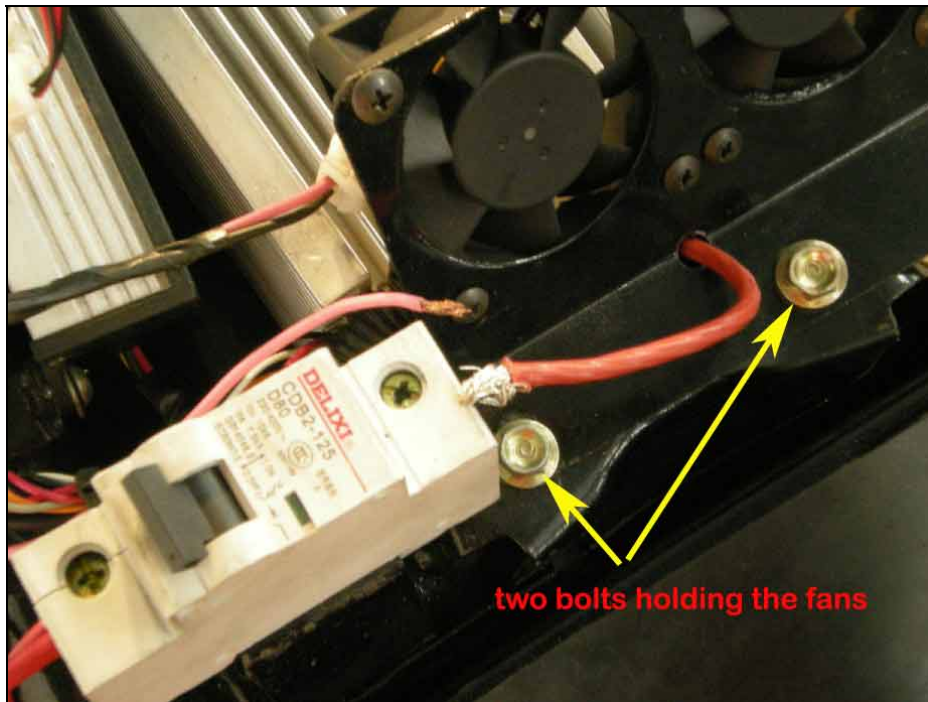


There are two bolts in the back and two nuts on either side which need to be removed before you can remove the locking mechanism.

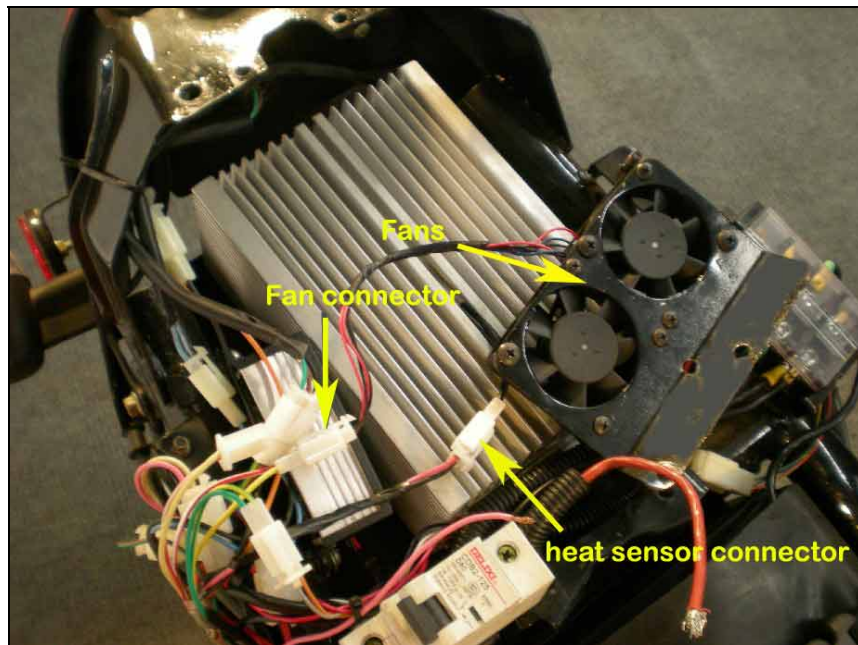




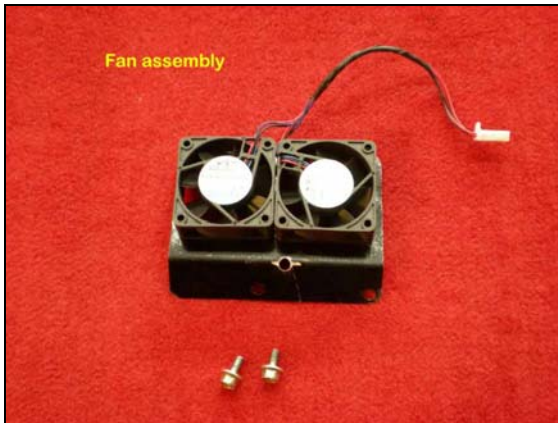
Now you can proceed to take the fan assembly that sits on top of the controller off and to do this you must first remove the two wires going into one side of the breaker.



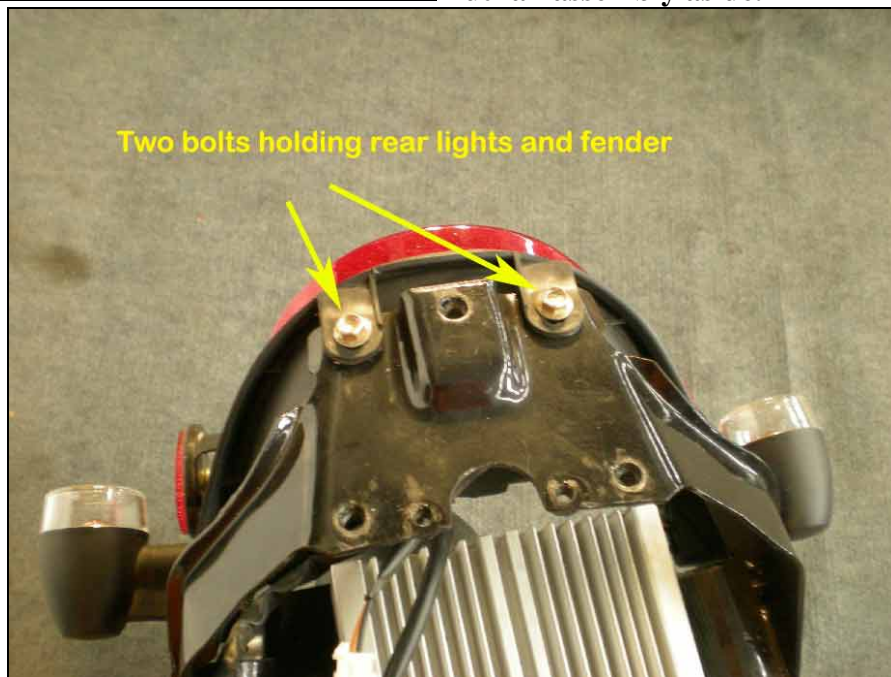
Now we will remove the fans (the loose wires are two wires that go to one end of the circuit breaker and the red one that comes from the controller feeds through the fan assembly and must be disconnected so that the fan assembly can be removed). The two bolts shown are the ones holding the fan assembly.



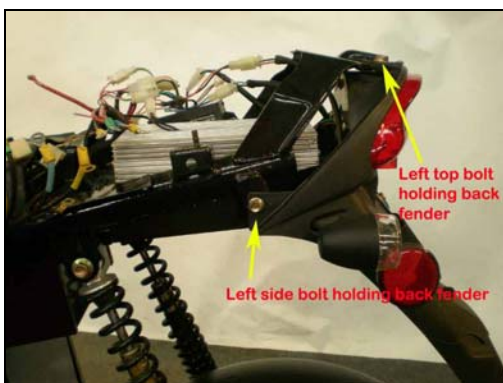
Both the heat sensor connector and the fan connector must be disconnected for the fan assembly to be removed.



Put fan assembly aside.



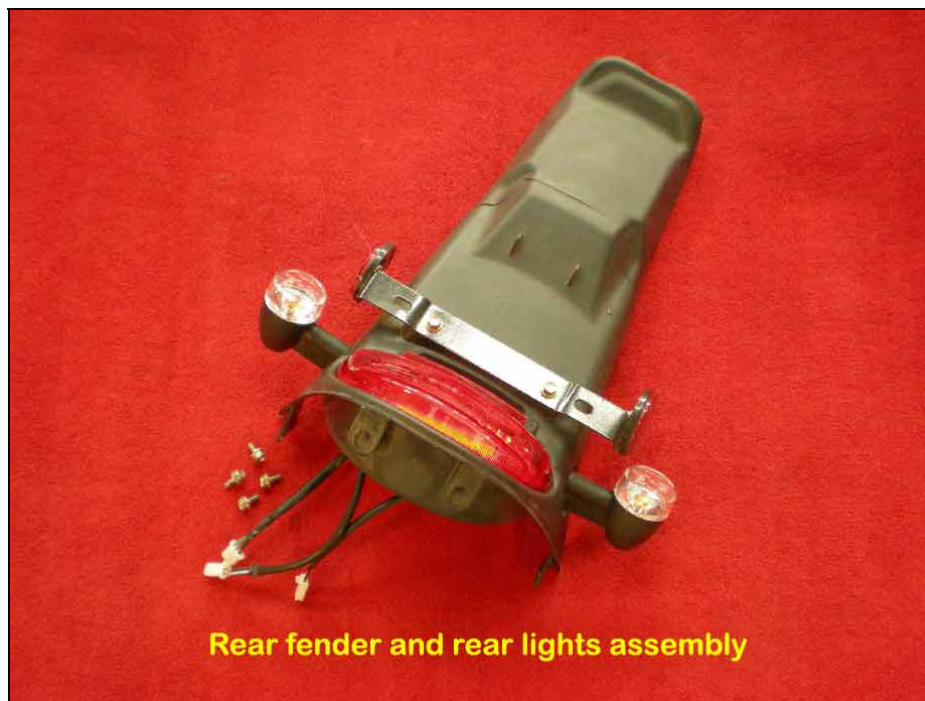
Now we can take the rear fender off the chassis. There are two bolts on the top rear-end of the bike.

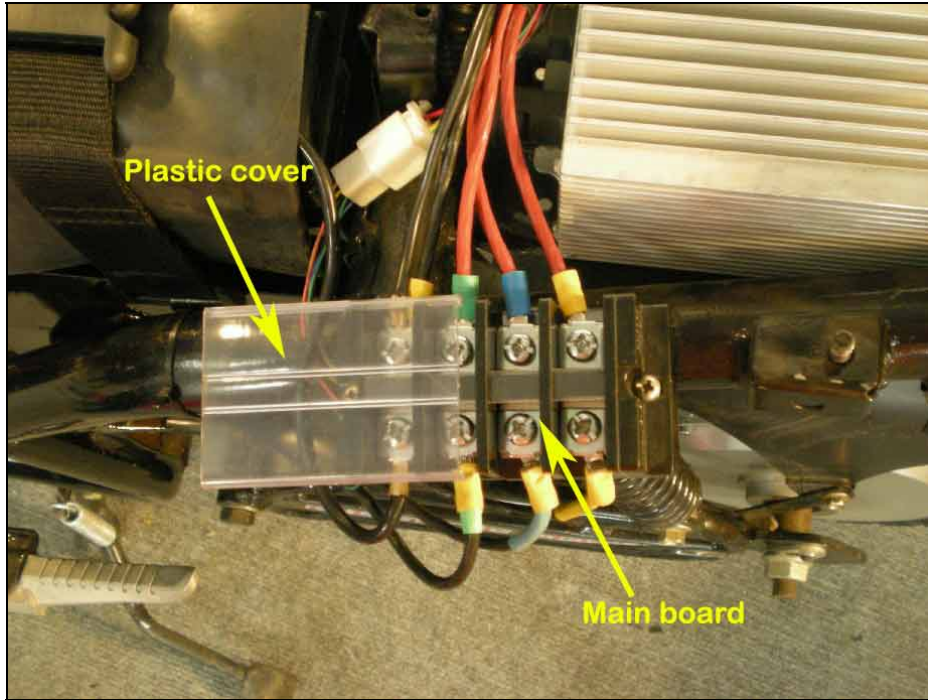


There are two bolts holding fender, one on each side

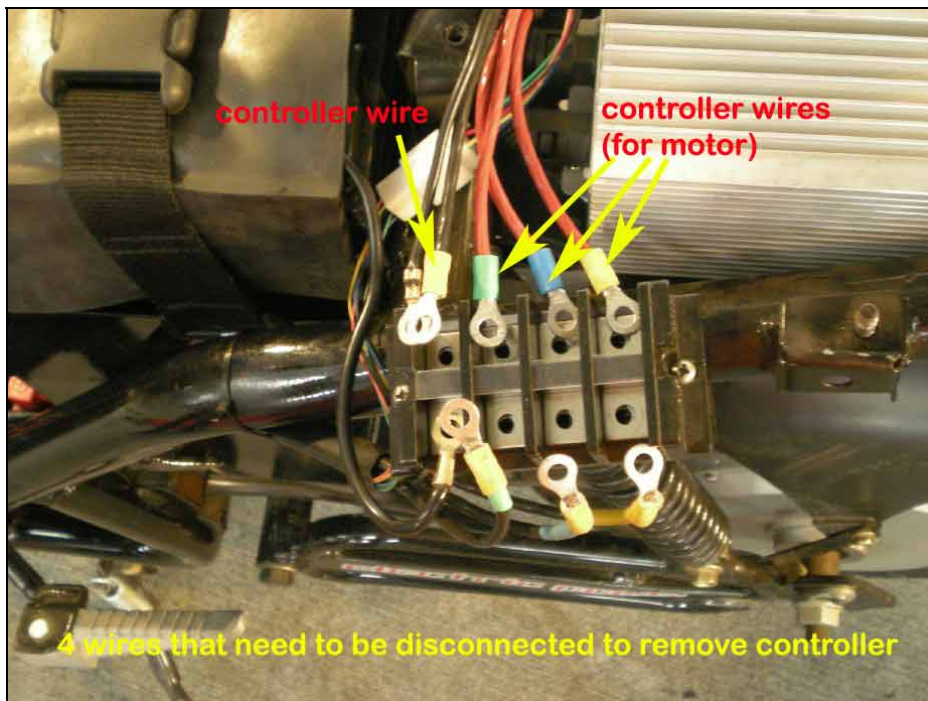


Once all four bolts are removed, the rear fender can be removed. Note: All three rear lights connector must be disconnected first. One is for the rear light and the other two are for the right and left rear signal lights.

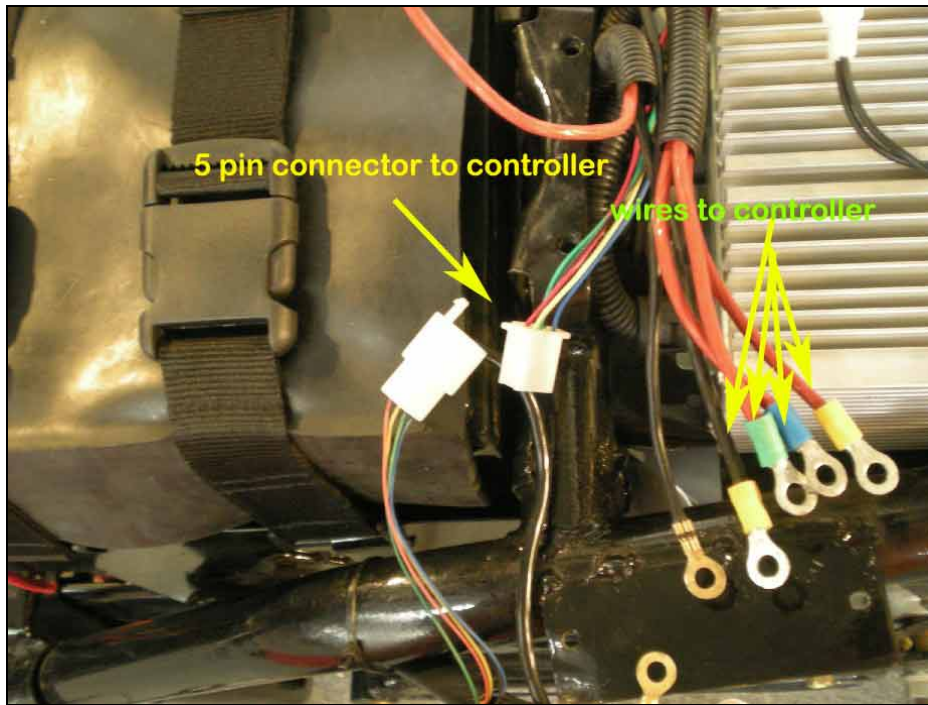




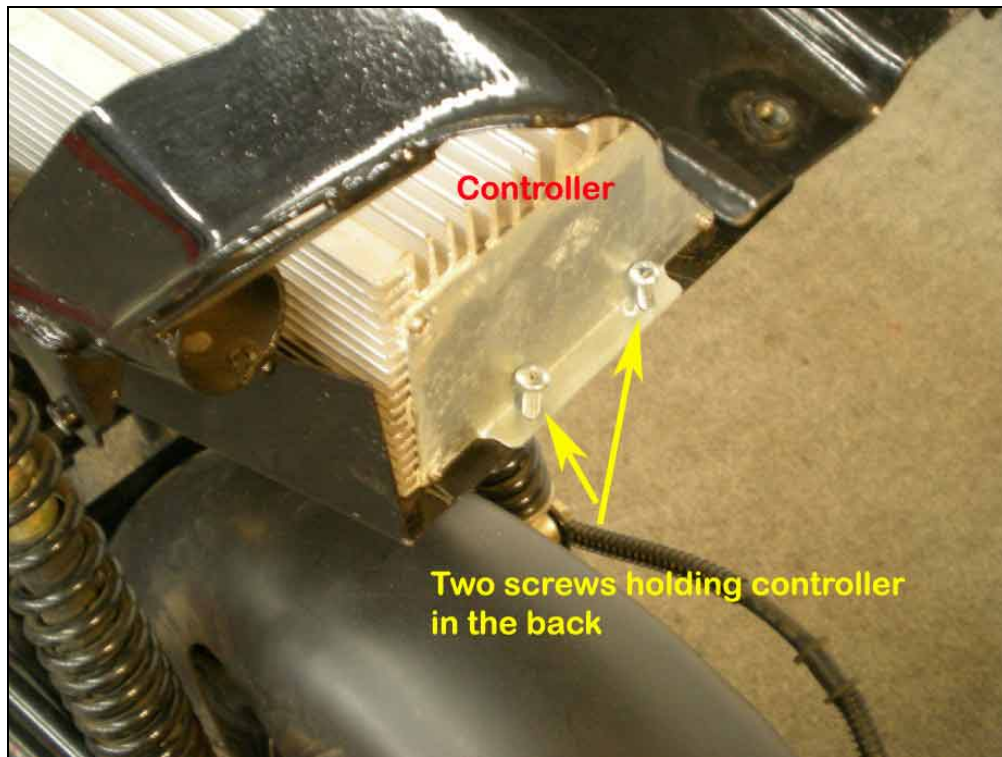
The main electrical board shown above has a plastic protective cover that snaps into place; you must remove it before loosening the wires that go to the controller.



Now you can proceed to disconnect all the wires that go to the controller. As shown in the picture there are four that go to the main board.

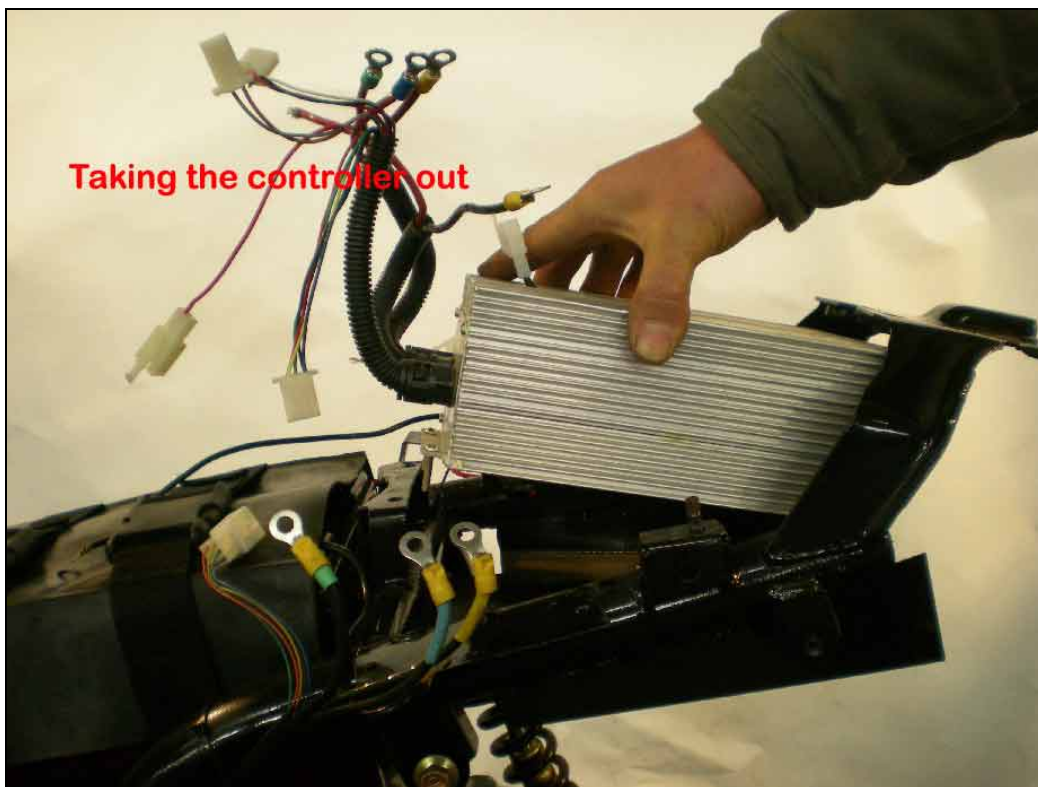
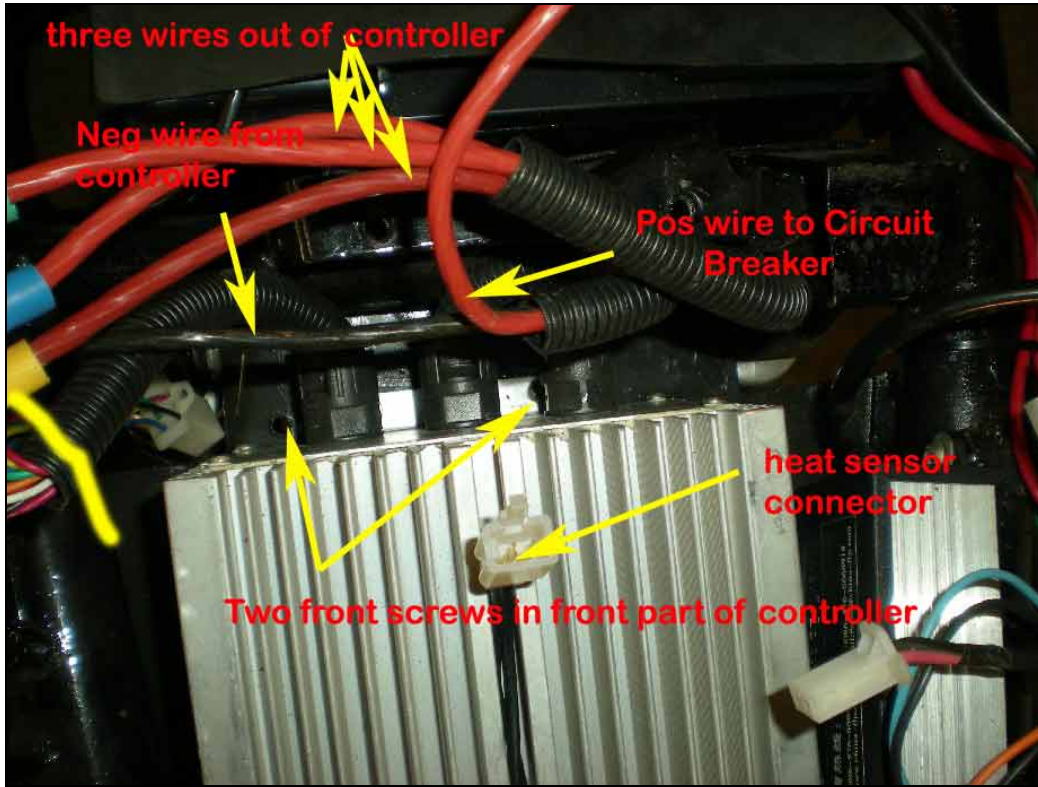


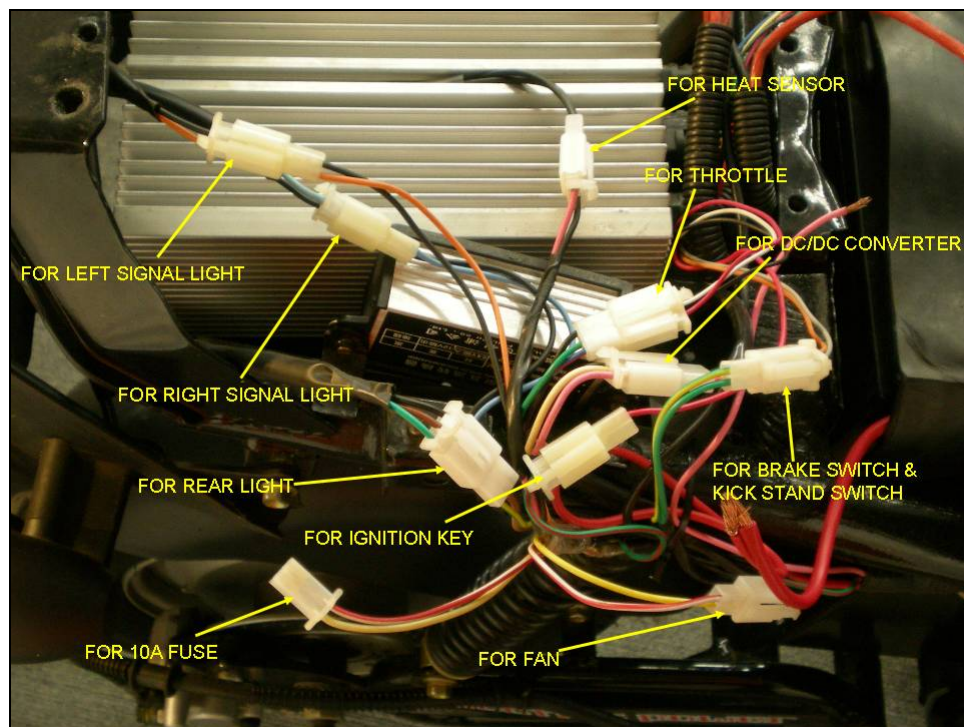
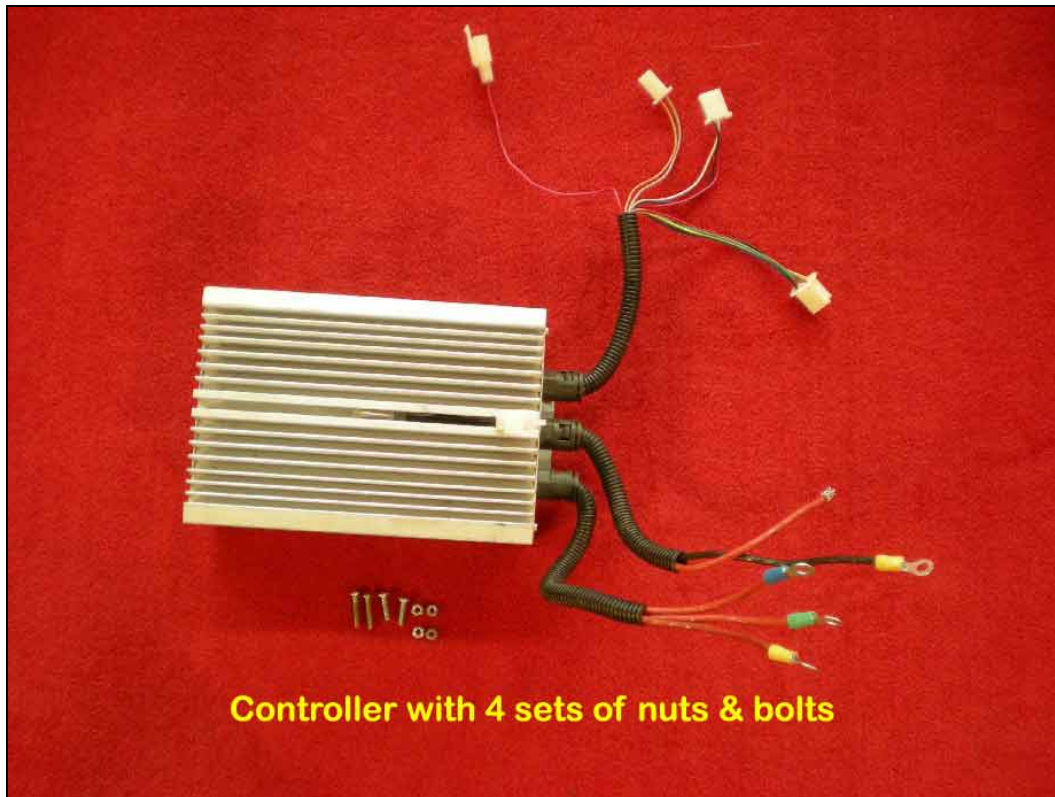
In addition there is a five pin connector.



Now you can remove the two screws holding the controller in the rear end of the bike.

And then move to the front and remove the two screws holding the front end of the controller. Then carefully remove the controller.





This picture shows all the connectors that either go to the controller or to other parts of the bike. Please refer to the PDF titled “Checking Controller Wires” for the functions of each controller wire.