Optibike M and R Series Motor Connector Replacement Procedure

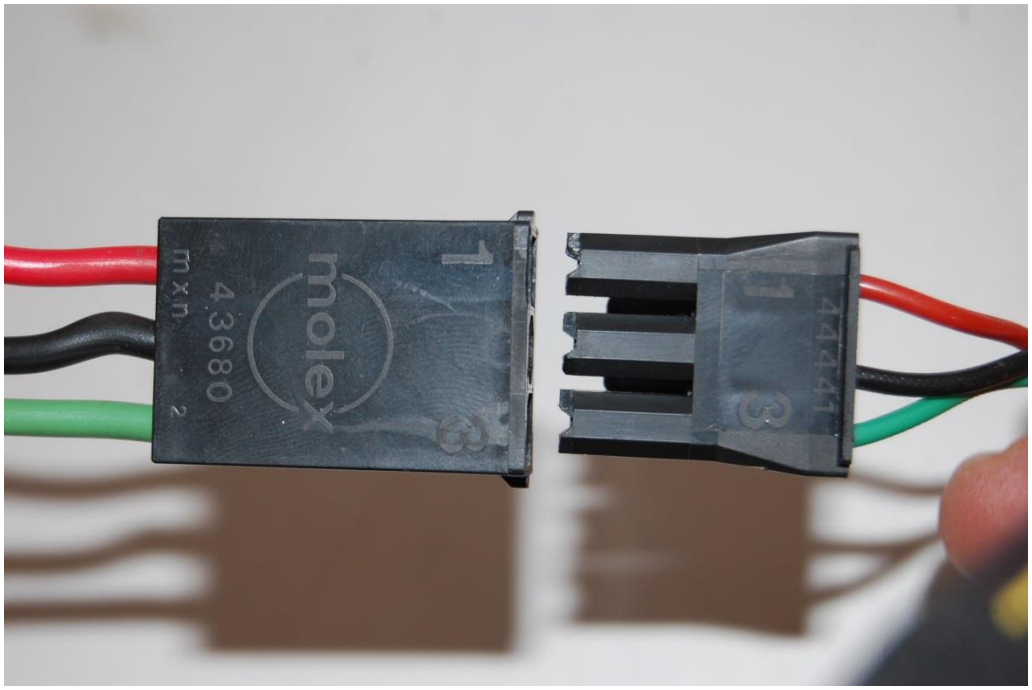
This is a field service procedure to change the large black power connectors on the Optibike Motor and its connection on driver board. This applies to all Optibike M and R series from 2007 onwards.

V1.0 November 1014

For additional assistance please call 303.443.093 or email: service@optibike.com

Disclaimer

- This procedure is intended do be done by a qualified technician, who is skilled in this type of work.



Applicable Parts

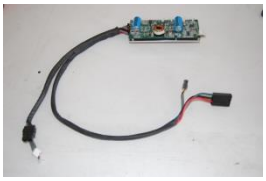
The Service Guide pertains to the Optibike R series motor and driver board for the large black Molex connector replacement.

The connections can both be replaced without removing the motor or driver board from the bike.

The Battery Bottom Cover must be removed to access the connectors.

Motorized Bottom Bracket

Connectors located under Battery Bottom Cover



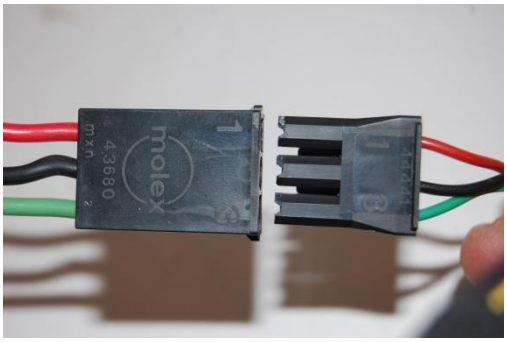
Driver Board

Tools Required

To crimp the connectors, Molex specifies a $250 crimp tool. Crimping can also be done with a needle nose plier or standard crimping tool. It is recommended to solder the connections in addition to crimping.

Needle Nose Plier
Side Cutter
Wire Cutter/Stripper

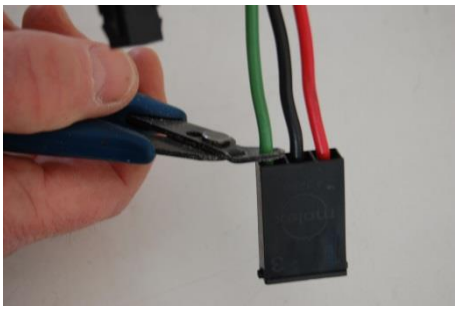
Solder Station with Solder



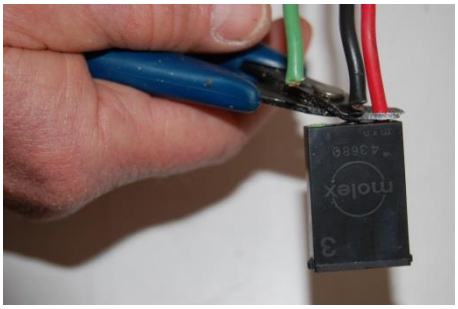
Motor Wire Connectors

Step 1: Cutting the Wire

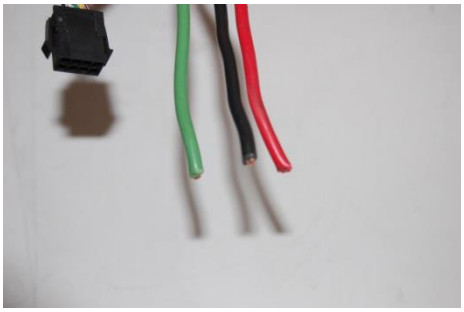
The first step is to cut the old wires. It is recommended to replace all connector pins at the same time on both the motor and driver board side.



Use the side cutter to cut the green wire as close to black plastic housing as possible.



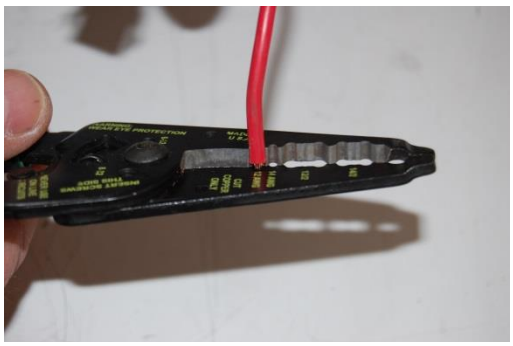
Use the side cutter to cut the black and red wires.



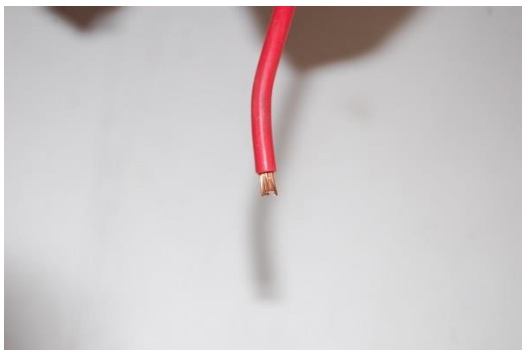
Wires cut and ready for stripping

Step 2: Stripping the Wire

The wires should be stripped with the wire stripper to a length of 4 mm or 5/32 inch.

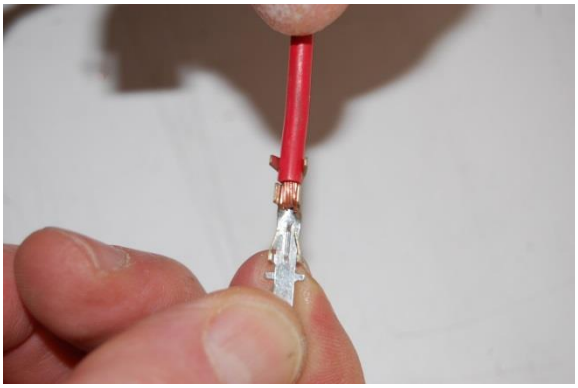


Use wire stripper to strip the wire end.

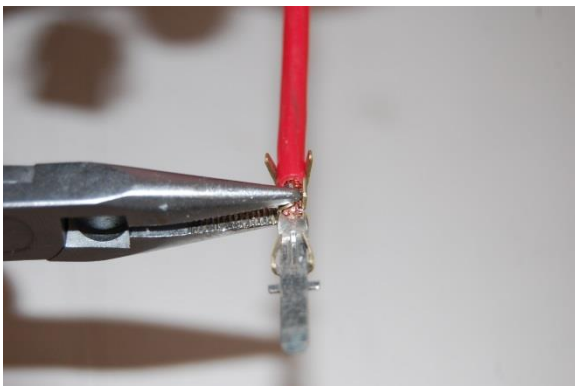


Stripped Wire. Repeat for Black and Green Wires

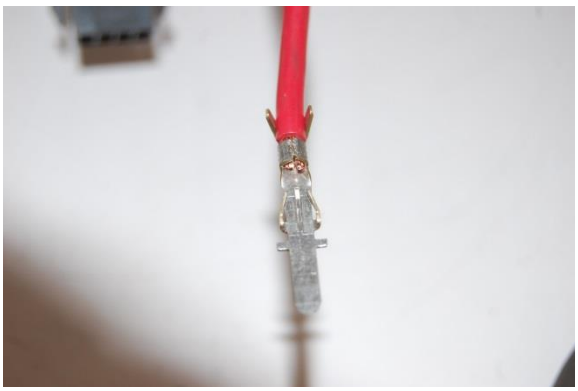
Step 3: Crimping the Wire (Part 1)



Place the connector pin under the wire.

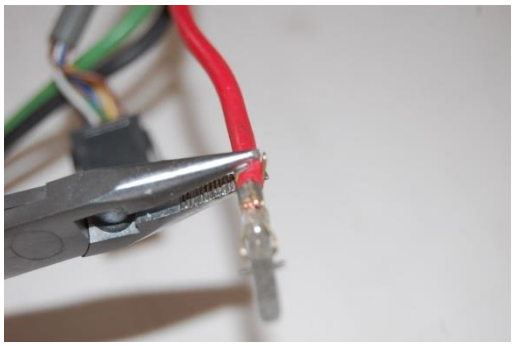


Use Needle Nose Plier to crimp the first side of pin around the stripped wire.

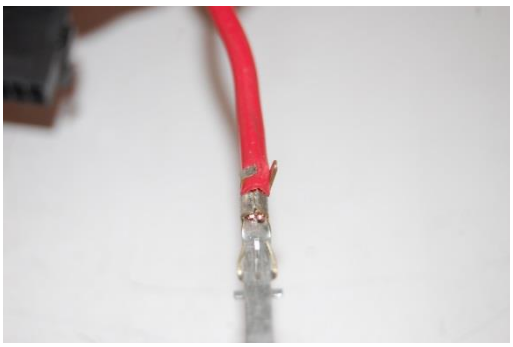


Crimp the opposite side (Note the rear crimps go around the plastic housing)

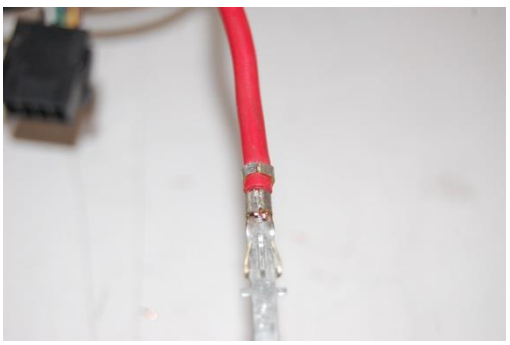
Step 3: Crimping the Wire (Part 2)



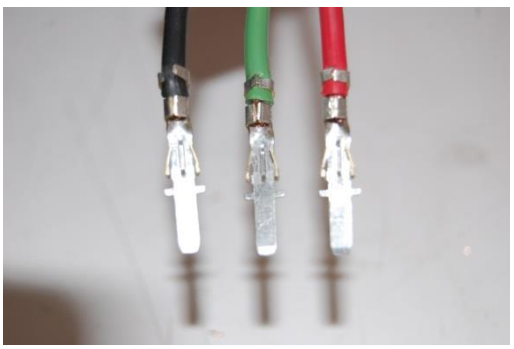
Now crimp the first side of the rear crimp over the plastic.



One side done



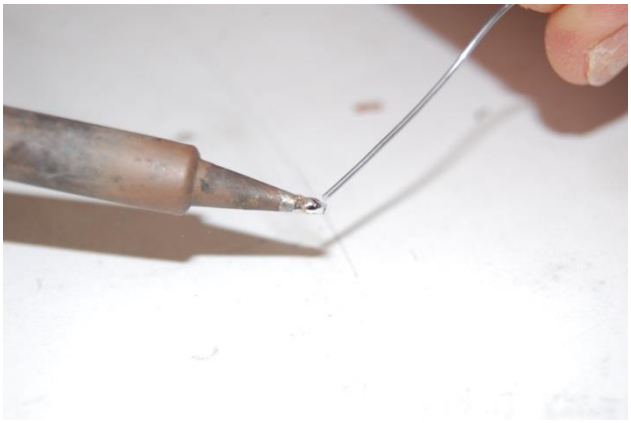
Crimp the opposite side



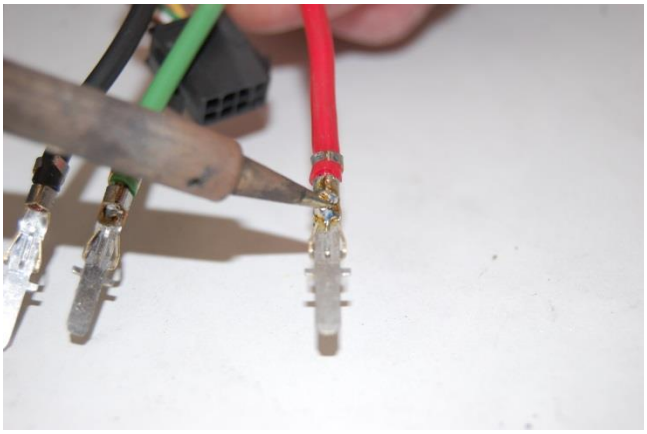
Repeat for the other 2 wires

Step 4: Soldering the Wire (Part 1)

Turn on the solder iron Let it warm up.

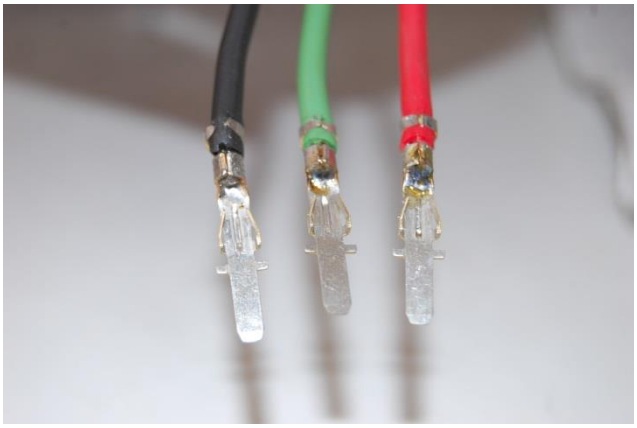


Clean the tip and melt some solder to it.



Hold the tip of the solder iron just at end of striped wire. Add solder as it begins to flow. Only let solder fill around stripped area.

Step 4: Soldering the Wire (Part 2)

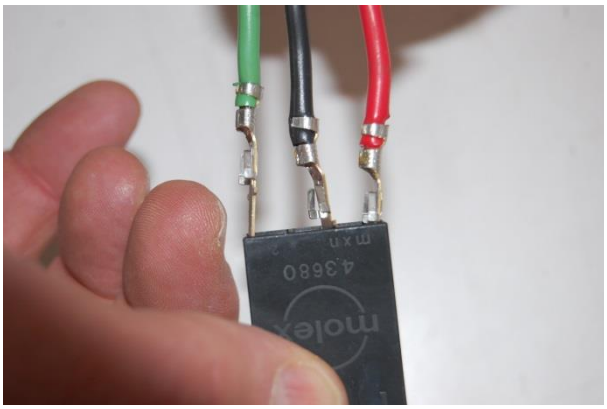


Repeat for other two wires.

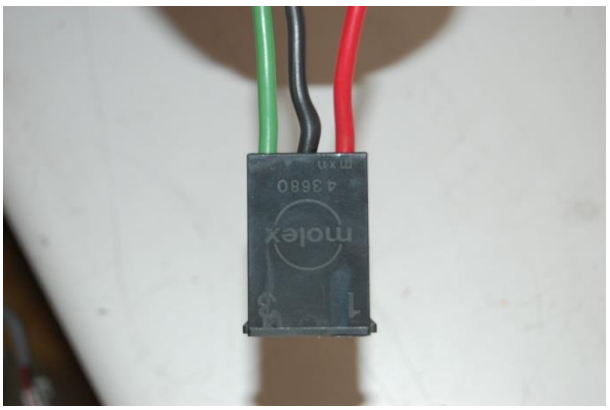
Hints:

1. Wait until the solder begins to flow before adding more.
2. Only a little solder is needed.
3. Keep solder on stripped wire area.
4. Do not melt the plastic wire housing.

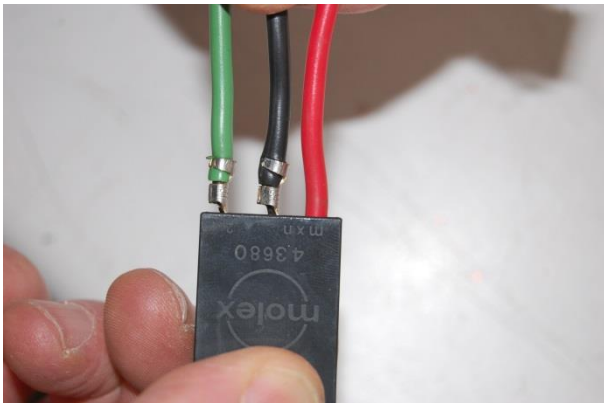
Step 5: Inserting the Pins into the Housing (Part 1)



Arrange the connectors in the housing entrance as shown.

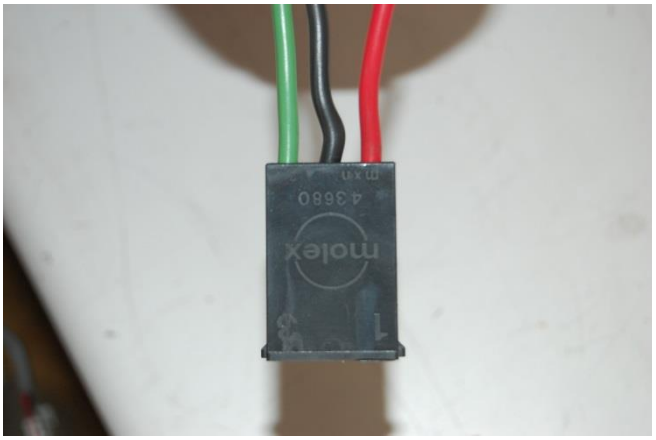


The housing is numbered. The red wire goes in slot #1, the green wire slot #3

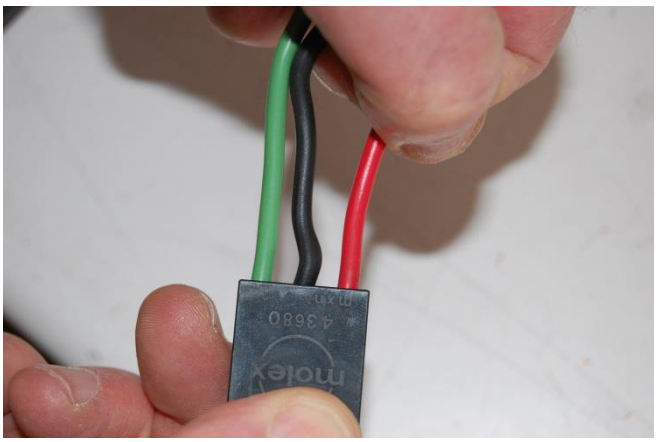


Push the pin into the housing. It should go in easily and then lock.

Step 5: Inserting the Pins into the Housing (Part 2)



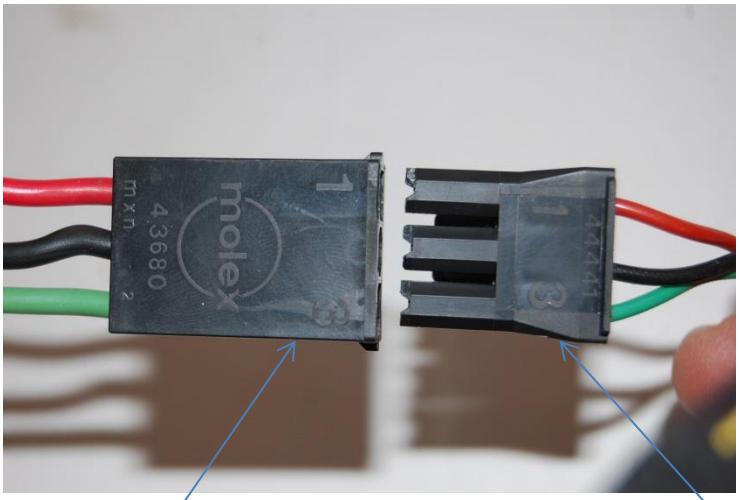
All the pins in the housing



Check the pins are snapped into the housing by doing a pull test on each wire.

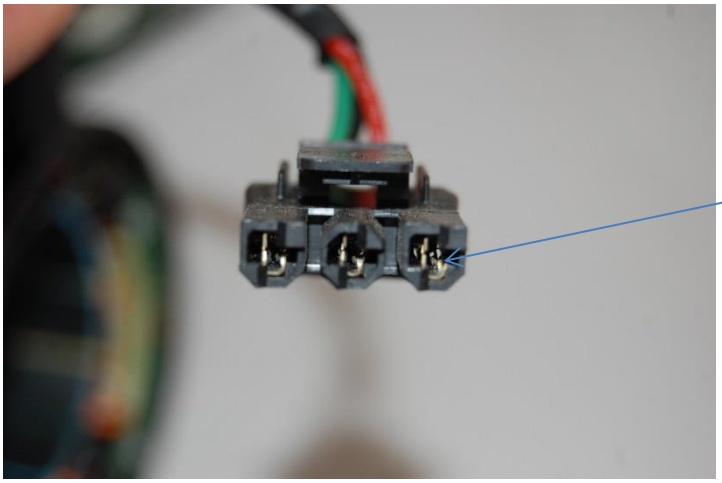
Step 6: Check it

Check that the wires are all inserted as in the picture.
The wire colors should match on each side.



Driver Board Connector

Motor Connector



Check that the female pins are close together so they form a tight contact on the male pin. If they are too wide, they can be pushed together with a small screw driver.