



## **Repair Guide** V2.2

## INTRODUCTION

Here are quick instructions of how to disassemble the ZIPmow machine to make internal repairs. This includes replacing motors, replacing the main board, and resetting the board to use with a new Remote Control.

## INITIAL STEPS

- Wear protective gloves.
- Use an electric drill if available. You will need small, medium and large Phillips head bits.
- Place the ZIPmow upside down on your workbench.

## REMOVE BLADES

- Place the 3 blade covers onto the blades.
- With a large Phillips, remove the 2 screws from each blade and slide each blade off.



## REMOVE DRIVE WHEELS

- Pull off the yellow hub caps from the back wheels.
- With a large Phillips, loosen the 3 screws and pull off each of the back wheels.

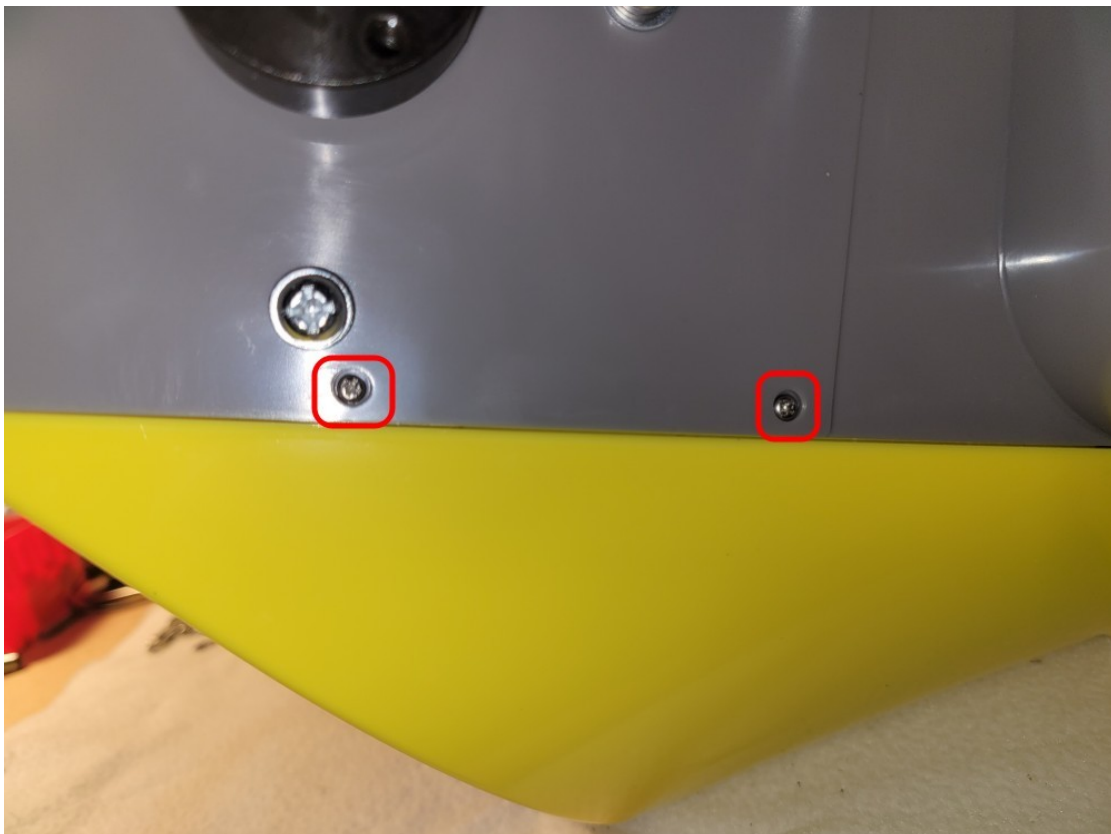
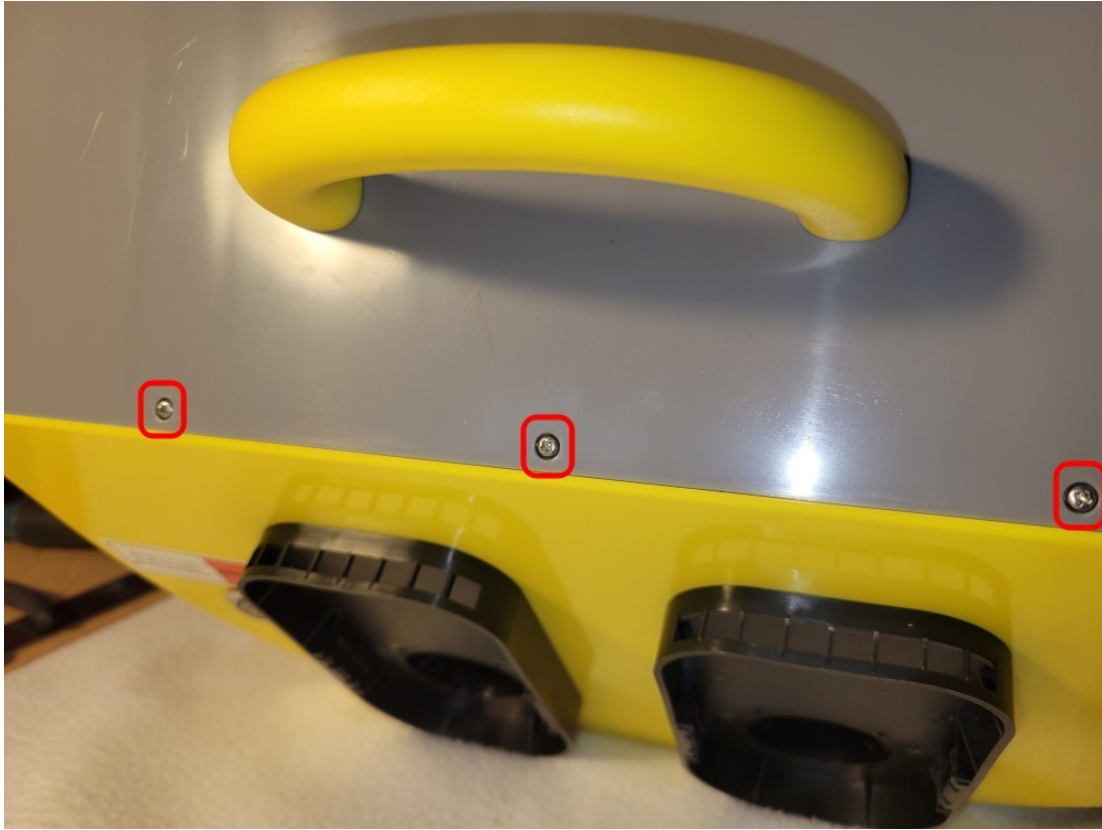
This is required for access to all body screws. It also makes it safe to test without the mower rolling off the workbench.



## REMOVE BODY SCREWS

There are a total of 15 screws mounting the top cover to the cutting deck. There are 7 tiny screws around the back.

There are 8 small screws under the cutting deck. Please notice they are of different lengths.

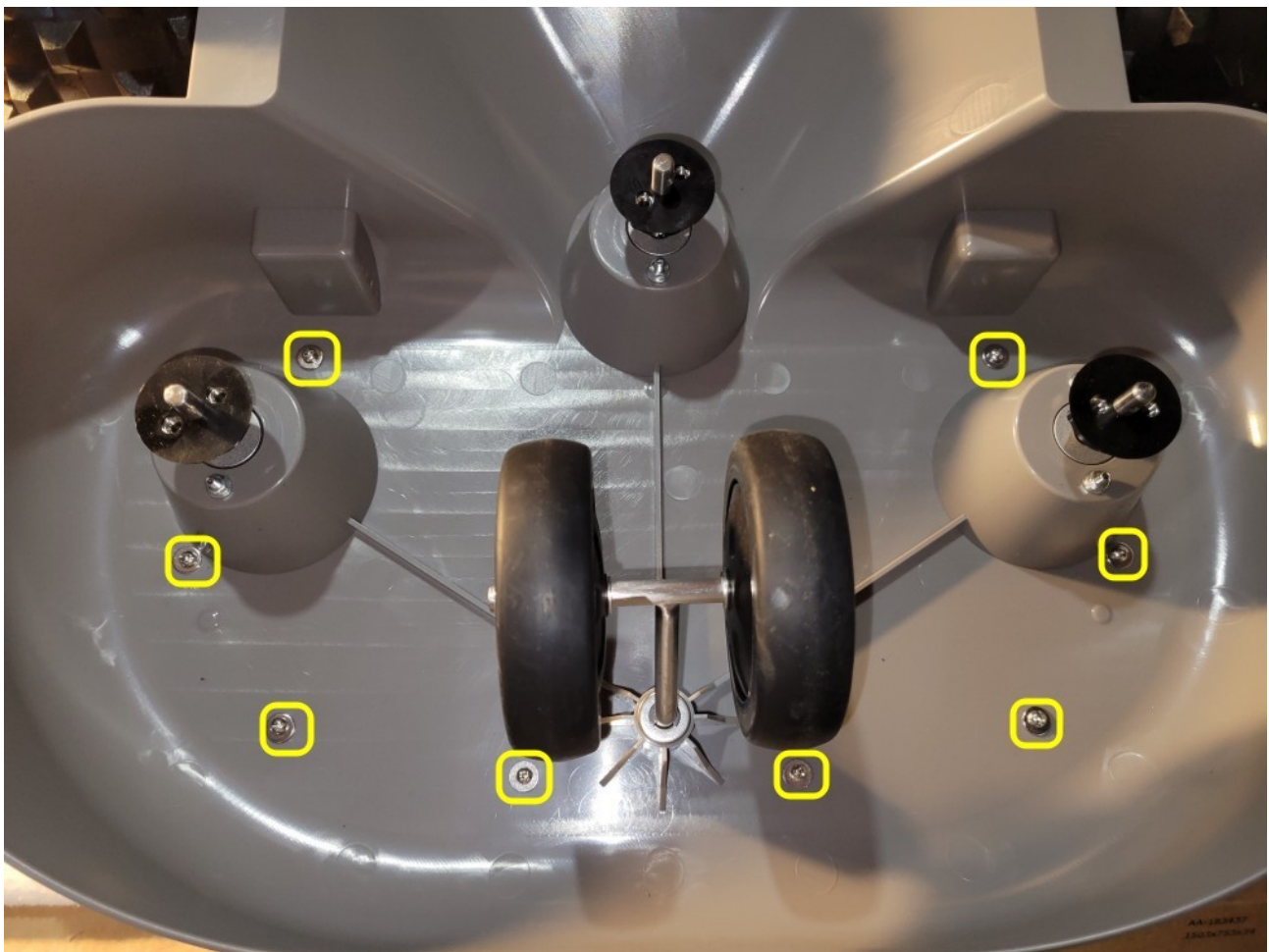


- With a small Phillips, remove the 7 tiny screws around the sides and back of the mower.

- With a medium Phillips screwdriver, remove the 8 small screws under the cutting deck. There are 3 lengths of screws that need to go back into the same location.

- 2 short screws in the front row.
- 2 medium screws next row.
- 4 long screws in the last 2 rows.

You must keep track of these screw sizes for when you re-assemble the machine.



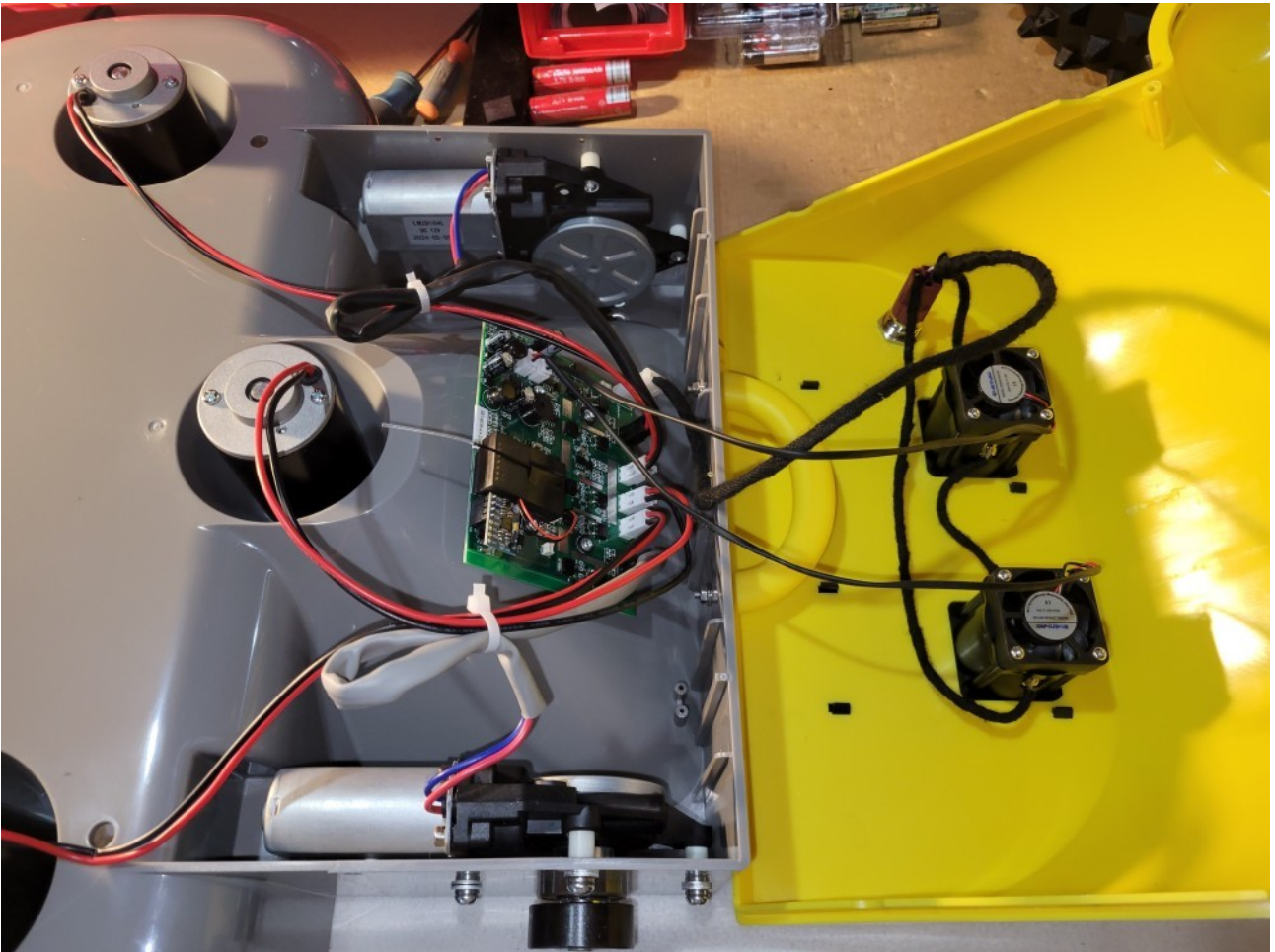
- Also, please clean the plastic pieces stuck in the screw threads before re-installing the screws.



## REMOVING THE TOP COVER

Now that all screws are removed, you need to carefully lift the top cover.

- HOLD the top cover ON while flipping the machine upright and facing to the left.
- Carefully lift the top cover from the front and flip it over to the right as shown below.

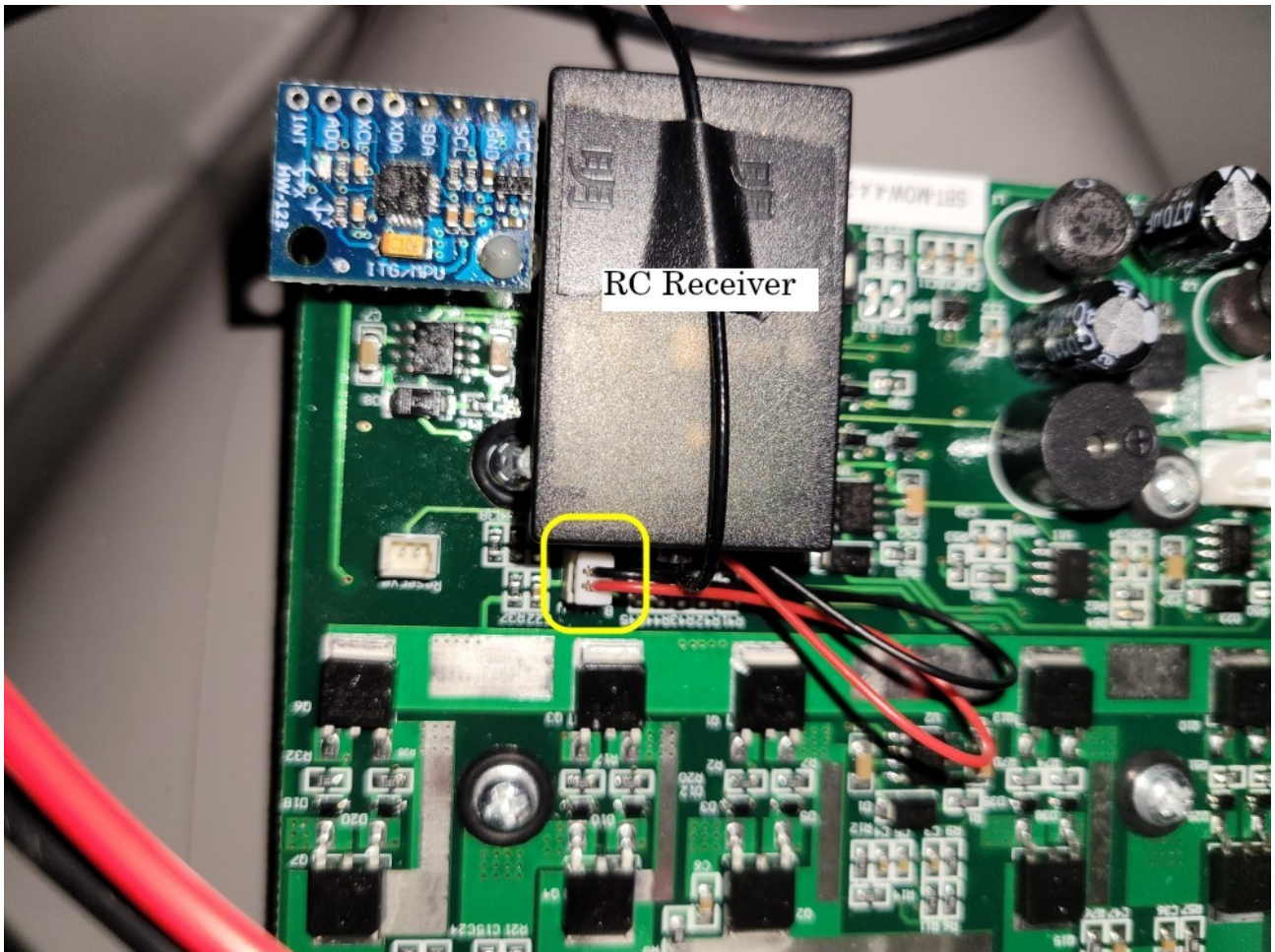


Now you can proceed with the necessary repairs.

## RC RECEIVER REPLACEMENT

You may need to replace the RC receiver unit. This is the small, black module with a small antenna wire. Another small red/black power wire is plugged into the main board.

- Remove the small red/black power wire connector from the board next to the receiver.
- Pull up on the RC receiver while rocking side to side to remove the receiver unit.



## REPLACING THE HANDHELD REMOTE CONTROL

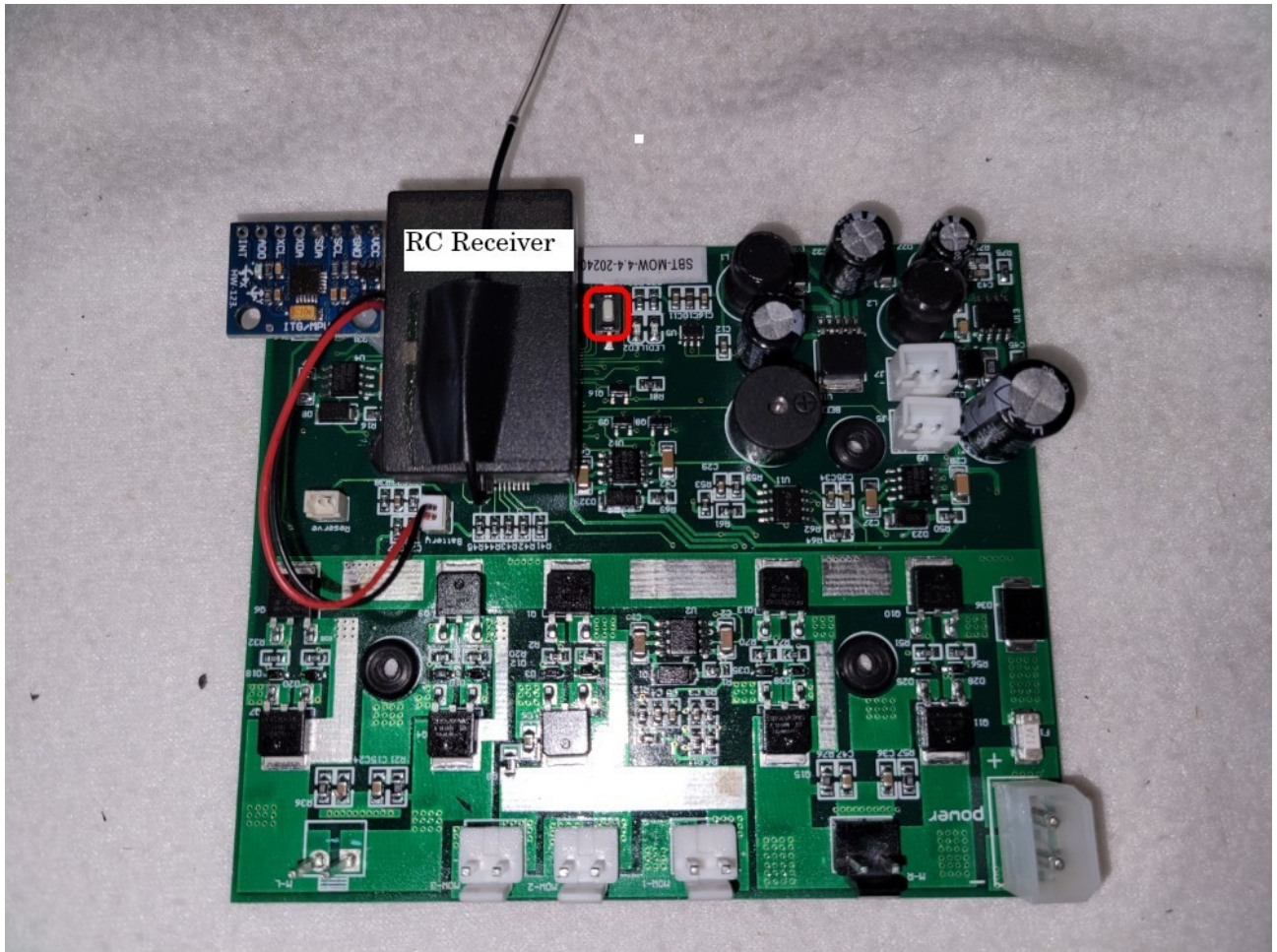
If you need to change to a new Handheld Remote Control, you need to do a process called 'PAIRING'. This allows the new Remote Control to talk to the ZIPmow. There is a small button on the main board that needs to be pressed during this process.

Now that you have the body opened up, here are the steps to get your new Remote Control working:

- First make sure that you have removed the blades and back wheels from the previous steps.
- With the top cover closed on top, place the 2, 18V batteries into the ZIPmow and turn it on.
- Carefully open up the cover and set it upside down behind the main body.
- Turn on the RC remote control.
- As in the photo below, the top number is the RC Remote Control voltage and it should be around 6V. The bottom number is the RC Receiver and it should be 00.0V.



- Now look at the main board pictured below and PRESS the SMALL WHITE BUTTON next to the RC Receiver (circled in red).



- Next, back on the Remote Control, press the MATCH button. The bottom number should now show a voltage of 32V to 38V.

- Test the mower wheels and blades operate from the Remote Control.

- Now shut everything off and remove the mower batteries.

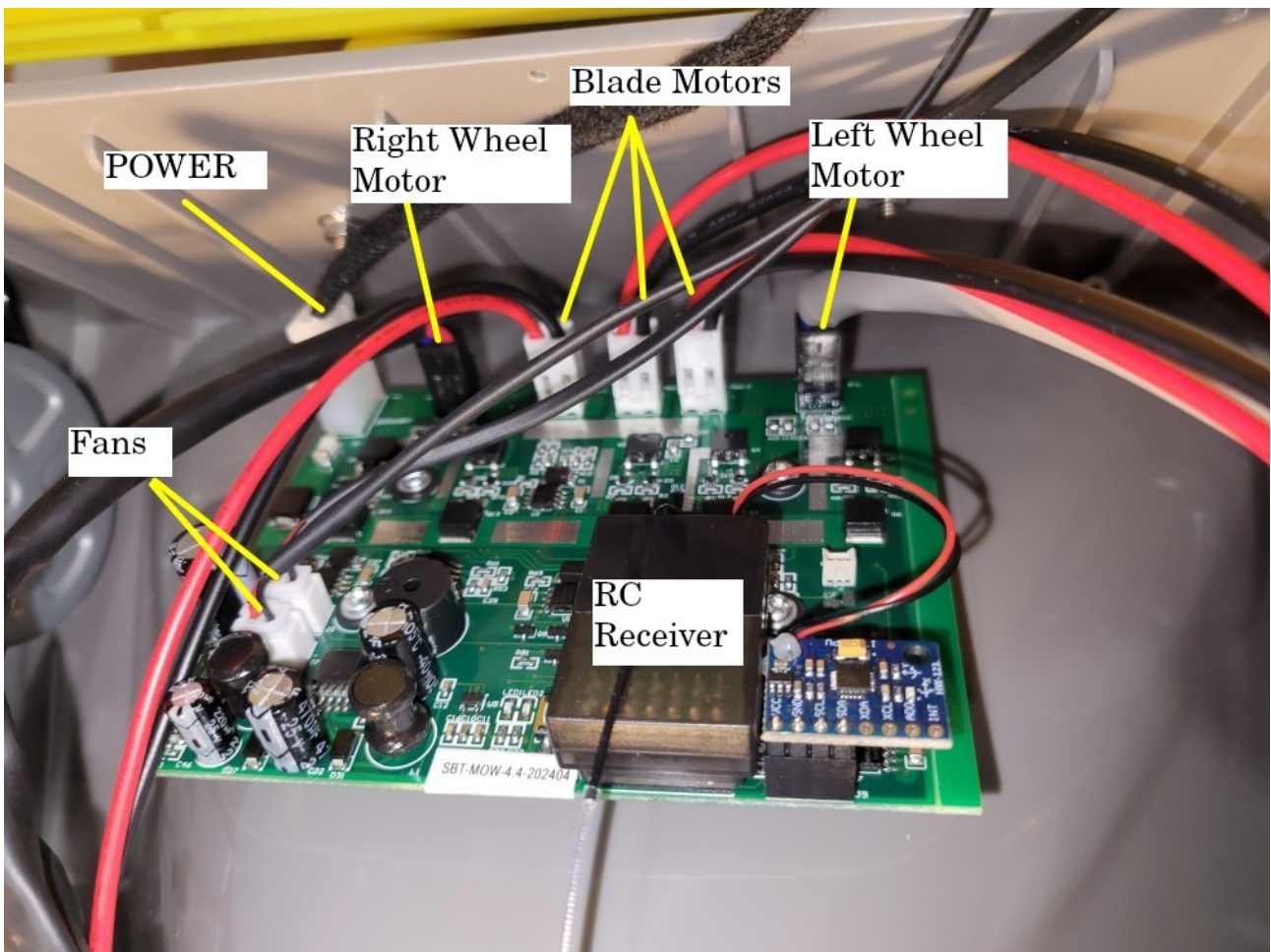
- Put the machine back together following the instructions in reverse order.



## BOARD REPLACEMENT

There are 8 wire connectors from the board to the mower.

- Remove the 1 power connector at the back by firmly pulling and rocking side to side. This can be quite tight. You should wiggle it back and forth.
- Remove the 2 fan connectors by gently pulling them while rocking side to side.
- Remove the 5 motor connectors at the back by squeezing the back clip and pulling up. Take notice of their



- Remove the 4 small Phillips screws that connect the board to the mower main body and lift the board out.

Based on instructions from ZIPmow Support, you may need to transfer the current RC receiver to the new board or a new receiver may already be on the board.

- Attach the replacement board with the 4 screws and reconnect all wires as shown in the photo above.

## DUAL FRONT WHEEL REPLACEMENT

Replacing or just reattaching the dual front wheel is a simple process. The key components are 2 E-clips that keep the wheel axle connected to the mower body.



There are special tools available to install this clip, but they are not necessary. Since most customers do not have this tool, the instructions show the use of standard tools.

You should have the following parts:

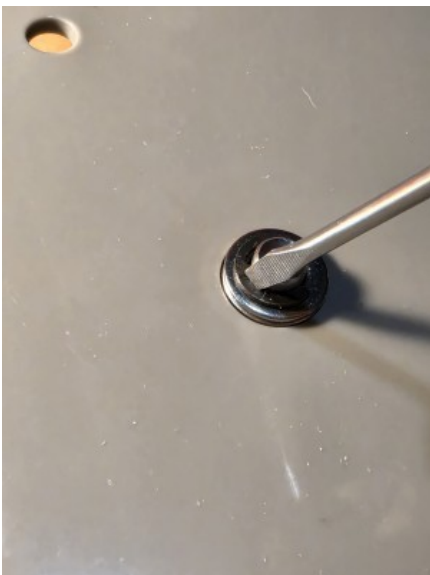
- 2 E-clips
- 1 large washer (20 mm)
- 3 medium washers (16mm)

Some ZIPmows may have 2 large washers and 2 medium washers. That's OK. Always put the large washers on the bottom and the small ones on the top.

### Remove the Current Front Wheel

At this point it is assumed that you have the top cover removed.

- Use a small flat head screwdriver to pry the E-clip off of the top of the axle. Be careful that the clip does not fly off and get lost.



- Once the top E-clip is removed, pull the front wheel out from the bottom. You now have the following parts. A large washer is on the bottom, and 3 medium washers have been removed from the top.



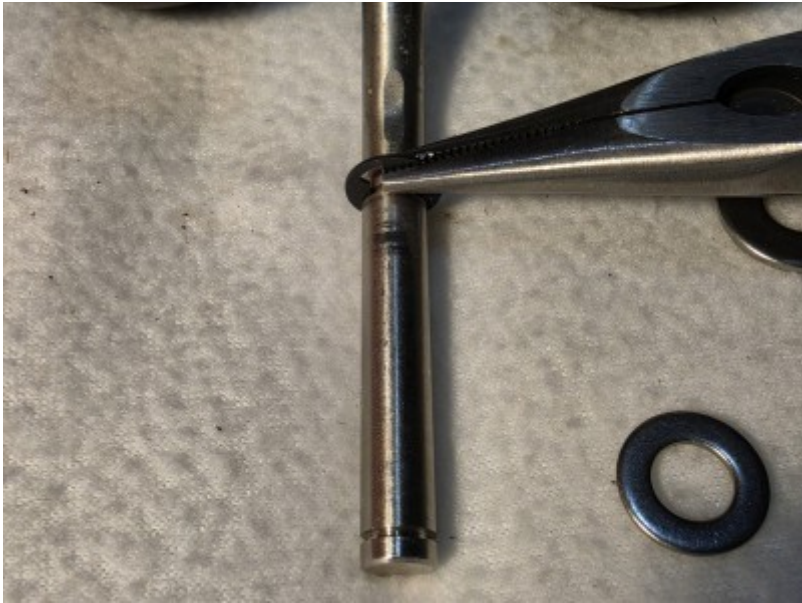
- Now you may replace the bottom E-clip.



At this point you should have the following parts. As was mentioned, you may have 2 large and 2 medium washers.



- Now insert the bottom E-clip into the bottom slot on the wheel shaft.



- Snap the E-clip onto the shaft with pliers as shown.



- Once the E-clip is attached you can slide on the 1 or 2 large washers.



- Insert the wheel shaft with the washer(s) into the bottom of the body.



Now set the mower upright and see the wheel shaft top. Here are all the parts the need to go on top.



The space under the slot in the shaft needs to be filled up with the washers.



- Insert the washers up to the slot location. The smaller the space between the top washer and the slot, the better. Too much space will allow the front wheel to rattle.



The last part to go on is the top E-clip.



- Line up the E-clip with the slot and use pliers to snap it on as shown.



The front wheel is now securely installed.



## WHEEL MOTOR REPLACEMENT

First you must follow the directions at the beginning of this document to remove the blades and back wheels. This is required for access to all body screws. It also makes it safe to test without the mower rolling off the workbench.



Continue following the directions through the section "Opening Up the Case".

Now that you have the mower ready, you can replace the wheel motor.

- First, remove the mount hub screw with a 5mm Allen wrench.

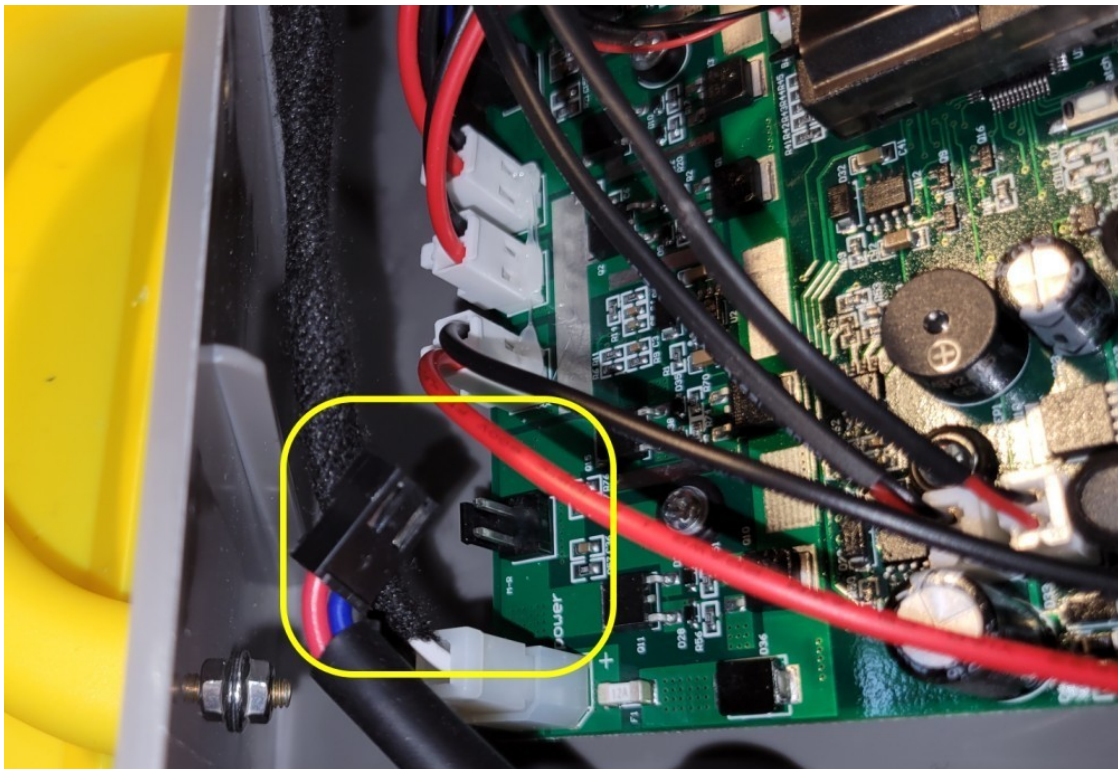


- Then remove the mount hub.

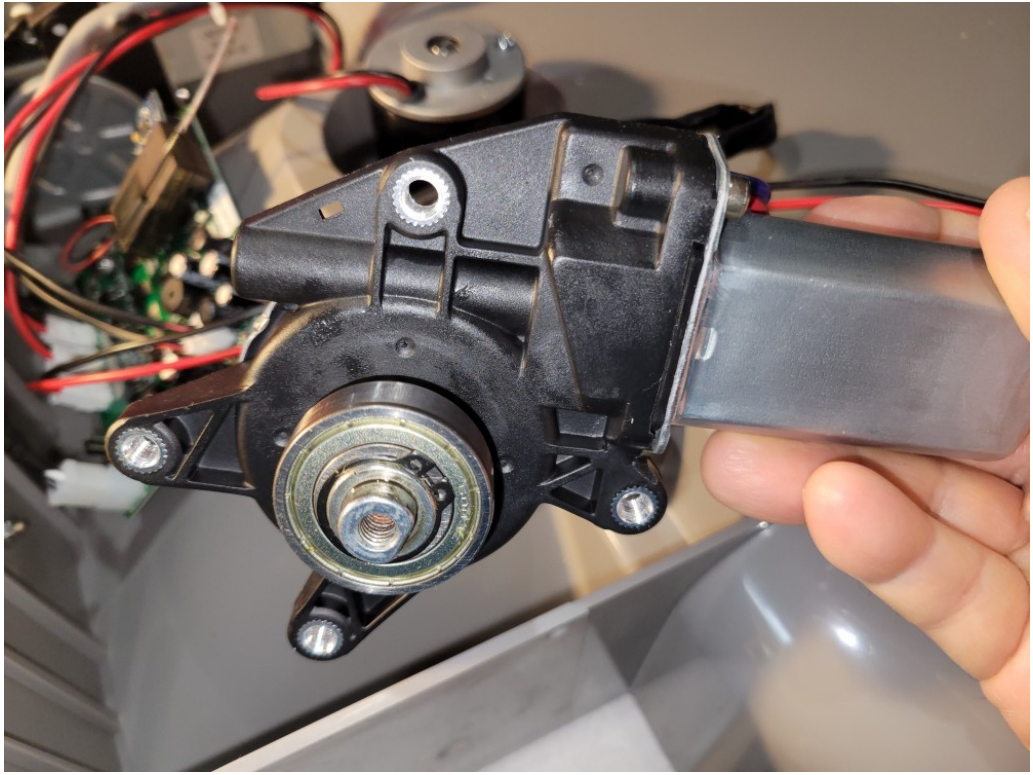
- Now remove the 4 Phillips screws for the motor you are replacing.



- Remove the motor wire from the main board by squeezing the clip on the back of the plug and pulling it off.



- Now remove the old motor from the mower.



The screws have plastic spacers that may fall into the body.

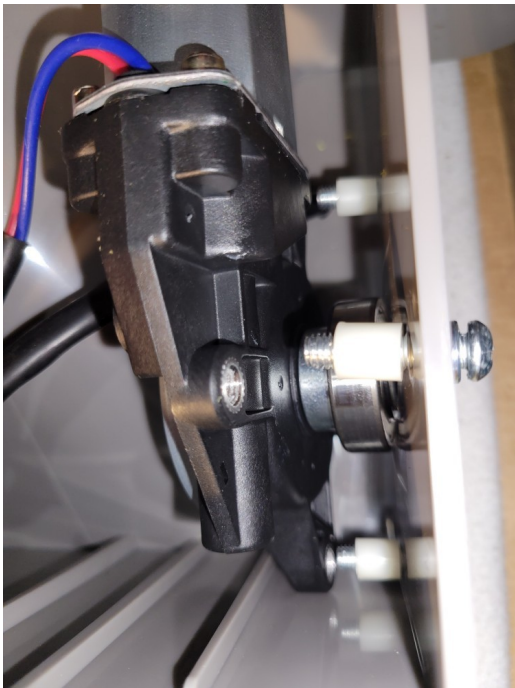


- Insert the 4 screws back through the body and slide on the white spacers as shown.

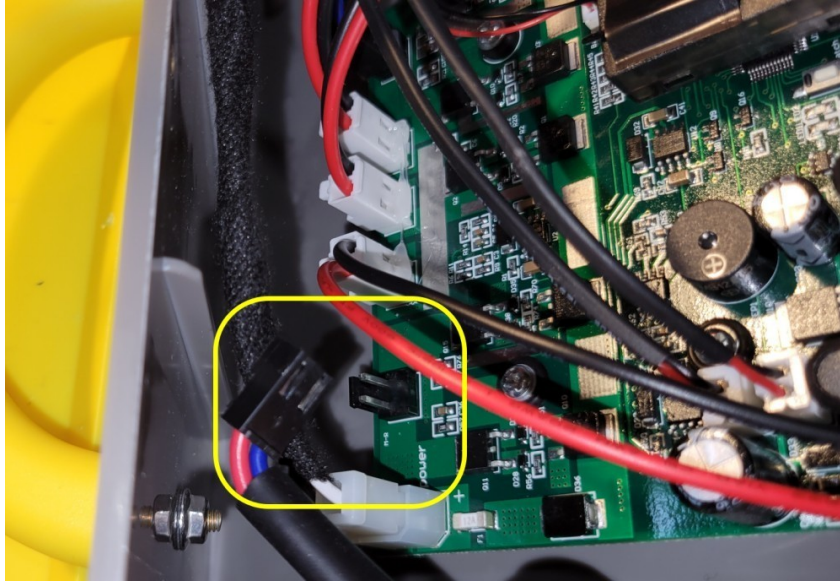


- Now, line up the main bearing and 4 screws and start turning the screws by hand to get them started.

- Once all screws are hand tight, re-tighten them **firmly** with a screwdriver.



- Re-attach the motor wire plug to the board.



- Re-attach the mount hub **firmly** to the motor.



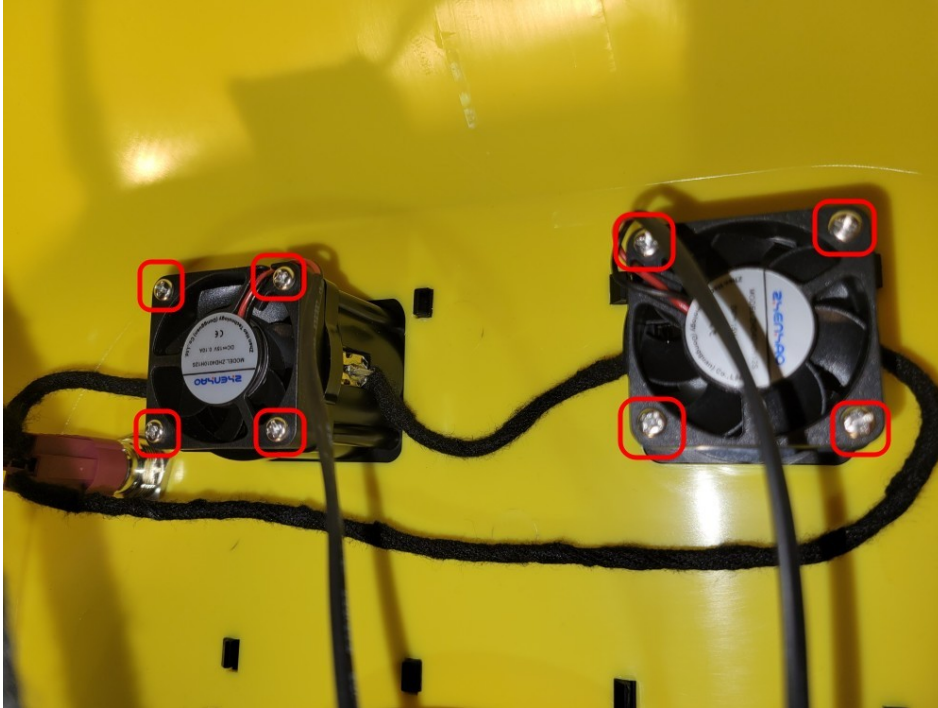
- Re-attach the wheel **firmly** to the mount hub. Then the hub cap.



- Now, before closing up the main body, you need to test the operation of all motors.
- Also, before closing up the main body, you should check the fans following the directions in the “Fan Correction” section above.
- See the “Remove Body Screws” section above to understand how to re-attach the body screws. **There are 4 different size screws.**

## FAN CORRECTION

There was an assembly error on some ZIPmow machines where the fans were installed backwards. This is a simple fix when you have the machine opened up. The labels should be facing OUT. The photo below shows a pair of fans facing the WRONG way.



- Remove the 4 Phillips screws in each fan and flip them over to face the label to the outside. They should now look like the photo below. Note the position of the connector wires.

