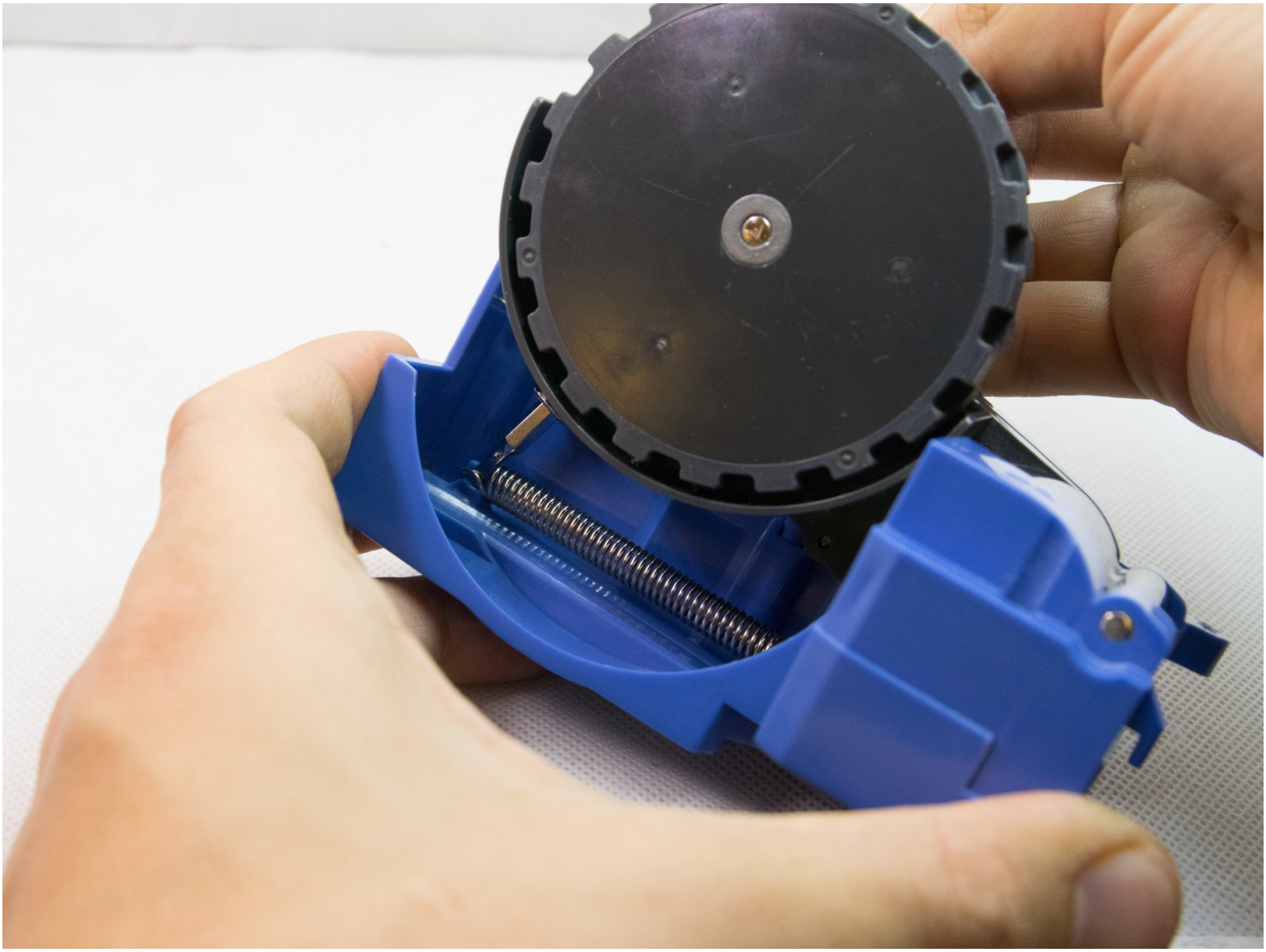
Roomba 650 wheel module Disassembly

Quick guide on how to completely disassemble iRobot's Roomba 650 wheel module in order to clean all the internal dust buildup.

Written By: Nuno Covas



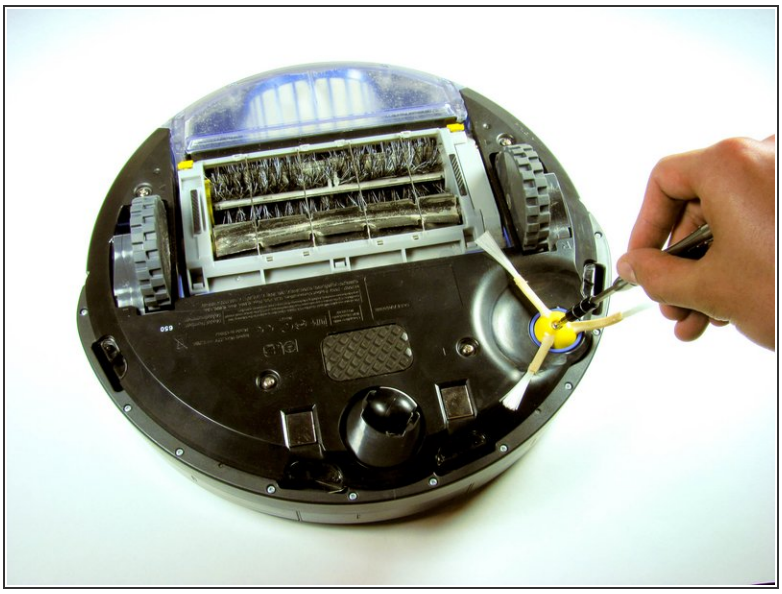
INTRODUCTION

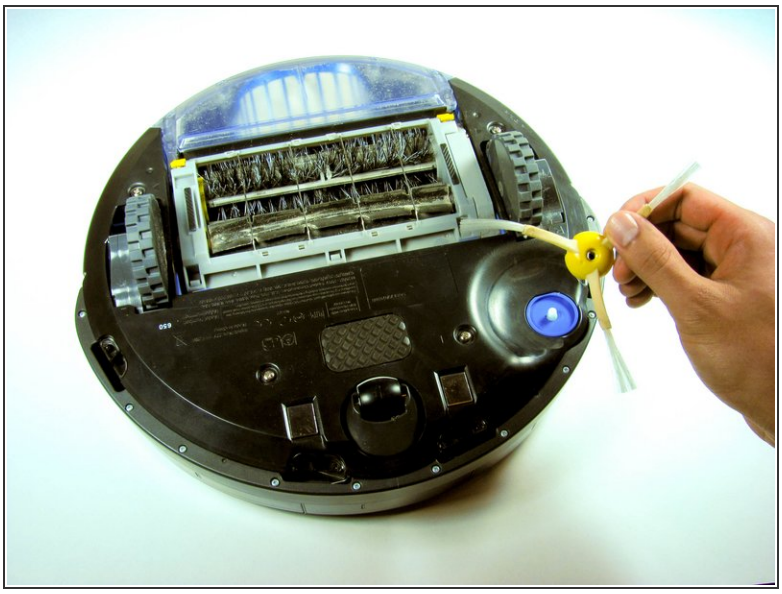
Quick guide on how to completely disassemble iRobot's Roomba 650 wheel module in order to clean all the internal dust/fiber buildup. The module was not designed to be easily cleaned. This guide involves some force and possibly even damaging the wheel housing

TOOLS:

- Phillips #0 Screwdriver (1)
- Phillips #00 Screwdriver (1)
- Phillips #2 Screwdriver (1)
- Large Needle Nose Pliers (1)
- Flathead Screwdriver (1)

Step 1 — Removing the Side Brush





- With the Roomba upside down and turned off, use the Phillip's 02 screwdriver to remove the one 3.5 mm screw from the center of the side-brush.
- Set the screw aside and pull the brush out.

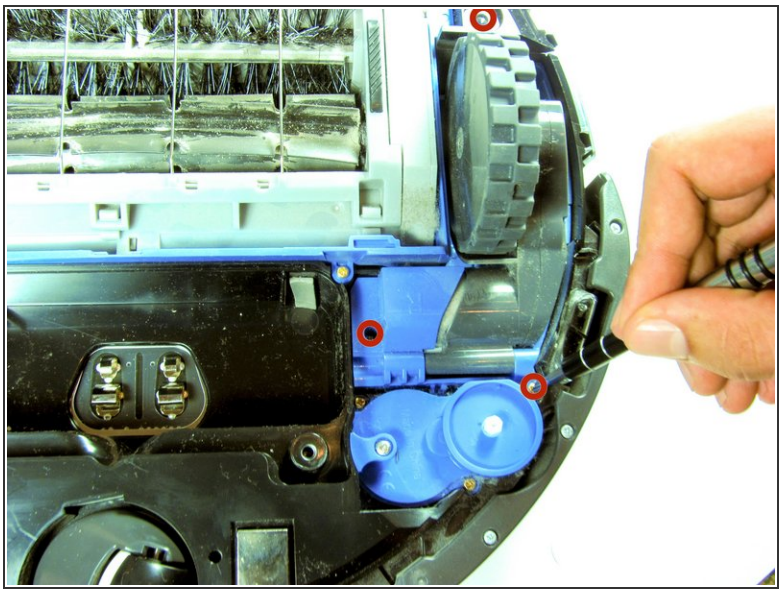
Step 2 — Bottom Panel Removal

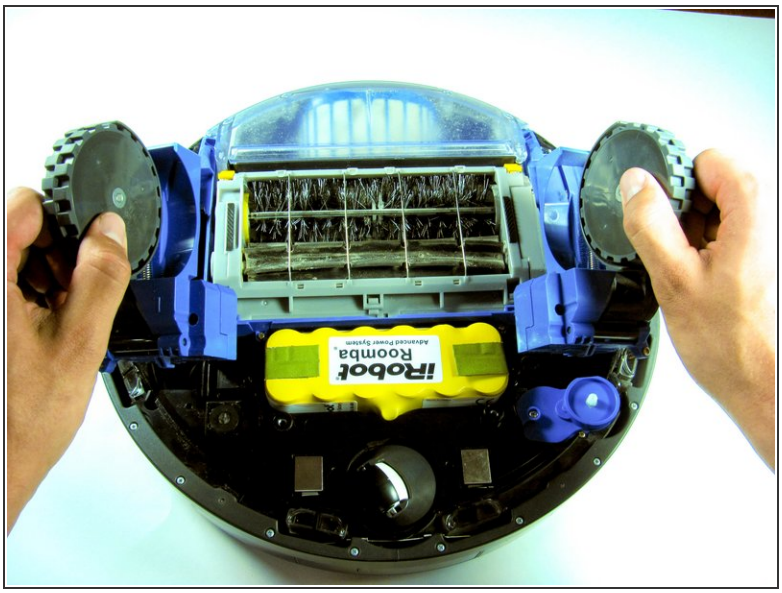
- Unscrew the four screws that hold the bottom panel using the Phillips 02 screwdriver.

The screws will not come out of the bottom panel. They were designed to become loose but not be removed. This prevents you from losing them, and prevents the Roomba from sucking them up if they came out during cleaning.

- Once you are sure that all the screws have been loosened as much as possible, then lift the bottom panel up off the Roomba.

Step 3 — Main Wheels



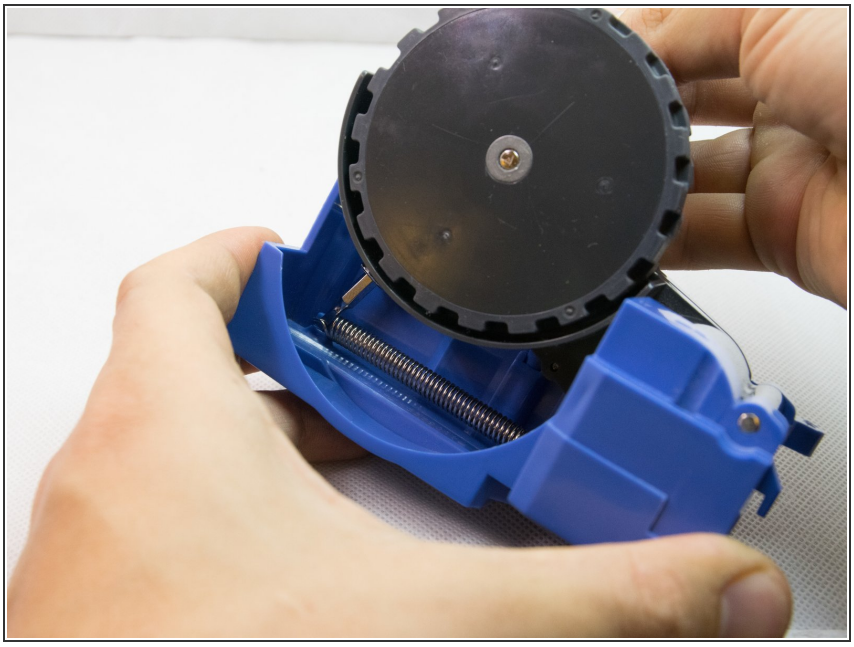


- Unscrew the six 12mm screws holding the side wheels on using a Phillips 00 screwdriver. There should be 3 on each side.

The screws do not come all the way out.

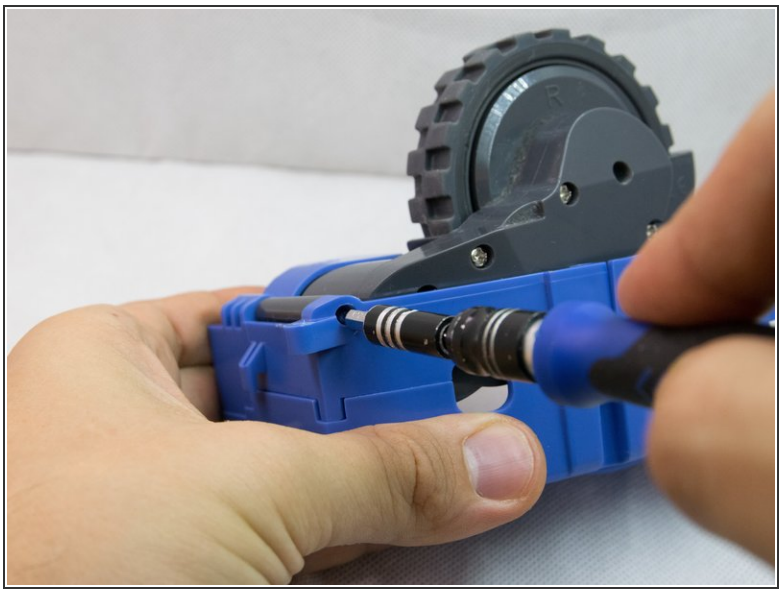
- Remove the wheels by pulling them out.

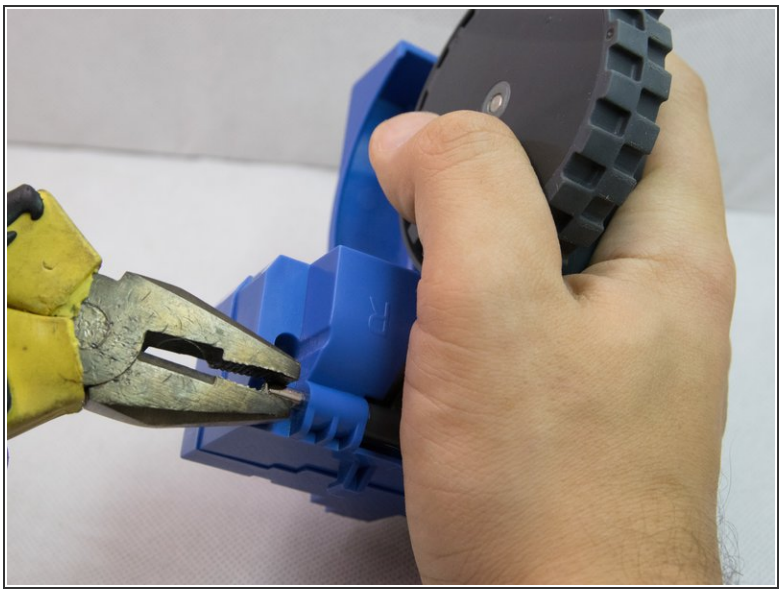
Step 4 — Spring



- Remove the shock spring to keep the wheel from jumping off when you remove the bolts

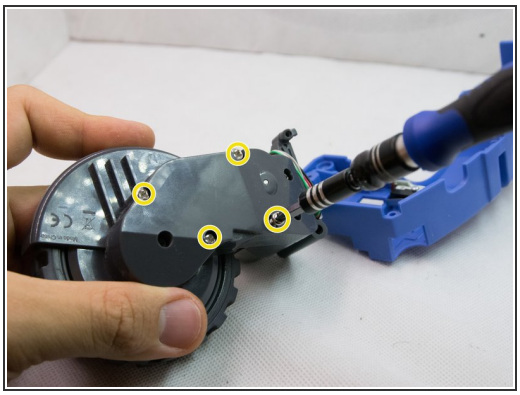
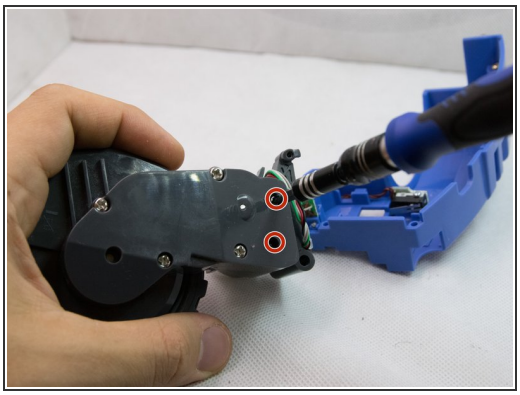
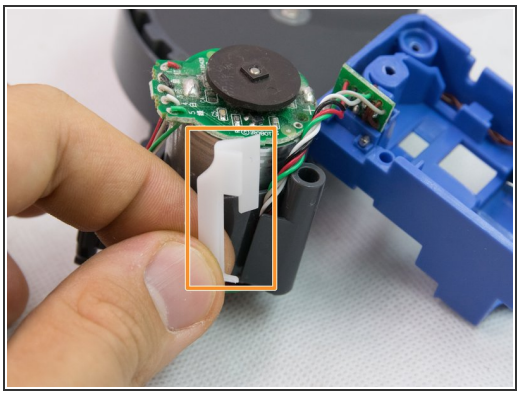
Step 5 — Suspension





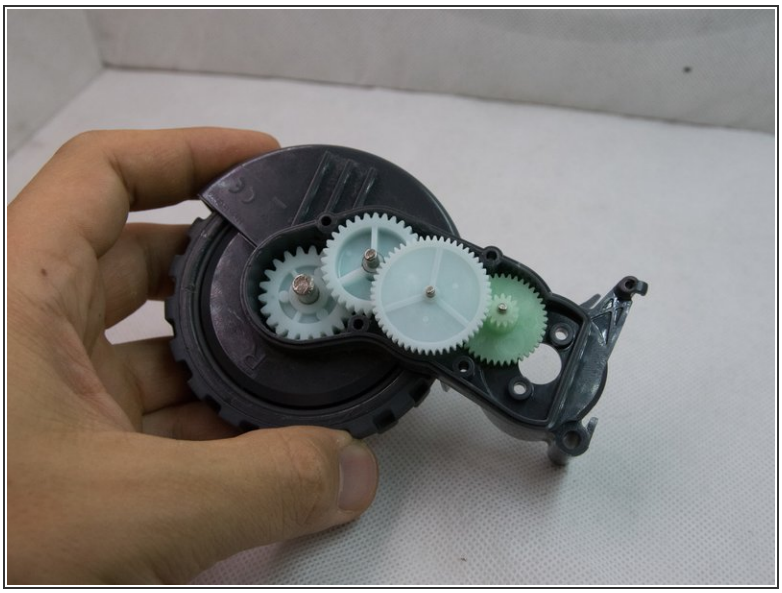
- Push the pin that acts as the pivot point for the suspension. I got away with just pushing with a screwdriver
- Use pliers to pull from the other end to remove the pin completely
- Unscrew all the remaining bolts

Step 6 — Take the gear housing apart

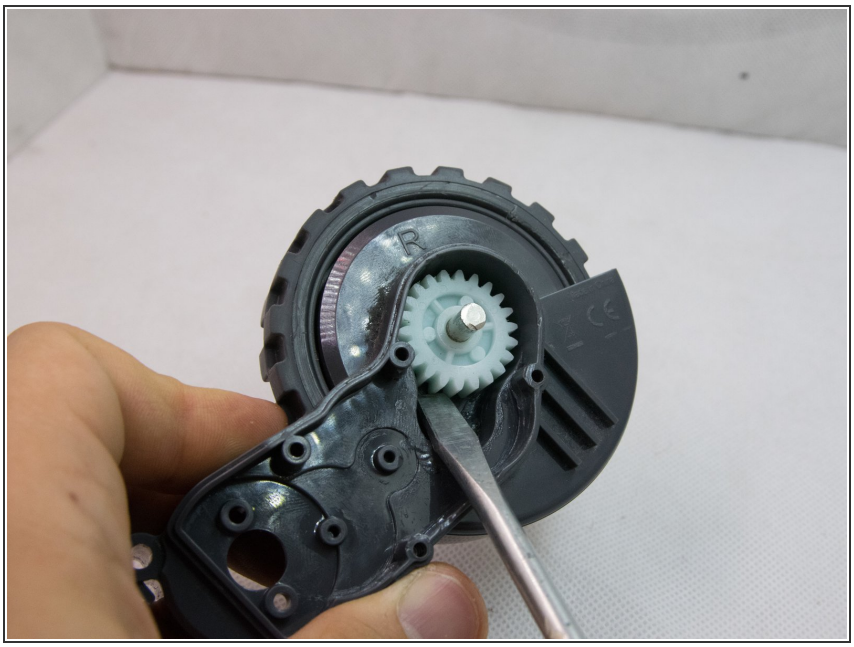
- Unscrew the housing bolts
- Unscrew the two bolts that keep the motor in place
- Remove the plastic stopper that keeps the motor wires in place
- You should be able to take the motor out now

Step 7 — Inside the gear mechanism




- With the motor out of the equation, try to move the wheel. If it's still stuck, than the problem is most likely the fibre buildup inside the wheel housing - as expected
- All the gears should slide right off. Except the last one - the one that actually drives the wheel.

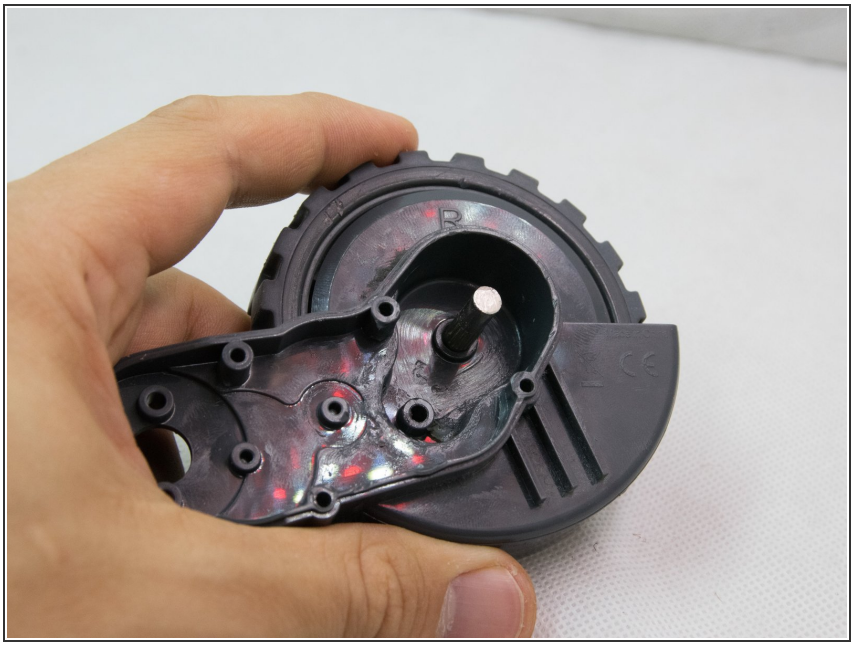
Step 8 — Remove the main gear



- Remove the main gear using a flathead screwdriver. This is the most difficult step - unfortunately the part was definitely not designed to be serviceable.

⚠ This will require a decent amount of force and even though the gears seem to be made out of nylon there's a chance this one could break

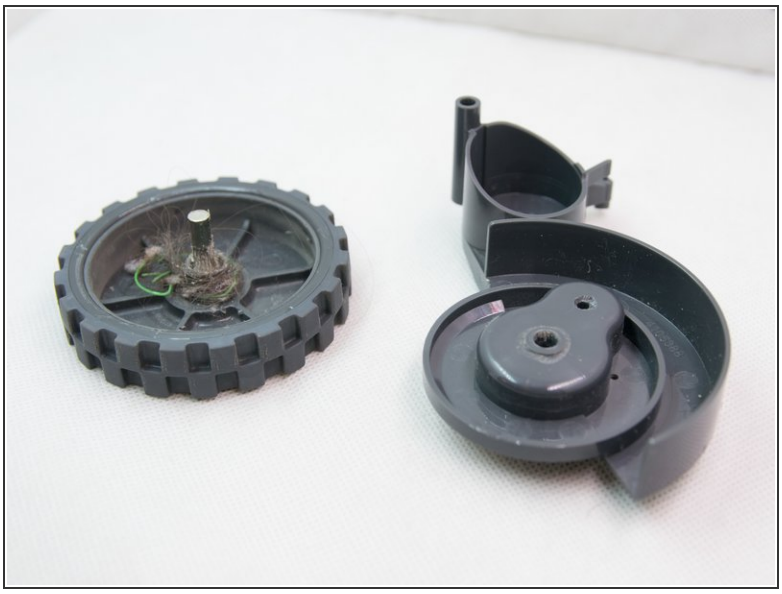
Step 9 — Remove wheel



- With the main gear out of the way the wheel should slide right off. In my case I had to wiggle it around a bit due to the fibre buildup

ⓘ It is NOT recommended to rotate the wheel while trying to remove it. The rotation will enlarge the hole of the carrier and make the wheel loose.

Step 10 — Clean and reassemble



- Remove all the gross hair buildup from the axle. Should come right off.

Step 11 — Done

- Much better! As you can see the only thing that keeps the wheel in place is the main gear. there is no problem of the gear slipping because the axle is splined. If you want you can use some threadlock to help securing the gear.

To reassemble your device, follow these instructions in reverse order.