



Sony Cyber-shot DSC-HX400V Teardown

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INTRODUCTION

This will be an complete teardown of the camera. The camera, that was torn down had problems with the moving lens.

TOOLS:

- Essential Electronics Toolkit (1)

Step 1 — Take your Camera



- 20.4 MP CMOS Sensor
- 50x Optical Zoom
- GPS, NFC and WiFi

Step 2 — Case



- Remove the eight screws.

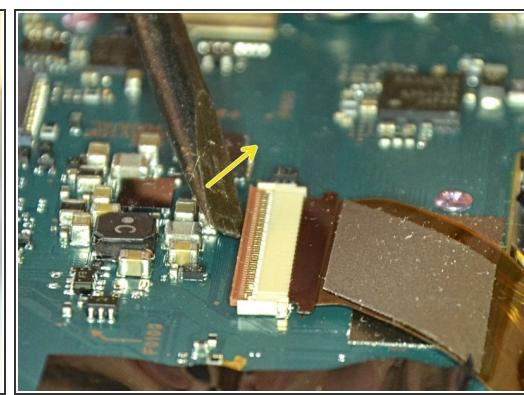
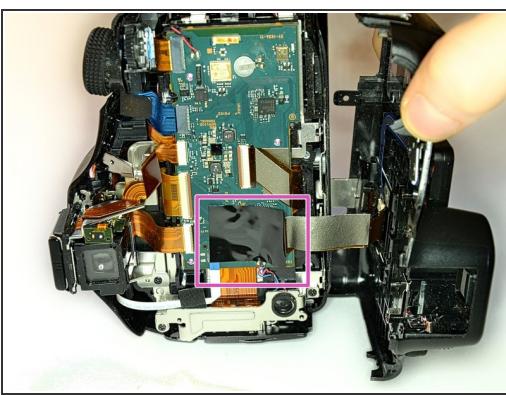
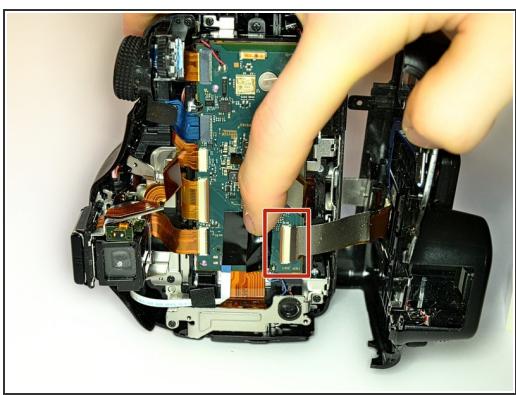
Step 3 — Take the Case apart



- Begin with the bottom and pull the case apart.

 Be care full with the ribbon cable of the display.

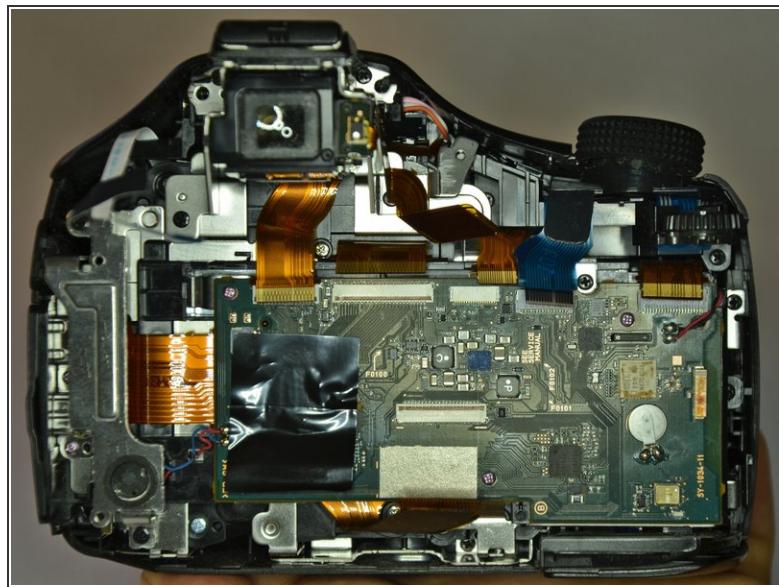
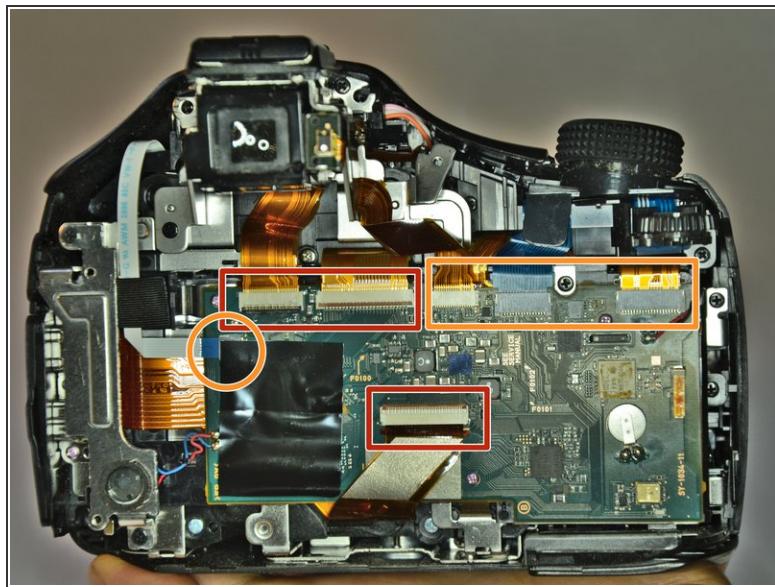
Step 4 — Separate the Case



- Free up the connector under the black tape.
- Disconnect the ribbon cable.
- You need to pull up the brown edge of the connector to open it. (Here shown with another connector of the next step.)

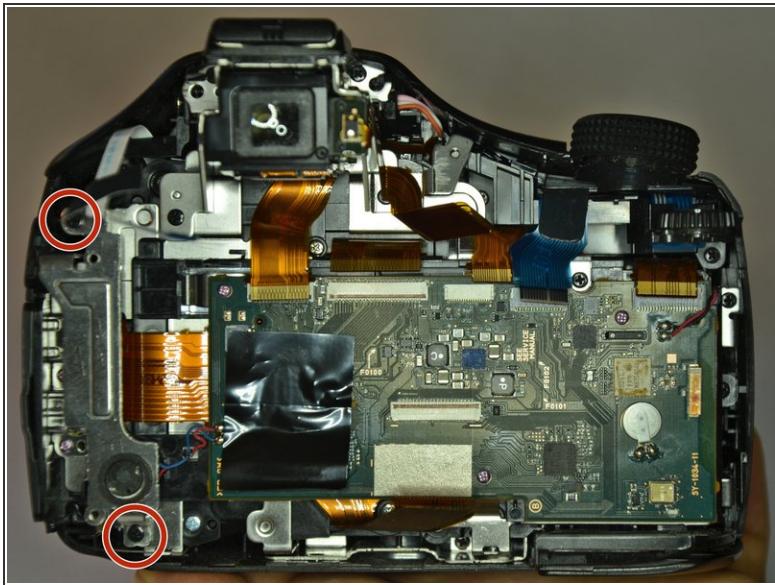
 This cable is used to connect the display as well as the button on the rear site to the mainboard.

Step 5 — Disconnect Motherboard



- Disconnect all seven remaining ribbon cables.
 - Disconnect these with the technique from the last step.
 - Simply pull these out of the connector. There are small edge at the cable to easily pull them out.

Step 6 — Speaker

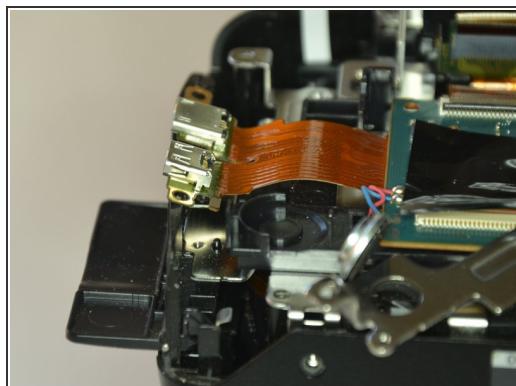
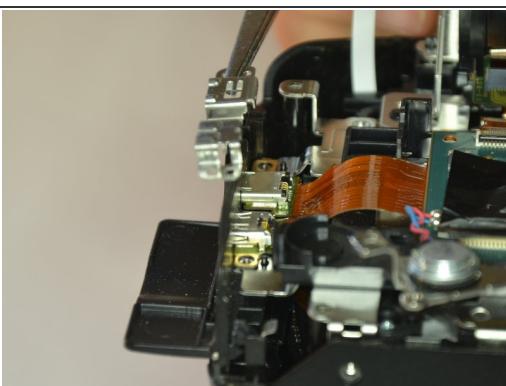
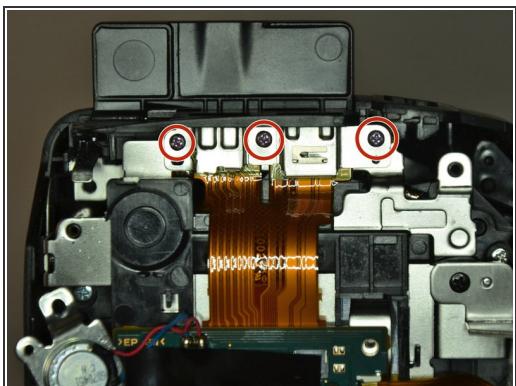


- Unscrew both screws
- Take out the bracket. You can then remove the bracket from the speaker.

⚠ Be careful with the cable between the speaker and the motherboard.

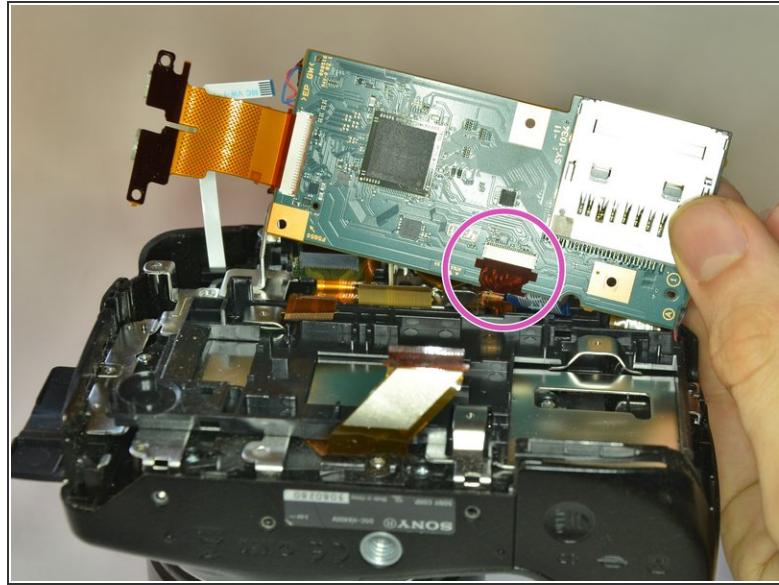
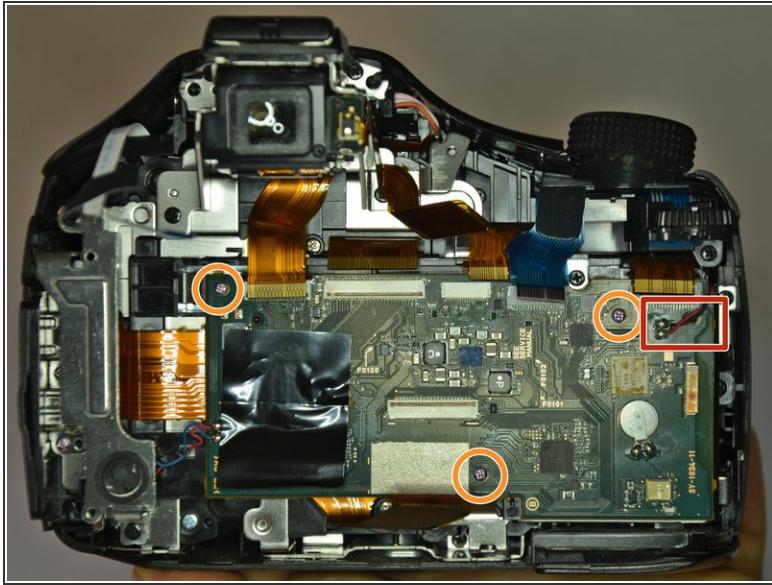
ⓘ The speaker bracket is also the mount for the camera strap.

Step 7 — HDMI and MicroUSB Connectors



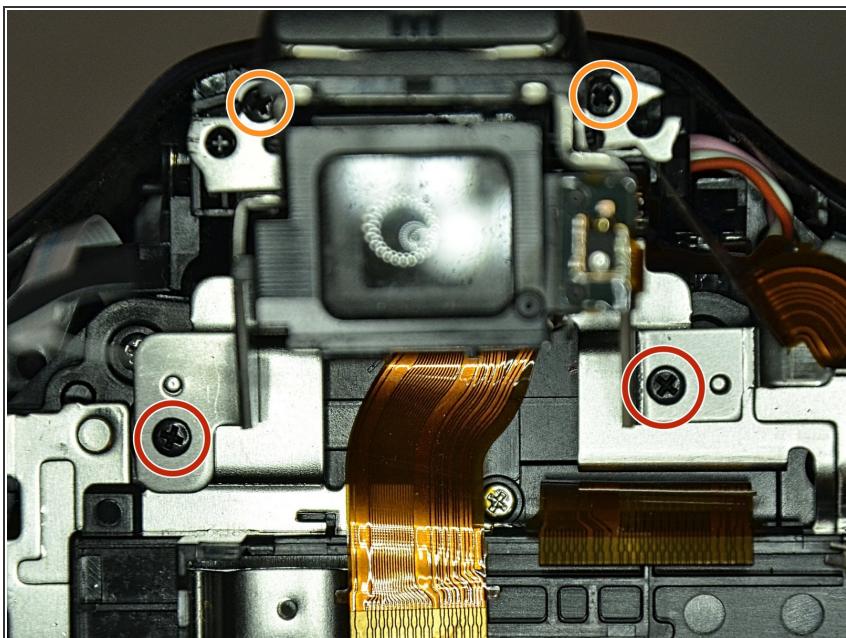
- Unscrew all three screw that are holding the bracket down.
- Lift up the bracket and then the connectors.

Step 8 — Mainboard



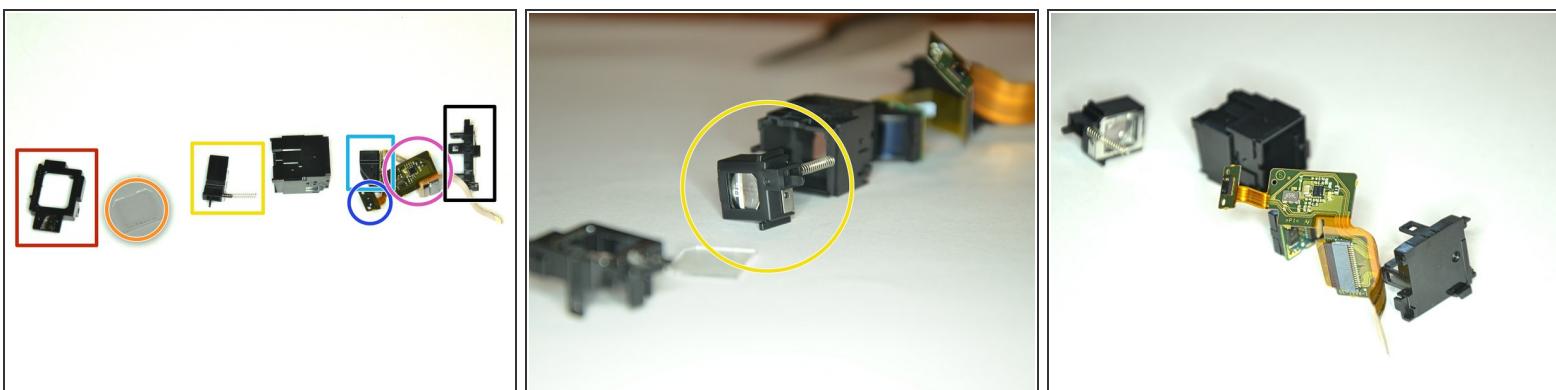
- Unscrew the three screws.
- ⚠ Be careful with the small cable to the NFC (and WiFi?) antenna which is glued to the battery case.
- Turn the mainboard around and disconnect the last ribbon cable.

Step 9 — Viewfinder and Flash-Socket



- Unscrew the four screws.
- Note that the two bottom screws are shorter than the others.
- *i* The viewfinder sits inside the bracket of the flash socket. On right beside the electronic viewfinder (aka display with lens), there is the proximity sensor which is used to switch between the display and the viewfinder.

Step 10 — Viewfinder Insides



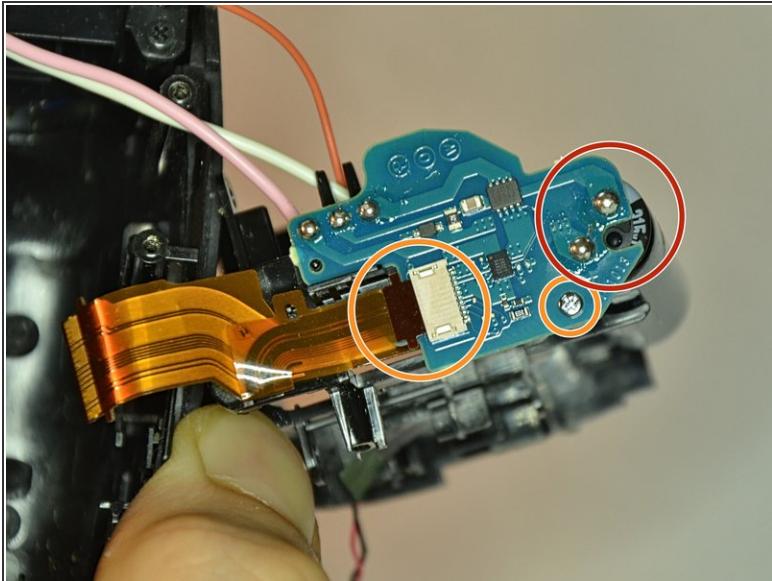
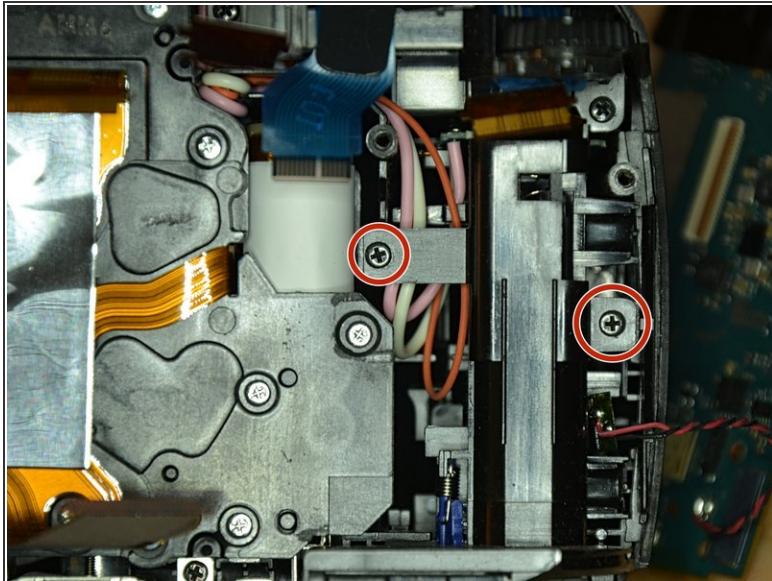
- Frontglass holder
- Frontglass, you may want to clean it, if you have disassembled it
- Lens with spring. This is used to give you a sharp view into the viewfinder. The small nib is pushed in different positions by the small dial on the case to adjust the focus for your eyes
- Monitor, a very small monitor. Looks much like the image sensor.
- Proximity sensor for detecting your eye and therefore switching to the viewfinder.
- PCB with 2 unidentified ICs (659L and 3232 615)
- Backcover

Step 11 — Baseplate



- Disconnect the ribbon cable to the GPS module at the top.
- Unscrew the last two screws of the baseplate. Then pull the baseplate to back.
- ⚠ Be careful with the GPS module when pulling out the baseplate.

Step 12 — Battery Case



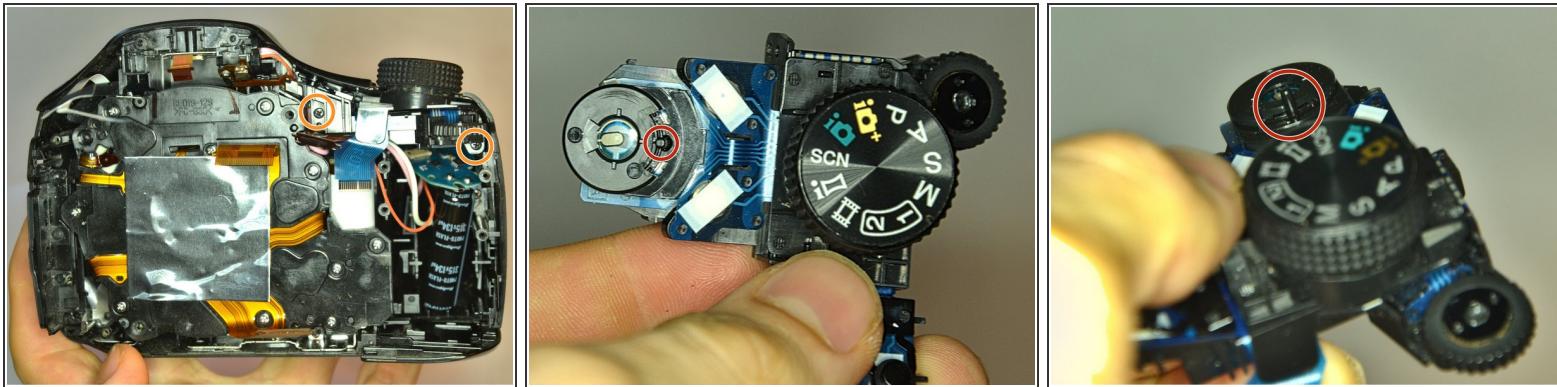
- Unscrew the battery case and pull it out.

⚠ Make sure you have DISCHARGED the flash capacitor before. Now you could touch it and may get a electrical shock. It is rated for 315 V and 134 μ F.

⚠ Be careful again with the cable between the mainboard and the antenna.

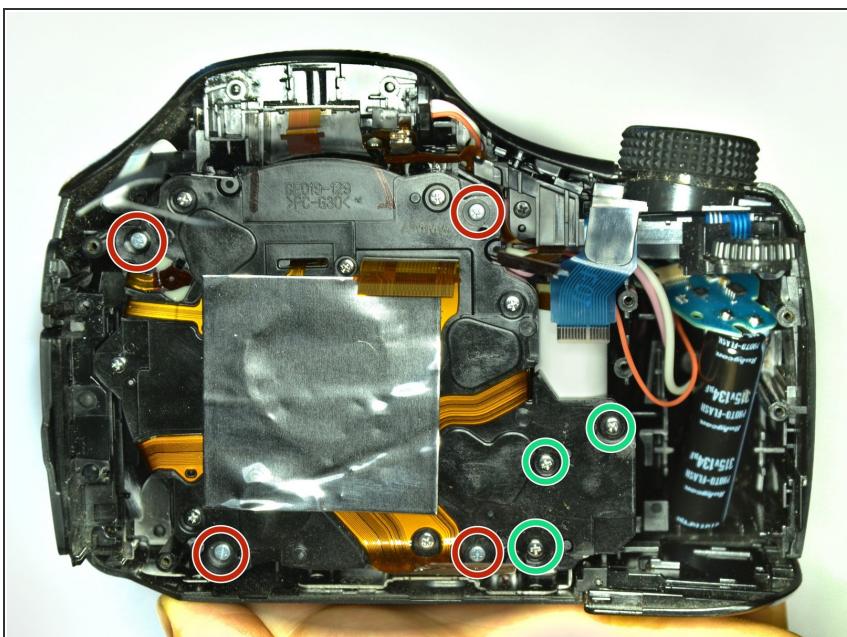
- Disconnect the ribbon cable, unscrew the flash PCB from the battery case and pull them apart. Finally, the mainboard (and therefore the antenna and battery) is separated from the rest.

Step 13 — Button Panel



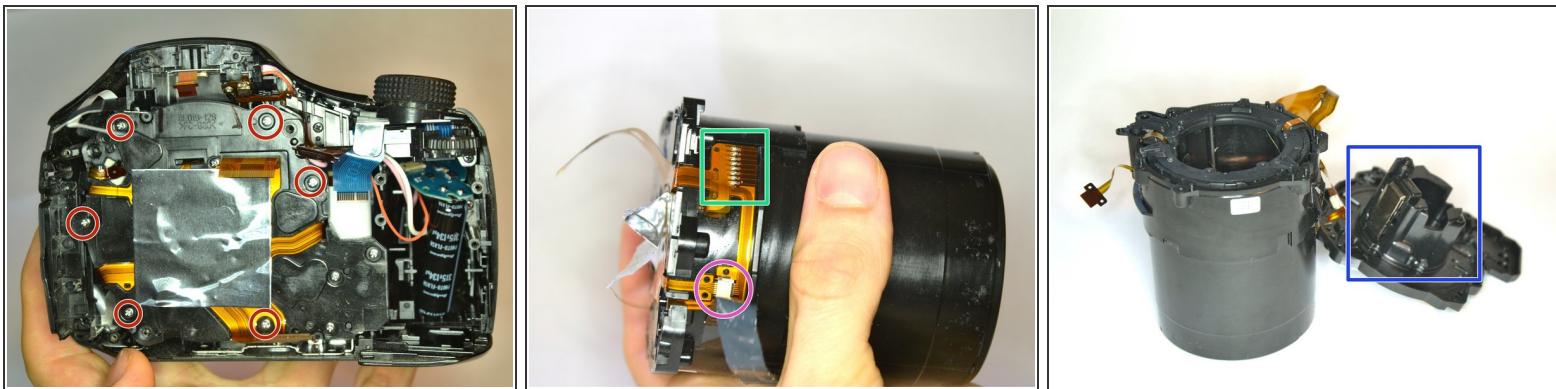
- To remove the button panel, you have to unscrew these two screws.
- When reinserting, make sure that the nib for the zoom is in the middle position. Otherwise it will zoom the whole time.

Step 14 — Remove Optics



- Unscrew these 4 screws to separate the optics part from the rest of the case
- Unscrew these to loosen the motor from the sensor backplate

Step 15 — Sensorbackplate



- Unscrew these 6 screws, after you have taken the optics out of the case. Note that the three motor screws were in place during the photo, but should be removed first
- To be able to separate the Sensorbackplate from the rest, you have to unsolder the connector
- Also disconnect this connector, as well as the connector on the opposite site
- Finally you have the sensor with (maybe?) the auto focus lens.

⚠ If you have dust on your images, it is not necessarily on the sensor. It is rather unlikely because it is enclosed from the auto focus lens. Maybe you should search on other part of the optics first

Step 16 — Optics



- The rest of the optics contains 3 tubes as well as 3 moving lenses
- Unscrew the 4 screw to loosen the sprocket
- Before you can remove it, you have to floss the 2 ribbon cables through the outer case. It is not easy, you have to rotate them, but it is manageable

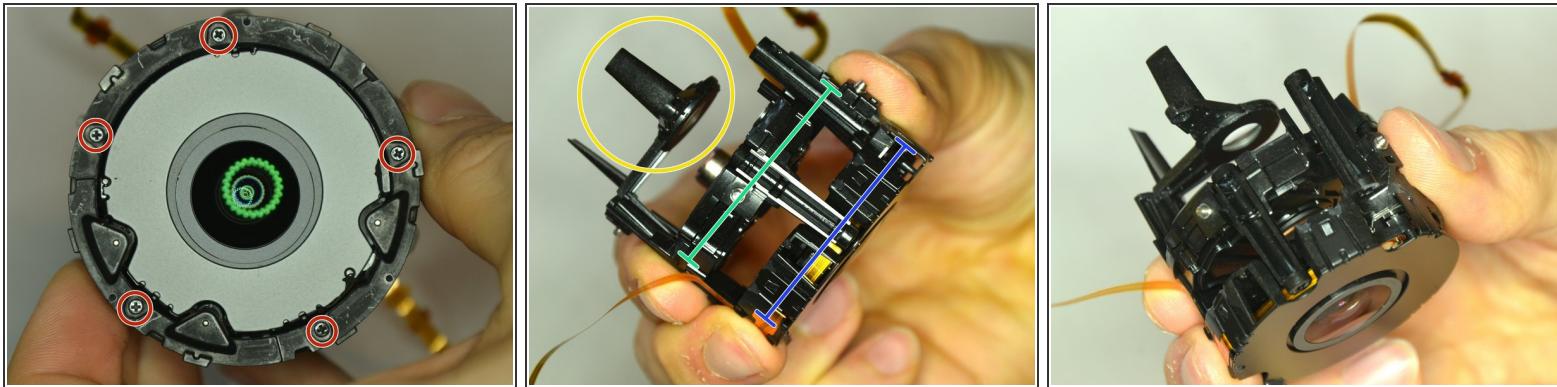
Step 17 — Tubes



- The outer case has a gear mount and grooves for the inner tube.
- This tube has the front lens integrated and is visible to the outside when the camera is turned on and zooming.
- The inner tube moves all 4 lenses.
 - This groove moves the tube with the front lens.
 - The three inner grooves moves the image stabilisation, the shutter and an additional lens.
 - This nip interacts with the grooves in the outer tube.

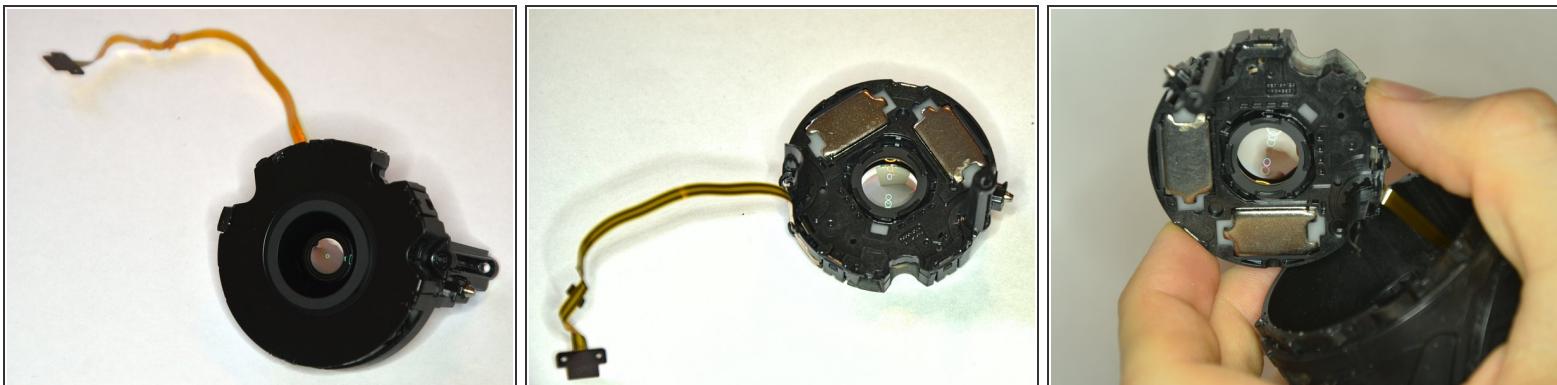
⚠ This is the dust and dirt that was stopping the objective from moving out. It isn't much. So, be careful and keep yours clean. I was not able to completely remove it in my camera, but it is working now with some help.

Step 18 — Lens Groups



- Unscrew all 5 screws to remove the rod holder. Then you can separate all three optics groups.
- This is a moving lens with no other purpose
- This is the shutter and aperture module. It also integrates some lenses.
- This is the image stabilisator, which contains two coils and magnets.

Step 19 — Image Stabilizer



- You can see the two magnets, that are used to move the lens

Step 20 — Overview



- These are all disassembled part. Not everything is removed from the case and disassembled entirely