Epson Stylus Photo 820 Teardown

Teardown of an Epson Stylus Photo 820 Inkjet Printer.

Written By: jdp23

INTRODUCTION

Teardown of an Epson Stylus Photo 820 Inkjet Printer.

🔧 TOOLS:

- Phillips #1 Screwdriver (1)
- Flathead Screwdriver (1)
- 8" Needle Nose Plier (1)

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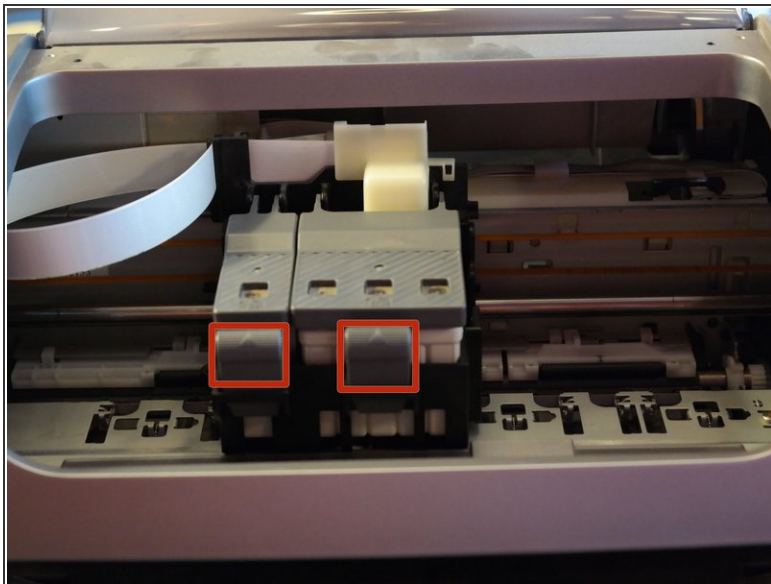
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Step 1 — Epson Stylus Photo 820 Teardown

- This is a teardown of the Epson Stylus 820 Photo color printer.

⚠ **Caution:** Along with being the most epic, this is also the messiest teardown on iFixit. If you decide to do this, make sure you do it on a surface that you will not care if it gets covered in ink.
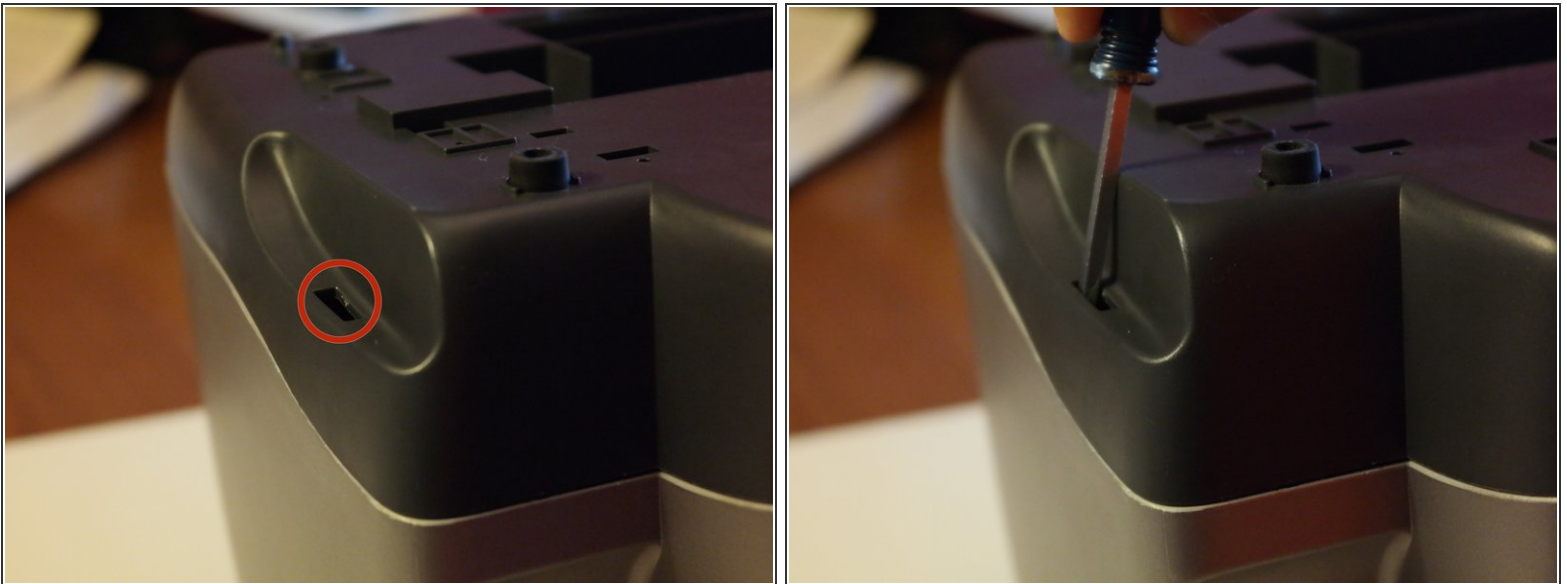
Step 2

- The ink cartridges are replaceable. That is a good sign.

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Step 3
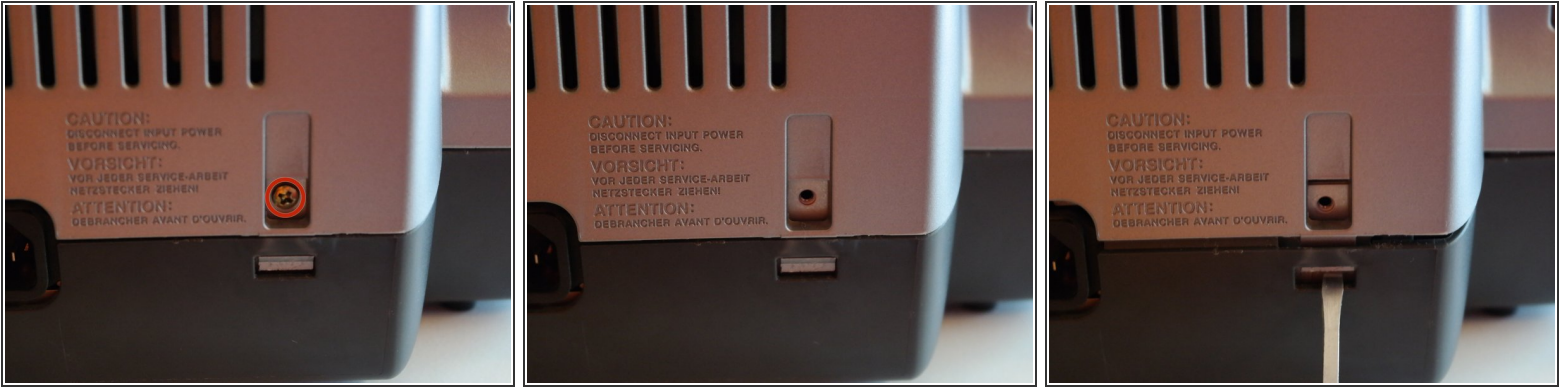
- Only one screw on the outside. That looks like a good sign.

- After removing the screw, the three tabs on the back can be unhooked.

Step 4

- What are these strange slots on the bottom of the printer?

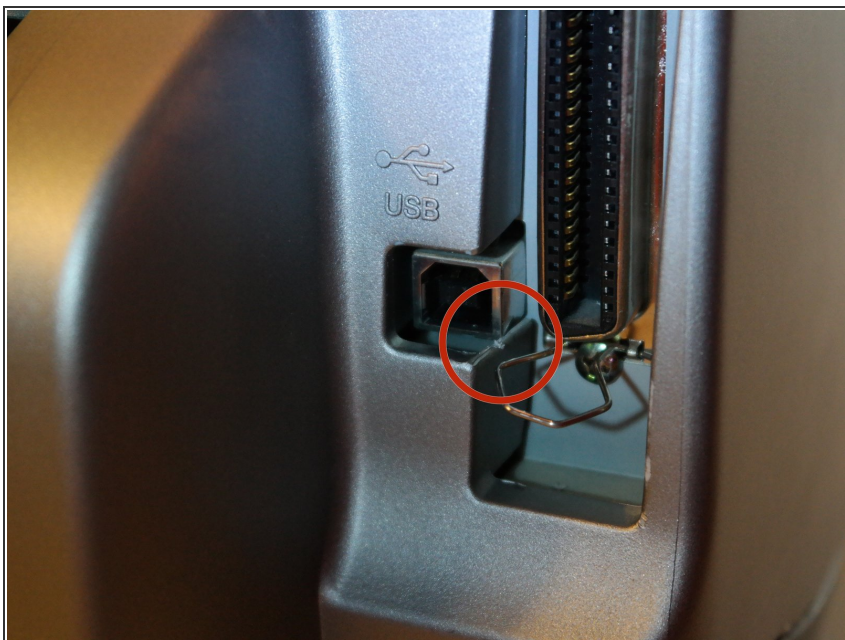- Answer: according to the existing iFixit guide, they allow access to the tabs holding the cover in place.

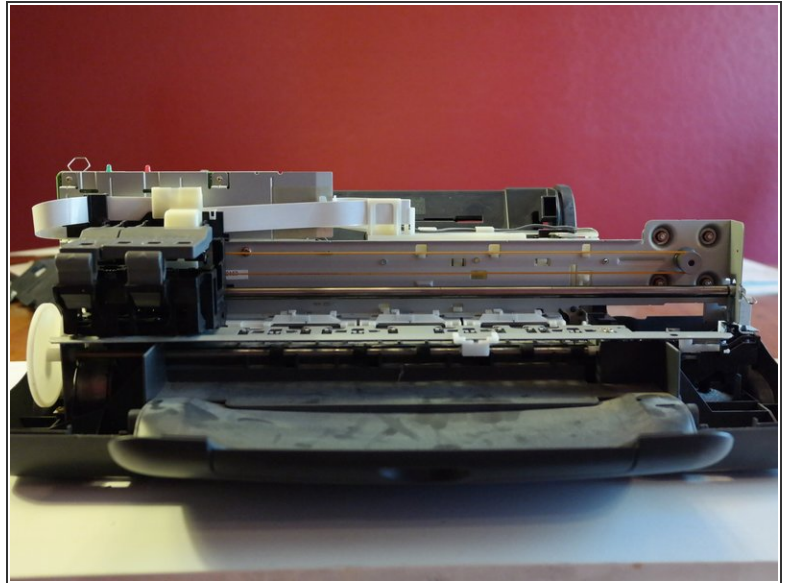- *Opening this printer is a lot harder than it looks.*

Step 5

- Now it is time to unlatch two more tabs.
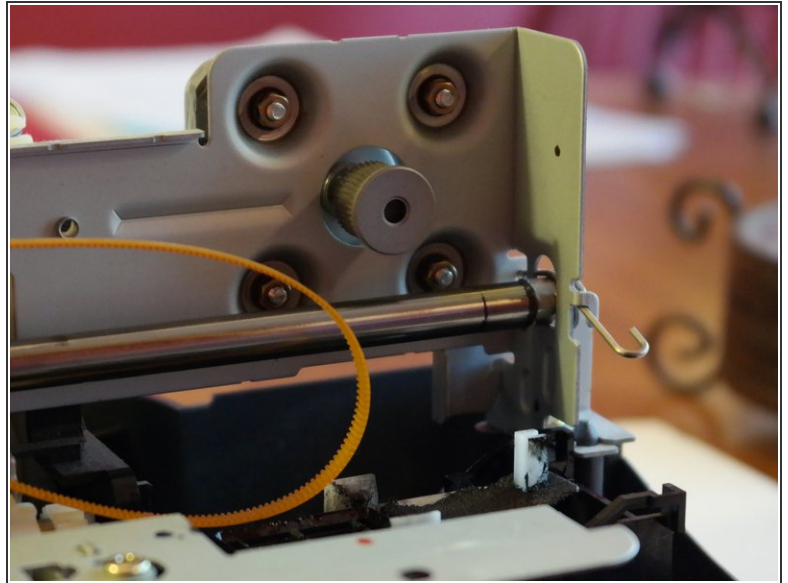
- The case has started to separate.

Step 6

- It was necessary to pry this piece of plastic away from the USB port while removing the case.
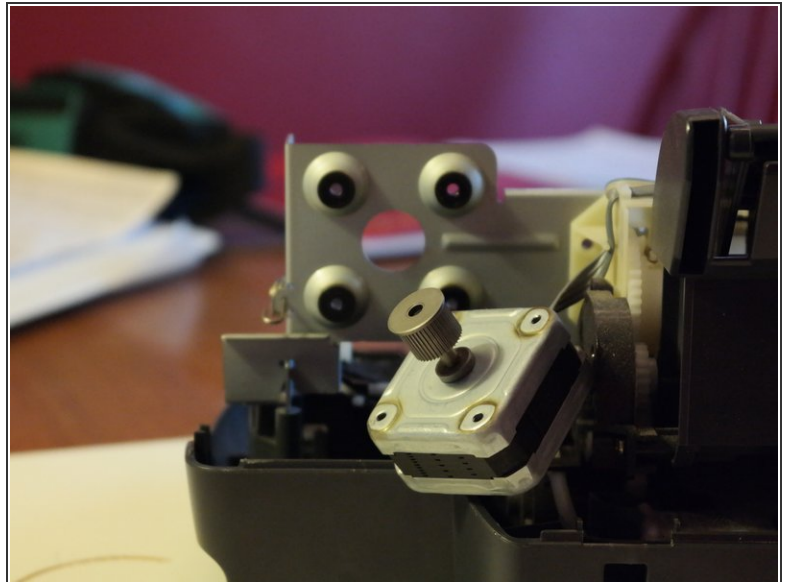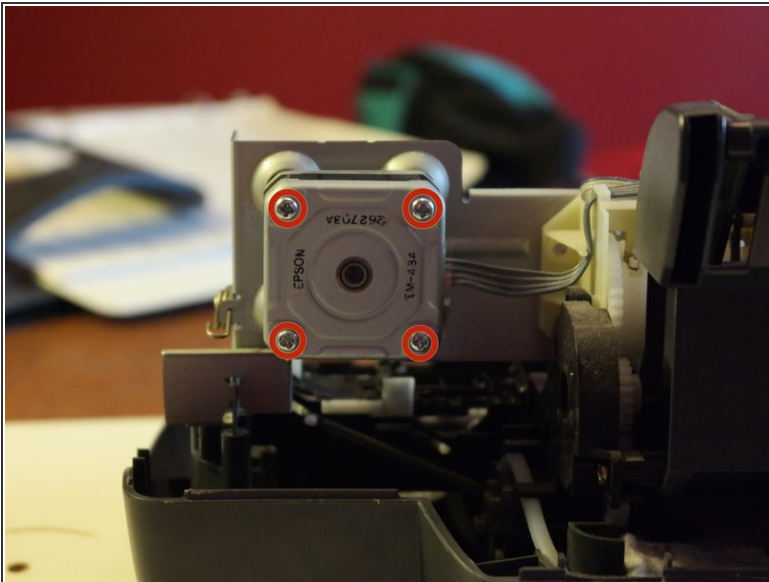
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Step 7

- The cover is *finally* off!

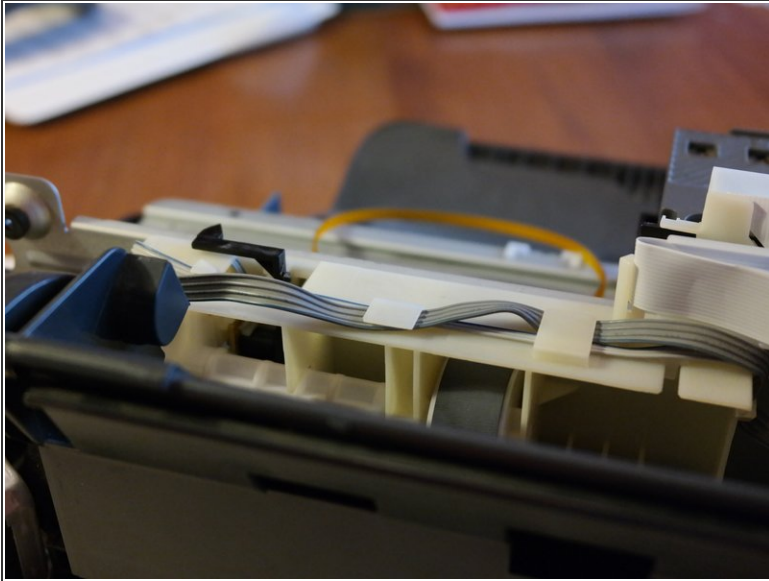- Not much more can be seen by taking off the cover.

Step 8

- Next step: the stepper motor.

- The drive belt can be easily removed by pressing on a tensioner on the other side of the printer. +1 for reparability!
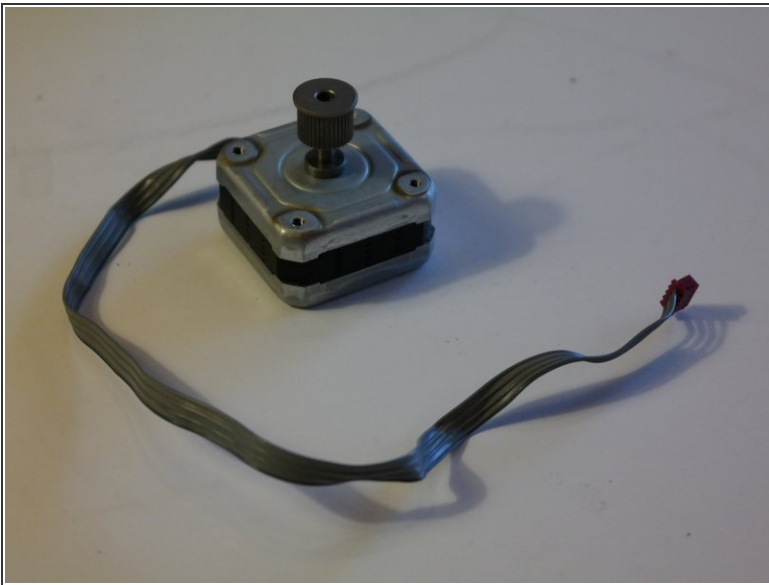
Step 9


- After removing 4 screws, the stepper motor comes out.
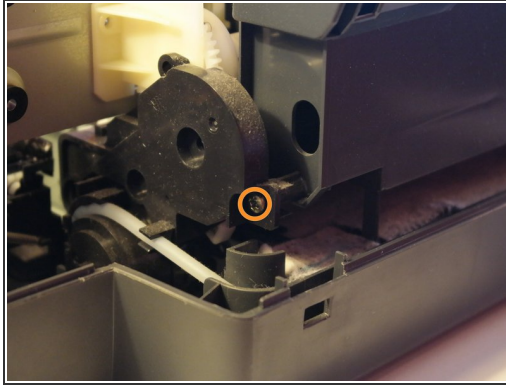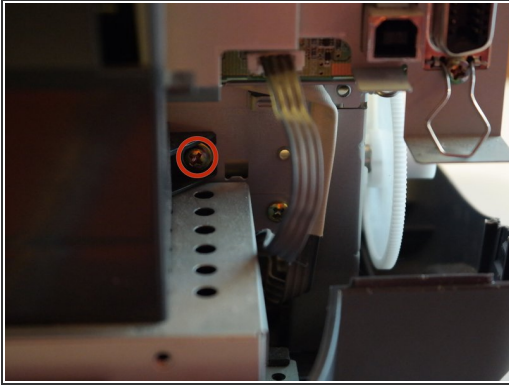
Step 10
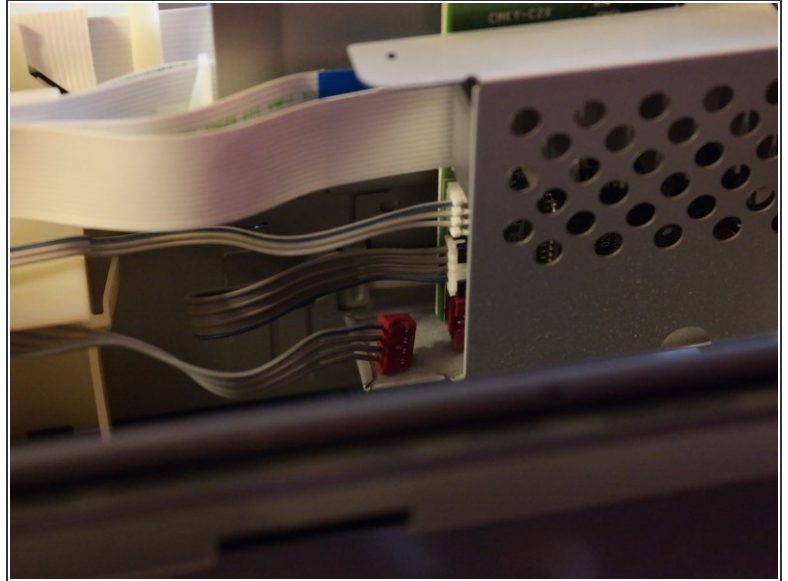
- The stepper motor cable is routed through a series of plastic tabs that hold it down.

- It eventually connects to the (hidden) logic board.

Step 11

- A closer look at the stepper motor.

- *If you know what voltage this motor runs at or its pinout, please leave a comment!*

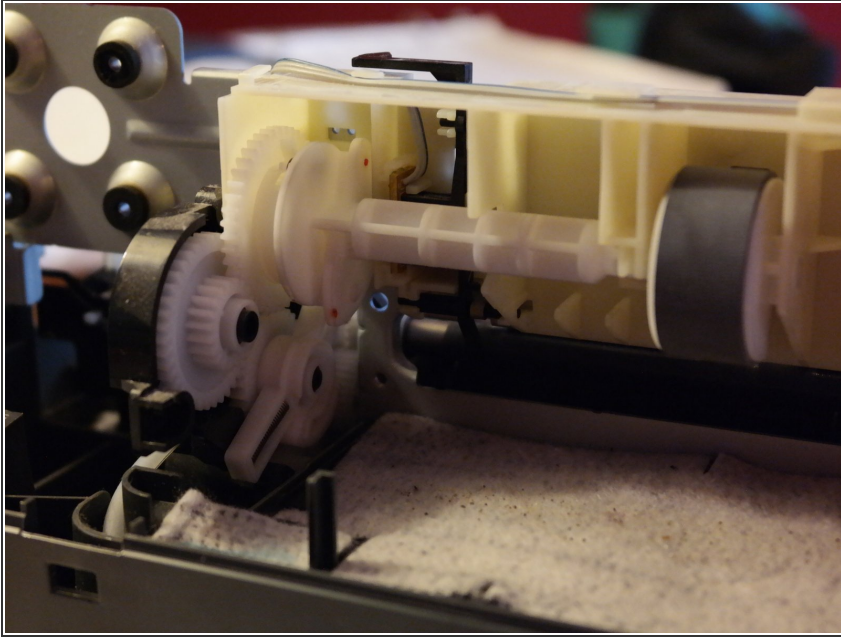This document was generated on 2020-11-15 01:34:54 PM (MST).
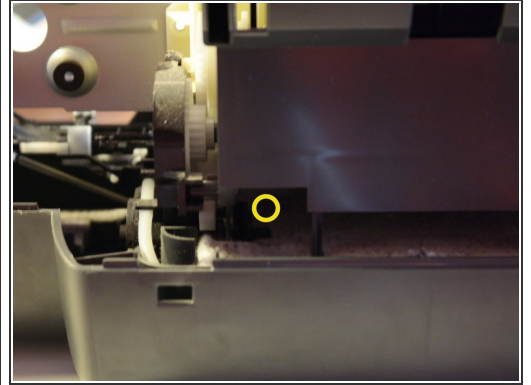
Step 12

- In order to access the paper tray, 3 screws must be removed.

- One in an obvious place.

- One in a less-obvious place.

- And one hidden in a dark place.

Step 13
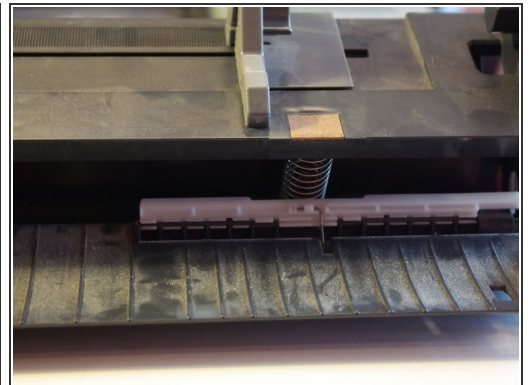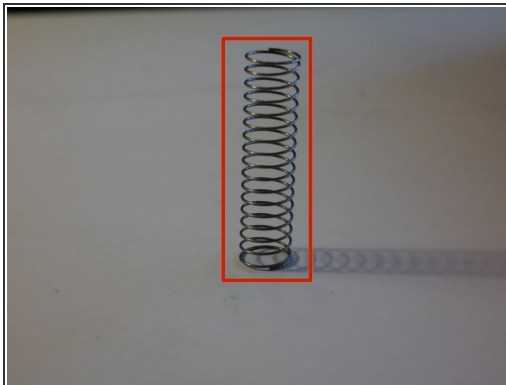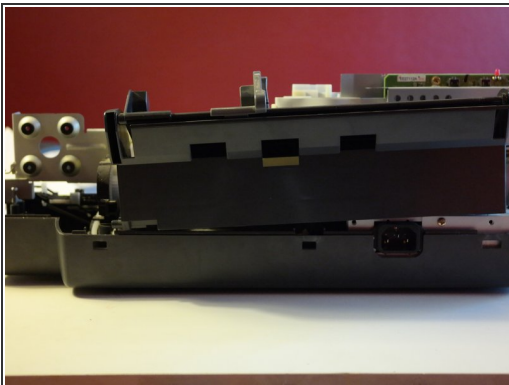
- The paper tray has been removed.

- This magnificent specimen was found deep inside the paper tray.

Step 14

- A close look at what is behind the paper tray.

- *While this padding at the bottom looks harmless, do not treat it that way. Skip the next step if you do not want to know what might be hiding inside your printer.*
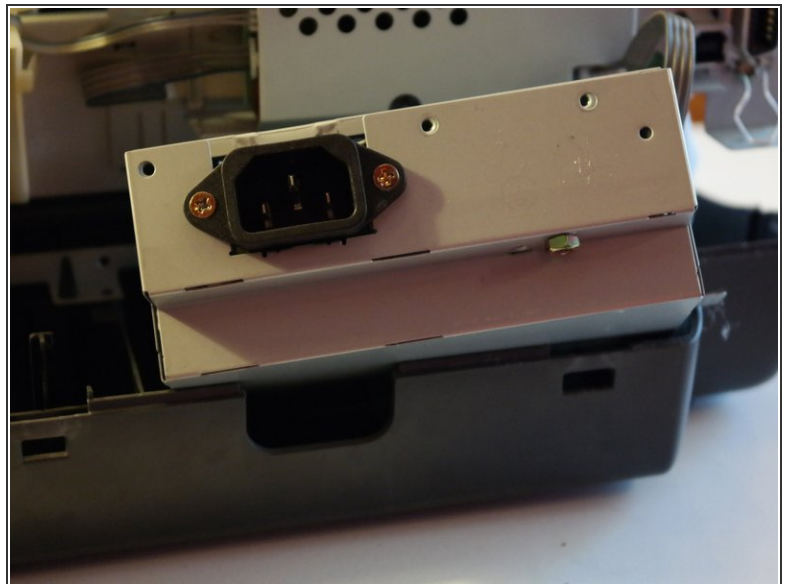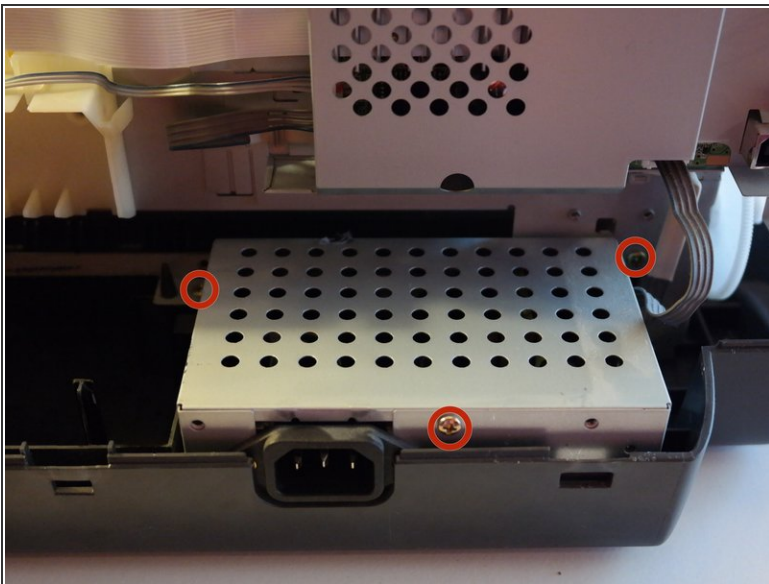
Step 15

- The object at the bottom of the last photo was 5 layers of absorbent padding to contain all the ink that the printer has wasted while cleaning its nozzles, in this case *almost 8 years* of ink.
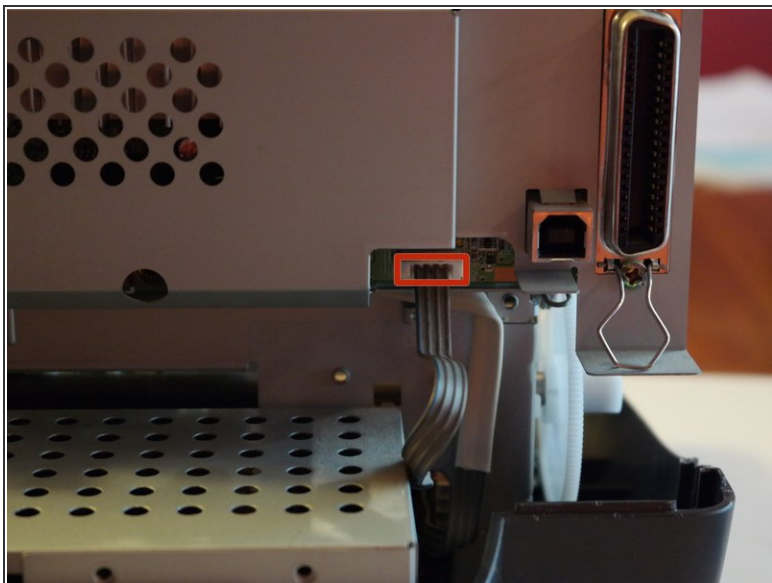
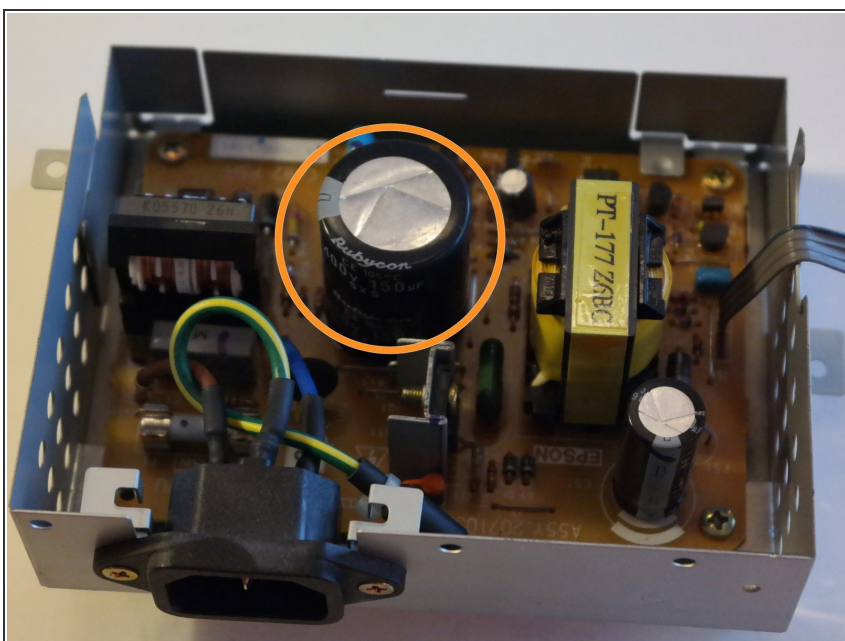- (i) At least the mess wasn't as bad as [this](#) or [this](#).

Step 16

- The power supply is held in place by 3 screws, but it seems to be missing two on the front.

Step 17

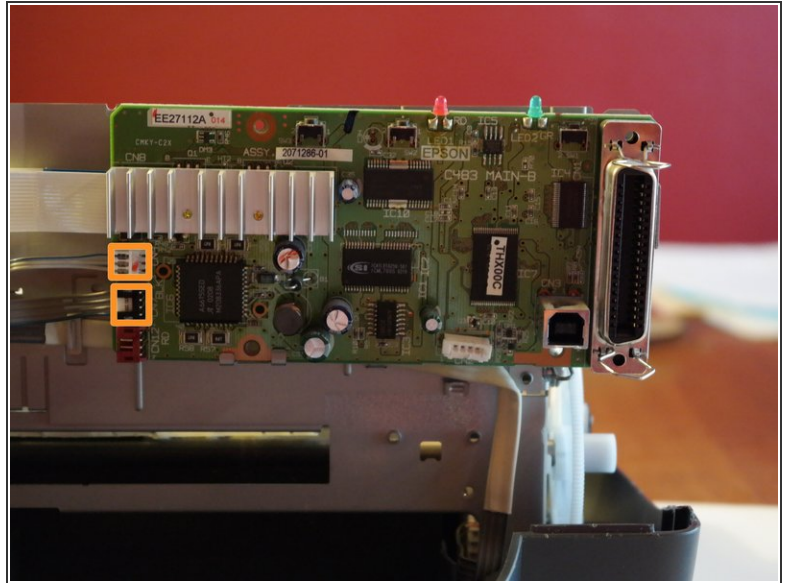- The power supply is connected to the main board by 4 surprisingly thin wires.
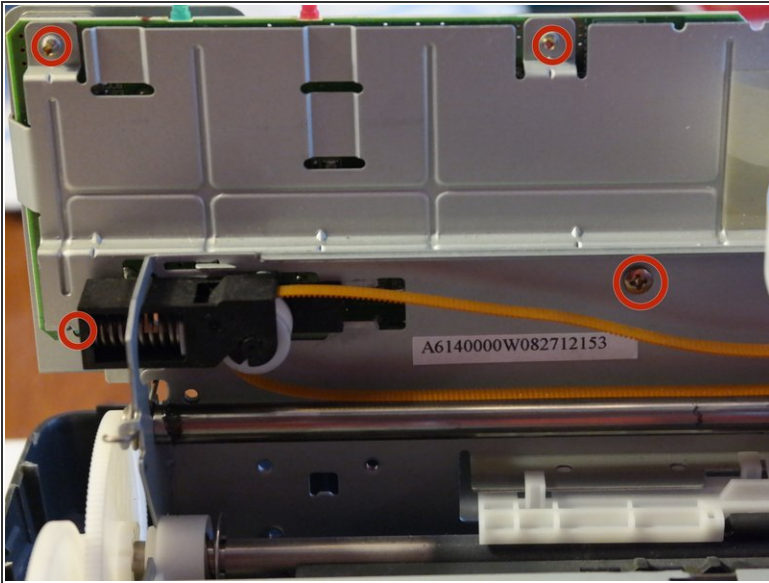
Step 18

- The inside of the power supply.

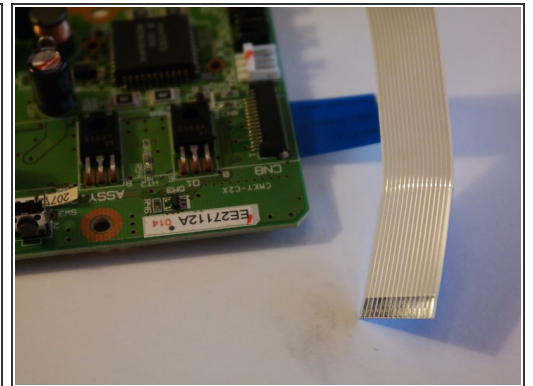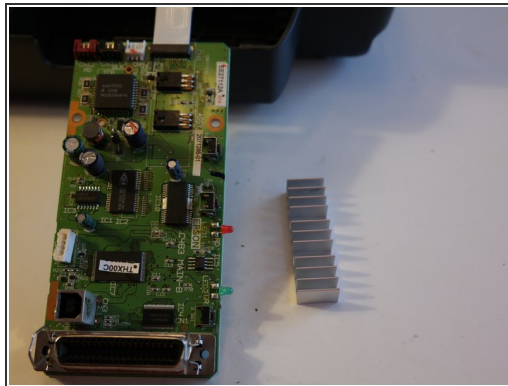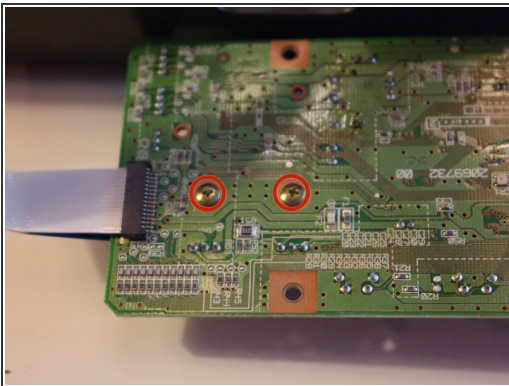- ⚠ The large capacitor (circled in orange) can hold up to 400 volts, which will hurt if you touch it while plugged in.

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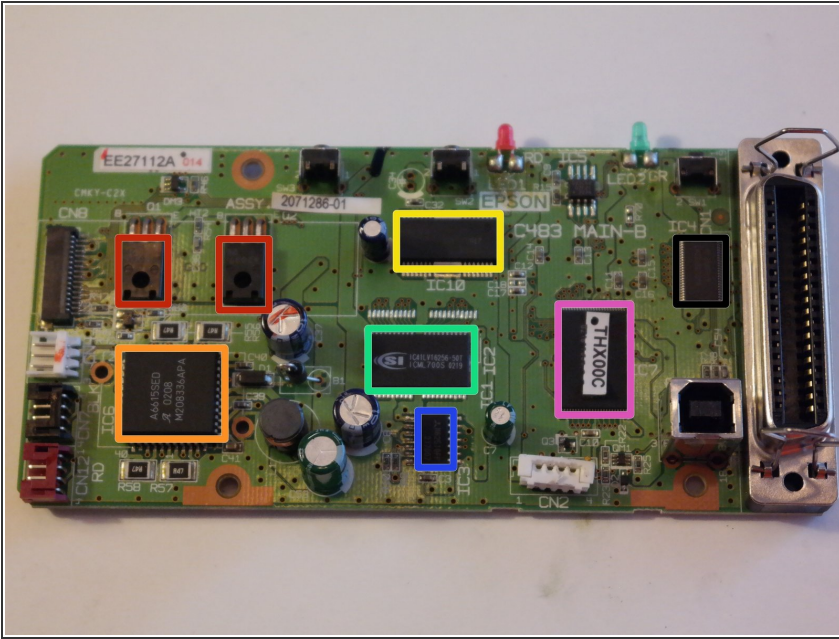www.iFixit.com

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Step 19

- The logic board's shielding is held in place with 4 screws.

- Two cables remain connected to the logic board.

Step 20

- The heatsink is attached to the logic board by these screws.

- The large dual ribbon cable for the printhead attaches to two connectors on the logic board, one on each side.
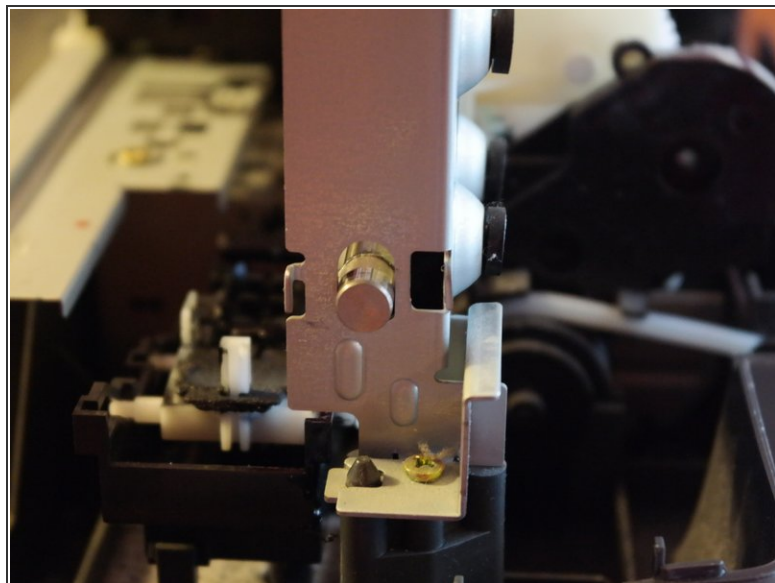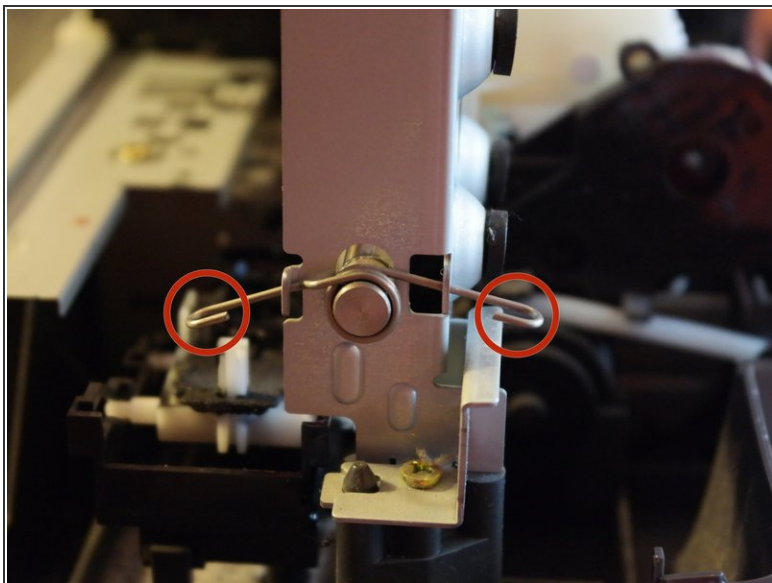
Step 21

- The chips on the logic board.
- A2037 and C5694 transistors
- A6615SED stepper motor driver
- 219A254UN proprietary EPSON chip
- IC41LV16256 256K x 16 bit dynamic RAM
- M62510FP bus termination regulator
- 29LV400TC 8 mBit CMOS flash memory
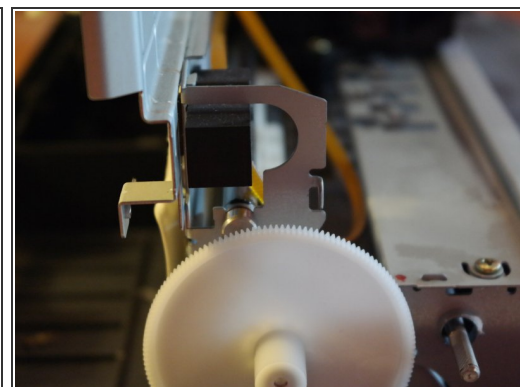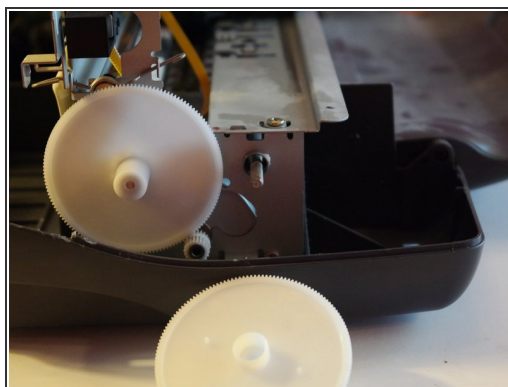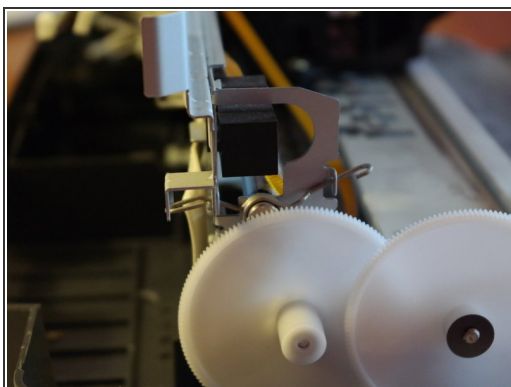- LVCZ161284A high speed IEEE 1284 transceiver

Step 22
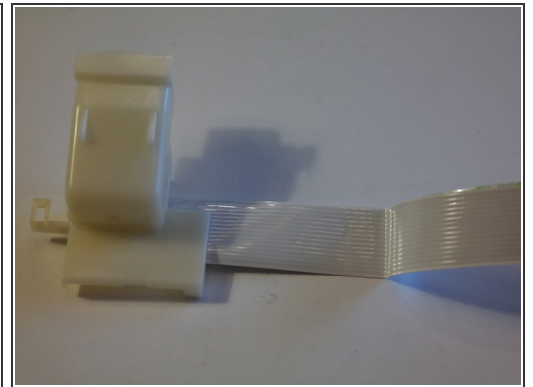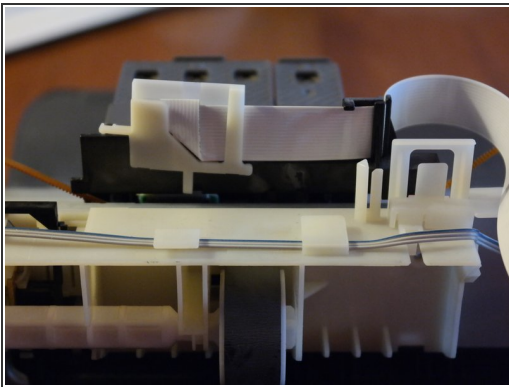
- The plastic clip that holds the dual ribbon cable in a folded position.

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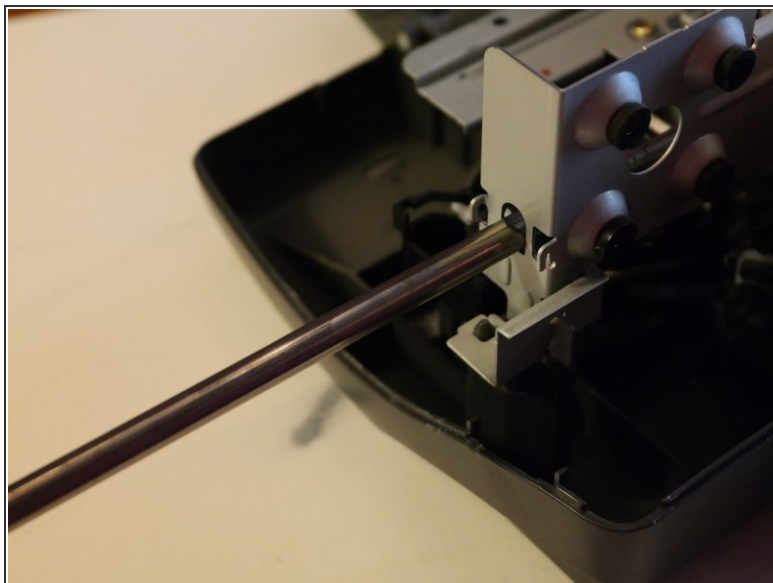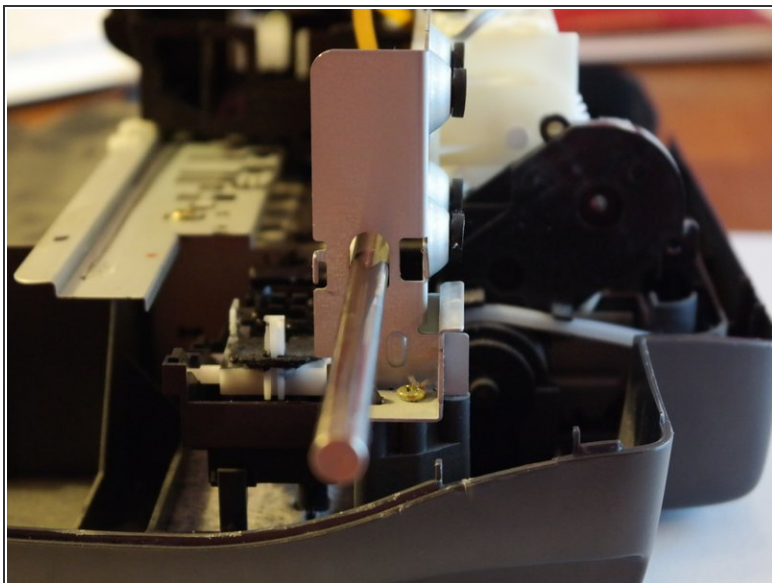
Step 23

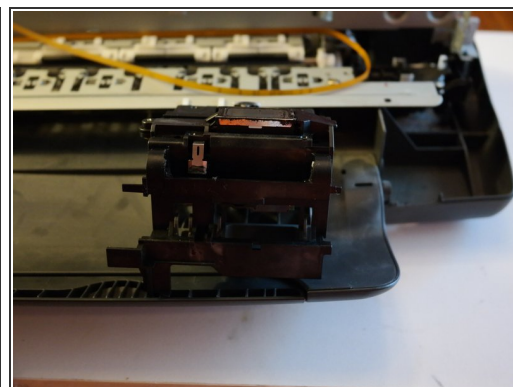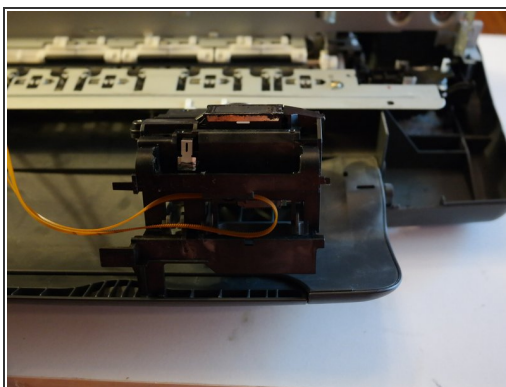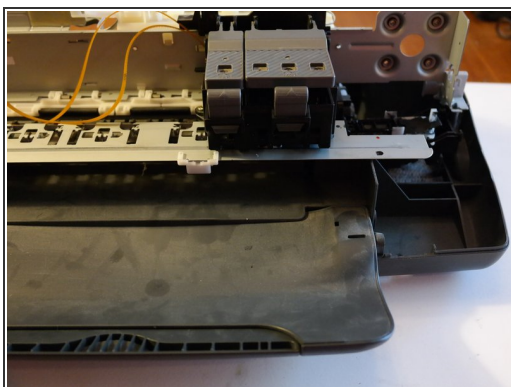- The main axle/rod/shaft/round metal thingy is held in by spring clips.
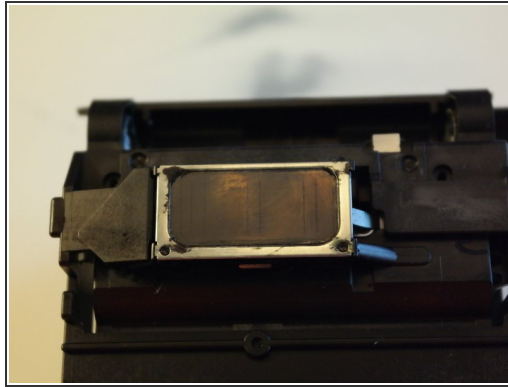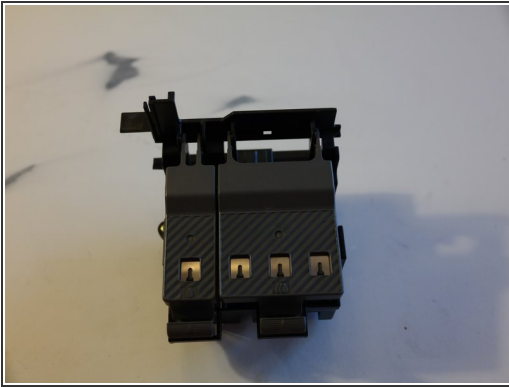
Step 24

- The other side.

Step 25

- The rod can now be extracted from the printer.
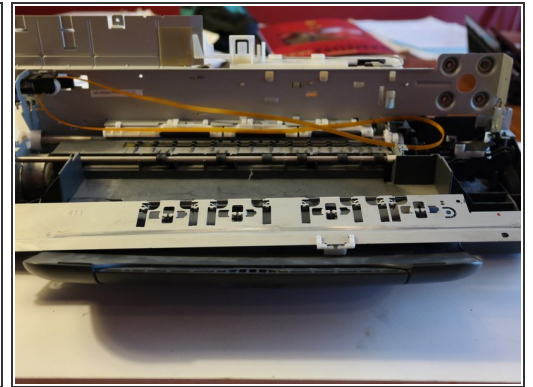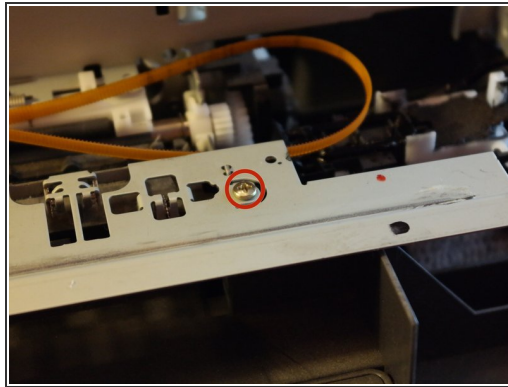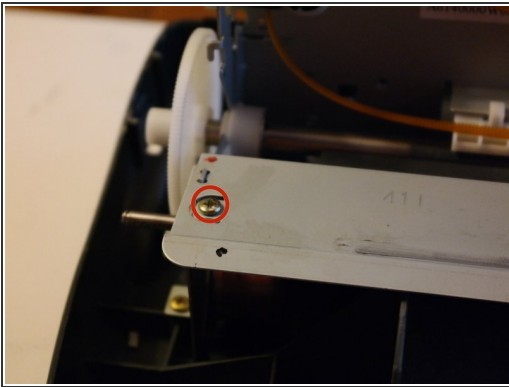
Step 26

- Now that the rod has been removed, the print head can be unhooked from the drive belt.
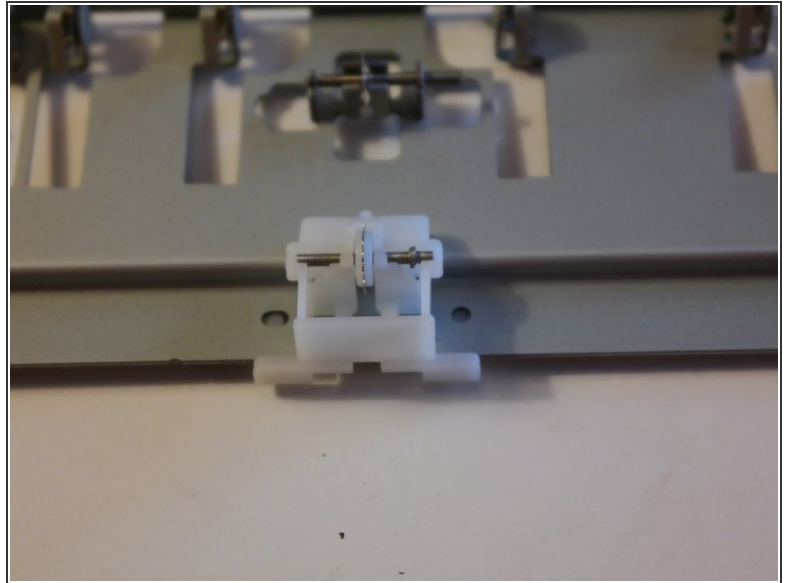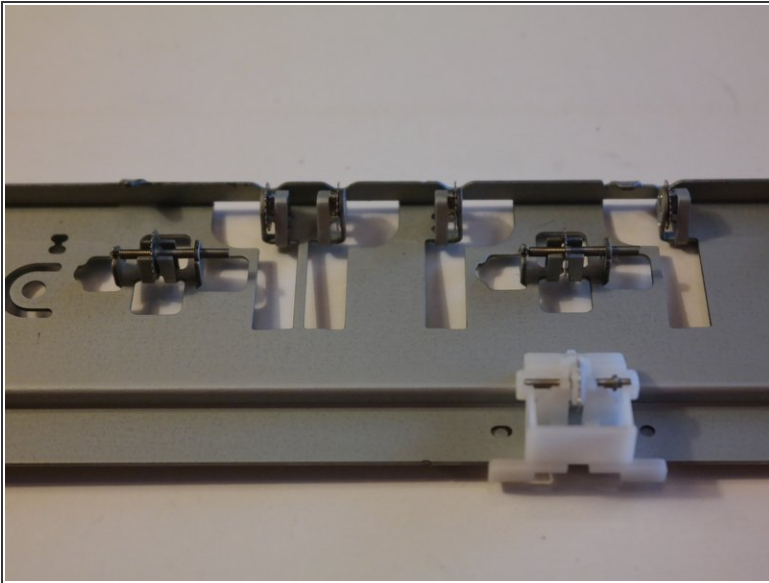
Step 27

- The print head

- The six lines on the print head visible in the second and third pictures are actually rows of microscopic ink nozzles.

Step 28

- An unusual metal bar in the paper feed path is held in by two screws.

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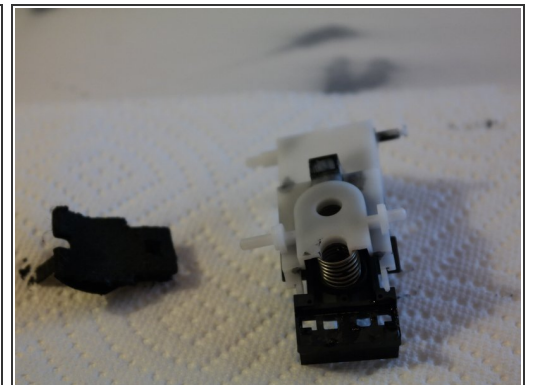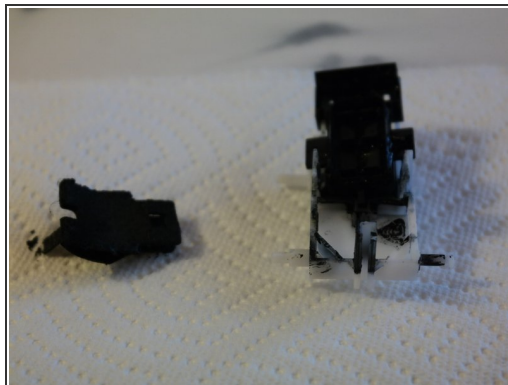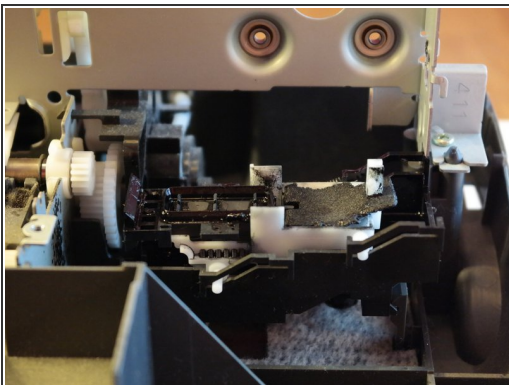
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Step 29

- The metal strip contains many spiked wheels rotating on springs which allow them to be pushed out of the feed path.
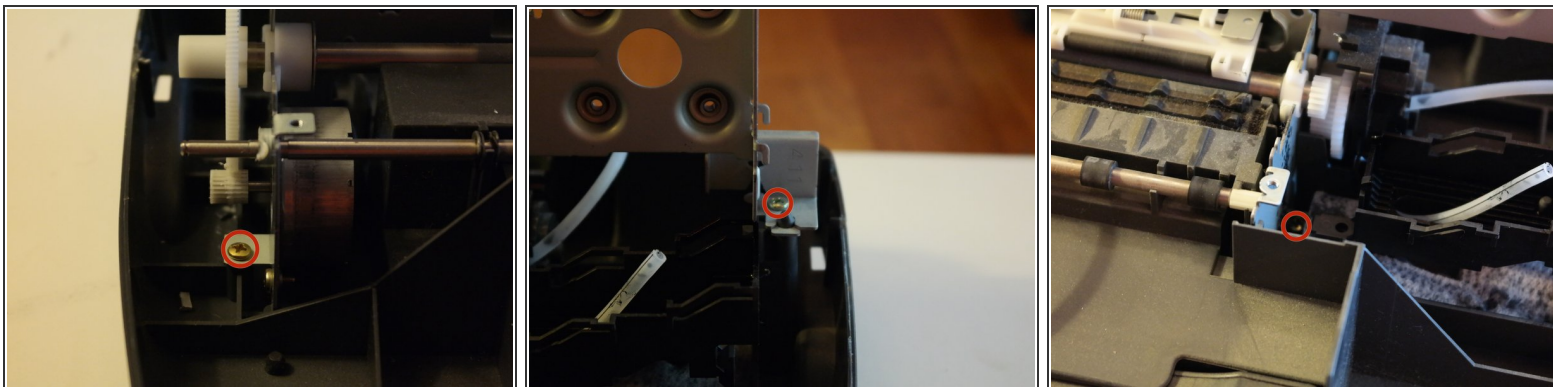
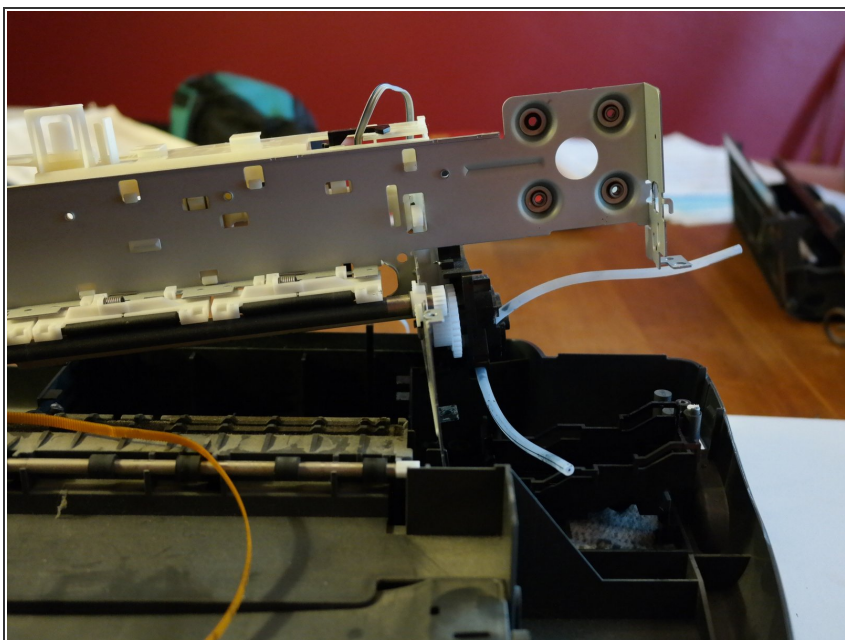- *Please comment if you know what this passive component does.*

Step 30

- This inky mess is the nozzle cleaner.

- The assembly is spring loaded so the nozzles can be pushed into a pad to collect ink, which is then somehow transferred into the large absorbent ink pad.

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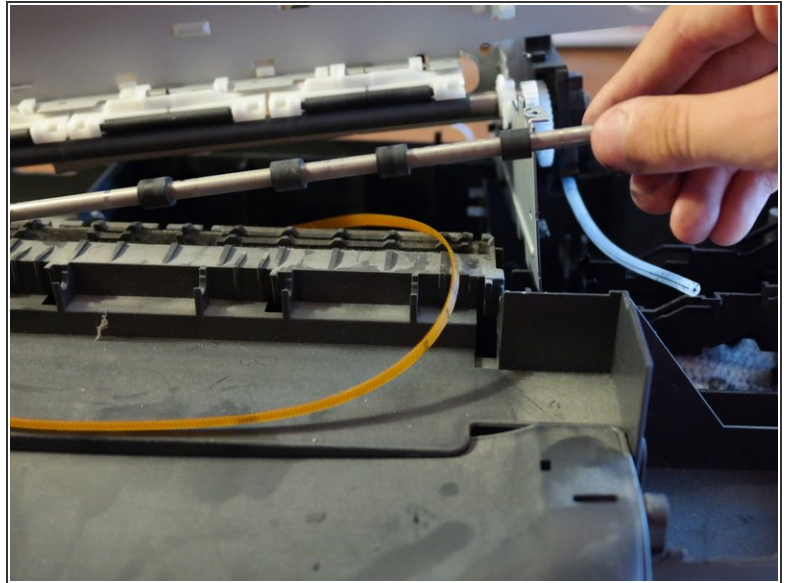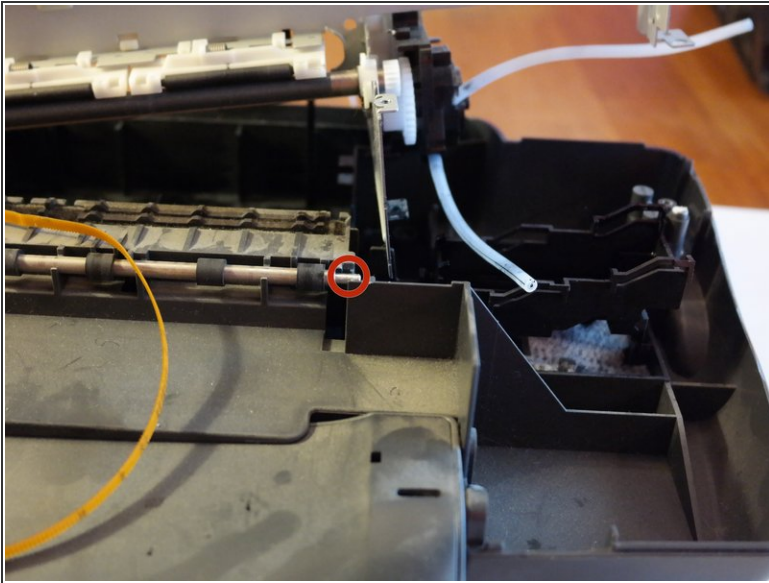www.iFixit.com

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Step 31

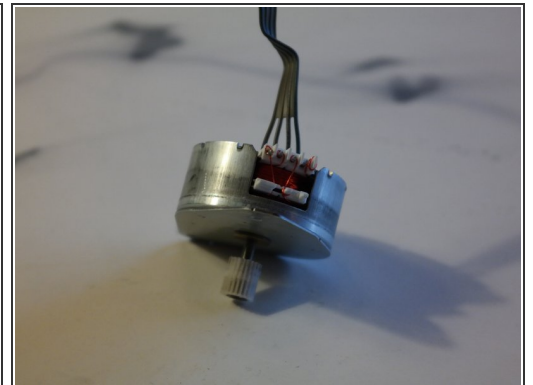- To remove the metal midframe of the printer, three screws must be removed.
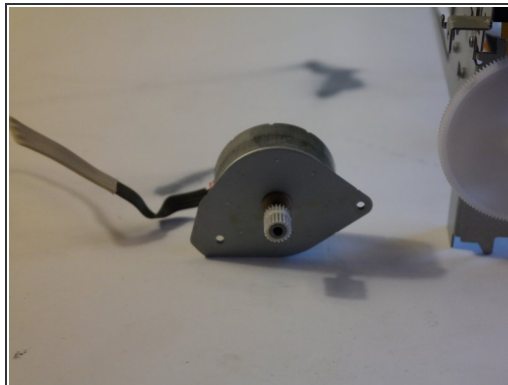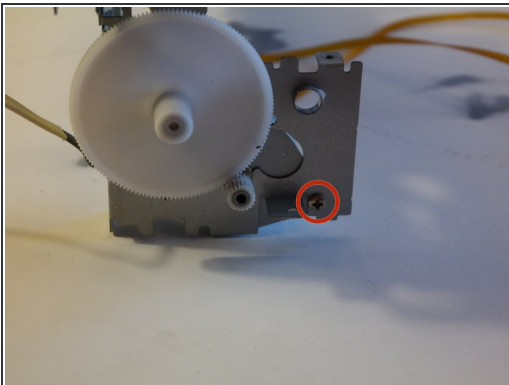
Step 32

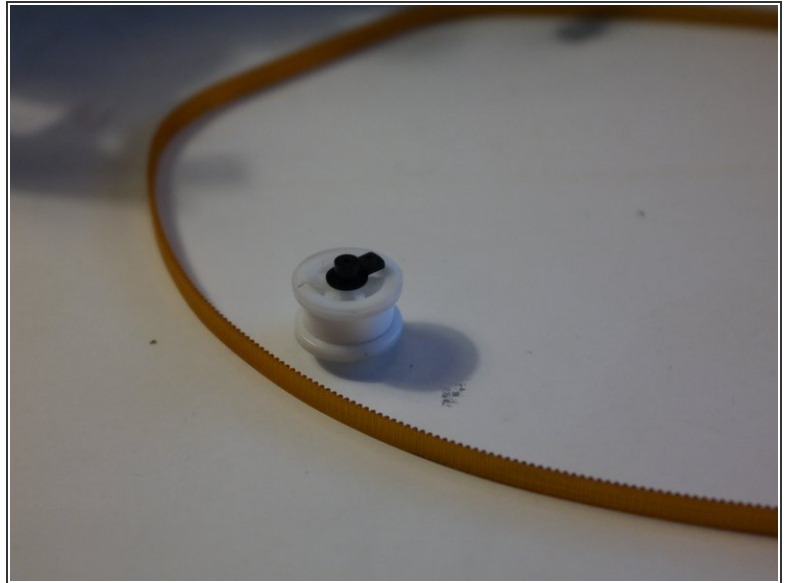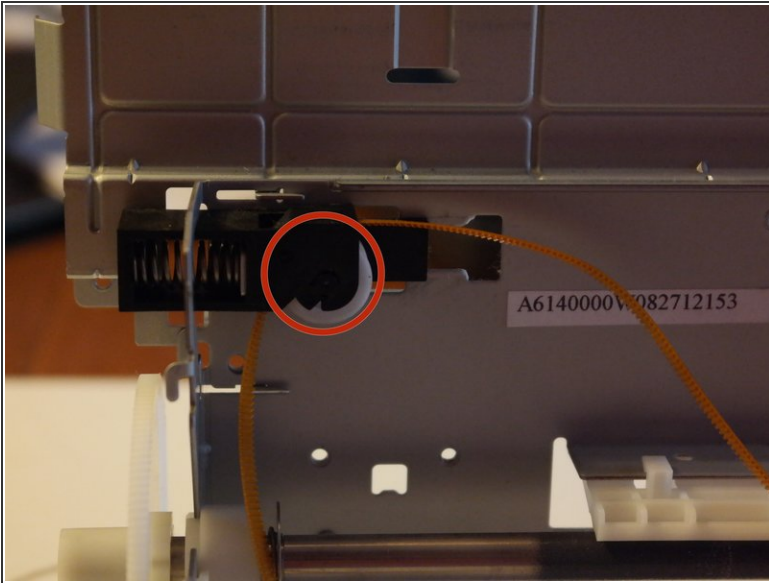- The midframe can now be lifted out of the printer.

Step 33

- After removing a gear, another metal rod can be removed.

Step 34

- After removing another screw, the second stepper motor can be removed.

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Step 35

- The tensioner wheel and drive belt can be removed by pushing it down out of the tensioner.

Step 36
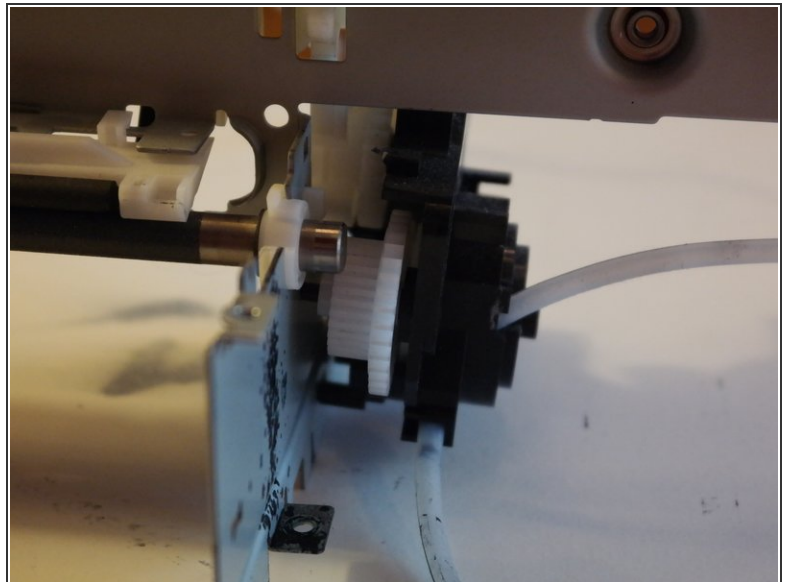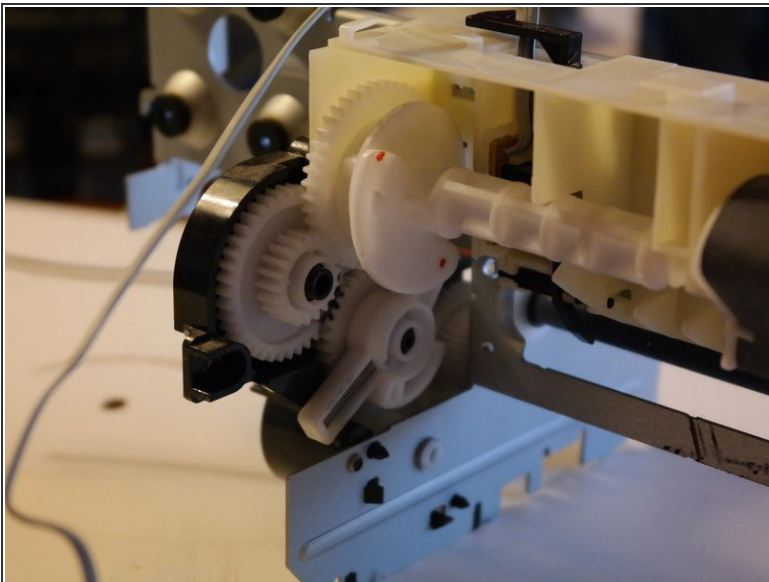
- The gearbox is going to be the next thing to be removed...

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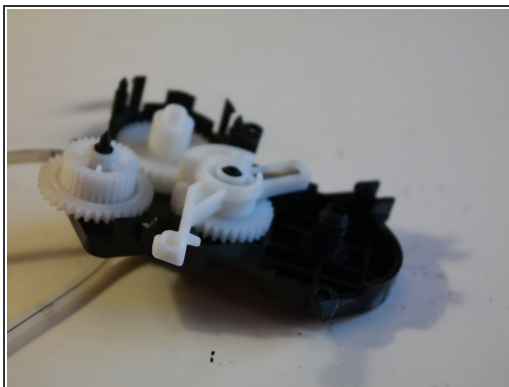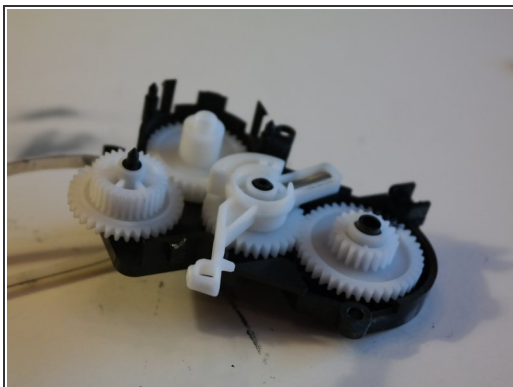
Step 37

- The gearbox drives the paper feed and the nozzle cleaning processes all from one motor.

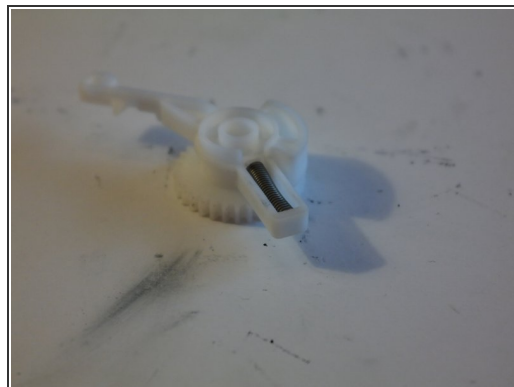## Step 38
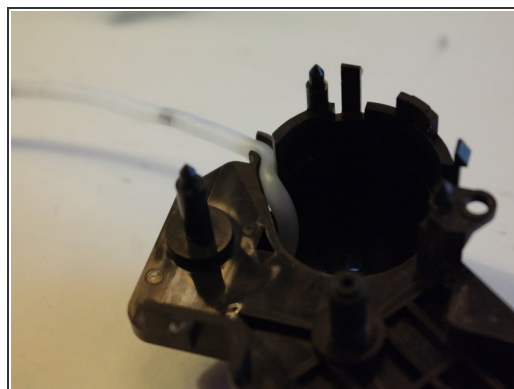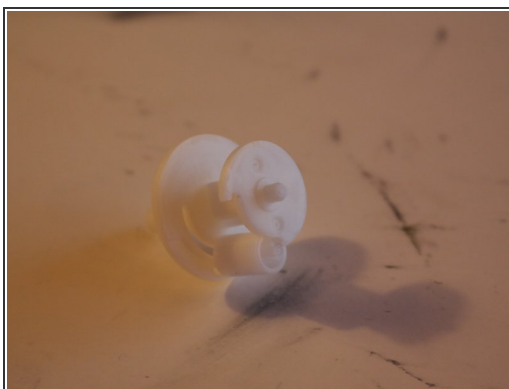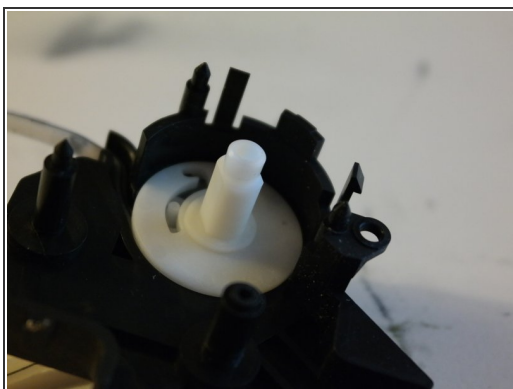
- A close look at the peristaltic pump used to move ink from the nozzle cleaner to the large absorbent pads.

Step 39
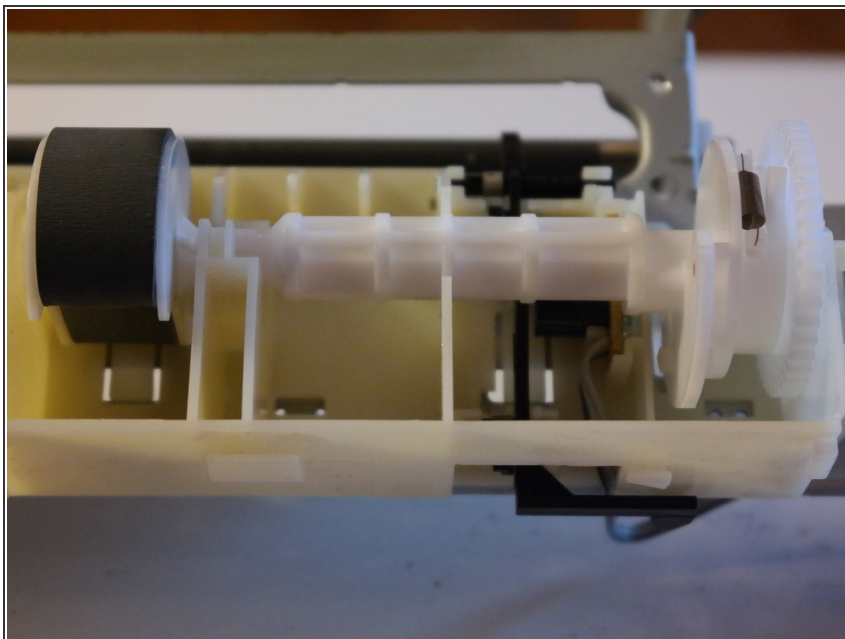
- This is what is left of the paper feed mechanism. The circuit board contains two microswitches to detect if there is paper present.

Step 40

- Another rod is removed from the printer.

- This rod is coated in something that helps it grip onto the paper better.

Step 41

- Lastly, here are the three spring-loaded rollers removed from the paper feed mechanism.

Step 42

Repairability Score:

6/10

- The main stepper motor, the part most likely to fail, is easy to remove.
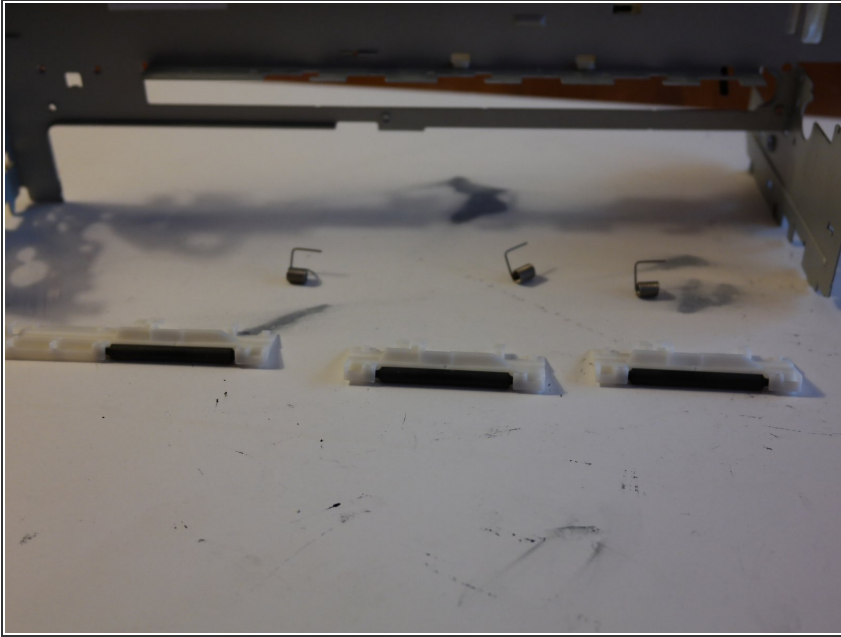
- The ink cartridges are easily replaceable.

- Many parts inside the printer have ink on them, making repairs messy.

- The other stepper motor is very hard to access and requires disassembling most of the printer.

- The midframe, which contains the gearbox and secondary stepper motor, is attached to the case with blobs of melted plastic that must be cut off to remove.

- The case is very hard and tedious to open without breaking tabs.

Step 43
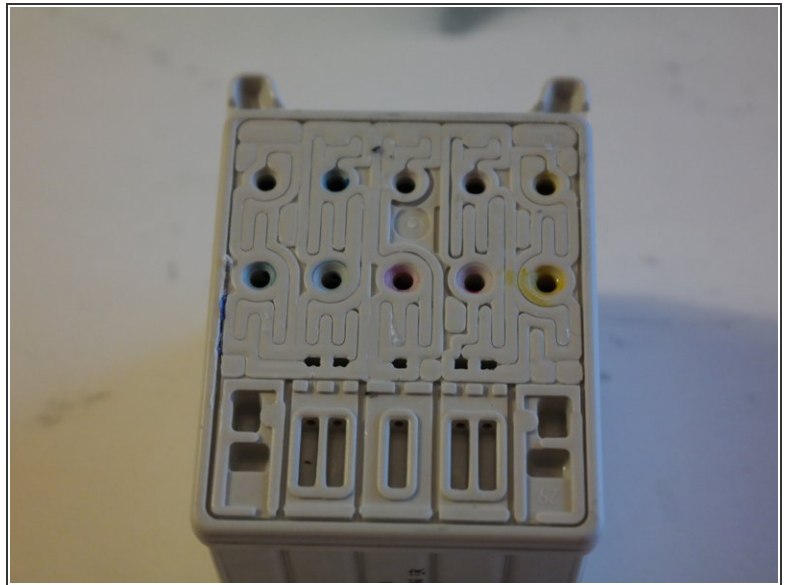
- **Bonus Teardown Time!**

- Time to see what is underneath the 'Do not remove' sticker located on the ink cartridge.

- What is this network of labyrinthine passageways?

- The answer is a capillary tunnel to reduce ink pressure. The lower row of holes leads into the cartridge itself, while the top row leads to the ink nozzles.

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