Replacing the Form 3 cartridge spring finger assembly

formlabs

Required Supplies:

- Cartridge spring finger assembly (provided by Formlabs Support)
- 3 mm hex driver (provided by Formlabs Support)
- 2 mm hex driver (provided by Formlabs Support)
- Nitrile gloves

Estimated time: 15–20 minutes

The cartridge spring finger assembly sits at the bottom of the resin cartridge slot at the back of the Form 3. The printer uses the cartridge spring fingers to detect inserted resin cartridges. A dirty or damaged cartridge spring finger assembly can prevent the Form 3 from interacting with resin cartridges properly.

Use this guide to replace the Form 3 cartridge spring finger assembly.

Preparing the workspace

OVERVIEW: *Prepare the Form 3 and a dust-free workspace for replacing the cartridge spring finger assembly.*

STEP 1: REMOVE THE BUILD PLATFORM
Remove the build platform first to avoid dripping resin into the printer cavity.

STEP 2: REMOVE THE RESIN CARTRIDGE
Remove the resin cartridge and close the vent cap to prevent resin from dripping off of the bite valve and into the printer.

STEP 3: REMOVE AND STORE THE RESIN TANK
Remove the resin tank, place it in the resin tank carrier, and cover it with its lid. Set the carrier and tank aside on a clean, flat surface.

> **NOTICE:** Wear gloves and hold the resin tank by the tank grips on either side to avoid contamination or damage to the underside of the tank.

STEP 4: PREPARE THE WORKSPACE
Clear a workspace around your printer. Ensure that the workspace is well-ventilated and free of dust.

STEP 5: UNPLUG THE PRINTER

Disconnect the power cable from the printer before continuing with maintenance. Do not perform maintenance on the printer while it is connected to power. Wait five minutes after disconnecting the printer from power before proceeding.
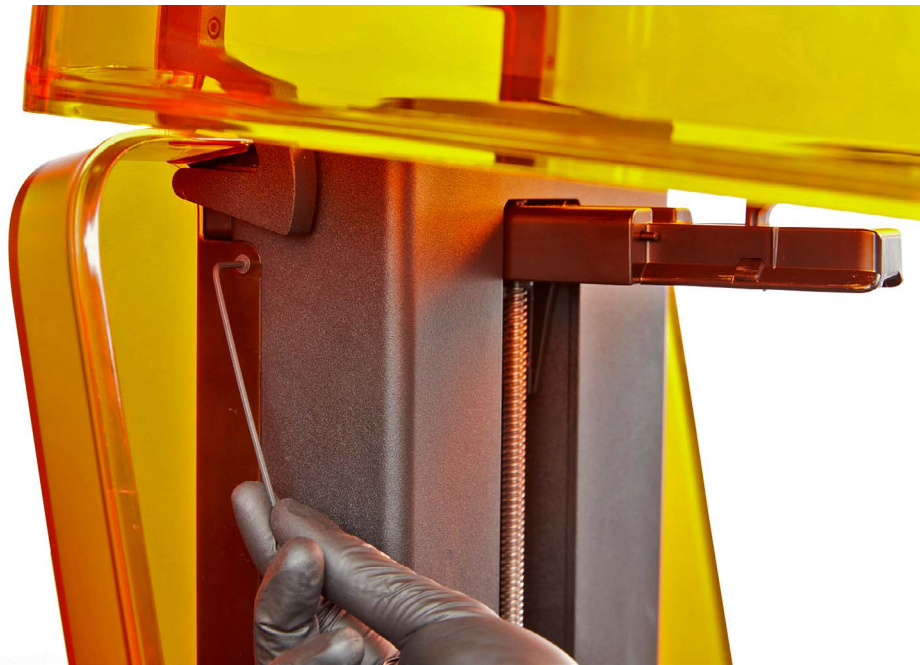
> **DANGER:** Performing maintenance on the printer while it is plugged in increases the risk of electric shock. Never remove the rear shell of the printer while the printer is plugged in. Never reconnect the printer to power while the rear shell is uninstalled.

Removing the rear shell

OVERVIEW: *Remove the rear shell of the printer to gain access to the resin cartridge slot.*

> **NOTICE:** The Form 3 contains sensitive electronic components. Ground yourself before touching any electronics in the printer by using a grounding strap or touching a grounded piece of metal.

STEP 1: REMOVE THE REAR SHELL SCREWS (INTERNAL)

Open the printer cover. Use the provided 2 mm hex driver to loosen and remove the two screws on the side of the Z-tower. There is one screw on each side of the Z-tower.

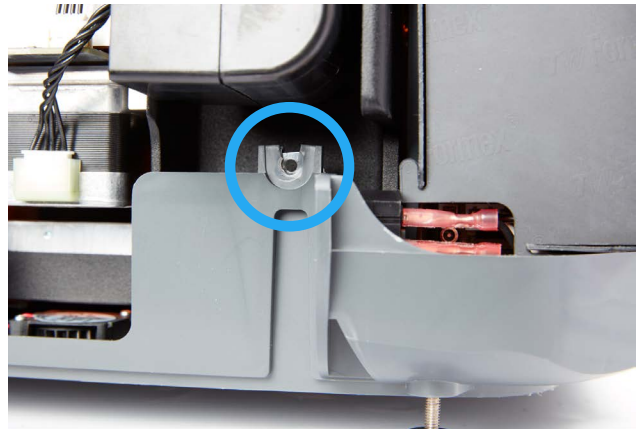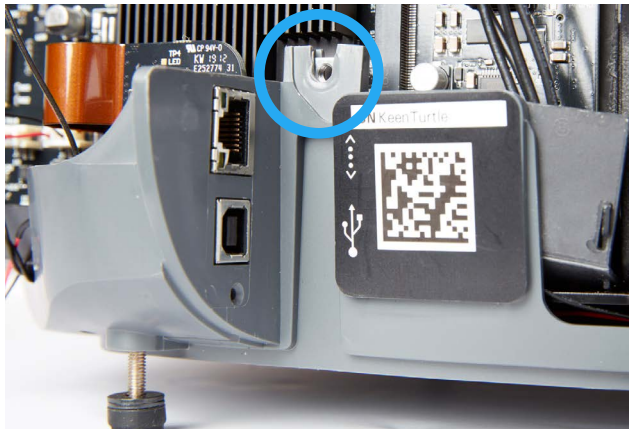## STEP 2: REMOVE THE REAR SHELL SCREWS (EXTERNAL)

Rotate the printer to access the rear. Use the provided 3 mm hex driver to loosen and remove the two screws on the back of the printer, near the power and data ports.

STEP 3: REMOVE THE REAR SHELL

Gently flex the sides of the rear shell outwards to unclip it from the printer frame. Pull the rear shell directly away from the printer to remove it. Set the rear shell aside.
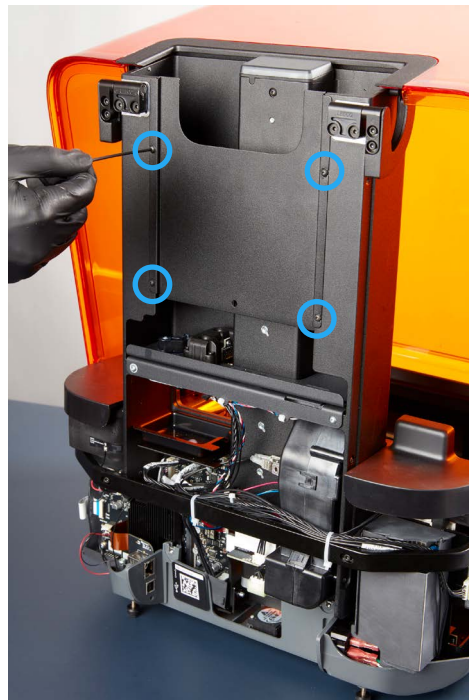
Locate—but do not remove—the two nuts, retained in the lower shell, that previously secured the external rear shell screws. Ensure that they did not come loose while removing the rear shell.

Removing the cartridge slot plate

OVERVIEW: *Remove the plate that covers the resin cartridge slot to gain access to the cartridge spring finger assembly.*

STEP 1: REMOVE THE CARTRIDGE SLOT PLATE SCREWS

Use the provided 2 mm hex driver to loosen and remove the four screws holding the cartridge slot plate to the Z-tower.

STEP 2: REMOVE THE CARTRIDGE SLOT PLATE

Remove the cartridge slot plate and set it aside.

Removing the cartridge spring finger assembly

OVERVIEW: *Unplug, unscrew, and remove the cartridge spring finger assembly from the printer.*

STEP 1: UNSCREW THE CARTRIDGE SPRING FINGER ASSEMBLY SCREWS

Use the provided 2 mm hex driver to loosen and remove the three screws that secure the cartridge spring finger assembly to the bottom of the cartridge slot.

STEP 2: DISCONNECT THE CARTRIDGE SPRING FINGER ASSEMBLY CABLE

Gently lift the cartridge spring finger assembly away from the bottom of the cartridge slot. Locate the cartridge spring finger assembly cable. Hold the connector by its plastic housing and disconnect the cable from the cartridge spring finger assembly board. Do not pull on the individual wires.

STEP 3: REMOVE THE CARTRIDGE SPRING FINGER ASSEMBLY
Carefully remove the cartridge spring finger assembly from the printer.

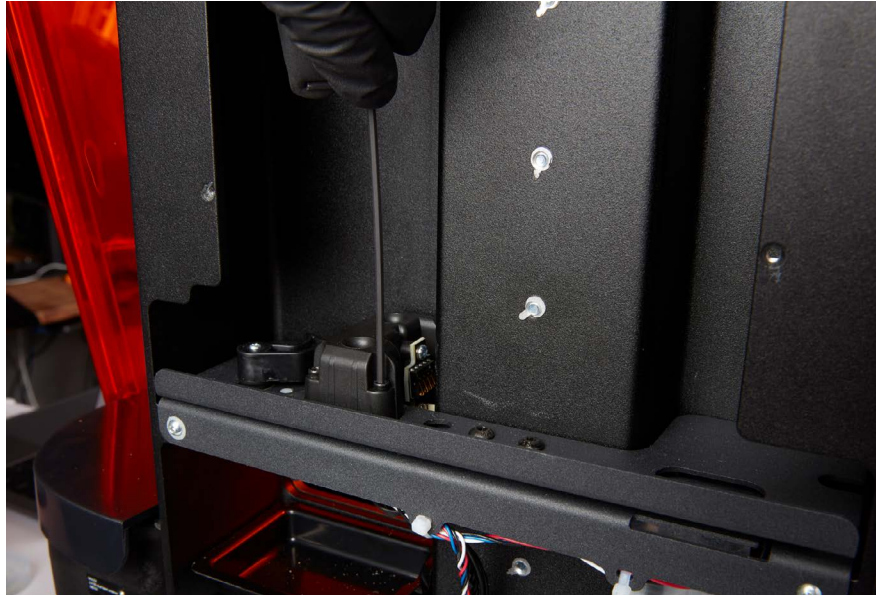# Installing the new cartridge spring finger assembly

OVERVIEW: *After removing the old cartridge spring finger assembly, connect and install the replacement cartridge spring finger assembly.*

STEP 1: RECONNECT THE CARTRIDGE SPRING FINGER ASSEMBLY CABLE

Plug the cable into the cartridge spring finger assembly. The cable will only enter the connector in the correct orientation. Be careful not to bend the pins in the connector.

STEP 2: INSTALL THE CARTRIDGE SPRING FINGER ASSEMBLY SCREWS

Place the three 2 mm hex screws into their respective holes in the cartridge spring finger assembly and thread them into the floor of the cartridge slot. Tighten the three screws using the provided 2 mm hex driver. Do not overtighten to avoid stripping the screw threads.

Reinstalling the cartridge slot plate and rear shell

OVERVIEW: *After installing the replacement cartridge spring finger assembly, reinstall and secure the cartridge slot plate and rear shell.*

STEP 1: ALIGN THE CARTRIDGE SLOT PLATE

Orient the cartridge slot plate vertically, with the cutout at the top. Align the four holes in the cartridge slot plate with the four screw holes in the Z-tower.

STEP 2: INSTALL THE CARTRIDGE SLOT PLATE SCREWS

Thread one 2 mm hex screw into each of the four holes. Tighten the screws using the provided 2 mm hex driver. Do not overtighten to avoid stripping the screw threads.

STEP 3: REPLACE THE REAR SHELL

Place the rear shell back onto the printer. Press it towards the front of the printer to ensure that it fully seats in place. There should be no gaps between the rear shell and the side or bottom shells.

STEP 4: SECURE THE REAR SHELL
Using the provided 3 mm hex driver, screw the two 3 mm hex screws into the rear of the printer.

Open the printer cover. Using the provided 2 mm hex driver, screw the two 2 mm hex screws into the sides of the Z-tower.

Finalizing the repair

OVERVIEW: *After intalling the new cartridge spring finger assembly, power on the printer and perform final checks.*

STEP 1: POWER ON THE PRINTER
Close the printer cover and connect the power cable to the printer and the power supply. The printer will initialize.

STEP 2: TEST THE PRINTER
Insert a resin cartridge into the printer and check that the printer detects it properly.