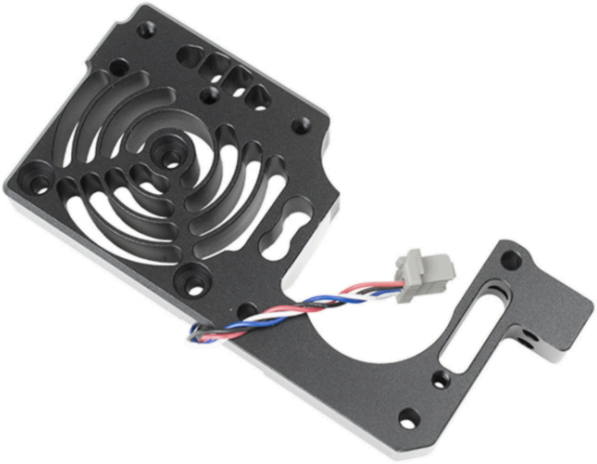
Tabla de Contenido

How to replace Hotend Heatsink (CORE One L)



help.prusa3d.com/g948778

Escanea el código QR para ver la última versión de este capítulo.

PASO 1 Introduction

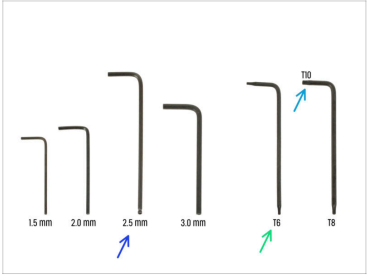
- This guide will take you through the **hotend heatsink replacement** on the Prusa **CORE One L**.

The following instructions are compatible with all Prusa nozzle diameters.

- Todas las piezas necesarias están disponibles en nuestra tienda prusa3d.com.

Ten en cuenta que debes iniciar sesión para tener acceso a la sección de repuestos.

PASO 2 Tools Required



- **Prepara las herramientas para este guía:**
  - 2.5mm Allen key
  - T6 Key
  - Llave / Destornillador T10
  - Prusa lubricant or other compatible grease (can be found in our e-shop)
  - PG-assembly-adapter can be found on Printables.com in the Nextruder assembly folder.

PASO 3 Printer Preparation



- Close the door.
- Navigate to menu ***Filament -> Unload filament***.
- Pull out the filament.
- Retira la bobina de filamento de la impresora.

⚠ Ensure that the printer has cooled down.

- Navigate to ***Preheat -> Cooldown*** and wait for the temperatures to drop. This may take several minutes.

PASO 4 Printer Preparation 2



- Abre el menú ***Control -> Mover Eje -> Mover Z*** y baja completamente la base calefactable.
- Espera hasta que la base calefactable se mueva hacia abajo.
- Turn off the printer using the switch on the back.
- Unplug the mains cable.

PASO 5 Top Cover Removal

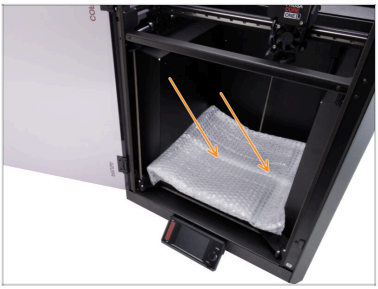


- Open the door and reach in to the bottom side of the top cover.

  ⓘ The cover is held in place by a set of plastic latches.

- Locate two of the latches at the bottom front. Squeeze them together simultaneously.
- Lift the cover to unhook it. Pull the cover to the front.
- Retira la cubierta superior.

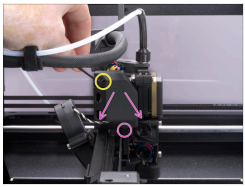
PASO 6 Heatbed Protection

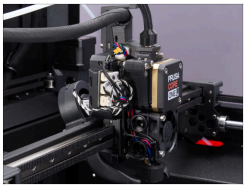


⚠ Before proceeding, it is recommended to protect the heatbed!

- Use a piece of fabric, cardboard, bubble wrap, or another suitable material to cover the heatbed to prevent any damage.

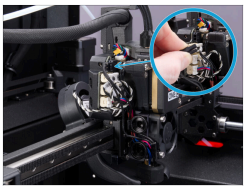
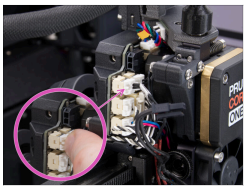
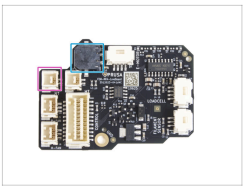
PASO 7 Nextruder Cover Removal





- Adjust the printer so that you can access the Nextruder from all sides easily.
- Using the 2.5mm Allen key, remove the M3x10 screw on top of the Printhead-cover-left (cover).
- Unhook the cover from the bottom and remove it.

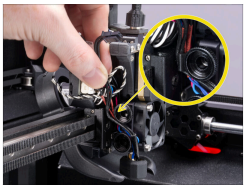
PASO 8 Hotend Disconnecting

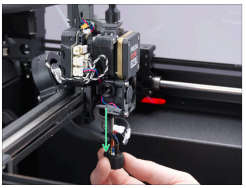




⚠ Each connector has a safety latch; **press the latch to remove the connector**, as pulling without pressing the latch may cause a damage.

- Desconecta el cable del calefactor del hotend.
- Desconecta el cable del termistor del hotend.

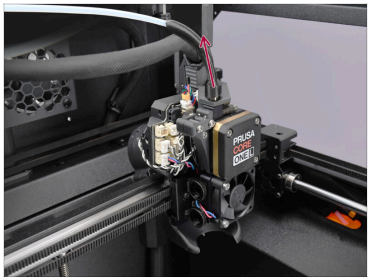
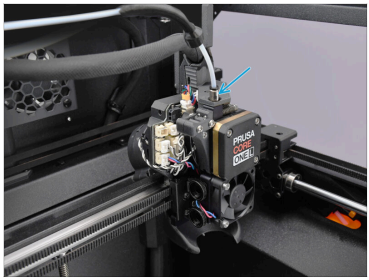
PASO 9 Hotend Assembly Removal





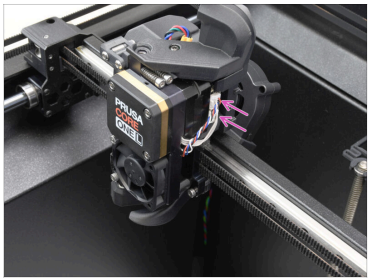
- Desconecta los cables del hotend de la guía de cables de plástico situada detrás de los dos tornillos de mariposa.
- Hold the hotend securely with your hand to prevent it from falling.
- Using your other hand, loosen the two thumb screws by a few turns. **Do not remove them completely.**
- Pull the hotend assembly down and out of the heatsink.

PASO 10 PTFE Disconnection

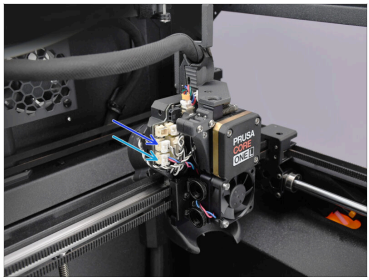
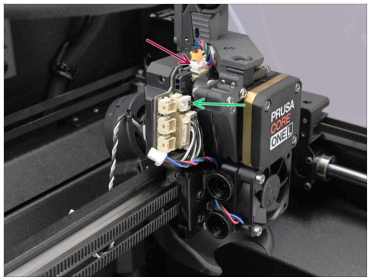
- Pull up the fitting cover on the extruder PTFE tube.
- Unscrew the PTFE fitting from the extruder and set the tube aside.

PASO 11 Cover Right Removal

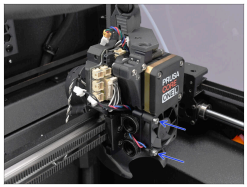
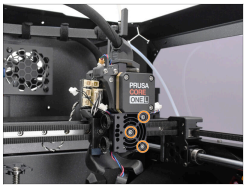
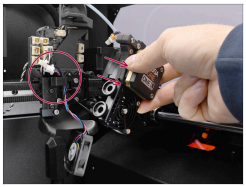
- Loosen the M3x6 screw on the right side of the Nextruder.
- Remove the extruder-side-cover-right.
- Disconnect the Loadcell and Filament Sensor cables.

PASO 12 Extruder Disconnecting

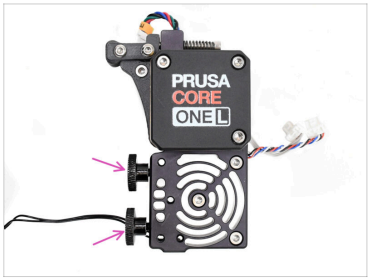
- Disconnect the print fan cable.
- Disconnect the extruder heatsink fan cable.
- Disconnect the Extruder motor cable.
- Disconnect the heatsink thermistor cable.

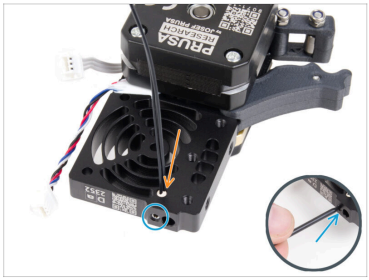
PASO 13 Extruder Removal

- Remove the two M3x18 screws securing the hotend heatsink fan, then remove the fan.
- Remove the three M3x10 screws securing the heatsink, then start removing the extruder **slowly and carefully.**
  - Dislodge the heatsink thermistor cable from the hook behind, then remove the extruder completely.

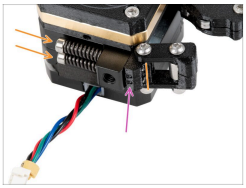
PASO 14 Nextruder Disassembly

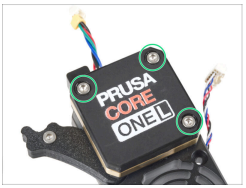




- Remove the two thumb screws on the side.
- Remove the M3x4T grub screw using the short side of the T6 Torx key.
- Remove the NTC heatsink thermistor. Be careful not to damage the cables.

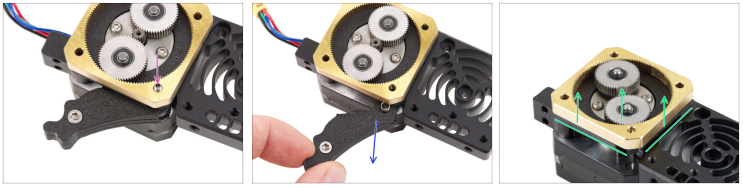
PASO 15 Extruder Disassembly 2





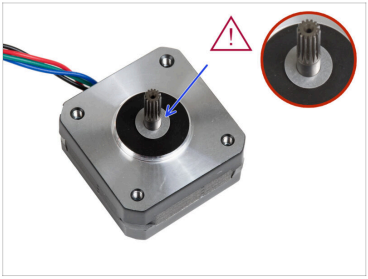
- Remove both the M3x30 screws with the springs.
- Remove the Idler-swivel assembly.
- Remove the M3x25 screws.
- Remove the PG-case, the plastic cover on the front of the gearbox.

PASO 16 Extruder Disassembly 3



- In case you have the "three screw" version of the Nextruder, remove the M3x25 set screw.
- Remove the Idler assembly.
- Remove the whole gearbox assembly: the printed main plate, the brass PG-ring and the gears.
- Clean all the parts of the gearbox from excess grease and dirt.

PASO 17 Extruder Disassembly 4



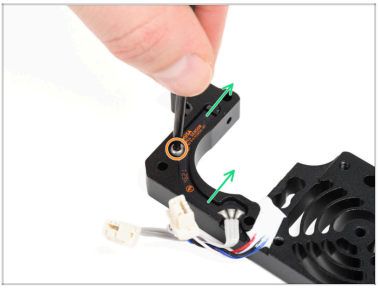
- Locate the **metal washer** that should be between the gearbox and the motor. It might be stuck to the gearbox assembly.

  ⚠ Reseat the washer on the motor shaft, in case it has come off.

  See the last picture for a reference.

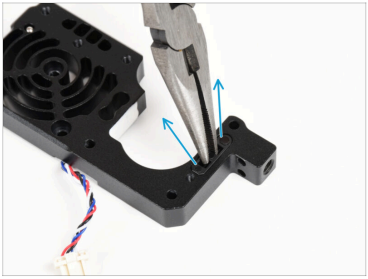
- Remove the extruder motor from the heatsink.

PASO 18 Extruder Disassembly 5



- Desenrosca el tornillo M2.5x6rT para retirar el sensor de filamento Hall.
- Carefully remove the Hall filament sensor.

PASO 19 Extruder Disassembly 6

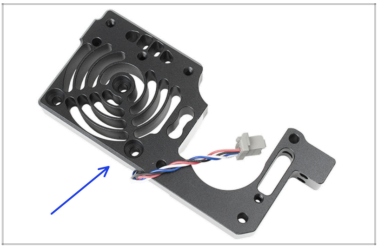


⚠ **BE EXTRA CAREFUL when removing the filament sensor.** The filament sensor contains a tiny parts (spring, magnet, steel ball) that tend to fall out when the sensor is removed.

- Very carefully pull the filament sensor out from the heatsink using the needle-nose pliers.

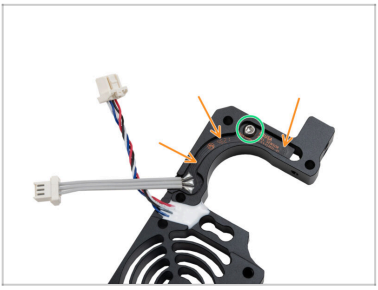
  ⚠ **Don't lose the small parts!** You will need them again later. **Keep them aside in a safe place.**

PASO 20 New Heatsink Preparation



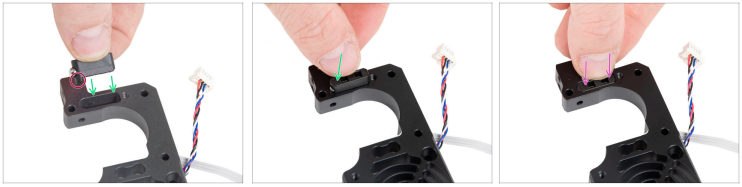
- **Para los siguientes pasos, prepara:**
- New heatsink (1x)

PASO 21 Hall Sensor Installation



- Coloca el sensor de filamento Hall en la cavidad de forma similar del disipador térmico.
- Fíjalo con un tornillo M2.5x6rT. Apriétalo con mucho cuidado, puedes romper la placa electrónica.

PASO 22 Filament Sensor Installation

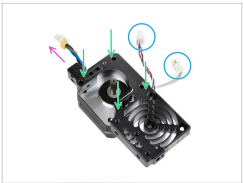


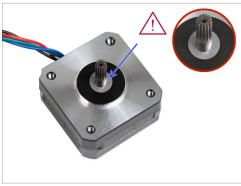
- Insert the filament sensor assembly into the heatsink. Make sure the steel ball part is closer to the side of the heatsink.

  ⚠ Note the **correct orientation of the assembly**. There is a protrusion on the part. The protrusion must be facing down.

- Push the assembly into the heatsink and make sure the filament sensor assembly is flush to the metal heatsink.

PASO 23 Heatsink Assembly





- Coloca el disipador sobre el motor del extrusor. Ten en cuenta la orientación de ambas piezas.
  - El cable del motor debe estar orientado hacia "arriba".
  - Los cables del disipador deben estar en el lado derecho.
- Coloca la main-plate en el disipador. Observa la orientación de la pieza. Utiliza el recorte como guía.
- **Before proceeding to the next step, make sure that the 5x10x0.1 spacer is placed on the extruder motor.**

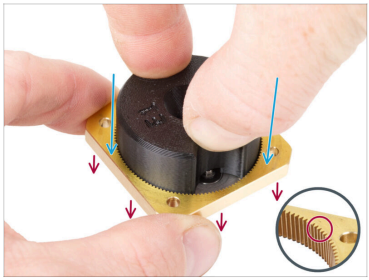
PASO 24 Gearbox Assembly

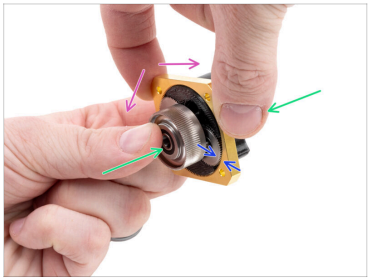
The following instructions need to be done correctly and carefully. Achieve better understanding and successful assembly by watching the video alongside the guide: prusa.io/PG-assembly

- Después de ver el vídeo, sigue los pasos de esta guía.

- Coloca el PG-assembly-adapter en el PG-assembly. Observa las cavidades para los engranajes en el adaptador.

PASO 25 PG-Ring Assembly

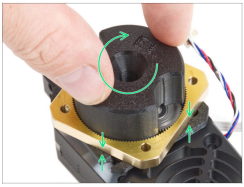




⚠ **Do not assemble the gearbox without the PG-assembly-adapter.** This tool is intended to ensure that the gears are correctly fit together.

- Desliza el PG-ring en el adaptador.
  - Observa que hay un chaflán en un lado de los dientes del PG-ring. Este lado debe estar orientado hacia abajo (hacia el PG-assembly).
- Sujeta todo el conjunto con una mano para poder girarlo con el PG-ring.
- Con la otra mano, desliza el PG-ring en el ensamblaje PG con un movimiento oscilante (mueva el PG-ring a izquierda y derecha repetidamente) - un cuarto de vuelta es suficiente.
- Deténte cuando las superficies de los engranajes estén aproximadamente a ras con la superficie del anillo PG.

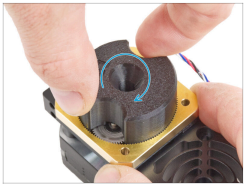
PASO 26 Gearbox Assembly

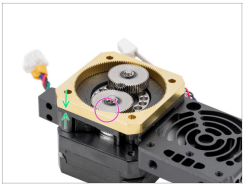




Procede con mucho cuidado en este paso.

- Hold the PG assembly in position and carefully attach it onto the extruder motor shaft.
- Very gently rotate the entire PG assembly (PG-assembly-adapter, PG-assembly, and PG-ring) until it naturally drops down, ensuring there is no gap between the assembly and the main plate.
- Remove the PG-assembly-adapter.

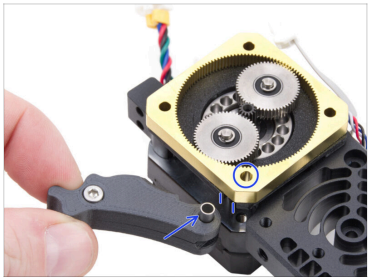
PASO 27 PG-Assembly Check

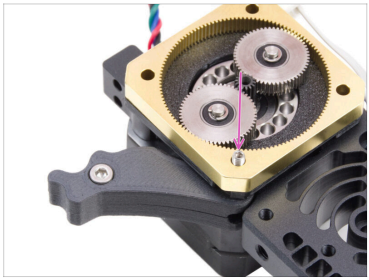




- Vuelve a colocar el PG-assembly-adapter en el PG-assembly para comprobar que todas las piezas están correctamente asentadas.
- Gira con el PG-assembly-adapter. **El conjunto del PG debe ser fácil de girar sin tener que ejercer mucha fuerza.**
- Retira el PG-adapter. Ya no lo necesitarás durante el montaje. Recomendamos conservarlo para el mantenimiento.
- Asegúrate de que el PG-assembly no sobresale sobre el PG-ring. Debe colocarse por debajo del nivel de la superficie del PG-ring o al mismo nivel que el anillo.
- Asegúrate de que la separación entre el PG-ring y la Main-plate es mínima. Si se observa una separación significativa, desmonta el conjunto del engranaje planetario y vuelve a colocarlo.

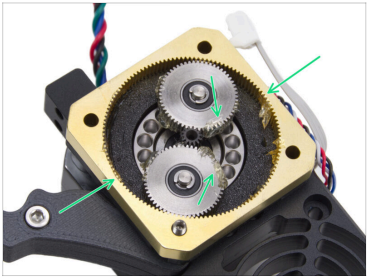
PASO 28 Nextruder Idler Installation





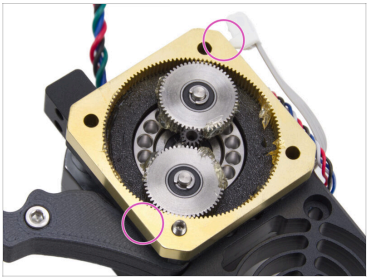
- Inserta el conjunto del tensor entre el PG-ring y el motor del extrusor. Hay un recorte para el espaciador en la placa principal. Alinea el espaciador de la polea guía con el orificio del PG-ring.
- Secure both parts with the socket set screw 3x25. **Do not overtighten the screw! The screw protrudes from the PG-ring after tightening.**

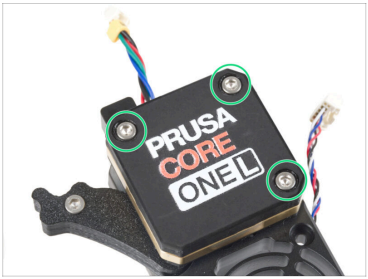
PASO 29 Gear Lubrication



- Apply a small amount of lubricant to the tip of a zip tie (or another suitable applicator).
- Aplica una pequeña cantidad de Lubricante Prusa **alrededor** del PG-ring y los dientes del PG-assembly.

PASO 30 PG-Cover Installation

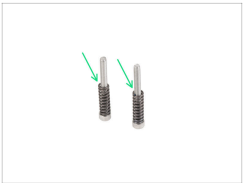


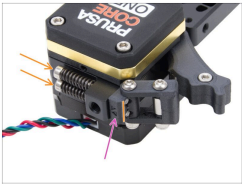


- Con la toalla de papel, limpia los residuos de lubricante de la superficie frontal del PG-ring.
- Coloca la tapa frontal en la caja de engranajes y fíjala con tres tornillos M3x25. **No los apriete completamente** en este momento.

ⓘ The screws on the front case will be completely tightened during the self-test in the final steps.

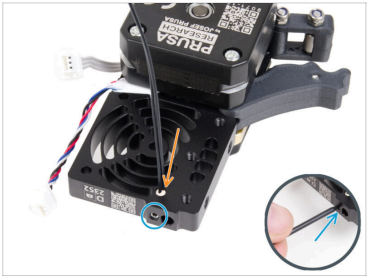
PASO 31 Idler Swivel Installation





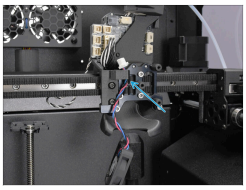
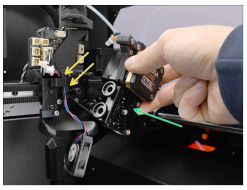
- Fija el muelle 15x5 en ambos tornillos M3x30.
- Push the two screws with the springs through the dedicated openings in the heatsink.
- Attach the Idler-swivel assembly onto the screws. Ensure it is oriented correctly, as shown in the reference picture.
- Tighten both screws carefully. **Stop as soon as the screw tips are flush with the front face of the idler nut — do not overtighten.**

PASO 32 Heatsink Thermistor Installation



- En el lado del motor del extrusor, inserta el termistor NTC en el orificio del disipador térmico.
- Secure it using the M3x4T grub screw. Tighten it gently but firmly using two fingers on the short side of the T6 Torx key. Do not overtighten to prevent damaging the thermistor and threads.
- Inserta dos tornillos de pulgar en el disipador. No los aprietes del todo. Dos vueltas son suficientes por ahora.

PASO 33 Extruder Installation

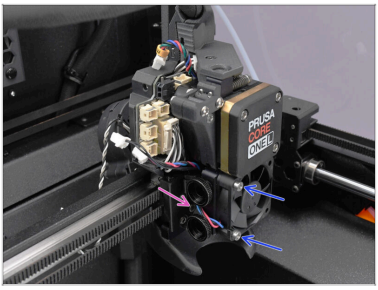




- Before installing the extruder, make sure the hotend heatsink fan cable is held by the right side of the hook on the carriage, as pictured.
- Move the Nextruder to the inside of the printer.
  - Guide the heatsink thermistor cable by the same hook.
- Align the heatsink with the carriage and fix it in place using three M3x10 screws.

  ⚠ Verify none of the cables and connectors behind the extruder is getting pinched.

  ⚠ **Tighten the screws carefully — they thread into plastic, so stop when snug to avoid stripping or otherwise damaging the threads.**

PASO 34 Fan Installation

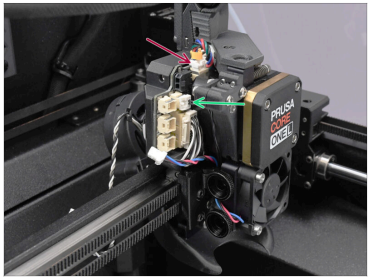


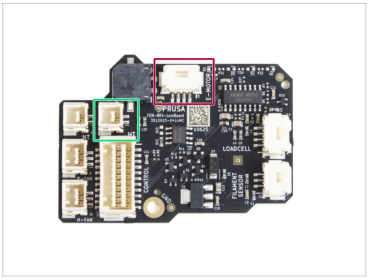
- Guide the hotend heatsink fan cable between the thumb screws.

  ⚠ Make sure the fan is positioned so that the cable is guided toward its left side.

- Attach the fan to the heatsink using two M3x18 screws.

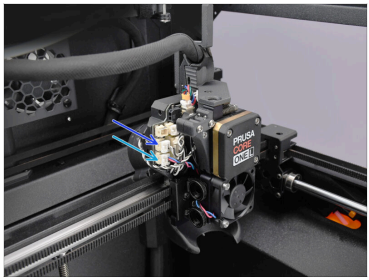
PASO 35 Extruder Connection

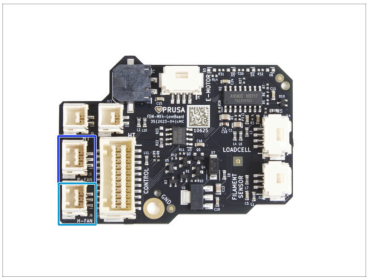




- Connect the extruder motor cable into the top of the LoveBoard.
- Connect the heatsink NTC thermistor into the corresponding plug on the LoveBoard.

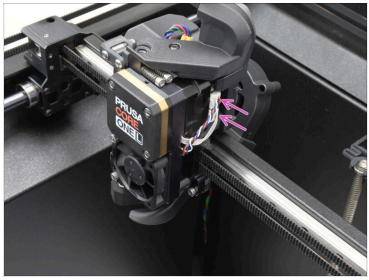
PASO 36 Extruder Connection 2





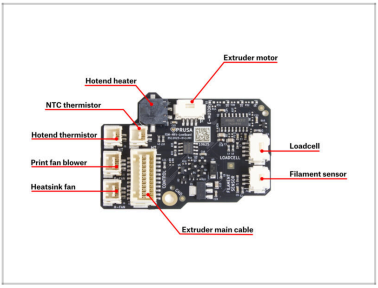
- Connect the Hotend heatsink fan into the bottom left connector on the LoveBoard.
- Guide the print fan cable from the back toward the LoveBoard and plug it into the connector directly above.

PASO 37 Cover Right Installation



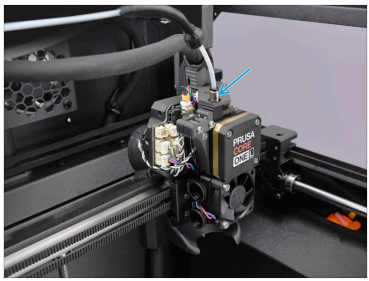
- Move to the right side of the extruder.
- Connect the Loadcell and Hall Filament Sensor cables into the right side of the LoveBoard.
- Cover the cables with the extruder-cover-right, center the cover, and secure it with one M3x6 screw.

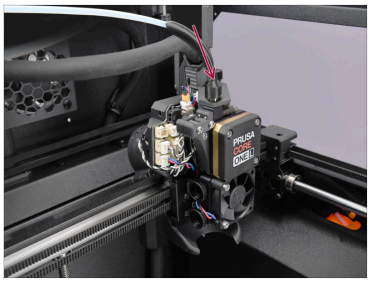
PASO 38 LoveBoard Connection Check



Check the connections to the LoveBoard according to the diagram.

PASO 39 PTFE Installation

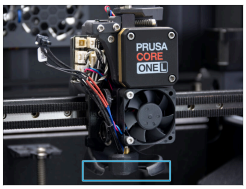




- Screw the PTFE fitting into the top of the extruder and tighten it until snug.
- Slide down the plastic cover to conceal the PTFE joint.

PASO 40 Hotend Assembly Installation



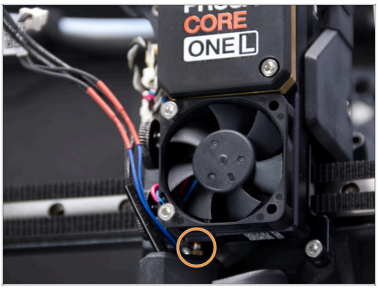


- Locate the hole on the bottom of the heatsink and insert the hotend assembly.

  Position the assembly to maintain a consistent gap between the fan shroud and the hotend.

- Once fully inserted, keep pushing the assembly upward and tighten both thumbscrews.
- Double-check that the hotend is fully inserted into the heatsink and properly aligned with the fan shroud.

PASO 41 Nozzle Check

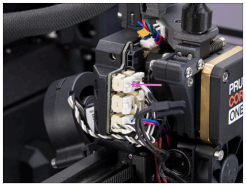
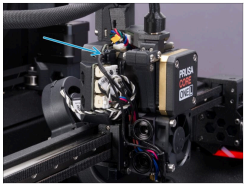
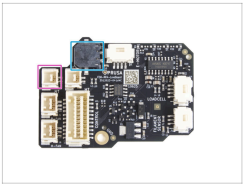


- **Verify that the nozzle is fully inserted** into the heatsink, with the copper ring on the nozzle barely visible.

  ⚠ If not inserted properly, the nozzle may suffer from a poor heat transfer potentially leading to clogs.

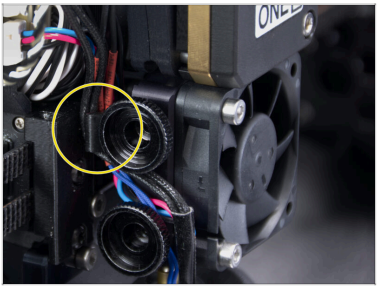
ⓘ To adjust the nozzle position, loosen the thumbscrews, push the hotend assembly upward, and then retighten the thumbscrews.

PASO 42 Hotend Connection

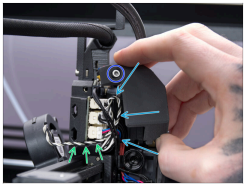
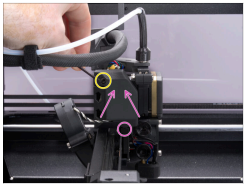
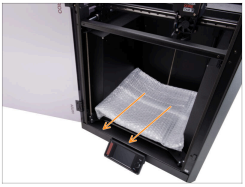
- Plug the hotend thermistor cable to the top left connector on the love board.
- Plug the hotend heater to the black connector on the upper part of the love board.

PASO 43 Hotend Cables Guidance



- Guide the hotend cables between the thumb screws. Hook them behind the plastic notch on the carriage. First, hook up the thinner thermistor cables, followed by the thicker heater cables.

PASO 44 Cover Left Attachment

- Organize the cables so they do not stick out, preventing them from being pinched when attaching the Printhead-cover-left.
- Ensure the print fan cable is routed through the ridge in the Printhead-cover-rear.
- Tip: Prepare the M3x10 screw and set it up in the cover before attaching it.
- Attach the cover to the left side of the nextruder assembly.
  - Insert the bottom of the cover into the slot on the Printhead first.
  - Press the cover towards the nextruder.
- Fíjala en su sitio con el tornillo M3x10.
- Retira el material protector de la base calefactable.

PASO 45 Top Cover Attachment

- Place the back of the cover onto the printer, with the ventillation grille facing you.
- Slide the cover backward until the rear part hooks into place.
- Once the back is secured, lower the front of the cover and gently push it down until the front latches snap into place.

PASO 46 Power Up

Ensure the printer is placed on a stable surface where ambient vibrations, such as those from other printers, are minimized.

- Close the door.
- On the back of the printer, plug in the mains cable.
- Turn the power switch ON.

PASO 47 Final check

- Visit the menu **Control -> Calibrations & Tests** and run the Selftest.

⚠ **Make sure to do the Gearbox Alignment!** If you have just assembled, serviced, or opened the Nextruder, **aligning the planetary gears is a mandatory step**. Skipping this can result in gear ticking, filament grinding, and uneven extrusion.

- Follow the on-screen instructions, and once all tests pass with a green check mark, you may continue using the printer as usual.

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