

# Glowforge Manual

Version 2.1.4



## Introduction

We are over-the-moon excited to introduce you to your Glowforge 3D Laser Printer. It's here. You're here. This is a big deal.

With your Glowforge, you're going to do incredible things. You'll build that custom storage solution that you can't seem to find in stores. You'll make the best birthday present your aunt has ever received.

You'll start a business that knocks the socks off of every customer. You'll do things you haven't even dreamed of yet.

But before you can do any of that, there's this.

Our job is to make sure that every part of the Glowforge experience is delightful. We're sorry, but it is important that you read a few pages that are not delightful: the ones about safety. They're a little dry, and a bit scary. Most of this manual is dedicated to helping you create beautiful things, but this part was written by our safety team, in the most direct language possible, to make absolutely certain you can operate your Glowforge printer safely.

Then, after the safety talk, we'll get back to the fun part: unboxing, the easiest laser setup you've ever seen, and... Laser Time! Your very first Glowforge prints.

We're deeply humbled to have you as one of the very first Glowforge users. We can't wait to see the amazing things you'll do.

PS: If you see anything that is unclear or seems incorrect, please let us know immediately at [support@glowforge.com](mailto:support@glowforge.com).

## Safety

Now, it's time to get serious. Improperly operating the Glowforge unit can cause fire, eye or skin injury from laser exposure, or exposure to chemicals that may be health hazards. These can result in serious injury or even death.

### Before you start

- Read this section before using your Glowforge printer, and ensure everyone else who uses it reads this too.
- Always follow all instructions in this section and in the Glowforge App.
- Children require the supervision and assistance of an adult at all times.
- Do not use your Glowforge printer while under the influence of alcohol or drugs.
- Lasers are subject to regulations and standards, particularly when installed in an educational institution or place of work. Ensure that you comply with all applicable rules.
- Do not touch the head or arm of the Glowforge unit while the power is on. If you do so by accident, turn it off, then back on again to prevent the possibility of damage.

## Electrical Safety

To reduce the risk of electric shock or fire:

- Do not try to service, repair, or modify the Glowforge unit
- Never try to access the wiring of the Glowforge unit
- Do not open the power supply or any other sealed portion of the Glowforge unit
- If the Glowforge unit is damaged, unplug the power cord and contact [support@glowforge.com](mailto:support@glowforge.com) immediately
- In the event of any emergency or malfunction, unplug the power cord on the back of the unit
- Use only a properly grounded outlet with least 800 watts available

## Fire Safety

The Glowforge unit's laser cuts and engraves with a beam of high-intensity infrared light. The laser can generate extremely high temperatures in the material being cut or engraved. Under some circumstances, it is possible for the material inside the Glowforge unit to ignite and for the flame to spread outside of the area being cut or engraved. If ignited, the flame could destroy your unit and spread, potentially setting fire to the building.

### Fire Risk

- Do not put anything inside the Glowforge printer that is not laser-compatible, even if you do not intend to cut or engrave it. Learn more about laser-compatible materials below.
- Do not stack materials; for example attempting to cut two or more sheets of material at a time. Multiple sheets are more likely to burn.
- Clean out leftover bits inside the Glowforge unit when it builds up. (See "Cleaning")
- Do not place things on top of the Glowforge unit. Do not store things that can catch fire above it.
- Do not store sources of flammable vapors like paint, acetone, gasoline, or alcohol in the same room as your Glowforge unit. Flammable vapors could be ignited during operation.
- When a print is complete, certain materials, like plastics, can remain hot. Allow them to cool down before you touch them.

### Keep watch during operation

- Never leave the Glowforge unit unattended while operating – always stay within sight. Look inside frequently.
- A small, candle-like flame where the laser beam strikes the material is normal. This flame should move with the laser and should not remain lit when the laser has moved past. If there is a lasting flame inside the Glowforge unit:
  1. Pull the plug on the back of the unit.
  2. If it is safe to do so, extinguish the fire with a wet towel or a fire extinguisher.
  3. If the fire cannot be extinguished or if it spreads outside the Glowforge unit, call your local emergency number (for example 911) and evacuate the building.
  4. Do not operate the unit further until you have contacted Glowforge for service information at [support@glowforge.com](mailto:support@glowforge.com).

## Laser Safety

### All Glowforge Printers

The Glowforge Basic 3D Laser Printer is a Class 1 laser product containing an embedded Class 4 laser and the Glowforge Pro 3D Laser Printer is a Class 4 laser product. The laser in your Glowforge emits enough infrared light to cause instant skin and eye injury, or start a fire. This infrared laser light is invisible. The Glowforge unit has a case and glass lid which block harmful levels of infrared and ultraviolet light to allow you to operate the laser safely.

**CAUTION!** Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

#### **Do not use if glass or case are damaged or modified.**

Any damage or modifications could allow dangerous contact with moving and/or electrical parts, and/or allow infrared and ultraviolet light, heat, smoke, and fumes to escape.

Safety interlock switches on the front door turn off the laser immediately if they are opened. Do not place magnets near the lid or doors as they can interfere with the switches. Do not try to defeat the switches.

#### **Do not modify or service**

**CAUTION!** Attempting to modify or service the Glowforge unit may result in hazardous laser light exposure.

To reduce the risk of injury:

- Do not attempt service. All service must be performed only by the Glowforge factory or by factory-authorized technicians.
- Do not attempt to alter or modify the unit.
- Only use the front door or top lid to open the case. Do not try to open the case any other way, such as by drilling holes, removing fasteners, or removing coverings.
- Do not try to disassemble or open sealed portions of the Glowforge unit, including any protective coverings or housings.
- If the crumb tray is removed, use extreme caution to ensure that the laser only strikes laser-compatible material, and does not touch the metal bottom of the unit which could cause a reflection and damage the unit.

### Glowforge Pro Class 4 Laser Safety & LSO Training

Because the Glowforge Pro has pass-through slots, it is a Class 4 laser device. For safe operation, a Class 4 laser device should be operated under a laser safety program under the

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control of a Laser Safety Officer (LSO). Training for LSOs normally costs more than \$1,000, but Glowforge has worked with leading laser safety training experts to prepare materials so that you can act safely as the LSO for your Glowforge Pro.

**These materials will train you to operate your Glowforge Pro in Class 1 conditions, which do not require additional special precautions.** If you need to operate your Glowforge Pro in Class 4 conditions, these materials will explain what you must do in order to operate it safely. They will also provide you with an overview of laser physics and safety concerns, and processes to follow.

You must read, understand, and follow the Glowforge Pro Training Materials to use your Glowforge Pro.

The Glowforge Pro LSO Training materials are emailed to all Glowforge Pro owners as a password-protected PDF.

## Smoke and Fume Safety

When you use your Glowforge, the laser creates visible and invisible aerosols, gases, vapors, and particulates (referred to here as “smoke and fumes”). The smoke and fumes can include carbon monoxide and other chemicals which present health hazards, as well as being unpleasant and stinky. The chemical composition of the smoke and fumes depend on the material being lasered. Smoke and fumes from laser-compatible materials are controlled by exhaust or filtration.

## Exhaust

Only operate your Glowforge unit when it is exhausted to the outdoors or through the Glowforge Air Filter. Failure to exhaust will cause smoke and fumes to escape into the room, presenting a risk of health hazards or death.

If you exhaust outdoors, be sure that the exhaust location won't be bothersome to neighbors or passers-by, and don't forget to check your local rules for air quality regulations that may apply to you.

To prevent smoke and fumes from escaping the unit, do not open the lid until the fans stop.

Follow all of the instructions in “Setting Up” carefully.

If there is a strong odor from your Glowforge while it is operating, stop immediately and re-check your exhaust setup. If the strong odor continues, discontinue using your Glowforge and contact support.

Pro Users: There may be small openings around the edges of the passthrough slot. This is expected; your Glowforge Pro's powerful fans will whisk smoke and fumes away into the exhaust hose.

## Safety Equipment

Be sure carbon monoxide detectors are installed and tested in the building as recommended by local codes and manufacturer recommendations.

## Materials Safety

### Laser-Compatible Materials

“Laser-compatible” refers to materials that can be safely processed with the CO<sub>2</sub> laser in the Glowforge unit. Materials that are not laser-compatible may catch fire, emit hazardous smoke and fumes that cannot be controlled by exhaust or filtration, and are a health hazard to you, your neighbors, and your Glowforge printer. For this reason, you must only put laser-compatible materials in the Glowforge unit.

### Proofgrade™ materials

Glowforge sells a line of Proofgrade materials that are laser-compatible and give top-quality results when used with the Glowforge printer. To learn more about Proofgrade materials, contact [support@glowforge.com](mailto:support@glowforge.com).

### Laser-compatible materials from other suppliers

Other suppliers like Inventables.com sell material that they indicate is laser-compatible. If you are uncertain, ask the supplier if the material may be processed safely with a CO<sub>2</sub> laser.

### What if I'm not certain whether my materials are laser-compatible?

If you aren't completely sure that your material is laser-compatible, do not put it in the Glowforge unit.

- **Some materials look similar to laser-compatible materials, but are different.** For example, vinyl and fiberglass can be mistaken for laser-compatible materials but emit harmful smoke and fumes.
- **Materials may have contaminants, coatings, or additives that are not laser-compatible.** For example, certain plywood glues, inks, adhesives, dyes, and paints may not be laser-compatible.
- **Some materials can reflect the laser and damage your Glowforge unit.** For example, copper and chrome can reflect the infrared laser light.

## Materials must fit

Materials that do not fit properly may obstruct operation and result in damage and increase risk of fire.

- Materials must be no more than 21 in. wide and must not be so long as to touch the end of the Glowforge unit. Material must be less than ½ in. tall if the crumb tray is in, or less than 2 in. tall if it is removed.
- Materials must not extend past the side of the crumb tray (if it is being used) or the metal bottom of the print area (if not).
- Do not place rolled-up material in the Glowforge. It may be too tall, or unroll during printing, obstructing operation.

## Materials must be flat

- Materials must be flat so they rest on the crumb tray.
- While a bulge is acceptable, for example from warped wood, the highest point of the material may not extend more than ½ in. above the crumb tray.
- Material must never double back on itself, for example curling up.
- Should material curl or bend so it reaches more than ½ in. above the crumb tray during a print, turn off the power immediately.
- If the material has a protective paper or plastic coating, that coating must be firmly affixed to the material. If it begins to peel off, discard the material and do not print on it.

## Operating Environment

To prolong the life of your Glowforge unit and to reduce the risk of fire or mechanical failure, do not put the Glowforge unit where it could experience:

- Extreme temperature or humidity
  - Temperatures below 40 degrees Fahrenheit (5 Celsius) or over 120 degrees Fahrenheit (48 Celsius)
  - Extreme humidity conditions (below 10% or more than 75%)
  - If venting outdoors, ensure that changing conditions do not cause extreme temperatures or humidity to enter the Glowforge unit through the exhaust hose. Disconnect the hose from the outside air when the Glowforge is not in use.
- Direct sunlight
- Rain, moisture, or liquids
- Excessive hair, dust, or small particles
- Loose materials such as paper or a tablecloth that could be sucked into the air intake on the bottom of the Glowforge

Print when the ambient temperature is within the following ranges. Printing outside these ranges may cause your print to pause periodically or fail to complete.:

- Basic: Below 60 degrees Fahrenheit (16 Celsius) or over 75 degrees Fahrenheit (24 Celsius)
- Pro: Below 60 degrees Fahrenheit (16 Celsius) or over 81 degrees Fahrenheit (27 Celsius)

## Stop Using Your Glowforge Unit If....

If any of the following occur, immediately turn off the power switch, unplug the unit, and contact [support@glowforge.com](mailto:support@glowforge.com). Do not use your Glowforge unit again until the issue has been addressed by support.

- The default settings for a piece of Proofgrade™ material do not cut through the material even after cleaning the lens and windows
- There is a fire in the unit which persists after the laser turns off
- The head stops moving but the laser is on
- The unit's button turns any color other than white, yellow, or teal
- You see any damage or discoloration to the case
- There are any cracks or chips in the glass tube or lid
- You see any moisture present inside the Glowforge unit
- You see any damage to the interior components of the Glowforge unit
- You notice unusual light coming from the unit that was not occurring previously.
- You notice an unusual sound coming from the unit that was not occurring previously

## Glowforge Regulatory Information

In the United States, lasers are regulated by the federal Center for Devices and Radiological Health (CDRH), a subsidiary of the federal Food & Drug Administration (FDA). The CDRH and the FDA, in conjunction with other agencies, help ensure that laser devices, from CD players to industrial lasers, can be used safely.

The Glowforge Basic unit is a Class 1 laser product containing an embedded Class 4 CO2 laser and a Class 1 laser diode. Because the Class 4 laser is fully contained in a Class 1 enclosure, this laser product is designated as a Class 1 laser product during all procedures of operation.

The Glowforge Pro unit is a Class 4 laser product containing an embedded Class 4 CO2 laser and a Class 1 laser diode. It is designated as a Class 4 laser product.



The included CO2 laser has the following characteristics:

- Wavelength: 10.6  $\mu\text{m}$  continuous wave (CW)
- Internal laser power: less than 100 watts peak
- Beam diameter: less than 5mm at aperture
- Beam divergence: less than 1.2mrad

The included laser diode has the following characteristics:

- Wavelength: 635nm - 650nm CW
- Internal laser power: less than 0.39 milliwatts peak

The Glowforge unit is manufactured by:

Glowforge  
2200 1st Avenue South, First Floor  
Seattle, WA 98134

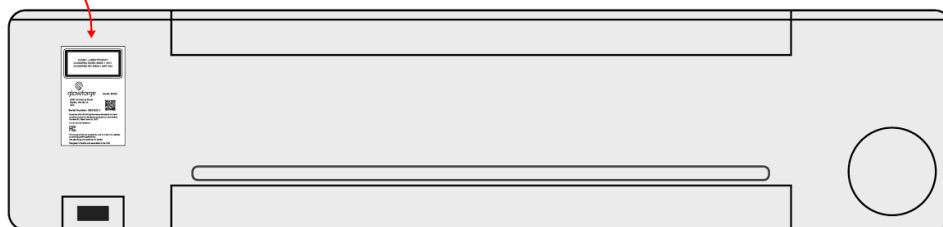
For more information or support, contact [support@glowforge.com](mailto:support@glowforge.com)

The following label information applies to the Glowforge Basic



Manufacturer's Label

This label appears on the back of every Glowforge Basic, with an appropriate serial number, in the spot indicated by the arrow in the diagram below.



Rear View of Unit

The following label information applies to the Glowforge Pro

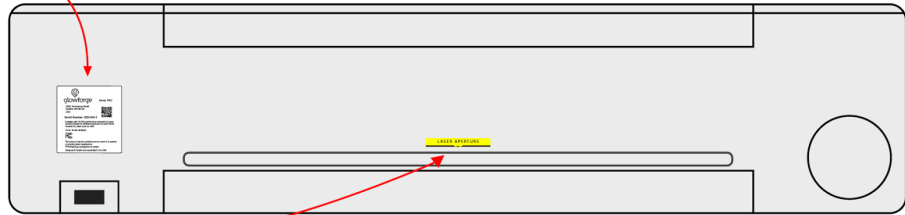


Manufacturer's Label



Aperture Label

The Manufacturer's Label and Aperture Label will appear on the back of every Glowforge Pro, with an appropriate serial number, in the positions indicated.

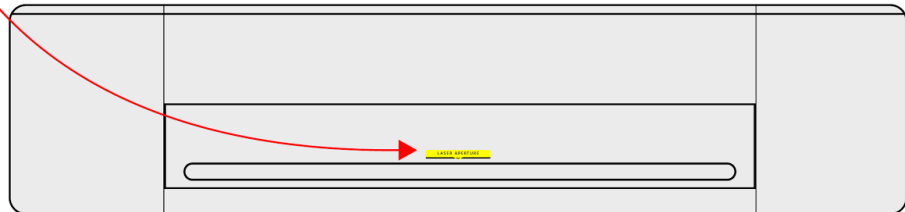


Rear View of Unit

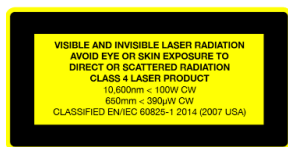


Aperture Label

This Aperture Label appears on the front of every Glowforge Pro in the position indicated.



Front View of Unit



Explanatory Label



Hazard Label

The Hazard Label and the Explanatory Label appear on the right side of every Glowforge Pro in the positions indicated.



Right Side View of Unit

## Unboxing & Setting Up

### Let's Get Started

If you've read about Safety, you now know everything you need to operate your Glowforge safely, and that's pretty cool. Thank you for your patience. Now, it's time to get lasering!

Unboxing shouldn't take too long – we can't wait for you to get started with your first print, either. In just a few minutes, you're going to have a working laser in your home (or office, classroom, workshop, or design studio)! Of course, if you encounter any challenges along the way, our Customer Success team can be reached at [support@glowforge.com](mailto:support@glowforge.com).

Before you start, be sure you have a flathead screwdriver and a stable surface on which to place your Glowforge where you'll have nearby access to an electrical outlet and exhaust vent.

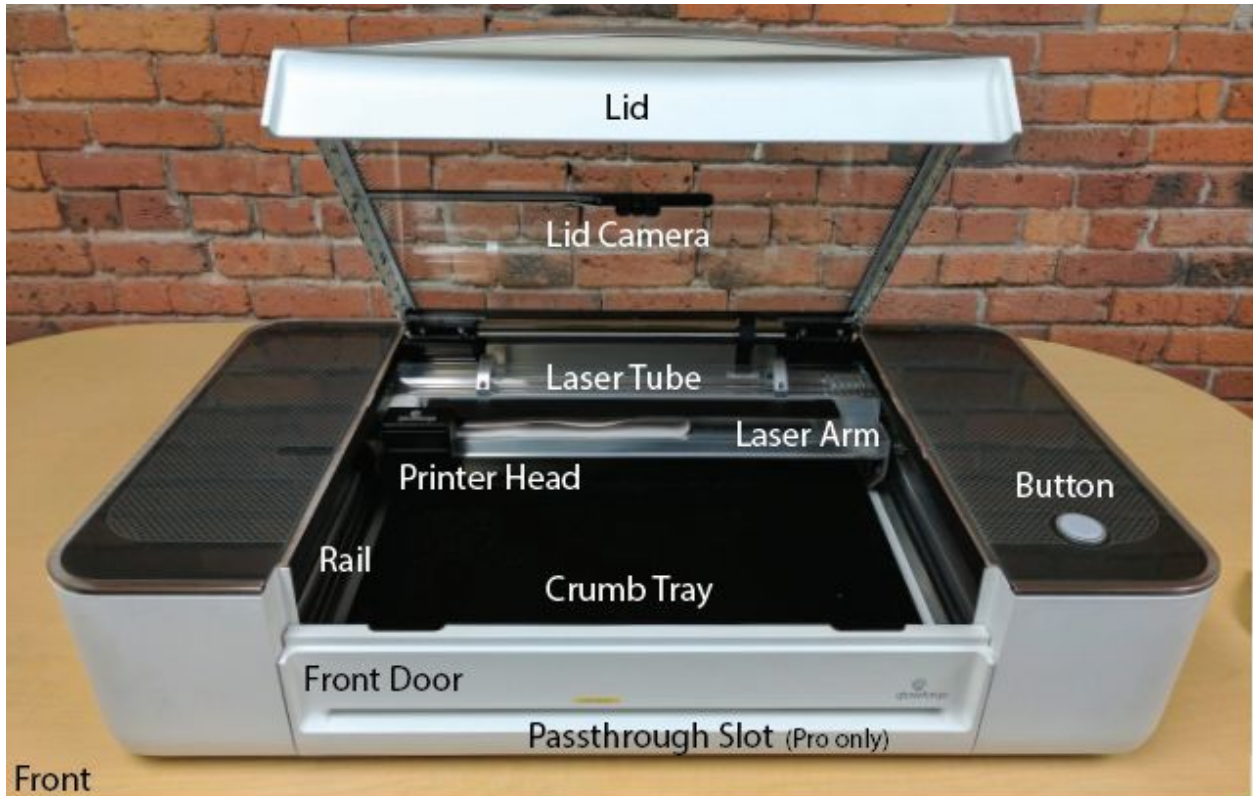
Let's get started, shall we?

#### Any damage?

If your packaging or any part of your Glowforge shipment is visibly damaged on arrival, we want to make it right as soon as possible! Send photos of the damage to [support@glowforge.com](mailto:support@glowforge.com) and wait until you hear back from us. If the Glowforge itself is visibly damaged, do not plug it in or attempt to operate us; contact us immediately.

## Getting Acquainted

Here's a quick tour of parts you'll need to know:



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## Your Glowforge Basic 3D Laser Printer & Accessory Pack

Your shipment arrived in three boxes. The largest box contains your Glowforge Basic printer and, shipped inside your Glowforge for safety, the printer head and power cord. We suggest telling the neighbors the box contains a big microwave, so they don't pester you all day to use it.



The box that's short and wide is your Glowforge Accessory pack. Set it to the side for just a few minutes. Your Proofgrade™ materials arrived in a third box (not shown).

## Unboxing Your Glowforge

We've designed the packaging to make it easy to get your Glowforge out.

The box is specially designed to protect your Glowforge through all shipments, domestic and international. Be sure to keep the box and packing materials, as you'll need them if you want to transport your Glowforge again or for any warranty repair.

1. Your Glowforge box is locked tightly by 4 handle locks on the bottom of your box.



2. Unlock the 4 Handle Locks
  - a. Hold the white tab on the right side of each white box handle.



3. Open the Handle Locks
  - a. Pull each white tab from right to left, opening the handle like a door



4. Remove the Handle Locks
  - a. Gently pull the frame of the white handle to remove it from the box



5. Keep all 4 Handle Locks
  - a. These lock the Glowforge Box together and are required for proper shipping of your Glowforge unit



6. Remove the Lid
  - a. First peek: that's your very own Glowforge. Next, you'll prepare where to put it before you remove it from its box.



## Choose a Location

### 1. Choose a Location

- a. Choose a location in a well-ventilated room with a 4" outdoor exhaust vent. This is the same type of vent used to connect a dryer. The exhaust vent should be at least 3 feet from property lines and openings into a building, and at least 10 feet from mechanical air intakes. You can also put the hose out an open window, so long as the end of the hose is at least 3 feet from the window and meets the other criteria above.



### 2. Prepare a Surface

- a. Get a hard, flat, and stable surface ready. If the surface is unstable, uneven, or too small, then you could have inaccurate prints, the doors may not close properly, and the camera might be misaligned. You could even damage your Glowforge.

### 3. Remove the top layer of protective foam





4. Have two people lift the Glowforge unit out of the box

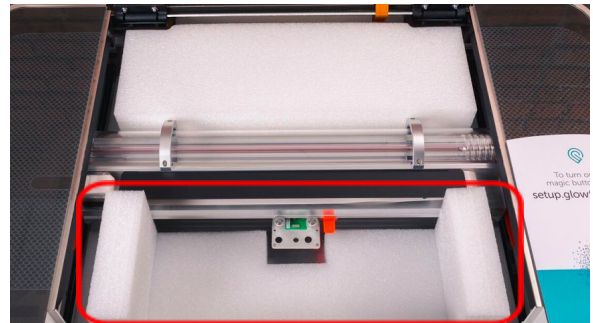


5. Leave a Little Room
  - a. Place the unit with at least an inch of clear space in all directions. Do not block the air intake on the bottom right side of the Glowforge unit.
6. Confirm Safety Equipment Confirm that your safety equipment meets requirements: See Fire Safety, Smoke and Fume Safety.

## Remove Printer Head, Power Cord, and Important Orange and Red Bits

We've secured your Glowforge with two foam blocks and several important orange and red bits. In addition to providing support during travel, the rear foam block also holds your Printer Head and power cord.

1. Lift the lid of your Glowforge & lower the front door
2. Remove the Front Foam Block
  - a. Gently pull out the foam closest to the lowered front door



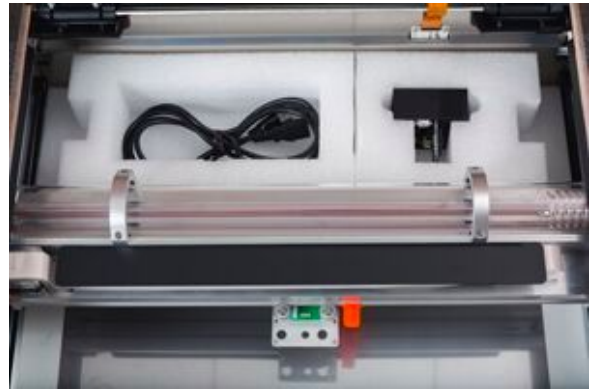
### 3. Remove Knobs

- a. To the left and right, you'll find red knobs. Unscrew and pull them out.



### 4. Reveal Printer Head and Power Cord

- a. Remove the top layer of the rear foam block to reveal your Printer Head and power cord



### 5. Remove Rear Foam Block

- a. Gently remove the rear foam block, including the Printer Head and power cord. Set these aside for now.

### 6. Remove Clip

- a. Under the glass tube, you'll find an orange clip. Push down on it and it will pop off.



7. Remove Red Strips
  - a. Push the laser tube back gently, then lift off the two red silicone strips.



## Your Glowforge Accessory Pack

It's time to open your Glowforge Accessory Pack.



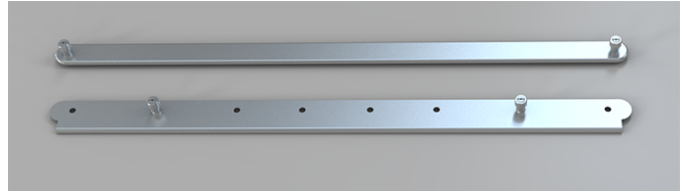
Glowforge Basic: Inside you'll find your jet black ferrous steel crumb tray, your lens tool, lens wipes, and an exhaust hose.

Glowforge Pro: You'll find your Pro Glasses along with your jet black ferrous steel crumb tray, your lens tool, lens wipes, and an exhaust hose. These are premium safety glasses which can be used alone or worn over prescription glasses.



Note: Your Pro Shields will be shipped later this year. They'll finger-screw right into the passthrough slot of your Glowforge Pro to ensure that nothing - material or laser light - comes in or out when the slot is not in use.

For more information about the Pro Glasses and Pro Shields, see the Glowforge Pro Training Materials.



## Slide In the Crumb Tray

The black and metal crumb tray sits inside the bed of your Glowforge, supports the material you place inside, and catches leftover print bits to keep your Glowforge nice and tidy. It has four little feet that rest in four little dimples. The handle goes in front, and the feet go on the bottom.

1. Lift the lid of your Glowforge & lower the front door
2. Gently move the Laser Arm
  - a. Using two hands, gently push the laser arm away from you until it's near the back of the unit.
3. Pick up the Crumb Tray
  - a. Pick up the crumb tray - make sure the handle is in front and the wide black plastic strip is in the back.
4. Slide in the Crumb Tray
  - a. Slide it in until you feel the feet settle into the dimples in the base of the Glowforge unit.



5. Make Sure the Handle is in Front
  - a. Check that the handle's in the front, and the wide black part is in the back, just like the picture. Otherwise, you'll have mysterious printing problems, and feel silly when we ask you if your tray is in backwards.

6. Close the Front Door.

## Snap in the Printer Head

Never connect or disconnect the printer head while the Glowforge is plugged in or you might break something.

1. Position the Laser Arm and Metal Plate
  - a. Gently slide the metal plate on the laser arm all the way to the right, then push the arm to the back of the unit.



2. Carefully Pick Up the Printer Head
  - a. Do not touch any part of the printer head that is not flat black metal. Be especially careful of the yellow window on the side of the head. Remove the printer head from the white foam tray and remove the orange foam cylinder from inside the head.



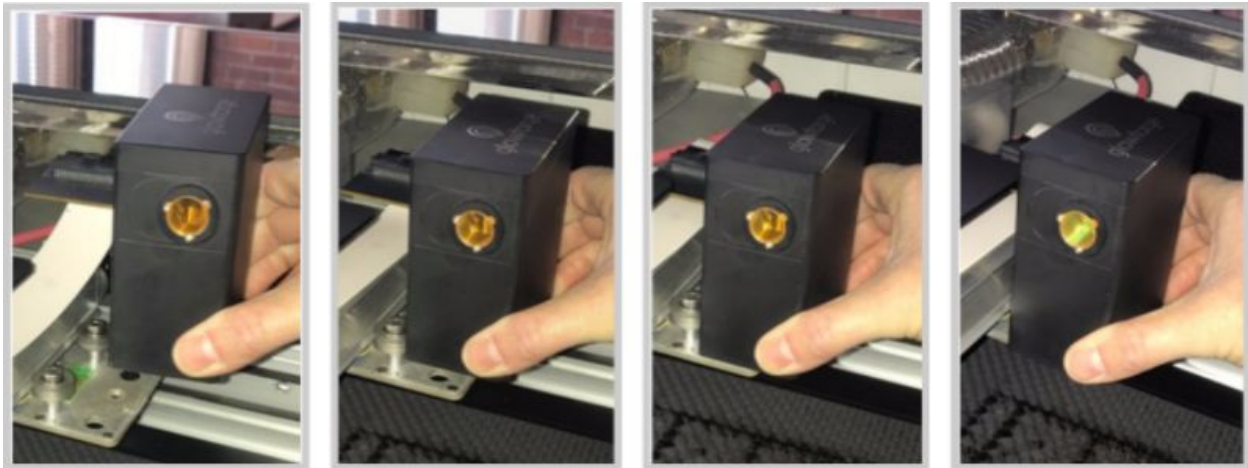
3. Pick Up the Wire Ribbon
  - a. Holding only the finished black surfaces of the printer head, pick up the printer head and wire ribbon as shown.



4. Slide the Ribbon Into the Head. Make sure the tab on the wire ribbon is facing up. Slide the ribbon into the head until it clicks.

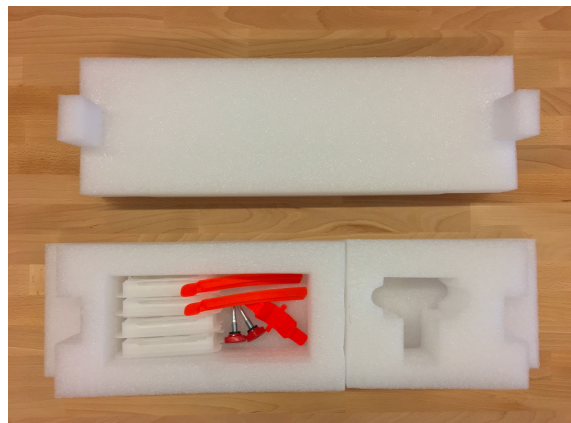


5. Attach the head.
  - a. As shown, lower the printer head over the metal plate so that it rests next to the two round posts. Then push it gently away from you – you'll feel a "click" as magnets pull the printer head until it sits snugly atop the metal plate.



6. Close the front door and lower the lid on your Glowforge

7. Save Everything!
  - a. If you need to ship your Glowforge, for example for warranty service, you'll need all the original parts: boxes, handle locks, foam, and important orange and red bits. Store them safely - replacement packing materials are \$199.



## Set Up Exhaust

1. Connect Hose to Unit
  - a. Use the hose provided. Slide the hose clamp around the hose and then fit both items together over the exhaust connection on the back of your Glowforge printer. Using a flathead screwdriver, tighten the clamp until it will not come off with a gentle tug. Careful: Over-tightening can damage the tube and risk exhaust leakage.



2. Connect Hose to Vent
  - a. Connect the other end of the hose to your outdoor exhaust vent. Keep the hose as straight as you can, with no more than two turns of 90 degrees or less. Make sure the hose isn't twisted, pinched, kinked, or flattened.
3. Disconnect Hose After Use
  - a. Changing weather conditions may cause hot, cold, or humid air to enter your Glowforge that could damage it. When your Glowforge is not in use, remove the hose from the vent or window, or disconnect it from your Glowforge.

## Connect to electrical power

1. Make sure your Glowforge is turned off (O is depressed) and then connect the power cable.
2. Plug the Glowforge into a grounded wall outlet with 800 watts of power available.
3. Turn on your Glowforge by pressing the switch so the "I" side is depressed.
4. Lights will come on, the head will move, and you might hear a bubbling sound.



The unit's button will glow teal. Your Glowforge is on!

## Sign in and connect your Glowforge to Wi-Fi

### 1. Get Ready

- a. Find a device that uses Wi-Fi to access the internet, like a laptop computer. Go to [community.glowforge.com](https://community.glowforge.com) and make sure the page loads correctly.

### 2. Begin Setup

- a. To begin setup, go to [app.glowforge.com/setup](https://app.glowforge.com/setup)



### 3. Sign In

- a. Your username is the email you used when placing your order. If you have not used your Glowforge account at all yet, you can set up your password by clicking "Forgot password?" You'll receive an email to help you create or reset your password.

**Glowforge Owners**

email

password

remember me

[forgot password?](#)

[no password?](#)

**SIGN IN**

### 4. Enable Airplane Mode

- a. If you are using a phone or other device that can access the internet through the cellular network, put it in airplane mode. Otherwise, it will use the cellular network, and won't communicate with your Glowforge in the next step.

### 5. Connect to Your Glowforge Unit's Wi-Fi

- a. Your Glowforge is now broadcasting a special Wi-Fi channel so you can connect to it and finish setting it up. Follow the instructions on screen to connect to your Glowforge unit's Wi-Fi. You will not be able to access the internet again until you either finish, or stop and reconnect to your usual Wi-Fi network. When you



connect successfully, the printer head will center and begin its “head homing” process before completing and moving back to the unit’s back left corner.

6. Your Glowforge will begin to calibrate

- a. When you connect successfully, the printer head will center and begin its calibration process before completing and moving back to the unit’s back left corner.

7. You Are Connected

- a. Your Glowforge is now connected to the internet and ready to print!

## Proofgrade™ Materials

### Your Proofgrade Materials

We’re providing a selection of materials from our brand new Proofgrade materials line, designed specially for your Glowforge to help you get perfect prints every time. They come with a protective layer that dramatically improves the print quality and allows you to draw directly on the material for use with Trace. Each piece of Proofgrade material has been labeled with a code that your Glowforge can read, which tells it exactly which settings to use to produce pristine cuts and engravings.



# Using Your Glowforge Pro

Be sure to review Laser Safety before operating your Glowforge Pro.

## Moving material through the passthrough slot

- Your material must move from front to back.
- If your material is long enough to stick out either end, make sure that you support it so that the part inside your Glowforge stays flat on the crumb tray.
- If you've made a lot of cuts, it can help to open the lid and remove the pieces before you slide your material along. (A little tape can work wonders here to help you extract little pieces that are hard to pick up otherwise.)
- When you're moving your material, it's ok to pull it from the back, and you can pull hard if you need to!
- As you slide your material, you may need to adjust your supports -- make sure that your material continues to lie flat on the crumb tray.



## Cleaning, Service & Moving

### Cleaning

#### Power Off

Always turn your Glowforge off before cleaning

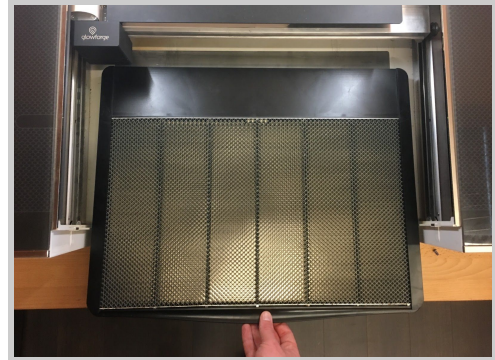
#### Floor and crumb tray

Remove leftover cutting and engraving bits from the floor and the crumb tray whenever there is a buildup. Bits on the tray can prop your material up in the air, and a buildup of cutting and engraving bits can create a fire hazard.

1. To remove the crumb tray, lift the lid, then swing down the front door. Lift the crumb tray slightly and slide it towards you. Be careful not to tilt the crumb tray up, or it will knock into the printer head and rails.

# DRAFT

2. Tilt the tray handle side down over a trash bin and empty out all the tiny remains of past projects that have fallen through the metal grid. If necessary, turn the tray upside down and shake out anything that's left. Use cotton swabs to gently remove bits that get caught. Be careful not to bend the grid.
3. Wipe the metal floor of the Glowforge unit with a soft cloth to sweep away any bits.
4. Pay special attention that the four dimples where the crumb tray sits are clean. If anything sits in those dimples, the Glowforge printer may not be able to focus correctly, and the camera will be out of alignment.
5. Return the crumb tray to the original location, sliding it in horizontally. Be careful not to contact the printer head or the rails. When it is in place, the tray's four feet will drop into the small dimples and it will no longer slide.



## Things that need wiping

After every 40 hours of printing, use ZEISS lens cleaning wipes (available on Amazon and many other stores) to clean the cameras, laser lens, and windows. This will keep the unit working properly and prevent permanent damage to your unit.

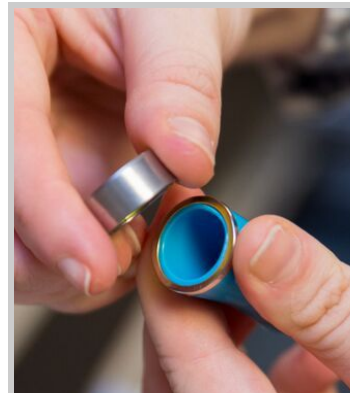
1. Turn off your Glowforge. Grasp the printer head as shown, and pull gently up and back to disengage the magnets and remove it.



2. Gently insert the lens tool into bottom of the head with the “Remove” arrow pointing in. When you hear the magnet click, withdraw the tool and the lens.



3. Gently slide the lens off the lens tool and wipe both sides with a lens wipe. Be careful to touch only the metal ring to avoid fingerprints on the lens.

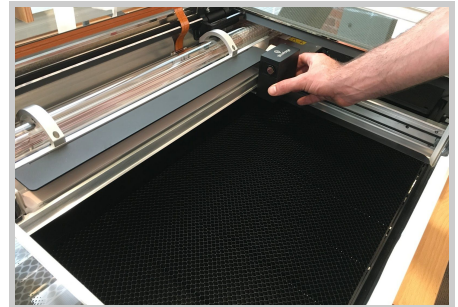


# DRAFT

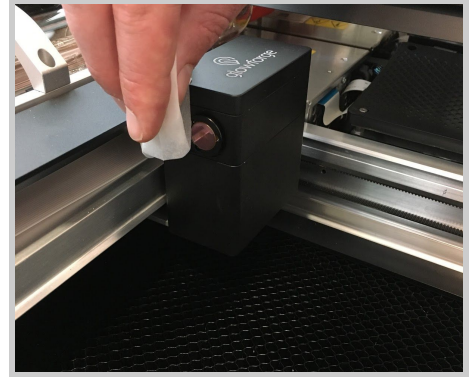
4. Flip the lens tool until the “Install” arrow points up. Set the lens down on the lens tool. The open side goes away from the blue plastic, so it looks like a bowl on top of the tool. It will sit firmly on the tool and will not wobble. Slide the lens tool up into the printer head until the magnet clicks, then remove the tool.



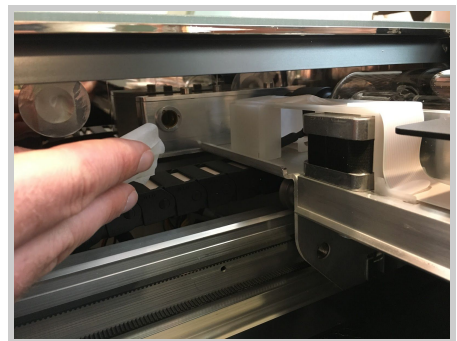
5. Review instructions for snapping in your printer head, then put the head back on.



6. Wipe the window on the left side of the head.



7. Carefully reach over the left rail and wipe the laser window on the left side of the bed.



8. Finally, gently wipe the lens of the wide angle camera on the unit's lid.



9. It's normal for some dust to accumulate inside your Glowforge. It is not necessary, but you can wipe the laser tube or the inside of the case with additional ZEISS cleaning wipes. Allow any moisture to dry completely before turning on your Glowforge again.

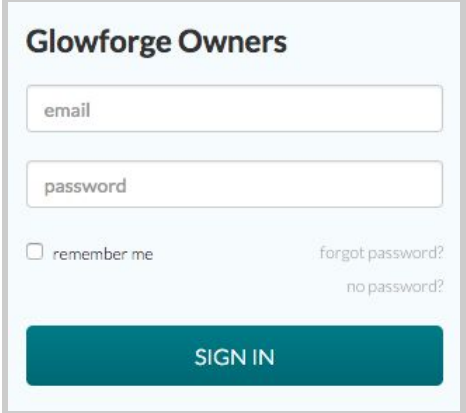
## Service

The Glowforge unit may not be serviced or repaired by the user. Should service or repair be required, it must be returned to the factory; contact [support@glowforge.com](mailto:support@glowforge.com) for instructions.

## Moving Your Glowforge

### Moving to a new Wi-Fi network

1. Using a device that connects to the internet via Wi-Fi, go to [app.glowforge.com/setup](http://app.glowforge.com/setup) and sign in.
2. Turn on your Glowforge and wait until all motion has stopped for 30 seconds.
3. Hold down the button on your Glowforge for ten seconds, until it glows with a teal color.
4. Follow the instructions on screen to connect your Glowforge to Wi-Fi.



The screenshot shows a sign-in form titled "Glowforge Owners". It features two input fields: "email" and "password". Below the "password" field, there is a checkbox labeled "remember me" and two links: "forgot password?" and "no password?". A teal "SIGN IN" button is positioned at the bottom of the form.

## Packaging Your Glowforge

Whether it's for a big move, taking your Glowforge to an event, or for any warranty repair, you'll need to package your Glowforge properly with the original boxes, foam blocks, and important orange and red bits. The box is specially designed to protect your Glowforge through all shipments, domestic and international. Should you need to purchase a replacement shipping box for \$199, contact [support@glowforge.com](mailto:support@glowforge.com).

## Power Off and Unplug Your Glowforge

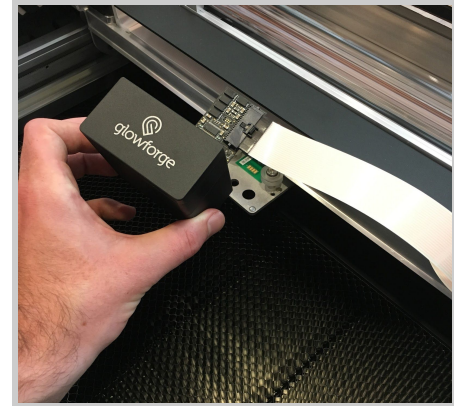
Always turn your Glowforge off before packaging any part of your unit. Unplug your unit and set the power cord aside.

## Remove the Printer Head

1. Position the Laser Arm
  - a. Gently push the laser arm to the back of the Glowforge

## 2. Remove the Printer Head

- a. Holding only the finished black surfaces, grasp the printer head as shown. Pull gently up and back to disengage the magnets and remove the head.



## 3. Unplug the Wire Ribbon

- a. Push down fully on the wire ribbon tab to unplug the wire ribbon from the printer head. Pull the wire ribbon gently away and tuck it into the laser arm.



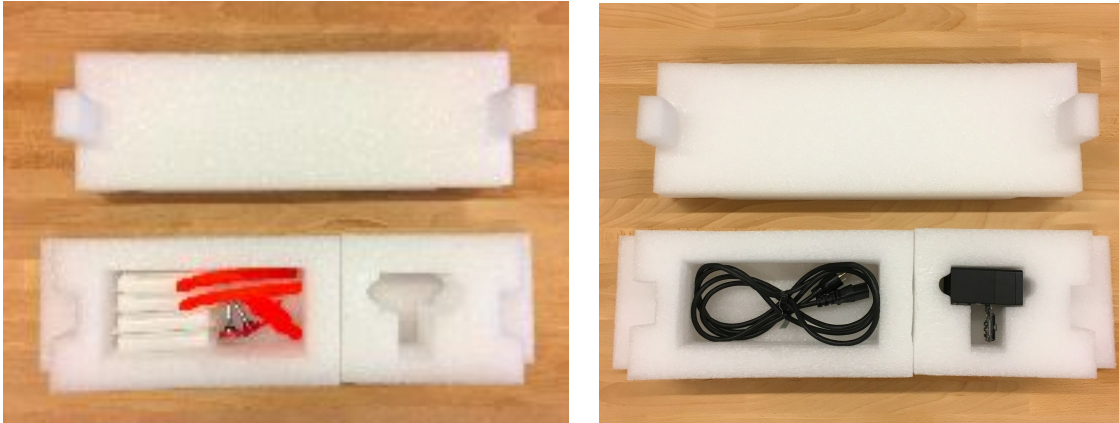
## 4. Insert the Orange Foam

- a. Being careful to only touch the finished black surfaces, insert the orange foam into the head





5. Place Printer Head and Power Cord in Foam Block
  - a. Remove all the packaging pieces stored in the white rear foam block. Gently lay the printer head and power cord into the foam as pictured.



## Remove the Crumb Tray and Exhaust

Remove the crumb tray and exhaust vent following the instructions below. The crumb tray, exhaust hose, and lens tool are packed in the Accessories Box.

1. Lower the Front Door and Remove the Crumb Tray
  - a. Lift the lid, then lower the front door. Lift the crumb tray slightly and slide it towards you. Be careful not to tilt the crumb tray up, or it will knock into the laser arm and rails.
2. Empty Your Crumb Tray
  - a. Lower the front lip of the crumb tray and dump the contents of the crumb tray catch area. Afterwards, you may invert the crumb tray to remove anything that may be left.
3. Wipe the Floor of Your Glowforge
  - a. Wipe the metal floor of the Glowforge unit with a soft cloth to sweep away any bits.

## 4. Remove the Exhaust

- a. Using your flathead screwdriver, loosen the clamp until it will come off with a gentle tug.



## 5. Pack Accessory Box

- a. Place the crumb tray, exhaust vent, and lens tool in your Glowforge Accessory Pack box



## Pack the Unit Safely

It's important to package your Glowforge properly with the original boxes, foam blocks, and important orange and red bits.

1. Place Red Strip on Both Rails
  - a. Push the laser arm to the back of the unit. Set the red silicone strips on the rails near the center of the unit with the knobby bit close to you as pictured.

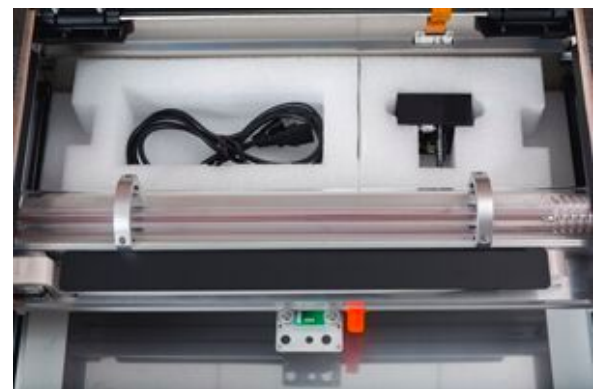


2. Position Laser Arm
  - a. Slide the laser arm forward so that it's resting on the silicone strips. You'll need to pick it up just a bit at the front, then the back, like taking a baby carriage up a curb.

3. Attach the Clip
  - a. The clip snaps onto the bottom of the laser arm and pokes up into the metal plate. Align the left tab of the clip with the hole on the right side of the plate, then hook the back of the laser arm and pull the clip towards you and up. (It's much easier than it sounds.) When the clip is in place, the metal plate will no longer slide from side to side.



4. Insert the Rear Foam Block
  - a. With the lid removed, insert the foam block containing the printer head and power cord into your Glowforge. The bottom will lay flat against the floor of your unit.



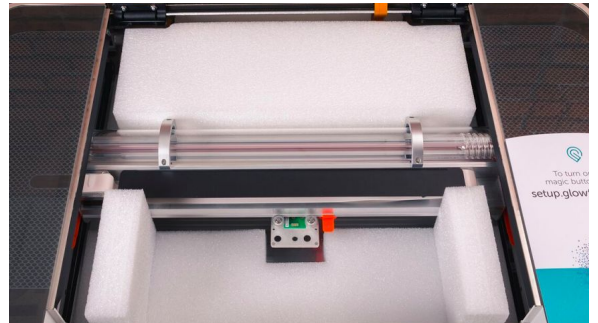
## 5. Screw in Red Knobs

- a. Locate the holes near the center of each rail. On both sides, screw the red knob through the hole in the laser arm to secure the laser arm to the rail. They must be screwed in as tight as your fingers will permit, but do not use a tool to tighten them.



## 6. Insert the Rear Foam Lid and Front Foam Block

- a. Place the lid of the rear foam block, covering the printer head and power cord. Place the final foam block in the front of your unit and close the front door.



## 7. Close the Lid and Box Glowforge

- a. Make sure the two black foam shells are in the bottom of the box. Have two people lift the Glowforge unit into the box. The unit will fit snugly into the foam inserts.



## 8. Place Top Foam

- a. Place the top layer of foam over your Glowforge. These pieces lay flat on your Glowforge.



## 9. Prepare to Lock Your Packaging

- a. Place the lid of your Glowforge Box over the unit and get out the four locking clips.



## 10. Unlock All Four Handle Locks

- a. Use the pull tab to open the handles. Position the two back flaps so they face directly inside the box.



## 11. Insert Handle Locks

- a. Insert all four handle locks so they sit flush against the outer box. Use your finger to gently lock the inner tabs down and up into their final position.



## 12. Lock the Handle Locks In Place

- a. Close the securing handle door and press to ensure it is locked in place. Your packaging should now be locked together and ready for transport.



## Finding Community & Support

Having trouble? Want to do something new? We'll do our best to help you succeed!

### Community Forum

Most Glowforge owners have registered at the [Glowforge Community Forum](#), where hundreds of Glowforge owners post each day. You'll find some incredibly talented (and helpful) folks who can provide assistance, suggestions, and ideas to help you make the most of your Glowforge.

Here's an easy way to start:

- If you've got a specific question or idea (like you want to make a new band for your watch), [try searching](#) to see what folks have written on the topic.
- If you just want to browse the forum, we recommend starting with our [Made on a Glowforge](#) topic, where you can find hundreds of laser projects that our community either has made or wants to make.
- Once you've read a bit to get an idea of how it works, post pictures of what you make. People will love it!

### Support Online

Go to <https://glowforge.com/support> to find guidance any time of day or night. The Learn By Doing area includes tutorials to get you started with your Basic or your Pro, and you'll also find Troubleshooters in case anything doesn't go according to plan.

### Support by Email

We are here for you! Email [support@glowforge.com](mailto:support@glowforge.com) with your questions, challenges, feedback, and even your stories of perfect prints. Our goal is to reply within hours on weekdays, and always within three days.

We provide the best support when we fully understand what you're facing. Please send:

- A description of the steps you took, what happened and what you expected
- The date and time of the issue
- The name of your file, if there was a file involved
- The name of your Internet browser and Operating System
- A screenshot or photo of what happened