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Quick Start Guide for Snapmaker Ray Models

This guide will demonstrate the most user-friendly and convenient assembly steps and workflow for first-time users.

01 Before You Start

Before starting the assembly and operation of Ray, please read the following content carefully.

- ‣ [Disclaimer](#)
- ‣ [General safety](#)
- ‣ [Laser safety](#)
- ‣ [Fire safety](#)
- ‣ [Warnings & Labels of Ray](#)
- ‣ [Warnings & Labels of the Laser Module](#)
- ‣ [Precautions & Emergency measures](#)
- ‣ [Environment requirements of Ray](#)
- ‣ [Tips and notes for assembly](#)
- ‣ [Used_symbols](#)

O2 Assembly & Installation

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To complete the assembly, you can either read the Assembly Guide in PDF format, or follow the online instructions below.

If you have purchased the Ray bundle with the 20W/40W Laser Module and Enclosure, please assemble in the following order. If you have purchased other bundles, skip the steps that include items you do not have.

- ‣ 2.1 [Assembling the machine body](#)
- ‣ 2.2 [Installing the toolhead](#)
- ‣ 2.3 [Assembling the Enclosure](#)
- ‣ 2.4 [Installing the air assist pump](#)

03 Setup & Preparation

3.1 Turning on the machine

For safety reasons, you need to go through several steps to turn on the machine.

- ‣ Turning on the machine

3.2 Placing the laser engraving and cutting platform

- ‣ Placing the laser engraving and cutting platform

3.3 Preparing the software

We recommend that you install Snapmaker Luban to generate G-codes for laser engraving and cutting, as it is a tailor-made software for Snapmaker products.

- ‣ Installing Luban

If you have already installed Luban, make sure to update it to at least v4.9.

- ‣ Updating Luban

> Snapmaker Ray also supports LightBurn. For detailed tutorials, refer to Using Ray / Artisan / 2.0 with LightBurn.

3.4 Connecting the machine to Luban

You can connect Ray to Luban through either a serial port or Wi-Fi and perform a variety of operations, including file transfer, pause, resume, and stop.

- ‣ Connecting to Luban via the serial port
- ‣ Connecting to Luban via Wi-Fi

> ⚠ For Snapmaker Ray, the Wi-Fi connection can only be established upon the serial-port connection.

> To achieve optimal file transfer performance, we recommend using the Wi-Fi connection.

3.5 Updating the firmware (recommended)

Due to possible differences between the factory version and the latest version in terms of functionality experience and indicator light meanings, we strongly recommend updating the firmware of Ray before the first-time use and keeping the firmware up to date during subsequent use to obtain the best user experience.

- ‣ Updating the firmware

04 First Work

In order to help you quickly become familiar with the workflow for using Ray with Luban and completing your first laser creation, this section will guide you through Luban's **Beginner's Guide**. You will have fun with the provided laser material and the example project tailored for your first creative experience.

4.1 Preparing the G-code File

1. At the top-left corner of **Workspace**, click **Back** to return to the Home page of Luban. Then, select **Laser > 3-axis** to enter the Laser G-code Generator.
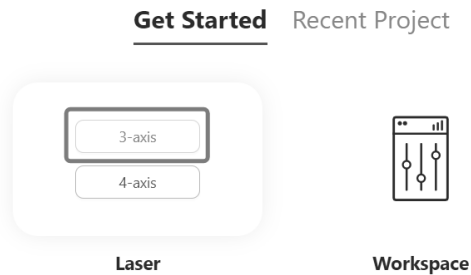
2. Familiarize yourself with the basic operations by following the Beginner's Guide. During this process, Luban will automatically load the example project and generate the G-code file.

> If the Beginner's Guide does not pop up or unexpectedly closes, you can access it by clicking **Help** > **Beginner's Guide** in the menu bar.
>
> You can also import your own files and configure the parameters.

3. After the G-code file is generated, click **Export** > **Load G-code to Workspace** at the bottom-right corner. The interface will automatically redirect to **Workspace**.

4.2 Preparing the Material

Take out the basswood plywood sheet from the material bundle, then place it on the laser engraving and cutting platform.

> Do not use highly reflective materials (except for 304 stainless steel and anodized aluminium), as they can reflect blue light, which may cause burning on the bottom cover of the laser module, and increase the safety risk of burning nearby objects or even causing fires.

> Ensure that the tools do not obstruct the machining areas or collide with the toolhead or any part of the machine.

> If you are worried that the material might move during machining, you can use additional

securing tools to fasten the material to the platform, such as the mask tape.
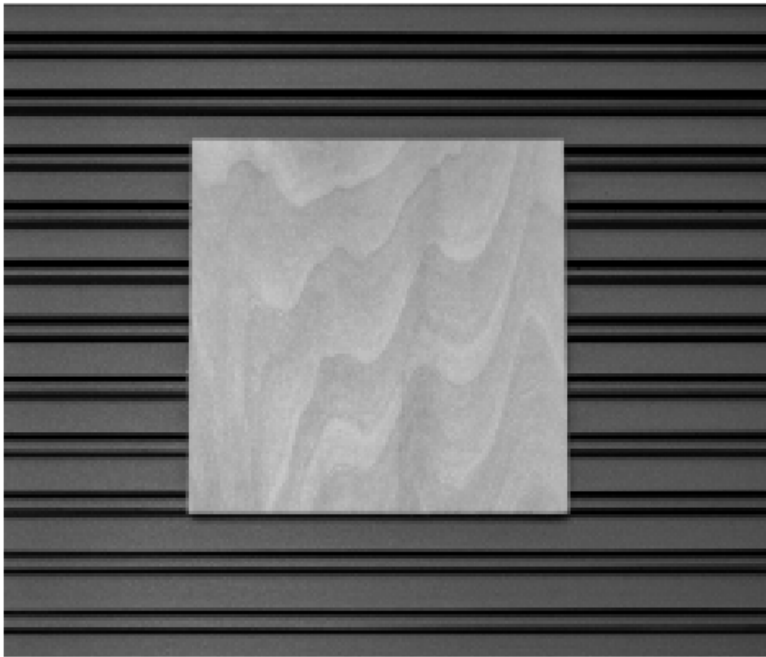
4.3 Adjusting the laser height

Adjusting the laser height to focus the laser can ensure optimal engraving and cutting outcomes.

‣ Adjusting the laser height

4.4 Setting the XY work origin

The XY work origin for the example project should be set at the **left-bottom corner** of the workpiece.

‣ Setting the XY work origin

4.5 Transferring the G-code file to the machine

If you have connected the machine to Luban, we recommend transferring the G-code file through Luban.

‣ Transferring the G-code file to the machine

4.6 Starting laser engraving and cutting

1. Check the state of the Enclosure.

   ‣ **IF** you have installed the Enclosure, make sure the Enclosure door is closed and will stay closed throughout the task.

   ‣ **IF** the Enclosure is not installed or purchased, be sure to turn off Door Detection in Luban's **Workspace** > **Settings** in the top menu bar. Otherwise, the machine will not start the task.

Back   Settings Firmware Network Control Machine Log

2. Press and hold the work switch on the integrated controller until the machine starts the task.

Keep the machine attended throughout the task!

During laser machining, you can control the task using the following methods:
-Work switch: Press to pause/resume; Press and hold to stop.
-Luban: Click **Pause**/**Resume**/**Stop** to perform the corresponding operation.

The Ray Enclosure supports Door Detection, which can detect the real-time opening and closing status of the Enclosure door. When the sensor detects that the Enclosure door is opened:
-If the machine is on standby, new tasks can not be started until the Enclosure door is closed.
-If the machine is performing tasks, it will immediately pause the ongoing task. To resume, you need to first close the Enclosure door, then press the work switch or click the **Resume** button on Luban.

05 Maintenance

To ensure the engraving and cutting effects, please perform the following maintenance operations once a week.

‣ Cleaning the laser engraving and cutting platform

‣ Cleaning the laser lens protector

‣ Cleaning the bottom cover

For more maintenance operations, refer to Maintenance for Ray.