

Work Example — Rubber Stamp Making (Adobe Illustrator)

RSD-SUNMAX Series
SUNMAX LASER

About this document: This is an English translation of the Japanese original prepared by SUNMAX LASER for reference purposes. In case of any discrepancy, the Japanese original shall prevail. Specifications are subject to change without notice.

Work Example — Rubber Stamp Making (Adobe Illustrator)

- This document assumes that the laser machine has been set up correctly.
- This document assumes that the honeycomb table is installed.
- This document assumes that LaserWorkV6 (hereinafter "LaserWork"), the control software for the RSD-SUNMAX series, has been installed correctly.
- This document uses Adobe Illustrator CS6.

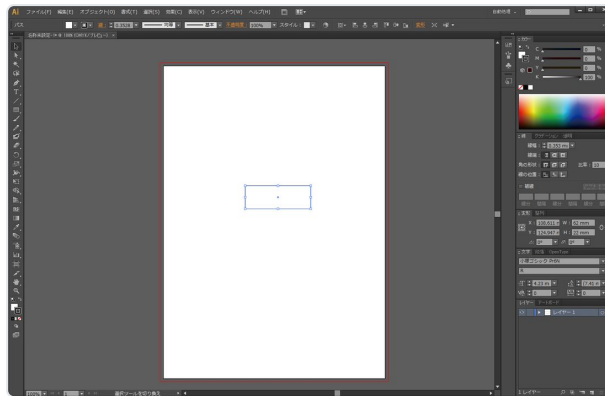
— Finished image of a product made by following this document —



1. Creating the Design in Illustrator

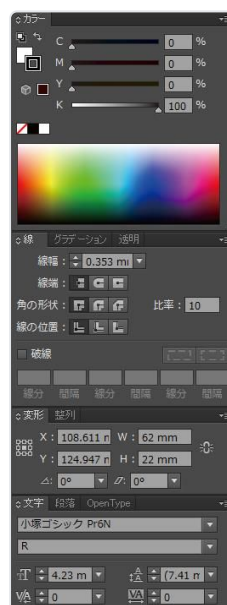
1.1 Creating the Rectangle

Use the Rectangle tool to create a black frame. Make the frame about 2 mm larger than the actual stamp face in each dimension. For example, for a W60 × H20 mm address stamp, make it W62 mm × H22 mm. Use a stroke width of about 1 pt.



Note: If you do not add a frame, the job becomes intaglio engraving (the black areas — that is, the text — are engraved). When making a rubber stamp in Illustrator, the frame is mandatory. Likewise, when creating a stamp face that has its own border, it must be enclosed by a frame larger than the stamp-face border. This outer frame is not engraved during processing.

Note: Always create your data in millimeters. If another unit is currently set, you can change it in Document Setup.



- Set the fill color to white or transparent.
- Set the stroke color to black (#000000).
- Use a stroke width of about 1 pt.
- To make a W60 × H20 mm stamp face, the frame is enlarged by 2 mm in each dimension and set to 62 × 22 mm.

1.2 Laying Out the Text

Once the frame is made, create the text and lay it out.

Note: Always convert the text to outlines.

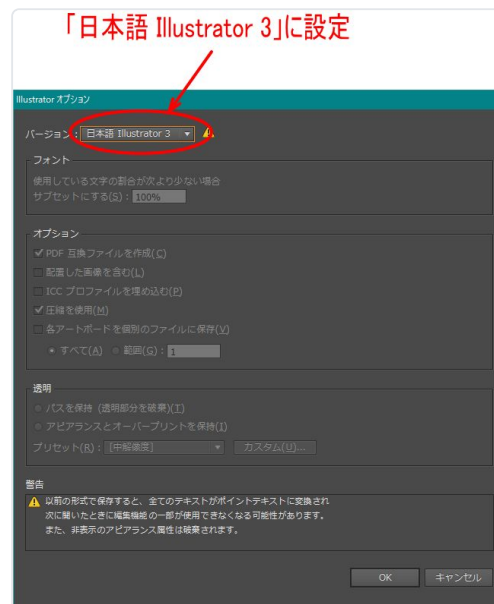
Note: The text color is black (#000000), with no stroke color.



Confirm that everything has been converted to outlines.

1.3 Saving the Data

Click "File" > "Save" or "Save As" in the menu.



The "Illustrator Options" dialog appears. Set the Version to "Japanese Illustrator 3".

Click OK to create the .ai file.

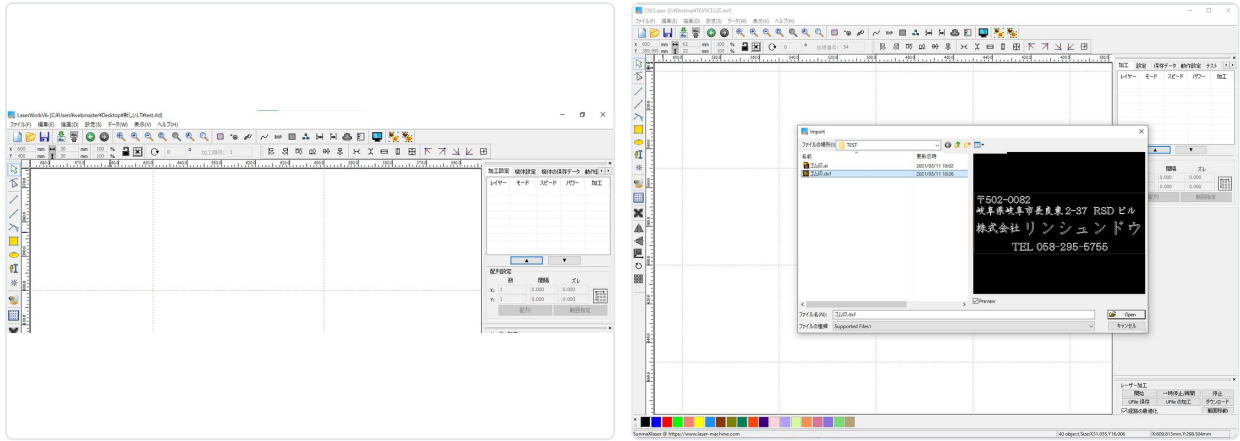
2. Importing the AI File

Load the .ai file exported from Illustrator into LaserWork.

2.1 Loading the File

Click the "Import" button on the LaserWork system toolbar.

The Open File dialog appears. Select the .ai file created in Adobe Illustrator.

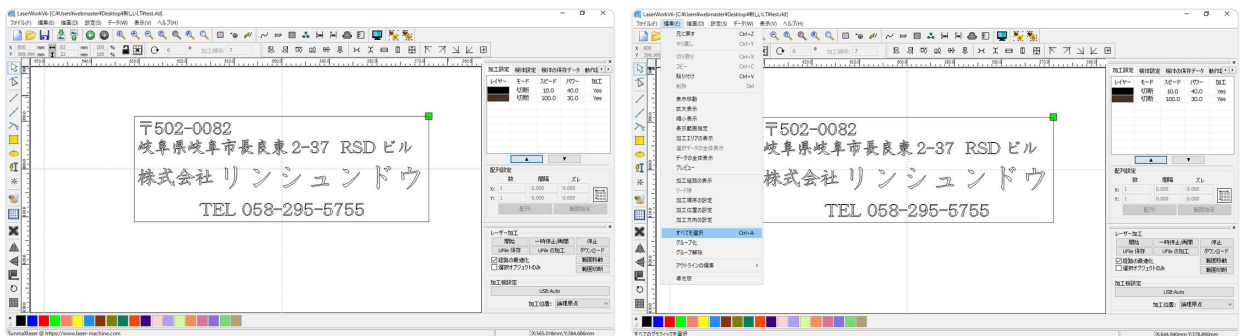


A preview pane is displayed. Select the .ai file and click the "Open" button.

- Preview checkbox
- Preview pane — when you select a file, its contents are displayed.

2.2 Displaying the Data

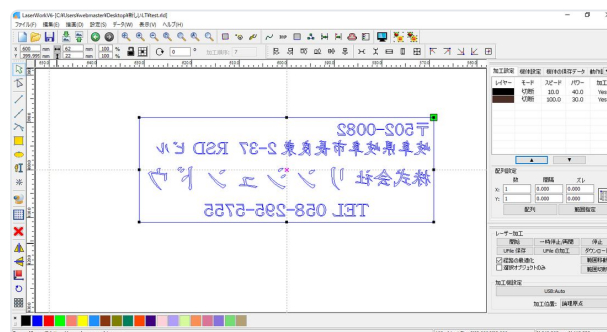
The data created in Illustrator is displayed.



2.3 Mirroring Horizontally

Press the shortcut key "Ctrl+A", or click "Select All" in the "Edit" menu, to select all objects.

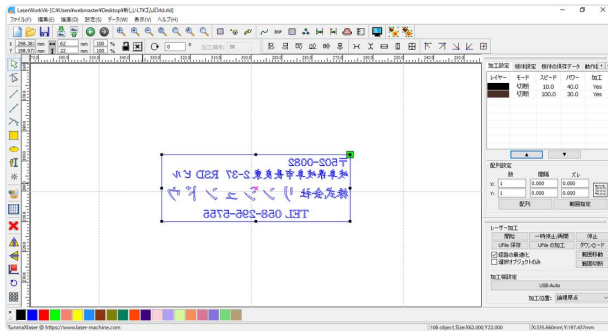
With all objects selected, click "Mirror Horizontally" on the edit toolbar to flip the data horizontally.



3. Processing Settings

3.1 Merging the Layers into One

Select all layers with the shortcut key "Ctrl+A" (or select all of the data with the Select tool in the drawing toolbar), then click any one of the colors in the properties toolbar at the bottom left of the screen.

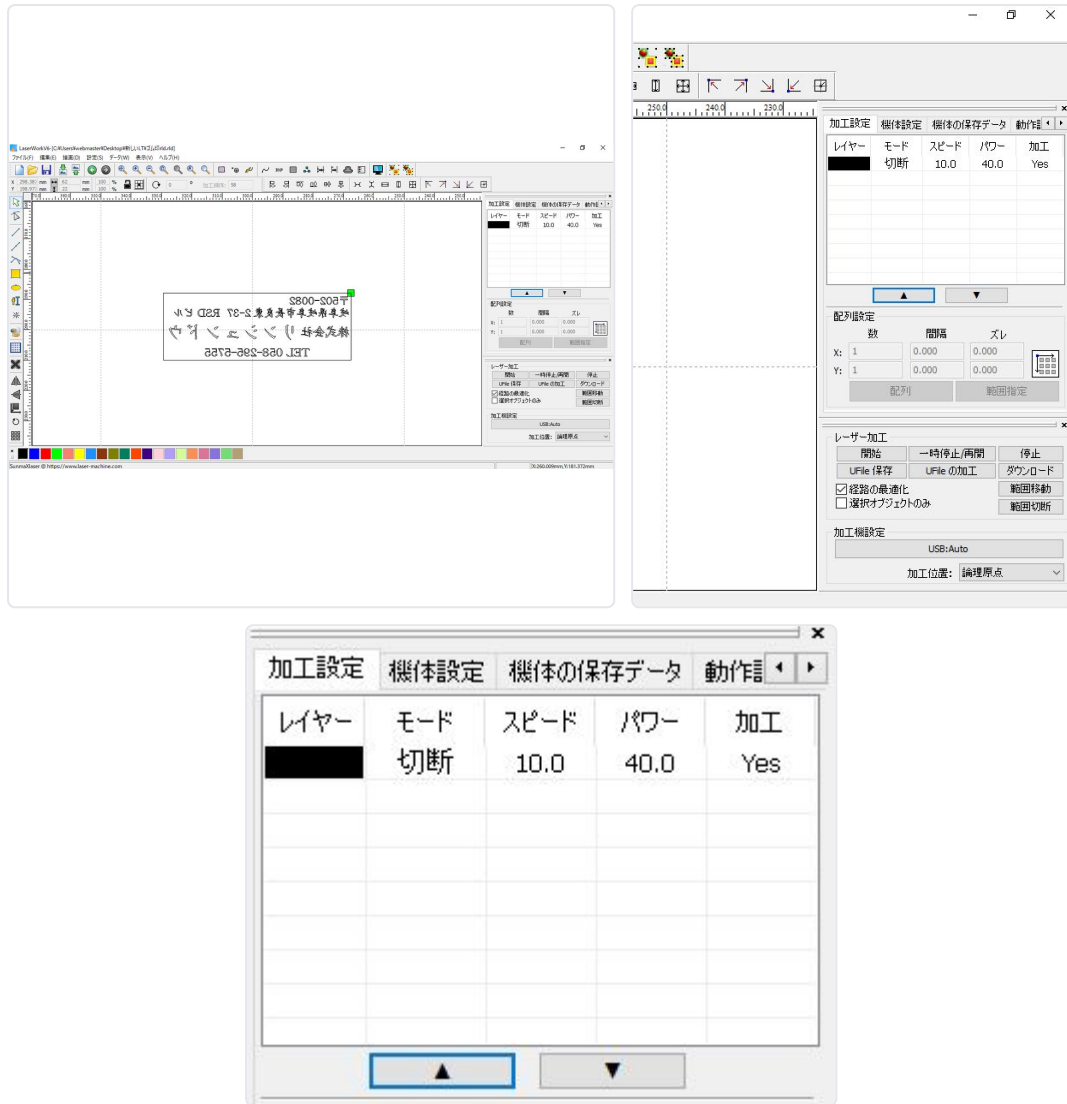


- Unify everything to black.
- (1) Put the objects in the selected state.
- (2) Click any one of the colors.

Confirm that the colors have been unified and the layers merged into one.

3.2 Opening the Layer Dialog

Double-click the layer you unified to display the layer dialog.



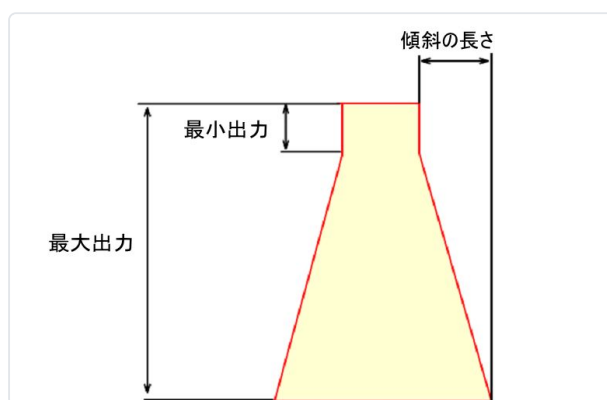
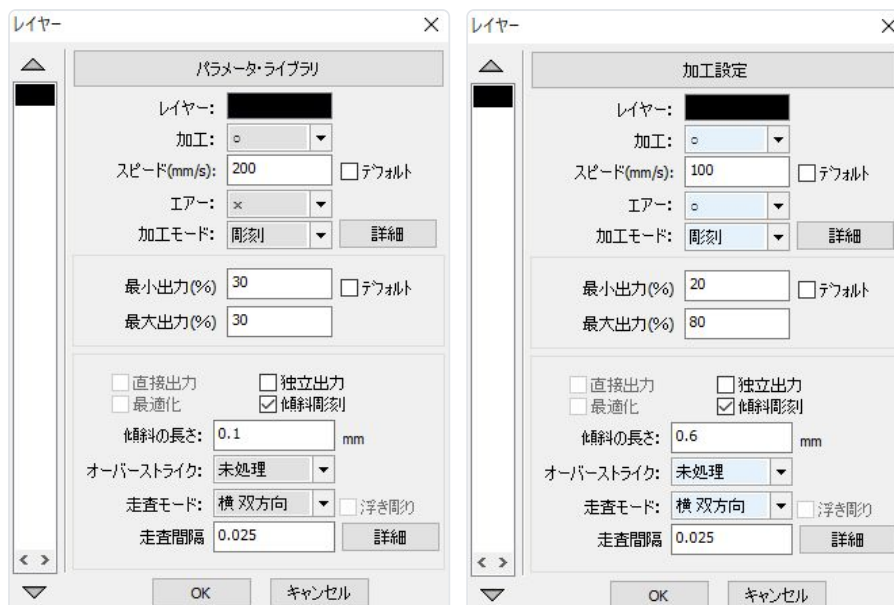
Double-click here.

3.3 Processing Settings

With the layer dialog open, you can configure the processing parameters.

Set the mode to "Slope Engraving," change the processing mode to "Scan" (engraving), and click "Slope Engraving."

Set each item as shown below.



After entering the settings, click the OK button to close the dialog.

The settings above are approximate. The optimal values vary depending on the type of rubber sheet you use and the finish you want, so inspect the actual engraved result and adjust the values accordingly.

About "Slope Engraving"

As shown in the figure below, the boundary between the engraved and non-engraved areas is cut at a slope.

When making rubber stamps or wooden plaques, slope engraving is effective for strengthening the raised (relief) portions.

Use the table below as a guide when configuring settings for rubber stamp making.

Item	Setting
Speed	100–200
Scan interval	0.025
Max power	60–100
Min power	10–30
Slope length	0.3–0.6
Scan mode	Horizontal bidirectional
Air	Either setting is fine (function disabled)

To accommodate differences in rubber sheet material or to adjust the engraving depth, use the following items as a rule:

- **Speed** — Lowering the speed makes the engraving deeper; raising it makes it shallower. The maximum value is 1000 for the SUNMAX-QS series and 1200 for the SUNMAX-GS series.
- **Max power** — Raising it makes the engraving deeper; lowering it makes it shallower. The maximum value is 100.
- **Min power** — The larger the value, the thinner the stamped impression becomes. Setting it to 0 may make the stamp face appear blurred.
- **Slope length** — When engraving deeply, increasing this value improves the strength of the characters.

The following items do not need to be changed for rubber stamp making, regardless of the job:

- **Scan interval** — If you want to speed up production even at the cost of a rougher finish, raising this value shortens the production time. For example, setting it to 0.05 cuts the production time in half.
- **Scan mode** — Select horizontal bidirectional. The laser fires on both passes of the scan; if bidirectional is not selected, the machine scans in horizontal unidirectional mode, firing the laser in one direction only. Horizontal unidirectional mode may improve processing quality in some cases, but the processing time doubles.

4. Setting the Origin

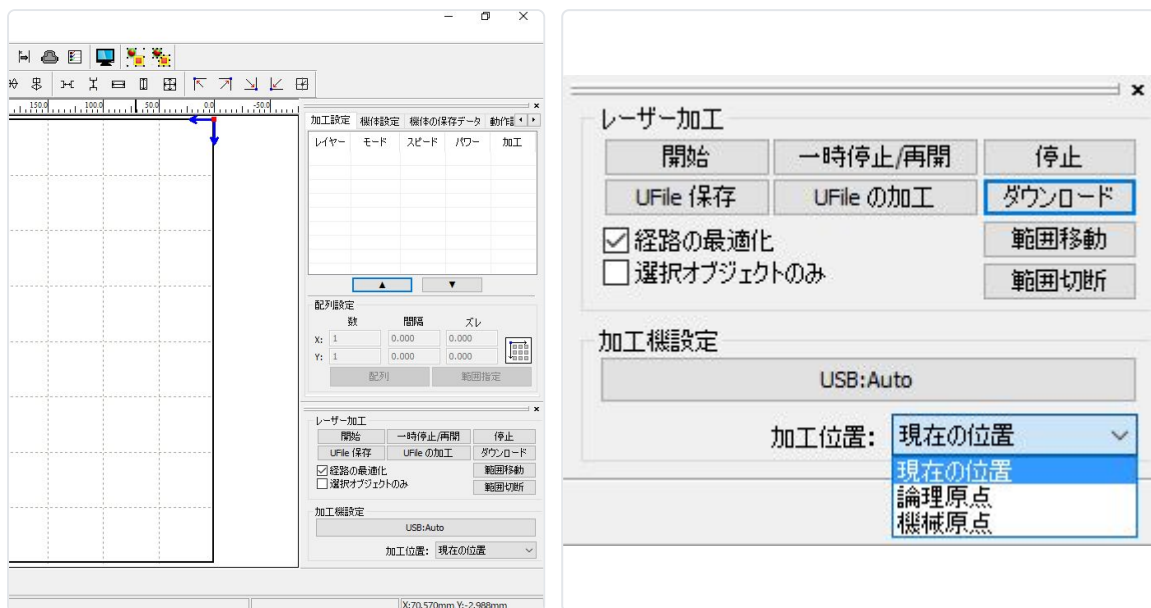
Before starting processing, you need to confirm and set the processing origin.

When you start processing from the laser machine's control panel, the "logical origin" set with the panel's "Origin" button becomes the origin position for processing.

When you run the job from the machine control pane in LaserWork, the origin position for processing changes depending on the "Position" setting described below.

4.1 Position

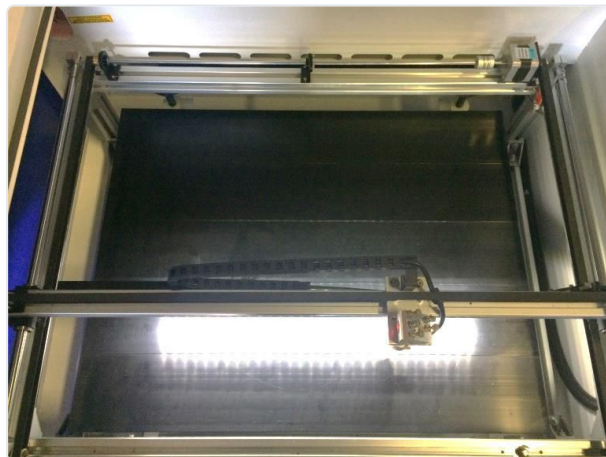
The processing start position differs depending on the Position setting. You can select it from the Position options shown in the Laser work area at the lower right of the screen.



Three position options are available.

Current Position

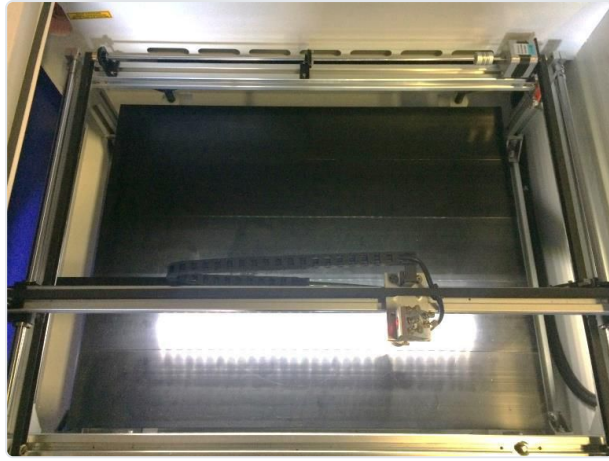
When set to "Current Position," clicking "Start" runs the job using the current laser head position as the data origin.



Logical Origin

When set to "Logical Origin," clicking "Start" runs the job using the logical origin — the position set with the laser machine's "Origin" button — as the data origin.

Processing origin: press the "Origin" button on the machine's control panel.



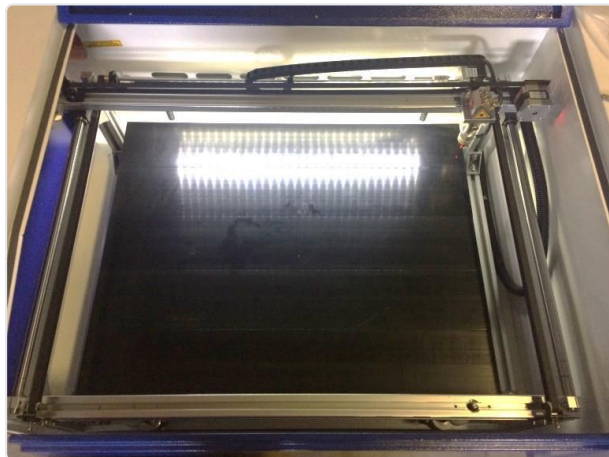
Even if the laser head has been moved, clicking "Start" moves the laser head to the logical origin and begins processing.

Machine Origin

When set to "Machine Origin," clicking "Start" runs the job using the laser machine's machine origin — the rear-right position where the machine homes when it starts up — as the data origin.

When processing from the machine origin, only cutting is possible.

When you click the "Start" button, the laser head moves to the machine origin and begins processing.



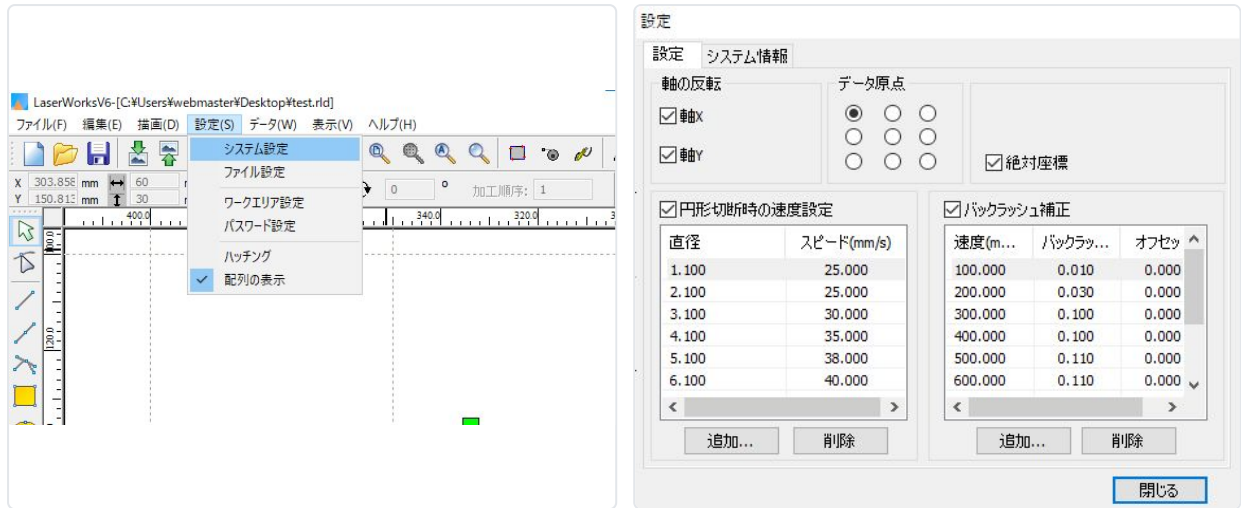
4.2 Absolute Coordinates

When the absolute coordinates checkbox is selected, the logical origin set with the control panel's "Origin" button and the "Position" setting used when running jobs from LaserWork are ignored, and processing takes place at the object's position on the design screen.

Use this setting when you want to process at a specific location.

How to Set It

From the menu at the top of the screen, open "Config" → "System Settings."



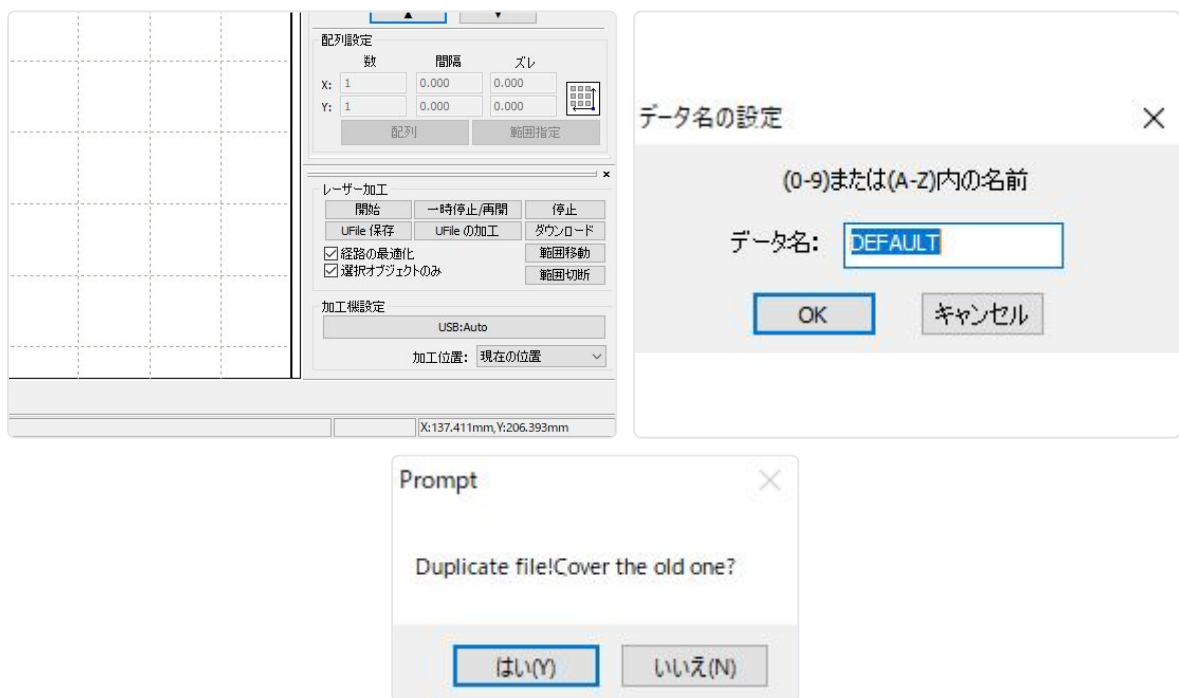
The settings screen appears. Select the absolute coordinates checkbox to enable it.

5. Downloading the Data

Once the processing settings and the position setting are configured, load the data into the laser machine.

Note: Downloading the data is required only when you start processing from the laser machine's control panel. It is not necessary when running the job from the machine control pane in LaserWork.

1. Click "Download" in the Laser work area at the lower right of the screen.
2. Clicking the Download button displays the "Set data name" dialog. Enter a name of your choice.

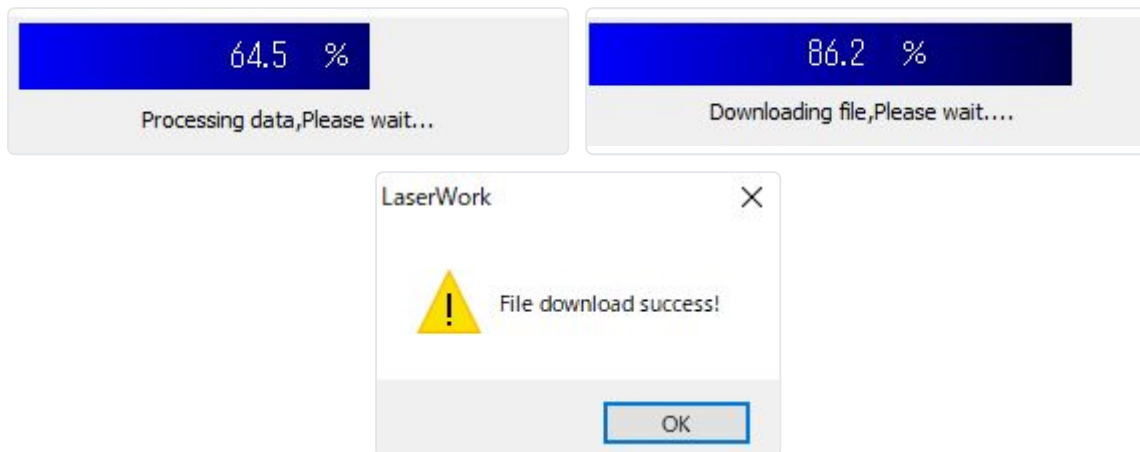


Note: If a file with the same name already exists on the laser machine, a dialog appears asking whether to overwrite it.

Note: Only single-byte alphanumeric characters can be used in the name.

3. Start of download — clicking the button starts the data download.

First, the design data is converted into a format the machine can process. If you have created a large data file, this step may take some time.



Once conversion reaches 100%, the download begins.

When the download progress bar reaches 100%, the data download is complete.

4. When it reaches 100%, a download-complete dialog is displayed.

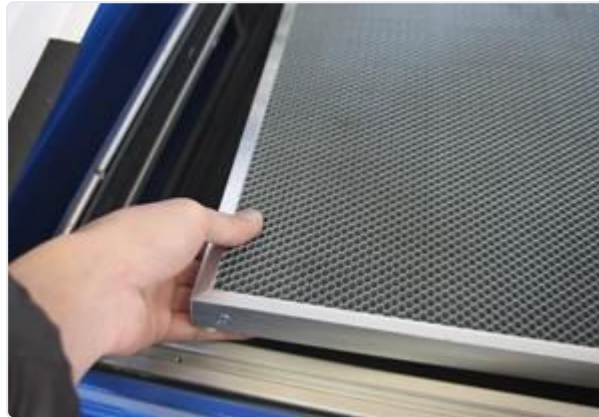
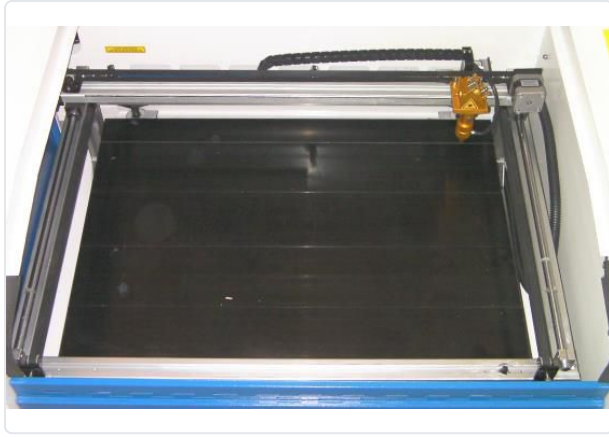
Click the OK button to finish.

6. Processing

The processing data has now been saved to the laser machine, so the next step is to run the job. Start processing by following the steps below.

6.1 Installing the Honeycomb Table

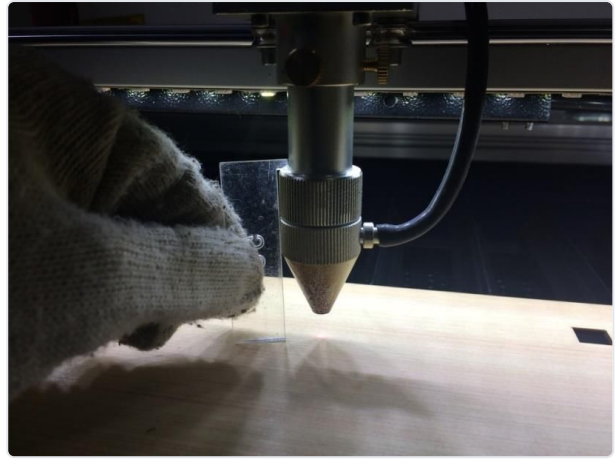
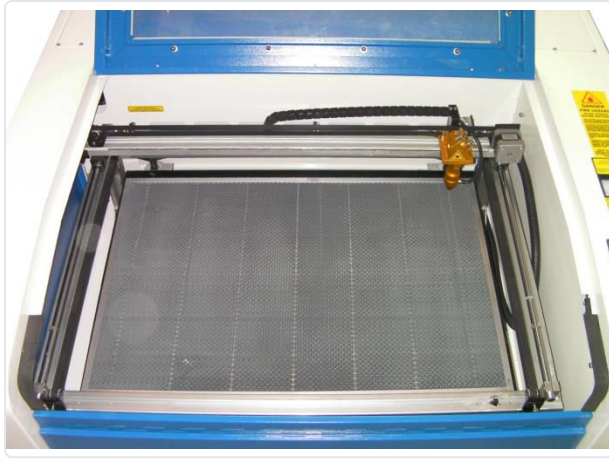
— Mounting the honeycomb table —



If the cutting table is installed, remove it so that the machine is in its engraving-table configuration.

Carefully place the honeycomb table on top of the engraving table.

To create enough clearance to set the honeycomb table in place, use the table elevation handle. Turn it counterclockwise to lower the Z axis.



Make sure the honeycomb table is installed in the correct position.

6.2 Focusing

Adjust the focus.

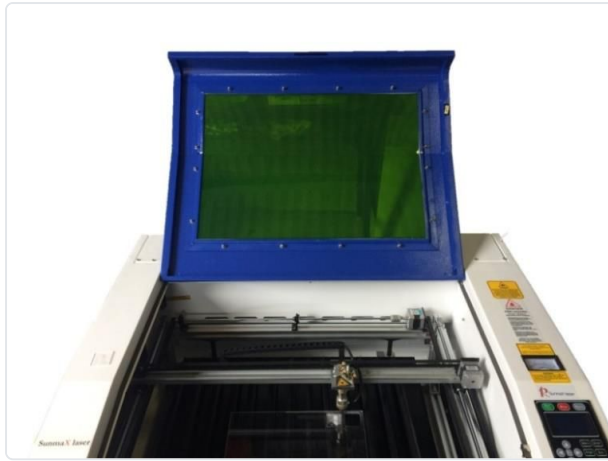
Use the supplied focus gauge to check whether the table height is appropriate.

Using the table elevation handle, adjust the height until the bottom of the focus gauge just lightly grazes the workpiece.

(Turning the handle clockwise raises the table; turning it counterclockwise lowers the table.)

6.3 Starting Processing

Now that preparation is complete, start processing. In this example, the job is started from the control panel.



1. Move the laser head to the position where you want to process, and set the processing origin with "Origin."
2. Close the top door.

Caution: If the top door is open, the laser will not fire.

3. After closing the top door, switch on the power of each external device (blower, water chiller, and compressor).
4. Press "Start/Pause" on the control panel to start processing.
5. When processing is finished, the laser machine sounds a beep. Open the protective cover and take out the processed rubber sheet.



7. After Processing

Wash the rubber sheet with water using a toothbrush or similar tool to remove the burn residue clinging to it. This completes the engraving of the rubber sheet.



8. Additional Notes

Cutting Out the Perimeter After Engraving the Rubber Sheet

If you want to cut out the stamp face after engraving it, add a "cut mode" layer. The cut-mode layer must be different from the slope-engraving layer used for the stamp face, and it must be processed after the stamp face.

For the cut layer, start with settings of about Speed = 10 and Max power = 90, then fine-tune from there. The appropriate settings vary with the material and thickness of the rubber sheet. To keep burning from spreading, the speed should be set as fast as possible. Cutting by repeating the pass about 3 times at a fast speed produces a cleaner finish.