

Work Example — Rubber Stamp Making (LaserWork)

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 (LaserWork)

- 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 LaserWork, the control software for the RSD-SUNMAX series (hereinafter "LaserWork"), has been installed correctly.

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



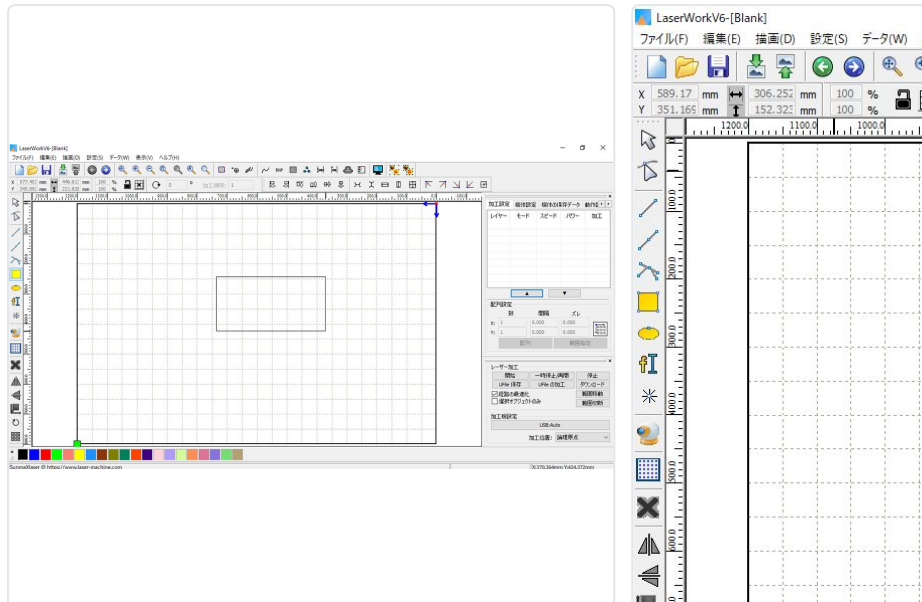
1. Creating the Design in LaserWork

Everything from design to processing is done in LaserWork.

1.1 Create the Frame

1. Click "Rectangle" on the object toolbar so that the button appears pressed in. At any position on the design screen, drag the mouse along the diagonal of the rectangle to draw a rectangle.
2. Select the rectangle with the "Select" tool, or use "Edit" > "Select All" (shortcut Ctrl+A) to put the rectangle in the selected state.

— Select tool — — Select All — (1) Click "Rectangle" (2) Click and drag



- Next, the current dimensions of the object are shown in the "X size" and "Y size" fields in the properties toolbar at the top left of the screen.

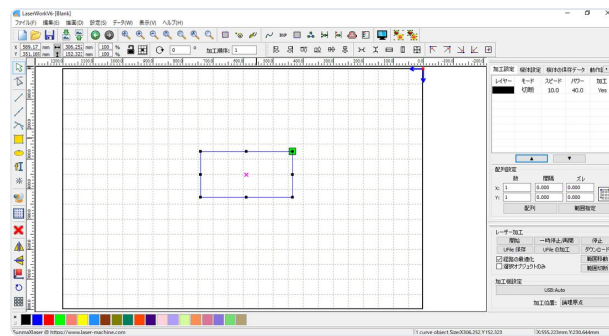
Note: These values are not displayed unless a layer is selected.

- The "X size" and "Y size" fields contain the dimensions of the rectangle you drew by dragging the mouse. Enter new values for the rubber stamp you are about to make.
- Enter the stamp face size plus 2 mm. For example, to make a W60 mm × H20 mm address stamp, enter 62 mm and 22 mm.

Caution: Make sure the lock icon is released (unlocked). If it is ON, the scaling ratio is locked.

Note: If you do not add a frame, the job becomes recessed engraving (the black areas — that is, the characters themselves — are engraved). When making rubber stamps with CNCLaser, a frame is

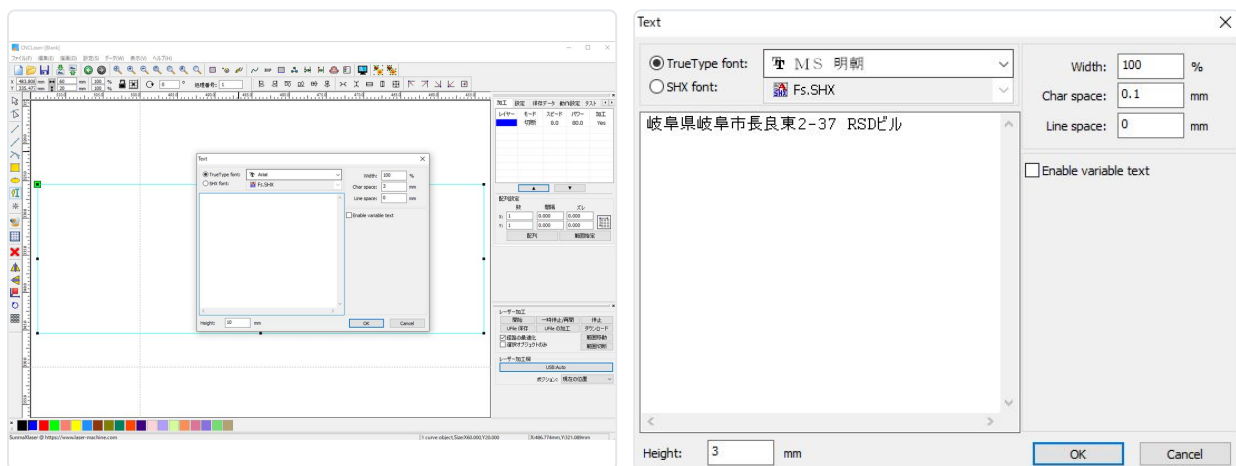
required. Likewise, when creating a stamp face that has its own border, it must be enclosed by a frame larger than the stamp border. This outer frame is not engraved during machining.



1.2 Lay Out the Text

1. Click "Text" on the drawing toolbar so that it appears pressed in; this enables text-input mode. Click at a suitable position on the screen to display the Text dialog.
2. The "Text" creation dialog appears.

Click at a suitable position



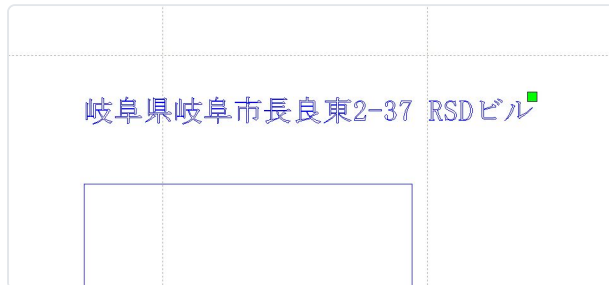
Height	Sets the initial height of the text. The value can be changed freely later, so any value is fine, but when making rubber stamps, setting it to about 4 makes the work easier.
Width	Sets the initial width of the characters. Always leave this at 100%; no change is needed.
Char Space	Character spacing is difficult to adjust later. For rubber stamps, if the height is set to 4, set this to 0.1.
Line Space	Sets the line spacing.
TrueType / SHX (CAD)	By selecting TrueType or SHX, you can choose between the PC's fonts and CAD line fonts. SHX fonts consist only of lines with no thickness and therefore cannot be engraved. Select TrueType here.

Note: For further details, refer to "Text" in the LaserWorkV6 user manual.

3. When you have finished entering the text, click the "OK" button. The text string is displayed.
4. Click "Select" on the standard toolbar to exit text-input mode.

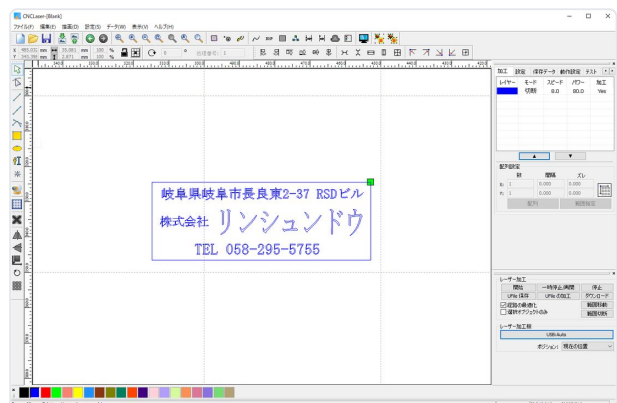
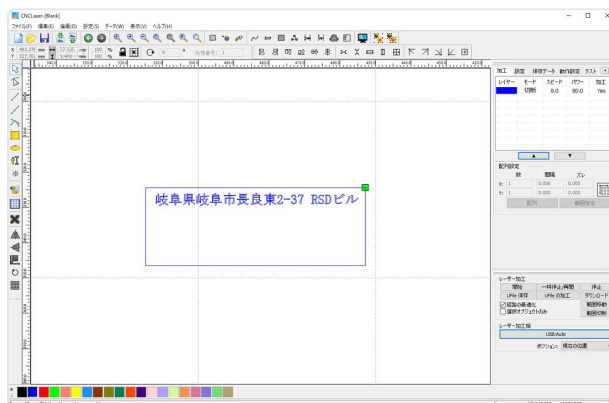
The newly entered text is in the selected state (its color depends on the layer color). In this state, drag the eight dots around it with the mouse to adjust its shape. Dragging the × in the center moves the entire text string.

If the text becomes deselected, for example by clicking elsewhere, drag the mouse around the entire text string to select it again.



Adjust the size so that the text fits inside the frame.

Continue entering the other text strings, such as the company name, in the same way.

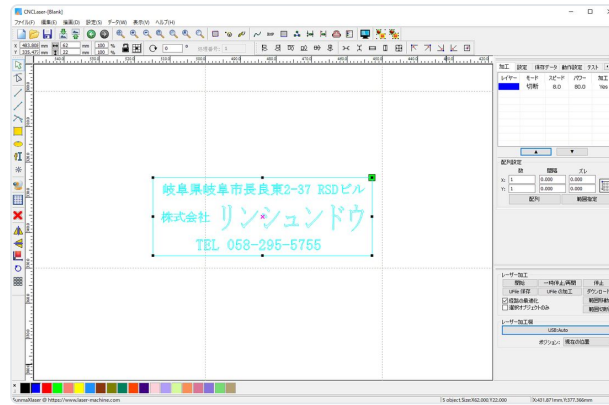


1.3 Mirror Horizontally

1. Put all objects in the selected state. You can select everything with the shortcut key "Ctrl+A" (or by selecting all the data with the drawing toolbar's Select tool).

If you drag the mouse around the whole design, everything becomes selected (light blue).

2. With all objects selected, click "Mirror horizontally" (mirror selected objects left-right) on the edit toolbar to flip the data horizontally.



2. Machining Settings

Now that the design is complete, we move on to the machining settings.

2.2 Open the Layer Dialog

1. Double-click the layer to display the layer dialog.

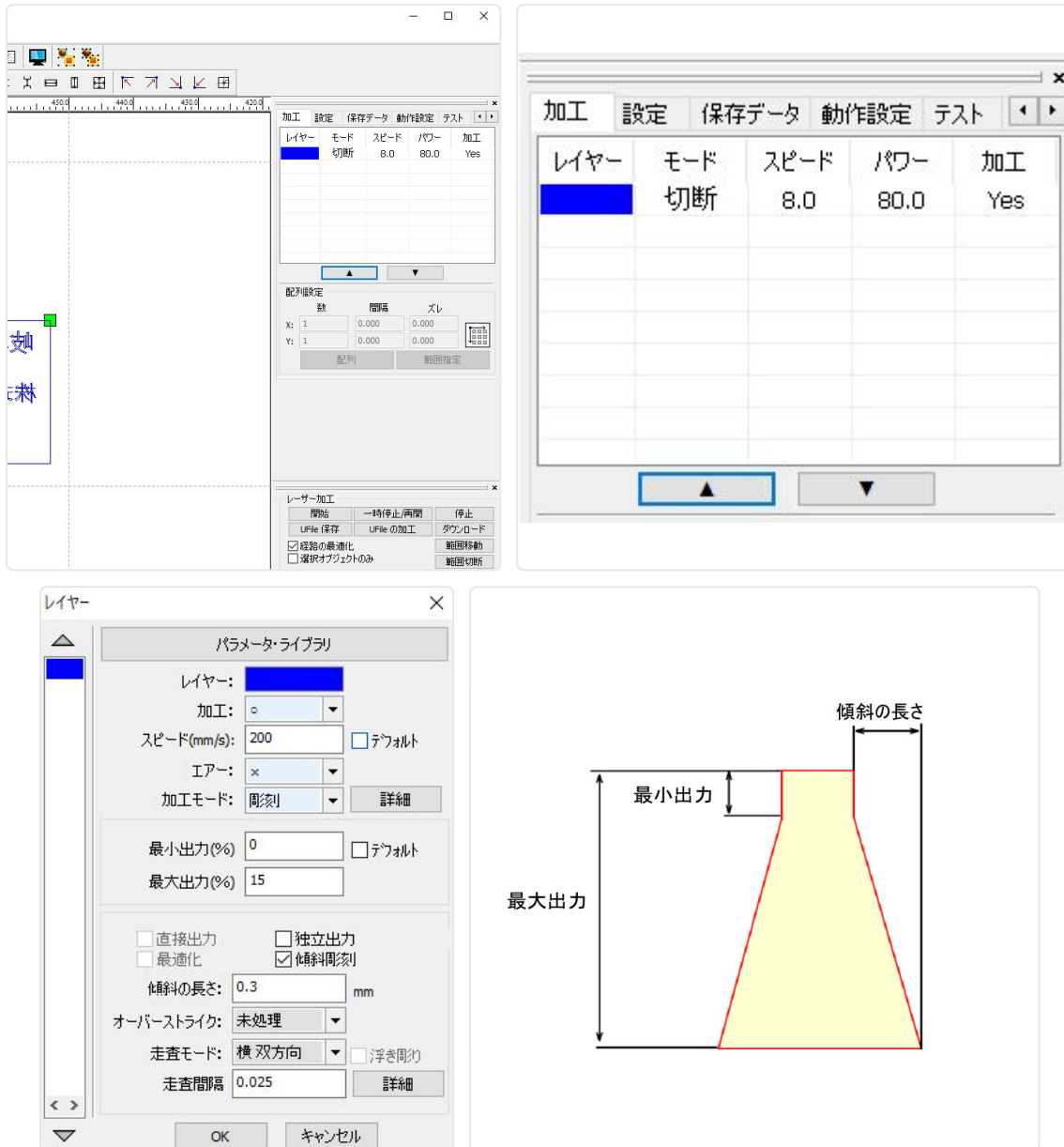
Note: The settings for each mode are remembered, so the values you set last time are shown as the defaults the next time you create a job.

2. The layer dialog appears. Change the processing mode to "Scan" (engraving) and click "Slope engraving".

Double-click

About "slope engraving"

As shown in the figure below, the boundary between engraved and non-engraved areas is cut as a slope. When making rubber stamps or wooden tags, slope engraving is effective for increasing the strength of the raised areas.



Set each item as shown below.

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

The settings above are approximate. The appropriate settings vary depending on the type of rubber sheet used and the desired finish, so check the actual engraved result and adjust the values accordingly.

Differences in rubber sheet material and adjustments to engraving depth should basically be made with the following items:

- **Speed** — Lowering the speed makes the engraving deeper; raising it makes the engraving shallower. The maximum value for the SUNMAX-QS series is 1000. The maximum value for the SUNMAX-GS series is 1200.
- **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 finer (thinner) the stamped impression becomes. Also, setting it to 0 may make the stamp face look 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:

- **Interval (scan gap)** — If you want to speed up production even at the cost of a coarser finish, raising this value shortens the production time. For example, if set to 0.05, the production time is cut in half.

Configure the settings for rubber stamp making based on the table below.

Item	Setting
Speed	100–200
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)



- **Scan Mode:** Select horizontal bidirectional. The laser fires on both the outbound and return passes of the scan. If bidirectional is not selected, the laser fires in horizontal unidirectional mode only. Horizontal unidirectional scanning can sometimes give better machining quality; however, machining time is doubled.

3. Setting the Origin

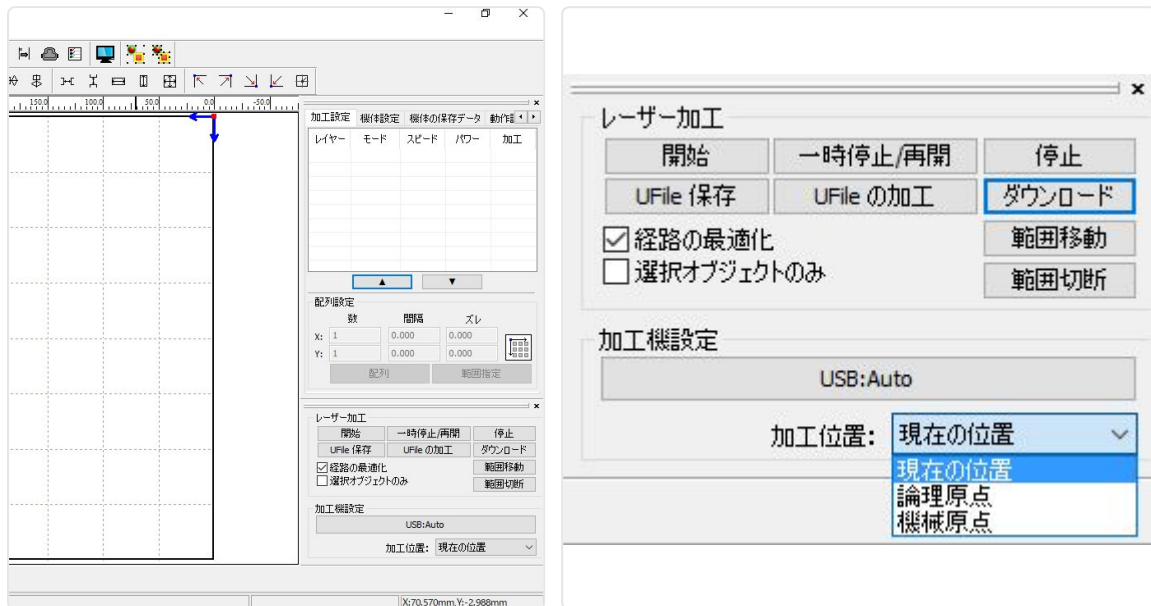
Before starting machining, you need to check and set the machining origin.

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

When you machine from the LaserWork machine control pane, the machining origin position changes depending on settings such as the "Position" setting described below.

3.1 Machining Position

The machining start position differs depending on the Position setting. You can choose it from the "Position" option shown in the laser machining area at the lower right of the screen.



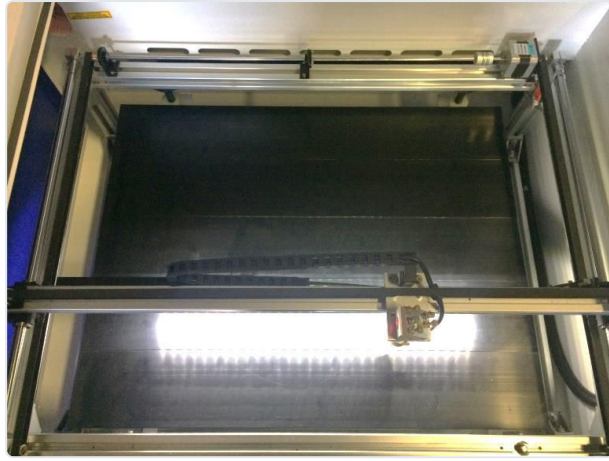
The machining position can be selected from three options.

Current Position

When "Current position" is selected, clicking "Start" performs machining using the current position of the laser head as the data origin.

Logical Origin

When "Logical origin" is selected, clicking "Start" performs machining using the logical origin — the position set with the laser machine's "Origin" button — as the data origin.



Machining origin: set by pressing the "Origin" button on the machine control panel.

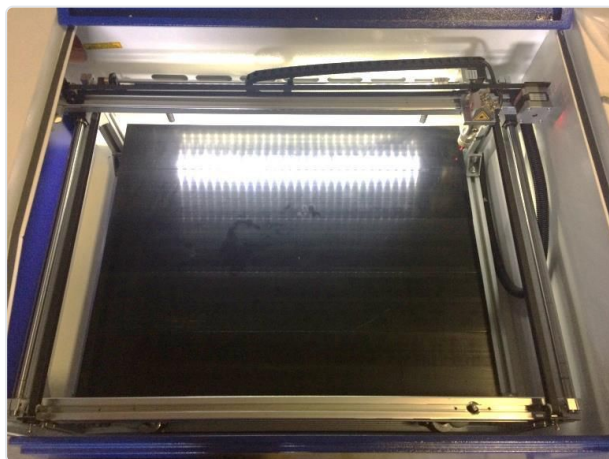


Even if the laser head has been moved, clicking "Start" moves the laser head to the logical origin and machining begins.

Machine Origin

When "Machine origin" is selected, clicking "Start" performs machining using the laser machine's machine origin position (back right — the position the machine homes to at startup) as the data origin.

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



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

3.2 Absolute Coordinates

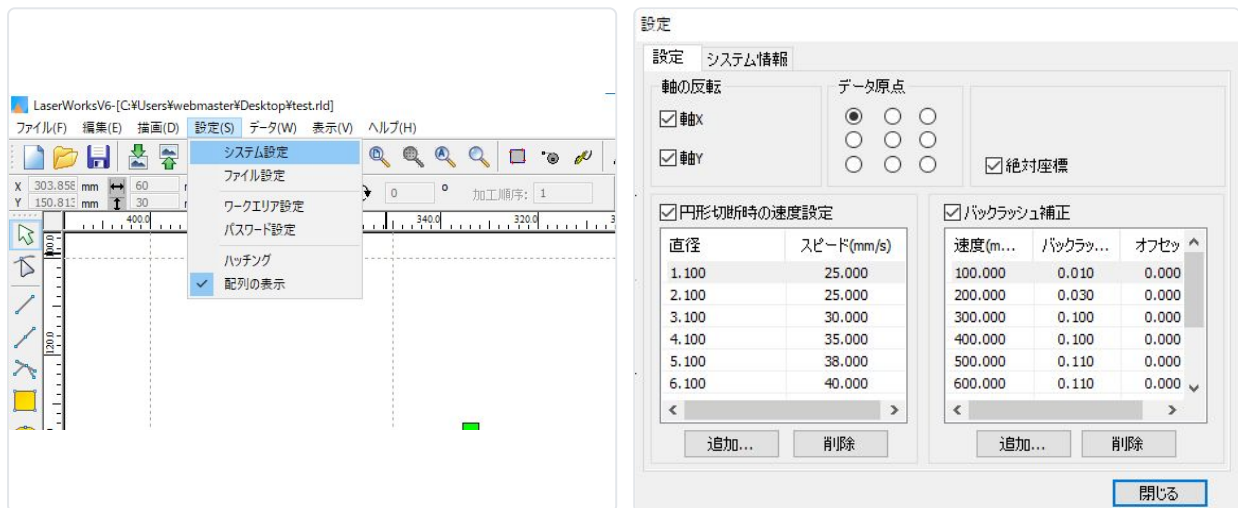
When the absolute coordinates option is checked, the logical origin set with the control panel's "Origin" button and the "Position" setting used when machining from LaserWork are both disabled, and machining is performed at the position of the objects on the design screen.

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

How to Set It

From the tabs at the top of the screen, open "Config" → "System Setting".

The settings screen appears. Check the "Absolute coordinates" checkbox to enable it.



4. Downloading the Data

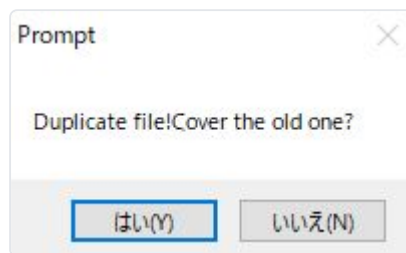
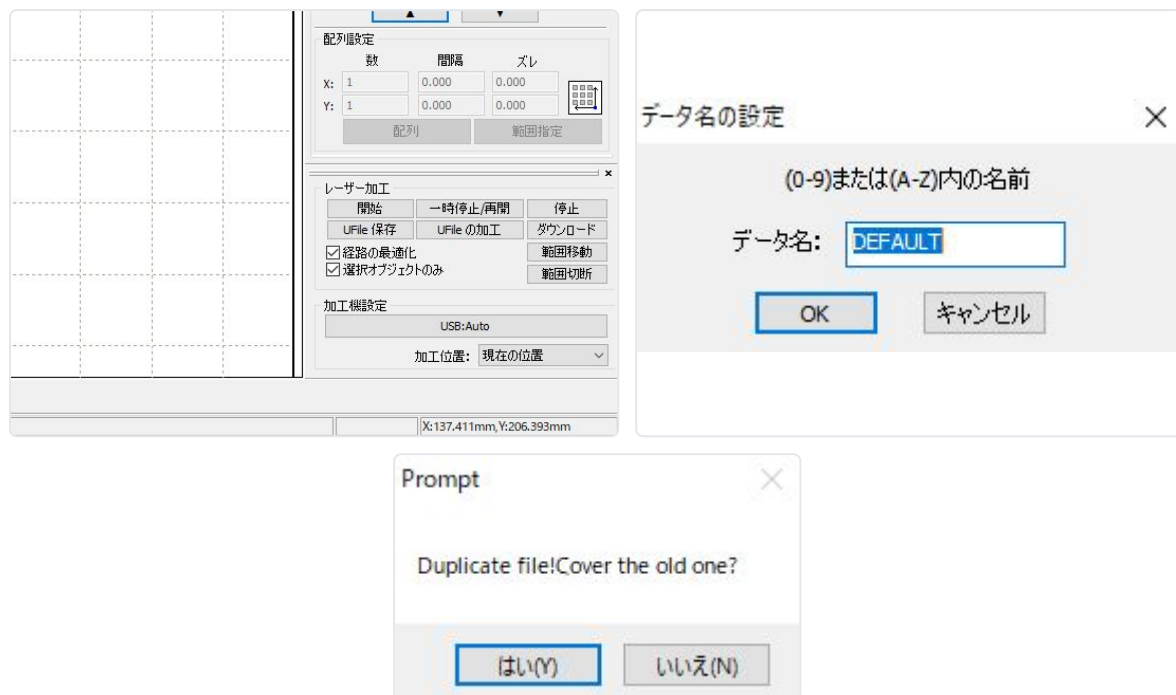
Once the machining settings and the machining position have been configured, load the data into the laser machine.

Note: Downloading the data is required when you start machining from the laser machine's control panel. It is not necessary when machining from the LaserWork machine control pane.

1. Click "Download" in the laser machining area at the lower right of the screen.
2. When you click the Download button, the "Set data name" dialog appears. Enter a name of your choice.

Note: If a file with the same name already exists on the laser machine, a dialog asking "Overwrite?" is displayed.

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

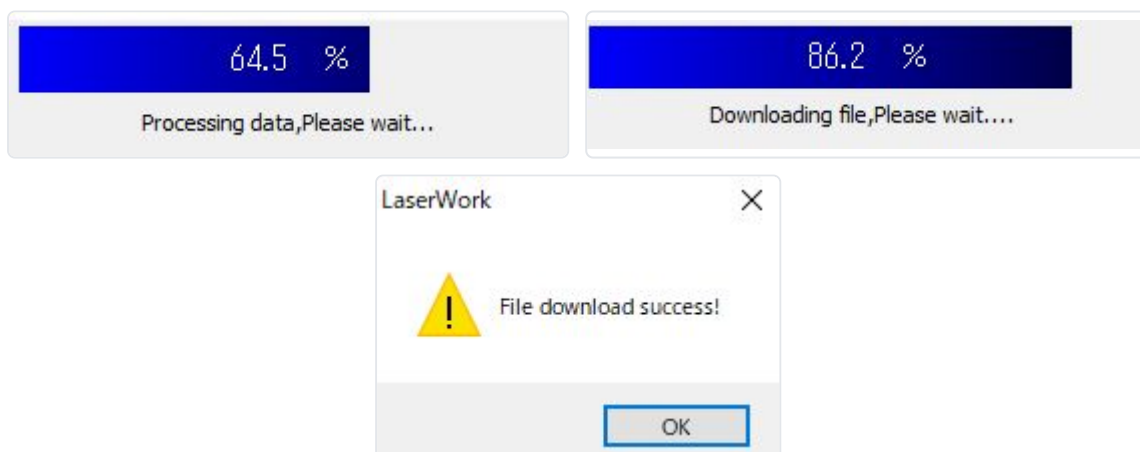


3. Start the download. Clicking starts the data download. First, the design data is converted into a format the controller can handle. If you have created a large data file, this step may take some time.

When conversion reaches 100%, the download then begins.

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

4. When it reaches 100%, a download-complete dialog appears. Click the OK button to finish.



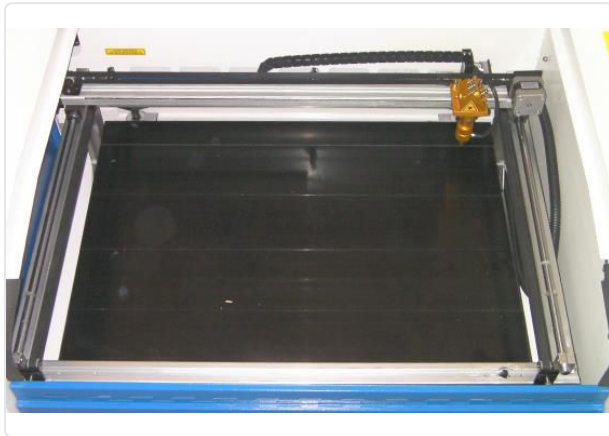
5. Machining

The machining data is now stored on the laser machine, so proceed with machining. Start machining using the following procedure.

5.1 Installing the Honeycomb Table

— Attaching the honeycomb table —

- If the cutting table is installed, remove it so that the machine is in the engraving-table configuration.
- Carefully place the honeycomb table on top of the engraving table.
- To create enough space to install the honeycomb table, use the table elevation handle. Turn it counterclockwise to lower the Z axis.



Make sure the honeycomb table is set in the proper position.

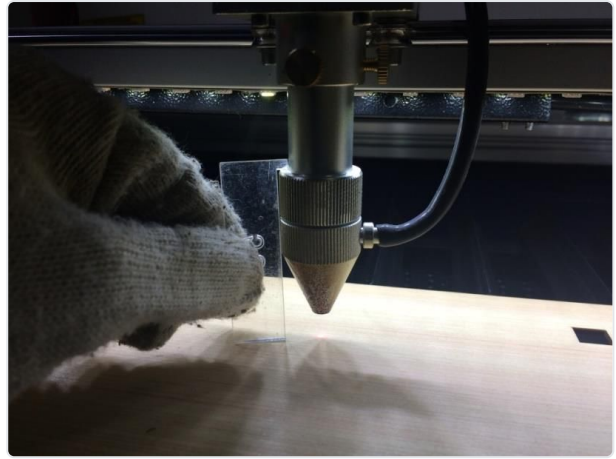
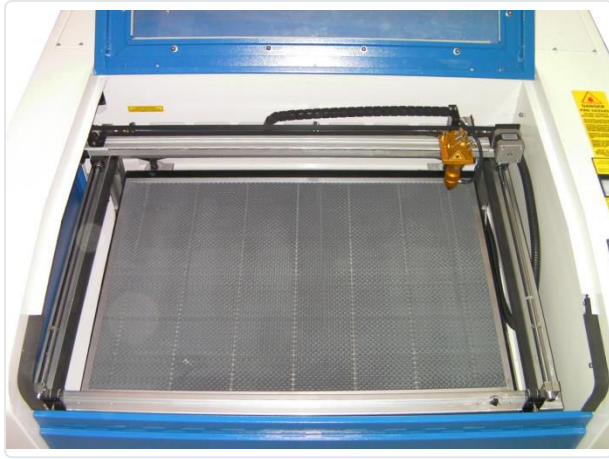
5.2 Focusing

Perform focusing.

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

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

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



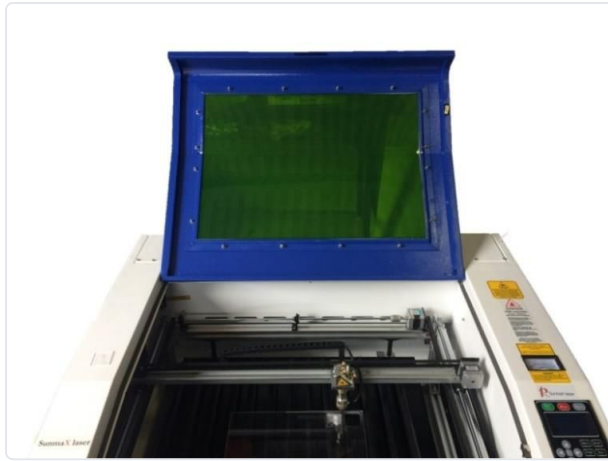
5.3 Starting Machining

Now that all preparations are complete, start machining. In this example, machining is started from the control panel.

1. Move the laser head to the position where you want to machine, and press "Origin" to set the machining origin.
2. Close the top door.

Caution: The laser will not fire while the top door is open.

3. After closing the top door, turn on the power to each piece of external equipment (blower, water chiller, and compressor).



エアーコンプレッサ



水冷機



送風機

4. Press "Start/Pause" on the control panel to start machining.
5. When machining is finished, the laser machine sounds a beep. Open the protective cover and take out the machined rubber sheet.



6. After Machining

Rinse the rubber sheet with water, scrubbing it with a toothbrush or similar tool to remove the burn residue that has adhered to it. The engraving of the rubber sheet is now complete.

7. Other

[Cutting around the stamp face 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 machined 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 minimize burning, set the speed as fast as possible. Cutting by repeating about 3 passes at a faster speed produces a cleaner finish.



Work Example — Rubber Stamp Making (LaserWork) — SUNMAX LASER / TEL +81-58-294-7333 / lasermachine.com@gmail.com