

Work Example — Batch-Producing Two-Color ABS Plates

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 — Batch-Producing Two-Color ABS Plates (LaserWorkV6 Edition)

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

— Finished appearance of the product created by following this document —



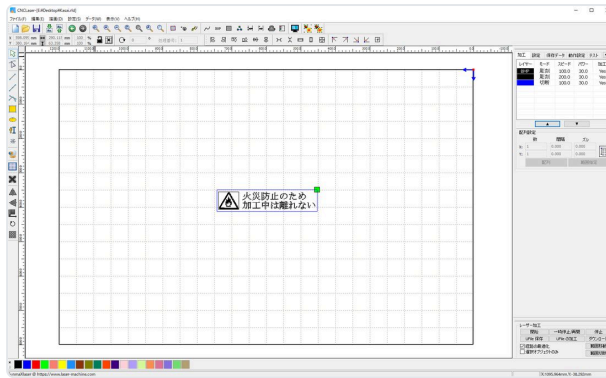
1. Creating the Design

Create your design in LaserWork or in a program such as Illustrator.

* When creating the data in Adobe Illustrator, set the version to "Japanese Illustrator 3" in the options dialog shown when saving.

For engraving data, you may instead export the artwork as a monochrome two-tone bitmap at a resolution of 1016 dpi.

Create the design using the tools shown in the "Draw" menu or the tools on the toolbar.



* The mark (flame) used in this design is a bitmap. Engraving precision is limited by the resolution of the source bitmap that is imported. To improve engraving precision, you must use outlined data. For details, refer to "Work Example — Making Wooden Tags (Adobe Illustrator Edition)."

(Reference) Example of a bitmap with low resolution



2. Processing Settings

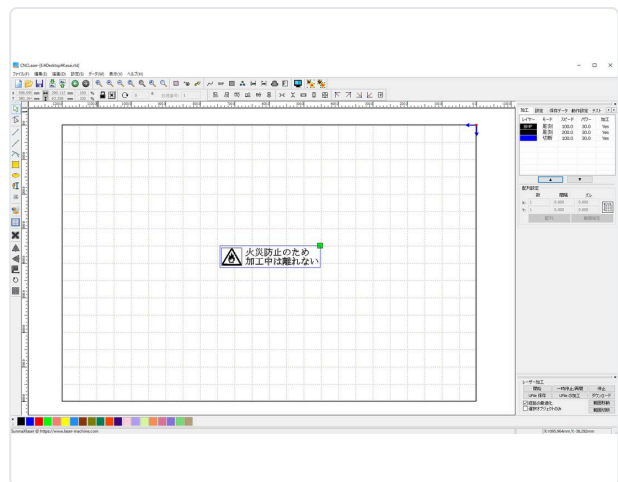
Now that the design has been created, the next step is to configure the processing settings.

2.1 Opening the Layer Dialog

Display the "Processing Settings" tab in the processing settings pane at the upper right of the screen, then double-click the layer you want to configure.

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

* Files imported in BMP format are fixed to engraving ("Scan") mode.

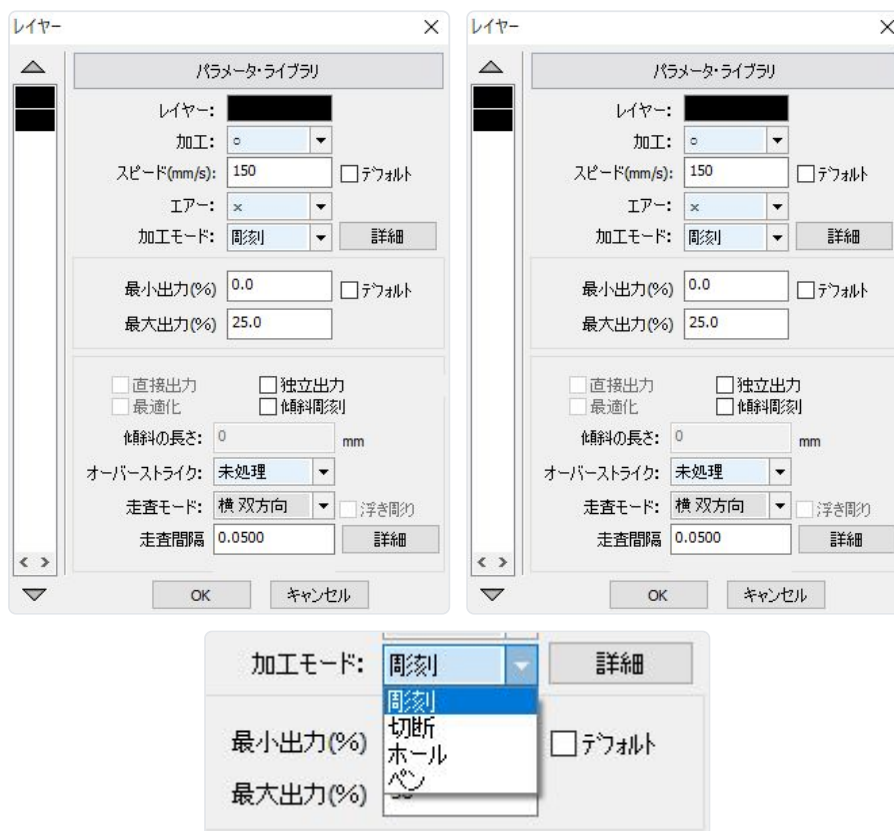


Double-click here.

2.2 Engraving Settings

The layer dialog appears.

Change the processing mode to engraving ("Scan").



A list of modes is displayed; click engraving ("Scan").

Once the mode is set to engraving ("Scan"), enter the setting values.

Set "Speed," "Max Power," and "Scan Interval" to suit the coating thickness of the material to be marked and the quality required.

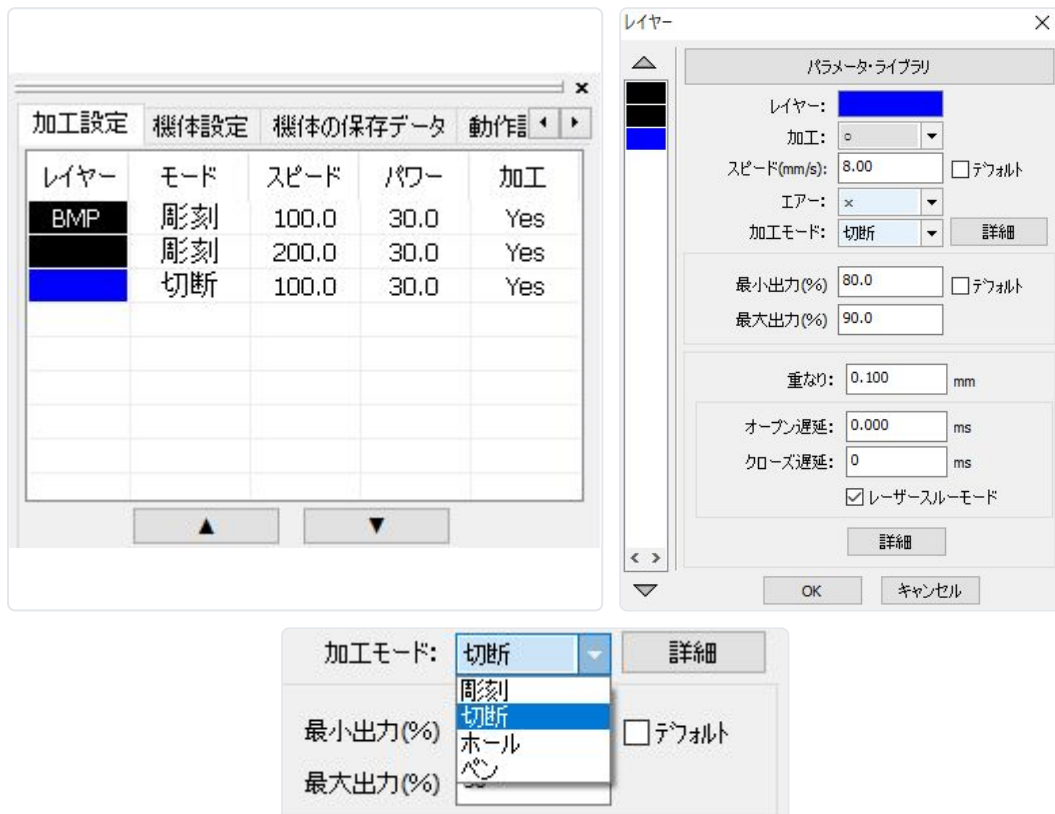
The "Advanced Engraving Settings" displayed by clicking the button do not normally need to be changed. For details on these settings, refer to the LaserWork user manual.

Click the OK button to complete the settings.

Next, set the processing mode of the outer frame — the shape to be cut — to "Cut."

Double-click the layer you want to cut.

The settings dialog appears.



A list of modes is displayed; click "Cut."

Double-click here.

Once the mode is set to "Cut," enter the setting values.

Set the values for "Speed," "Max Power," "Min Power," and "Overlap" to suit the thickness of the acrylic and the quality required.

For cutting, set both "Max Power" and "Min Power" to 90, and set "Speed" to suit the material being processed.

The "Advanced" settings do not normally need to be changed. For details on these settings, refer to the LaserWork user manual.

Click the OK button to complete the settings.



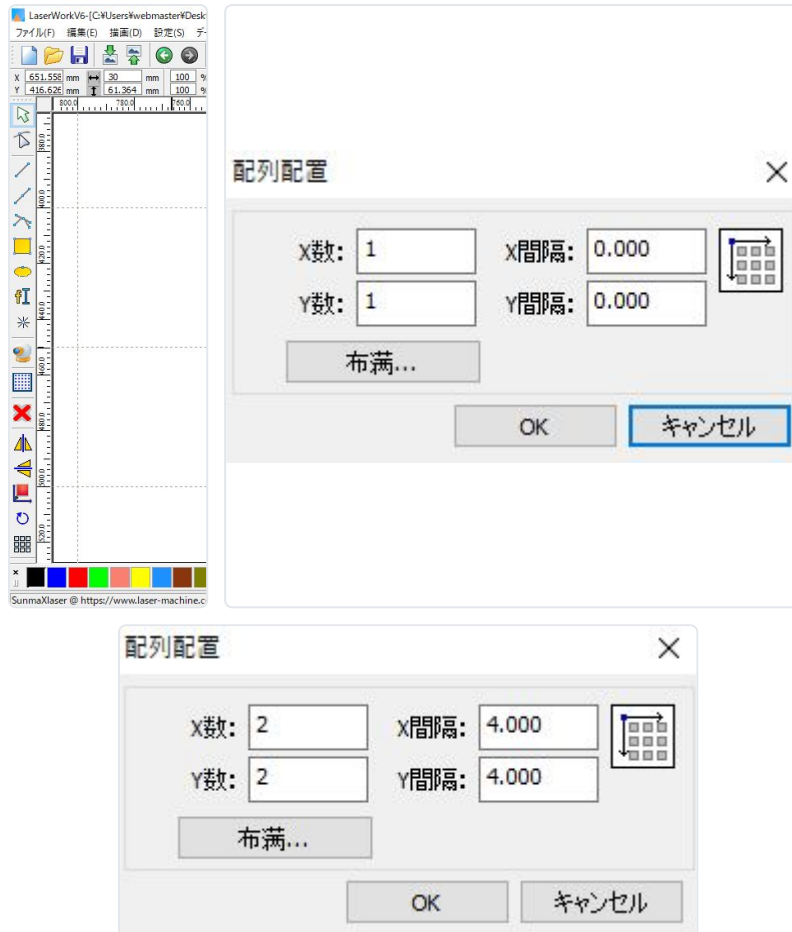
3. Settings for Processing Multiple Identical Items

To run the same job multiple times, click "Array Copy" on the drawing toolbar and configure the settings.

Clicking "Array Copy" displays the array alignment dialog shown below.

Set the X number, Y number, and spacing according to the number of repetitions across and down and the horizontal and vertical gaps.

Example: To process identical items in 2 columns and 2 rows with a gap of 4 mm, use the settings shown below.

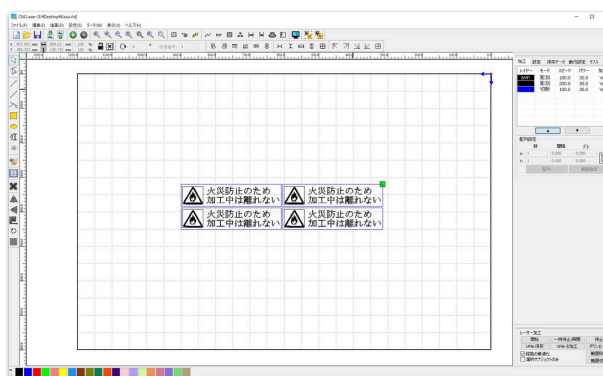


Click the OK button to complete the settings.

(Reference)

In this document, "Array Copy" was used as the setting for performing the same job multiple times. "Array Output" can also be used for the same purpose.

* For details, refer to the LaserWorkV6 user manual.



4. Setting the Origin

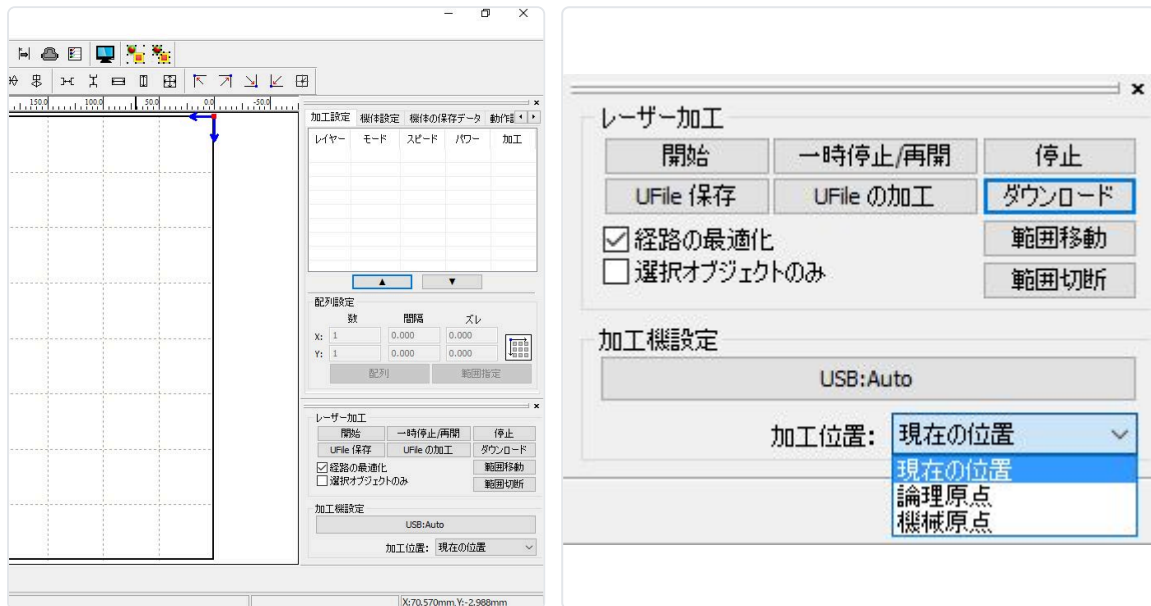
Before starting a job, you must check and set the processing origin.

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

When running a job from the "machine control pane" in LaserWork, the origin position changes depending on settings such as the "processing position" described below.

4.1 Processing Position

The processing start position differs depending on the processing position setting. Select it from the processing positions shown in the laser processing area at the bottom right of the screen.



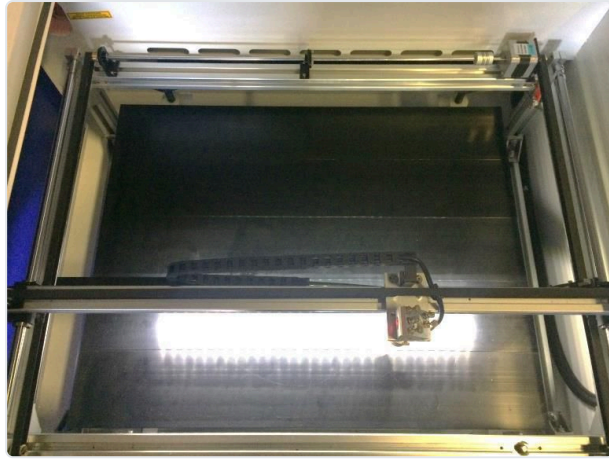
You can choose from three processing positions.

Current Position

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

Logical Origin

When "Logical origin" is selected, clicking "Start" runs the job using the logical origin position set with the "Origin" button on the laser machine as the position of the data origin.



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

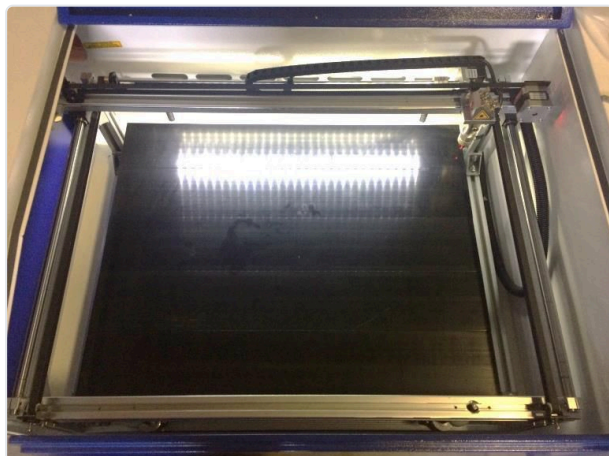
Even if the laser head has been moved, clicking "Start" moves the laser head to the logical origin and starts the job.



Machine Origin

When "Machine origin" is selected, clicking "Start" runs the job using the laser machine's machine origin position (rear right: the position the machine homes to at start-up) as the position of the data origin. When you click the "Start" button, the laser head moves to the machine origin and starts the job.

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



4.2 Absolute Coordinates

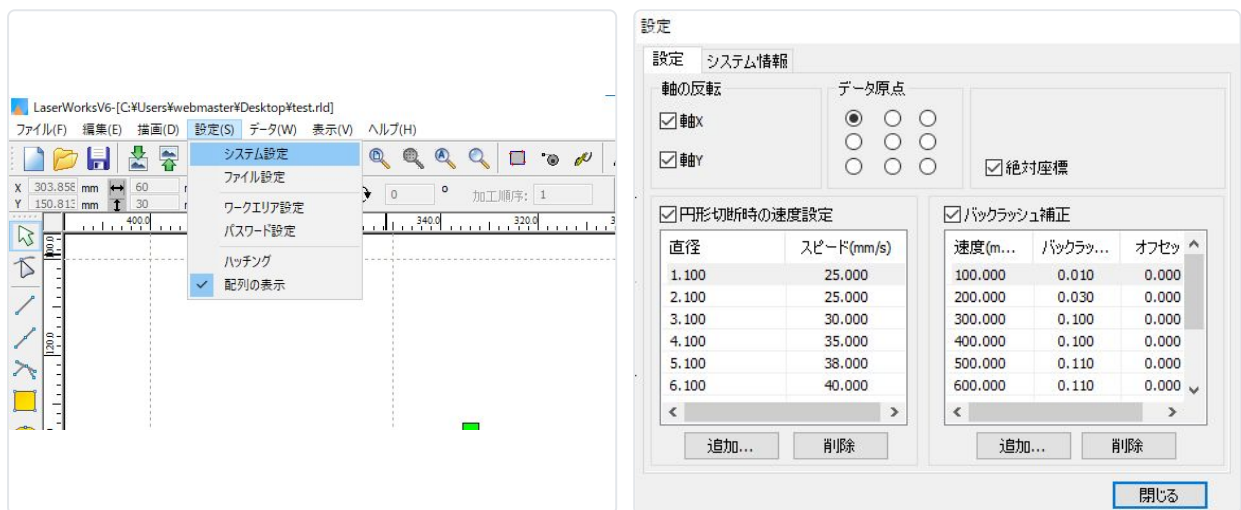
When the absolute origin checkbox is selected, the logical origin set with the "Origin" button on the control panel and the "processing position" setting used when running a job from LaserWork both become invalid, and the job is processed at the position of the object on the design screen.

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

How to Set

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

The settings screen appears. The setting is enabled by placing a check mark next to Absolute Coordinates.



5. Downloading the Data

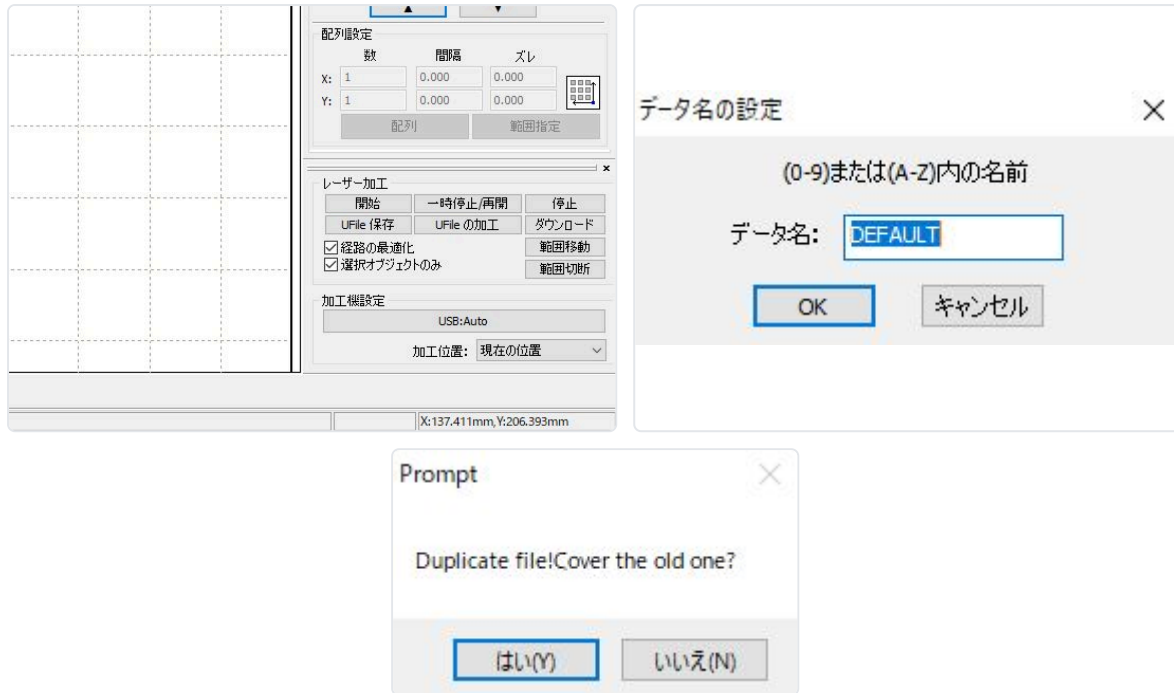
Once the processing settings and the processing position have been configured, load the data into the laser machine.

* Downloading the data is performed when the job is to be started from the laser machine's control panel. It is not necessary when the job is run from the "machine control pane" in LaserWork.

1. At the bottom right of the screen, click "Download" in the laser processing area.
2. When you click the Download button, the "Set data name" dialog appears. Enter a name of your choice.

* If a file with the same name already exists on the laser machine, a dialog appears asking "Overwrite?".

* Only half-width alphanumeric characters can be used.

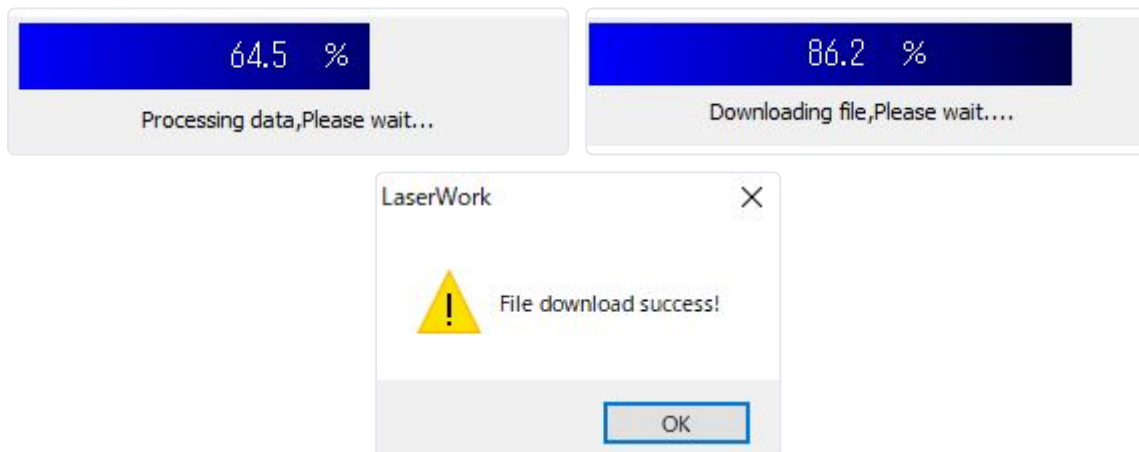


3. Start of download

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

When it reaches 100%, the download itself then 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

Now that the job data has been saved to the laser machine, carry out the processing. Start the job using the procedure below.

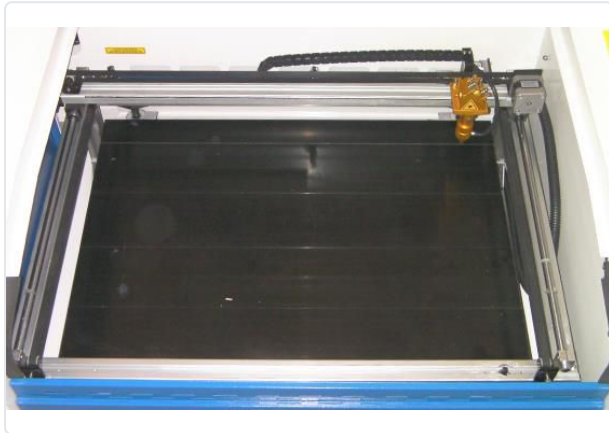
6.1 Installing the Honeycomb Table

Mounting the Honeycomb Table

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

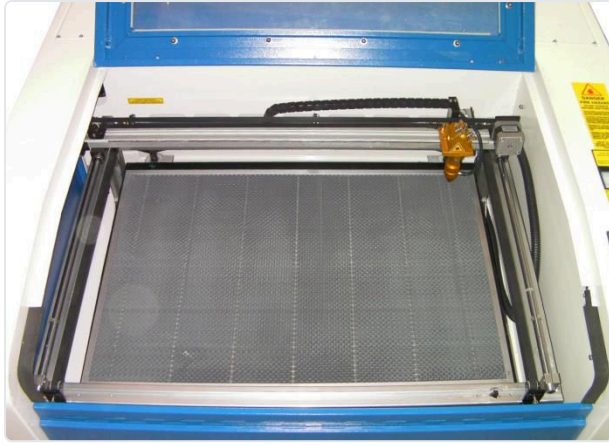
To create enough space to install the honeycomb table, use the table lift handle. Turn it counterclockwise to lower the Z-axis.

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



6.2 Applying Wet Newspaper

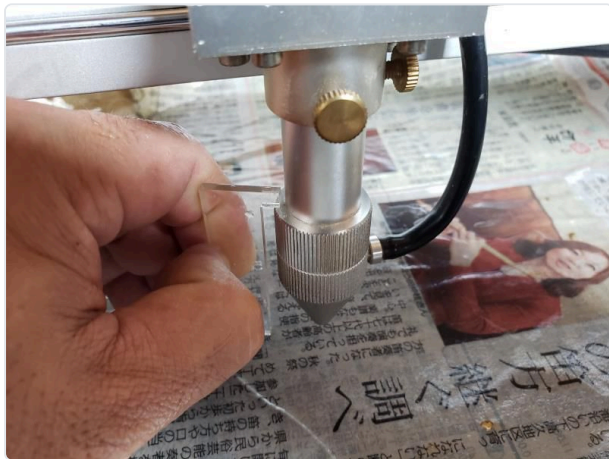
As a scorch-prevention measure, cover the surface of the material with wet newspaper or a similar material. Use your hand or a brush so that it adheres evenly to the material.



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

6.3 Focusing

Adjust the focus. Use the supplied focus gauge to check that the table height is correct.



Using the table lift 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.)

6.4 Starting the Job

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 you want to process, and press "Origin" to set the processing origin.
2. Close the top door.
 - * The laser will not fire while the top door is open.
3. After closing the top door, turn on the power of each external device (blower, water chiller, and compressor).

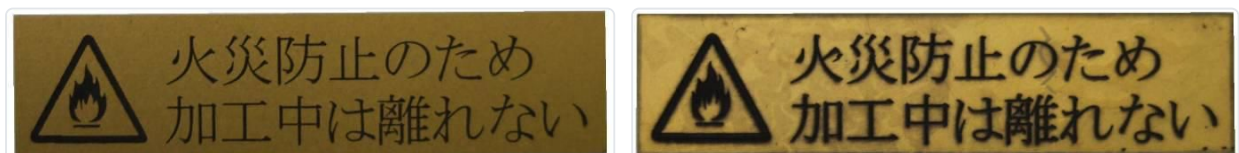


4. Press "Start/Pause" on the control panel to begin processing.
5. When processing is finished, the laser machine sounds a beep. Open the top door and remove the processed material.

In this work example, a scorch-prevention treatment (applying wet newspaper) was used. For comparison, the finished results with and without the scorch-prevention treatment during processing are shown below.

[Finished Results]

— With scorch-prevention treatment — — Without scorch-prevention treatment —



7. Processing Precautions

Warning: When processing at high laser power and extremely low speed, such as when cutting thick acrylic, the acrylic material may burst into flame. Always keep the job under constant observation while working, and beware of fire.

