

Work Example — Cutting Printed Acrylic with Registration Marks

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 — Cutting Printed Acrylic with Registration Marks

This document describes the procedure for cutting pre-printed acrylic on the LT6040ST908, as used in merchandise production such as acrylic stands.

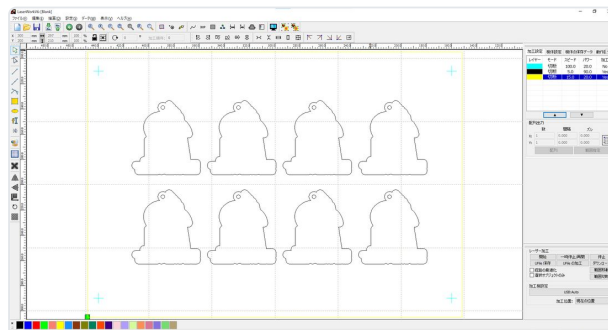
- This document assumes that the printed design and the cutting lines have been created correctly.
- This document assumes that the laser machine has been set up properly.
- This document assumes that RDWorks6, the control software for the LT6040ST908, has been installed correctly.
- The setting values in this document are reference values. Change them to suit the material you are processing.

1. Configure a Layer for Each Processing Task

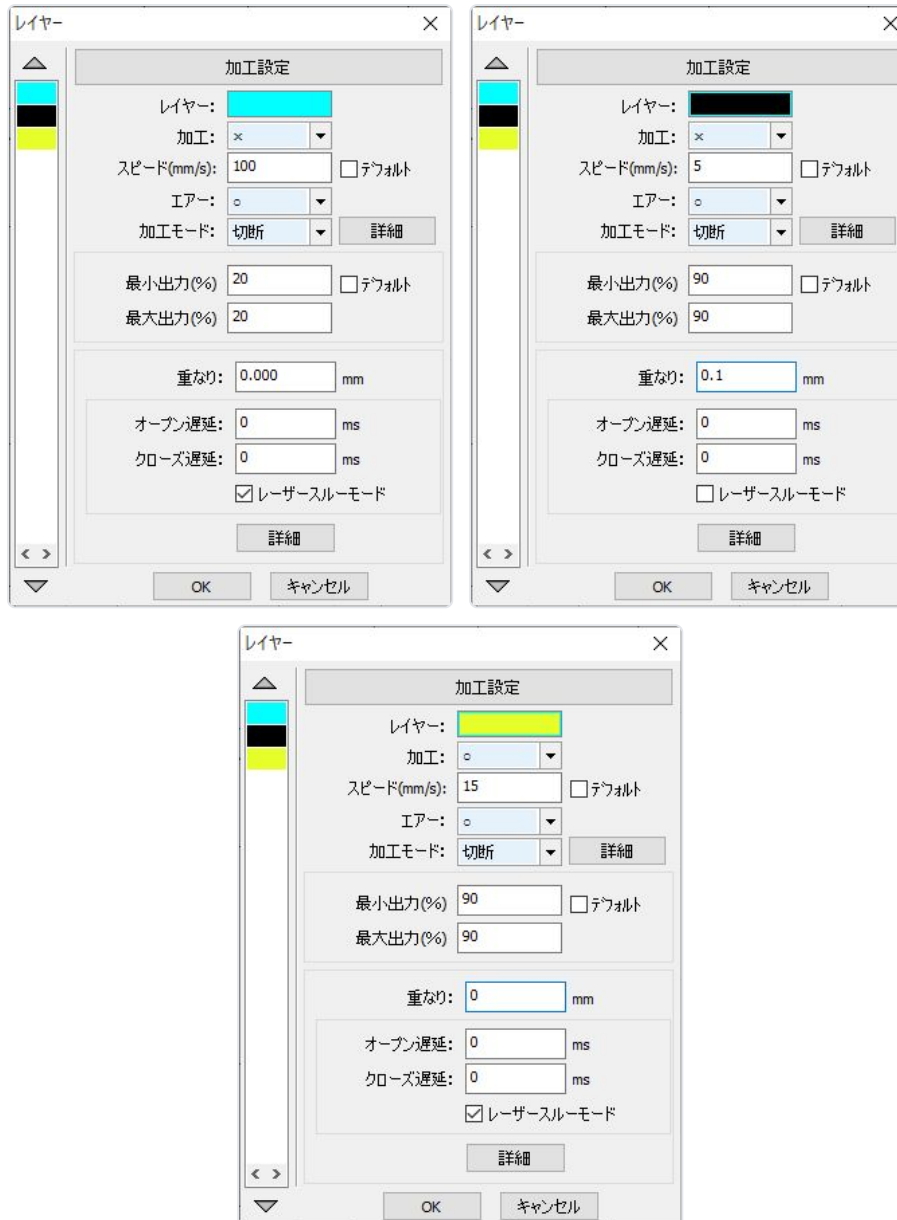
When cutting a pre-printed acrylic sheet, you must prepare separate data for the material size (A4 size in this document), the lines matching the registration marks, and the acrylic cutting lines, and assign each of them to its own layer.

In this document, the registration-mark data is set to light blue, the cutting lines to black, and the material size to yellow-green.

The settings for each layer are as follows.



Double-click the layer color.



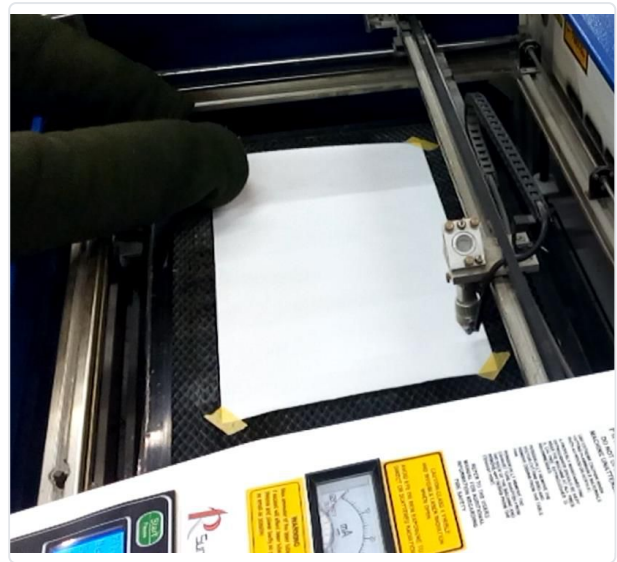
Click OK to apply the settings.

Click a color to switch layers.

2. Place the Material to Be Cut and Adjust the Focus

Place the material to be cut on the work area of the LT6040ST908 and adjust the focus.

In this document, riser blocks are placed under the four corners so that the material is not affected by reflections from the table.

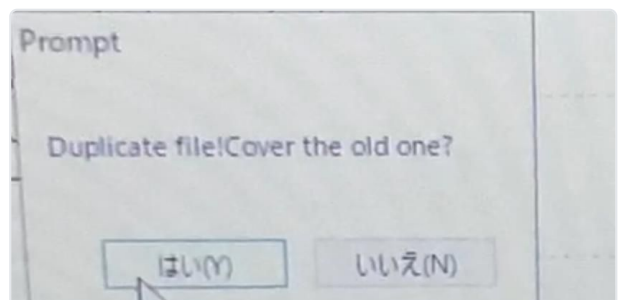
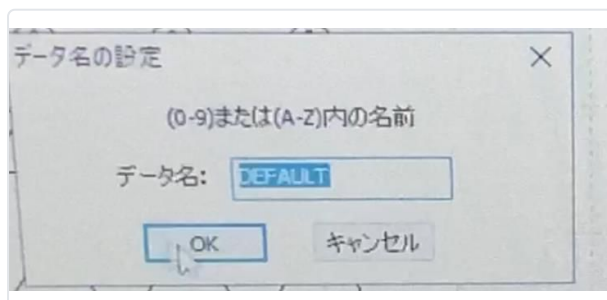
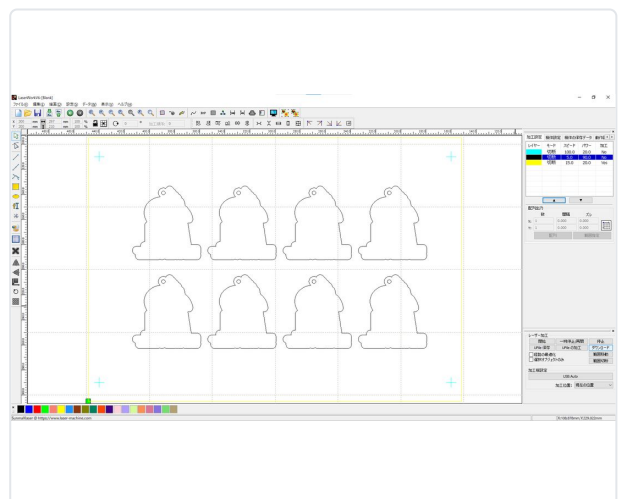
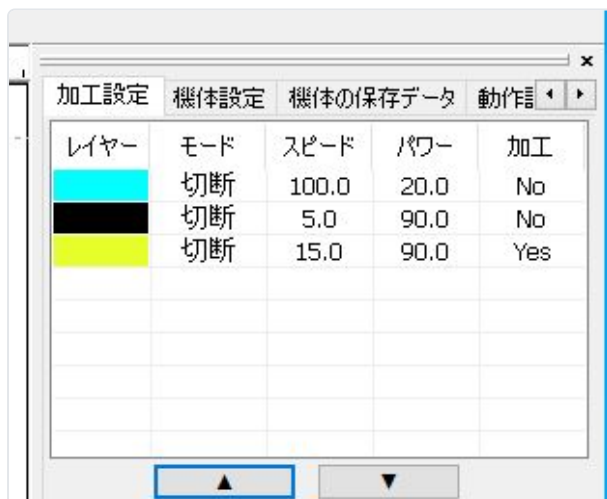


3. Cut at the Material Size to Establish the Approximate Processing Position

Remove the material and the riser blocks you placed earlier, and attach a sheet of paper larger than the material to the work table.

At this point, set the current laser head position of the machine as the origin using the Origin button.

Confirm that the processing settings are as shown in the figure below, with only the material-size cutting layer set to Yes for output.

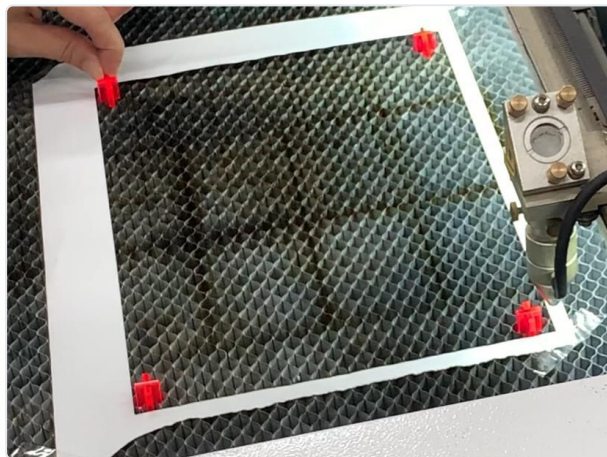
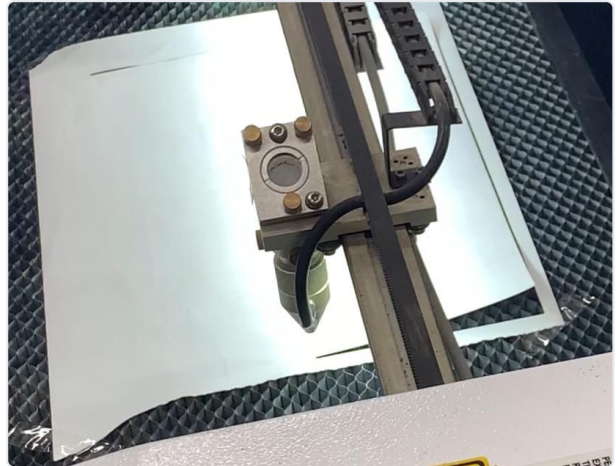
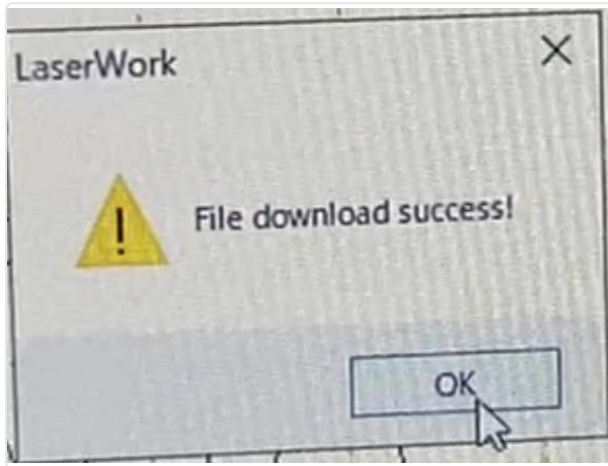


If the output settings differ, change the layer settings.

Click Download.

When a message appears, click OK. If another message appears, click Yes.

A message appears indicating that the transfer of the processing data is complete. Be sure to check this message.

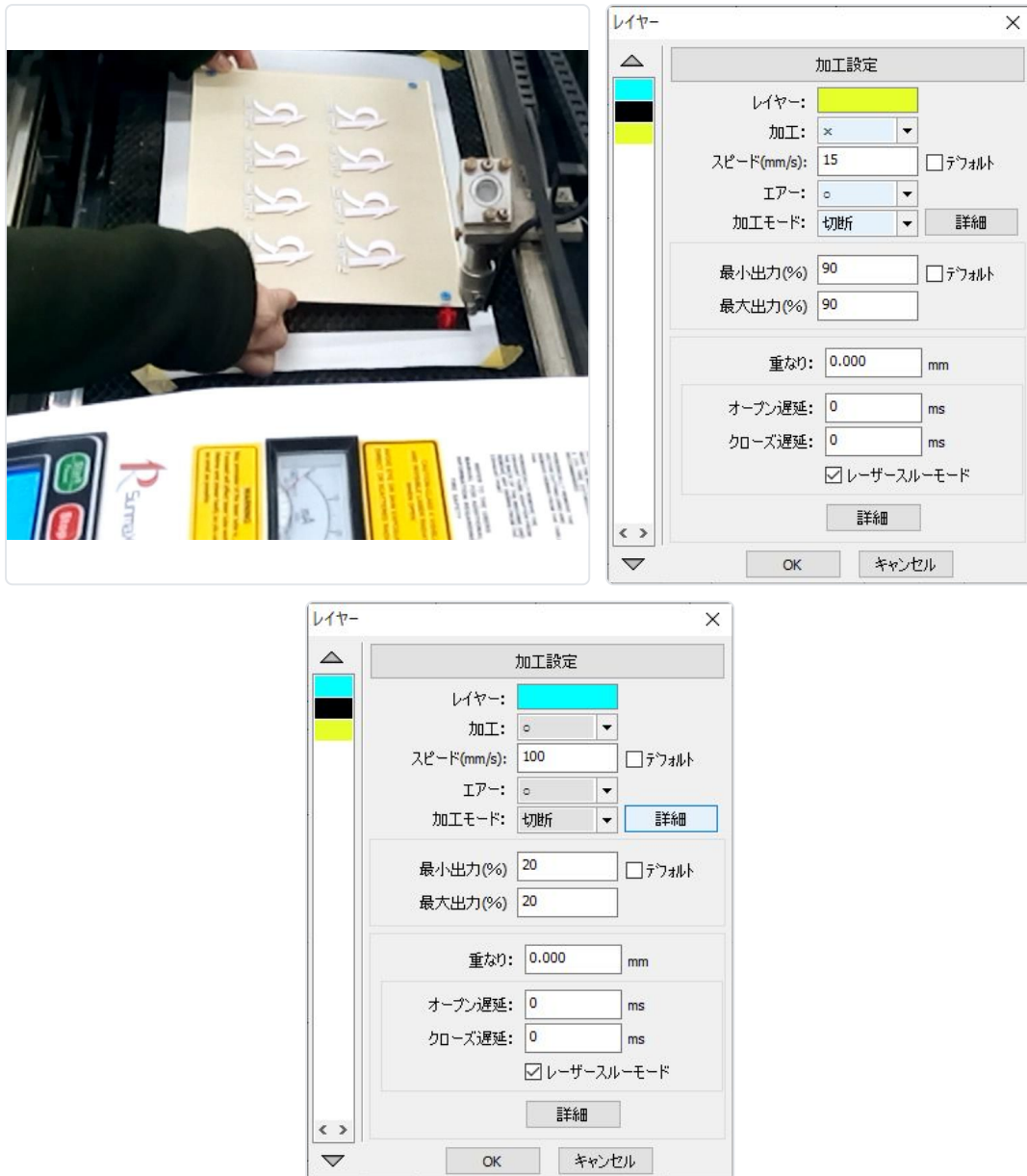


Click OK.

Press the START button on the machine's operation panel, and cutting starts for the material-size data only.

When cutting is complete, remove the paper inside the cut line and place the riser blocks.

Place the material on the riser blocks. When positioning the material, align it with the outline of the cut paper.



4. Configure Marking for the Registration Marks

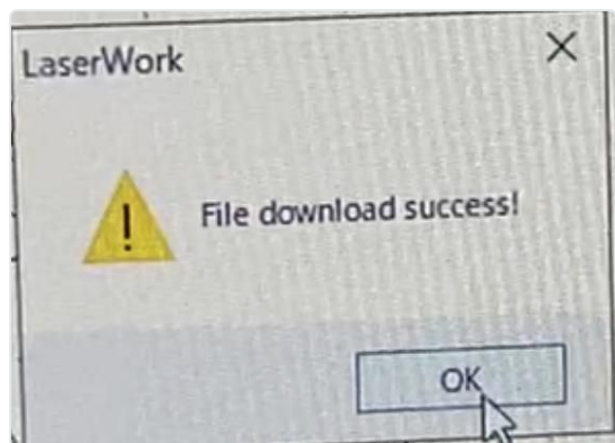
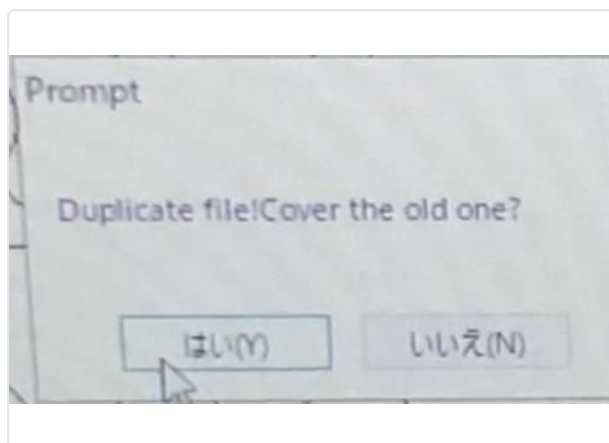
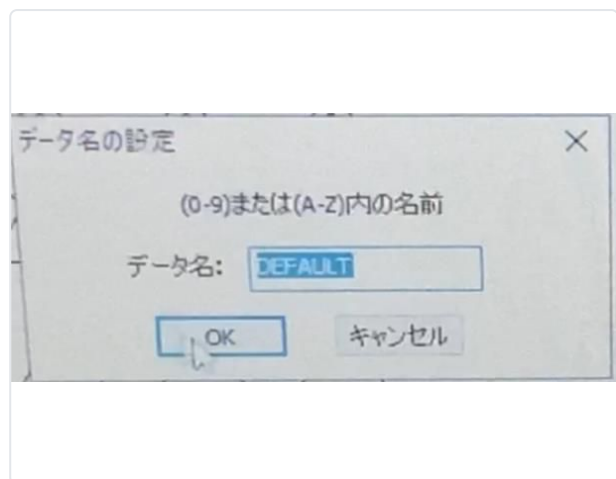
Once the approximate position of the material has been established, configure the marking settings for the registration marks.

Change each layer setting as shown below.

Note: The black layer (acrylic cutting lines) remains set so that it is not processed.

Click OK to complete the layer settings.

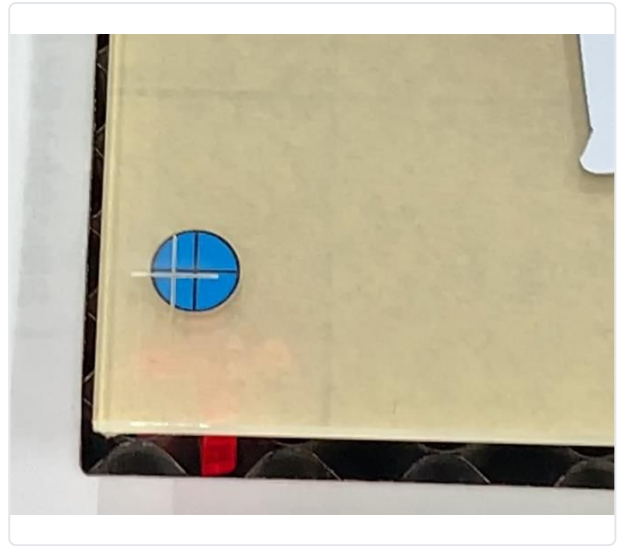
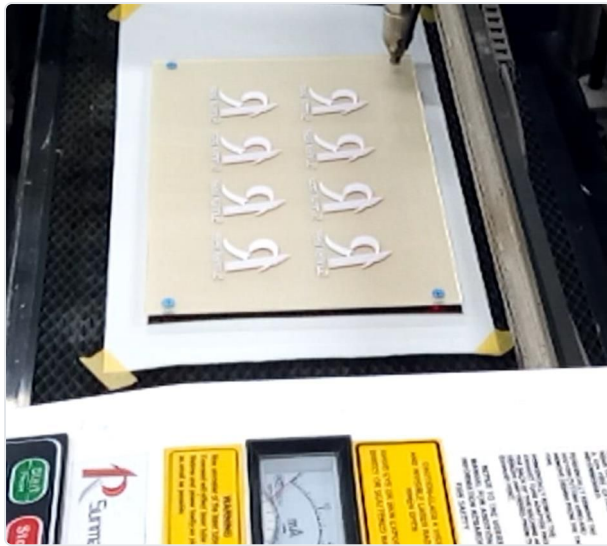
After confirming that the layer output settings have been changed as shown in the figure above, click Download at the lower left of the screen.



When a message appears, click OK. Another message then appears, so click Yes.

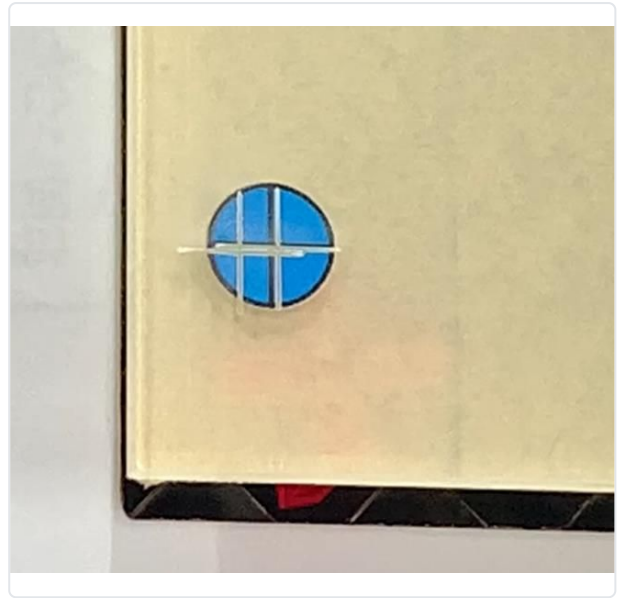
Check the completion screen shown below and click OK.

Press the START button on the machine to start processing. Cut lines just deep enough to form grooves are made at the registration-mark positions.



Any offset in the processing position can now be seen.

Fine-tune the position of the material according to the offset.



Press the START button on the machine once more to process the registration marks.

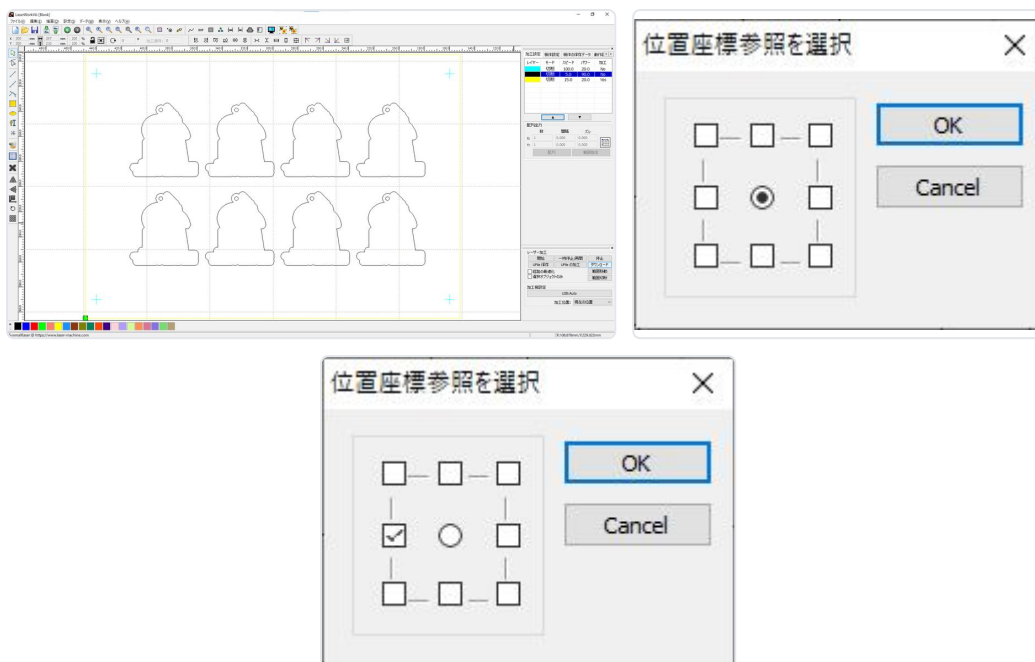
The position on the left side is aligned correctly, but the registration mark on the right side is shifted to the right. This is thought to be caused by a certain amount of stretching or shrinkage during printing. Adjust the size of the cutting data to match the print.

5. Adjust the Data

Adjust the data to match the size of the print.

In this document, the registration mark on the left is in the correct position, but the one on the right is shifted to the right. In this case, the data must be shrunk using the left side as the reference.

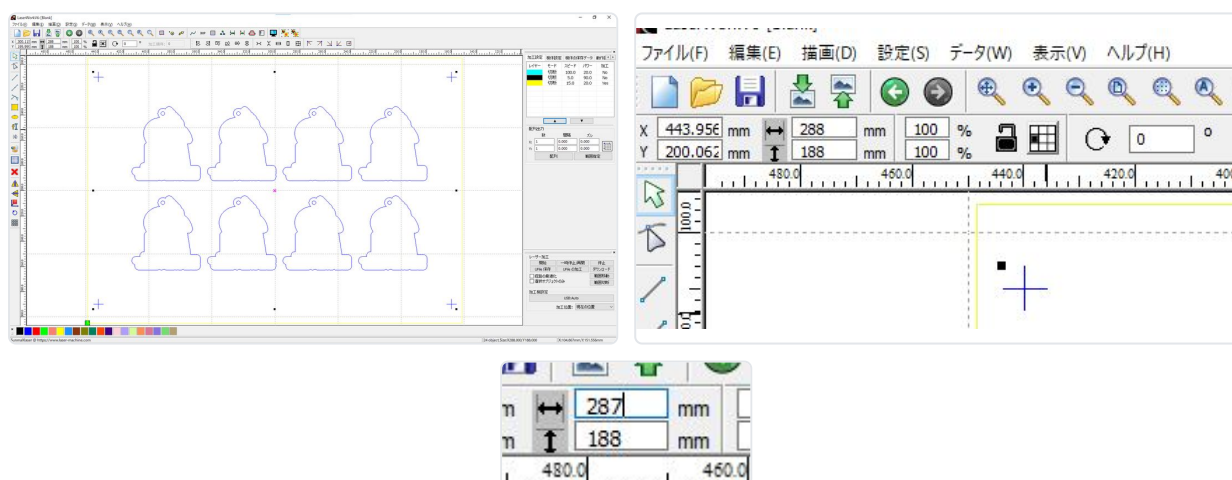
First, click the button shown below on the control screen.



The position coordinate reference dialog appears. Select the left-side option and click OK.

Next, select everything except the material-size data. (In this document, the selected data is shown in dark blue.)

The size of the selected data is displayed.

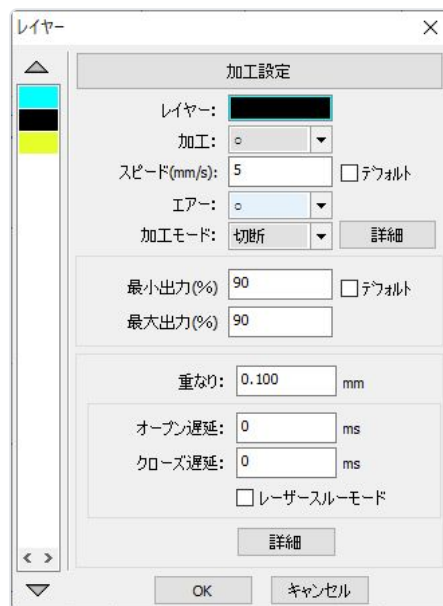
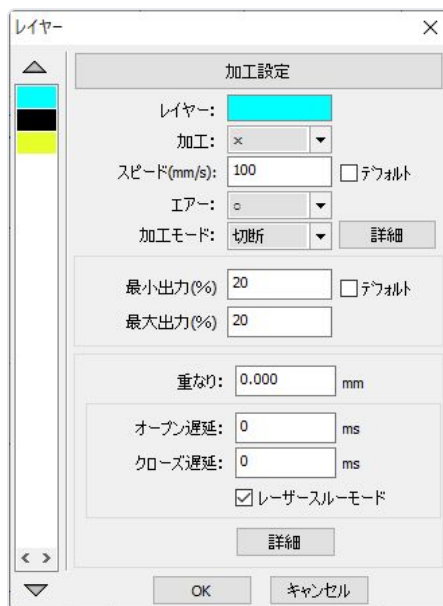


In this example, the data was found to be about 1 mm too large in the X direction, so reduce the X-direction size by 1 mm. In this document, change 288 to 287 and press Enter to apply.

Because this is a fine adjustment, the change is hard to see on screen, but the data shrinks by 1 mm while the left side remains fixed.

Click Download at the lower left of the screen, and when the messages appear, click OK, Yes, and OK.

Press the START button on the machine to mark the registration marks.



The processing position on the left side stays the same, the right registration mark now lines up, and the data has been corrected.

6. Cut the Acrylic

Once the position and size of the data have been adjusted, cut the acrylic.

Change the layer settings as shown in the figure below.

Click OK to complete the layer settings.

Note: The yellow-green (material size) layer remains set so that it is not processed.



Click Download at the lower left of the screen, and when the messages appear, click OK, Yes, and OK.

Press the START button on the machine, and processing begins.



To repeat the same job, start again from step 4, "Configure Marking for the Registration Marks." The positions of the registration marks differ each time depending on the condition of the print, so adjust them each time.

Caution: The material-size line serves to fix the processing position, so do not delete it from the data.

Because the data will need adjusting, we recommend keeping the original job data.