

Intermediate Registration Marks in SCAL with a Skycut

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1. Overview

This procedure allows one to set up intermediate registration marks for projects with repeated rows and/or columns of printed shapes to be contour cut. The printing can be executed from SCAL or printed to PDF for sending to an outside printer. The scanning of the marks and cutting will be performed using the Array function on the Skycut's control panel and the UART drive.

Workflow

- The basic steps in using SCAL to perform a print and cut application with intermediate registration marks are:
 - (1) Create a single set of images to be repeated between each set of intermediate registration marks.
 - (2) Change the registration mark settings in SCAL, as recommended later in this tutorial. Export this single set of images as a PLT file to be saved on a USB flash drive.
 - (3) Export this single set file in SVG format with the registration marks also exported. Then re-import this SVG file so that the registration marks are actual shapes you can now thicken and duplicate for printing.
 - (4) Duplicate the imported set of images and reg marks to create the array of repeats you wish to cut.
 - (5) Print the project without using SCAL's registration marks since the required ones have been imported and duplicated.
 - (6) Import the PLT file into the control panel on the cutter from the USB flash drive.
 - (7) Set up the required array of repeats to match the printout. Perform the cut.

What types of files work and what types of files do not

- A single set of images that can be repeated in rows of the same are required. Thus the following would be acceptable:

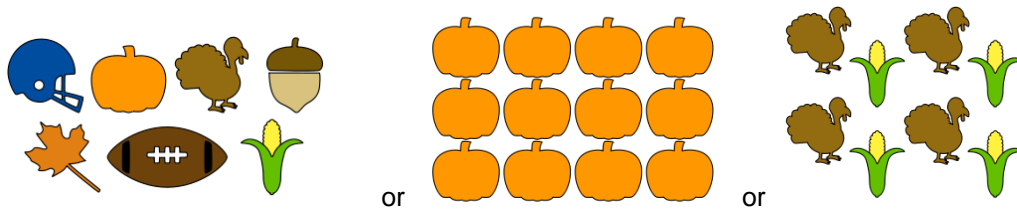
- ◇ A single row of the same image:



- ◇ A single row of different images:

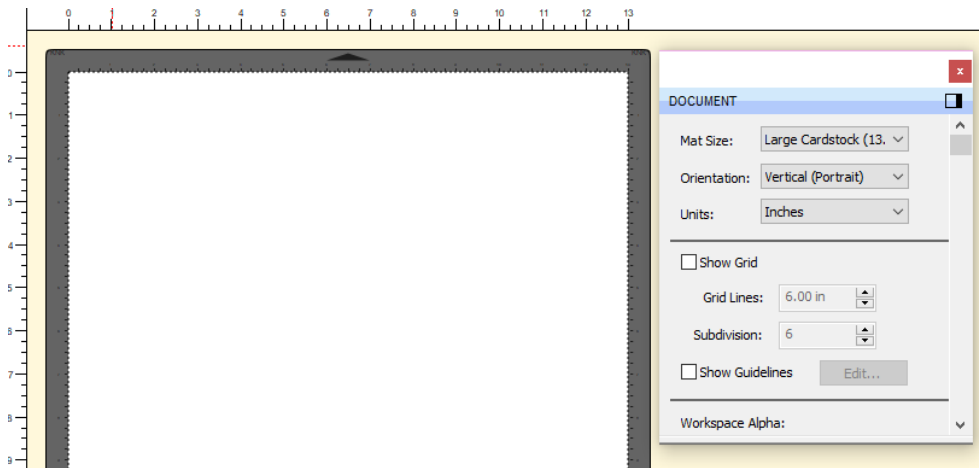


- ◇ Two or more rows of images where each repeat after this would be the same:

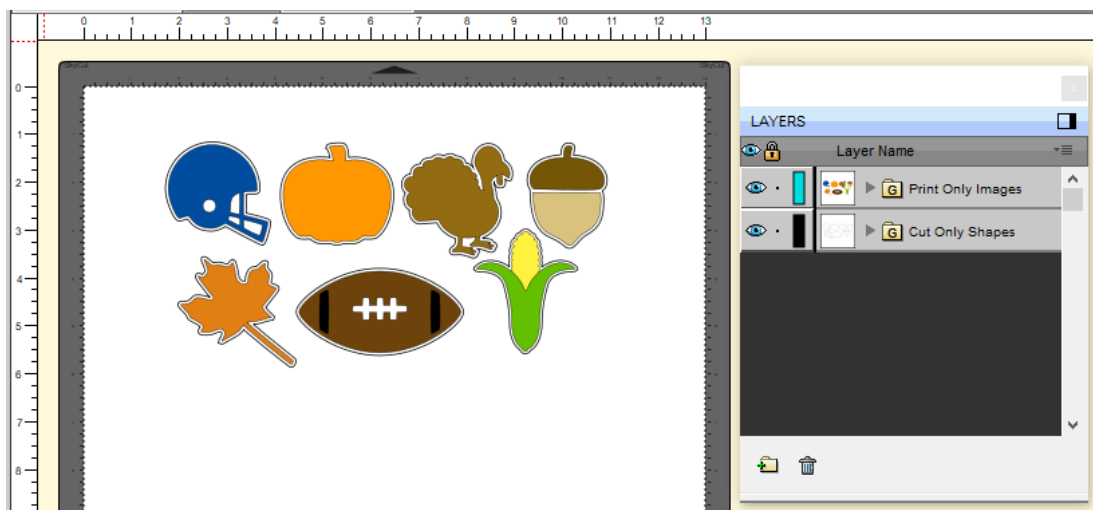


2. File Preparation

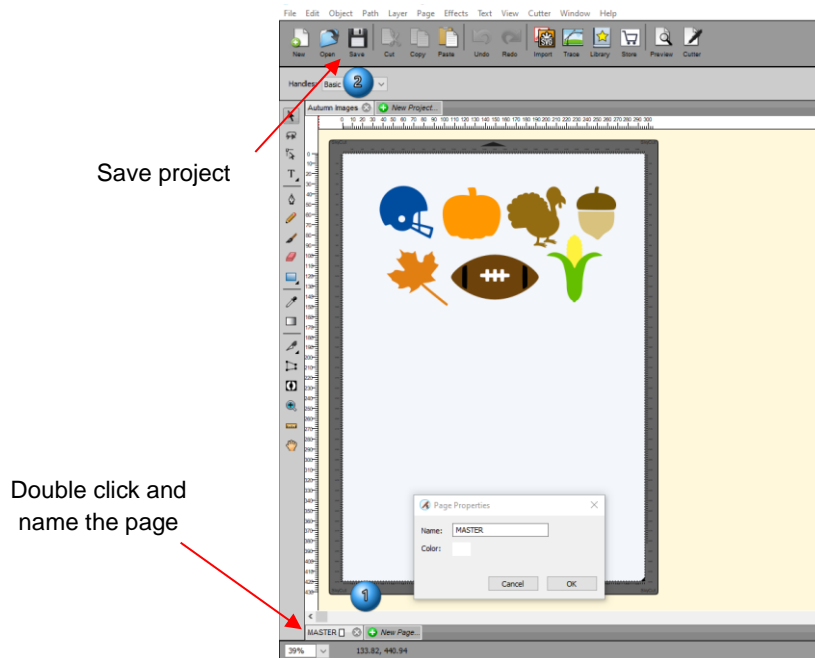
- From the **Document Panel** select a **Mat Size** that matches the printout dimensions you plan to use. In the example, a **Custom Mat** will be created that is 13" wide x 19" high. Also, for **Orientation**, use **Vertical (Portrait)**. **Units** can be set to either **Inches** or **Mm**:



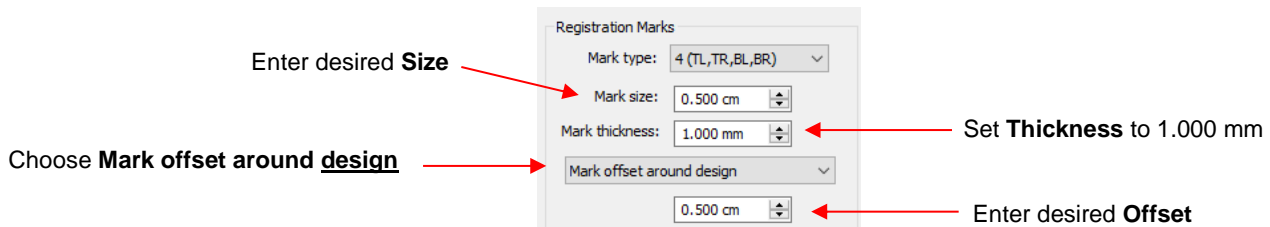
- Create the single set of images that will later be repeated, using the examples in the prior section as a guideline. In this tutorial, two rows of different images will be used, as the single set, and they are roughly centered near the top of the mat area. Note that it's advisable to group the images and also assign any layers to **Print + Cut Print** or **Print + Cut Cut**, as with normal PNC projects in SCAL:



- At this point, it is recommended that you (1) Rename the page something appropriate, such as *Master* and (2) Save the project:

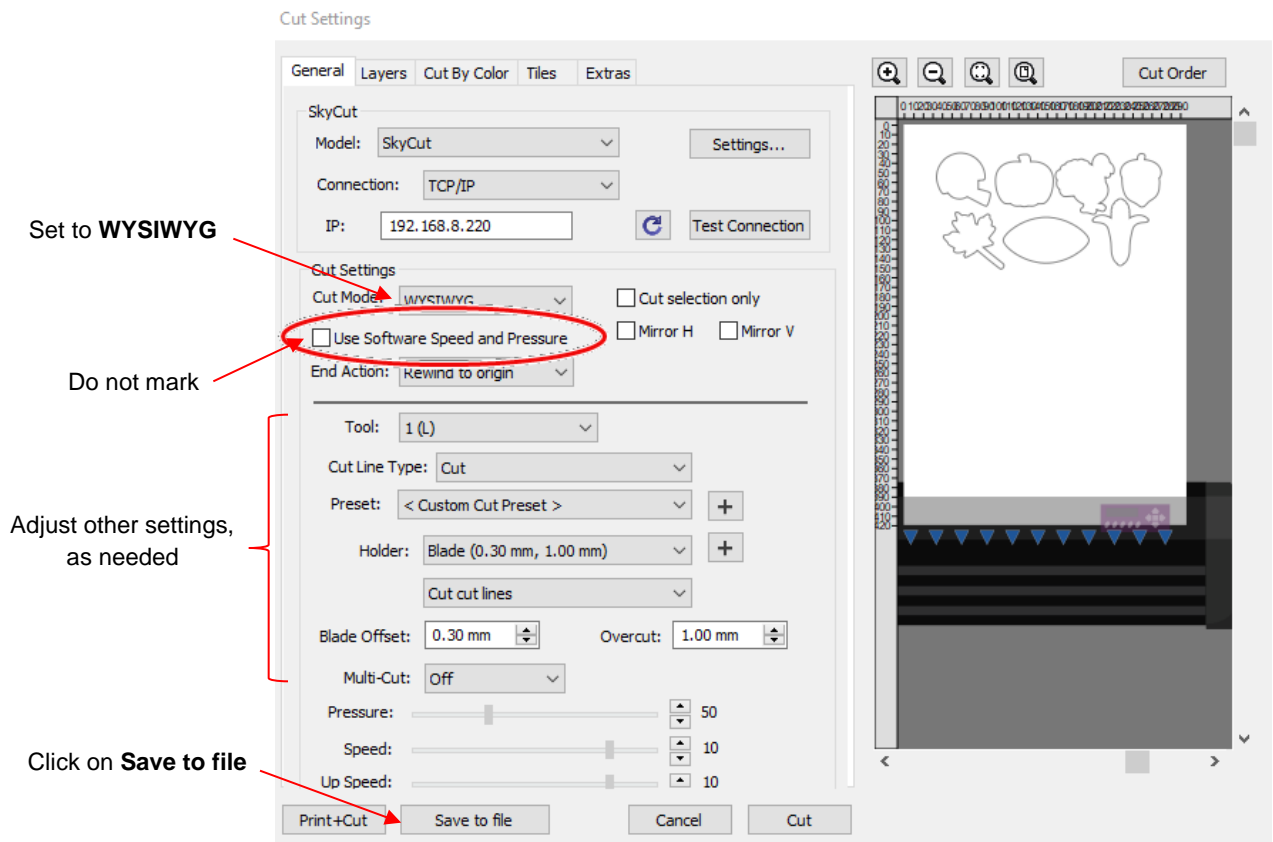


- Go to **Cutter>Cutter Settings**. For your first testing of this procedure, it is recommended you use the following settings. With experience, you can change these settings but remember that the marks cannot be too close to the images and they need to be of the same thickness as the ones that you will be printing.

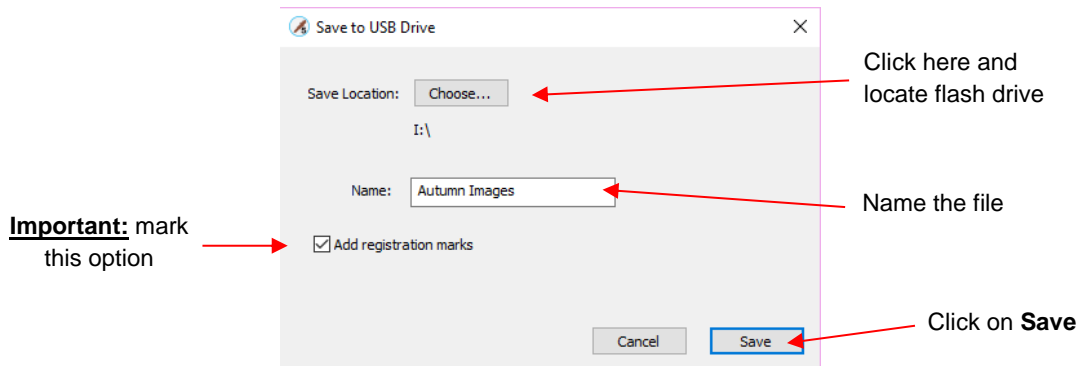


3. Export the Project as PLT

- Insert a USB flash drive into an available USB port on your computer.
- Verify that you see the shapes that should be cut for each set of repeats.
- In the **Cut Settings** window, check the settings that need to be in the PLT file, such as **Blade Offset** and **Overcut**, **WYSIWYG** mode, and **Multi-Cut**, if applicable. It is recommended that you do NOT enable the **Use Software Speed and Pressure option** so that those settings can be adjusted on the Control Panel if needed.



- Click on the **Save to file** button at the bottom of the **Cut Settings** window. The following window will open:

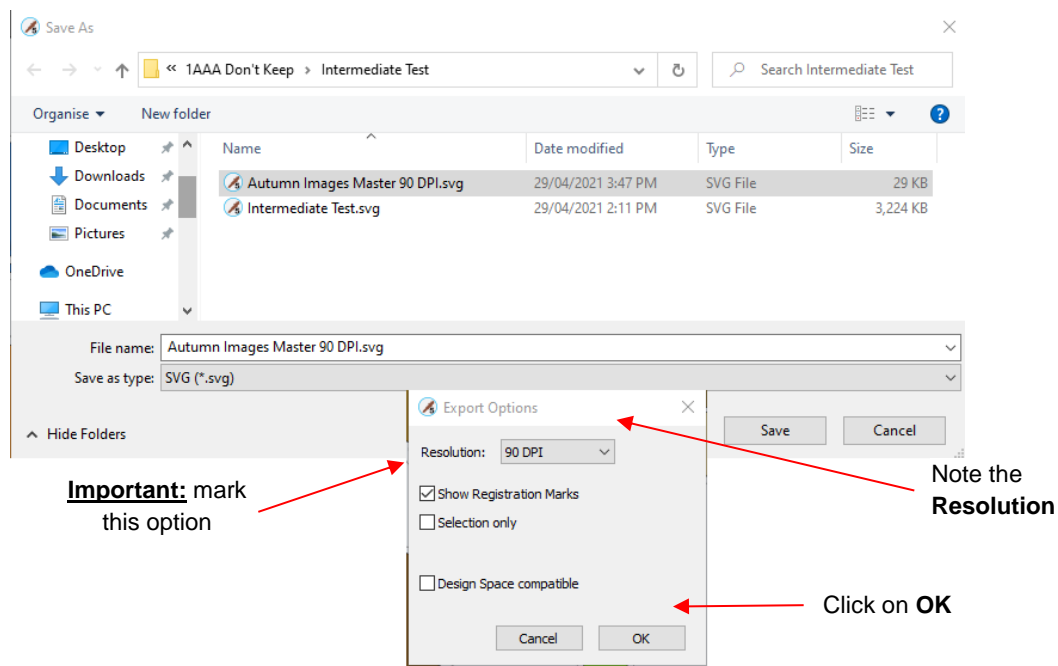


- ◇ Click on **Choose** and browse to the drive letter for your USB flash drive and click on **OK**.
 - ◇ Enter a **Name** for the file and mark the box next to **Add registration marks**.
 - ◇ Click on **Save**.
- Eject the USB flash drive and insert it into the USB flash drive port on your cutter.

4. Export the Master Pattern as a SVG File

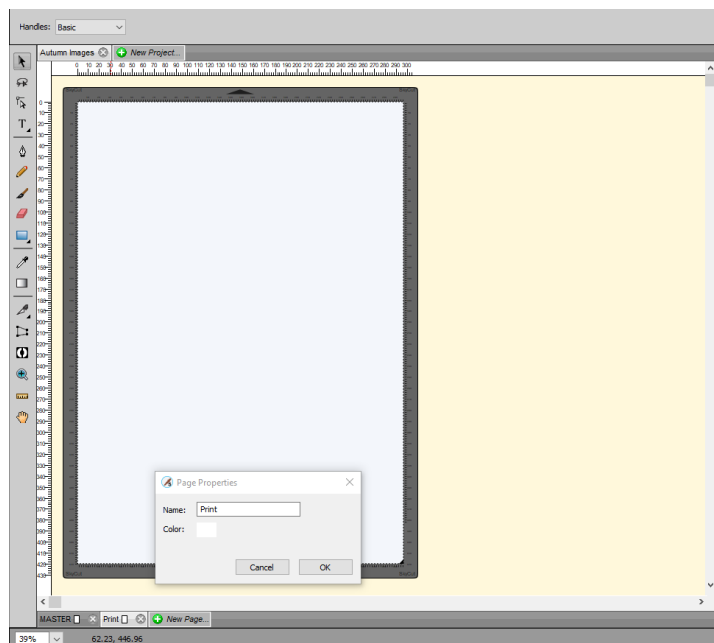
- Go to **File>Export**, provide a name for the SVG export, and click on **Save**.

- In the second save window that opens, note the **Resolution DPI** and enable the **Show Registration Marks** option:



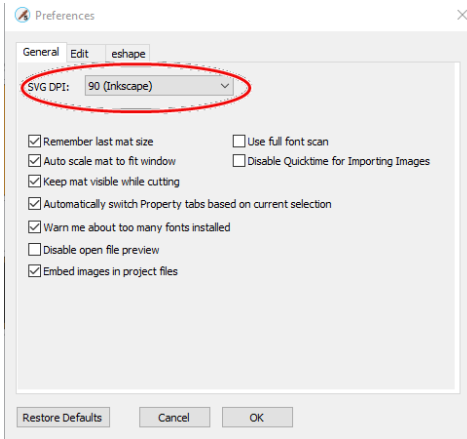
5. Create the Array Print Pattern

- Add a new page in the project and name it appropriately, such as *Print*.

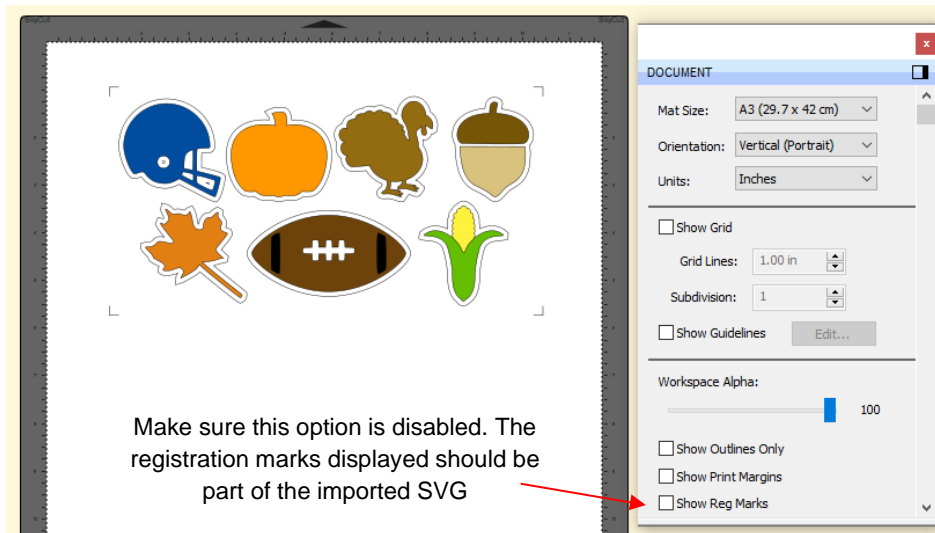


- Go to **Edit>Preferences** and verify that the **SVG DPI** setting matches what was used when you exported the SVG file:

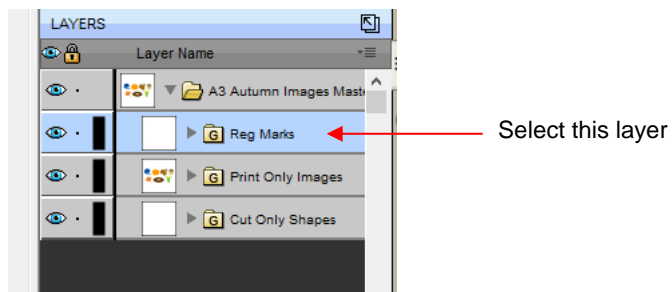
Set **SVG DPI** to match what was used in the export window



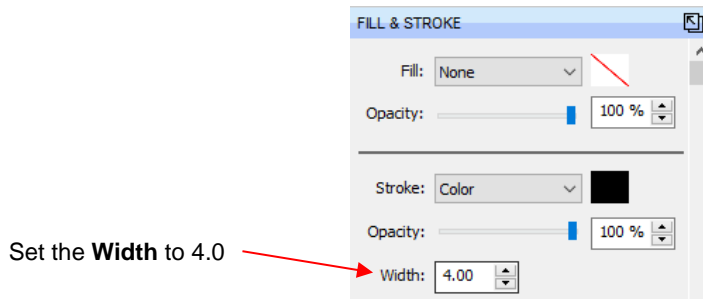
- Go to **File>Import**, locate the previously-saved SVG, and click on **Open**. You should see your single set of images and registration marks:



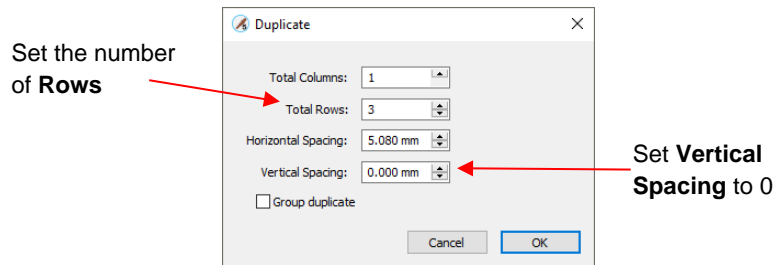
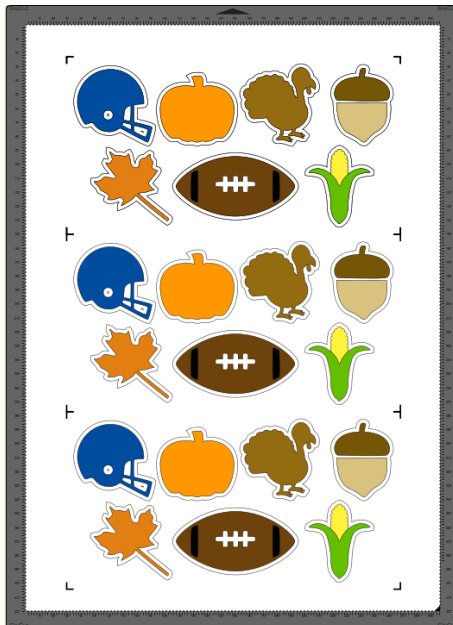
- Expand the folder on the **Layers Panel** and select the *Reg Marks* group:



- These imported reg marks need to be thickened before printing. With that layer select, set the **Stroke Width** to 4 on the **Fill & Stroke Panel**, which will match the 1.0 mm setting used under **Cutter>Cutter Settings**:



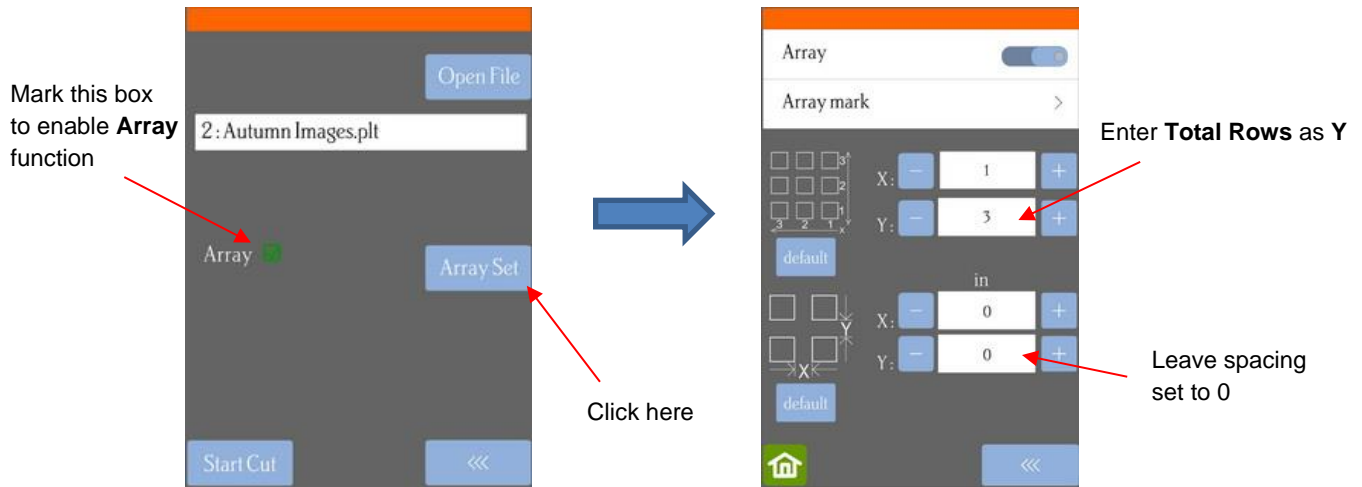
- Go to **Edit>Select All** (or **Ctrl+A**) to select the complete set including the registration marks. Then go to **Object>Duplicate** (or use **Ctrl+D**) to open the **Duplicate** window.
- Enter the number of **Total Rows** desired and set the **Vertical Spacing** to 0 so that the intermediate registration marks overlap:



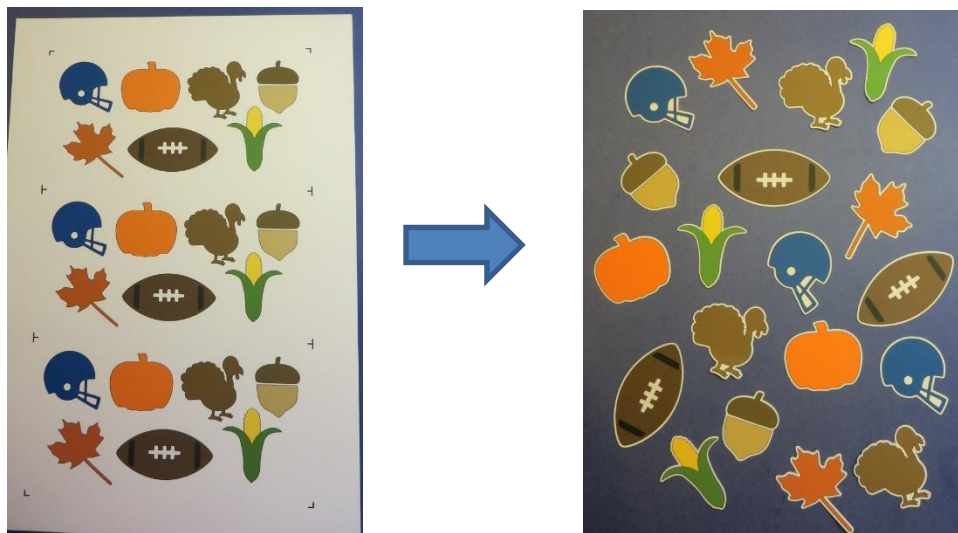
- You can, at this point, move the ENTIRE project together, including registration marks, if needed. This can sometimes be required to center the project in the document area and permit the printer to not generate a warning about objects being outside the printable area. In this project, everything could be shifted downwards a bit. (If you are planning to use **Borderless** printing, be sure to read this document: <https://www.iloveknk.com/Support/Tutorials/Skycut/Borderless-Printing-Issues-with-PNC.pdf>)
- The project is now ready to be printed. Note:
 - ◇ If you did NOT assign the *Cut Only* layer to **Print + Cut Cut**, hide this layer if you do not want it printed.
 - ◇ Do NOT mark the option for printing registration marks since you have already added the required ones. If the printer to be used is not available through SCAL, use a **Print to PDF** option.

6. Performing the Cut

- With the USB flash drive inserted into the cutter, open the PLT file that was saved in *Section 3*. If you need help with this step, refer to *Section 1.12.41* of the *Skycut with SCAL User Manual*.
- To set up for an array print and cut, in the same window with the loaded file showing, mark the box for **Array** and click on **Array Set**. Enter the number of rows (in this tutorial, 3). The spacing should be left at 0:



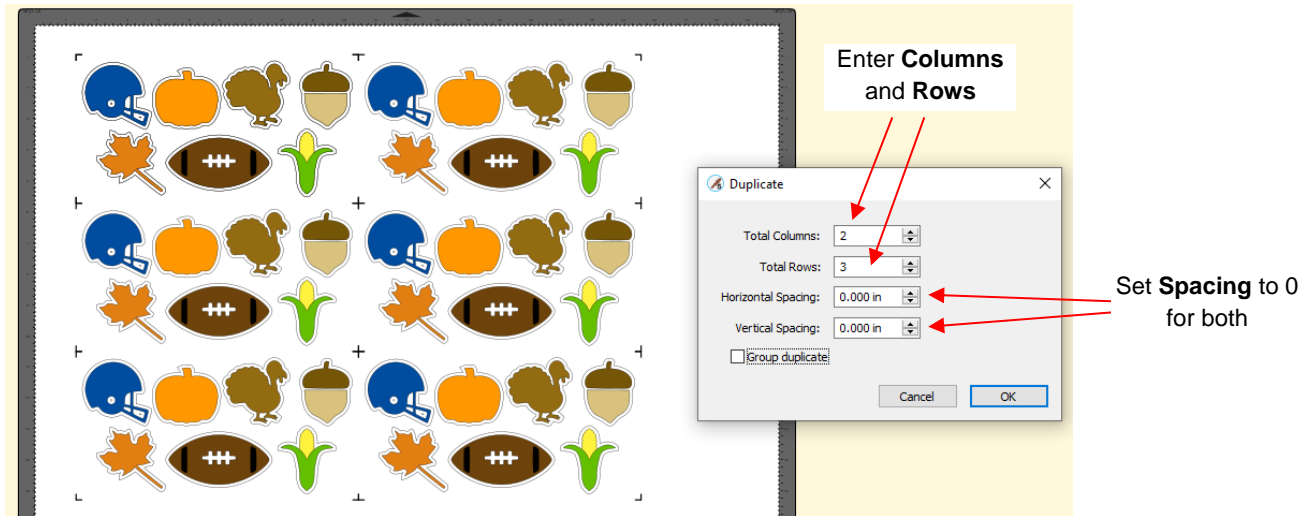
- Set the origin with the blade tip over the lower right registration mark. Return to the prior window and click on **Start Cut**. The Skycut will then read 4 reg marks at a time and cut the images within those 4 marks before proceeding to read the next 4. You can expect amazingly accurate results!



7. Additional Notes

- Because the UART (flash drive) function, in combination with the **Array** function, on the Skycut is being used, you are not limited to only rows of repeats. You can also add intermediate registration marks from left-to-right. The same procedure is followed. Note:

- ◇ Create the same single set to save to PLT on a flash drive and export as an SVG and reimport so that registration marks are present.
- ◇ After thickening the registration marks, select and use **Ctrl+D** to open the **Duplicate** window.
- ◇ Enter the desired **Total Rows** and **Columns** and make both the **Horizontal** and **Vertical Spacing** equal to 0:



- ◇ On the **Array** screen, enter the **Total Columns** and **Total Rows** on the printout:

