

## Using 301 Registration with Ioline Cutters

The 301 Registration features allow the user to cut or plot around a previously created patch, chenille design, label, or printed design. All that is required is a design file that includes the design outline for digitizing and a contour layer for cutting around the pattern. Ensure the file is in a format that the 301 can read. Please follow the instructions below for best results.

### Cutter Preparation

- Prepare tray with the proper adhesive sheet for the material to be cut. For example, use a high tack sheet for cutting scrim felt.
- Lay material onto tray adhesive sheet and smooth out any bubbles or bumps.
- Adjust cutting force and blade exposure for material to be cut by performing a series of test cuts. Refer to the *Quick Start Guide* for instructions.
- If you intend to cut pre-printed stickers on paper, remove the adhesive sheet and tape the material to the bare tray.

**Important Note:** *If the Force range is changed in the Ioline Control Center, make sure that the new settings are sent to the cutter using the **Permanent** button.*

### Open Ioline 301 Software

- Open the **Ioline 301 Software** by double clicking on the desktop sun icon. Alternatively, in the c:\ioline directory, ioline.exe can be double clicked to start the program.
  - Select the drive and directory where the file is located.
  - Click on a file type. For example **HPGL (.plt)**.
  - To open the file, double click on the desired file or click once on the file and select **Load Import File**. Double click on 2color.plt (located in the c:\embdata directory).
  - Click on **Design Setup**.
  - Under the heading, **Color Setup**, select the color/layer that shows the pattern outline, the shape that will be cut around. For 2color.plt, this is color 0. See Figure 1.
- Note:** *Verify that the Kiss Cut button 'K-C All' is selected. This feature is set default on.*

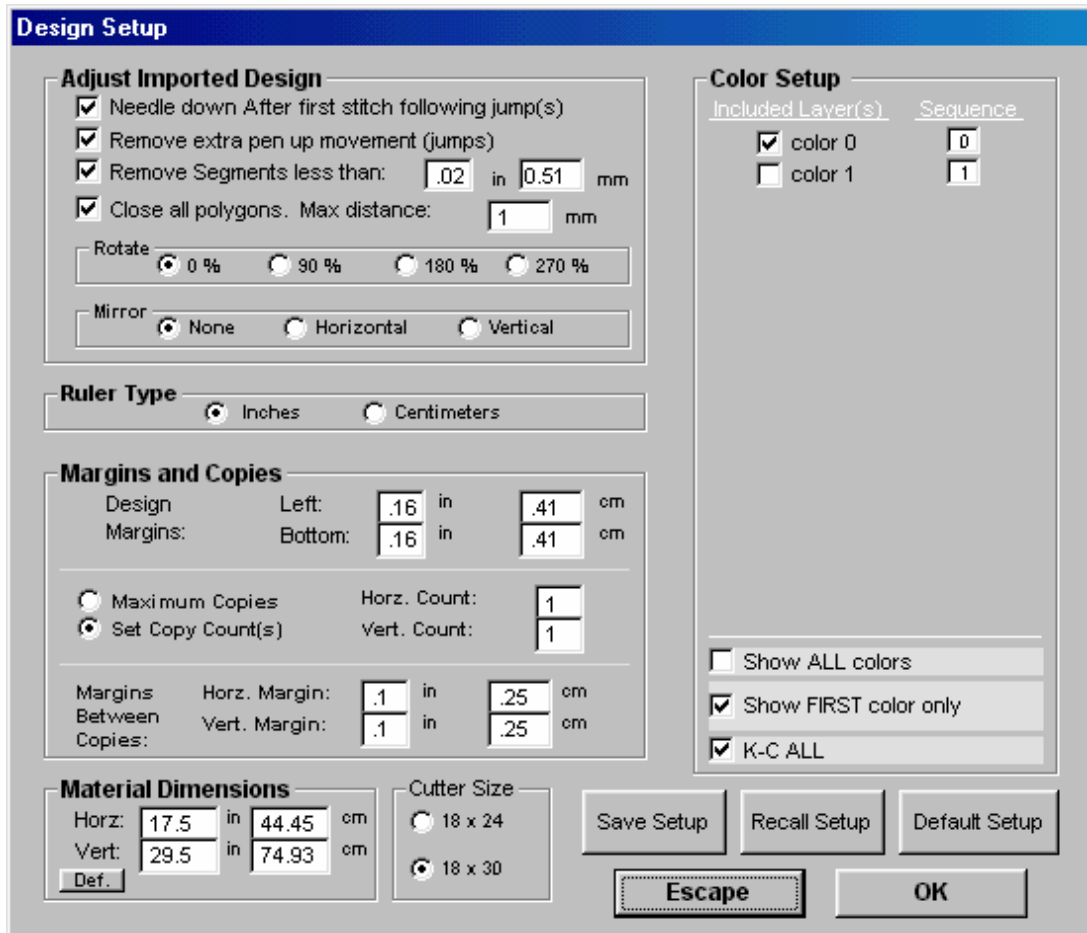


Figure 1: Selecting colors/layers.

- Select **OK**.

## Create Registration points in design file

Registration points are the features that you choose to align the pattern/plot that you wish to cut or plot around. Greater distance between the registration points will result in greater accuracy in the adjusted plot/cut file. Points should be chosen that are easily selectable from the pattern (sharp corners, rather than curves).

- Click on the **Registration** button to enter registration mode in the 301 software.
- Under **Registration Points**, click on **Set Point 1**.
  - Position mouse pointer over desired Registration Point and click the left mouse button. Consecutive clicks of the left mouse button will reselect the coordinate. *Hint: Check the **Snap** selection box to easily select vector endpoints.*
  - Click the right mouse button to accept 1<sup>st</sup> registration point. See Figure 2.

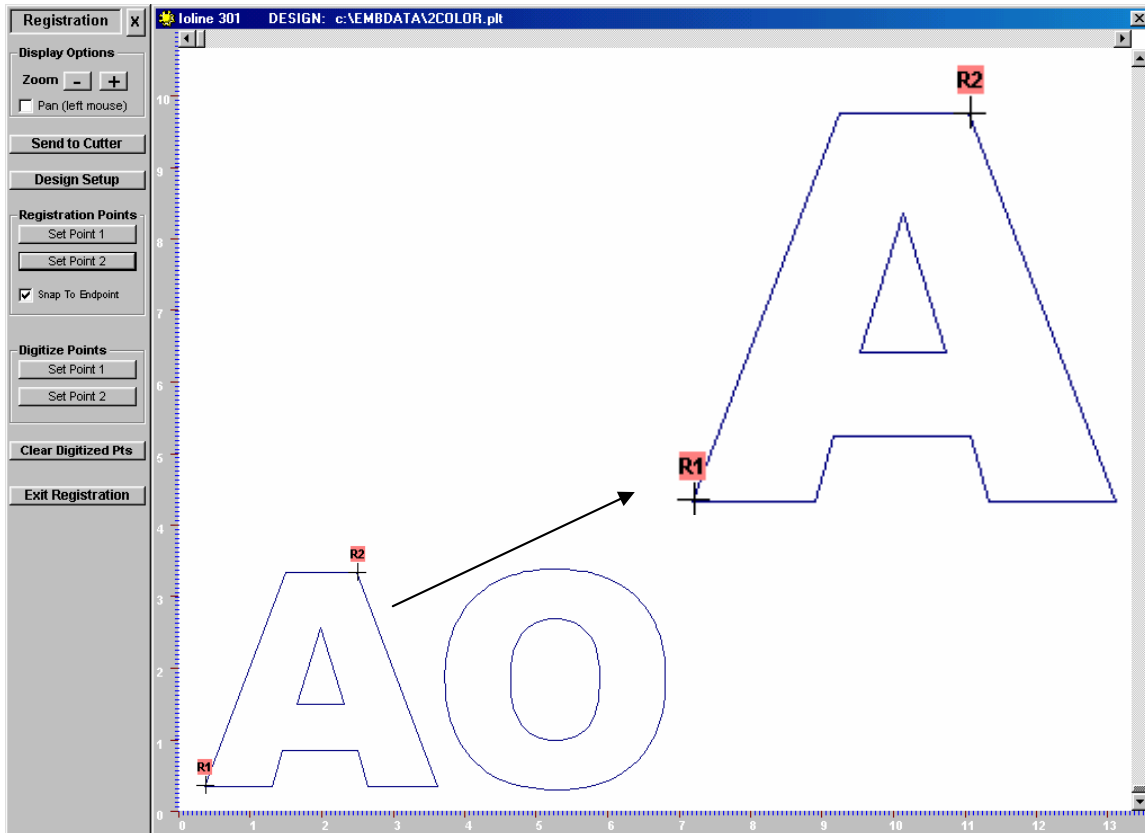


Figure 2: Registration Points.

- Under **Registration Points**, click on **Set Point 2**.
  - Position mouse pointer over the desired Registration Point and click left mouse button.
  - Click the right mouse button to accept 2<sup>nd</sup> registration point.

## Digitize Points from Cutter

These steps require that the shape is positioned on the tray and ready to digitize. We show the 2color.plt example included with the 301 for the purpose of this demonstration.

- Remove blade holder.
- Install Registration Tool.
- Use **Arrow Keys** to position carriage and table so that cut/plot file will be in the positive X and Y directions from the origin. See Figure 3.

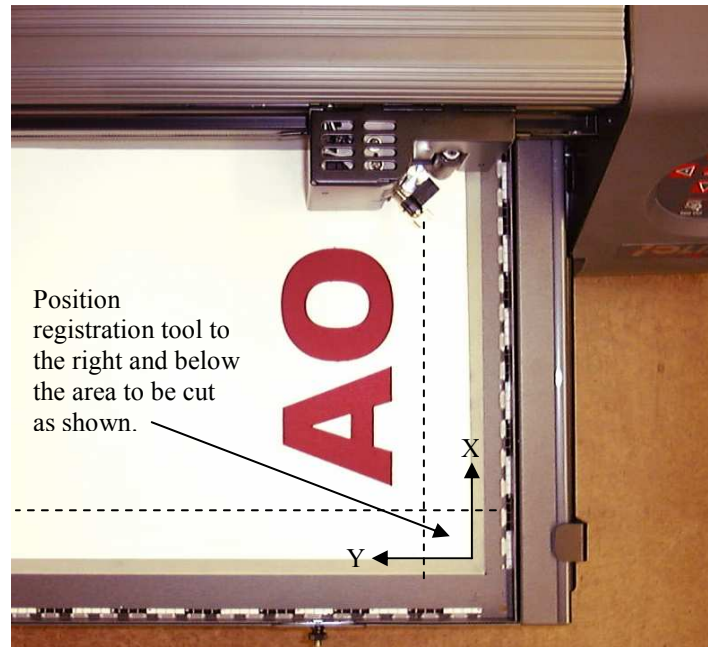
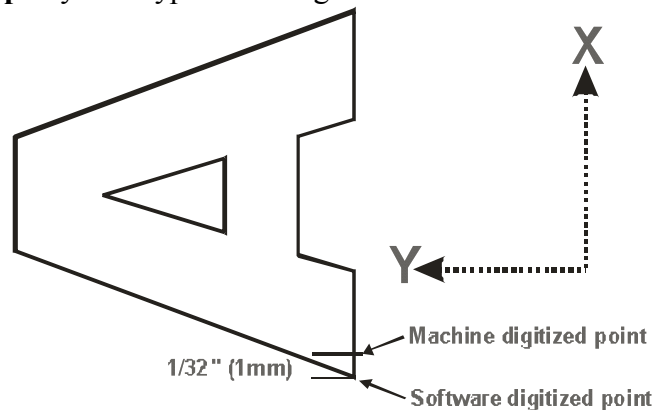


Figure 3: Where to set the plot Origin.

**Note:** If the plot origin is not set properly the object to be cut around will be cut inaccurately.

- If keypad light is red, press the **Set Origin** button. If not, press the keypad **Start/Stop** button until the keypad light turns red then press the **Set Origin** button.
- In 301 Software, under **Digitize Points**, click on **Set Point 1**. Two clicks may be required.
- Using cutter keypad arrow keys, position the carriage and tray so that the registration tool tip is over 1<sup>st</sup> Digitize Point that corresponds to registration point selected above. **Hint:** Turning the speed knob all the way down (counterclockwise) allows fine/slow carriage and tray movement for precise positioning. Digitize Points must be carefully selected to ensure accuracy of adjusted file.
- To assure the digitized points in the software match the digitized point on the machine, move the “Down” arrow so the registration tool is approx 1/32” (1mm) above the digitized point. This is a temporary solution and will be fixed in the next revision of the software. See diagram below.
- Press **Start/Stop** key on keypad. See Figure 4.





*Figure 4: Digitizing the Registration Points.*

- In 301 Software, under **Digitize Points**, click on **Set Point 2**. Two clicks may be required.
- Using cutter keypad arrow keys, position the carriage and tray so that the registration tool tip is over 2<sup>nd</sup> Digitize Point that corresponds to registration point selected above.
- Make sure the speed knob is in the off position and press the “Down” arrow so the tip of the registration tool is approx 1/32” above the digitizing point.
- Press **Start/Stop** key on keypad.

### **Send Adjusted File to Cutter**

- Select **Design Setup**. Under the heading **Color Setup**, check the color box(es) for only the layers you want to cut. All colors with checked boxes selected will be cut. For the 2color.plt file, check only color 1 (the contour color); uncheck color 0. See Figure 5.

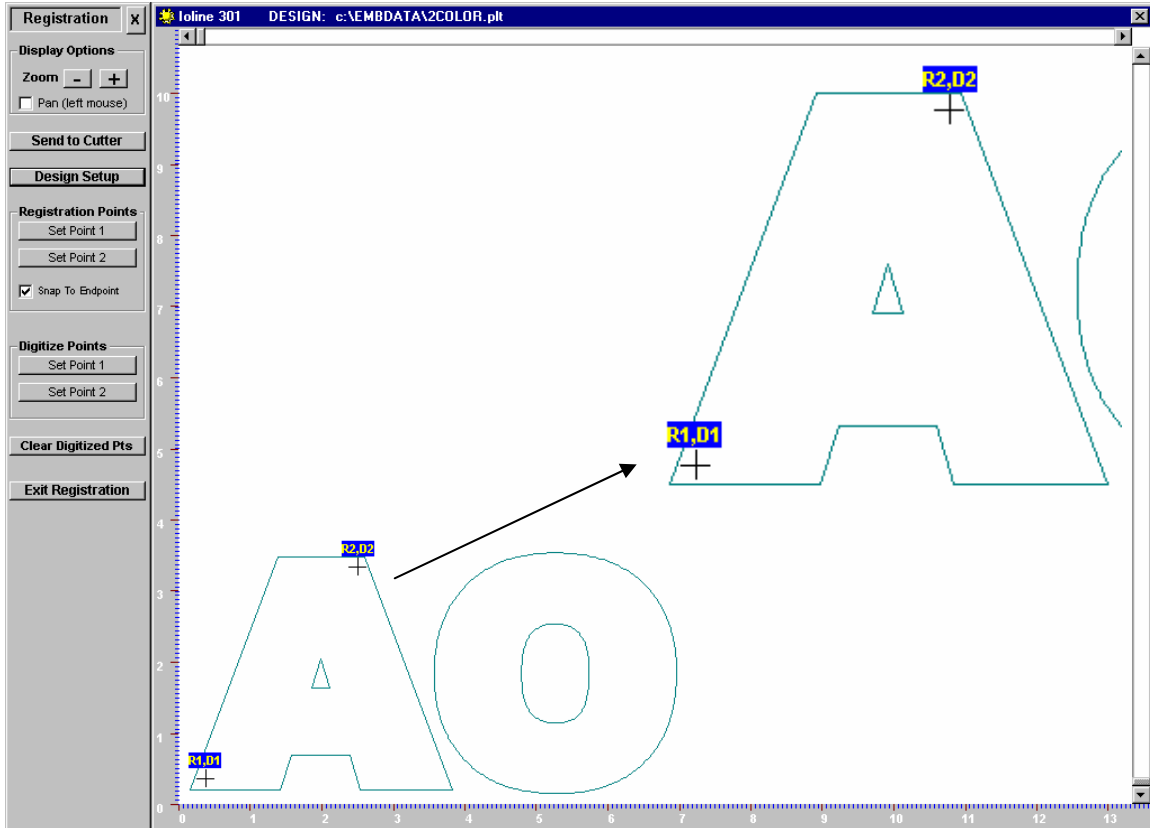


Figure 5: 301 display before file sent to cutter. Cut layer is turned on.

- Select **Send to Cutter**. The box next to **Adjust output using registration data** should be checked. If not, file will not be adjusted using registration data.
- Remove the registration tool and install the blade holder. Force and blade exposure must be properly adjusted.
- Click on **Send**. See Figure 6 for completed cut.



Figure 6: Completed cut.

The steps described in **Digitize Points from Cutter** and **Send Adjusted File to Cutter** should be repeated for each shape that requires registration. If the file did not cut completely through the material, make **Test Cut(s)** to readjust the blade exposure and/or force. Once properly adjusted, press the **Repeat** button to re-cut or re-plot the adjusted file.

***Warning:** If the **Set Origin** button is selected, and then the **Repeat** button is pressed, the file will be shifted to a new location.*

### **Saving Registration Points in a File**

Once the registration points have been created, they can be saved for later use.

- Select **Exit Registration** or click on X in upper right corner of display window.
- Click the **Save File** button.
- Select **HPGL plotter (.plt)**. Export window will open. See Figure 7.

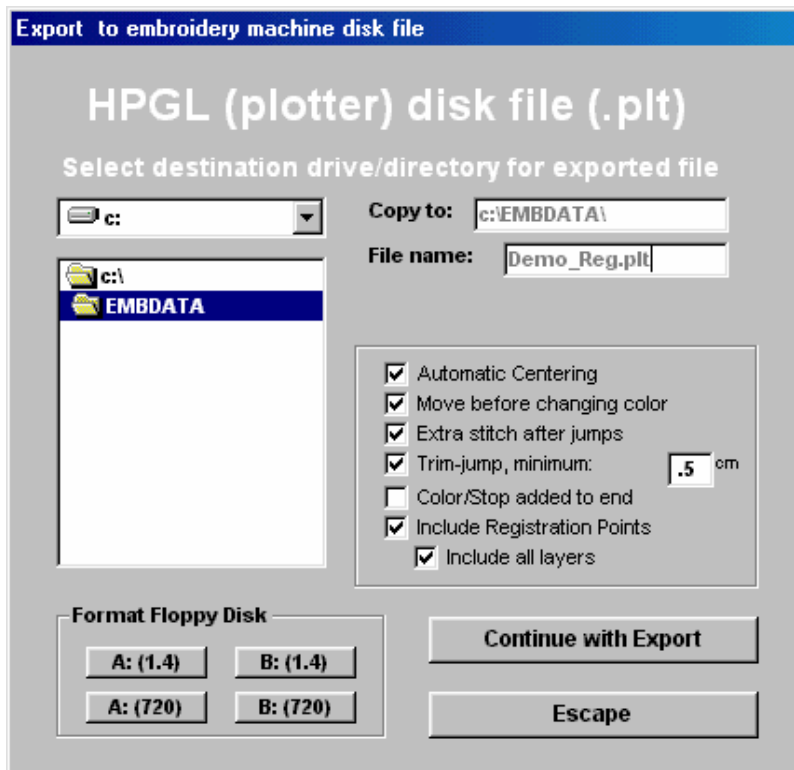


Figure 7: Export/Save window for HPGL file.

- Select the drive/directory for the exported file.
- Type a file name.
- Ensure that the following check boxes are checked:
  - Include Registration Points
  - Include all Layers
- Click on **Continue with Export**.