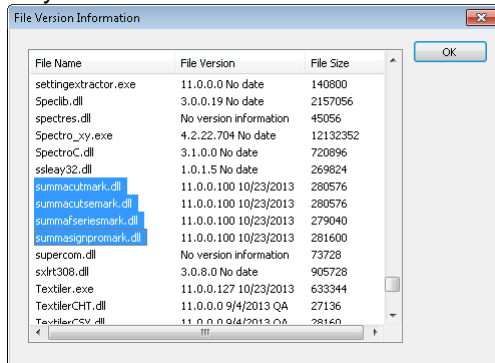# Contour Cutting with
Onyx ProductionHouse
RIP-Queue & Cut Server

Versions:

- Onyx ProductionHouse RIP-Queue: 11.0.0.107

- Onyx ProductionHouse Cut-Server: 11.0.0.146

Setting Onyx for Contour cutting

To use the contour cutting feature, follow these steps.

1. Prepare your file by creating a cut path (a specialized spot color) in a vector-based drawing program such as Adobe® Illustrator®, Coreldraw®, Macromedia® FreeHand®, …
2. Create in Onyx RIP Queue a specialized Quick Set to print the file with the OPOS registration marks (and optionally with a bar code.)
3. Cut the image on a Summa vinyl cutter using Onyx Cut-server (and optionally with the bar code server in Summa Cutter Control.)

Preparing a File for Cutting

The first step in the Contour Cut process is to prepare your file for contour cutting. To prepare your file, first you must define the cut path in a vector-based drawing program such as Adobe Illustrator or CorelDraw. The cut path may be as simple or complex, as you desire – it can range from a circle around a bitmap image or an outline of script text.

Once you create the cut path, you must assign a spot colour to it. This spot colour (specifically the name, not the colour) is the most important part of preparing the file as it allows the cutter software to determine where the cutter should cut the image.

The name you assign to this spot colour must have a unique name, which matches the name assigned in RIP-Queue. In RIP-Queue, the default name for the cut path spot colour is "CutContour". Once you decide on a name you can append unique identifiers to the name – for example CutContour1.

When RIP-Queue processes and prints the file, the path with this specially named spot colour will not be printed with the rest of the image. RIP-Queue processes the spot colour as a cut path and creates a separate cut script file for your cutting device.

Defining a Cut Path

Creating a cut path in Illustrator, CorelDraw, … is simply defining an object with a specific stroke colour (in most cases you will use CutContour as Spot Colour name). How to create a Spot Colour in Illustrator and CorelDraw see our how-to's.

Configuring Mark Settings and Barcode workflow

1. Within RIP-Queue, click in the top menu, *File*, *Manage Cutters*. After a warning that printing will stop the Cut Manager appears.
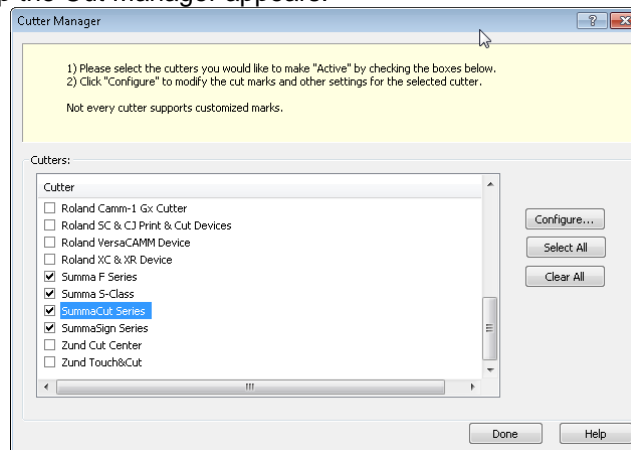

2. Four Summa drivers are listed. The F series, Summa's flatbed table, falls out of the scoop of this document (although similar principles are used). The S Class, Summacut and SummaSign have identical functionality.
3. Select a Summa roll-cutter (e.g. SummaCut) and click on configure:

- In most cases the Summa Barcode is the most convenient choice which allows using Summa's barcode server as well as launching the machine direct from Onyx CUT server. If saving material (and ink) is an issue there can be opted for not using any barcode. Also working with Onyx barcode system is possible but be aware that with these two options, OPOS_XY (compensating deformations along the machine width) will not work.
- The mark margins indicate the minimum distance of the marks to the edge of the media. (X: width of the media, Y: length of the media / feeding direction.)
  - o The default X-margin value (19mm / 0.75") can be considered as a minimum. For long jobs it is advisable to use extra margin.
  - o The default Y-margin value (19mm / 0.75") is good value between jobs and at the front of a job when loading in a Summa Cutter. However at the end of a job more margin is required. This extra margin can also be achieved by changing the top margin parameter in the media-placement section of the RIP-queue (see further). Or the Operator has to take care for extra margin when cutting the job off.
  - o Job orientation is important to define front and rear margins. In general it is better to feed the print in opposite direction to the cutter than it is printed.
    - ▪ There is more control about the margin at the beginning of a print which is convenient as we need more margin at the back when cutting.

- Deformation due to heat are more stable at the of a print than in the beginning. Scanning the OPOS_XY line at the end of the print is therefore preferable.
- When using a roll-up device when printing, the jobs will anyhow be feed in the opposite direction when placing the roll on the Summa cutter.
- NOTE, Onyx cut-server orientates by default the cutting in the same direction! Manual 180degree rotation is in this case recommended. When using barcode functionality the orientation is automatically adjusted to the way the print is loaded.

- The Image margins indicate the minimum distance of the image to the edge of the media. (edge to mark + mark to image)
  - The default Image-X-margin value (+/-44mm / 1.75") results in distance to the marks of 25mm (when using default settings). In most cases, this is a generous distance. For small jobs (or small repeat intervals) this distance can be made smaller (15mm more than the Mark-X-margin).
  - If no intermediate marks are use (only one mark on each corner) the Image-X-margin can be the same (1mm more) than the Mark-X-margin. In some cases this may optimize the material usage. Note: maximum job length with only 4 corner marks is 1.2m!.

Using intermediate marks   *Four corner marks only*
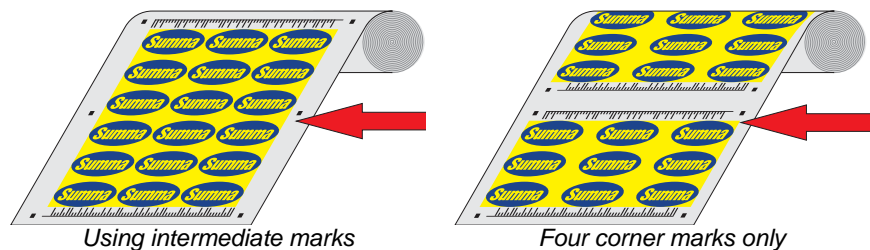
  - The default Image-Y-margin value (+/-44mm / 1.75") is a very generous distance.
    - For Summa Barcode 15mm more than the Mark-Y-margin should be sufficient.
    - When not using any barcode, 1mm more than the Mark-Y-margin should be sufficient.
    - When using Onyx barcode, 25mm in total should be sufficient.
- The use of intermediate marks is strongly recommended. Maximum job length without intermediate marks is 1.2m!
- The default repeat interval of 50cm is an adequate value.
  - Smaller intervals will result in higher precision.
  - Longer intervals requires less marks and consequently less time to find and scan the marks.
  - NOTE: When using OPOS segmented mode in combination with Flexcut it may be advisable to lower this value!

Creating an Onyx ProductionHouse Quick Set

Before you can print a contour cut file, you must either modify an existing Quick Set or create a new one for your contour cut files. Using a specialised Quick Set for contour cutting allows you to include additional options.

To Create a New Quick Set for Contour Cutting:
4. Within RIP-Queue, highlight the desired printer and click Configure Printer to open the Configure Printer dialog.

5. Within the Configure Printer dialog, click New on the Quick Set tab to display the Edit Quick Set dialog.
6. Set all appropriate printing options within the Edit Quick Set dialog.
7. In the Cutter Options section: Select one of Summa Series matching your device.
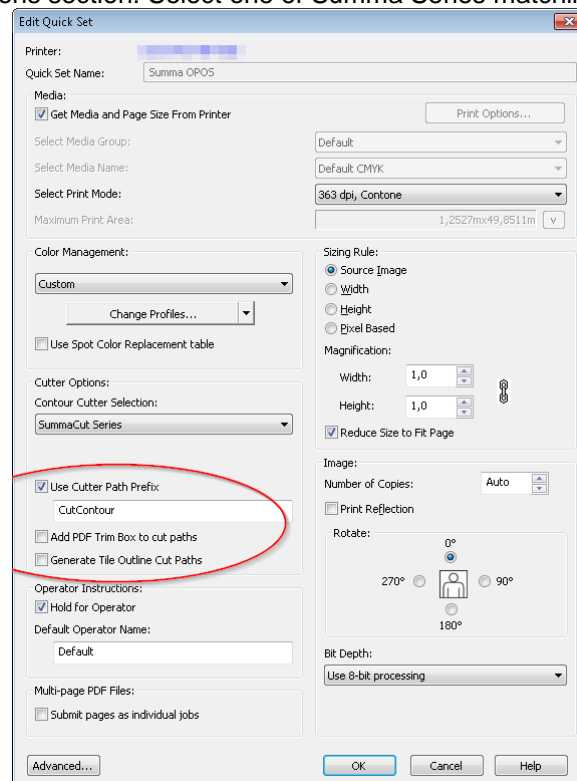
8. Enable the Use Cutter Path Prefix option. This is required if you want to cut defined cut paths in your design.
9. Within the text field in the Use Cutter Path Prefix area, enter the name you assigned to the cut path spot colour in the vector based graphic application such as Adobe Illustrator. If you opted to use the default spot colour name, then leave this field at its default setting. It is imperative that the text in this field match the prefix you assigned to the cut path spot colour, including case and spaces if any. If this field does not match the prefix you assigned to the cut path spot colour, RIP-Queue will not recognise the spot colour as a cut path.
10. Generally, adding a cut path based on the trim box is not required. Although they might be useful in some applications. This falls out of the scope of this document.
11. Generate Tile Outline Cut Paths – Although, generally not used, this option is useful for (multiple copies of) a photo that doesn't contain an embedded cut line, or for cutting around the edge of a large tiled image. When clicking on advanced, in the Marks tab is an extra option to trim the tile overlaps as well.
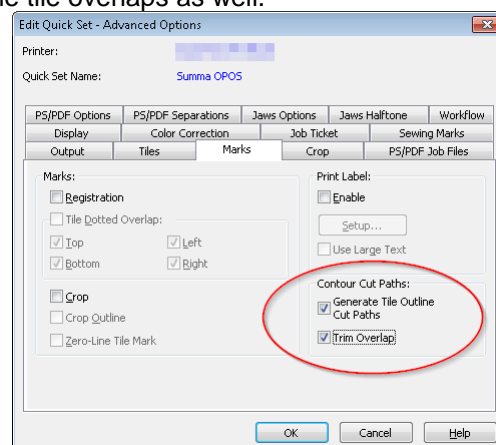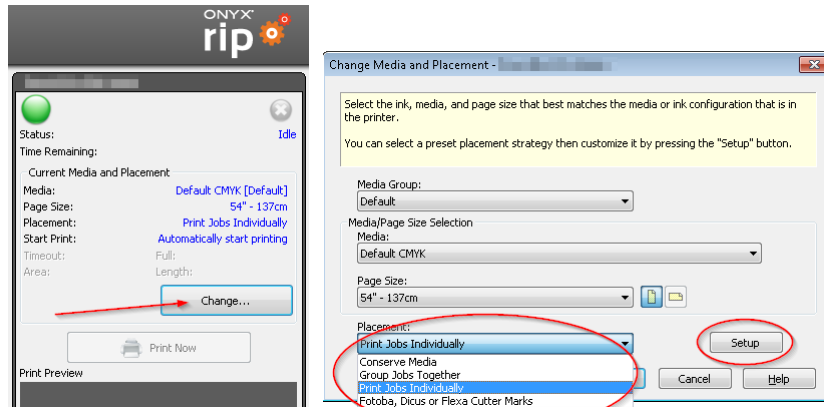
12. Click OK to close each dialog.

Contour Cutting Workflow

Using the following steps you can print on any printer and cut on a Summa cutter:

1. In RIP-Queue, highlight the desired printer and click "change" to open the "Change Media and Placement" dialog.

2. Within the "Change Media and Placement" dialog, Select one of the placement options.
   - Do not select 'Fotoba, Dicus or Flexa Cutter Marks'. This selection would deactivate the Summa registration marks!
   - Nesting (with the 'Conserve Media' and 'Group Jobs Together' options) will only work if the jobs have the same Contour Cutter selected.
3. Click on 'Setup'
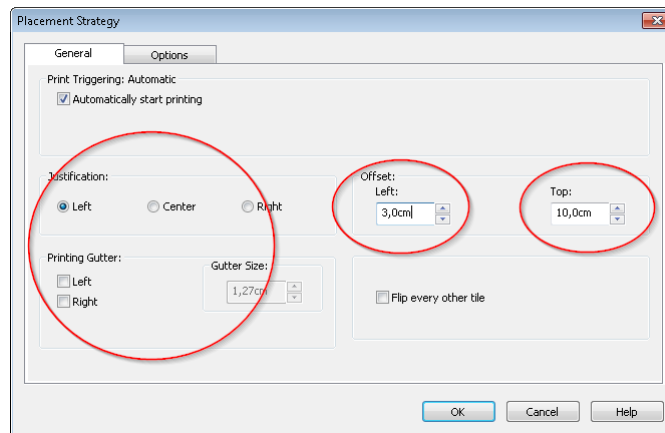
4. On the General tab, set the top offset to 4 inches or 100 mm. This adds an extra margin the cutter needs when moving the media back and forth during the cut process.
5. In General 'Justification' can be set to any value. However when using 'Barcode' it is convenient to have all jobs aligned to the right hand side when loaded in the cutting plotter. Note: when rolling up, the feed direction in the cutter will be reversed to the feed direction of the printer.
6. In General the 'Gutter' can be set to any value: However when using 'Barcode' it is convenient that the gutter is not at the right hand side when the print is loaded in the cutting plotter. Note: when rolling up, the feed direction in the cutter will be reversed to the feed direction of the printer.
7. On the Options tab the density of the marks can be adjusted. On some materials this may help the OPOS sensor to find the registration marks.
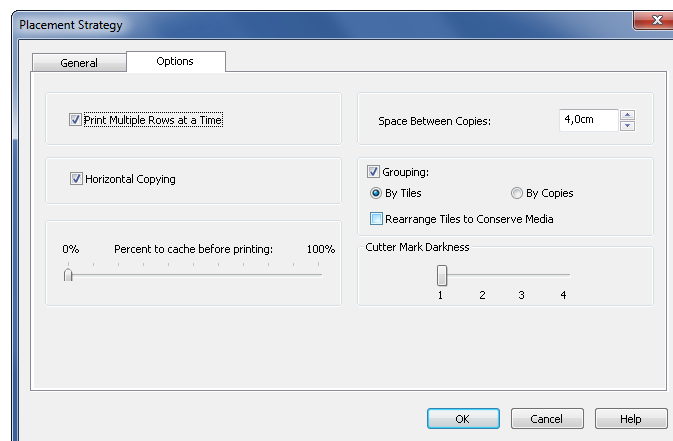
8. Click OK to close both the "Placement Strategy" dialog and the "Change Media and Placement" dialog.
9. Within RIP-Queue, open your file and be sure to apply the new Contour Cutting Quick Set.
10. Once Rip-Queue finishes printing the file, use the CUT-Server to cut the print.

Using CUT-Server

CUT-server is an Onyx application that sends cut information to the cutter. RIP-Queue creates the cut information for the CUT-Server from the cut path you defined in your graphics application.

Use the following steps to setup a summa cutter within CUT-Server.

1. Launch the CUT-Server by double-clicking the icon on your desktop or selecting CUT-Server from the Windows Start menu.

The first time you start the application, CUT-Server will prompt you to install a cutter. Once the program is setup the same sequence can be started up by clicking on the 'Manage Cutter' icon.
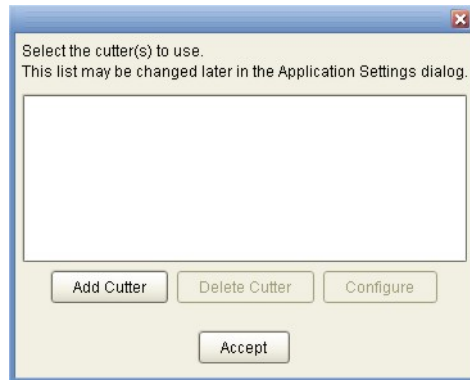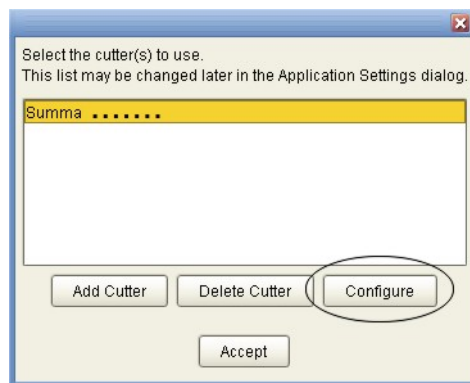

2. Select Add Cutter
3. This will open a new dialog box. Use the upper selection box to select your current cutter. In the bottom text box you'll be able to enter a custom name.
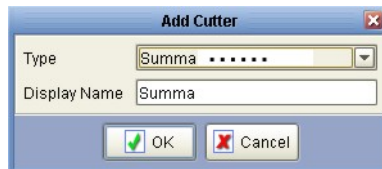

Click OK to close to accept
4. Now select the recently installed cutter and press the configure button.

In this screen you can select the port with which you have connected the cutter. On selecting "Setup" you will be able to configure the communication settings [(*)]. When driving the unit direct from the Cutserver, USB is the most used interface. Default is USB1. If more summa Cutters are connected, each device should have another USB number (up to four units – see operators manual). Als TCP-IP (network) connection becomes more popular. In the setting the correct IP-address should be set and port '9100'. (*) Serial   configuration: see   your cutter/cutter manual for the correct settings
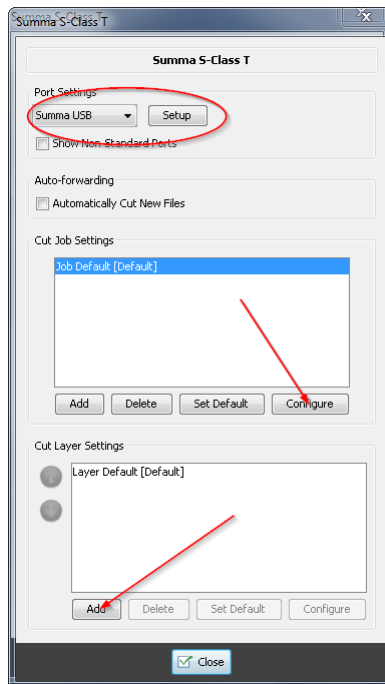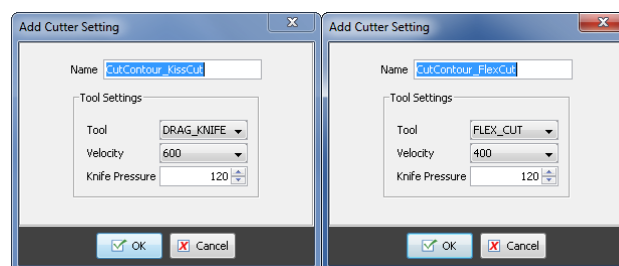
5. Select 'Job Default' and click on 'configure'.
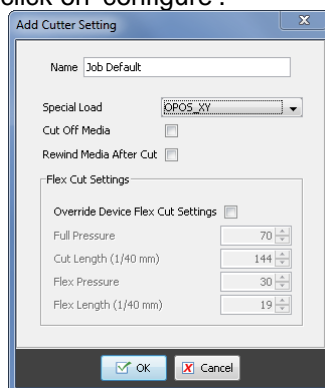
For maximum accuracy of the system set Special Load to OPOS_XY. Depending on the machine type and driver version extra setting can be made. Close the dialog.

6. In the 'Cut layer settings' click on 'add'.

It is convenient to add to two layer settings. One for Kiss Cut and one for Cutting Through (FlexCut). The Names should be exactly the same as the spot colours used in the design.

In the cutting settings window you will find device dependant user configurations (such as knife pressure, speed,…) however it is much easier to use the user configurations on your cutter.

Make sure the layer order correct, first kiss-cutting then cutting through (Flexcut)

7. Once a printer is installed, the above settings can be changed by clicking on the settings icon:
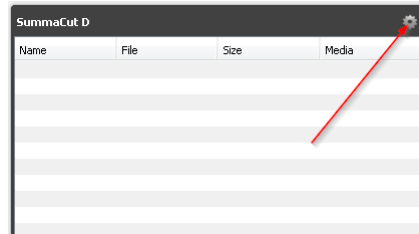

CUT-Server Queue

Not using Summa Barcode

1. When using the ONYX barcode, you will see a barcode on the output, containing a code. This code will represent a cut file in the cut server. the feed direction is also indicated on the printed job as it is show in the preview of the Cut-Server.
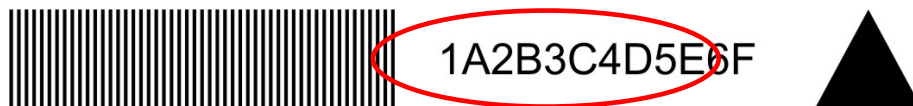
If job reference is printed, a visual check will be required.
If no direction indication is printed, a visual check will be required.

2. The orientation/rotation can be changed in the cut file tools dialog.
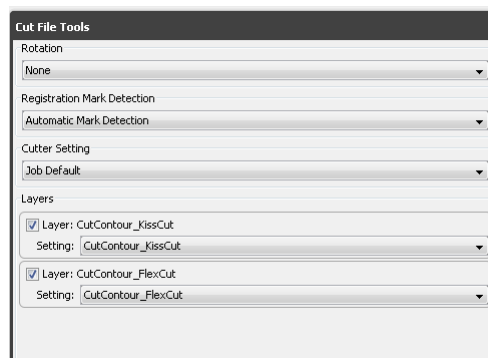
3. In the Layer section, every spot colour defined as cutting line will appear as separate layer. If the spot colour name matches a cut layer setting, this setting will automatically be assigned to the layer.

4. Check the layer order (as described before). Drag the layers to change order.

5. If orientation and layer assignments are set correctly the file is ready to be cut.

6. If the machine is connected directly to the cutserver (usb, serial, tcp-ip). Press the 'cut now' button.

Using Summa Barcode:

When using the barcode system the Port settings should be 'Cut to Folder'. The Folder can be defined in the setup window. This should be the same folder as defined in the Barcode server of Summa Cutter control (see Summa Cutter Control).
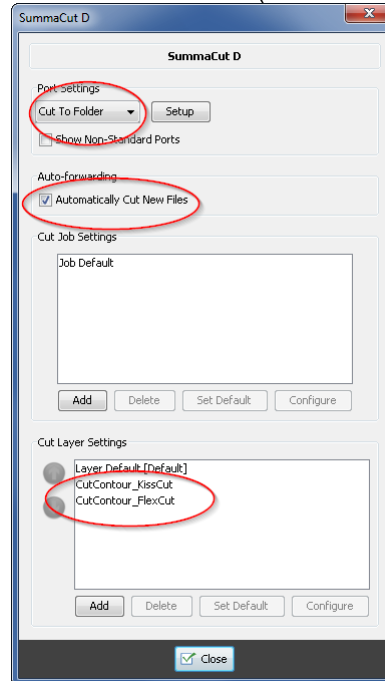
When opening a job, orientation is not important as Onyx will generate two cut-files. Cutting data will be available in the barcode server for both orientations.

Make sure layer setting are set correctly as described before and click 'cut now' to generate the cutting data.

In an optimized workflow layer setting should be correctly prepared. Automatic processing of the cutting information can be achieved by activating 'Automatically Cut new Files'.