



Print & Cut Mimaki Cutters



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Forward

This guide is designed as a quick reference for the use of your cutter. It is not meant to replace the User Manual for your cutter. Please read the User Manual for more detailed information and other options that are at your disposal.



Table of Contents

Standards	1
CutContour in CorelDraw	1
CutContour in Adobe Illustrator	1
Create a Print & Cut File in CorelDraw	2
Create a Print & Cut File in Adobe Illustrator	8
Understanding Registration Marks	10
Mimaki FineCut Registration Mark Creation For CG and CF Series	11
Mimaki RasterLink6 Mark Registration for CJV Series	12
Onyx Registration Mark Creation	13
Proper Blade Depth	14
Enable Mark Detect for Mimaki CG-FXII Series	15
Enable Mark Detect for Mimaki CJV150 & 300 Series	16
Enable Mark Detect for Mimaki CG-SRIII Series	17
Test Cut Mimaki CG Series	18
Setting Media - Friction Feed	19
Sending Cut Data from FineCut	21
Cutting with Onyx Cut Server	23

Print & Cut

Standards

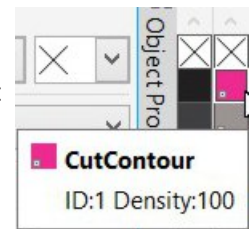
There are many variations of Print and Cut. This guide will attempt to cover as many as possible. This first section deals with general settings which cover 99% of the variations that may be encountered.

Most of the industry RIP software understand the word CutContour. This name is associated with a Spot Color that contains the path information that needs to be cut. It does not matter what the actual color is, it just needs to be called CutContour.

CutContour in CorelDraw

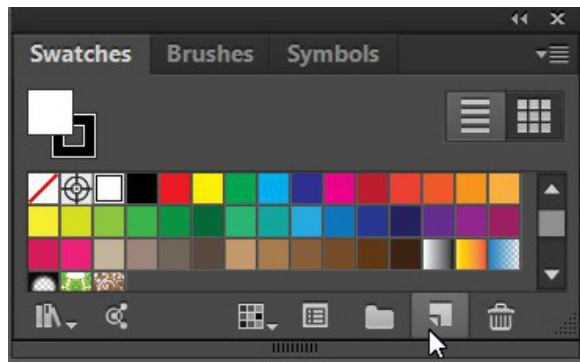
In CorelDraw select Window->Color Palettes->Open Palette
Browse to C:\Program Files\Corel\CorelDRAW Graphics Suite X7\Color\Palettes\Spot\Roland
Select the Roland VersaWorks.xml and then Open it.

On the right side of your screen you will see a new color palette added. The top chip is the Spot Color called CutContour. This palette will load itself every time you start CorelDraw.



CutContour in Adobe Illustrator

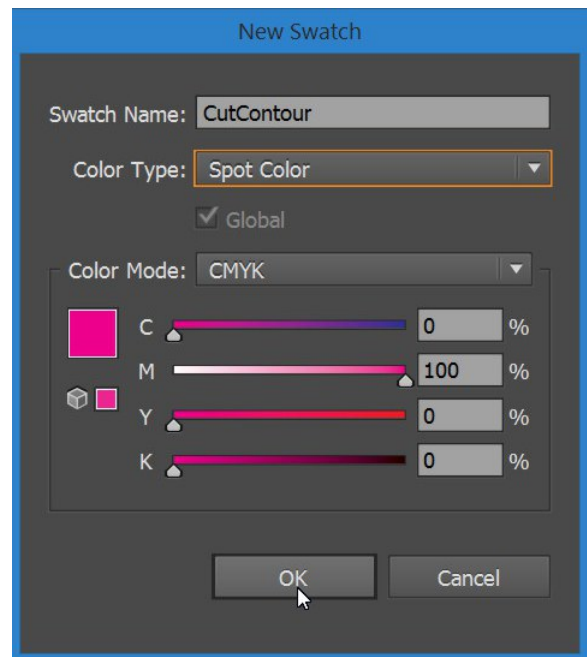
Go to your Swatch Palette and select New Swatch.



The Swatch is now added to your palette.



Enter the information below and then select OK.

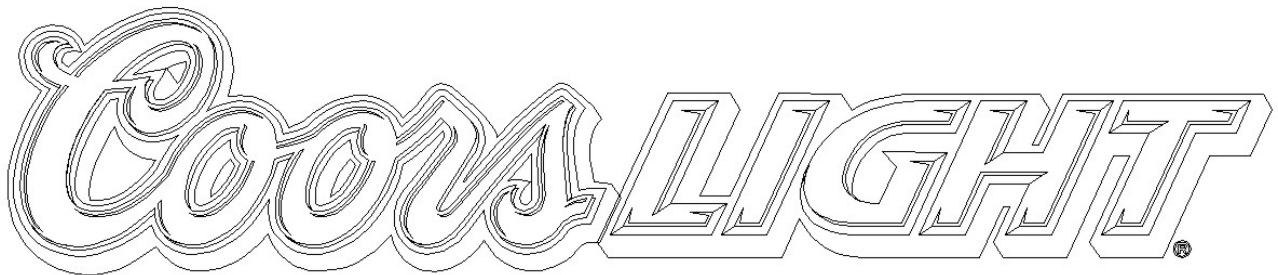


Print & Cut

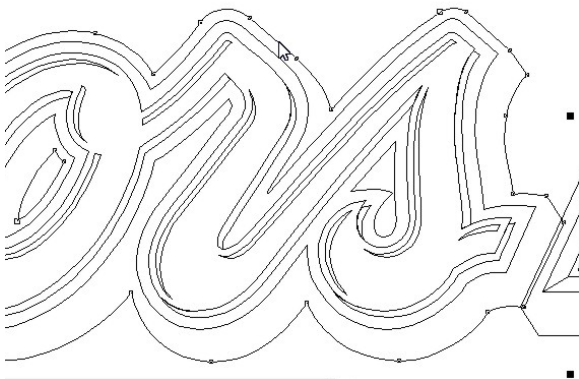
Create a Print & Cut File in CorelDraw



We will start with a Coors Light Logo. We placed this on a yellow background to better see it. Go to View->Wireframe.



If the image looks like the above then 1/2 the work is done.



Click on the outer outline.

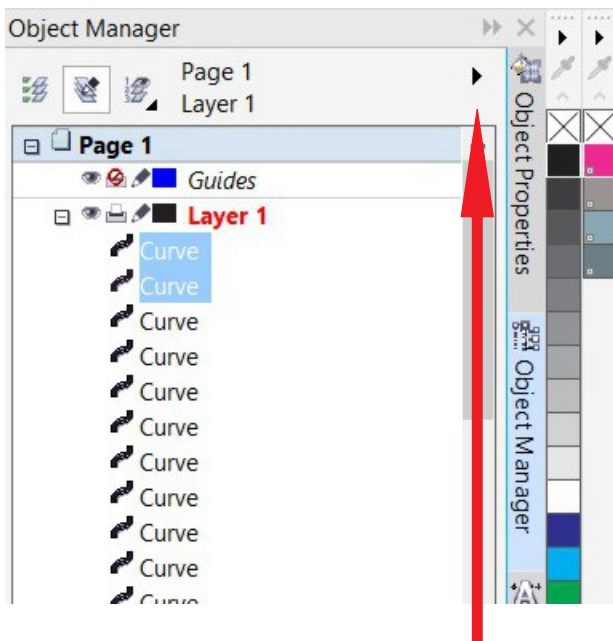


Go back to View->Enhanced.

Print & Cut

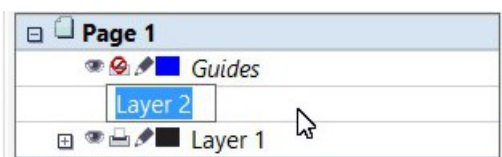
Create a Print & Cut File in CorelDraw (continued)

Doing a Edit->Copy followed by an Edit->Paste gives the results below.



Go to your Object Manager tab on the right. If you have closed it in the past, you really need it now. To restore the Object Manager go to Window->Dockers->Object Manager.

Notice in the example above the Copy->Paste option you did created two Curves just under **Layer 1**. Select the Right arrow pointed to by the red arrow and in the drop down select New Layer.

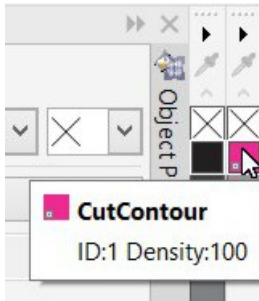
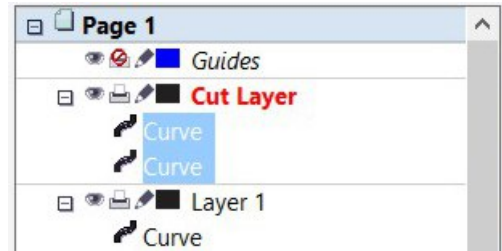


Name this Cut Layer and press your Enter key.

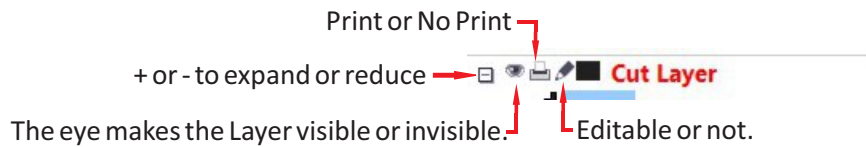
Print & Cut

Create a Print & Cut File in CorelDraw (continued)

Expand Layer 1 by selecting the little + sign. Select the top Curves that were created previously and drag them to the Cut Layer. You will then see something like the example on the right.



Go to your Color Palette and right click on the CutContour Color and then left click on the box with the X (no fill) just above Cut Contour. If successful you should see something like the example on the right.



Depending upon your RIP software and it's configuration the CutContour color may print. To avoid the printing just click on the Print / No Print icon next to your Cut Layer. It should then look like this .

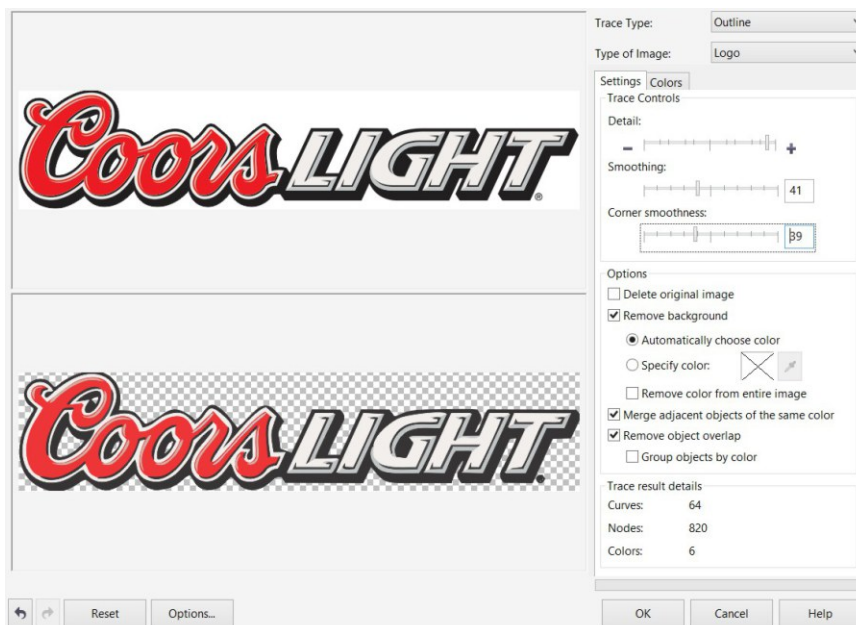
The last step you need is to add the Registration/Crop Marks into your document. These are Cutter specific and can be found in following sections.

Print & Cut

Create a Print & Cut File in CorelDraw (continued)

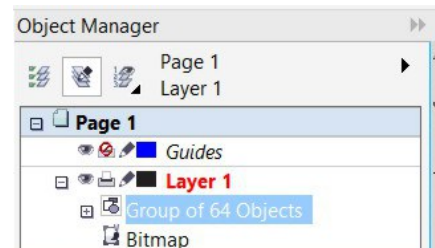


This image did not have lines. It's a Bitmap or Raster image and need to be worked on to accomplish a Print & Cut solution. The first method would be to use the Freehand or Bezier tool and go around the image creating an outline. A far simpler approach is to select the object, select Bitmaps->Outline Trace->Logo.



This dialog will open. You may need to do a few adjustment to the Detail, Smoothing and Corner smoothness sliders. Some of this will be trial and error.

Back in CorelDraw you should see Group of XX Object in your Object Manager. To restore the Object Manager tab, go to Window->Dockers->Object Manager.



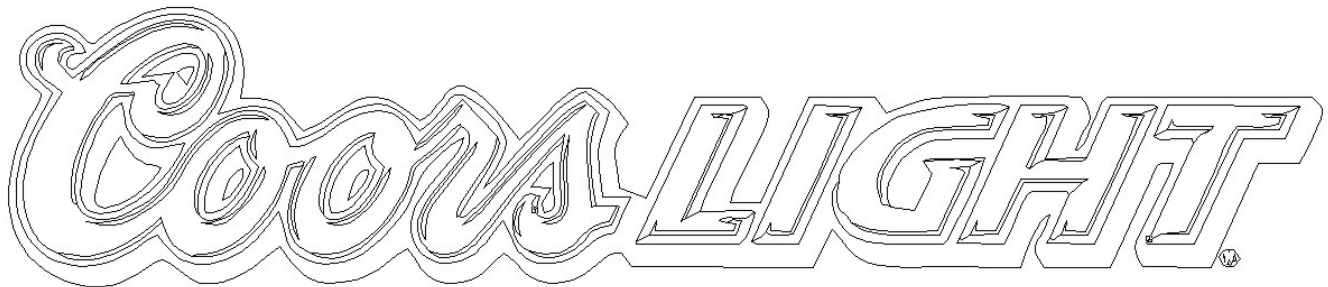
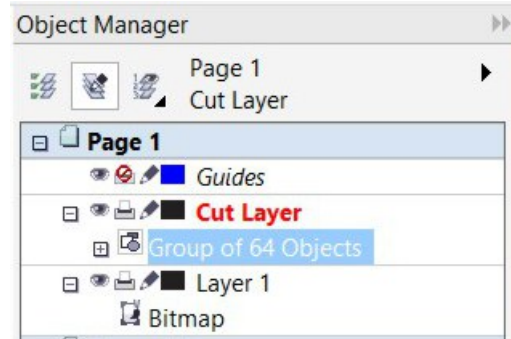
Print & Cut

Create a Print & Cut File in CorelDraw (continued)

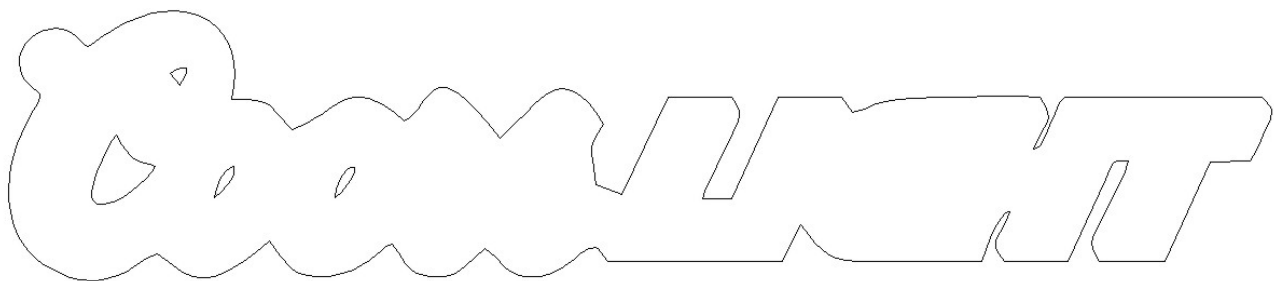
As on the previous pages create a new layer called Cut Layer. From Layer 1 grab the Group of XX Objects and drag it on top of Cut Layer. Your Object manager should look like the example on the right.

Hide the viewing of Layer 1, and make certain you have the Group of selected. With the keyboard select Ctrl-U to un-group the objects.

Go back to View->Wireframe.



You should now see lines as in the example above. You can now select each individual curve. This example needs to have only 5 curves when we are finished. The full outline, 2 curves for the inside of the C and 1 curve for each o. After you select the curve and press the Delete key, watch what gets deleted. If too much is removed do a Ctrl-Z to undo, and the Ctrl-K to break the curve apart. Re-select the curve and delete again.

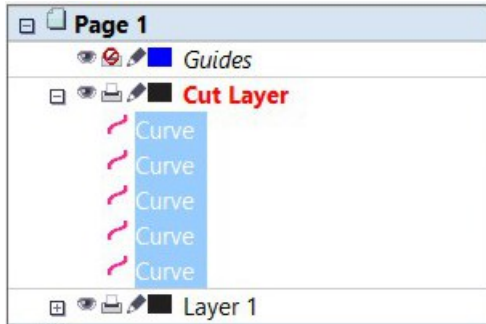


Our final result is shown above. Notice the H in Light. Depending upon how critical this is, you may need to go to the Shaping tool and repair it. This is best left for the next steps.

Go back to View->Enhanced and turn on the eye for Layer 1.

Print & Cut


Create a Print & Cut File in CorelDraw (continued)



Go back to Object Manager and select all the Curves in the Cut Layer. Right click on your CutContour color and left click on the No Fill color.



At this point, you can use your Shape tool to move the cut lines around.

Depending upon your RIP software and it's configuration the CutContour color may print. To avoid the printing just click on the Print / No Print icon next to your Cut Layer. It should then look like this .

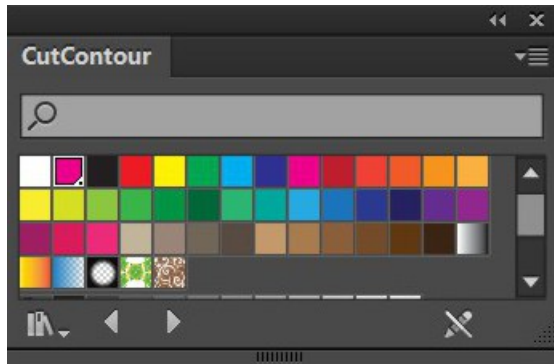
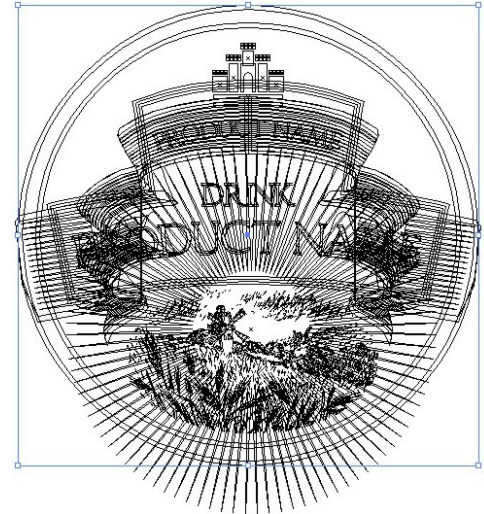
The last step you need is to add the Registration/Crop Marks into your document. These are Cutter specific and can be found in following sections.

Print & Cut

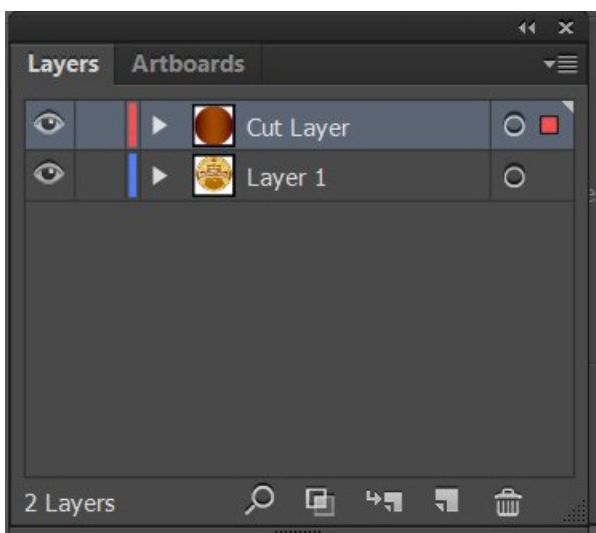
Create a Print & Cut File in Adobe Illustrator



This object is fairly simple the left example is the preview image. The right example is achieved by using View->Outline.



Open your color swatches and create the CutContour color outlined previously.



Open your Layers window. Select the outer outline of the object. Do an Edit->Copy followed by Edit->Paste in Place.

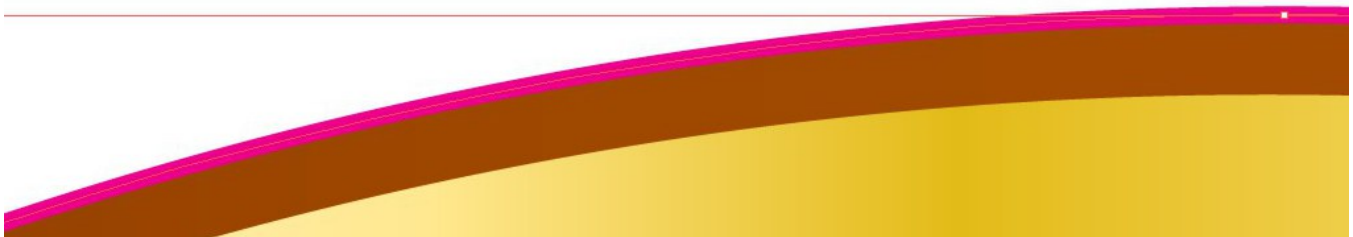
Create a new layer called Cut Layer. Drag the Path that was pasted to Layer 1 into the Cut Layer.

Print & Cut

Create a Print & Cut File in Adobe Illustrator (continued)



From your Tool Bar click on the fill color and make it No Fill. Swap the color to CutContour for the outline color.

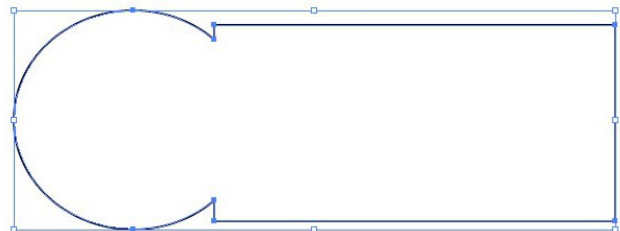
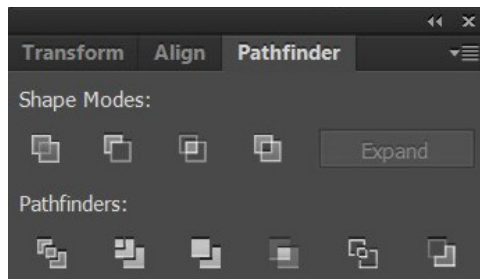
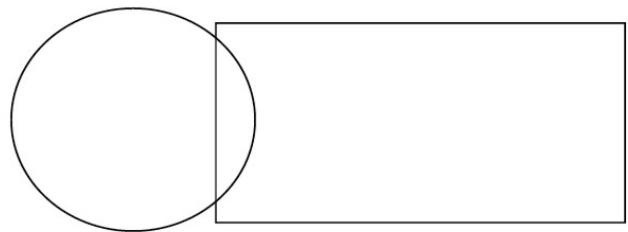


Zoom in on the screen and you will see a perfect cut line around the object.

If our sample had no lines defining the shapes it would appear it was a place bitmap or raster image. The image would require us to draw an Ellipse around it to create the cut line.



If you have several objects that create the outer path of you object as seen on the right select both object and use Pathfinder -> Unite to combine them.

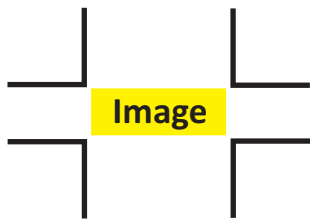


The last step you need is to add the Registration/Crop Marks into your document. These are Cutter specific and can be found in following sections.



Print & Cut

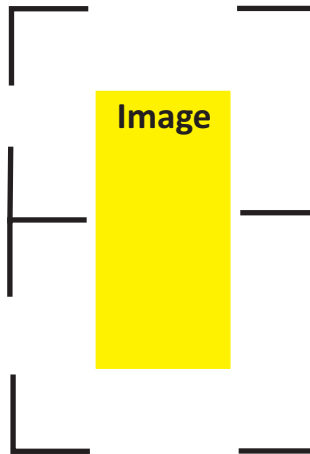
Understanding Registration Marks



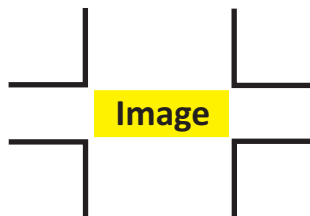
Type 1 Marks



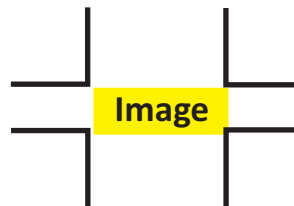
Type 2 Marks



Type 2 Marks for Graphtec cutters. If the image is over 17 inches long additional marks are created for the length to assure better accuracy.



Correct placement



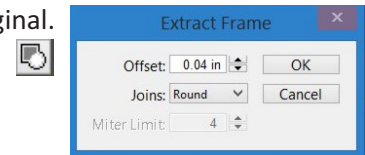
Incorrect placement

Print & Cut

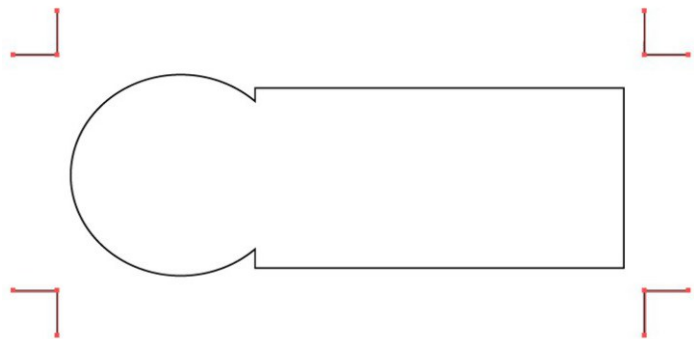
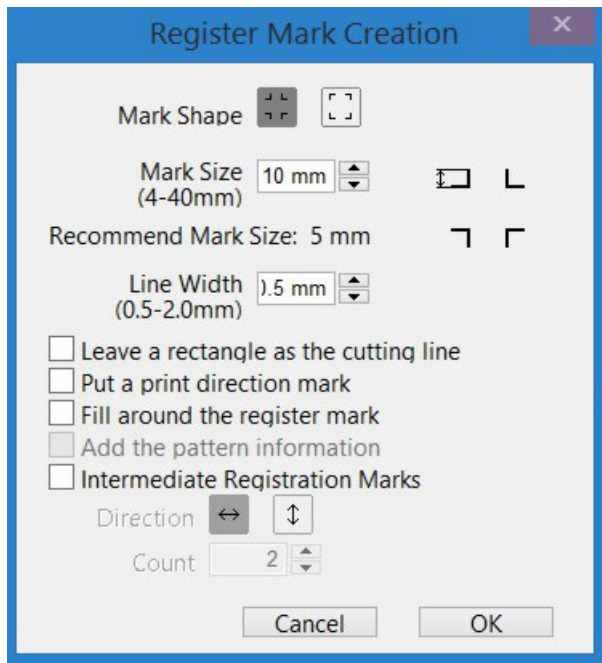
Mimaki FineCut Registration Mark Creation For CG and CF Series



The FineCut plugin for CorelDraw and Adobe Illustrator has a tool called Frame Extraction. Basically it's a shortcut to what we did in the previous sections. You still may need to add a few cutlines for the center of the object, but it will get the outside shape fairly fast for you. The nice aspect is you can round corners and produce the cut line as an offset from the original.



Creating Registration Marks is fairly simple. You need to first draw a rectangle around the full object. You simply select the Registration Mark option in the FineCut tools box . In the next window you leave the defaults, Type 1 shape, 10mm Size, and .5mm Line Width. Select the OK button.

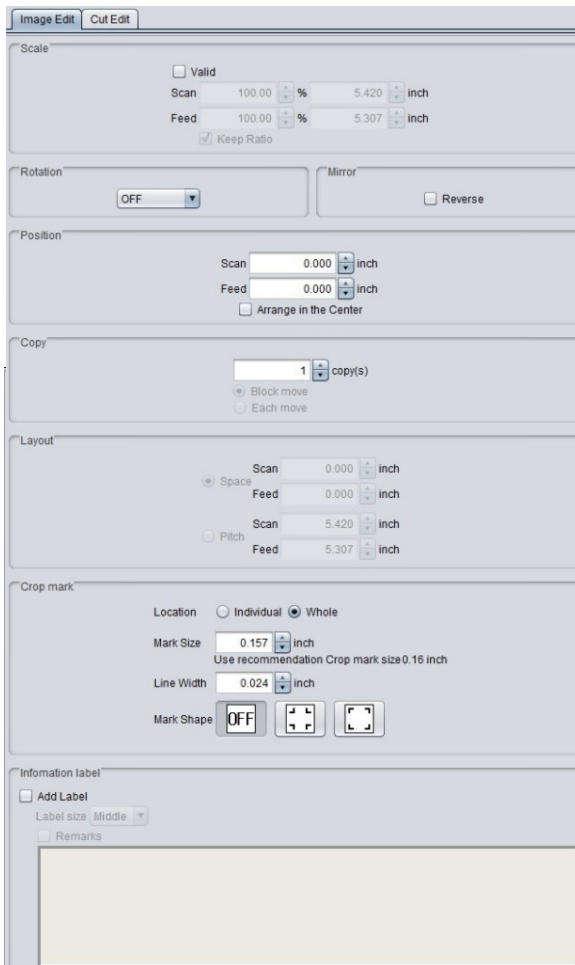


A new layer is created called FC RegisterMark Layer . This layer needs to be preserved just as it is. When doing Print & Cut the layer needs to be printed.



Print & Cut

Mimaki RasterLink6 Mark Registration for CJV Series Printers



In RasterLink6 under the General Print options make certain you enable your mark shape under the Image Edit tab.

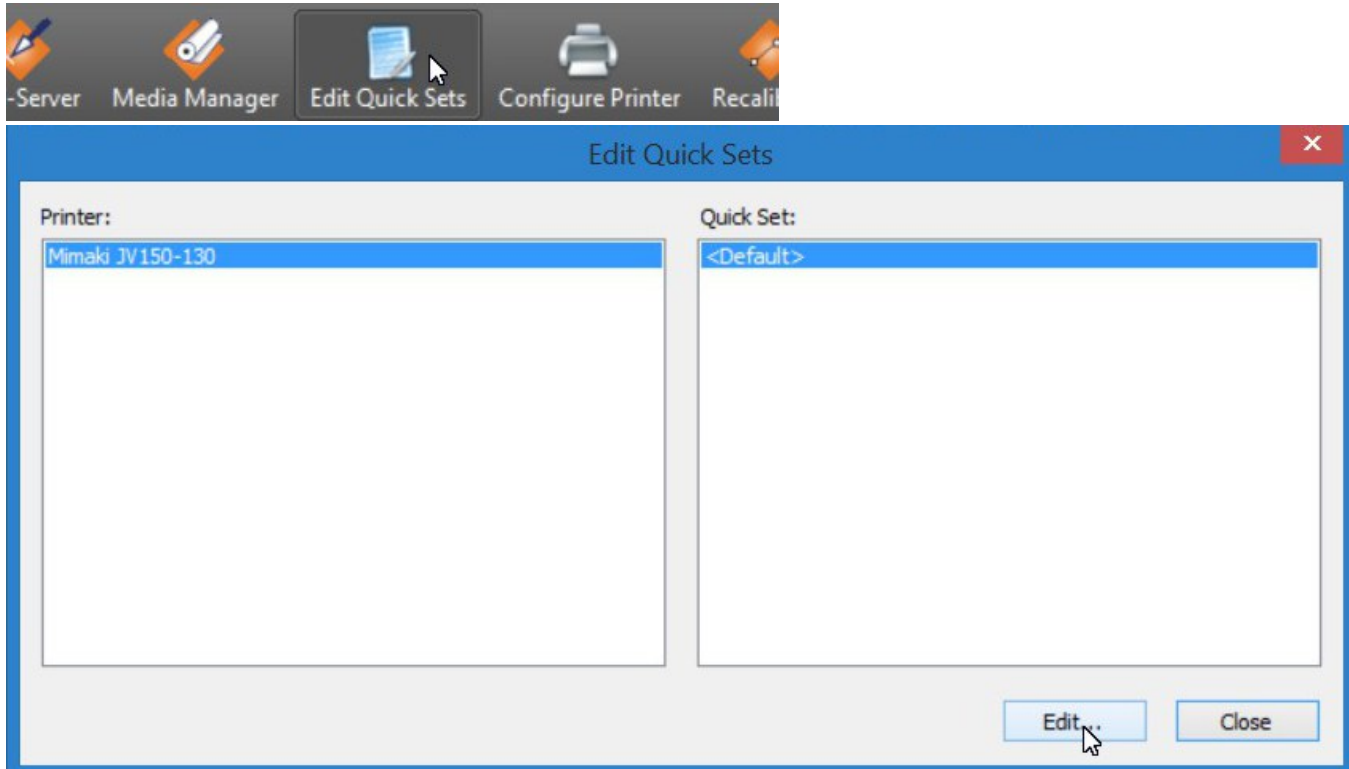
Change the Mark Size to 0.39 inch (10mm). Leave the line width at it's default.

Marks will now be generated for your image. When you go to print your image your selections are Print & Cut, Print Only or Cut Only will be your options.

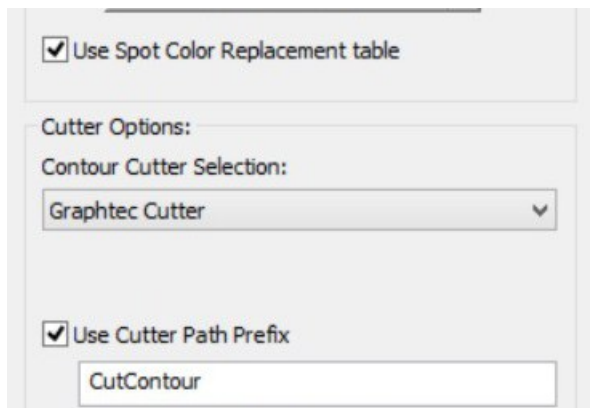
Print & Cut

Onyx Registration Mark Creation

Onyx does not need to have registration marks created in your design software if you plan on using the Cut Server application. Simply select Edit Quick Sets.



Select your Printer and the Quick Set you want to use. Then select the Edit button.



Make certain Use Spot Color Replacement table is checked.

Select your cutter from the pulldown.

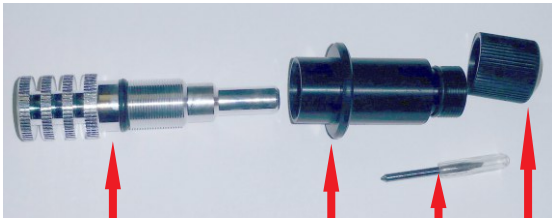
Make certain Use Cutter Path Prefix is checked and the name is CutContour.

Your file will print with registration marks and a barcode for it's reference when using Cut Server.



Print & Cut

Proper Blade Depth



Most collets are similar to the one shown on the left. There are four separate sections.

Adjusting Screw Body Blade End Cap



Adjust the blade depth so it is just slightly deeper than what your material is thick. Too short and you'll need higher pressures, Too Long and you'll break the tip off in a short period of time.



If you have been cutting without problems for some time, and now your cuts look bad or you begin to have problems by increasing the pressure you probably have broken the tip off the blade.



Print & Cut

Enable Mark Detect for Mimaki CG-FXII Series

Function -> Setup -> Mark Detect -> 4pt

Paper Hold: -> On

Dist.Revi. : -> Off

Size: -> 10mm (.39inch)

OffsetA: ->

OffsetB: -> See Below

Mark Form: -> Type 1

CopiesA: -> 1

CopiesB: -> 1

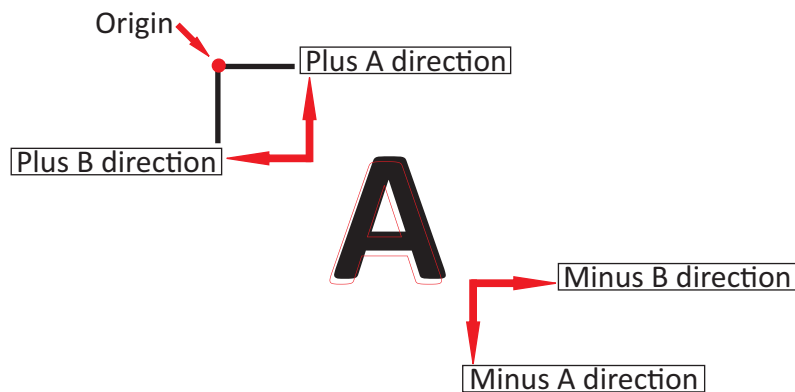
Spd Limit: -> 10cm/s (Slow but more accurate for long lengths)

Skew Check: -> 10mm

Offset A & B values are determined by trial & error. Once set correctly, you should not have to change them. Since the sensor is not the blade itself, you will need to make the adjustments.



The example on the left shows a red cut which is offset from the actual printed piece. Everything is based off the first Mark.



In the above example we would increase the OffsetA value while we would decrease the OffsetB value. This would move the cut up and to the right.

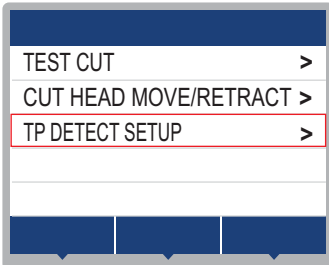


Print & Cut

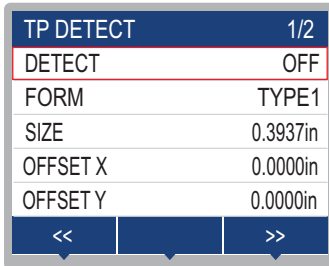
Enable Mark Detect for Mimaki CJV 150 & 300 Series



To get to the TOOL properties from the main menu press the (SEL) key twice. Now press the (FUNC2) key to enter the TEST CUT.

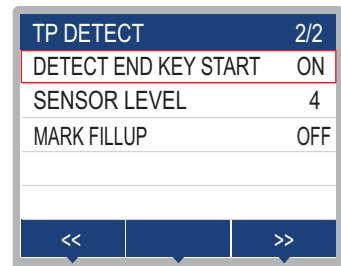


Using the (▲) (▼) keys scroll to TP DETECT SETUP and either select with the (▶) or (ENTER) key.



Using the (FUNC1) or (FUNC3) keys you can scroll between the two pages of options.

The inch measurement will be mm if your printer is set to the metric system.



Using the (▲) (▼) keys highlight DETECT and press the (ENTER) key. Use the (▲) (▼) keys again to select ON and then press the (ENTER) key. Registration/Crop Marks are now enabled.

FORM should be left to TYPE1.

SIZE should be left to the default of 0.3937 inches.

OFFSET X and OFFSET Y can be adjusted for better accuracy.

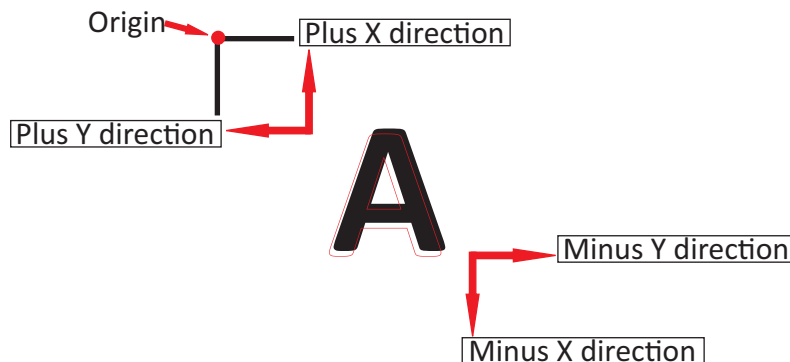
X is forward and back. Y is left and right. See Below.

Positive numbers move the cut forward or left. Negative numbers move the cut back or right.

DETECT END KEY START should be left to ON. This enables the END key to not look for marks.

SENSOR LEVEL can be adjusted for you lighting conditions or the laminated media where the marks are fainter.

MARK FILLUP should be left to OFF.



Print & Cut

Enable Mark Detect for Mimaki CG-SRIII Series

FUNCTION ▲ ▼ SETUP ENTER/HOLD MARK DETECT ENTER/HOLD ▲ ▼ 4pt ENTER/HOLD

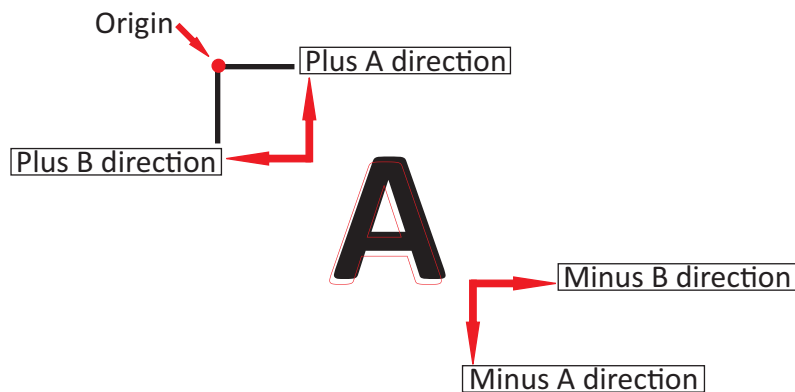
Additional options are available when the Mark set is enabled by using the ▲ ▼ ENTER/HOLD

- Dist.Revi. : -> Off
- Size: -> 10mm (.39inch)
- OffsetA: -> See Below
- OffsetB: ->
- Mark Form: -> Type 1
- CopiesA: -> 1
- CopiesB: -> 1
- Spd Limit: -> 10cm/s (Slow but more accurate for long lengths)
- Skew Check: -> 10mm

Offset A & B values are determined by trial & error. Once set correctly, you should not have to change them. Since the sensor is not the blade itself, you will need to make the adjustments.



The example on the left shows a red cut which is offset from the actual printed piece. Everything is based off the first Mark.



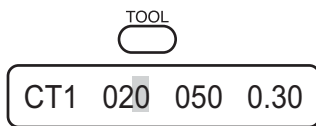
In the above example we would increase the OffsetA value while we would decrease the OffsetB value. This would move the cut up and to the right.



Print & Cut

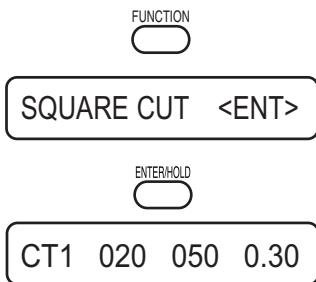
Test Cut Mimaki CG Series

Checking your tool settings is important. The Test Cut is the way to do this. Load your media in the cutter. Since you enabled the Mark detect sensor, the cutter now wants to find the marks. Just press the End button to cancel this operation.

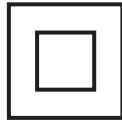


Press the Tool button. This brings you into the tool setup shown on the left. Notice the blinking cursor. This value can now be changed. Using the arrow and enter keys you can change these values. Each tool can be set for different speeds, pressures and blade angles dependant upon the type of media you are cutting.

Pressing the Tool button again brings up CT2, again CT3 and the like. Make certain you are set on CT1 for this first try.



To produce the test cut select Function, Square Cut, Enter and the cut will be done (may require Function key pressed a few times to locate Square Cut).



You may need to jog the media forward to see the cut. Use the arrow keys to do this. Using an x-acto knife pick the center box out. Does it come out easily? Now pick out the outer box. Look at the release liner of the media. Do you see a slight impression from where the inner box was?

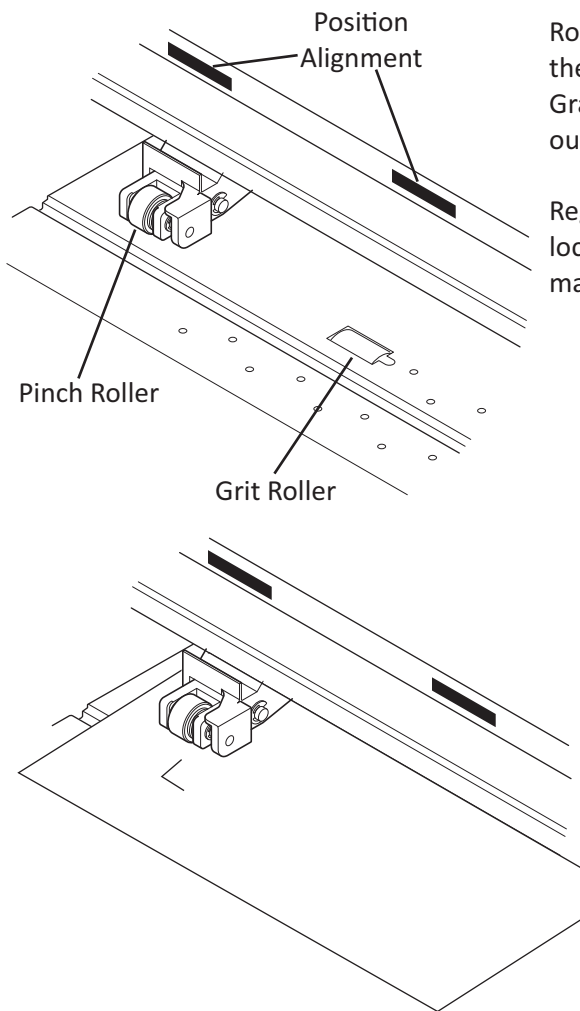
Troubleshooting chart.

I see the marks but it does not pick off.	Blade depth is not correct or not enough pressure. Increase the pressure setting for the tool first.
The release liner is cut through or a very deep impression.	Blade depth to great or to much pressure. Reduce the pressure first.
The corners are rounded.	Improper offset angle set for tool. Check the blade box for proper angle setting.
Corners are curled up.	Blade to deep. Reduce the amount of blade tip showing in the blade holder.

Some problems can be helped by reducing the speed setting. Thicker, heavier media requires lower speeds. Verify the tip is still on the blade. A broken tip can cause all of the issues listed here.

Print & Cut

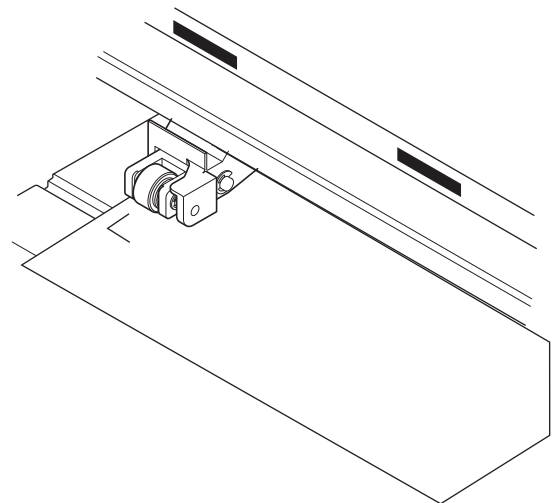
Setting Media - Friction Feed



Good Positioning

Roller position is one of the keys to a successful print & cut. To start, the Pinch Roller needs to be within the Position Alignment area. Graphtec uses a tape, Mimaki uses triangles for placement. If a roller is outside these areas you will get an error message on your display.

Registration marks need to be inside the 2 outer rollers. The cutter locates the to outside rollers and will only search for the registration marks if they are inside the pinch roller.



Bad Positioning

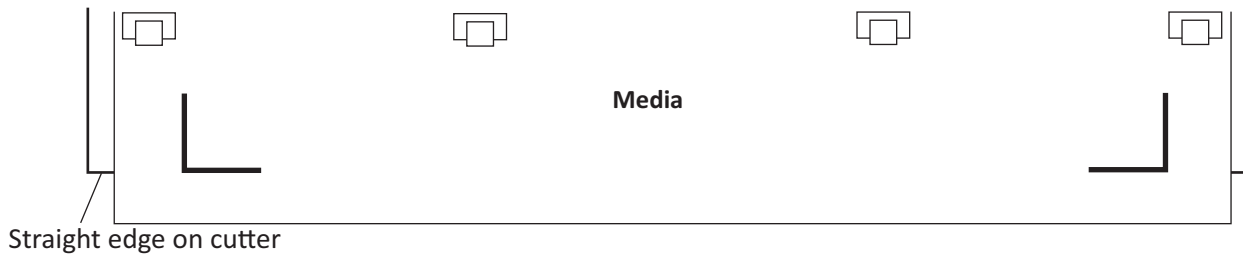
Roller too close to the edge of the media. Media can skew as it goes forward and reverse. Give yourself some room. This bad example also shows the registration mark is not inside the pinch roller. You printed this job too wide to cut.

Best practice when you print your job, center it on your media. This should give you ample room. Make certain you have a long enough tail on the media so the media out sensor is not tripped. Generally you need about 5" of extra media.



Print & Cut

Setting Media - Friction Feed (continued)



Before lowering the lever on the media, make certain it is in as straight as possible. To do this locate a straight line on the cutter. Press down on the horizontal end of the registration mark on the right. With holding the right side firmly, adjust the left side. Press down on this side to feel the straight edge. Once satisfied lower the pinch roller lever. On both Mimaki and Graphtec select load roll.

On a Graphtec cutter position the cutter just at the tip of the registration mark by using the arrow keys.



On Mimaki Cutters the little red light comes on and the display shows TP1. By using the arrow keys place the red light inside the registration mark. The dotted line on the right shows the extent you can place it. Press the **[Enter]** key and the cutter will begin to locate the marks.



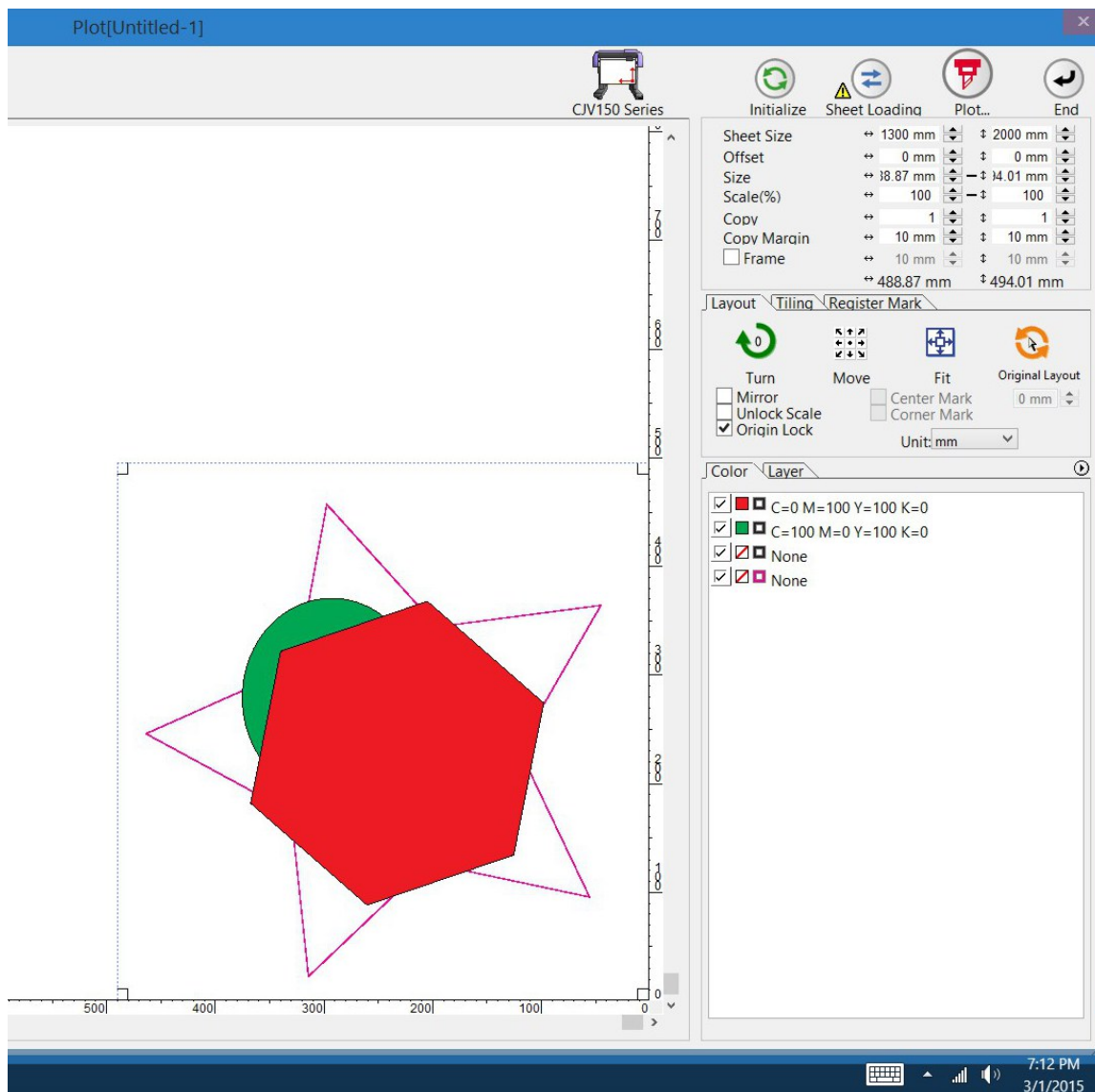


Print & Cut

Sending Cut Data from FineCut

Make certain your tool setting is set to the correct CT number. Place the cutter in Remote. You have previously saved your print & cut job in CorelDraw or Adobe Illustrator with the registration marks applied and the separate CutContour layer. Turn off all layers but the CutContour and Registration Mark layer.

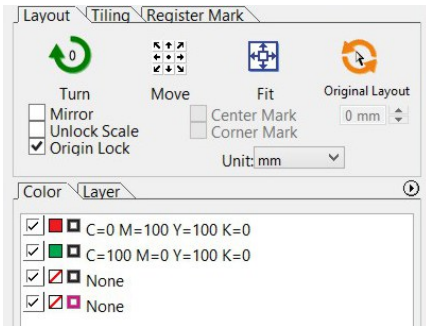
From the FineCut window in Illustrator or CorelDraw select Plot. The FineCut plugin opens and oops, we forgot to turn off the Graphics layer. We can recover from this here in FineCut.





Print & Cut

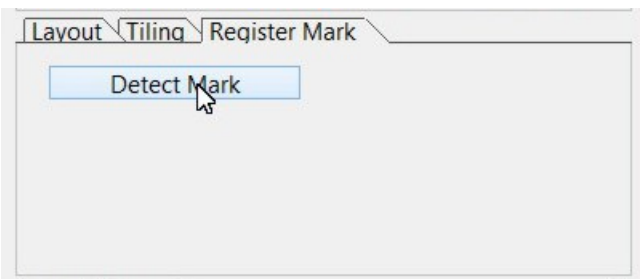
Sending Cut Data from FineCut (continued)



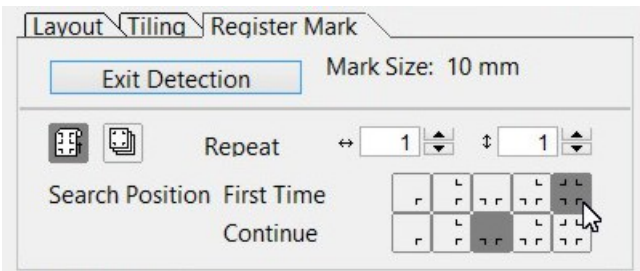
Locate the Layer tab and select it.



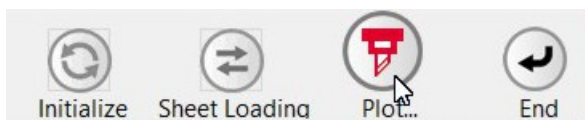
You can now uncheck the Graphics layer so it does not try to cut that data only. In this case we are cutting a star.



Locate the Register Mark tab and select it. Then select Detect Mark.



Make certain it is set to detect 4 marks for best accuracy.



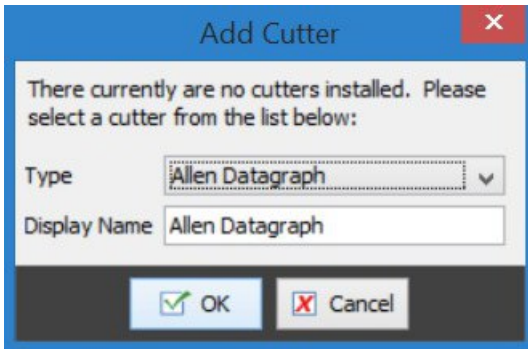
Select the Plot button on the top and the cutter should start up, locating the marks again and then begins to cut.



Print & Cut

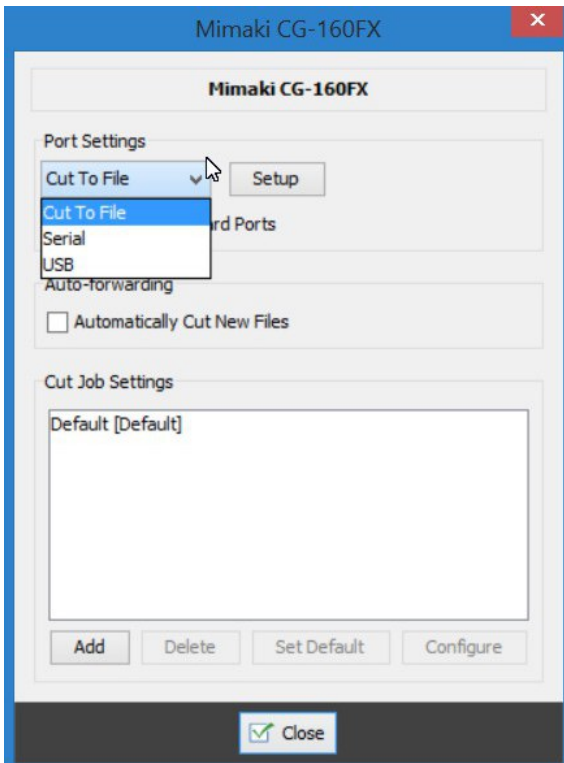
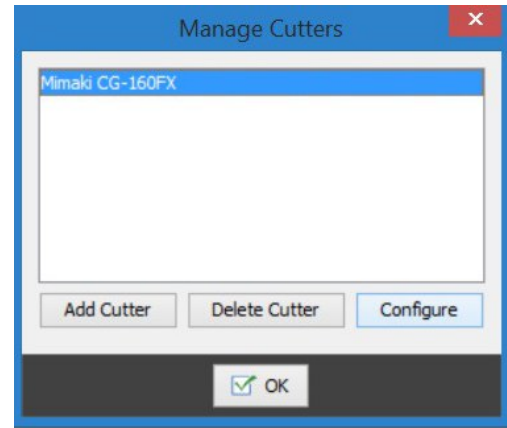
Cutting with Onyx Cut Server

Before we start Cutting, we need to configure Cut Server. Once we configure Cut Server we do have to close it and then re-open it. Start Cut Server from the RIP or Desktop link.



When Cut Server opens for the first time, you'll need to add a cutter. Use the pulldown to select your cutter model.

Now highlight the cutter and select the Configure button.



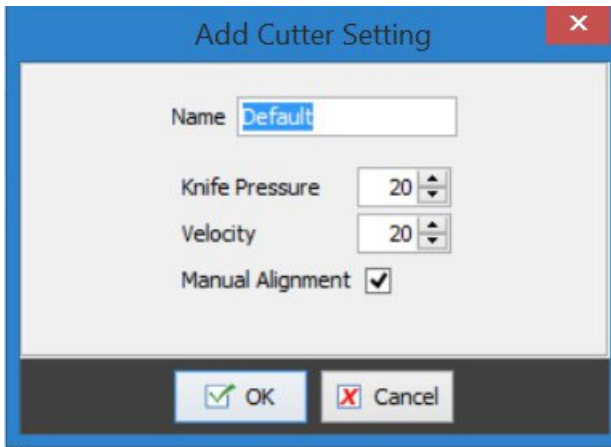
Select how the cutter is connected to your computer. If you select TCP/IP you will be prompted for the IP address.

Under the Cut Job Settings select the Add button.



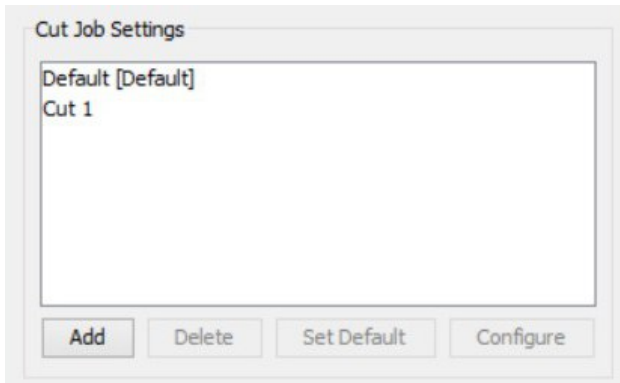
Print & Cut

Cutting with Onyx Cut Server (continued)



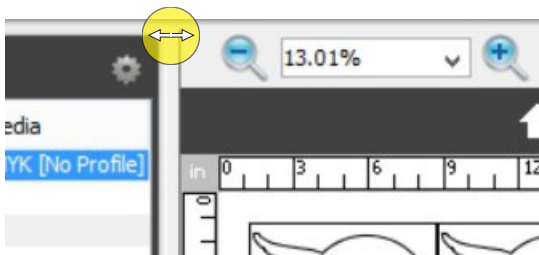
Change the Name to Cut 1 and add the Pressure Velocity settings from your cutter. You can create as many cutter setting as you want with varying pressures and speeds and select the OK button. Cut Server does not use cutter setting on your Mimaki.

Warning: Some versions of Cut Server are off for the pressure setting. If your Test Cut for the cutter had an 80 pressure you may need to use a pressure setting of 8.



Add as many setting as you may need. You may need a setting for laminated prints or heavy material. set these conditions on the cutter and add then to Cut Server. Ok you way out.

Close Cut Server and then re-open it.

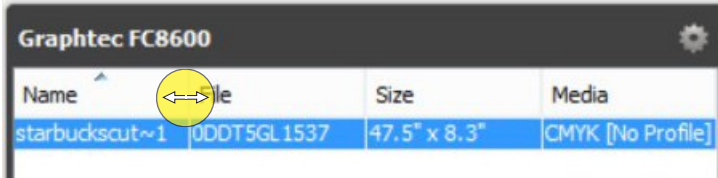


By moving the mouse between the columns, you'll see the horizontal arrow. Click and hold as you move the mouse left or right to adjust the column widths.



Print & Cut

Cutting with Onyx Cut Server (continued)

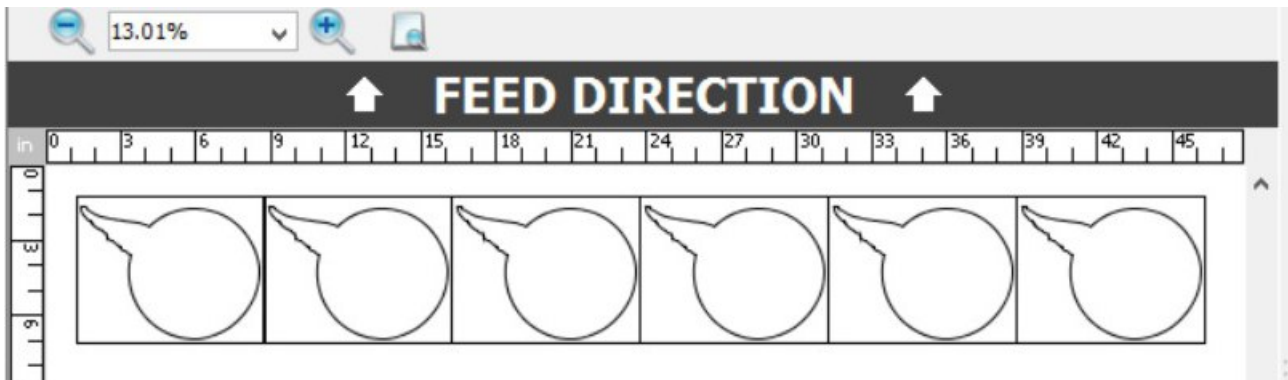


Name	File	Size	Media
starbucks-cut~1	0DDT5GL1537	47.5" x 8.3"	CMYK [No Profile]

You can also adjust the column width in the cut file display the same way. You can also adjust the listing order of the display by clicking on the column headers.

- Name is the physical name of the file.
- File is the Bar Code number printed on the print.
- Size is the physical size of the print including the registration marks.
- Media is the media you had selected in the RIP.

Select the job you wish to cut.

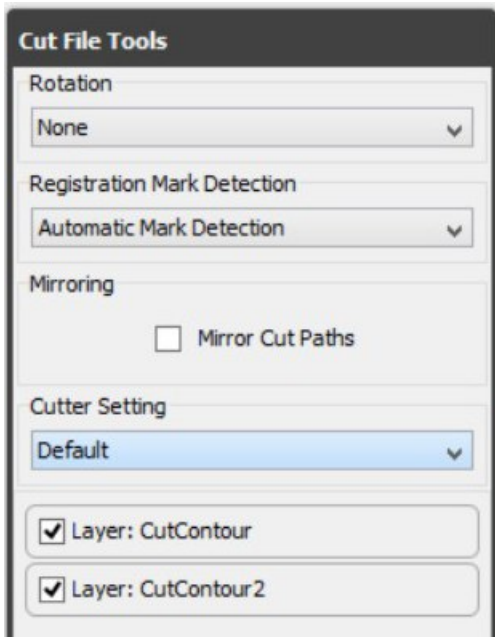


The center section of your display will show the cut lines. Using the magnifiers you can adjust the zoom of the image. It also shows you the Feed direction on how you place the media in the cutter.



Print & Cut

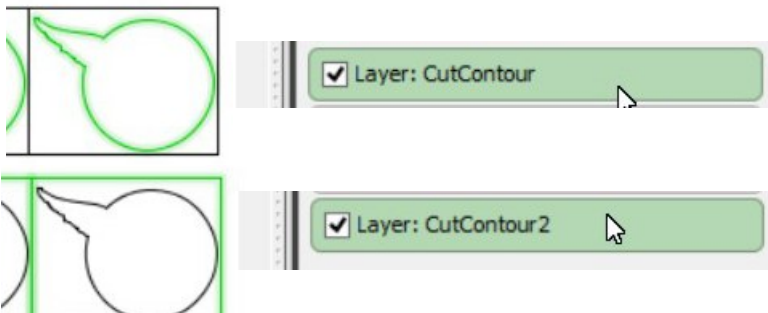
Cutting with Onyx Cut Server (continued)



The panel on the right of the screen allows you to rotate the cut 180 degrees so if you need to cut it upside down you can (usually dependant on amount of leader you have). Leave it set for Automatic Mark Detection.

Mirror should not be selected. If you mirrored the job, the cut paths are automatically mirrored. This mirror would only be good if you were cutting clear films, and you wanted to ut from the backside.

Layers shows two distinct CutContour layers in this example.



By moving the mouse over the layer, your display will show you the what each layer of the cut is by highlighting it with green.

By un-checking the box, you can turn off the specific layer so it does not cut.



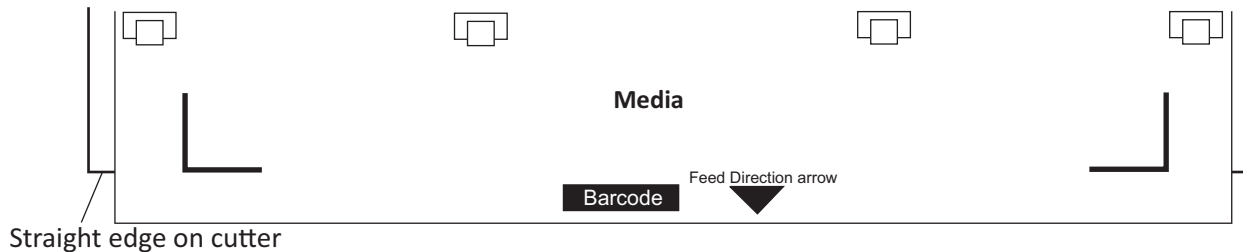
By using the pulldown, select the cutter setting you wish to use for each layer.



Print & Cut

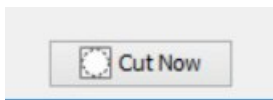
Cutting with Onyx Cut Server (continued)

Load your media on the machine.



Before lowering the lever on the media, make certain it is in as straight as possible. To do this locate a straight line on the cutter. Press down on the horizontal end of the registration mark on the right. With holding the right side firmly, adjust the left side. Press down on this side to feel the straight edge. Once satisfied lower the pinch roller lever. On both Mimaki and Graphtec select load roll.

On Mimaki Cutters the little red light comes on and the display shows TP1. By using the arrow keys place the red light inside the registration mark. The dotted line on the right shows the extent you can place it. Press the **[Enter]** key and the cutter will begin to locate the marks.



In Cut Server select the Cut Now button.