



EXPERT 24 LX

CUTTING PLOTTER

User Manual

Great Computer Corporation ©

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NOTICE

GCC reserves the right to modify the information contained in this user manual at any time without prior notice; un-authorized modification, copying distribution or display is prohibited. All comments, queries or suggestions concerning this manual please consult with your local dealer.

Important Information

Thank you for purchasing the **Expert 24 LX Cutting Plotter**.

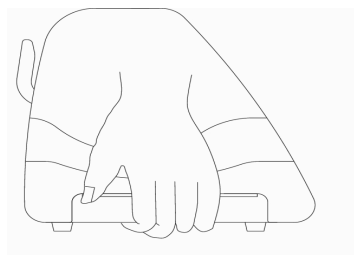
Before you use the cutting plotter, please make sure that you have read the safety precautions and instructions below.



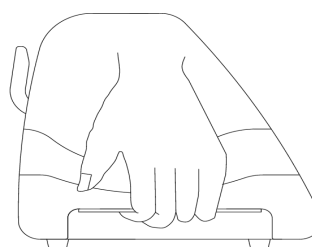
Caution

SAFETY PRECAUTIONS!

- For safety concern, please always hold the cutter firmly **from the bottom** while moving it. Do not move the cutter by clasping the depression area on both sides.



O (correct)



X (Incorrect)

- Do not shake or drop the blade holder, a blade tip can fly out.
- During an operation, do not touch any of the moving parts of this machine (such as the carriage). Also be careful to make sure that clothing and hair do not get caught.
- Always connect the power cable to a grounded outlet.
- Always use the accessory power cable which is provided. Do not wire the power cable so that it becomes bent or caught between objects.
- Do not connect the power cable to branching outlet to which other machines are also connected, or use an extension cable. There is danger of overheating and of mis-operation of the machine.
- Keep the tools away from children where they can reach.
- Always put the pinch rollers within the white marks.

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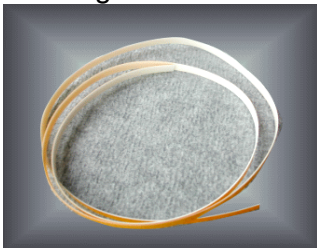




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1. General Information

1.1 Package Items

The package of Expert 24 LX contains the items listed below, please check carefully.
If you find any item missing, please consult your local dealer for further assistance.

Item	Quantity	
Cutting Plotter	1 Set	
Accessories	1 Set	
1. Installation CD	2. AC Power Cord	3. Desktop Support Brackets
		
4. Cutting Pad	5. USB Cable (1.8m)	6. Cushion in tool carriage
		
7. Tweezers	8. Paper Slicer	
		

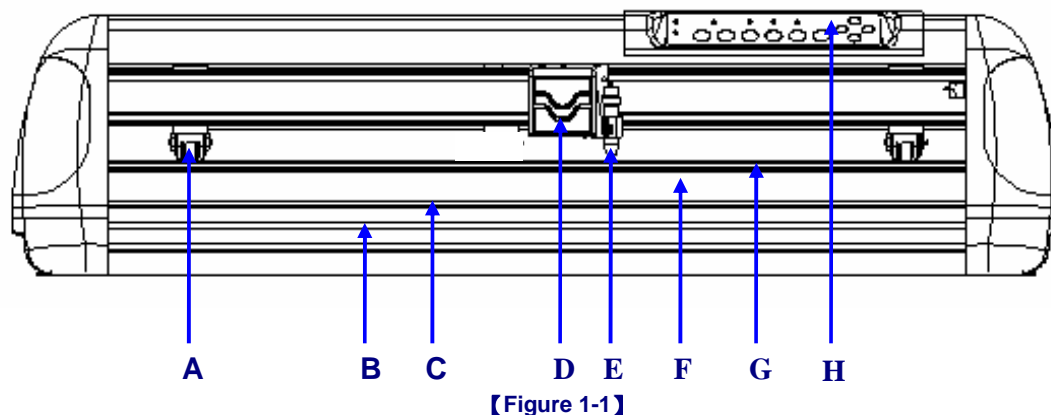
1.2 Product Features

The followings are the main features of the Expert 24 LX cutting plotters:

- Dual-port connectivity – USB & Serial interface.
- Up to 250 gram cutting force.
- Up to 400 mm/per second cutting speed.
- Guaranty 3 meter (10') tracking.
- Enhanced Automatic-Aligning System (AAS II) for auto contour cutting.

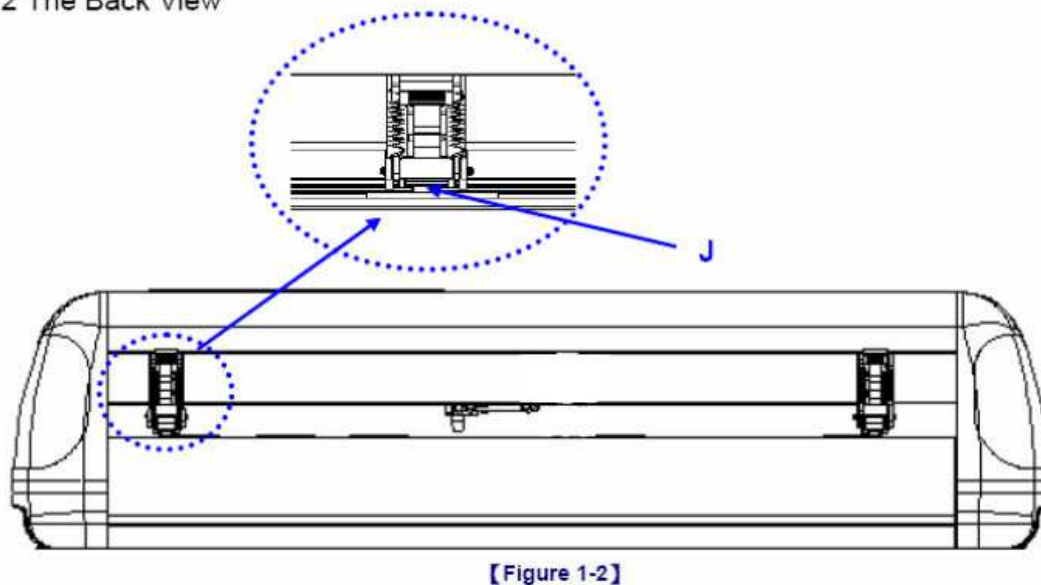
1.3 The Appearance (EX-24 LX)

1.3.1 The Front View



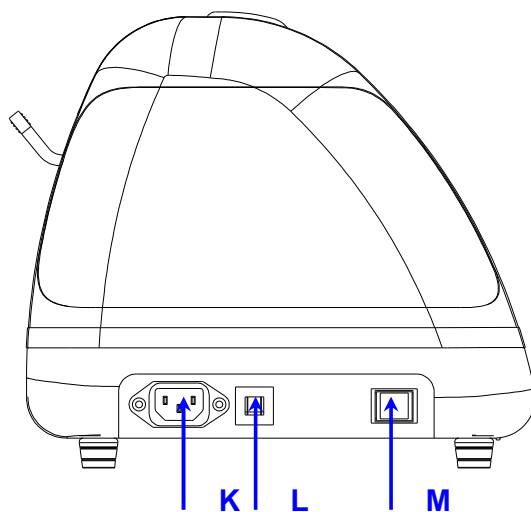
Object	Description
A Primary Pinch Roller	To help hold the media during cutting.
B Slicing Groove	To help slice off media.
C Alignment Ruler	To align media with clear guideline marks
D Tool Carriage	Performs the cutting with the installed blade or pen with AAS module.
E Blade Holder	To hold the blade.
F Platen	The surface for holding and supporting media in operation.
G Cutting Pad	To protect blade and plate in operation.
H Control Panel	To consist of 10 control keys and 6 LED lights.

1.3.2 The Back View

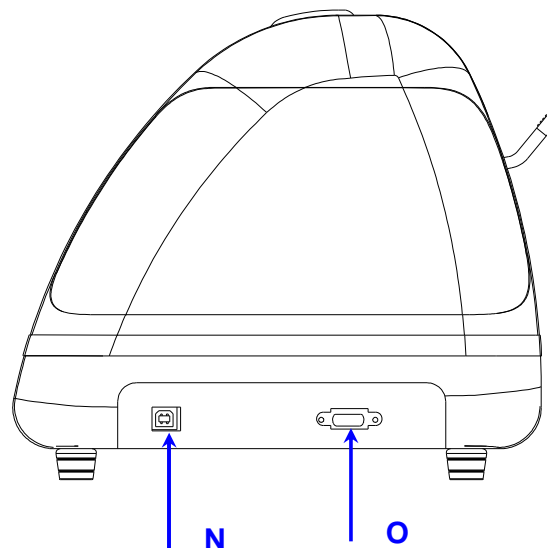


Object	Description
J Grid Drum	To move media back and forth in operation.

1.3.3 The Side Views



【Figure 1-3】



【Figure 1-4】

Object		Description
K	AC Power Connector	To insert the AC power cord.
L	Fuse	3Amp.
M	Power Switch	To turn on or off the machine.
N	USB Connector	To connect the machine and a computer through a USB cable.
O	Serial Interface Connector	To connect the machine and a computer through a RS-232 cable.

2. Installation

2.1 Precaution

Please read below information carefully before you start installation.

Notice 1

- Make sure the power switch is off before installing the cutting plotter.
- Carefully handle the cutter to prevent any injuries.

Notice 2 Choosing a proper place before setting up the cutting plotter

Before installing your cutting plotter, select a suitable location, which meets the following conditions.

- The machine can be approached easily from any direction.
- Keep enough space for the machine, accessories and supplies.
- Keep the working area stable, avoiding severe vibration.
- Keep the temperature between **15 and 30 °C (60-86°F)** in the workshop.
- Keep the relative humidity between **25% and 75%** in the workshop.
- Protecting the machine from dust and strong air current.
- Preventing the machine from direct sunlight or extremely bright lighting.

Notice 3 Connecting the Power Supply

Check the plug of the power cord to see if it mates with the wall outlet. If not, please contact your dealer.

- Insert the plug (male) into a grounded power outlet.
- Insert the other end (female) of power cord into the AC connector of cutting plotter.

2.2 Stand Installation

2.2.1 Stand Installation

Please follow the procedures below for assembling the stand.

Step 1 Please examine the supplied items in the accessory box of the stand carton before you install:

Stand is an optional item for Expert 24 LX, Item List :

- 1 Left side vertical stand
- 1 Right side vertical stand
- 1 Support for left side
- 1 Support for right side
- 1 Stand Beam
- 2 Bottom Stands with wheels
- 2 Sliding brackets for paper take up
- 1 Hex Wrench (M5)Φ4
- 28 Socket flat head screws(M6*12L)
- 1 Installation Guide

Step 2

Position the Left side vertical stand perpendicularly to part ❶ and put the screws into the holes and tighten them to form a left side T-stand (Figure 2-1). Repeat the same steps with the Right side vertical stand.

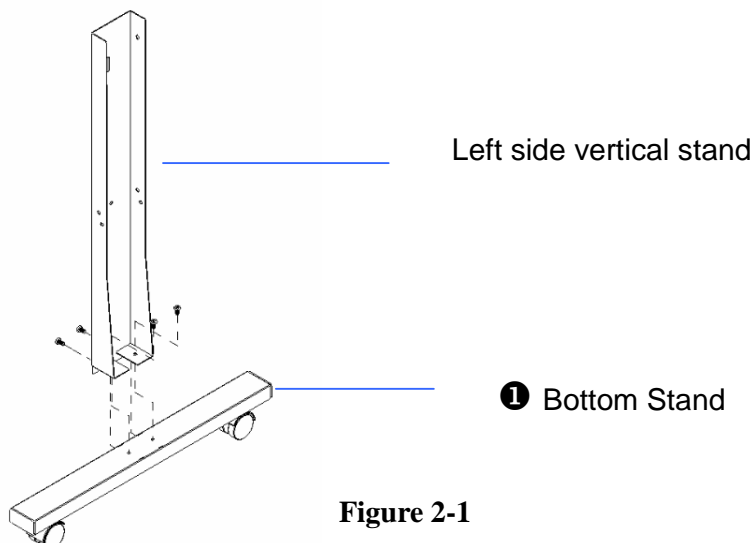
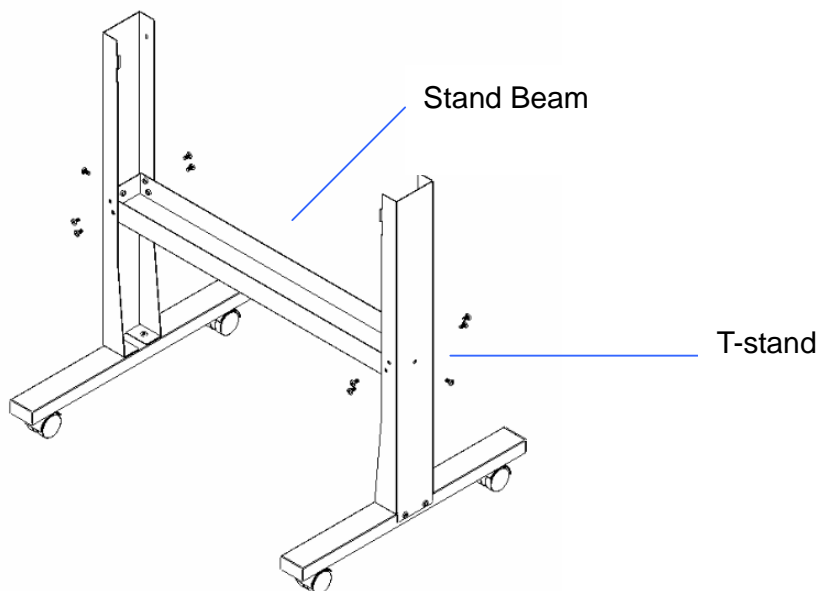


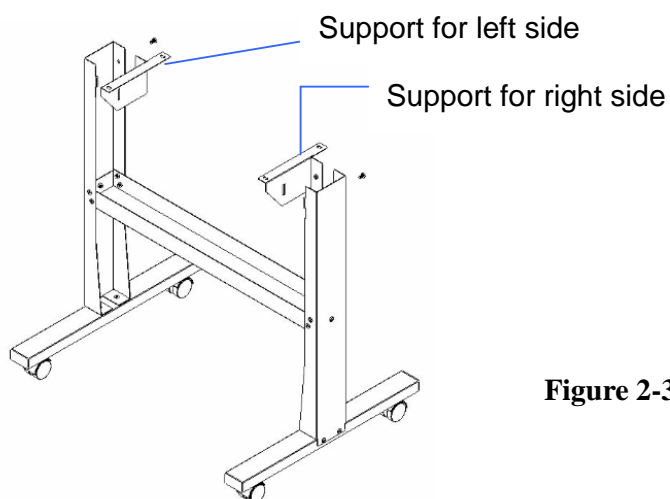
Figure 2-1

Step 3

Place the stand beam upright on the T-stand and put the screws into the holes but do not tighten them at this step.

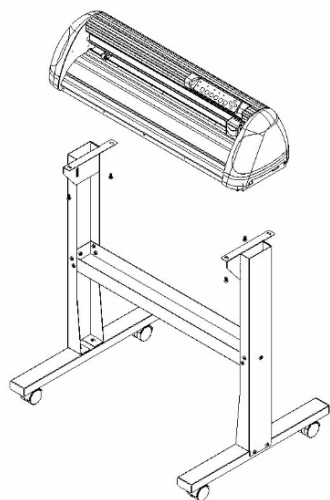
**Figure 2-2****Step 4**

Position both the left Support and right Support perpendicularly to the T-stand and put the screws into the holes and tighten them as shown in Figure 2-3.

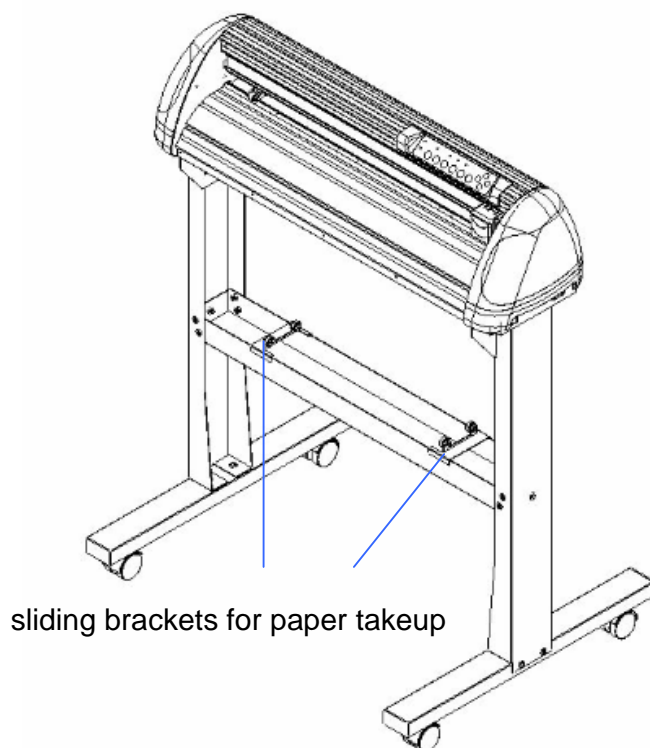
**Figure 2-3**

Step 5

Remove the cutting plotter from the carton. Position the stand under the plotter, and insert the screws into the holes on the bottom of the plotter but do not tighten them up as shown in Figure 2-4.

**Figure 2-4****Step 6**

Tighten the screws of step 3 and step 5. Place the sliding brackets for paper takeup onto the stand beam.

**Figure 2-5**

2.3 Blade Installation

Figure 2-6 is the illustration of the blade holder. Insert a blade into the bottom of the blade holder and remove the blade by pushing the pin. Make sure that your fingers are away from the blade tip.

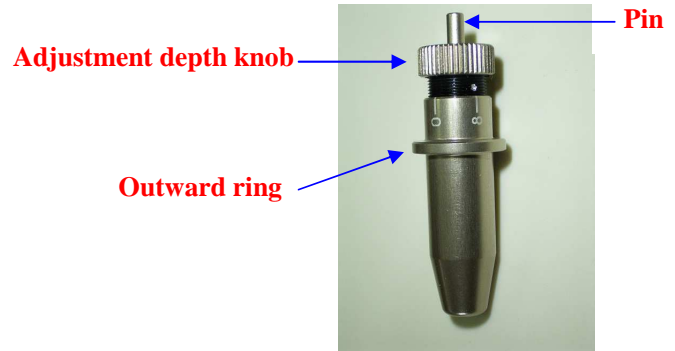


Figure 2-6

Step 1

Install blade (Figure 2-7).



Figure 2-7

Step 2

Push the blade to the bottom of the blade holder (Figure 2-8).



Figure 2-8

Step 3

Adjust the blade tip to suitable length by screwing "Blade tip adjustment screw" clockwise or count-clockwise. (Figure 2-9).



Figure 2-9

Tips:

"The proper length" means the blade's length is adjusted 0.1mm more than film's thickness. That is, if the thickness of film is 0.5mm, then blade's length is properly adjusted 0.6mm and it can completely cut through the film layer yet avoid penetrating the backing.

Step 4

Insert the blade holder into tool carriage. Please note the outward ring of the holder must put into the grooves of carriage firmly (see Figure 2-10), fasten the case (Figure 2-11).



Figure 2-10



Figure 2-11

Step 5

Use the reversing steps to remove the blade holder.

Step 6

Eject the blade: Push “**Blade eject pin**” to eject blade when the blade needs to be replaced.

Caution

The blade will lose its sharpness after a period of usage, the cutting quality be affected. By increasing the cutting force, it might do the trick. However, the blade is worn out and no longer provides a reliable cutting, you should replace a new one. The blade is consumable and must be replaced as often as needed to maintain the cutting quality. The quality of the blade deeply affects the cutting quality. So be sure to use a high quality blade to ensure good cutting results.

Tips - When to replace a new blade:

- ✓ If the blade is broken, you have to replace a new one.
- ✓ If cutting quality is not as good as usual, you may need to replace a new one.
- ✓ If the material cannot be cut through by higher cutting force, you may need to replace a new one.

2.4 Media Loading

2.4.1 Loading the Sheet Media

To load the media properly, please follow the procedures below:

Step 1

Lift the 2 levers at the back side of the cutter to lift the pinch rollers (Figure 2-12).

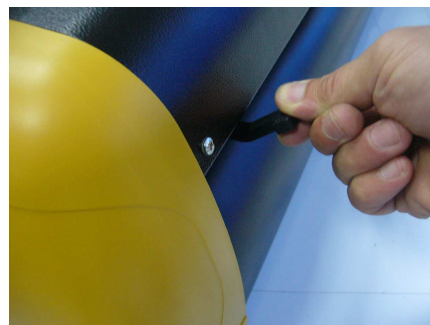


Figure 2-12

Step 2

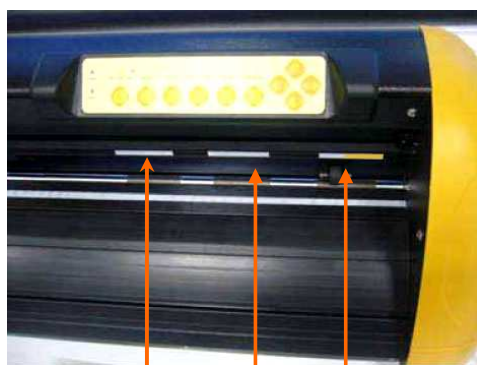
Load your media on the platen and slide it under the pinch rollers from either the front side or the backside. The **alignment rulers** on the platen extension will help you to adjust the media precisely (Figure 2-13).



Figure 2-13

Step 3

Then move the pinch rollers manually to the proper position. Be sure the pinch rollers must be positioned above the grid drum. The **stickers** on the main beam show the position of the grid drums (Figure 2-14). The position of the first grid drum is indicated by a yellow and white sticker. Please note that the position of the 1st AAS registration mark should not be located within the area indicated by the yellowish part of the sticker. If the registration mark is located in the yellowish part of the sticker then the registration mark will fail to be detected.



Stickers

Figure 2-14

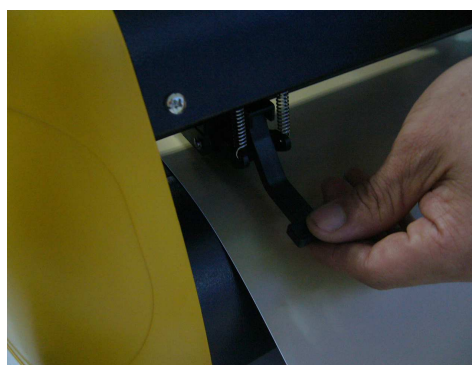
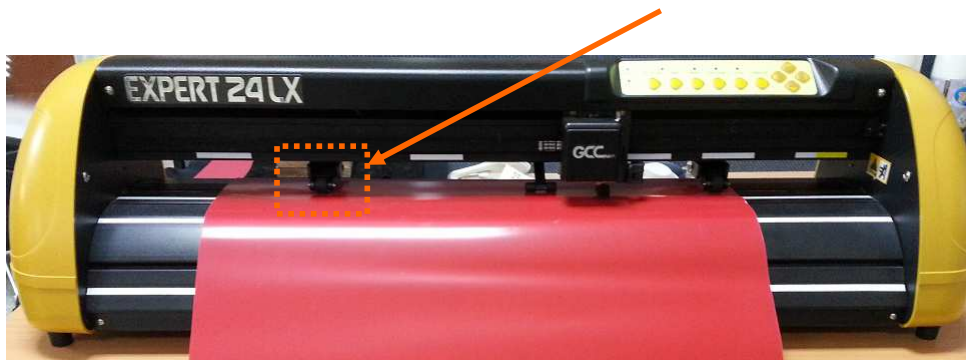


Figure 2-15

(O)**Correct****Figure 2-16****(X)****Incorrect****Figure 2-17****Step 4**

Push the lever backward to lower down the pinch rollers (Figure 2-15).

Step 5

After turn on the power, the tool carriage will measure the size of the media automatically. And the plotting cutter begins to work.

Note:

- ✓ Always adjust the position with the pinch rollers raised.
- ✓ Please reposition the pinch roller by holding the center of the pinch roller and moving it from the rear end of the machine. (Figure 2-18)
- ✓ DO NOT move the pinch roller by holding its front rubber roller (Figure 2-19).

**Figure 2-18****Correct****Figure 2-19****Incorrect**

2.4.2 Loading the Roll Media

You can use the stand. Please refer to Chapter 2.2 for hardware setup, and Chapter 2.4.1 for media loading.

2.4.3 How to change the poll size without turning off the machine?

Have the machine on-line, press origin set once and the red error light will start blinking, then pressed again and the machine will start moving to get the new size. Then open the VLCD and under the poll size you will find the new measurements.

2.5 Cable Connection

The cutting plotter communicates with a computer through a **USB (Universal Serial Bus)** or a **Serial port (RS-232C)**. This chapter shows you how to connect the cutting plotter to a host computer and how to set up the computer/cutting plotter interconnection.

!! Notice: When USB connection is enabled, serial port will be disabled automatically.

2.5.1 USB Interface

Expert 24 LX build-in USB interface are based on the Universal Serial Bus Specifications Revision 1.1. (Operation system of Windows 95, Windows NT don't support USB).

■ USB driver installation

Caution!!

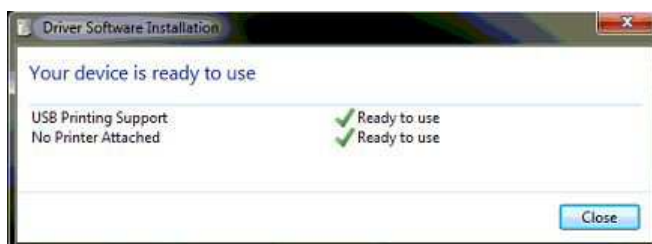
✓ **If you are using Windows 8/ 7/ Vista/ XP/ 2000 as your operating system, make sure you log in using the “Administrator” account.**

Use the USB One-click Installation for quick driver installation. Follow the simple steps below for driver setup.

Step 1:

Connecting your GCC cutter

1. Turn on the machine.
2. Connect the USB connector to the machine and then USB driver will installed automatically. It will take a few minutes to find the device. Please DO NOT disconnect the USB cable until the installation has completed.
3. You can double click the USB icon on the taskbar to make sure the USB device is detected.

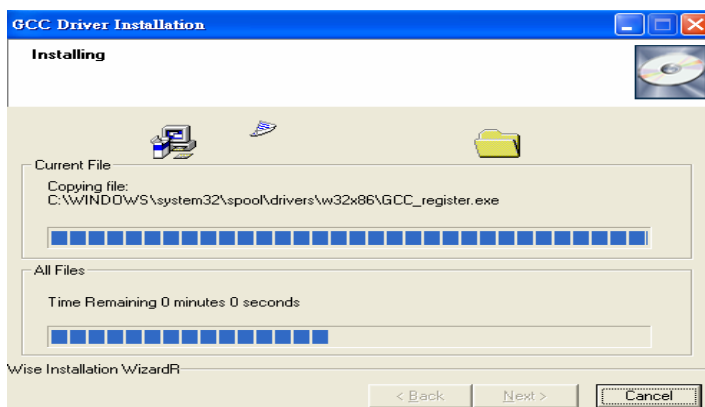
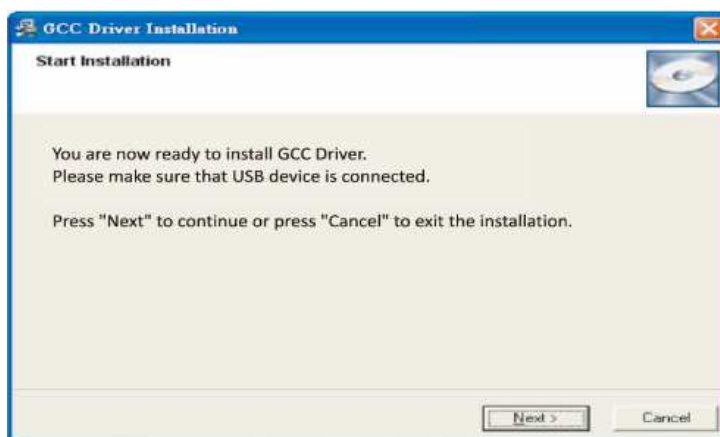


Step 2: Installing the software

- (1) Put the installation CD into your CD-ROM. **Please make sure that the USB device is connected before you start the driver installation.**
- (2) Choose the model you want to install from the driver list and click on Win 8/ 7/ Vista/ XP Driver (Manual Selection) or Win 8/ 7/ Vista/ XP Driver (Automatic detection) to start installing the Driver and AAS plugin. (The Expert Pro model is used as an illustration in the following steps.)



- (3) Click "Next" to start the driver installation.



- (4) The installation will take a few minutes to complete and you will see a message below and click on "OK" upon completion. Enjoy your GCC cutter!



Note:

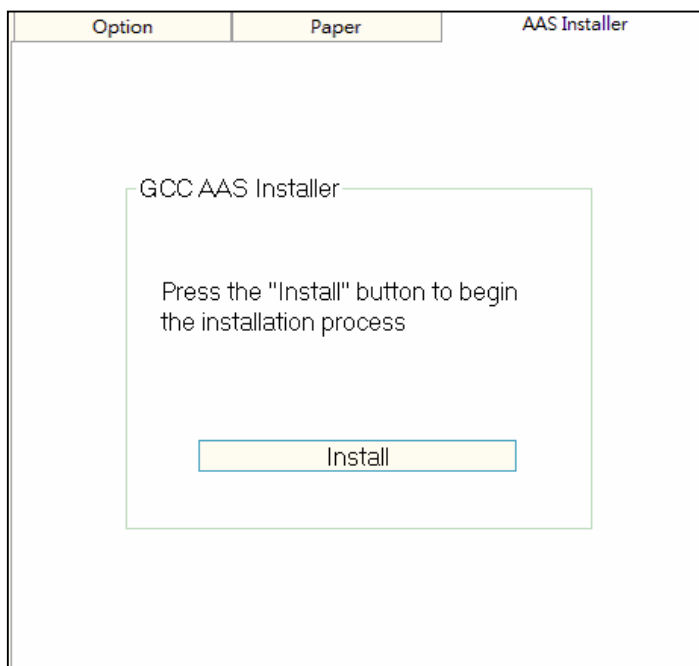
- (1) If the driver is being installed for a second time, the user will be prompted as to whether a second copy of the driver installation is required.



- (2) If the user selects yes, a second copy of the driver will be installed.



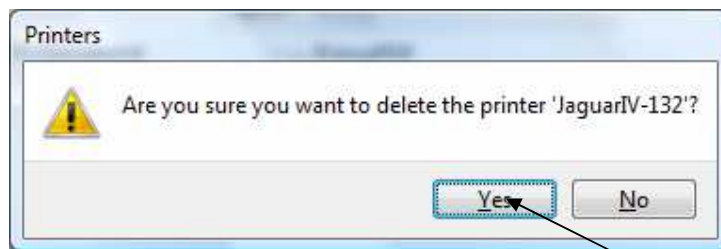
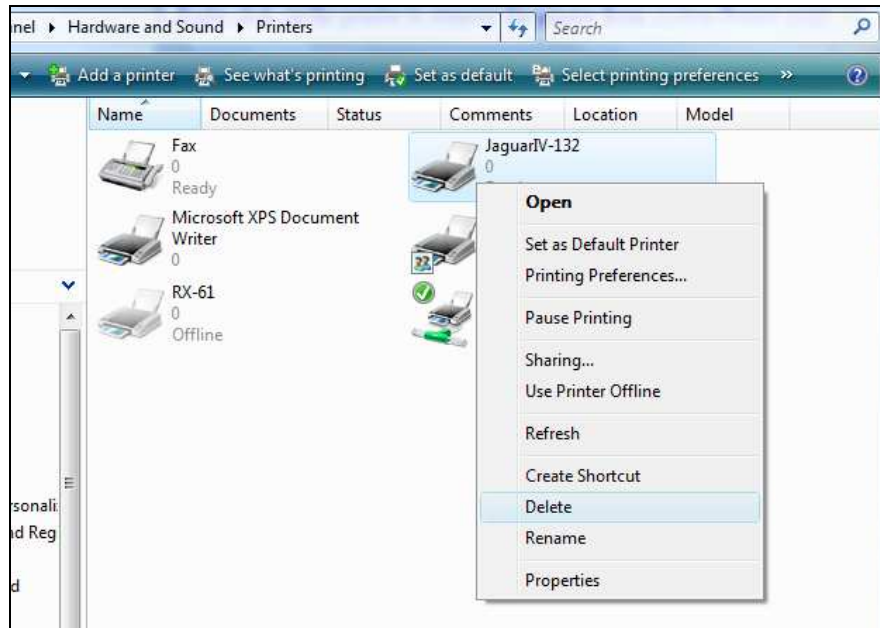
For users who have upgraded Adobe Illustrator or CorelDRAW, please go to the AAS Installer page in the Properties window and click Install to access the latest version of GCC AAS Plugin.



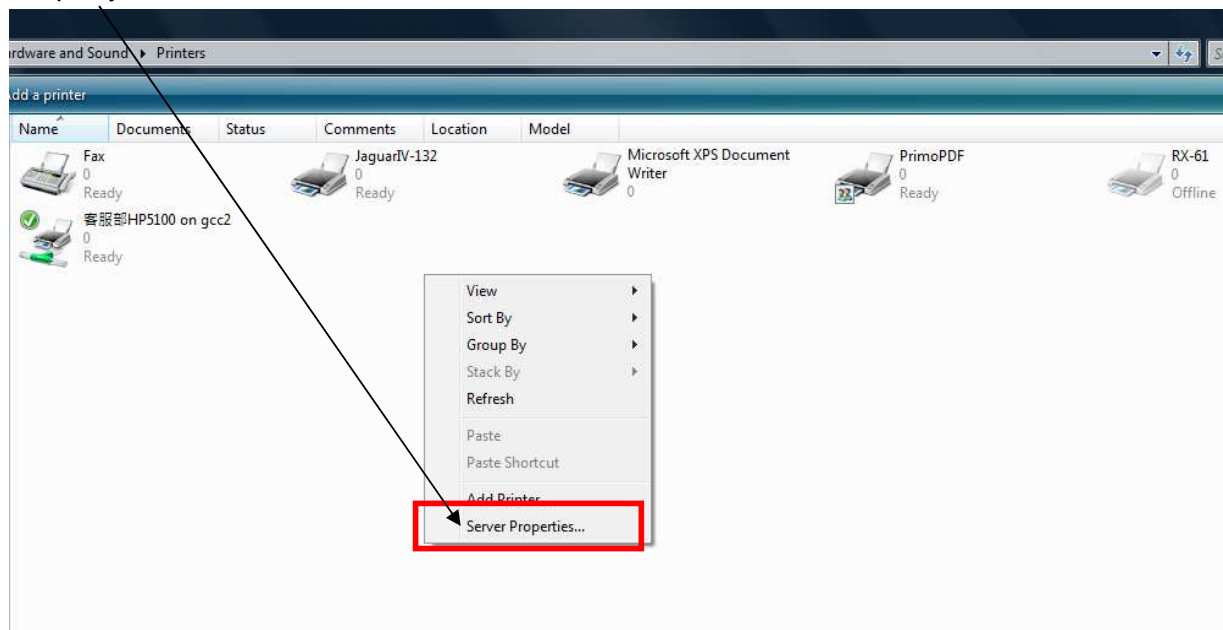
2.5.2 Driver Un-installation

You have to remove previous version driver installed on your PC system completely before you can install the latest version successfully. Please refer to below steps.

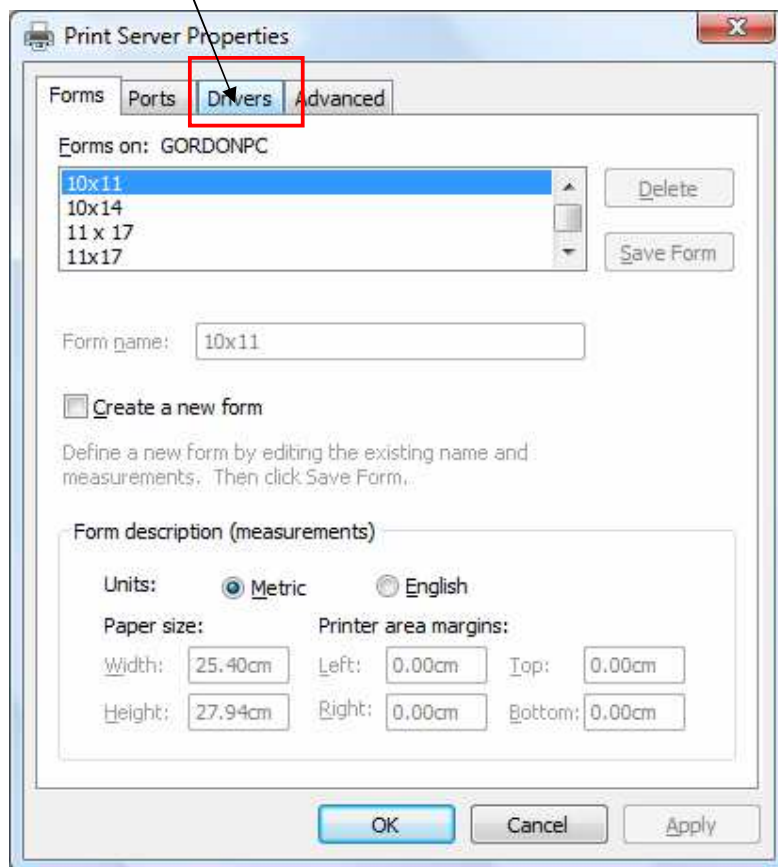
1. Right click on the printer to remove the printer from system Printer page.

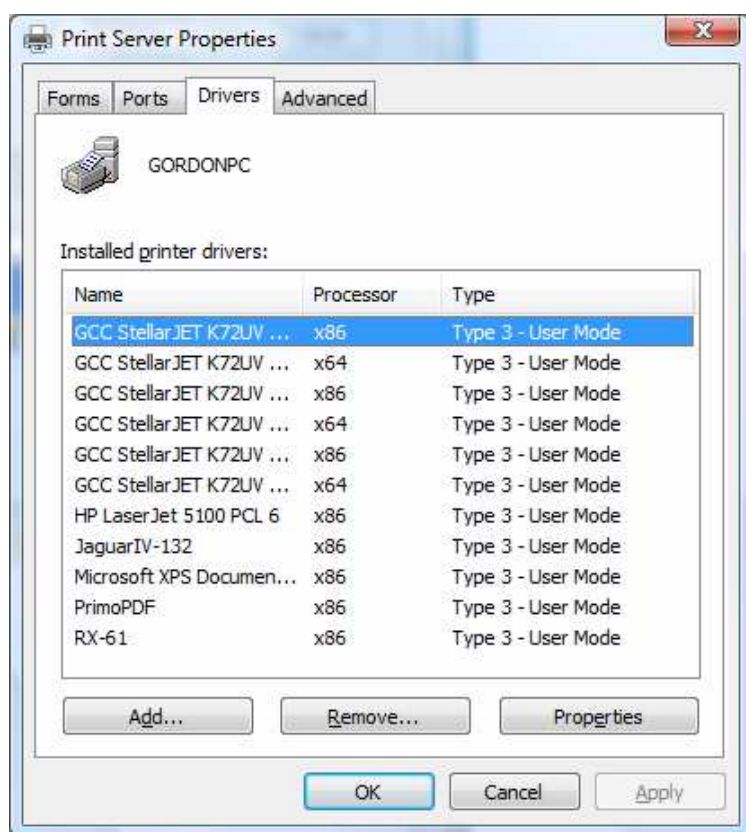


2. After removing the unit, right click on any empty space on the page and select “Server Property”



3. Select “Driver” page

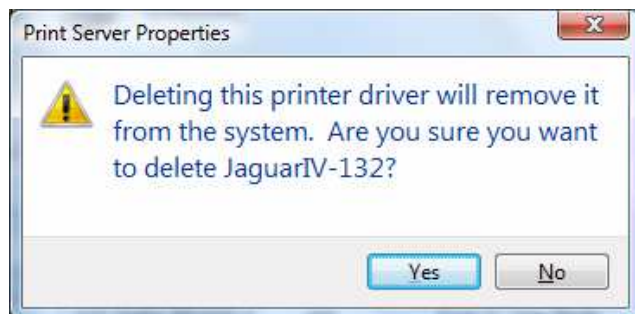




Select the model and click on "Remove".



Click on "OK"



Click on "Yes"

The driver installed on PC is completely removed.

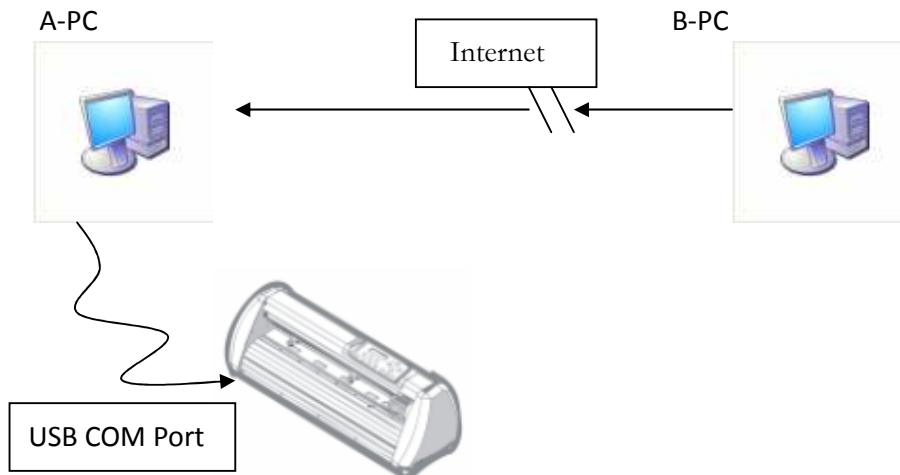
2.5.3 RS-232 Interface

■ Connecting to the RS-232 (Serial) Port

For IBM PC, PS/2 users or compatibles, connect the RS-232C cable to the serial connector of the assigned serial port (COM1 or COM2) of your host computer.

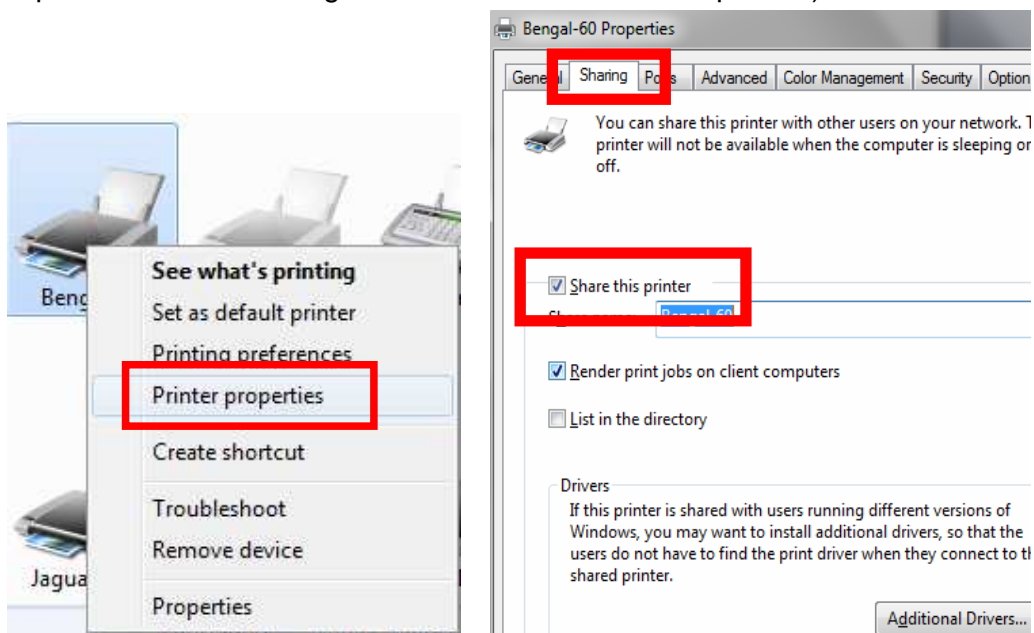
2.5.4 Printer Sever Shared Setting

In "A-PC", set the printer driver as a shared printer, then use B-PC to connect A-PC's printer driver via internet.



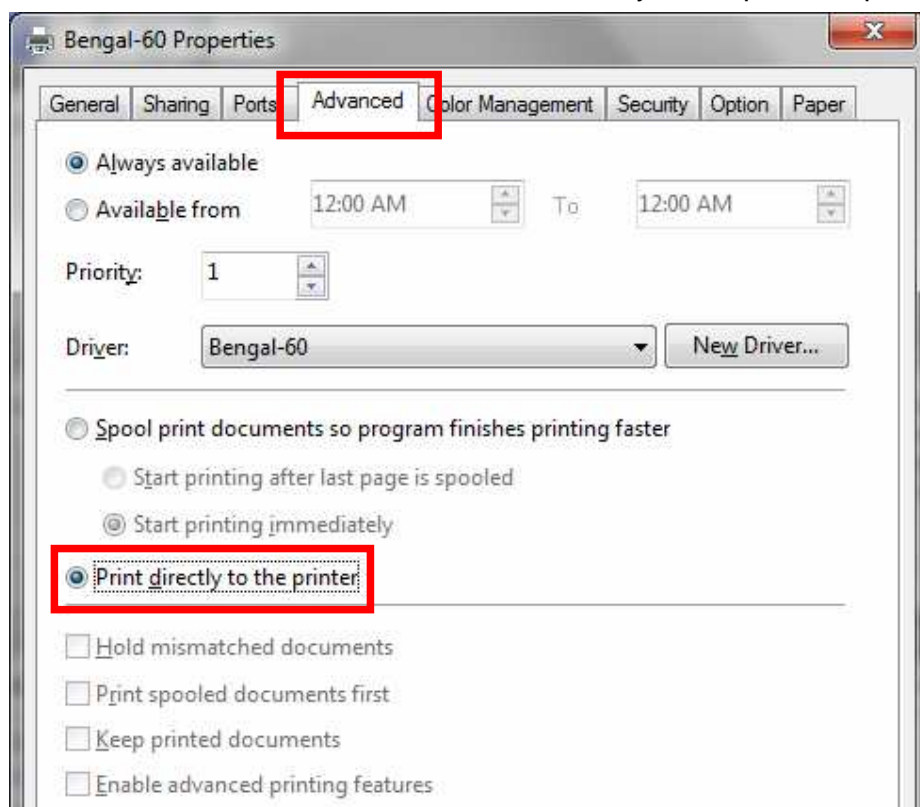
Step 1.

Please set A-PC's printer driver to shared printer. (Right-click on printer icon, choose "Printer properties". Click "Sharing" tab then check "Share this printer")

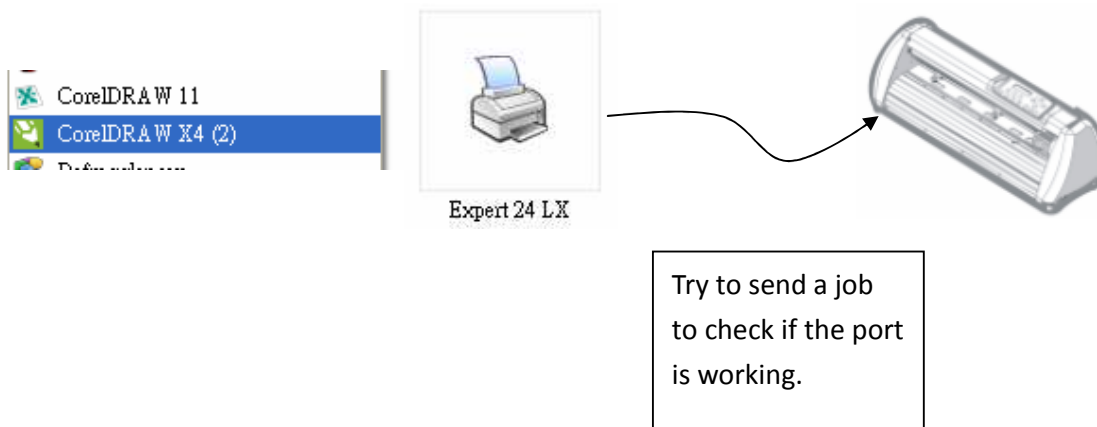


Step 2.

Click “Advanced” tab, then choose “Print directly to the printer” option.

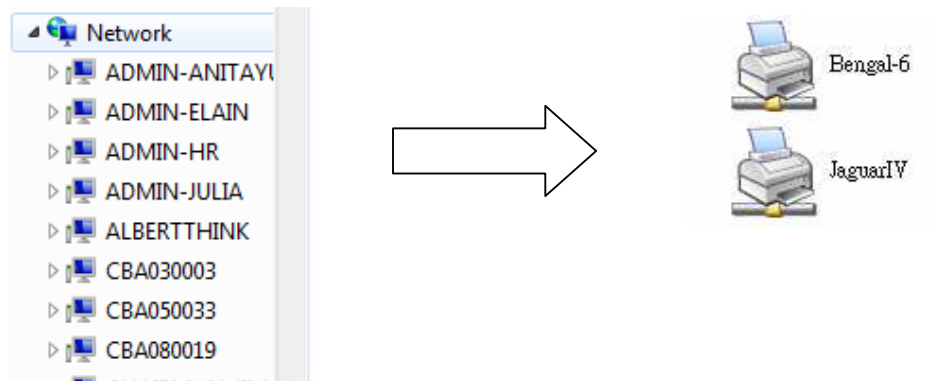
**Step 3.**

Send a job to the machine to check if A-PC is connected to the machine.

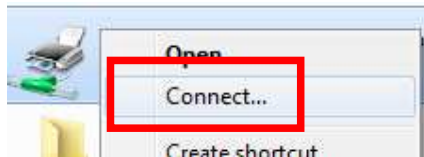


Step 4.

Activate A-PC's Printer Driver from B-PC's Network.

**Step 5.**

Right-click on printer icon, and select "Connect" to connect A-PC's printer.



3. Operation

3.1 The Control Panel

3.1.1 The Outline of control panel

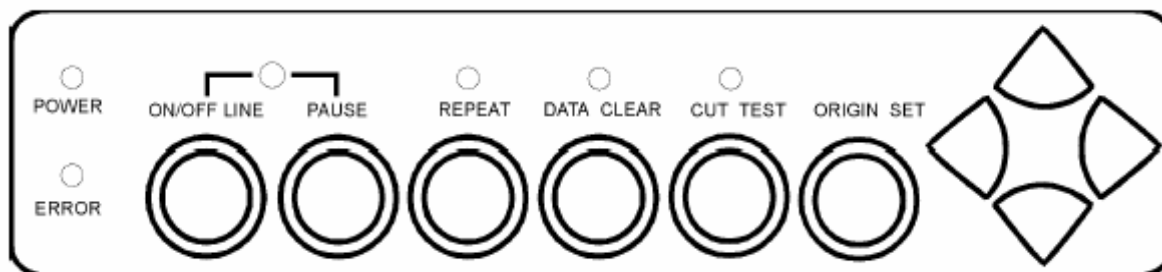


Figure 3-1

Key	Function
POWER LED	To indicate the power status (light up: power on; light off: power off)
ERROR LED	To indicate the error status (light up: error; light off: normal)
ON/OFF LINE	To switch modes or stop cutting job(light up: on-line; light off: off-line) While in on-line mode: only ON/OFF LINE and PAUSE keys activated While in off-line mode: the settings in VLCD can be adjusted.
PAUSE	To temporarily halt cutting process or to continue
REPEAT	To repeat last job.
DATA CLEAR	To clear up buffer memory.
CUT TEST	To perform cutting tests on different media.
ORIGIN SET	To reset origin at a new position.
4 Arrow Keys	To move carriage position, select function, or change setting.

3.1.2 Reset Origin

Note:

- ✓ Make sure the machine is in off-line mode to enable this function.

Step 1 Move the carriage to a new position.

Step 2 Press the ORIGIN SET button to reset origin.

3.1.3 Cut Test

Note:

- ✓ Make sure the machine is in off-line mode to enable this function.
- ✓ It's recommended to keep performing this function until the cutting quality meets your demand before executing the cutting job.

Step 1 After sizing, press the ON/OFF LINE button to set as off-line mode.

Step 2 Move the carriage to a preferred position.

Step 3 Press CUT TEST button to perform.

3.1.4 Repeat

Note:

- ✓ Make sure the machine is in off-line mode to enable this function.

Step 1 Press the ON/OFF LINE button to set as off-line mode.

Step 2 Press the REPEAT button to perform re-plot function starting at the position where the carriage locates. It is also available to move carriage to a preferred position, re-set origin, and then perform this function.

3.1.5 Repeat AAS Job

This feature allows users to repeat AAS jobs automatically without having to operate on the computer side.

Step 1 When the first AAS job finishes, press "Repeat" on the control panel to activate this function.

Note:

- ✓ Please be noted that this feature is mainly applied to the Single paper mode; ensure a new piece of material is loaded and the origin repositioned to the first registration mark before "Repeat" is pressed.

3.2 VLCD

“VLCD” is a computer program to help modify parameters of cutting functions.

3.2.1 Installation

Step 1 Copy the VLCD.exe file in the Accessories folder of the Expert 24 LX Installation CD onto your local drive to finish installation.

Step 2 Launch VLCD by double-click on the icon.

Note:

- ✓ Make sure the machine is in on-line mode to enable this program.
- ✓ There is media in the machine.

Step 3 Choose the right port connected to your computer (Figure 3-2).

If you are using the USB cable, choose **USB0** from the pull down menu. If you are using a Serial cable, choose either **COM1** or **COM2**. Make sure no other devices are occupying the port that you are going to use.

Step 4 Press the **Connect** button to connect your computer and the cutter. If the connection succeeds, the model info, firmware version, and adjustable parameter columns will be showing (Figure 3-3).

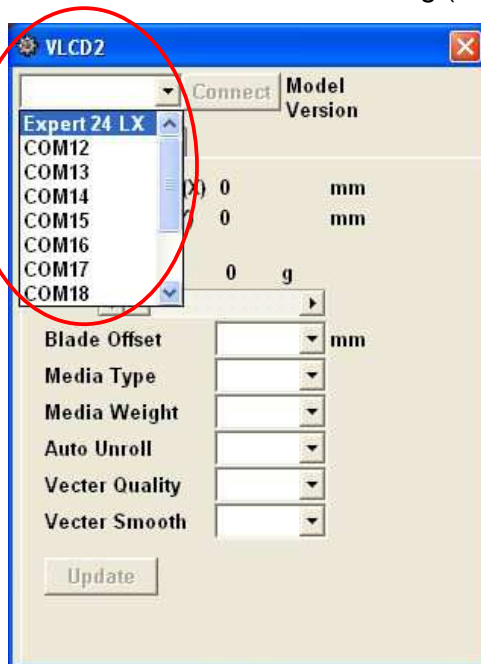


Figure 3-2

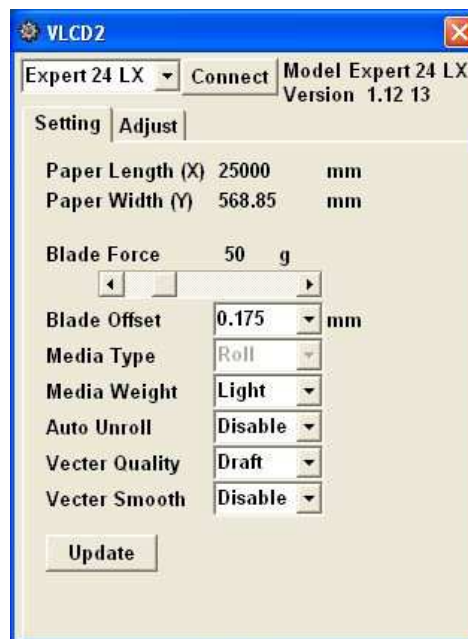


Figure 3-3

3.2.2 Functions of VLCD

Below are the functions adjustable in VLCD for Expert 24 LX.

- Poll Size
- Force
- Media Weight
- Offset
- AAS Offset
- Auto Unroll
- Update Setting

■ Poll Size

Click on the **Poll Size** button will reveal the X/Y values.



In the case, the maximum plotting length is 25000mm, and the distance between the farthest two pinch rollers is 568.85mm (Figure 3-4).

Figure 3-4

■ Force

To adjust the blade force between 0 and 250 (Default = 50).

■ Media Weight

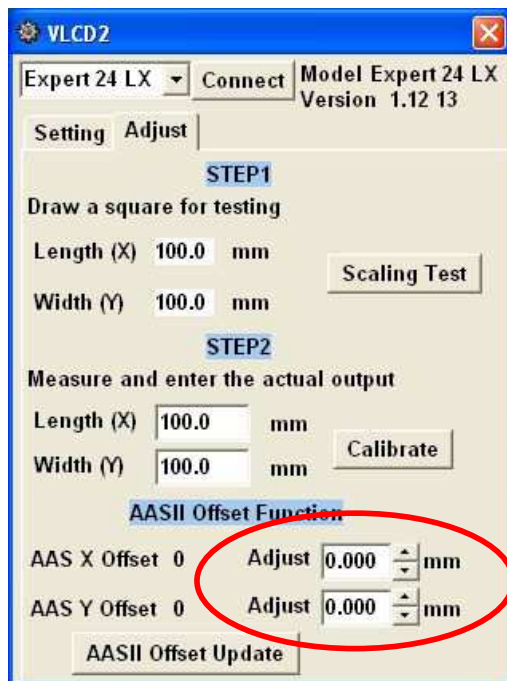
To choose different weights of media in two options: Heavy, and Light (Default).

■ Offset

To adjust the blade offset to ensure cutting quality in 8 options: 0.000, 0.175 (Default), 0.250, 0.275, 0.300, 0.500, 0.750, and 1.000.

■ AAS Offset

To set or modify AAS offset value.
You can refer to “5.3 Printer Test” for more details.



■ Auto Unroll

To switch options for sheet media (Auto Unroll Off: Default) and roll media (Auto Unroll On).

■ Update Setting

To apply the changed setting onto the cutter by presses the **Update Setting** button.

3.2.3

Restore factory default settings

VLCD allows you to turn all parameters to factory-default settings.

Step 1 Enter the USB-port switching mode by pressing “Pause”(2) after “On/Off line”(1) and then press “Origin Set” (3).



Step 2 Press the left key (4) and then up (5)



Step 3 You have now entered the Data clear and restoring default settings mode; press “Data clear” (6) and then “Origin Set” (7) to confirm.



Step 4 The default settings restoring process has been completed. All buttons will be ineffective before the cutter is rebooted.



Step 5 Restart your cutting plotter now.

3.3 File Uploader

3.3.1 Installation

- ✓ “File Uploader” is a tool to help loading files for direct output.
- ✓ The program **ONLY** supports HPGL format-files generated via GCC Cutter driver.
- ✓ Copy the GCC File Uploader.exe file in the Accessories folder of the Expert 24 LX’s Installation CD onto your local drive to finish installation.
- ✓ Launch GCC File Uploader by double-click on the icon (Figure 3-5).

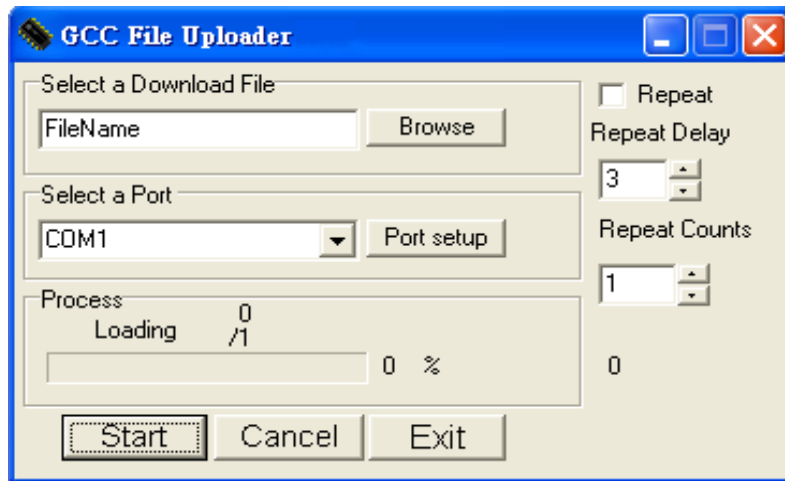


Figure 3-5

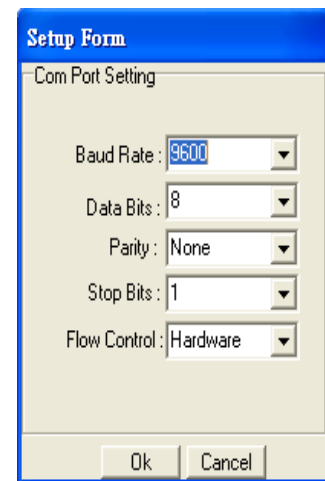


Figure 3-6

3.3.2 Functions of File Uploader

■ Port setup

- ✓ This function will be activated while choosing COM port for data transmission.
- ✓ Press the Port setup button to pop up the setup window for parameter change (Figure 3-6).

■ Repeat

- ✓ Activate this function by click on the Repeat’s checkbox.
- ✓ Repeat Delay – the pause time between jobs; Unit: second.
- ✓ Repeat Counts – the number of repeat jobs.

3.4 Data Transmission

There are two options to transmit the data from the computer to the cutting plotter:

Option 1: With proper interface settings, the data can be transmitted from your application software package to the cutting plotters directly.

Option 2: Most cutting software packages are able to emulate **HPGL** or **HPGL/2** commands, therefore. As long as the file is **HPGL** or **HPGL/2** format, the cutting plotter can output the data precisely.

3.5 Expert 24 LX Print Driver setting

3.5.1 Expert 24 LX Print Driver setting>Option Page

Die Cut

The Die Cut function must be activated with the Kiss Cut function to avoid the falling of cut-through materials and material jam beneath the carriage. Die Cut helps you to cut through the backing of the material while Kiss Cut cuts through only the top layer but not the backing. This will leave only tiny bits of the backing attached to the top layer, creating complete individual patterns with backing sheets (see figure 3-7 and 3-8).

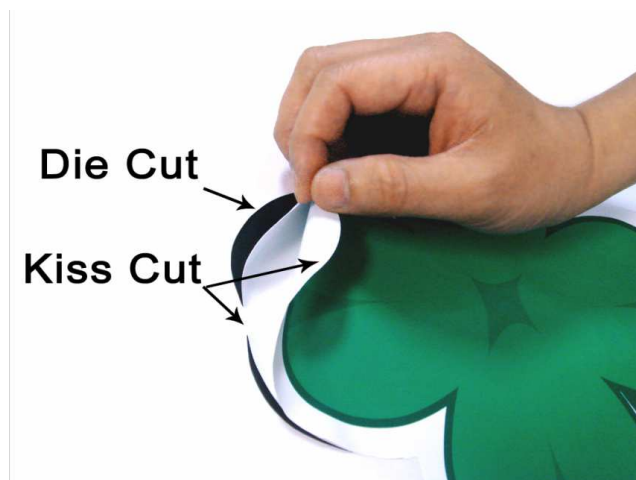
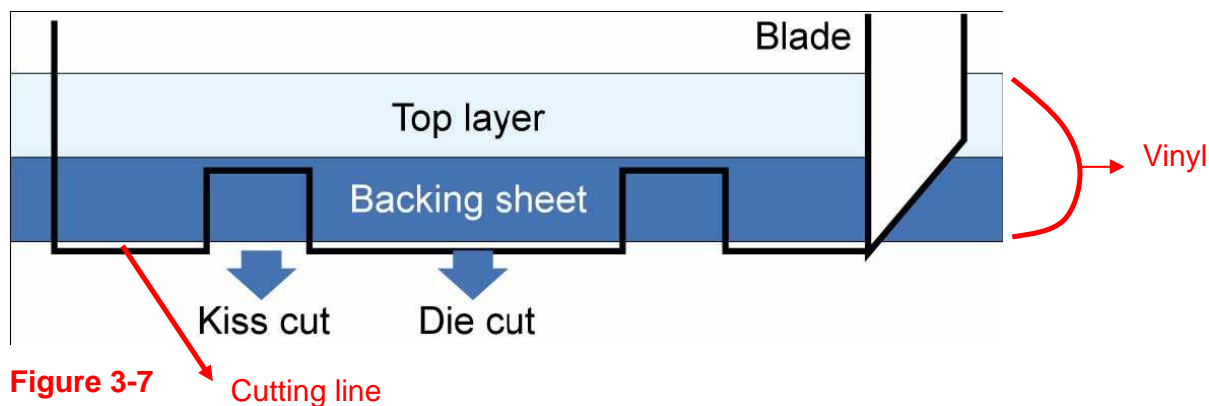
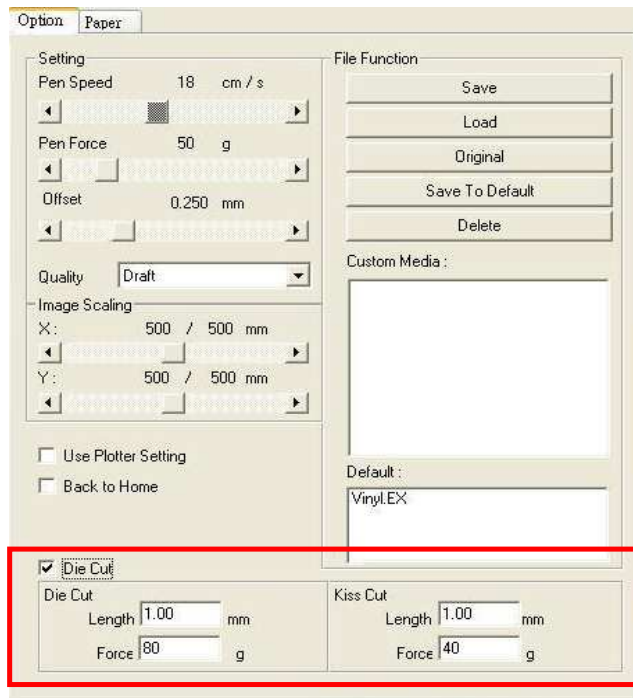


Figure 3-8

To activate the Die Cut function, go to “Option”, tick “Die Cut”, and enter the amount you wish for the “Length” and “Force” of both Die Cut and Kiss Cut, then click “OK” (see figure 3-9).

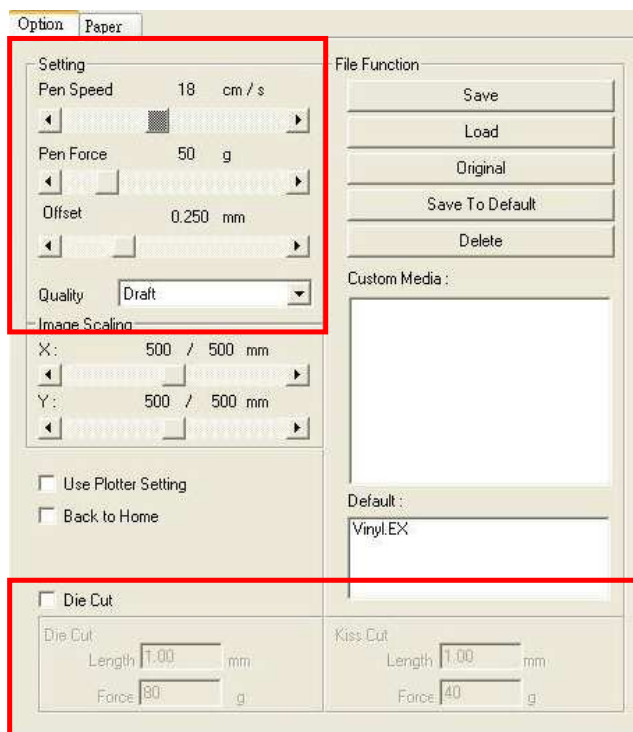


***Note:**

The length setting for the cutting line of Die Cut is in the range of 0-2000mm whereas that of Kiss Cut is 0-100mm.

Figure 3-9

When the job is completed and you untick the Die Cut function, you will be able to adjust the pen speed, pen force, and offset in the section on the top following normal operating procedures (see figure 3).



Note:

1. The extension of the blade has to be set to cut through both the top layer and the backing in the very beginning. You then adjust the tool force for the best cutting performance.
2. Once the Die Cut function is activated, it will perform on all the line segments on the object.

Figure 4

3.6 Reference Parameter setting for different materials

The following reference parameter is used on GCC verified materials shown in the table.

Material	Wall stickers	Magnets	Protective tint	
Blade	red	green	green	
Blade tip length (mm)	0.3	0.8	0.3	
Force (g)	95	580	320	
Speed (cm/sec)	72	3	3	
Offset (mm)	0.275	0.5	0.5	
Recommend model	RX, Jaguar	RX, Jaguar	RX, Jaguar, Puma, Bengal, Sable, Ex Pro, Ex 24/52, Ex 24/52 LX	
Material	Vehicle stickers	Reflective film	Cardboard	
Blade	red	green	green	
Blade tip length (mm)	0.27	0.5	0.3	
Force (g)	85	380	165	
Speed (cm/sec)	60	3	30	
Offset (mm)	0.275	0.5	0.5	
Recommend model	RX, Jaguar, Puma, Bengal, Sable, Ex Pro, Ex 24/52, Ex 24/52 LX	RX, Jaguar, Puma, Bengal, Sable, Ex Pro, Ex 24/52, Ex 24/52 LX	RX, Jaguar, Puma, Bengal, Sable, Ex Pro, Ex 24/52, Ex 24/52 LX	
Material	Window tint	Window decoration	Personalized stickers	Rhinestone
Blade	red	red	red	green
Blade tip length (mm)	0.09	0.25	0.28	0.8
Force (g)	70	95	105	190
Speed (cm/sec)	72	65	72	15
Offset (mm)	0.275	0.275	0.275	0.5
Recommend model	RX, Jaguar	RX, Jaguar	RX, Jaguar	RX, Jaguar IV, Puma III

4. Basic Maintenance

This chapter explains the basic maintenance (i.e. cleaning the cutting plotter) required for the cutting plotter. Except 24 LX for the steps mentioned below, all the other maintenances must be performed by a qualified service technician.

4.1 Cleaning the cutting plotter

In order to keep the cutting plotter under good conditions and have the best performance, you need to clean the machine properly and regularly.

Precaution in Cleaning



- ✧ Unplug the cutting plotter before cleaning.
- ✧ Never use **solvents, abrasive cleaners or strong detergents** for cleaning. They may damage the surface of the cutting plotter and the moving parts.

Recommended Methods

- ❖ Gently wipe the cutting plotter surface with a lint-free cloth. If necessary, clean it with a water-rinsed or an alcohol-rinsed cloth. Wipe the cutting plotter to remove any residues on the cutting plotter. Finally absorb water with a soft, lint-free cloth.
- ❖ Wipe all the dust and dirt from the tool carriage rail.
- ❖ Use a vacuum cleaner to clean any accumulated dirt and media residue beneath the pinch roller housing.
- ❖ Clean the platen, paper sensors and the pinch rollers with a water-rinsed cloth or alcohol-rinsed cloth. Finally absorb water with a soft, lint-free cloth.
- ❖ Use the same method mentioned above to clean dust and dirt from the stand.

4.2 Cleaning the Grid Drum

- ❖ Turn off the cutting plotter, and move the tool carriage away from the area needed to be cleaned.
- ❖ Raise the pinch rollers and move them away from the grid drum for cleaning.
- ❖ Use a bristle (a toothbrush is also acceptable) to remove dust from the drum surface. It needs to rotate the drum manually to clean the drum completely (Figure 4-1).

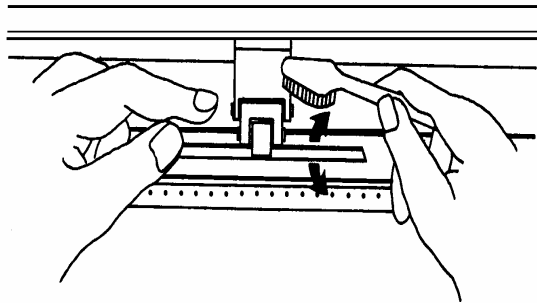


Figure 4-1

4.3 Cleaning the Pinch Rollers

If the pinch rollers need a thorough cleaning, use a lint-free cloth or cotton swab to wipe away the accumulated dust from the rubber portion of the pinch rollers. To prevent the pinch rollers from rotating while cleaning, use your fingers to hold the pinch rollers in place.

Use a lint-free cloth or cotton swab rinsed with alcohol to remove the embedded or persistent dust.

Chapter 5 Automatic-Aligning System

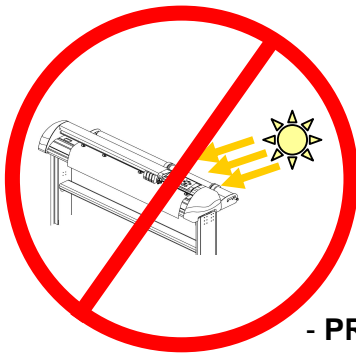
Please note that this chapter is only an instruction to AASII; for step-by-step instructions, please refer to the following chapters: 07_A-3 CorelDraw Plug-In, 07_A-4 GreatCut, 07_A-5 Illustrator.

5.1 Introduction

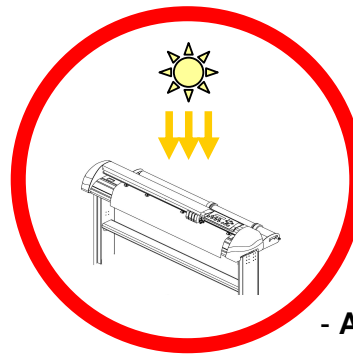
The Expert 24 LX cutting plotters feature a standard Automatic-Aligning System (AAS II) to guarantee precise contour cutting quality by detecting the registration marks printed around the graphic.

Notice

- Avoid any kind of light source horizontally illuminating the AAS module.



- PROHIBITED



- ACCEPTABLE

- DO NOT take off the cover of AAS module while in operation.



- PROHIBITED

5.2 AAS Calibrating the System

The AAS system has one calibration procedures to ensure maximum accuracy of AAS operation. To operate the AAS you need to learn about the method of media feeding firstly. (Refer to 2.4 Media Loading.)

5.2.1 Media Calibration

Media Calibration is to ensure the sensor being able to recognize the registration marks. The factory default works on a wide range of materials. However, certain types of materials may not work properly. Performing a media calibration may become necessary while working with such materials to change the sensitivity of AAS for greater reliability. Media calibration adjusts the media feeding according to media type for better accuracy during cutting.

■ When to use

We suggest white media for best cutting result. It is not necessary to perform media calibration every time unless the registration marks on the printed media become undetectable in AAS sensing process.

5.2.2 AAS Calibration

The first registration mark is designed to be different in order to identify the origin for AAS auto-detection. The following precaution must be aware for registration marks to be read automatically.

- Type of media
- Registration mark pattern
- Reading range required for detection the registration marks
- Position for registration marks and medium

The registration marks have to be:

- Created by cutting software like GreatCut or GCC CorelDRAW plug-in
- In black color (printing quality of registration marks is essential; incorrect, misaligned colors, blurry or smeared printout might leading to inaccurate cutting result)
- Length: The length of marks
 - Range: 5mm~50mm
 - Optimized Setting: 25mm
- Thickness: The line thickness of marks
 - Range: 1mm~2mm
 - Optimized Setting: 1mm

- Margin: The distance between marks and images
 - Range: 0mm~50mm
 - Optimized Setting: 5mm

The cutter can not detect the marks while:

- Cutter carriage is not located near the outside area of first mark before detecting (See the picture in page 5-7 for auto-detecting area of first mark.)
- Medium thickness is more than 0.8mm
- Transparent medium is used
- Non-monochrome drawing. The marks can't be read if is printed on colored medium
- Dirty or creased medium surface

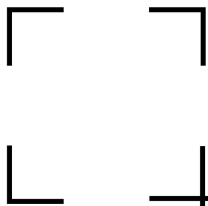
5.2.3 AAS II on Expert 24 LX

There are three types of AAS II mark patterns: 4-Point Positioning, Segmental Positioning, and Multiple Copies. Note that before print out your designs by inkjet printers, the registration marks have to be created on your graphic designs by cutting software like SignPal, GreatCut or GCC CorelDraw plug-in. *Hand-made marks or drawings won't be reorganized by GCC cutting plotters.* For more details about registration mark setting in cutting software, please refer to 'Appendix A-3 : CorelDraw Plug-In Instruction' and 'Appendix A-4 : GreatCut Instruction'.

1. 4-Point Positioning

This is the basic mark pattern that AAS II will auto detect four registration marks and contour cut images inside those marks.

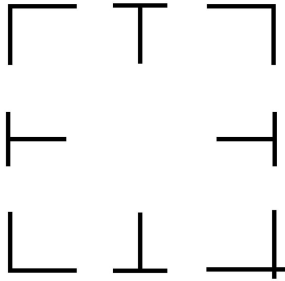
- Command: Esc.D1;(XDist);(YDist):
- Layout: 4 L-shaped marks at the 4 corners around the design



2. Segmental Positioning

In addition to 4 original points, the intermediate registration marks are added on both X axis and Y axis to help contour cut accurately, especially for cutting large images.

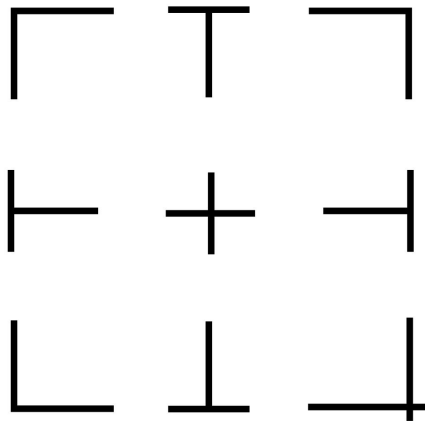
- **Command:** Esc.D2;(XDist);(YDist);(XStep);(YStep):
- **Layout:**
 - In-between distance on X: 200~600mm, default 300mm
 - In-between distance on Y: 200~600mm, default 300mm



3. Multiple Copies

The function is used to duplicate images to let you cut quantities of images at a time. The AAS II sensor will automatically scan registration marks for each individual image to ensure the contour cutting precision.

- **Command:** Esc.D3;(XCopies);(YCopies);(Space):
- **Layout:**



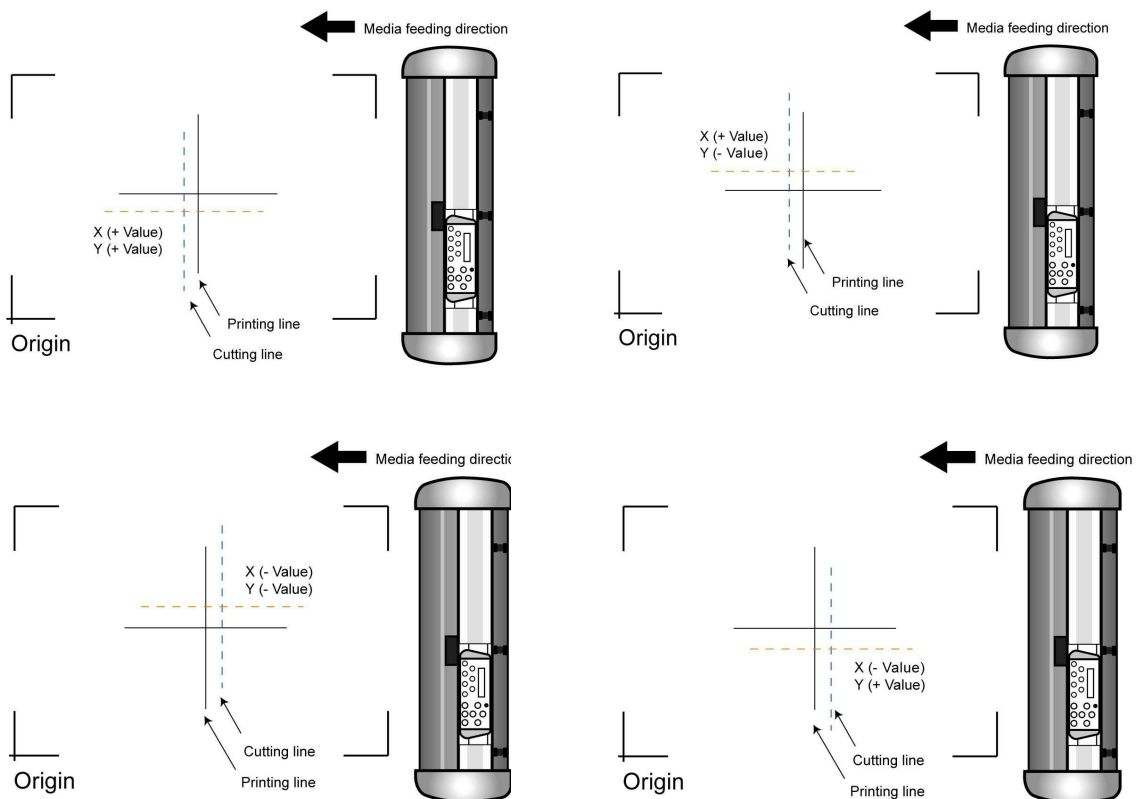
5.3 Printer Test

Before performing AAS contour cutting, it's recommended to print out a test file that you can find in the enclosed Installation CD to make sure the AAS II cutting accuracy of Expert 24 LX.

There are two testing files for AASII:

1. AAS II_X_Y_Offset_Caberation_A4 .eps (A4 size)
2. AAS II_X_Y_Offset_Caberation_600_600 .eps (Default setting, it is recommended for testing)
 - Print out the testing graphic. (Please use high precision printer)
 - Load the graphic to Expert 24 LX and sent the file to test the cutting job

- If there are any adjustments to be made, you can change the offset value by following the steps:
 - Measure the offset values from the printed line and the actual cutting line.
 - Enter the AAS Offset under MISC function for the values you just measured, then press Enter
 - Test the cutting again
 - AAS II offset X and Y value is defined as following:
Horizontal line is defined as X and vertical is defined as Y (when facing the cutting plotter)
 - When the actual cutting line and the printed line need to be changed towards the direction of origin mark, then simply add the negative value of the offset. If the direction is from the opposite of the origin mark, then enter positive values for the offset (see the following figures). This method applies to both X and Y axes.

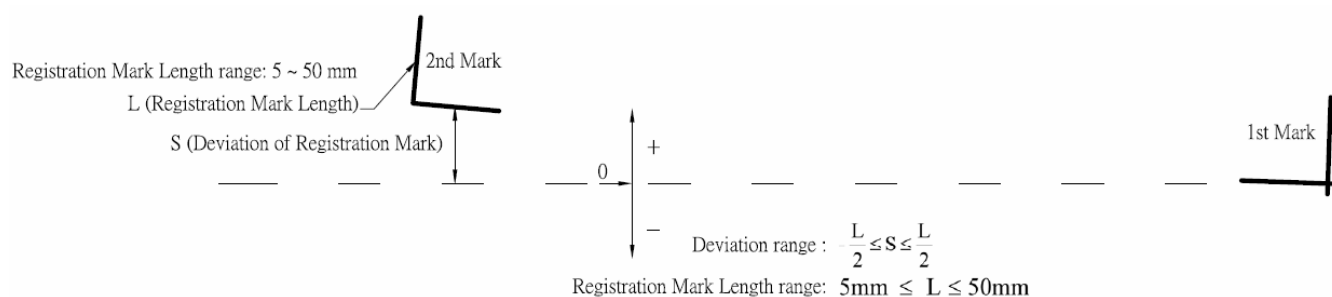


Note:

- Before adjusting the AAS II settings, please proceed scaling for width and length.
- The blade offset value isn't set for this test graphic, please set it according to the blade you use.
- If you have any question, please contact us or your local distributor for assistance.

5.4 Registration Mark Offset Range

Please correctly load your media (refer to the alignment ruler on the platen) to make sure the registration marks are successfully detected. Deviation exceeds the range below will lead to detection failure.



5.5 Contour Cutting

For accurate contour cutting with AAS function, please proceed the following steps:

Step 1 Creating Graphics

- Create the graphic that you want to print and cut in your software.



- Create a contour for cutting around the graphic.



TIPS1: Leave some space between the graphic and contour line.

TIPS2: Create the contour in a separate layer and assign a different color for it.

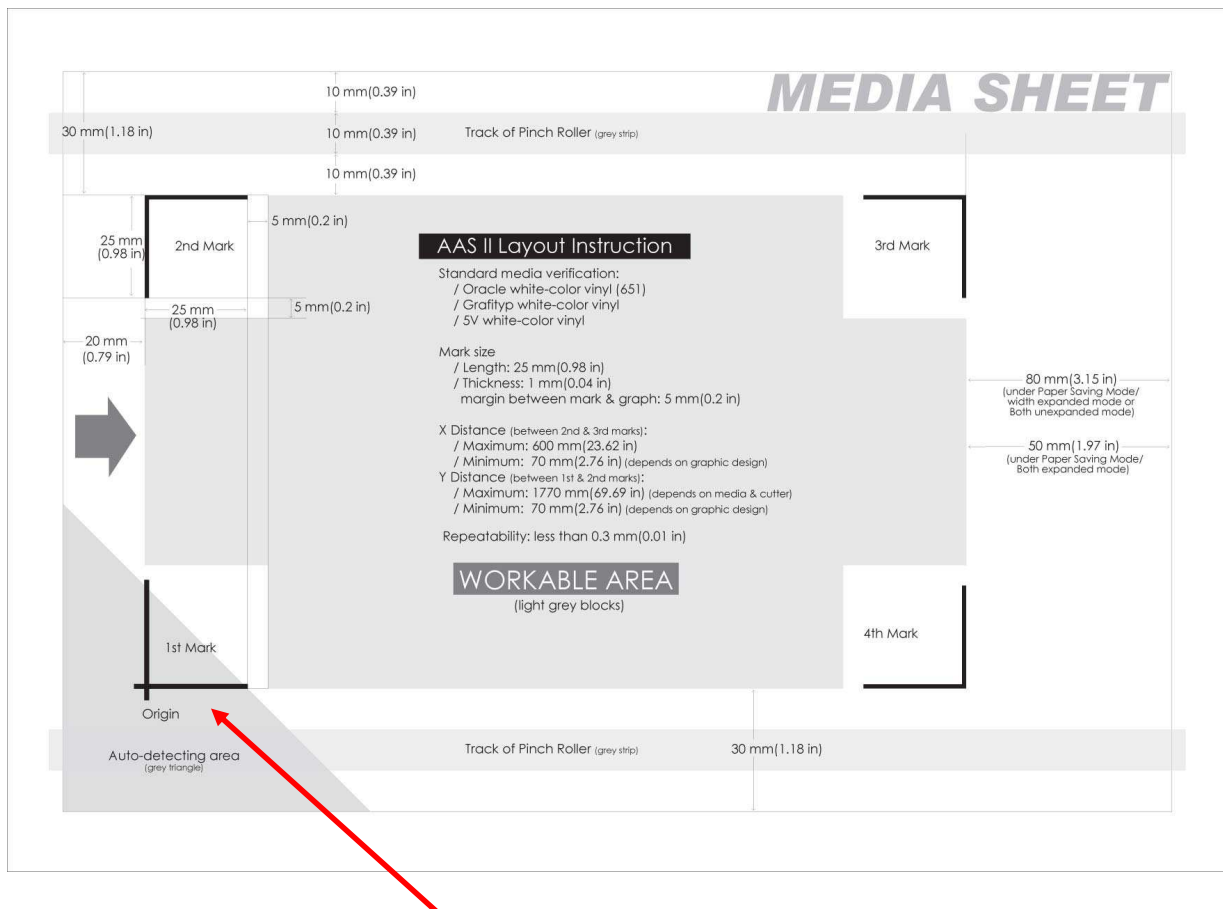
- Add registration marks around the graphic.

Note:

The Multiple Copies function is also available. It automatically copy the graphic and registration marks.

Step 2 Placing the Registration Marks

- The AAS Layout Instruction:



* The Auto Detection function will succeed as long as the carriage is positioned within the grey area.

- It is recommended to leave a 30mm left/right margin, 20mm margin on the top of the media sheet, and a bottom margin of at least 50mm to avoid sheets from

dropping off or other errors that may occur during media sizing.

- Please note that the position of the 1st AAS registration mark should not be located within the area indicated by the yellowish part of the sticker on the main beam in Expert 24 LX cutting plotter. If the registration mark is located in the yellowish part of the sticker then the registration mark will fail to be detected.

Step 3 Print the Graphics

- Print the graphic and the marks with your printer

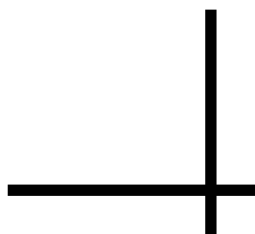


(Scaling = 100%).

- When printing on a roll media, make sure the orientation as following:

Step 4 Load the printout onto cutter

- The Origin Mark is different from the rest registration marks. Please make sure the media is fed with correct direction.



Step 5 Cut the Contour

- Send out the command from software to perform the contour cutting job.

5.6 Tips for AAS

For getting better results of contour cutting, there are some tips below for your reference.

- Keep light sources simple and avoid illuminating from the sides of cutter.
- Before operating AAS, change the maximum paper size in Expert 24 LX driver property.

STEP 1 Find the **Expert 24 LX model** in the “Printer & Fax” folder of your PC.

STEP 2 Open the Properties window and select the “Paper” tab.

STEP 3 Change the maximum Paper Size of X to **1200mm**.

- Adjust the cutting speed to between 200~400mm/sec.
- Avoid the registration marks locating on the tracks of pinch rollers.

6. Trouble Shooting

This chapter helps you to correct some common problems you may come across. Prior to getting into the details of this chapter, please be sure that your application environment is compatible with the cutting plotter.

Note:

Before contacting your local dealer, please make sure that the problems are coming from your cutting plotter, not from the communication between the computer and cutting plotter or from a malfunction in your computer or software.



Why doesn't the cutting plotter operate?

6.1 What if Expert 24 LX cannot operate?

If your cutting plotter doesn't plot, please check the following items first:

- Is the power cord plugged in properly?
- Is the power cord connected to the power connector properly?
- Is the power switch turned on properly?

Solutions: If the POWER LED lights on, the cutting plotter should be in a normal condition.

Turn off the cutting plotter and turn it on again to see if the problem still exists.

If the POWER LED doesn't light, please call your local dealer to resolve this problem.







6.2 Light Indicators

Some of the operating problems can be identified by the lights on the control panel.

When your cutting plotter stops operating or the lights are on or flashing unexpectedly, see the following descriptions of the panel light patterns and the actions you should take.

6.2.1 Warning Indicators

When the ERROR LED flashes (as shown below), take the necessary actions according to the following instructions. When the problems are solved, the ERROR LED will turn off automatically. Pressing the ON/OFF LINE button can also turn off the ERROR LED.

Warning Indicators		ERROR	ON/OFF LINE	REPEAT	DATA CLEAR	CUT TEST
1	Graph was clipped		●	●	○	○
2	HPGL/2 command Error		●	○	●	○
3	Lever up or no media		●	○	○	○
4	Cannot repeat		○	●	○	○
5	Communication error		○	○	●	○
6	Width sensor error		○	○	○	●
7	Check media, drum or X motor	●	○	○	●	○



= flash



= on



= off

Warning 1 The graph is clipped

This condition indicates that the cutting graph is bigger than the cutting area.

You can solve the problem by:

1. Reload a wider or longer media.
2. Move the pinch rollers to widen the cutting area.
3. Re-scale the graph to a smaller size. Then send the cutting job again from your computer to the cutting plotter.

Warning 2 HPGL/2 command error

If the cutting plotter cannot recognize the commands from your computer, please check the commands applied to your cutting plotter in the HP-GL/2 or HPGL commands. Then send the same job to the cutting plotter again.

If that doesn't solve the problem, please contact your local dealer.

Warning 3 Lever up or no media

Check that you have lowered the lever down and make sure that you load the media before cutting.

Warning 4 Cannot repeat cutting

There are two possibilities:

1. There is no data in the buffer: please send the job again from your computer;
2. The buffer is full: please send the same job from your computer again.

Under both conditions, press the ON/OFF LINE key to clear the warning message.

Warning 5 Communication error

Check that the serial/USB cable has been connected to the cutting plotter and computer properly.

If so, then check whether the interface settings are correct. Check that the communication settings in your PC are the same as the ones on your cutting plotter (for example – 9600bps, no parity, 8 bits, 1 stop bit). Then, press ON/OFF Line key to switch back to On Line mode.

Warning 6 Width sensor error

Check that the pinch rollers are positioned above the grid drum and reload the media again.

Note:

In order to identify the warning messages easily, please stick the warning sticker (in accessory box) on the side cover of your cutting plotter.

6.2.2 Error Indicators

If some mechanical problems occur during the operation, the ERROR LED will turn on. Please follow the instructions below to solve the problem. If the cutting plotter still cannot work, please contact your local dealer and tell him or her about the error indicator.

	Error Indicators	ERROR	ON/OFF LINE	REPEAT	DATA CLEAR	CUT TEST
1	SRAM error	●	●	○	○	○
2	DRAM error	●	○	●	○	○
3	Check media, drum, or X motor	●	○	○	●	○
4	Check media or Y motor	●	○	○	○	●



= flash

● = on

○ = off

Error 1 and 2

Please contact your local dealer to replace SRAM or DRAM.

Error 3 Check the media, drum or X-motor (Drum driven motor)

This message indicates that there might be a problem on the **X-axis**.

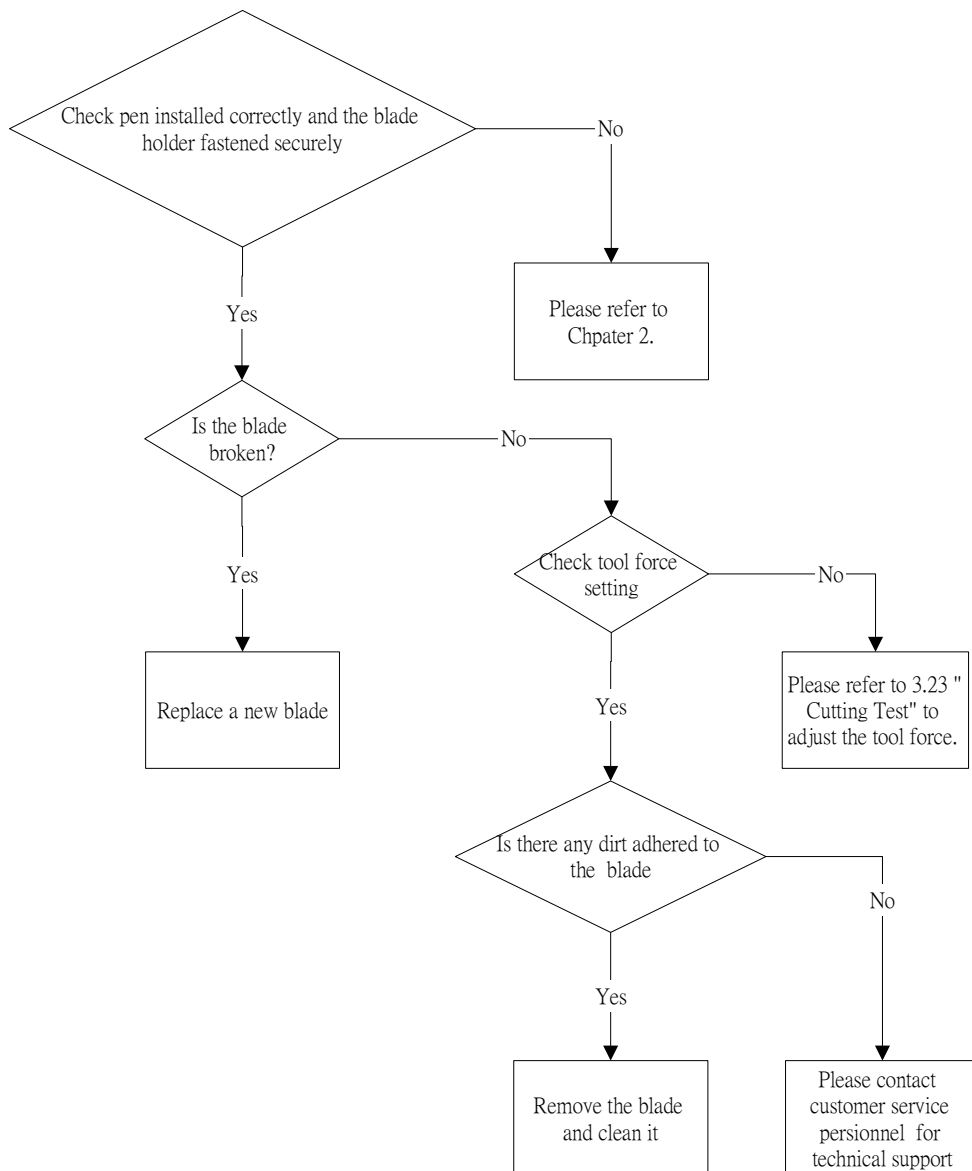
Please check that the drums are working normally and see that the media is well loaded. Then turn on the power and reboot the cutting plotter.

Error 4 Check the media, or Y motor (carriage driven motor)

This message indicates that there might be an obstruction to the carriage relating to a problem on the **Y-axis**.

Please clear the obstruction and check that the carriage can move smoothly. Then turn on the power and reboot the cutting plotter.

6.3 Cutting Quality Problems








Expert 24 LX Specification

Model	EX-24 LX	
Max. Cutting Width	600mm (23.6")	
Max. Media Width	719mm (28.3")	
Material Thickness	0.8mm	
Max. Cutting Force	250g	
Max. Cutting Speed(Diagonal)	400 mm /sec (15.7"/sec)	
Mechanical Resolution	0.012 mm	
Software Resolution	0.025 mm	
Distance Accuracy	± 0.254 mm or $\pm 0.1\%$ of move, whichever is greater	
Repeatability	± 0.1 mm	
Re-plot Memory	500 Kbyte	
Interfaces	USB 2.0 (Full Speed) & RS-232	
Commands	HPGL, HPGL/2	
Configurable Origin	Yes	
Control Panel	6 LEDs/10 Keys	
Stand	Optional	
Automatic-Aligning System	Completely Automatic Contour Cutting System for print to cut solution	
Operation Environment	Temperature	15°C~30°C / 60°F~86°F
	Humidity	25% ~ 75%

- Compatible with Windows 2000/ XP/ Vista/ 7/ 8 and MAC OS X 10.4-10.7.
- The specification and data sheet may vary with different materials used. In order to obtain the best output quality, please maintain the machine regularly and properly.
- GCC reserves the right to change the specifications at any time without notice
- The above listed specification values are effective only when operated with media certified by GCC.

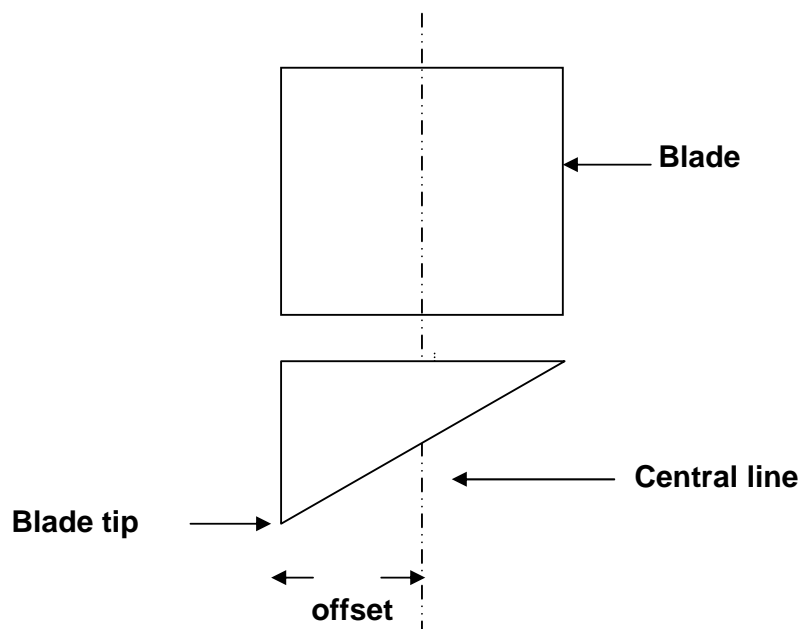
Blade Specification

20200159G	For cutting thick fluorescent and reflective vinyl. Also for cutting detailed work in standard vinyl.
	The blade is 45° with Red Cap (5-unit package), 0.25 mm offset
	
265012020G	For cutting reflective vinyl, cardboard, sandblast, flock, and stencil sharp edge.
	The blade is 60° with Green Cap , 0.50 mm blade offset
	
26500059G	For cutting thin sandblast mask and stencil with friction feed or sprocket feed machine.
	The blade is 60° with Blue Cap , 0.25 mm blade offset
	
26500060G	For Cutting small text and fine detail. Sharp blade with smallest offset.
	The blade is 0.175 mm blade offset with Black Cap
	
265012840G	For thin and delicate media such as window tint.
	The blade is 25° with Yellow Cap , 0.25 mm blade offset
	

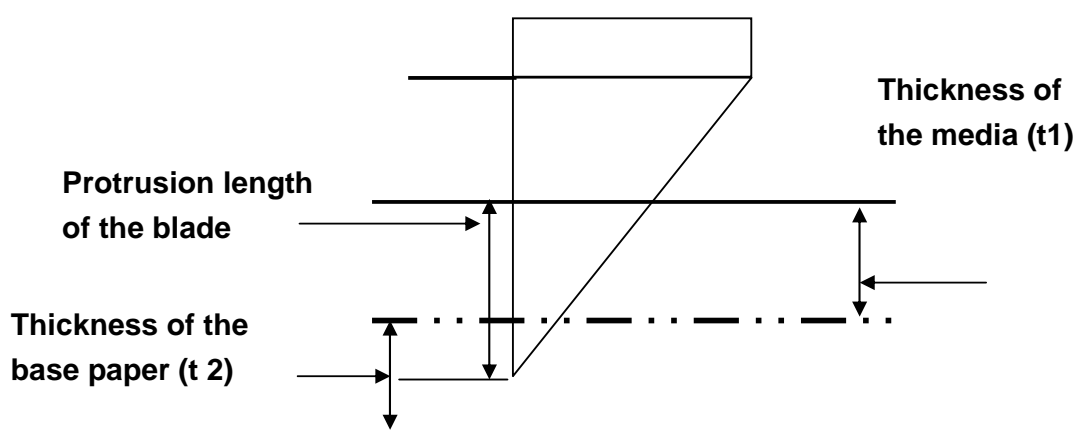
About the Tool

A generic term referring to the blade that cuts the sheet, the pen that does plotting, and the LED bombsight (option) used for pointing to the reference point.

OFFSET is the distance that the blade tip is displaced from the centerline of the blade.



Protrusion Length of the Blade



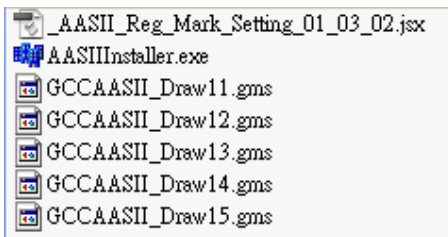
Length of protrusion = $t_1 + t_2 / 2$, but for your convenience you may just make it about 0.3mm ~ 0.5mm beyond the blade holder tip.

CorelDRAW Plug-In Instruction

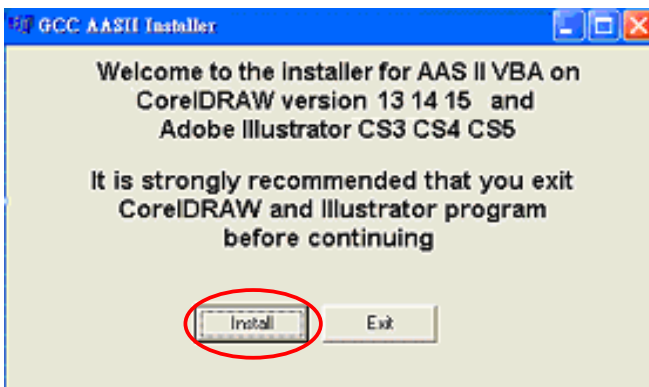
AASII VBA Installer is applicable for CorelDRAW Version 13, 14, 15, 16

Installation

1. Check the “AAS CorelDraw Installer” folder in Jaguar IV Installation CD, and double click the “AASIIVBAInstaller.exe” file to run the installation program.

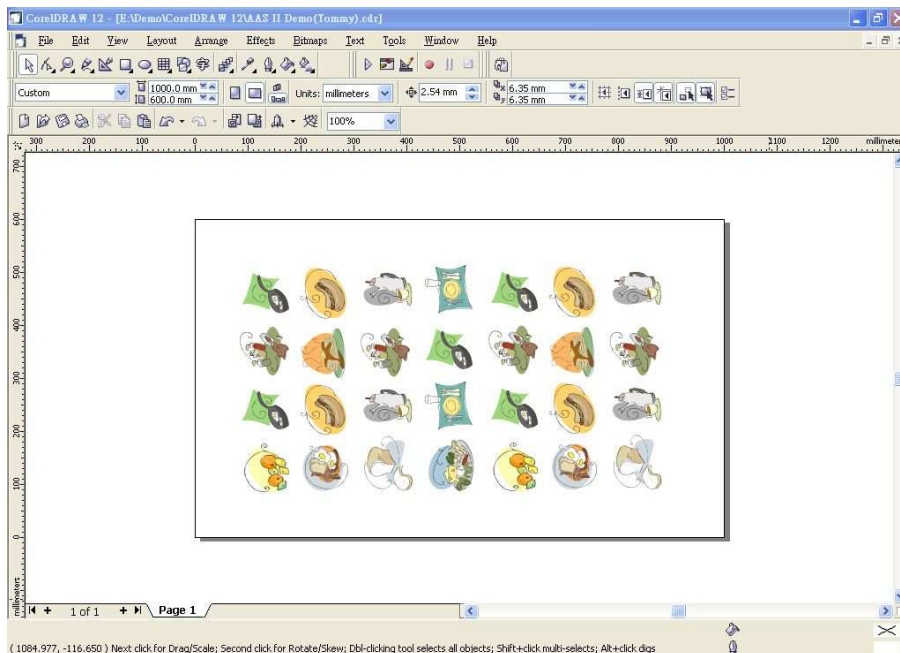


2. Press the “Install” button to begin installing GCC AASII CorelDRAW VBA.

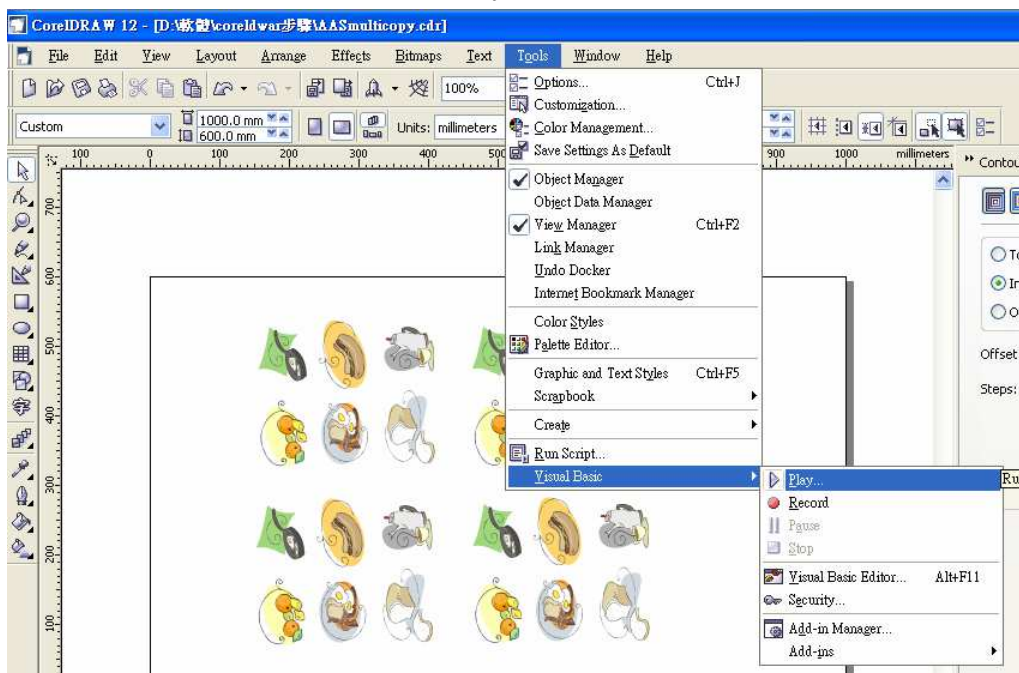


User Instructions

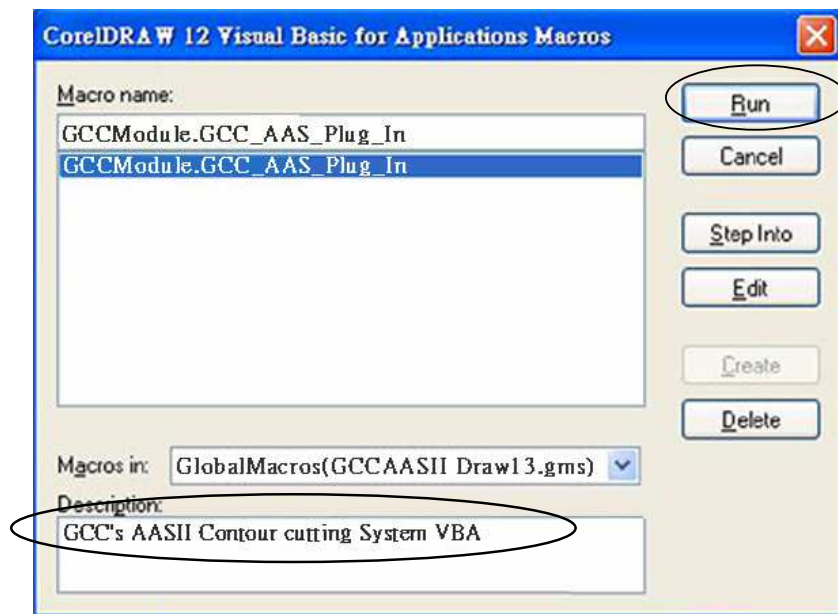
1. Run CorelDRAW to edit your graphics and select all images at once when you wish to plot.



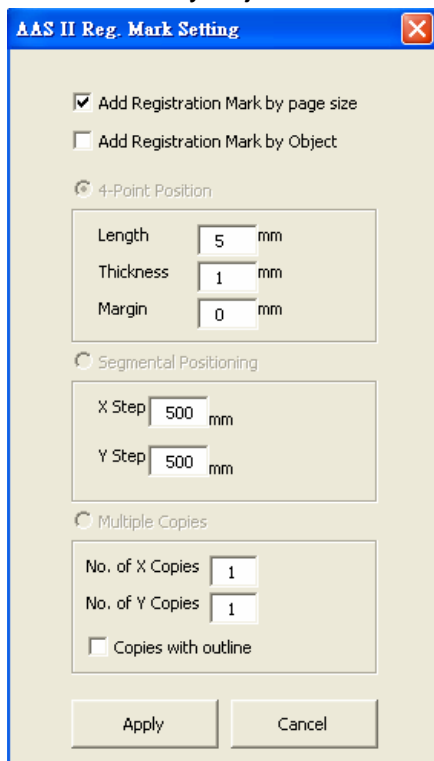
2. Select "Tools→Visual Basic→Play".



The **Visual Basic for Applications Macros** window will pop up. Select **Global Macros(GCCAASII_Draw13.gms)** under the “Macros in” manual, and press “Run”.



- Click on “Apply” and select whether you would like to add the registration marks by page size or by object.



Note: “Add Registration Mark by Object” will be the default selection if you click on the image whereas “Add Registration Mark by page size” will be the default one when the blank area on the page is clicked.

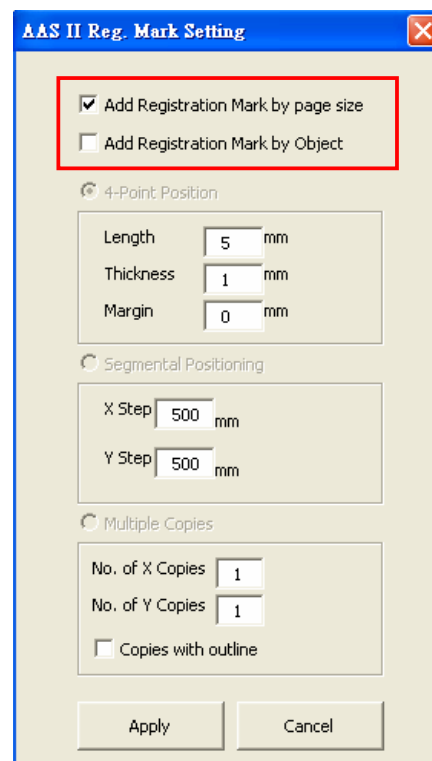
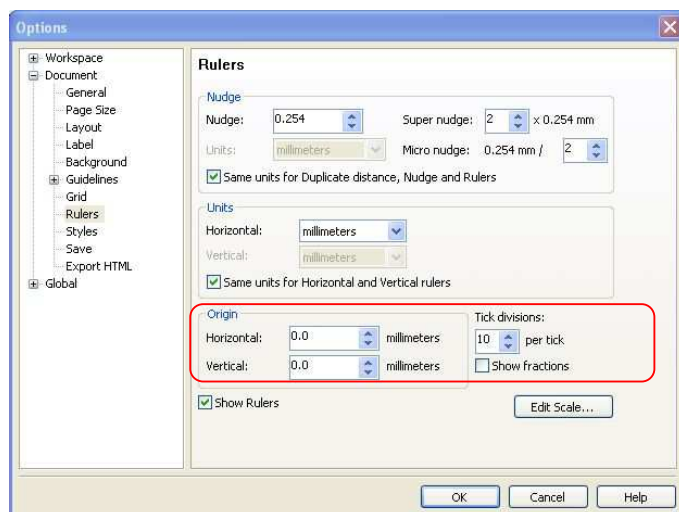
- Now you can print out the image file with registration marks.

Add Registration Mark by page size

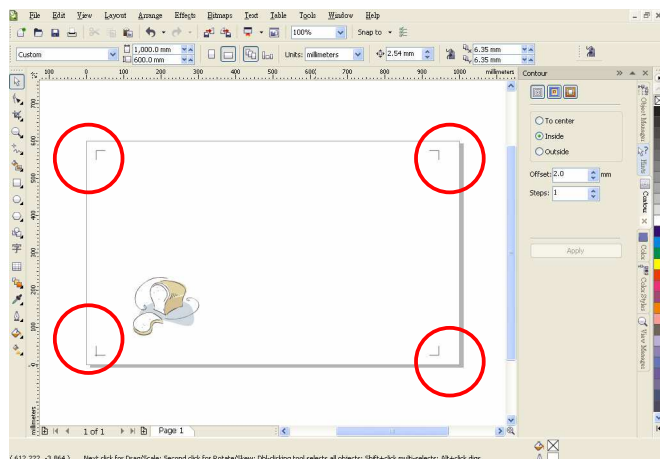
If you tick “Add Registration Mark by page size” as shown in the figure below and click “Apply”, your registration marks will be created automatically.

Note:

1. The length setting will be in the range of 5-25mm according to your page size.
2. Please DO NOT make any changes to the “Origin” section when you choose to add registration marks by page size as indicated below otherwise the position of the marks will be changed.



The system will create the 4 marks on the 4 corners of the page as shown in the picture below wherever you move your image.

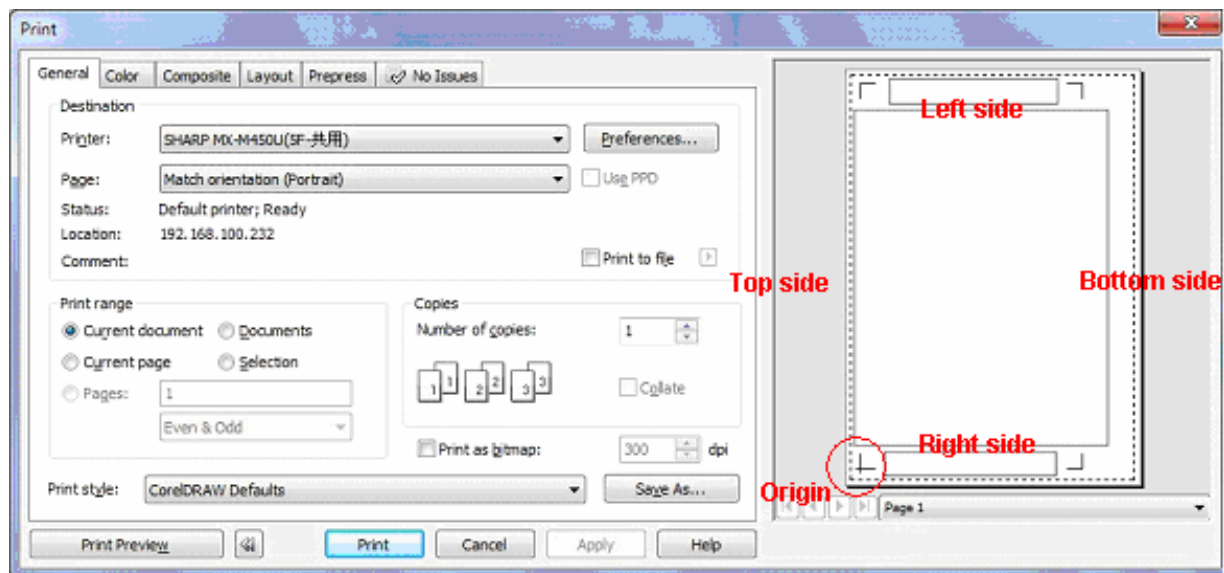


Workable area

It allows users to extend the registration mark when editing graphics.

For A4 size media sheet, the workable area is 2.5mm extended from the registration mark on left and right sides and 4.5mm extended from the registration mark on top side. On the bottom side, it is suggested to leave at least 25mm margin from the edge of media sheet to prevent sheets dropping or any error occurred while media sizing.

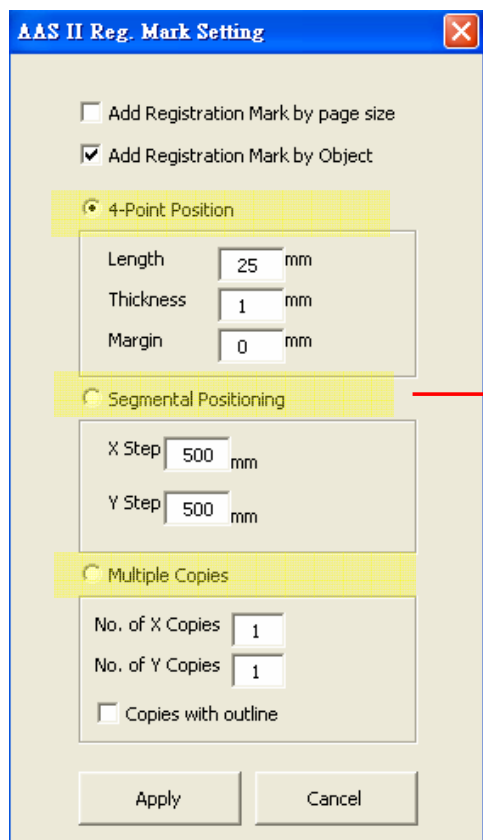
For A3 size media sheet, the workable area is 10mm extended from the registration mark on the left side, 9mm extended from the registration mark on the right side and 11mm extended from the registration mark on top side. On the bottom side, it is suggested to leave at least 25mm margin from the edge of media sheet to prevent sheets dropping or any error occurred while media sizing.



NOTE: Select “**Edge**” mode when media sizing to allow the media sheet to be unrolled. If you select “**Single**” mode, the media sheet will not be able to be moved back and hence fail to be detected by front paper sensor.

Add Registration Mark by Object

If you tick “Add Registration Mark by Object”, you will be offered three options of registration marks as shown below.



4-Point Positioning

- Length: The length of marks
→ Range: 5mm~50mm
→ Optimized Setting: 25mm
- Thickness: The line thickness of marks
→ Range: 1mm~2mm
→ Optimized Setting: 1mm
- Margin: The distance between marks and images
→ Range: 0mm~50mm
→ Optimized Setting: 5mm

Segmental Positioning

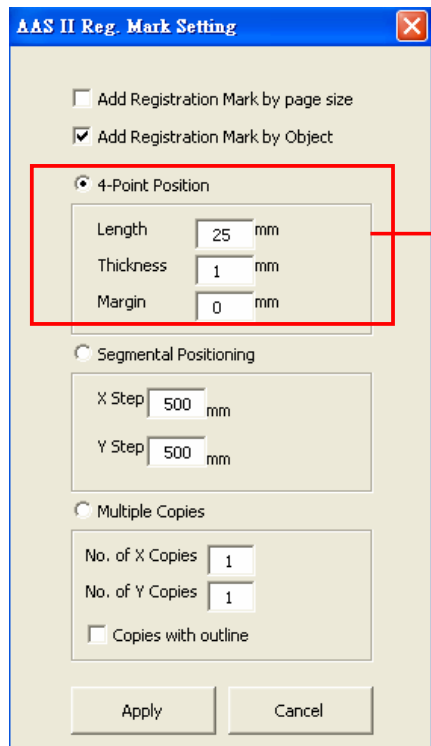
- X Step: The distance of intermediate position on the X axis
- Y Step: The distance of intermediate position on the Y axis
→ Range: 200mm~600mm
→ Optimized Setting: Less than 500mm

Multiple Copies

- No. of X Copies: The numbers of copies on X axis
- No. of Y Copies: The numbers of copies on Y axis
→ Range: 1~50. (The more copies you make, the more time is needed for data transmission.)
→ Numbers of X Copies * Numbers of Y Copies = The total amount of image copies
- Copies with outline: To show outlines of image graphics

Note: The values entered in the “4-Point Positioning” section (length, thickness and margin) will still be applied when you tick “Segmental Positioning” or “Multiple Copies”.

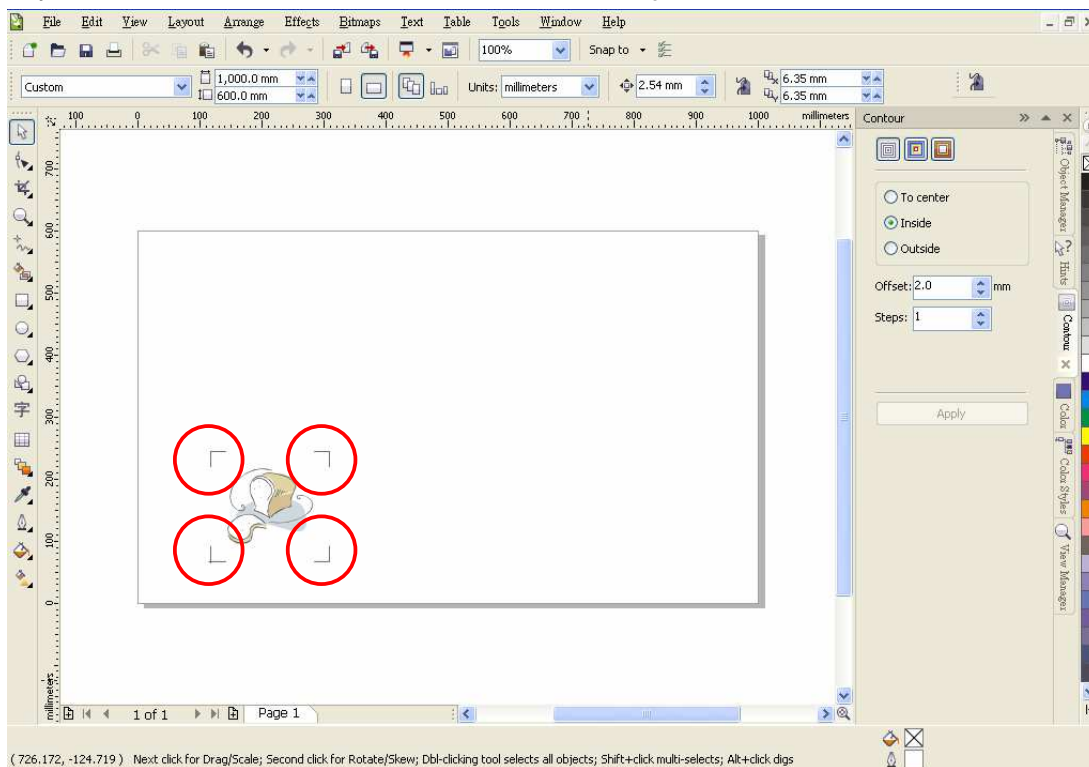
4-Point Positioning



4-Point Positioning

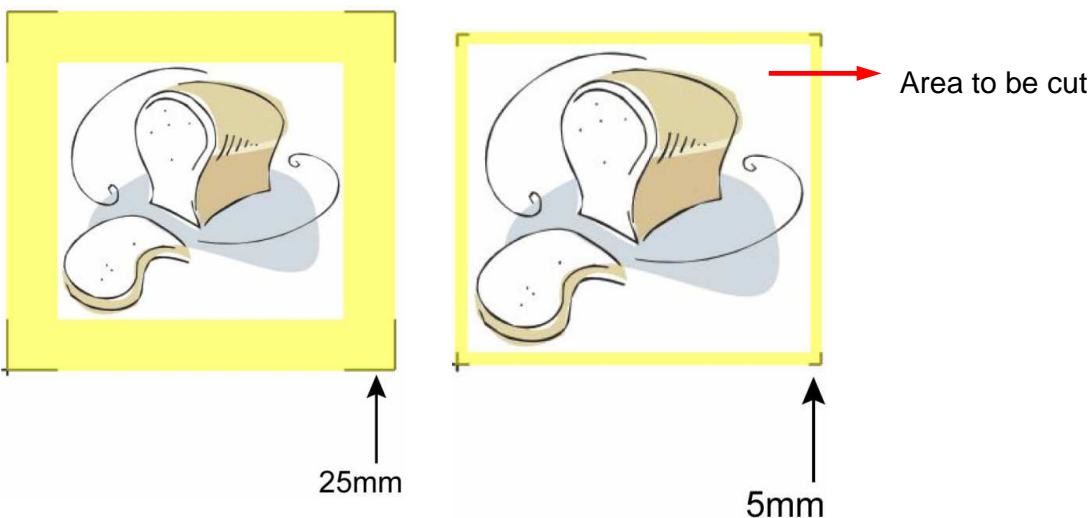
- Length: The length of marks
→ Range: 5mm~50mm
→ Optimized Setting: 25mm
- Thickness: The line thickness of marks
→ Range: 1mm~2mm
→ Optimized Setting: 1mm
- Margin: The distance between marks and images
→ Range: 0mm~50mm
→ Optimized Setting: 5mm

The system will create the 4 marks as shown in the picture below.



Note:

To save your materials, in addition to amending object margins, you can also adjust the length of the registration marks (5mm minimum) when you apply 4-Point Positioning (see table 1 for suggestions based on different material sizes). The smaller the size is, the smaller the distance between the object and the registration marks is (see the figures below).



Page size (unit: mm)	Suggested mark length (unit: mm)
A6 (105 x 148)	5
A5 (148 x 210)	8
A4 (210 x 297)	11
A3 (297 x 420)	16
A2 (420 x 594)	23
A1 (594 x 841) and above	25*

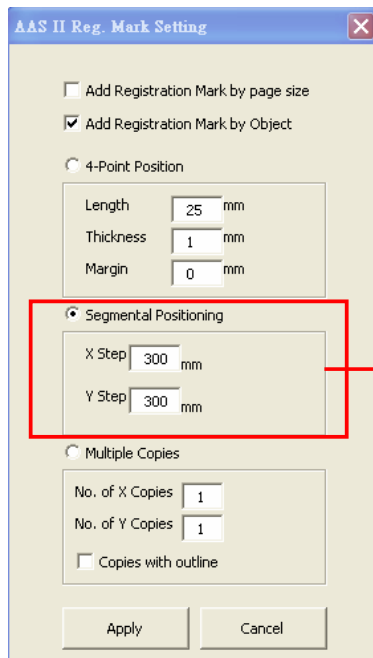
Table 1

*25mm is the suggested value for the registration mark length

2. The size of the registration marks would affect the accuracy of registration mark detection so please make sure the amount you enter is reasonable.

3. If you change the paper size, you will have to reset the registration marks otherwise the previous setting will be applied.

Segmental Positioning

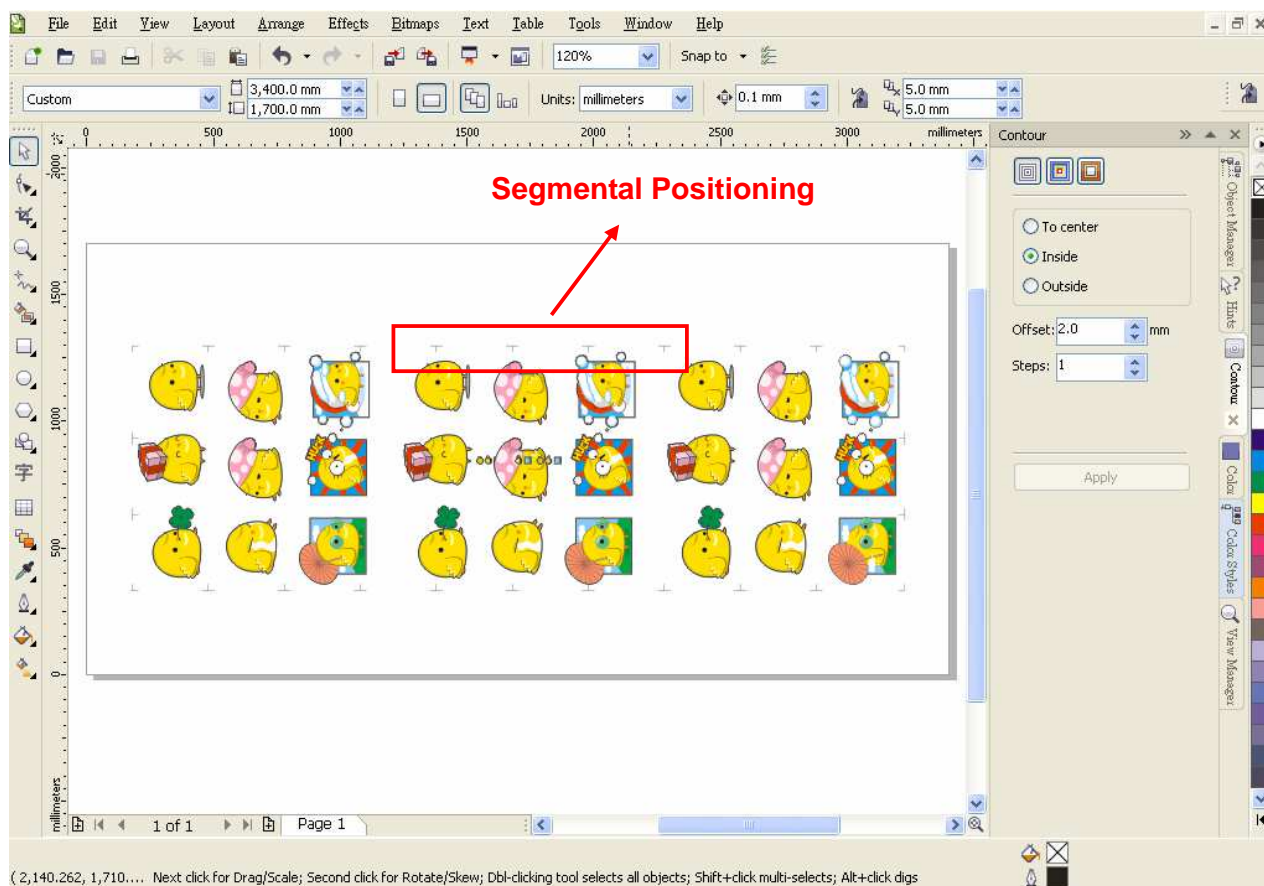


For precise cutting quality, it is suggested to select “Segmental Positioning” when you are working on an extra long or large-sized image to increase cutting accuracy.

Segmental Positioning

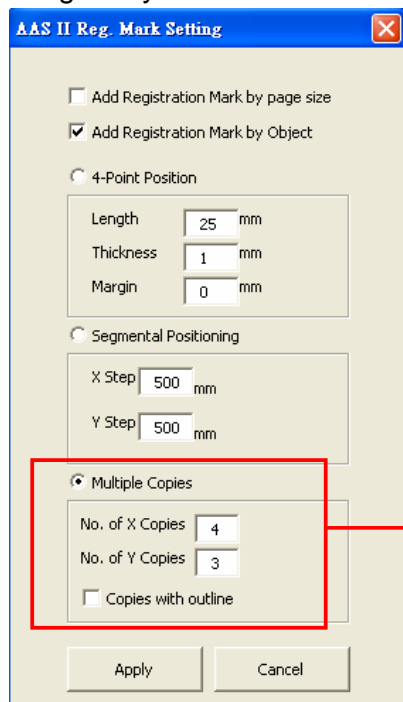
- X Step: The distance of intermediate position on the X axis
- Y Step: The distance of intermediate position on the Y axis
 - Range: 200mm~600mm
 - Optimized Setting: Less than 500mm

The system will create the as shown in the picture below



Multiple Copies

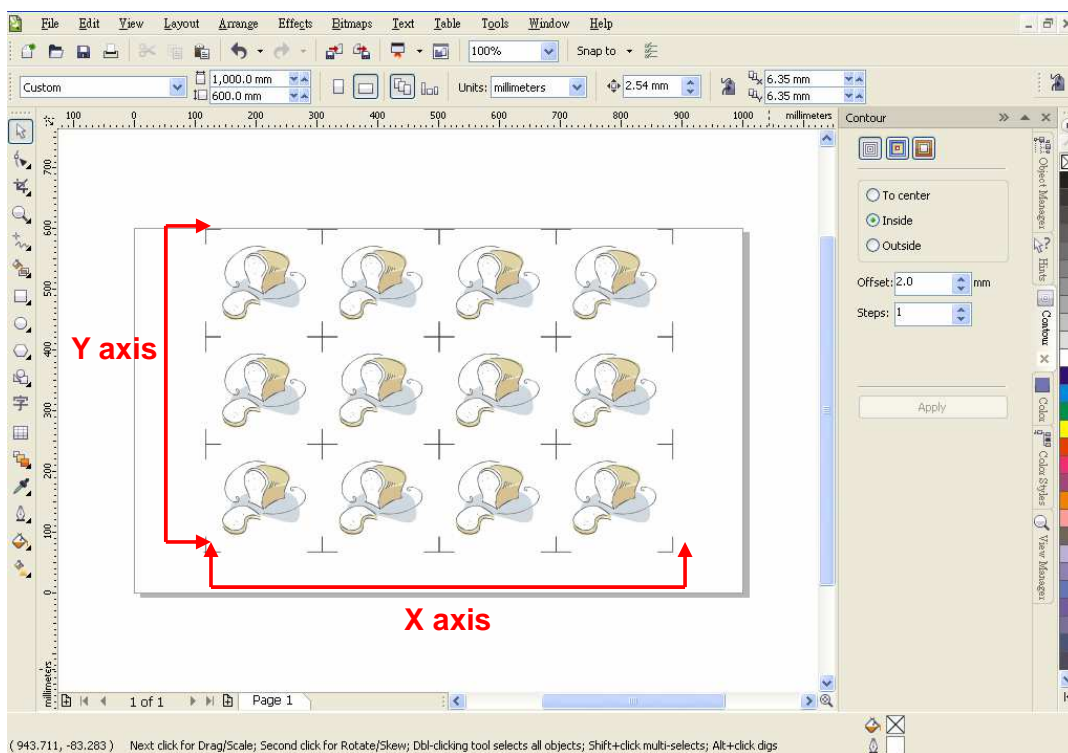
It is suggested to select “Multiple Copies” when you would like to make several copies of one image on your material to increase cutting accuracy.



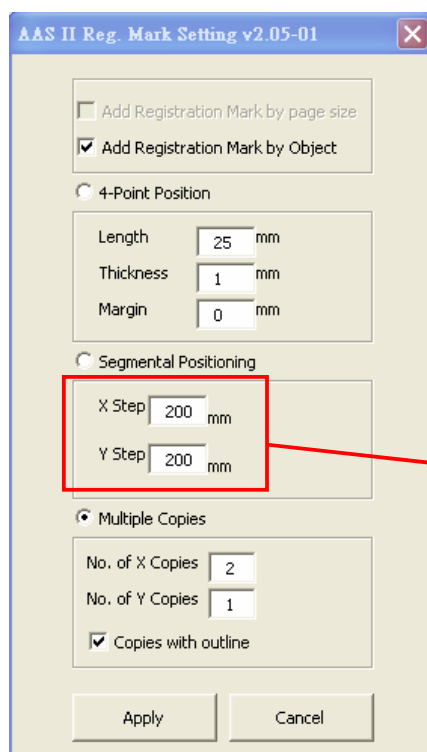
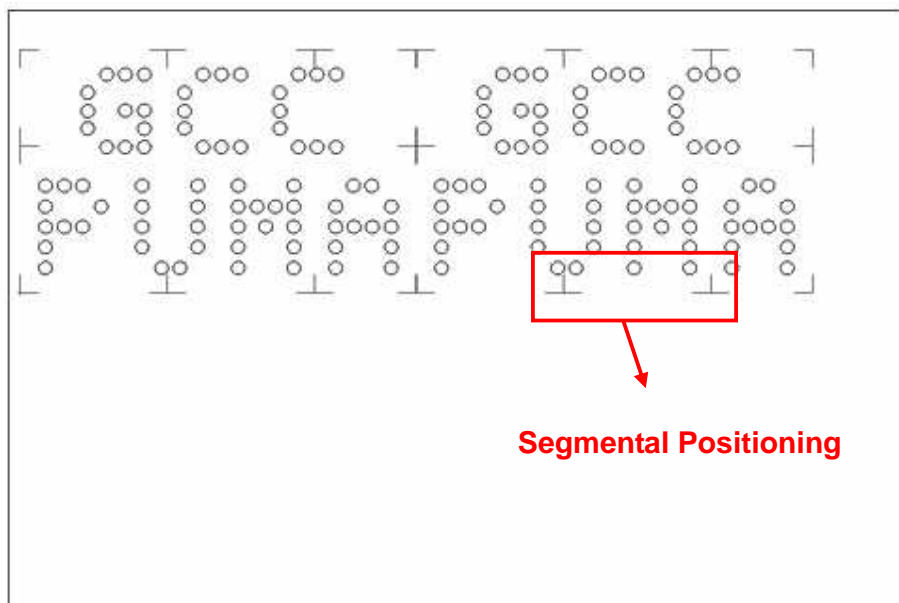
Multiple Copies

- No. of X Copies: The numbers of copies on X axis
- No. of Y Copies: The numbers of copies on Y axis
→ Range: 1~50. (The more copies you make, the more time is needed for data transmission.)
→ Numbers of X Copies * Numbers of Y Copies = The total amount of image copies
- Copies with outline : To show outlines of image graphics

The system will create the as shown in the picture below.



Segmental Positioning will be applied to Multiple Copies when the object to be copied is of large size (with the length or width over 200mm) to increase the accuracy of registration mark detection.

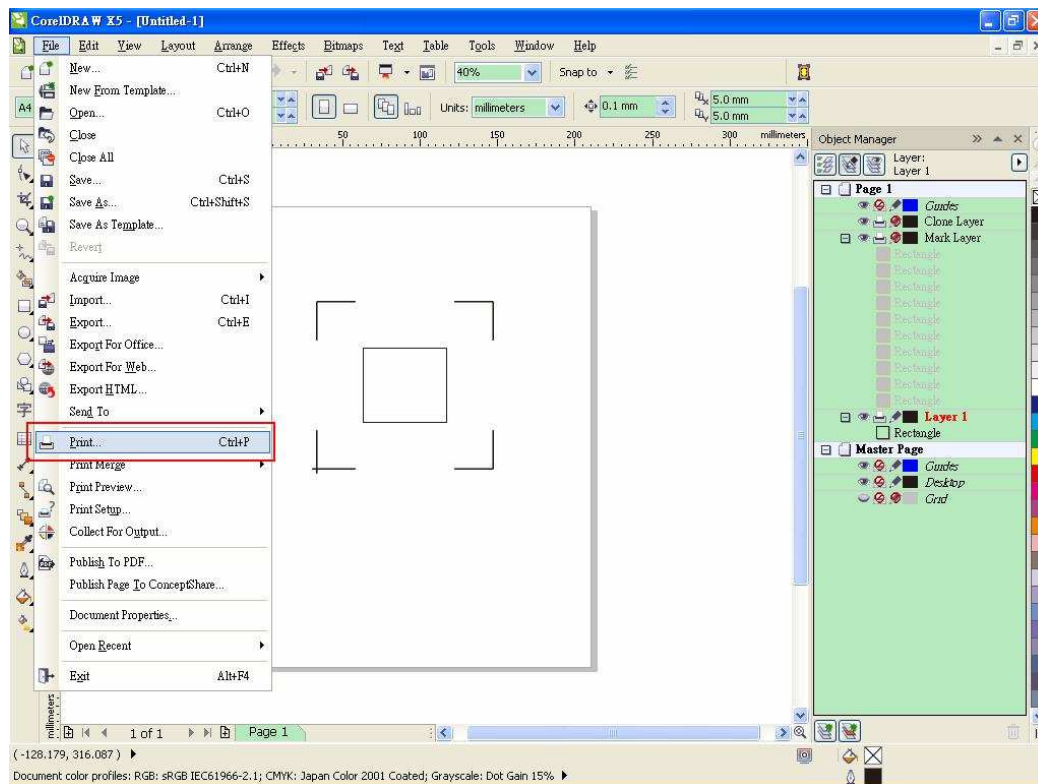


Please make sure you are happy with the settings for Segmental Positioning as these will be applied to the copies created.

Contour cutting through CorelDraw

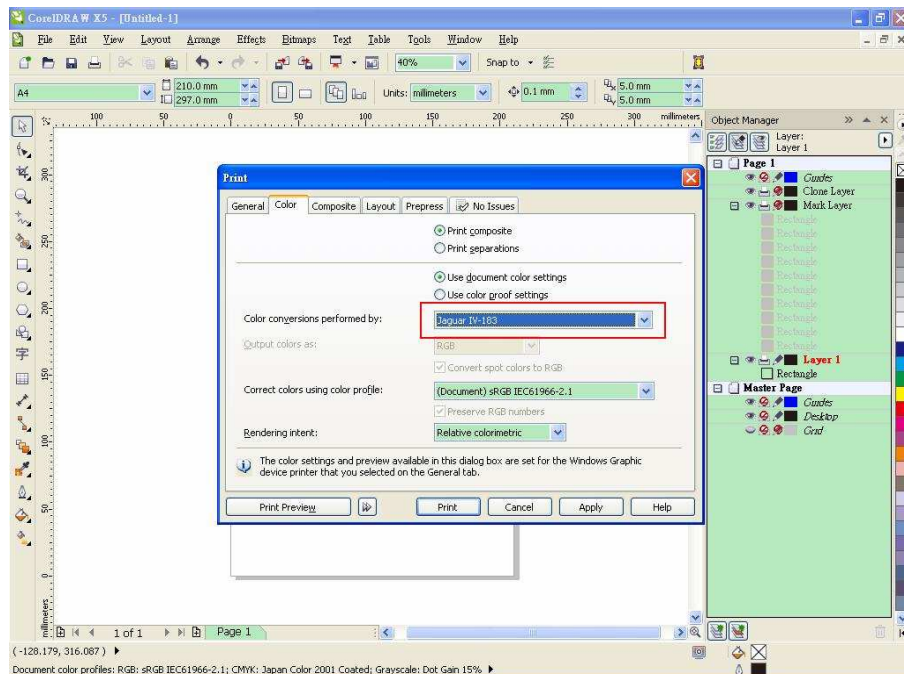
Step 1: Position the paper with registration marks printed by your printer on the GCC cutter.

Step 2: Select “Files→Print”.

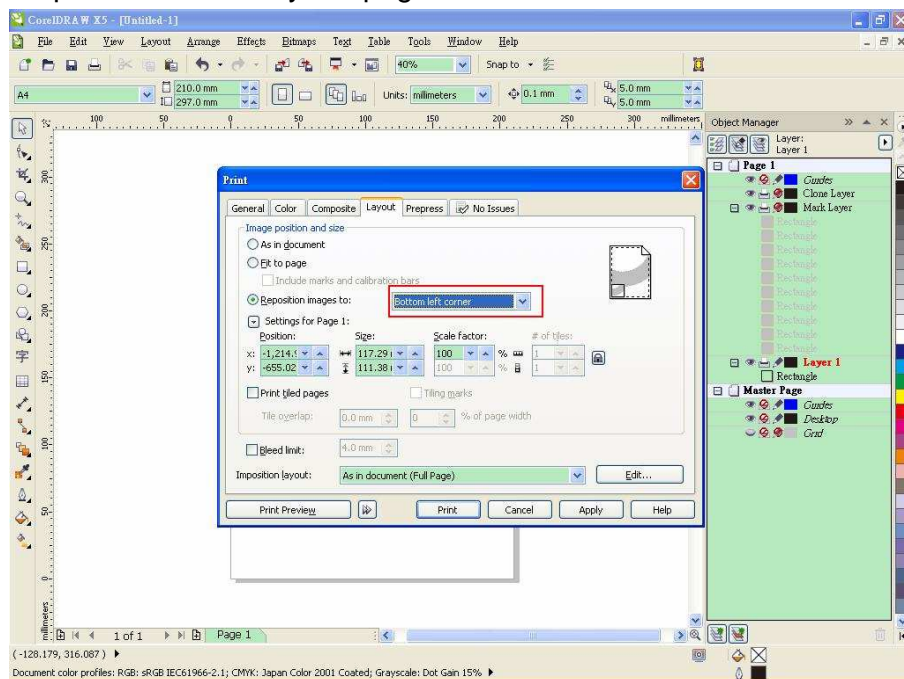


Please note that if you use CorelDraw X5, you must follow the steps below.

Click the “color” page and go to the “Color conversions performed by:” and then select the model name of you cutter.



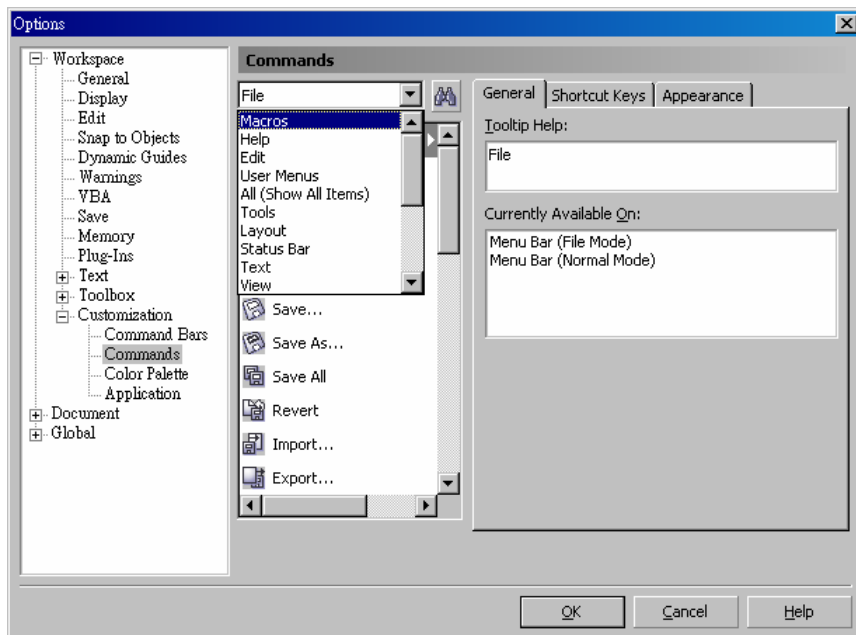
Step 2: Go to the “Layout” page and select Bottom left corner at “Reposition images to”.



Step 3: Click “Print”.

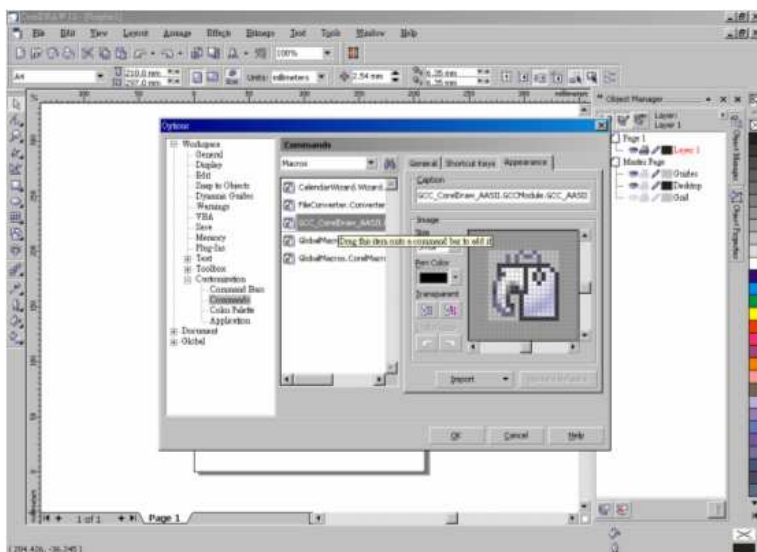
You can also add a Hot Icon for the AAS II Plug-in

Step 1: Select “Tools→Customization→Commands→Macros”.



Step 2: Choose **【GCC_CorelDraw_AASII.GCCModule.GCC_AASII】** and drag it to the “commands” bar.

Step 3: If you want to have a different icon, select “Tools→Customization→Commands→Appearance” to import a graphics for use as the icon. Choose an icon and press OK to complete this setting.



GreatCut Instruction

The user manual of GreatCut 2 software is available on the GCC installation CD.

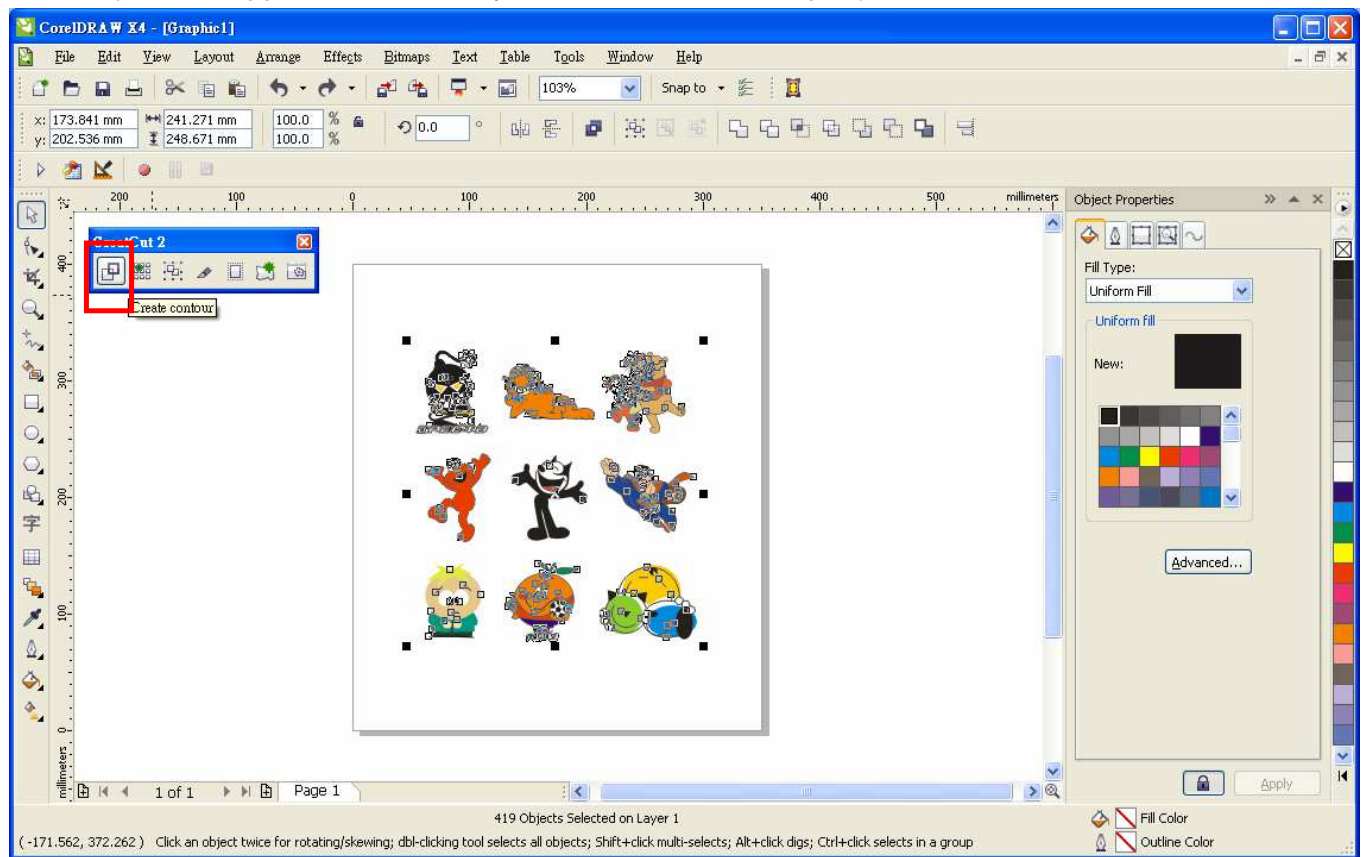
GCC AASII System

Below is a step-by-step instruction of using the AAS function of GreatCut 2 software through CorelDRAW and Adobe Illustrator.

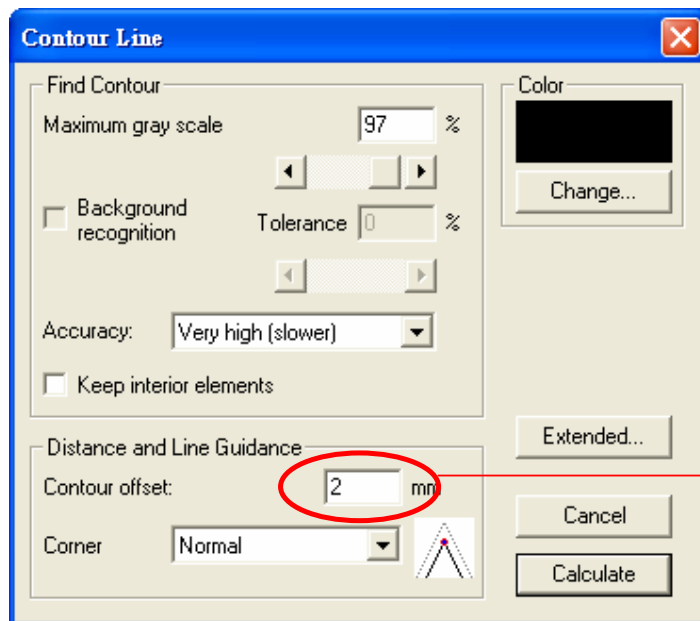
Edit your image in CorelDRAW

4-Point Positioning

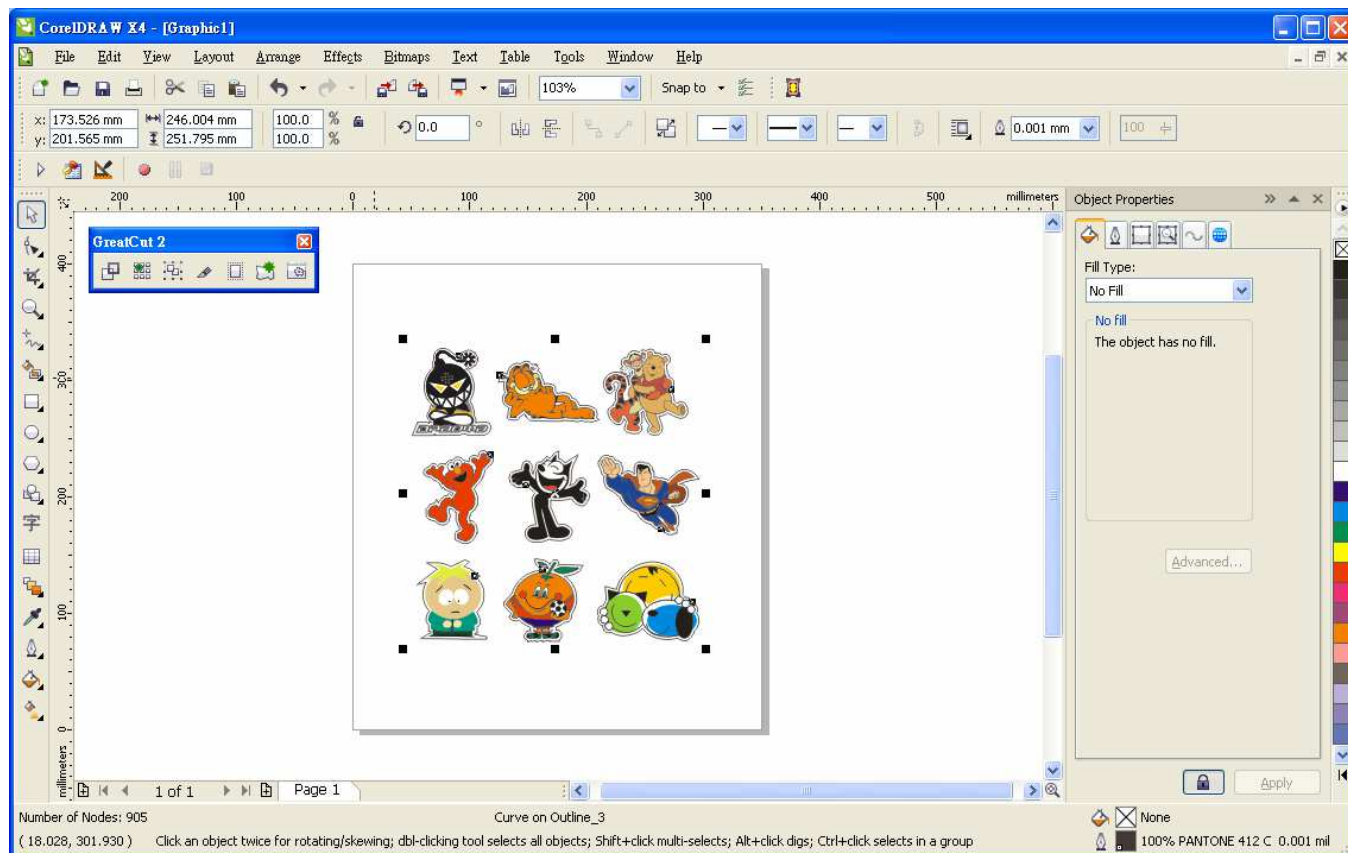
Step 1. Create a new file in CorelDRAW and click on the Create contour icon in the GreatCut 2 toolbar (it would appear automatically once CorelDRAW is open).



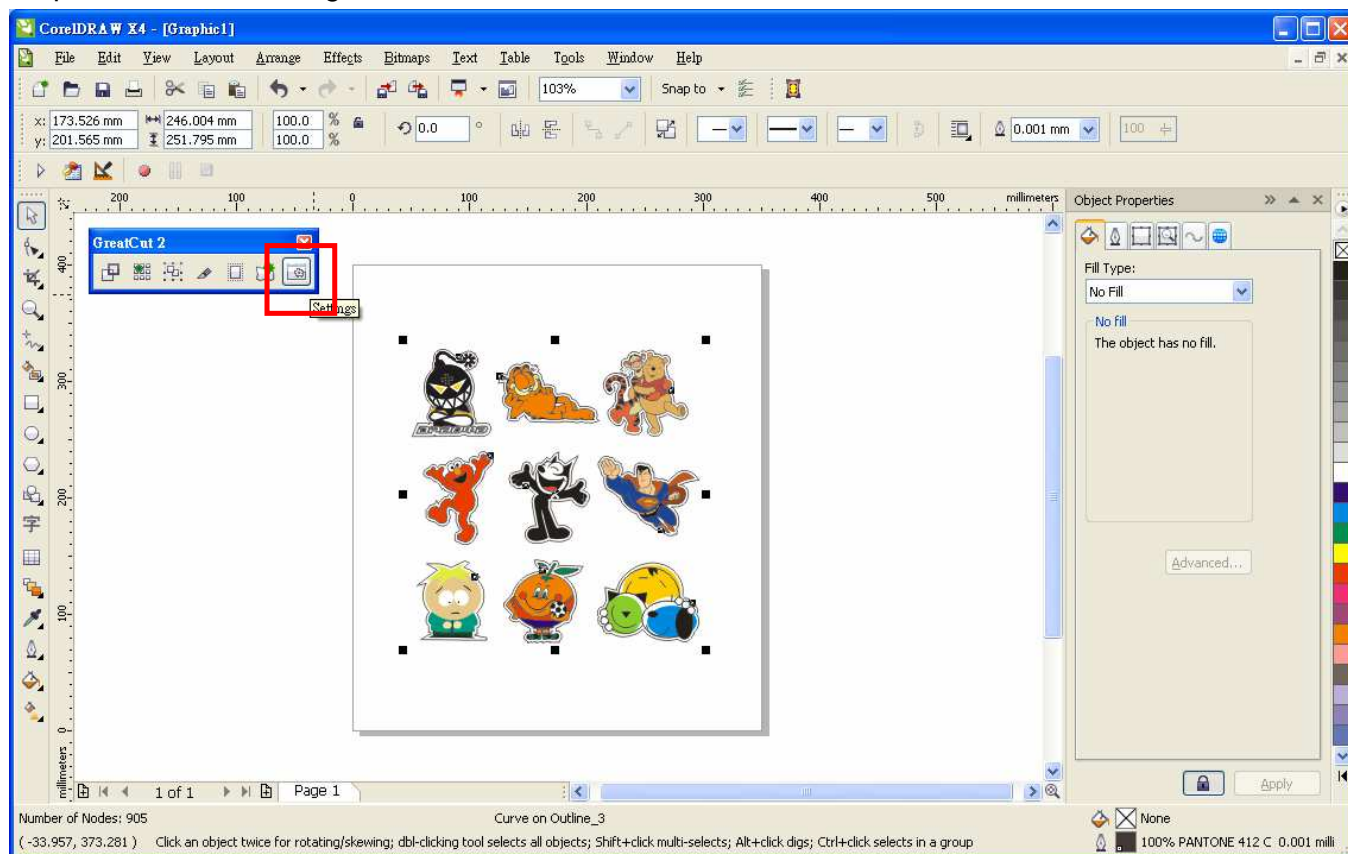
Step 2. Complete contour line settings (including contour offset value) and press Calculate to confirm.



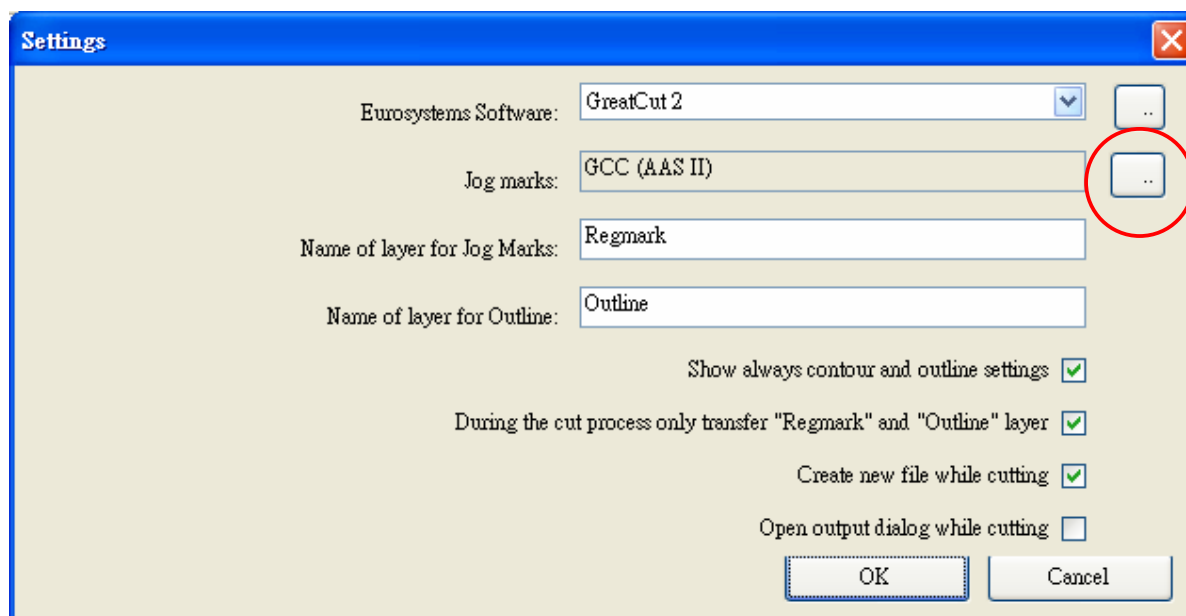
Contour lines will be added to the images.



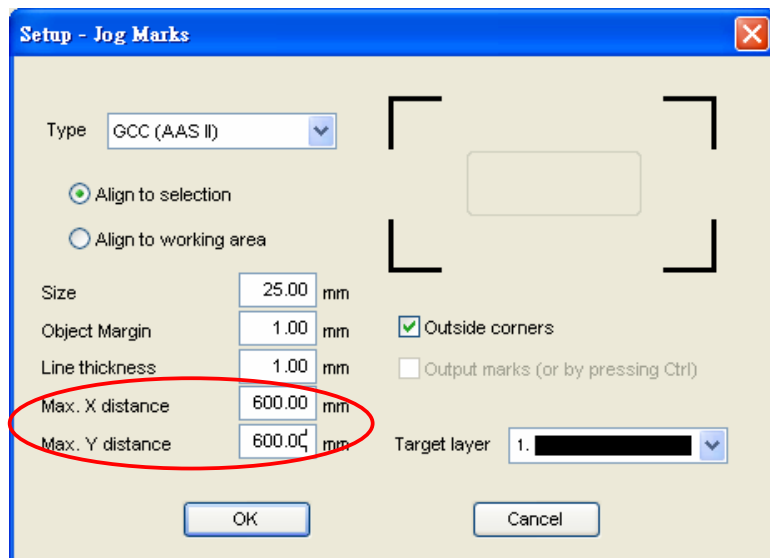
Step 3. Press the Settings icon on the GreatCut 2 toolbar.



Step 4. Press the button on the right of Jog marks.



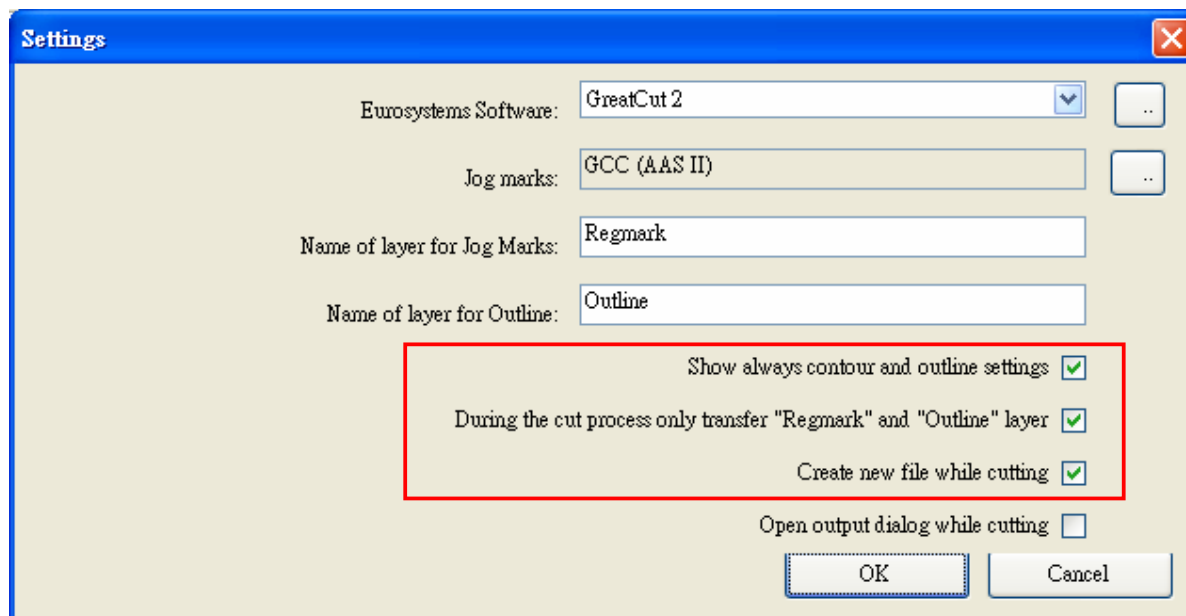
Step 5. Adjust the size, object margin and line thickness of your registration marks in the Setup-Jog Marks window and click OK.



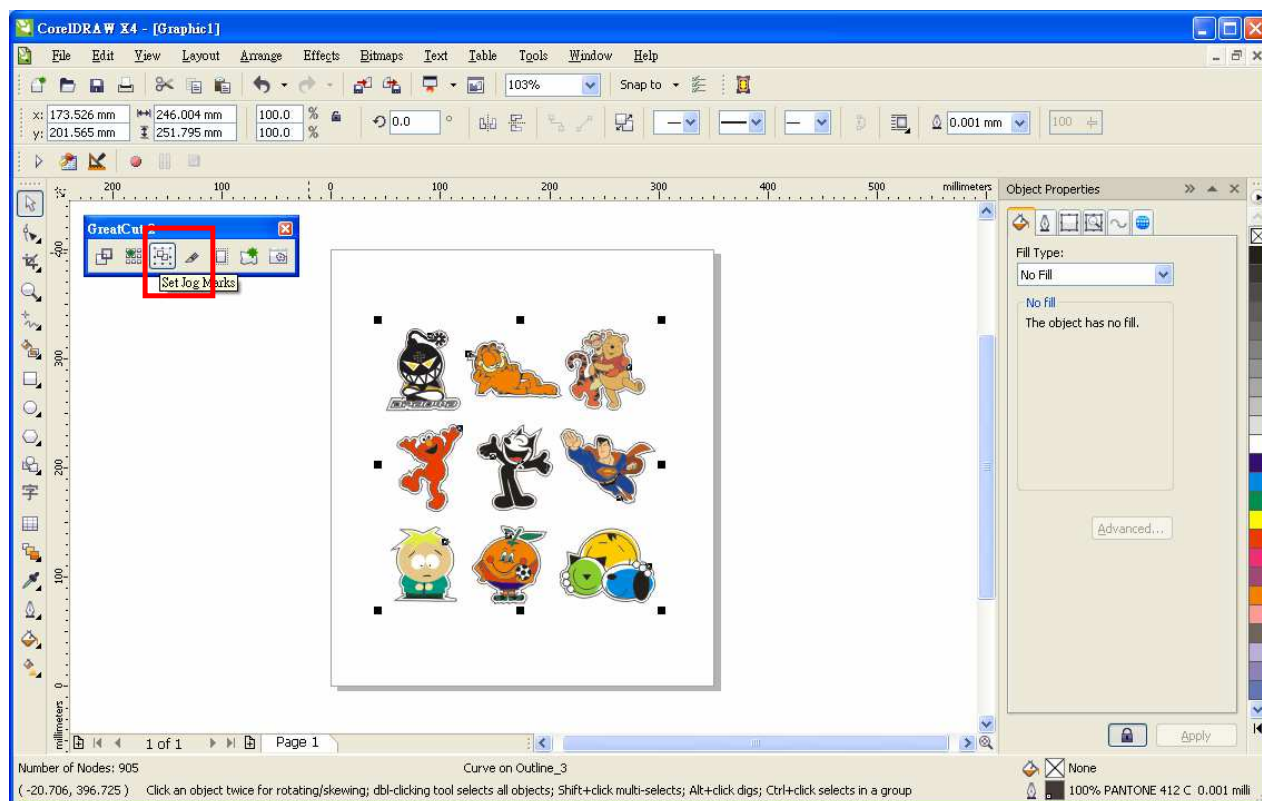
4-Point Positioning

- **Size:** The length of marks
→ Range: 5mm~50mm
→ Optimized Setting: 25mm
- **Object margin:** The distance between marks and images
→ Range: 0mm~50mm
→ Optimized Setting: 5mm
- **Line thickness:** the line thickness of marks
→ Range: 1mm~2mm
→ Optimized Setting: 1mm

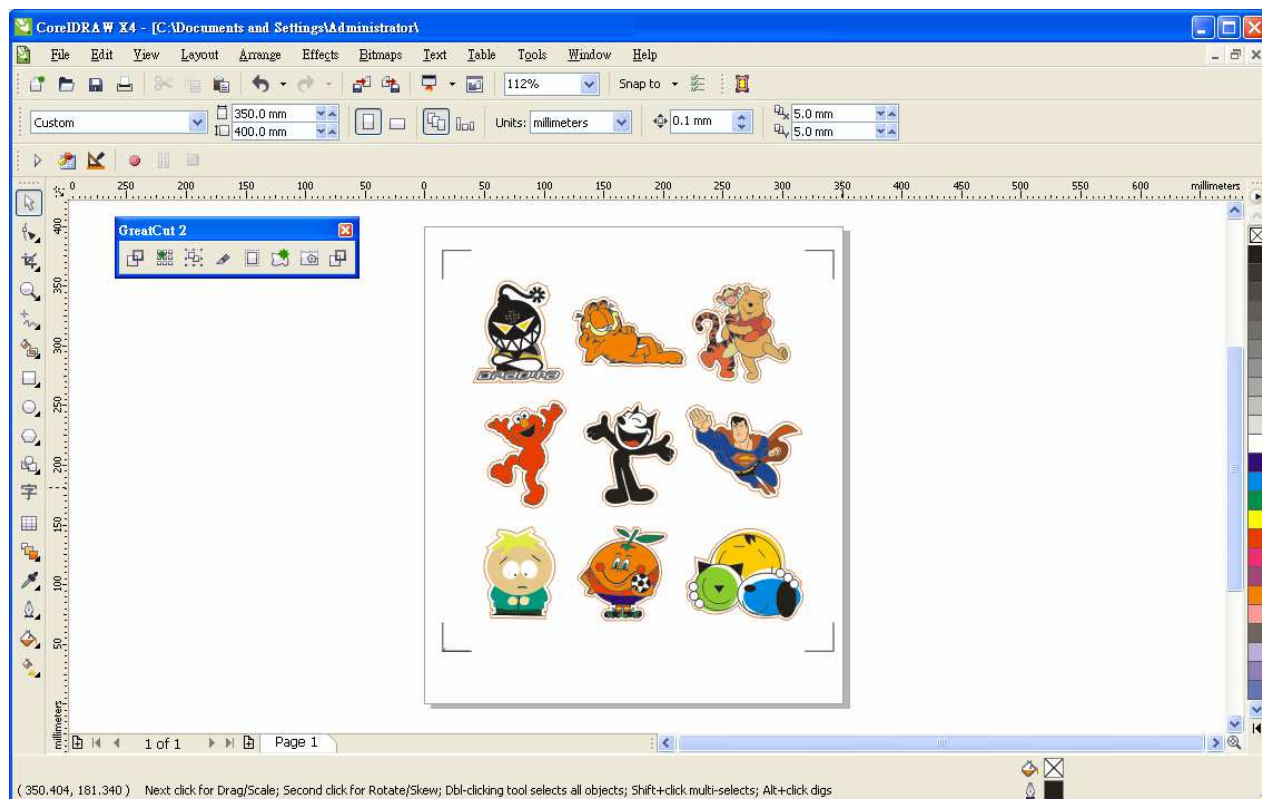
Step 6. Ensure the three items below are selected and click OK.



Step 7. Click the Set Jog Marks Icon in the GreatCut 2 toolbar.

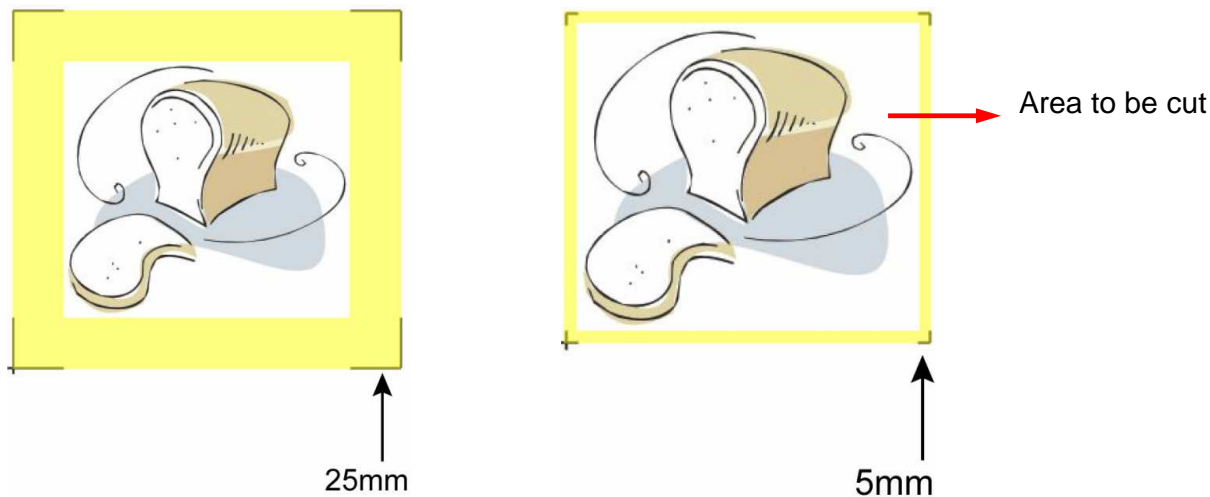


The system will create the 4 marks as shown in the picture below.



Note:

1. To save your materials, in addition to amending object margins, you can also adjust the length of the registration marks (5mm minimum) when you apply the above function(see table 1 for suggestions based on different material sizes). The smaller the size is, the smaller the distance between the object and the registration marks is (see the figures below).



Page size (unit: mm)	Suggested mark length (unit: mm)
A6 (105 x 148)	5
A5 (148 x 210)	8
A4 (210 x 297)	11
A3 (297 x 420)	16
A2 (420 x 594)	23
A1 (594 x 841) and above	25*

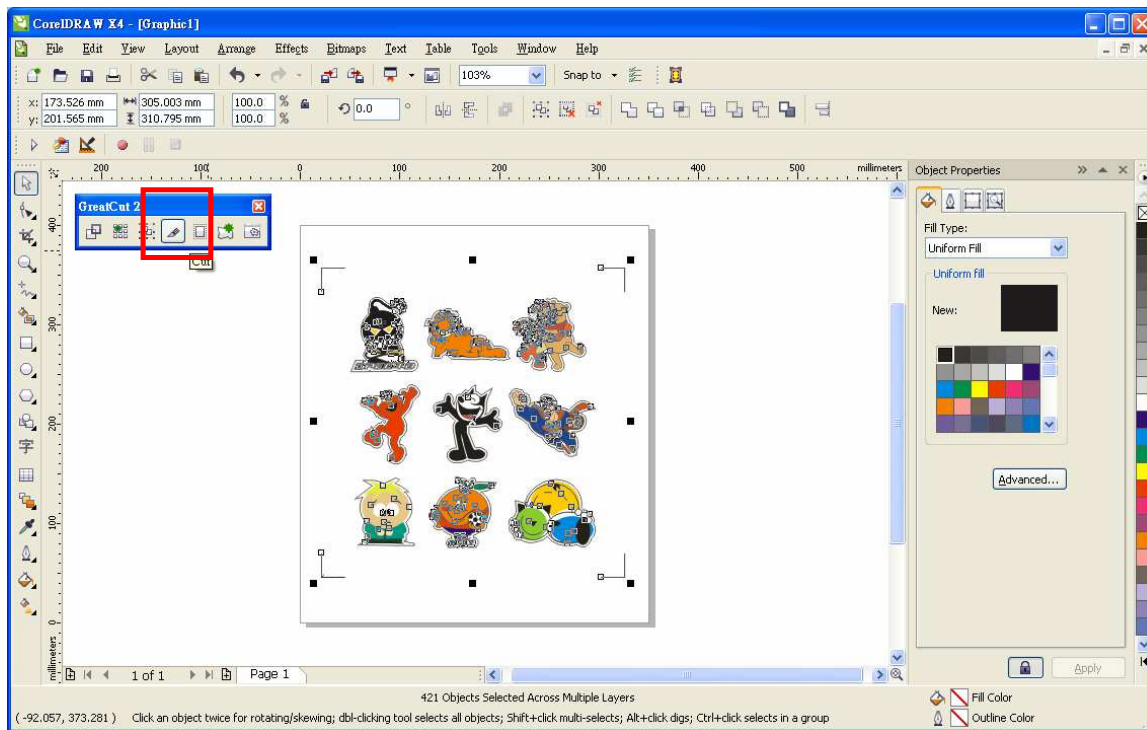
Table 1

*25mm is the suggested value for the registration mark length

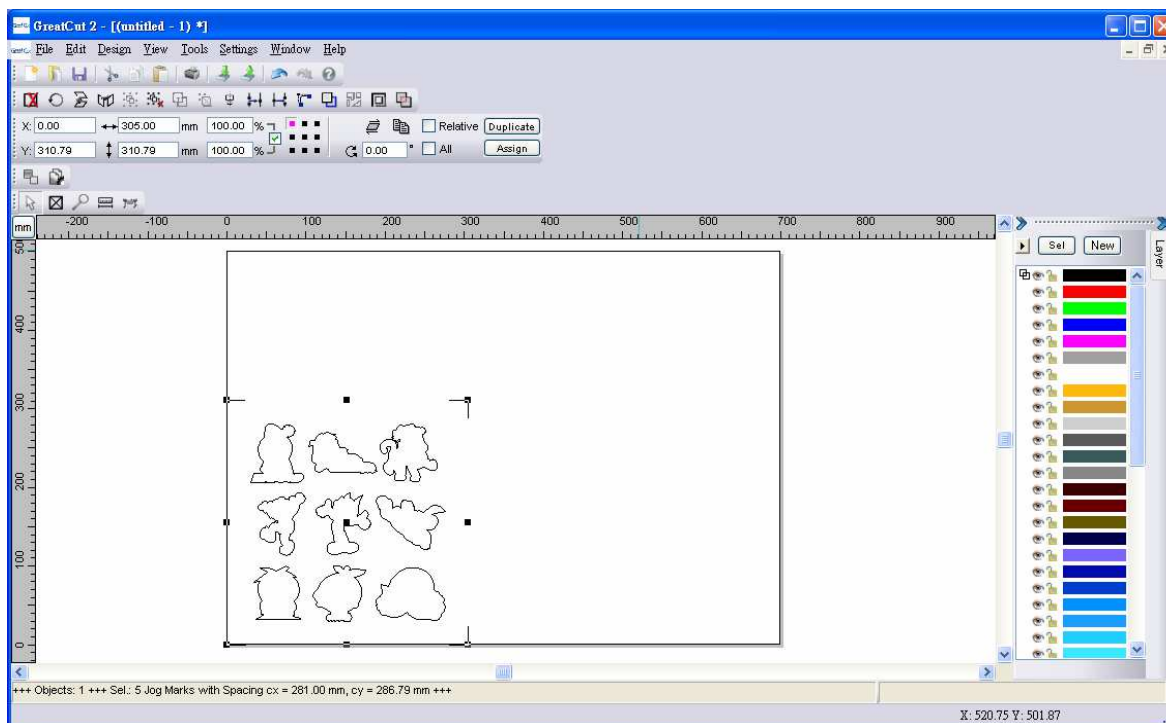
2. The size of the registration marks would affect the accuracy of registration mark detection so please make sure the amount you enter is reasonable.

Output

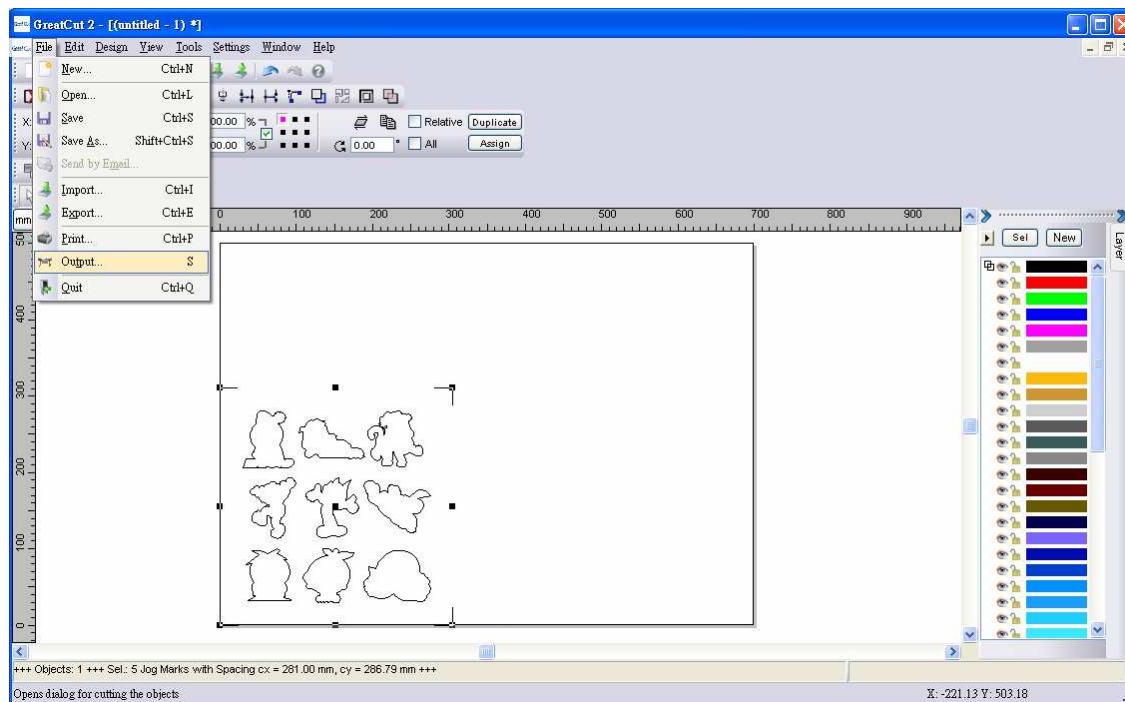
Step 1. Select both the entire object (including registration marks and the contour line) and press the Cut icon in the GreatCut 2 toolbar.



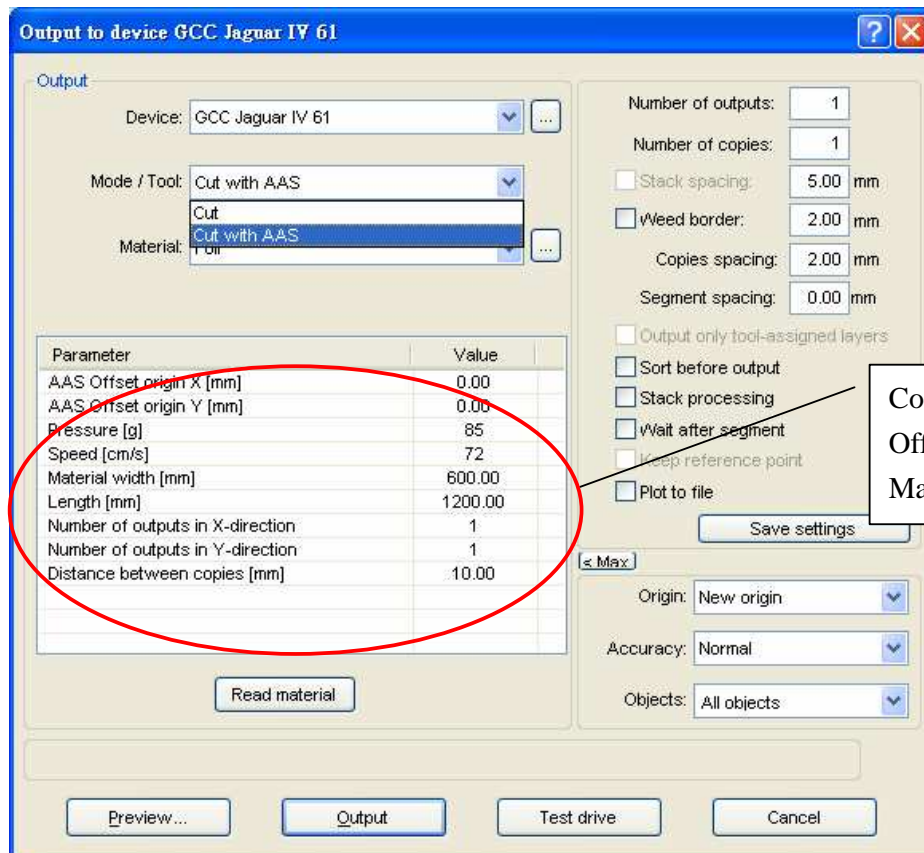
Step 2. The system will activate GreatCut2 automatically and import the registration marks and contour line to GreatCut 2.



Step 3. Select Output under File.



Step 4. Select Cut with AAS in Mode/Tool in the Output to device window.



Step 5. Click output and the object will be sent to GCC Cutting Plotter

Output to device GCC Jaguar IV 61

Output

Device: GCC Jaguar IV 61

Mode / Tool: Cut with AAS

Material: Foil

Parameter	Value
AAS Offset origin X [mm]	0.00
AAS Offset origin Y [mm]	0.00
Pressure [g]	85
Speed [cm/s]	72
Material width [mm]	600.00
Length [mm]	1200.00
Number of outputs in X-direction	1
Number of outputs in Y-direction	1
Distance between copies [mm]	10.00

Read material

Number of outputs: 1

Number of copies: 1

☐ Stack spacing: 5.00 mm

☐ Weed border: 2.00 mm

Copies spacing: 2.00 mm

Segment spacing: 0.00 mm

☐ Output only tool-assigned layers

☐ Sort before output

☐ Stack processing

☐ Wait after segment

☐ Keep reference point

☐ Plot to file

Save settings

≤ Max

Origin: New origin

Accuracy: Normal

Objects: All objects

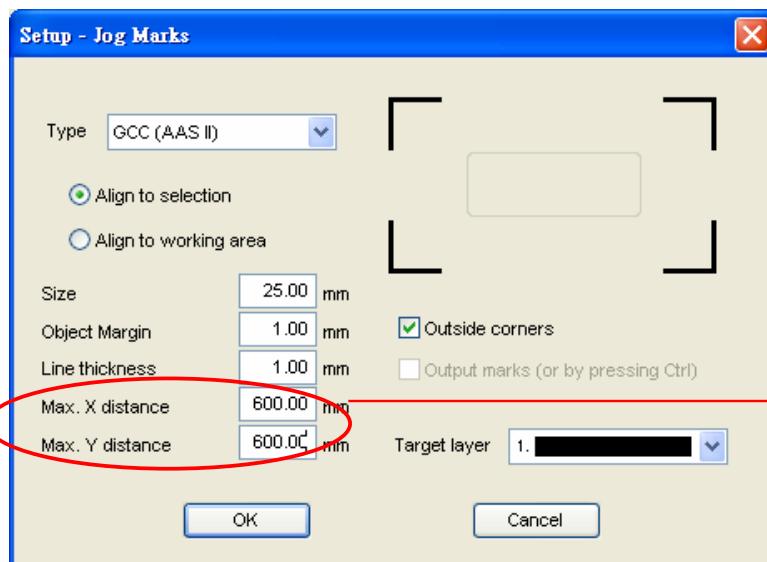
Preview... **Output** Test drive Cancel

Advanced Settings

Segmental Positioning

For precise cutting quality, it is suggested to apply “Segmental Positioning” by adjusting the x and y distance when you are working on an extra long or large-size image to increase cutting quality.

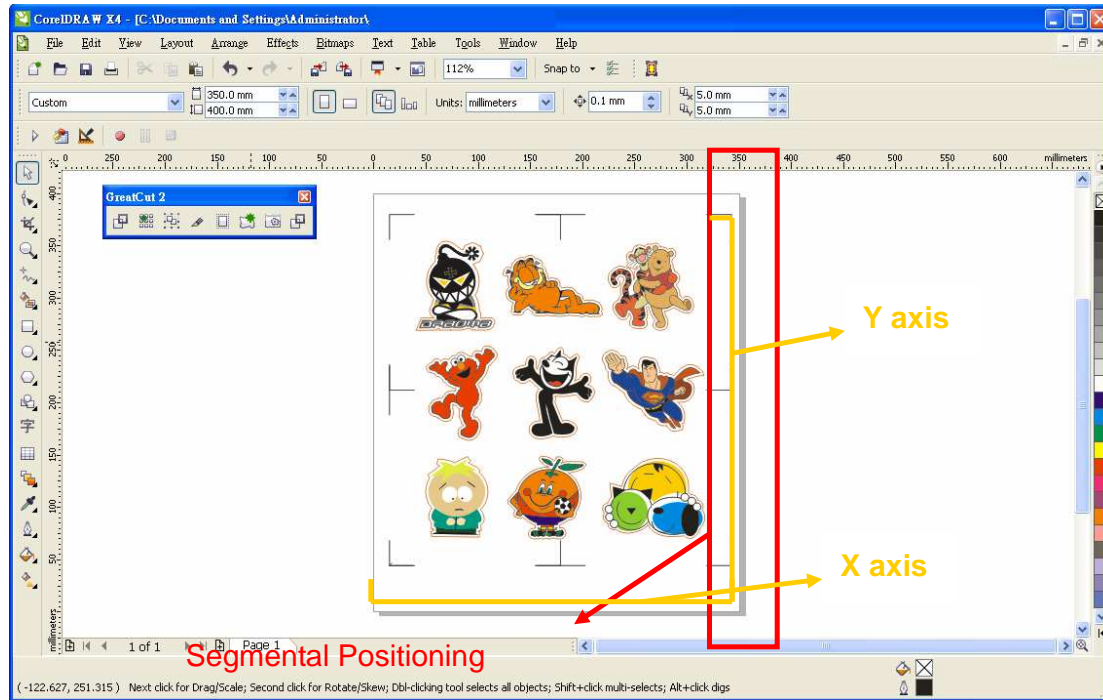
Follow the same steps in the **4-Point Positioning** section to complete the contour line setting and registration mark creation procedures. Adjust the size, object margin and line thickness of your registration marks and the space between registration marks by changing X, Y distance in the Setup-Jog Marks window and click OK.



Segmental Positioning

- **Max. x Distance:** The distance of intermediate position on the X axis
→ Range: 200-500 mm
- **Max. y Distance:** The distance of intermediate position on the Y axis
→ Range: 200-500 mm

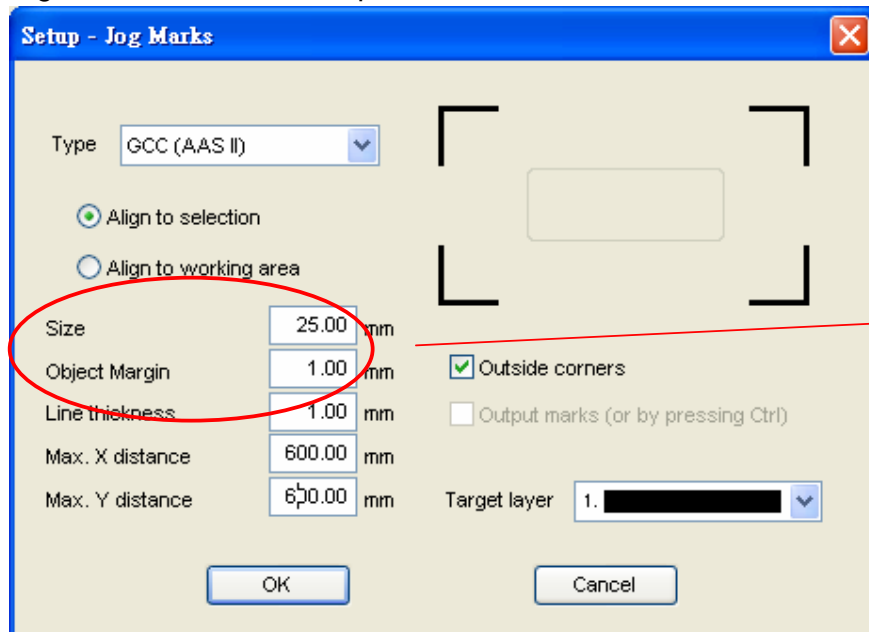
The system will create the marks as shown in the picture below.



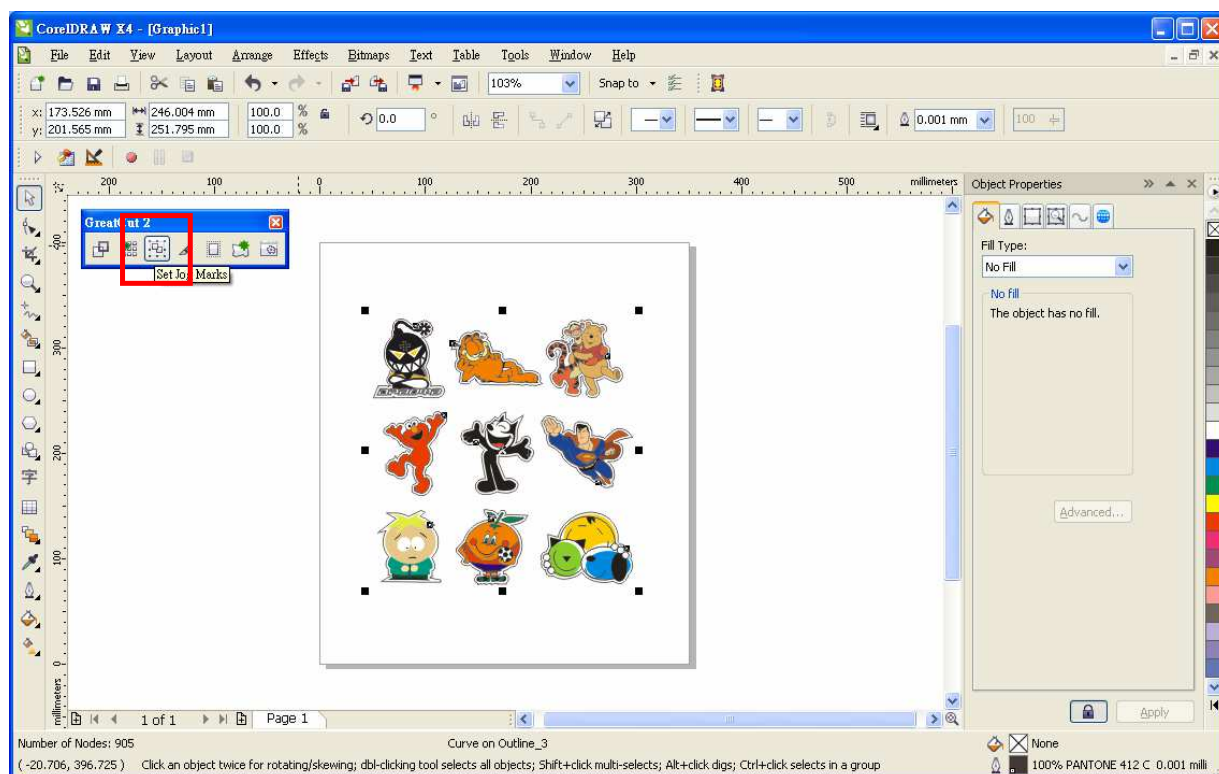
Follow the same steps in the **Output** section to output your image to GCC Cutting Plotter.

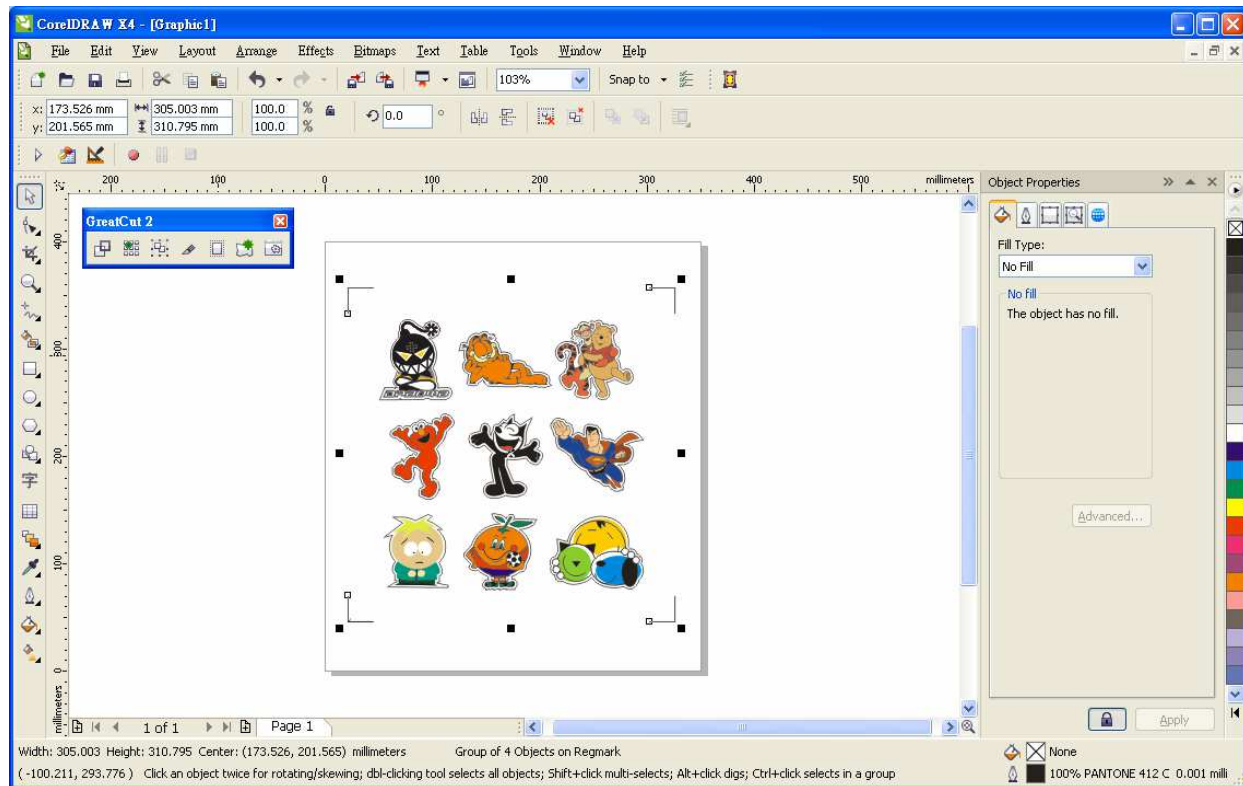
Multiple Copies

Follow the same steps in the **4-Point Positioning** section to complete the contour line setting and registration mark creation procedures.

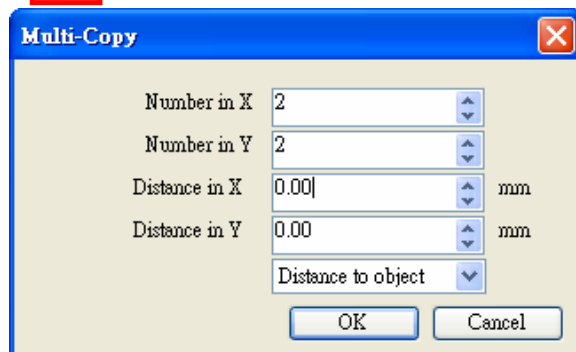


Click the Set Jog Marks Icon in the GreatCut 2 toolbar and 4 marks will be created as shown in the picture below.



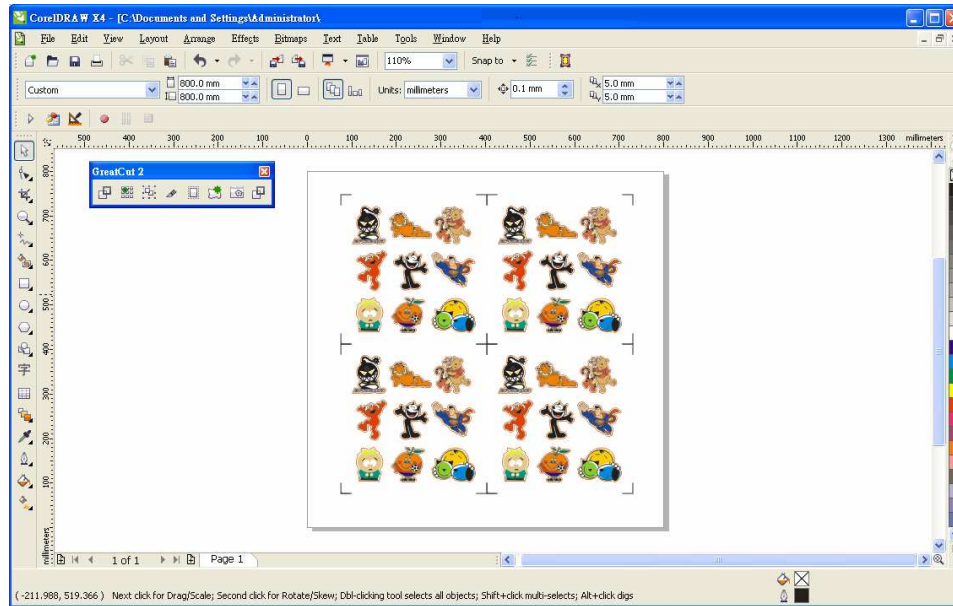


Click the Multi-copy Icon in the GreatCut 2 toolbar and complete the Number in X/Y (the number of copies desired on the X/Y axis) and Distance in X/Y (distance between each copy) settings then click OK.



Note: The spacing of vertical & horizontal (Offset X & Y) should be $\geq 20\text{mm}$ or $= 0\text{mm}$; Users are advised to set the Distance in X/Y as 0 mm to remove the space between each copy to avoid the waste of materials.

The system will create several copies of the object with registration marks as shown in the picture below.

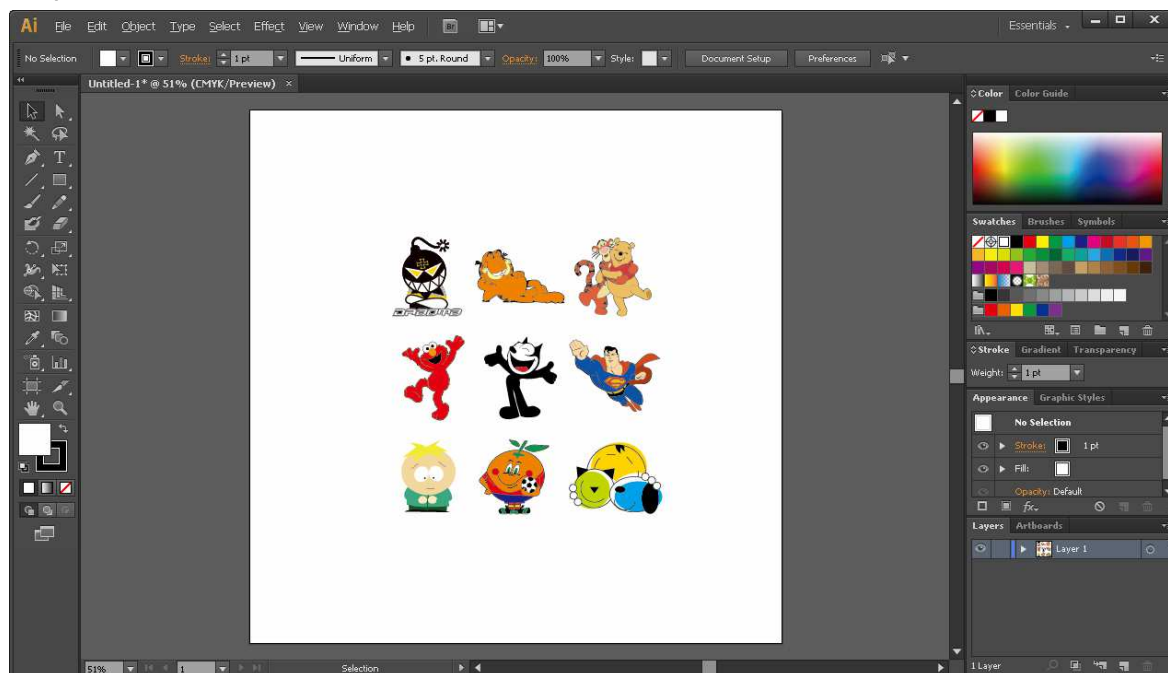


Follow the same steps in the **Output** section to output your image to GCC Cutting Plotter.

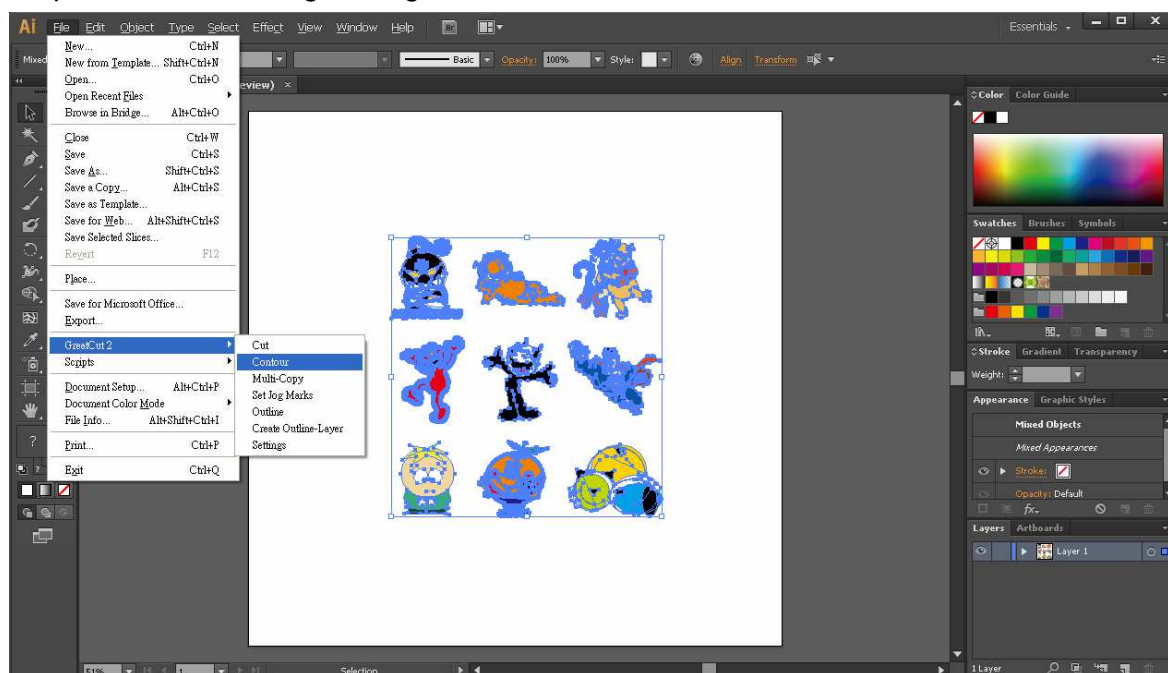
Edit your image in Adobe Illustrator

4-Point Positioning

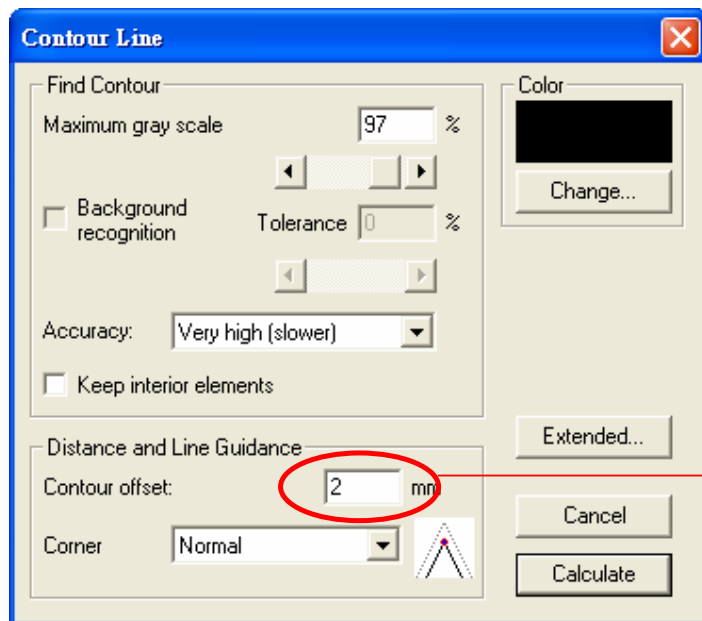
Step 1. Create a new file in Adobe Illustrator.



Step 2. Select the image and go to Contour in GreatCu2 in File.

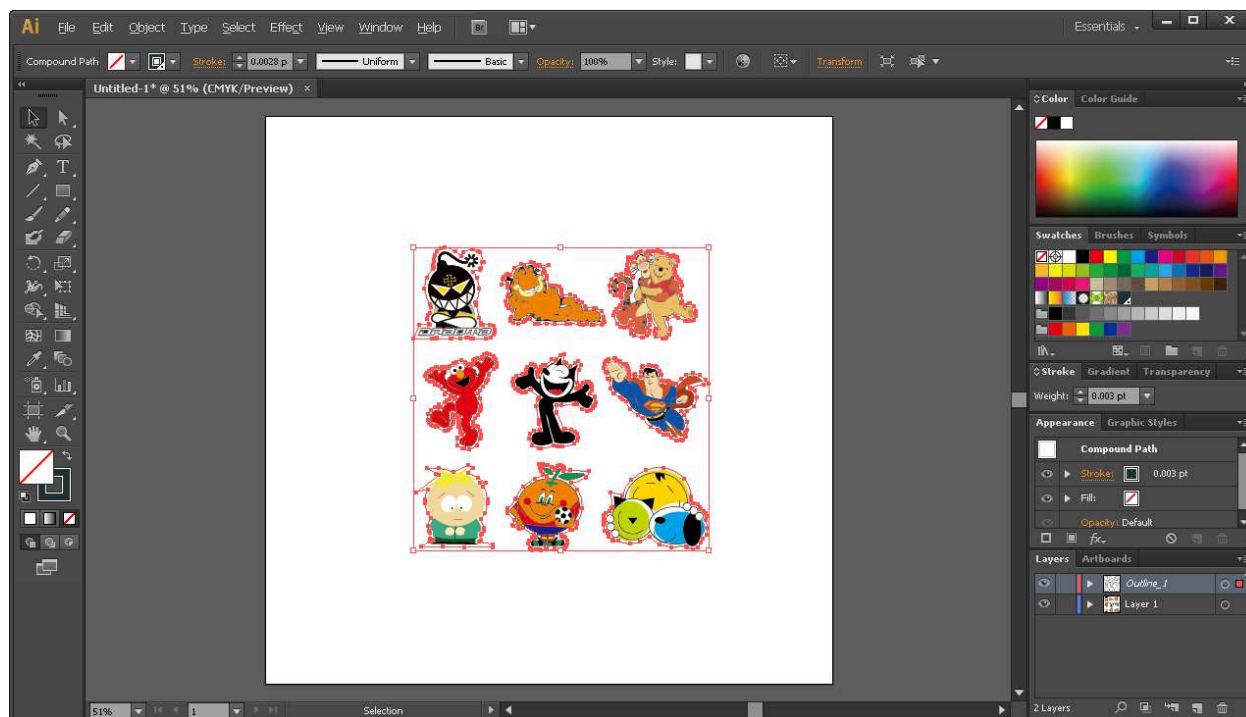


Step 3. Complete contour line settings (including contour offset value) and press Calculate to confirm.

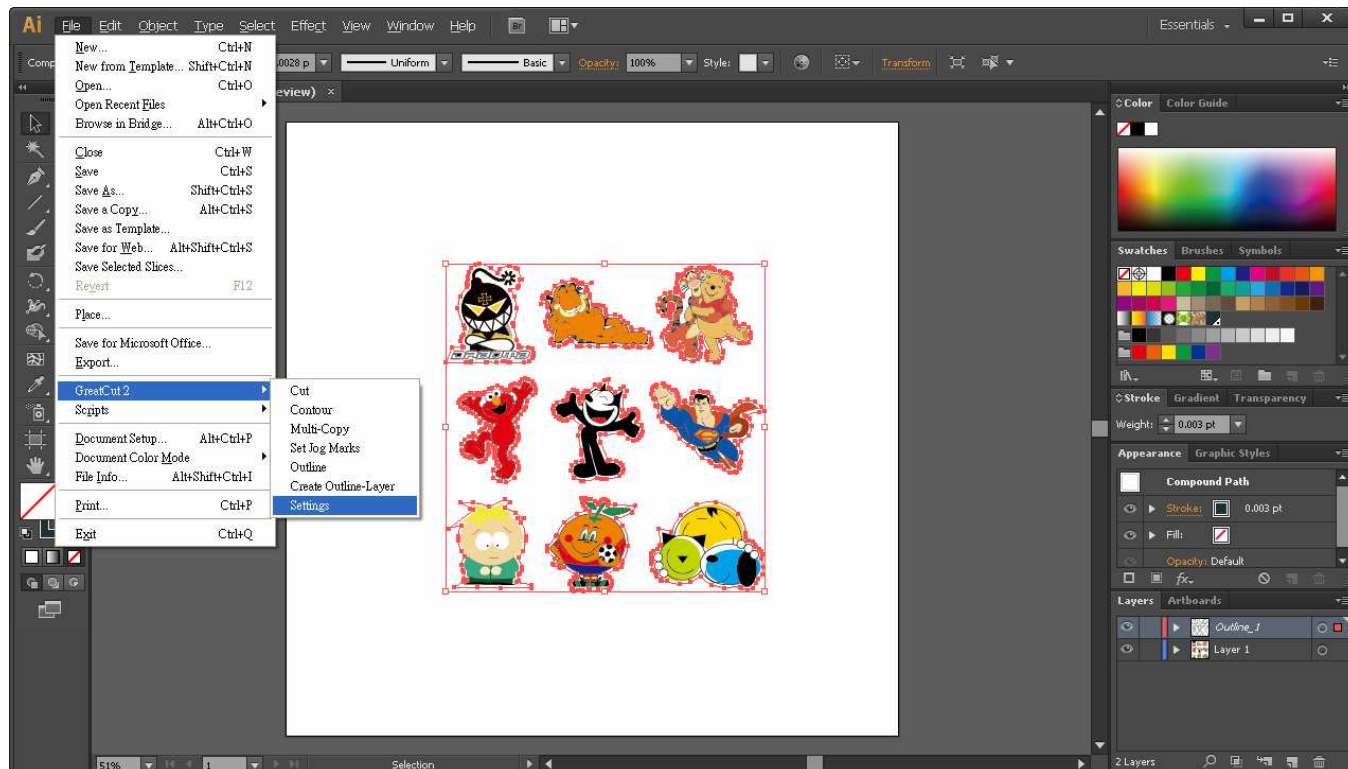


Contour offset is the distance between the object and the contour line.

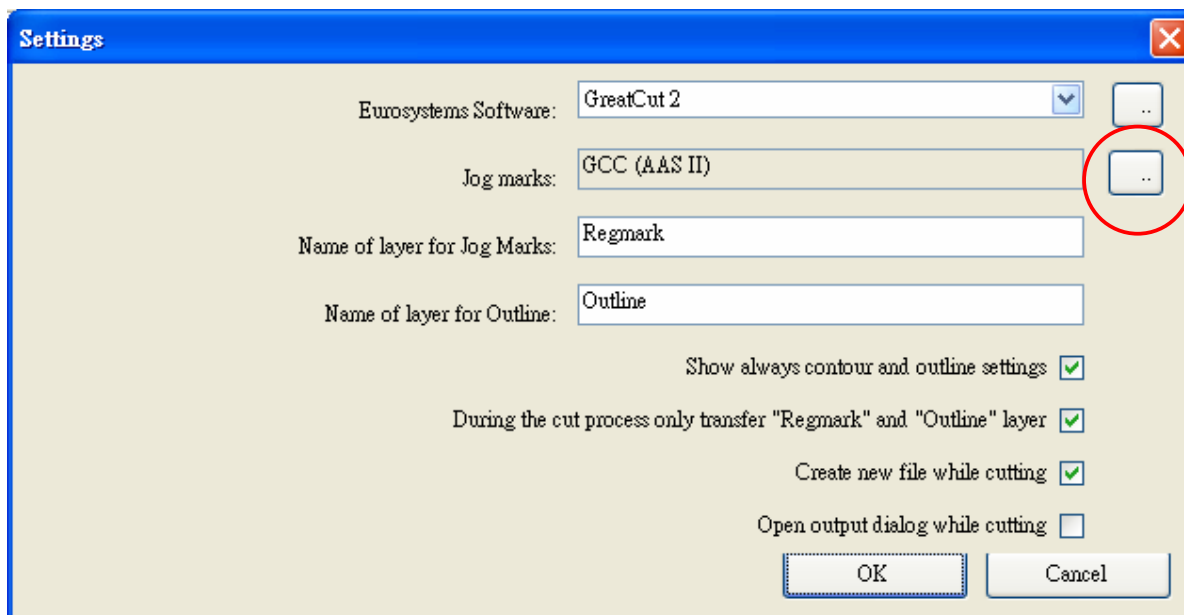
Contour line is now added to the object.



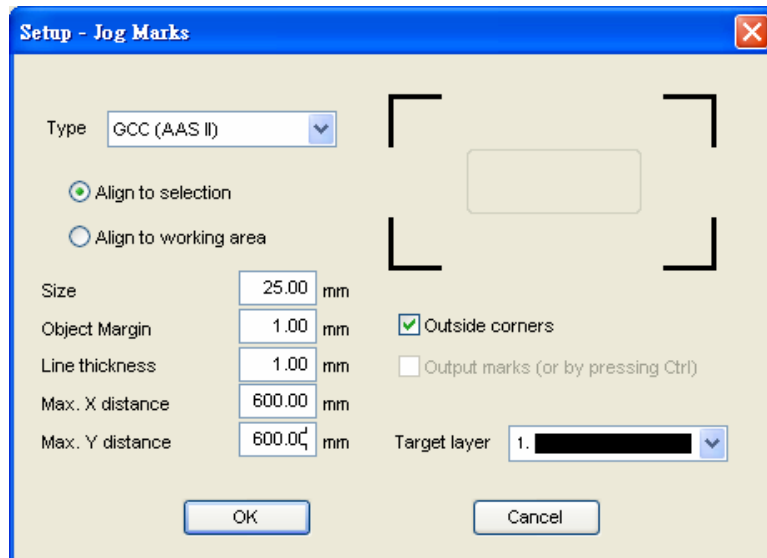
Step 4. Click Settings in GreatCut 2 under File.



Step 5. Press the button on the right of Jog marks.



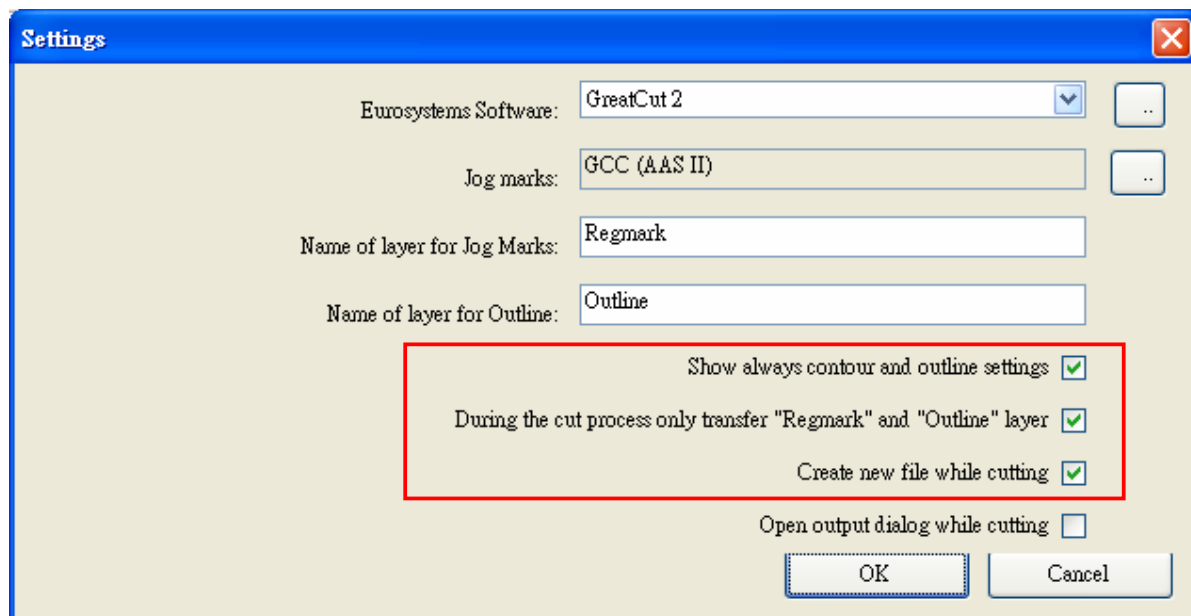
Step 6. Adjust the size, object margin and line thickness of your registration marks and click OK.



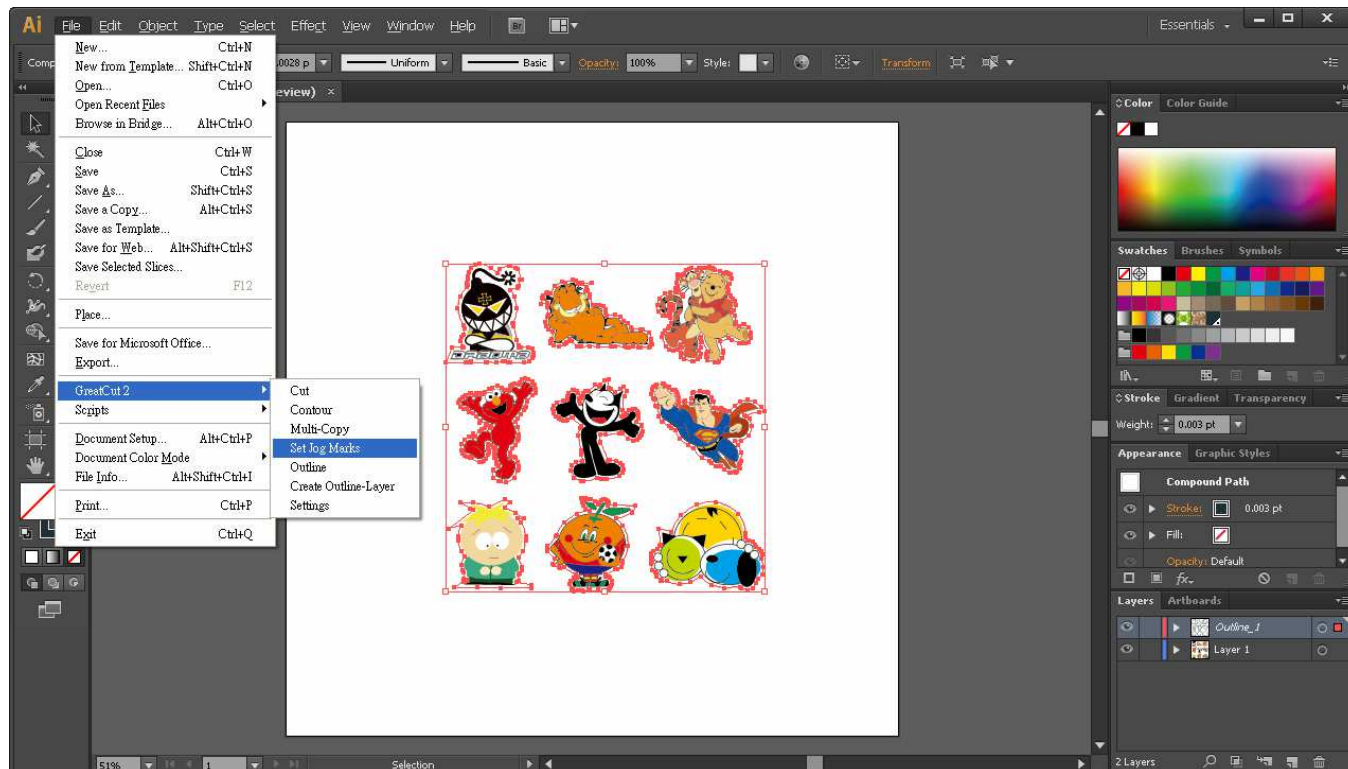
4-Point Positioning

- **Size:** The length of marks
→ Range: 5mm~50mm
→ Optimized Setting: 25mm
- **Object margin:** The distance between marks and images
→ Range: 0mm~50mm
→ Optimized Setting: 5mm
- **Line thickness:** the line thickness of marks
→ Range: 1mm~2mm
→ Optimized Setting: 1mm

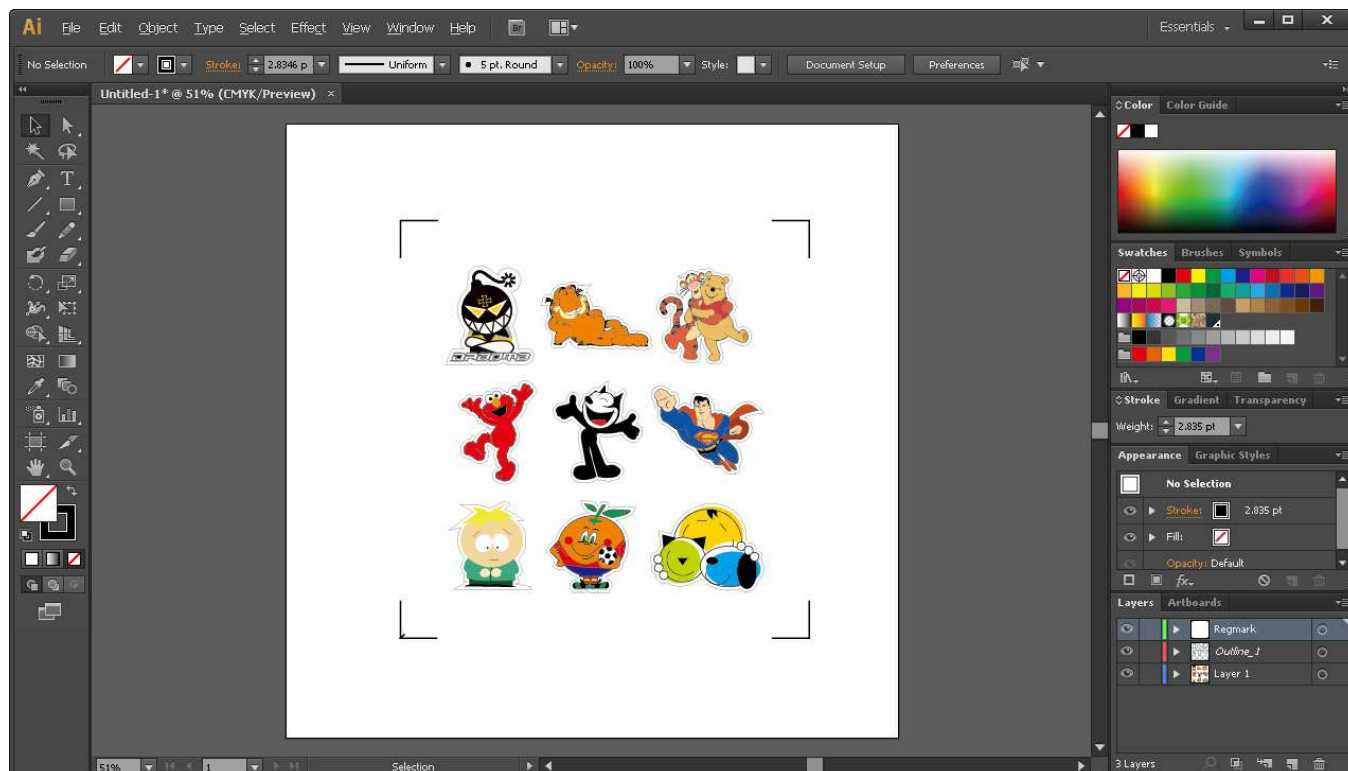
Step 7. Ensure the three items below are selected and click OK.



Step 8. Click Set Jog Marks in GreatCut2 under File.

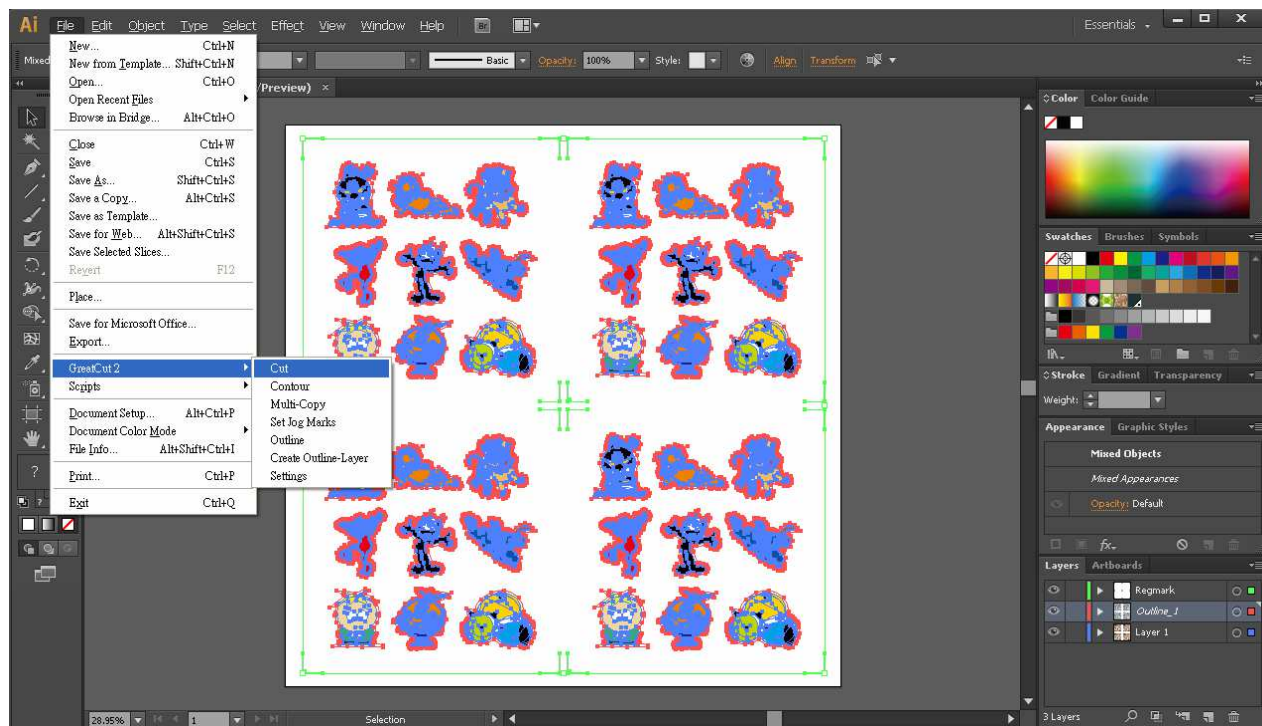


The system will create the 4 marks as shown in the picture below.

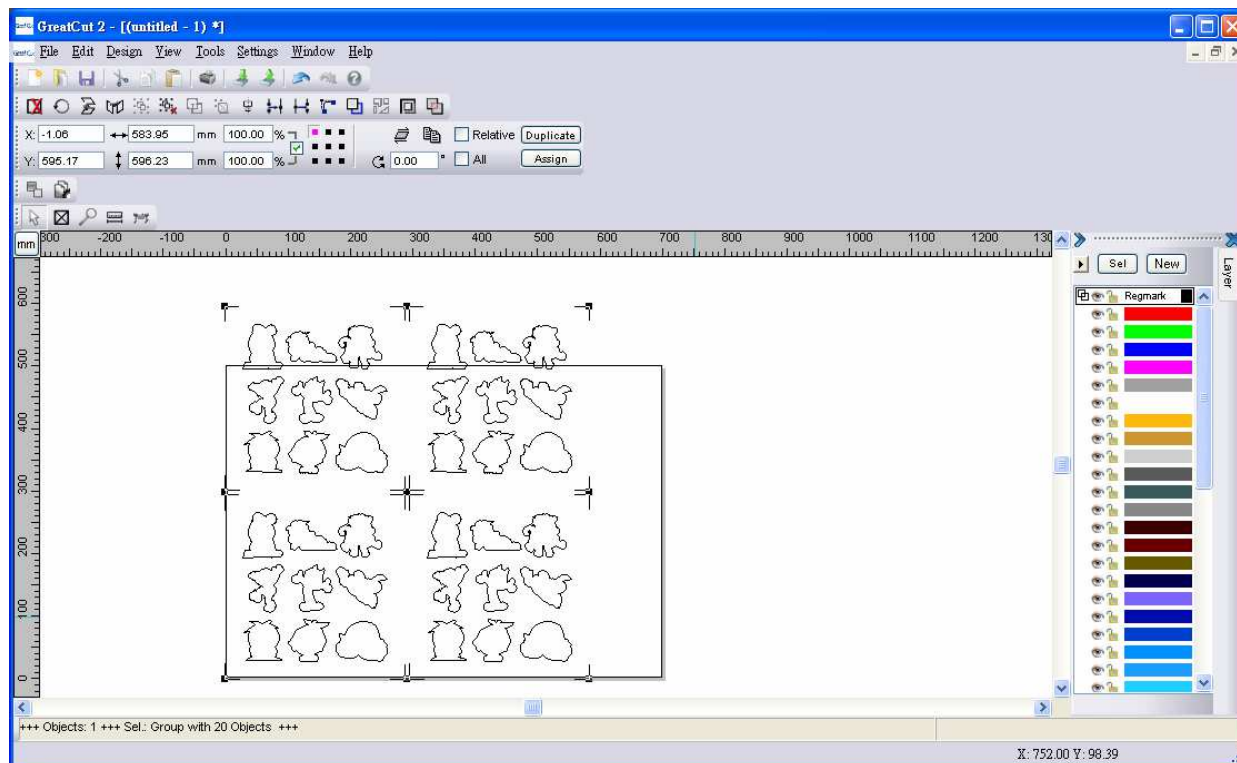


Output

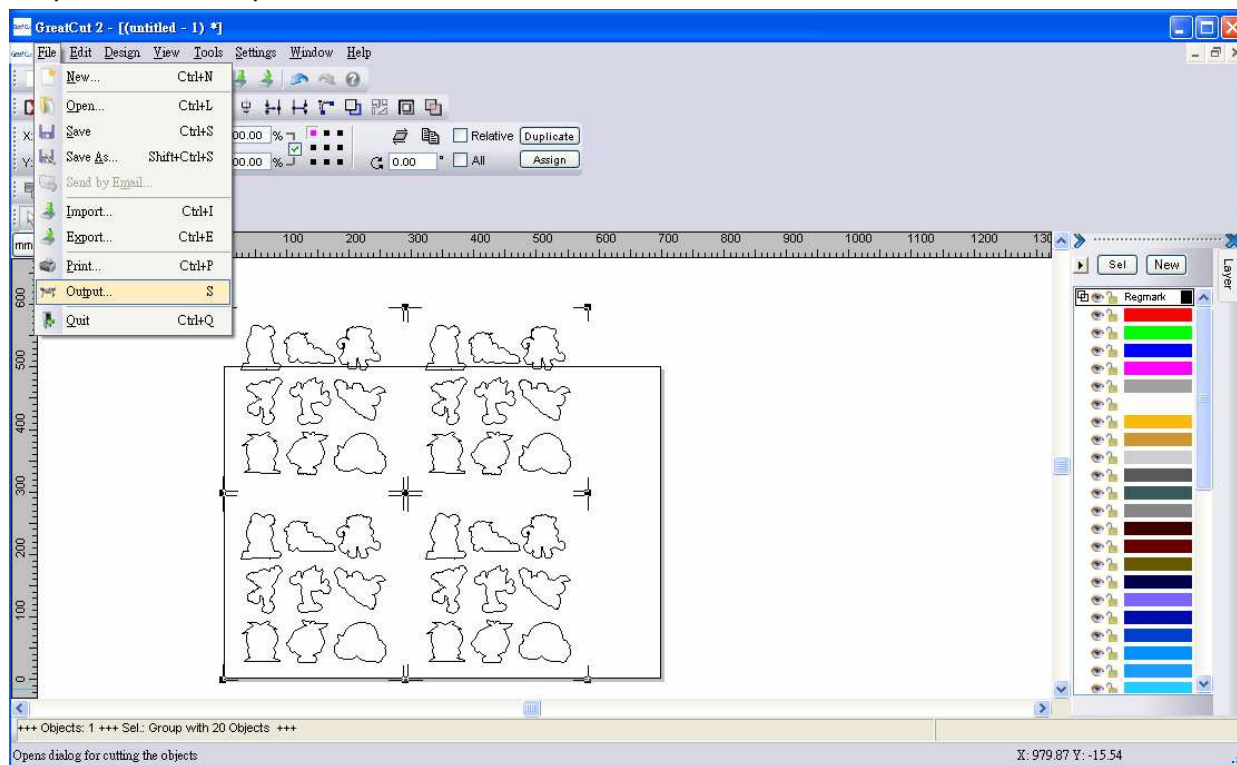
Step 1. Select both the entire object (including registration marks and the contour line) then click Cut in GreatCut2 under File.



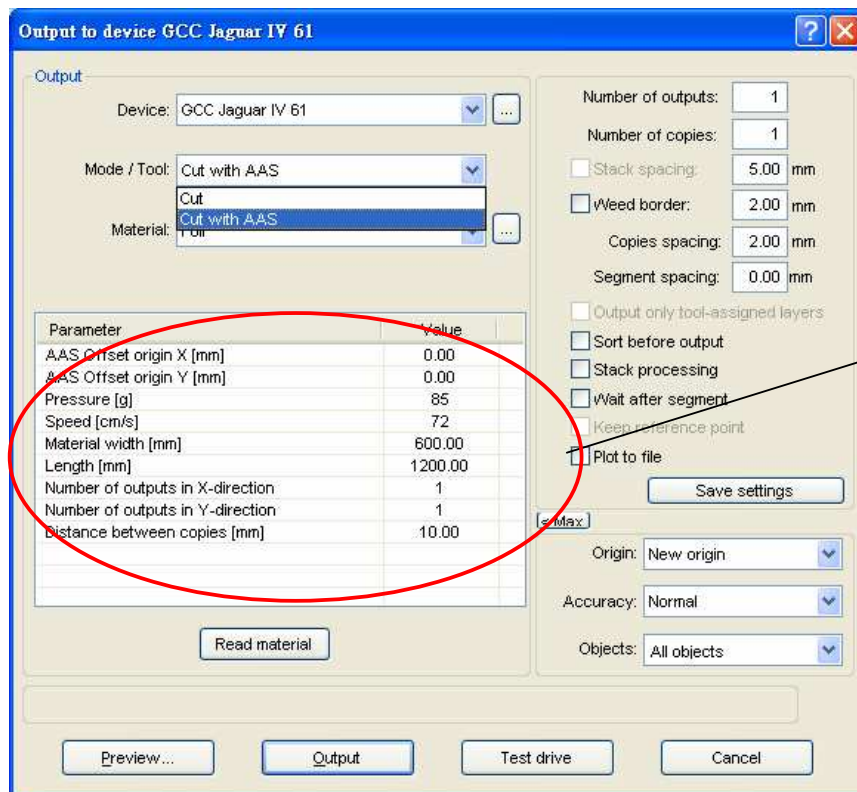
Step 2. The system will activate GreatCut2 automatically and import the registration marks and contour line to GreatCut 2.



Step 3. Select Output under File.



Step 4. Select Cut with AAS in Mode/Tool in the Output to device window.



Step 5. Click output and the object will be sent to GCC Cutting Plotter

Output to device GCC Jaguar IV 61

Output

Device: GCC Jaguar IV 61

Mode / Tool: Cut with AAS

Material: Foil

Parameter	Value
AAS Offset origin X [mm]	0.00
AAS Offset origin Y [mm]	0.00
Pressure [g]	85
Speed [cm/s]	72
Material width [mm]	600.00
Length [mm]	1200.00
Number of outputs in X-direction	1
Number of outputs in Y-direction	1
Distance between copies [mm]	10.00

Read material

Number of outputs: 1

Number of copies: 1

☐ Stack spacing: 5.00 mm

☐ Weed border: 2.00 mm

Copies spacing: 2.00 mm

Segment spacing: 0.00 mm

☐ Output only tool-assigned layers

☐ Sort before output

☐ Stack processing

☐ Wait after segment

☐ Keep reference point

☐ Plot to file

Save settings

≤ Max

Origin: New origin

Accuracy: Normal

Objects: All objects

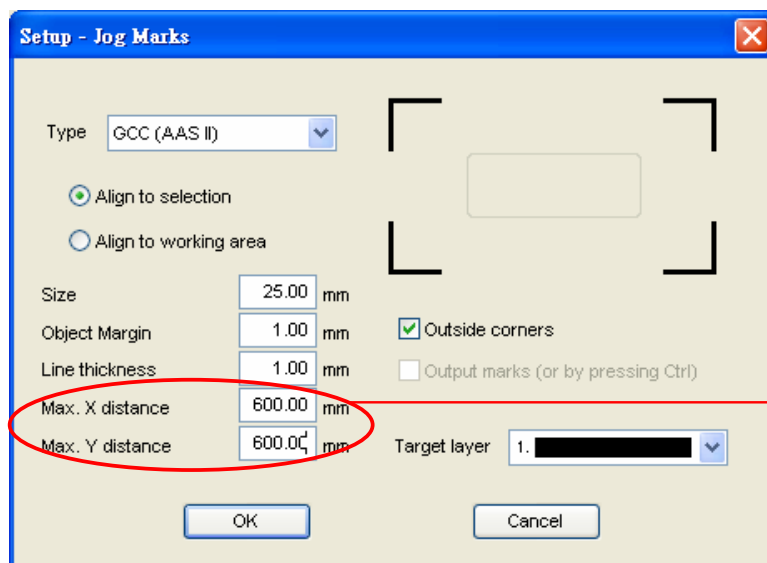
Preview... **Output** Test drive Cancel

Advanced Settings

Segmental Positioning

For precise cutting quality, it is suggested to apply “Segmental Positioning” by adjusting the x and y distance when you are working on an extra long or large-size image to increase cutting quality.

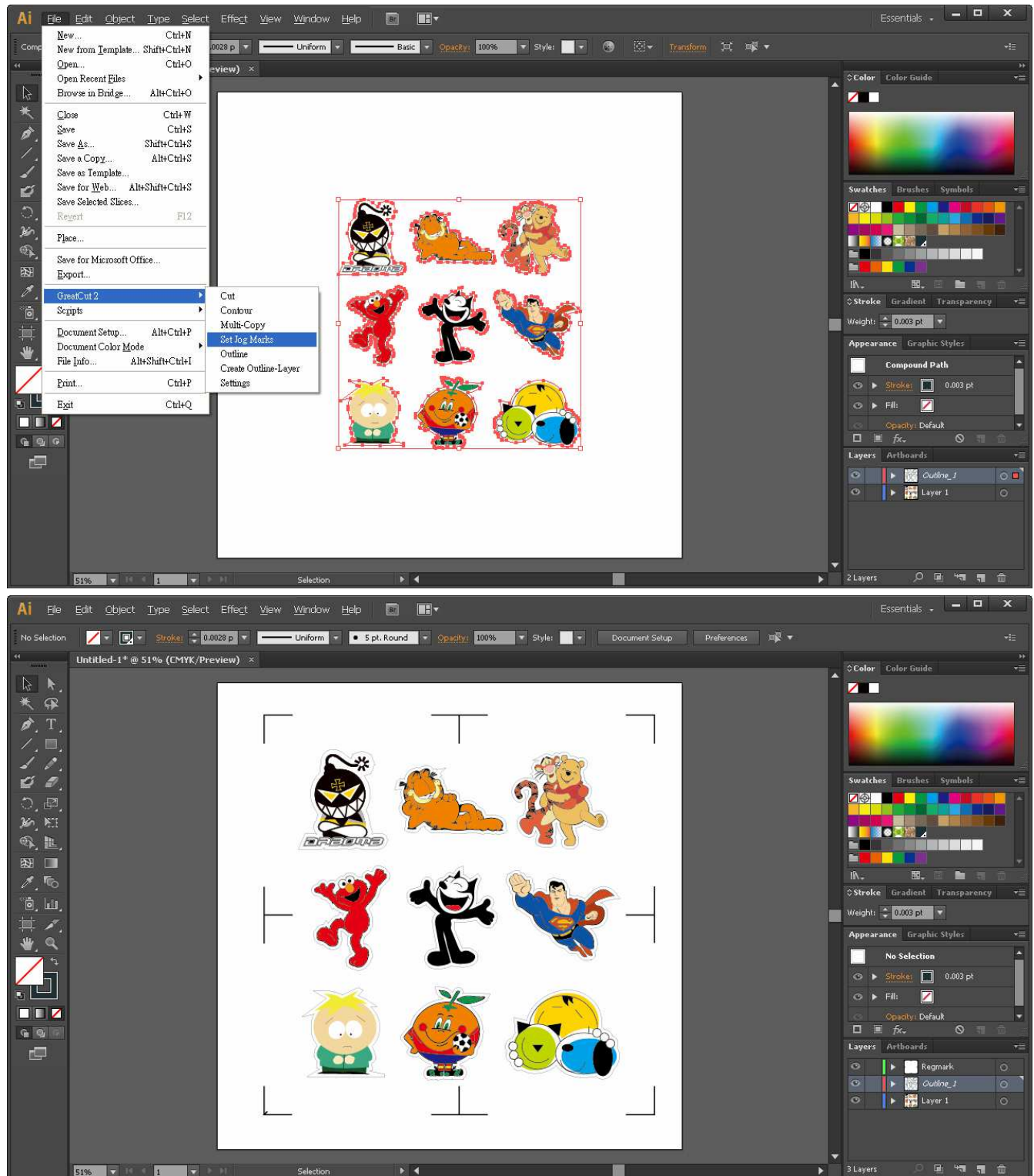
Follow the same steps in the **4-Point Positioning** section to complete the contour line setting and registration mark creation procedures. Adjust the size, object margin and line thickness of your registration marks and the space between registration marks by changing X, Y distance in the Setup-Jog Marks window and click OK.



Segmental Positioning

- **Max. x Distance:** The distance of intermediate position on the X axis
→ Range: 200-500 mm
- **Max. y Distance:** The distance of intermediate position on the Y axis
→ Range: 200-500 mm

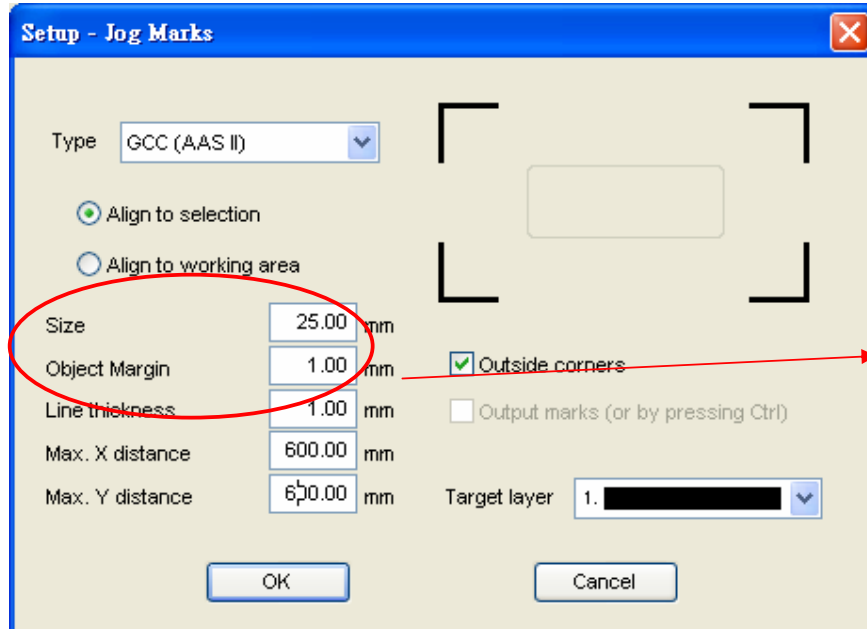
Click the Set Jog Marks Icon in the GreatCut 2 toolbar and 4 marks will be created as shown in the picture below.



Follow the same steps in the **Output** section to output your image to GCC Cutting Plotter.

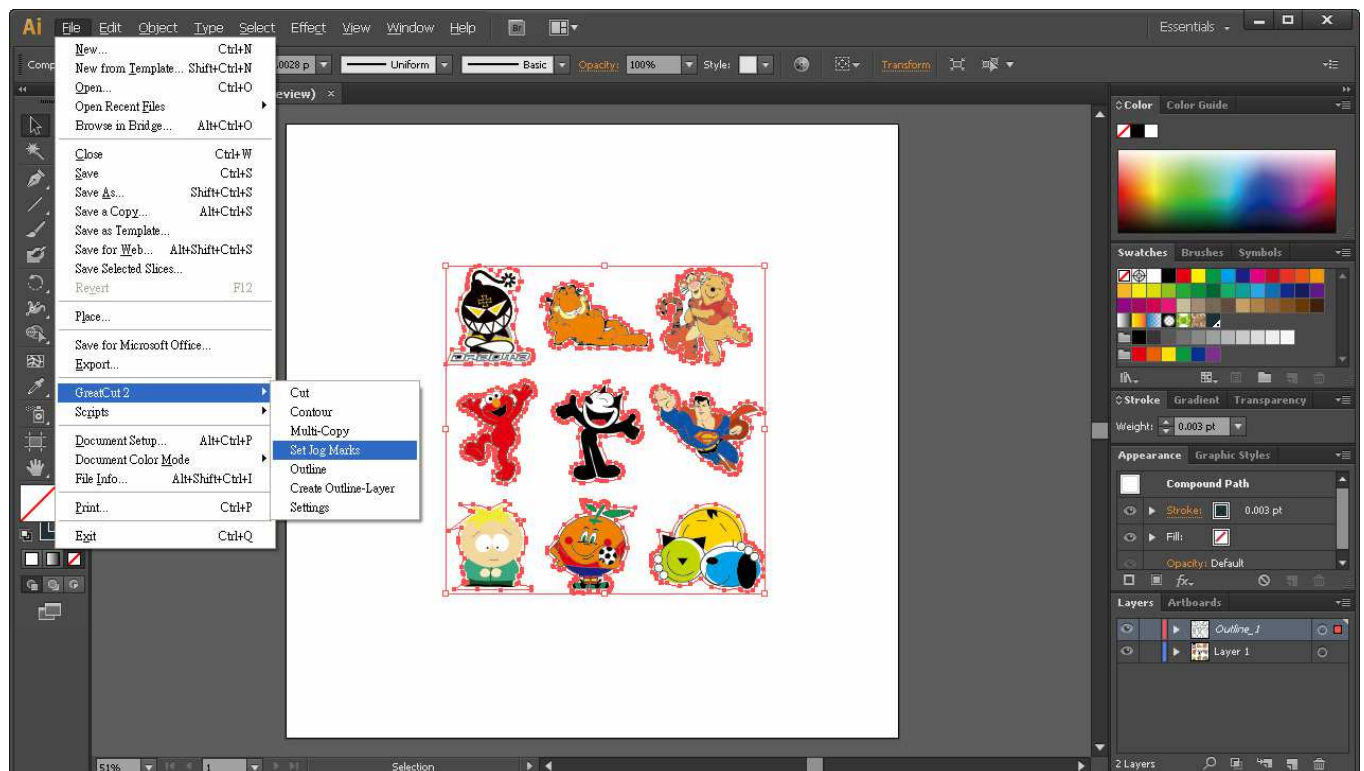
Multiple Copies

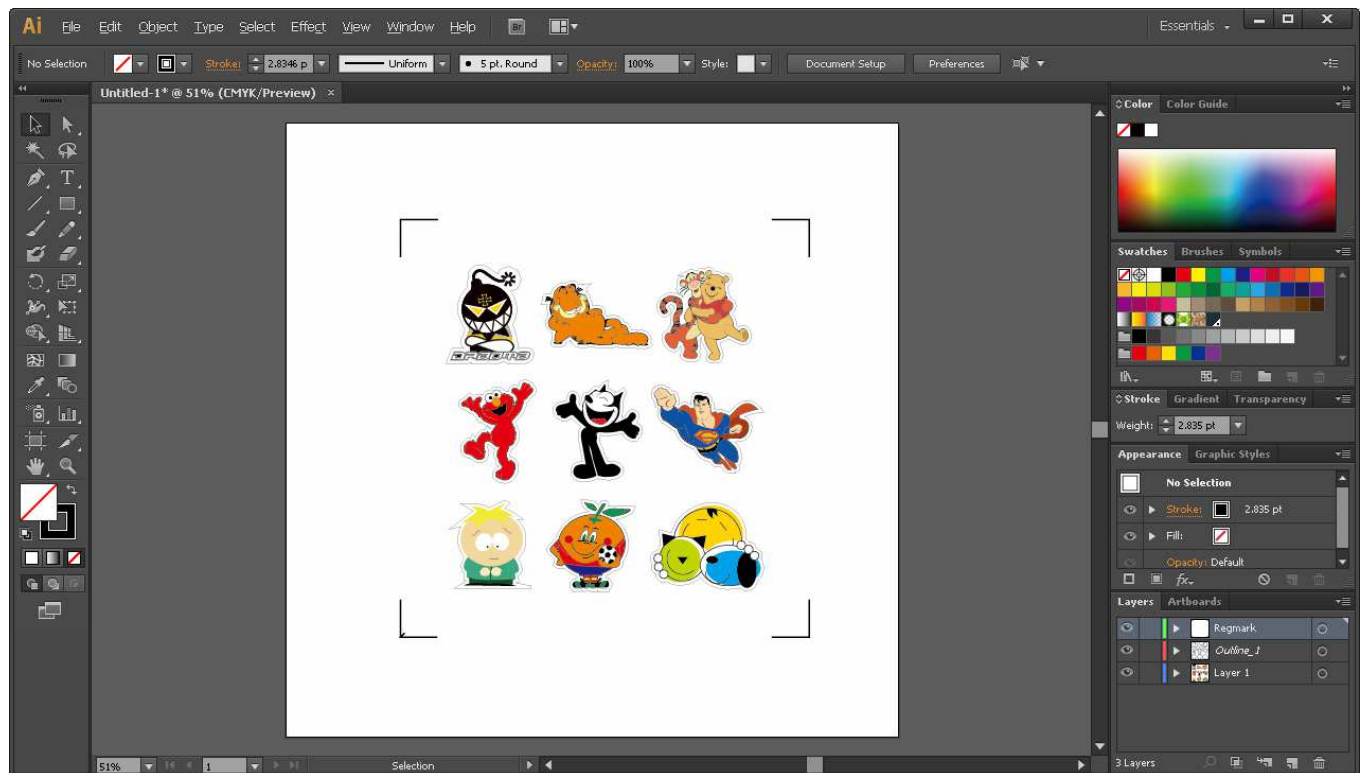
Follow the same steps in the **4-Point Positioning** section to complete the contour line setting and registration mark creation procedures.



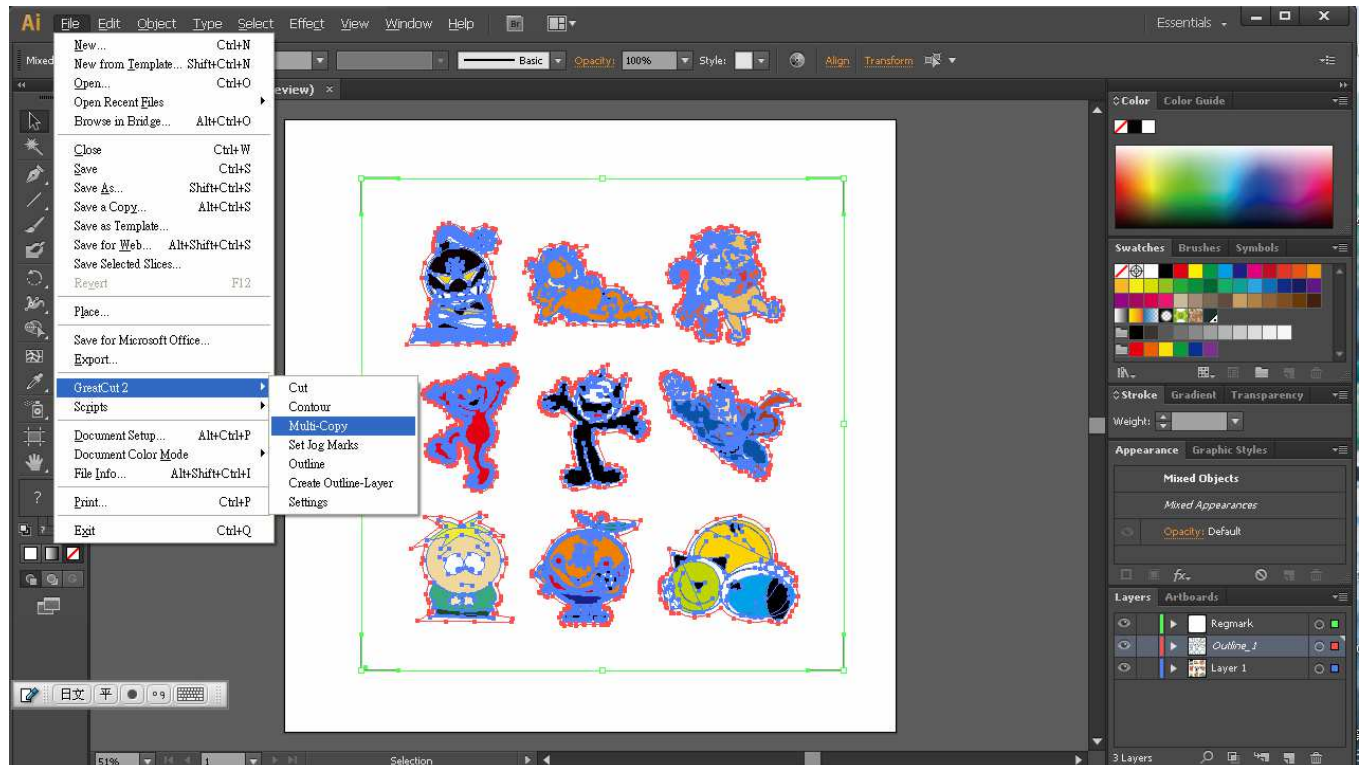
When you apply the “Multiple Copies” function, the value that has been set in this section will still be applied.

Click the Set Jog Marks Icon in the GreatCut 2 toolbar and the system will create the 4 marks as shown in the picture below.

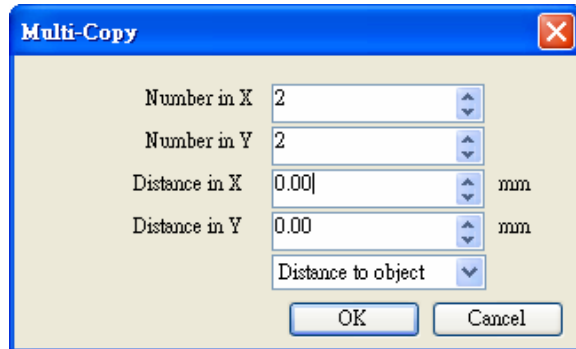




Click Multi-Copy in GreatCut2 under File.

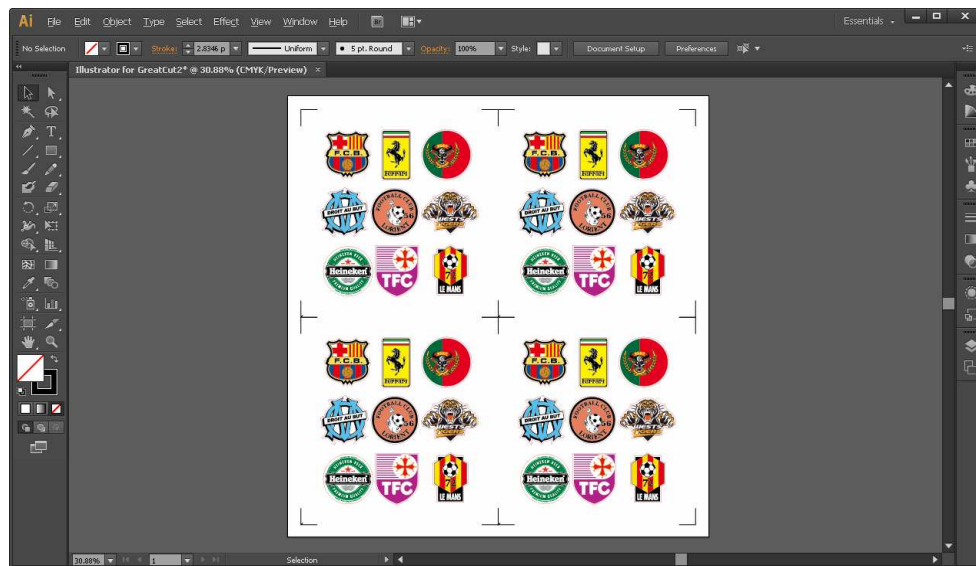


Complete the Number in X/Y (the number of copies desired on the X/Y axis) and Distance in X/Y (distance between each copy) settings then click OK.



Note: The spacing of vertical & horizontal (Offset X & Y) should be $\geq 20\text{mm}$ or $= 0\text{mm}$; users are advised to set the Distance in X/Y as 0 mm to remove the space between each copy to avoid the waste of materials.

The system will create several copies of the object with registration marks as shown in the picture below.



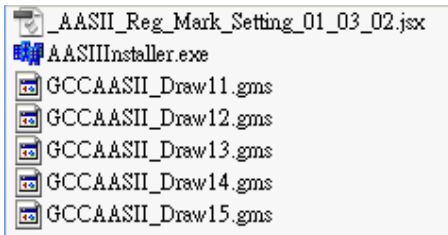
Follow the same steps in the **Output** section to output your image to GCC Cutting Plotter.

Illustrator Plug-In Instruction

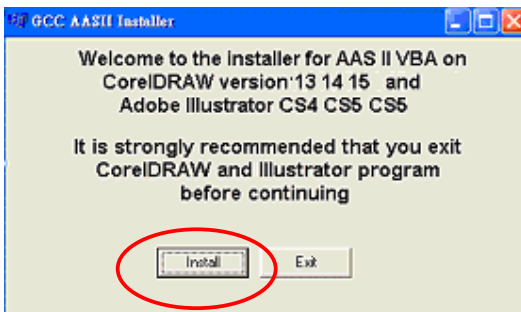
AASII VBA Installer is applicable for Illustrator Version CS4, CS5, CS6

Installation

1. Check the “AAS Illustrator Installer” folder in Ex 24 Lx Installation CD, and double click the “AASIIInstaller.exe” file to run the installation program.

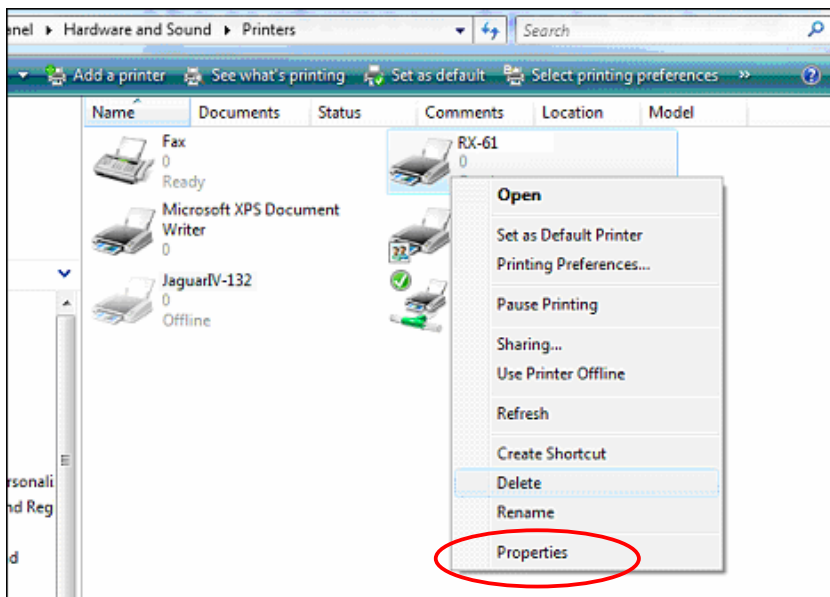


2. Press the “Install” button to begin installing GCC AASII Illustrator VBA.

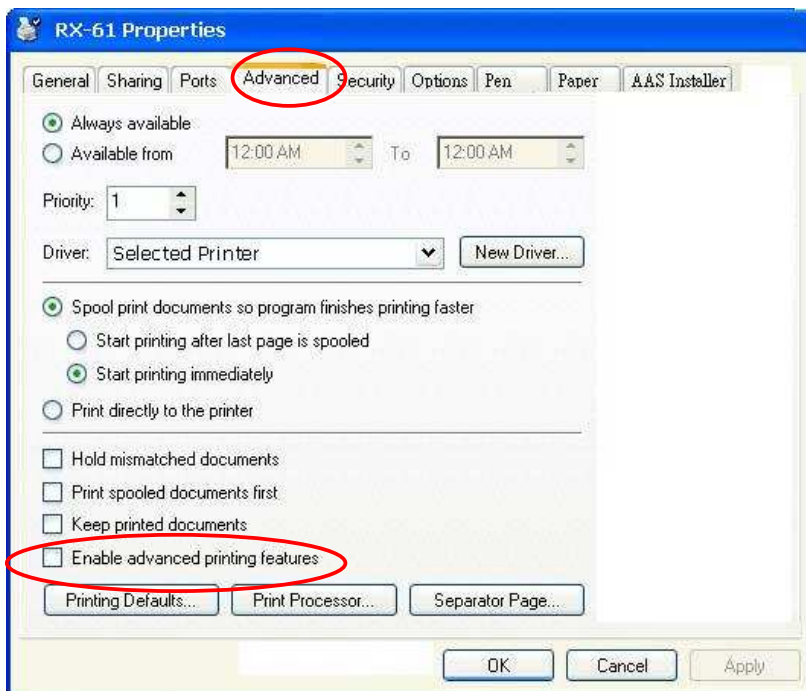


Printer Setting

Step1: Right click on the printer and select Properties to open the Printer Properties page

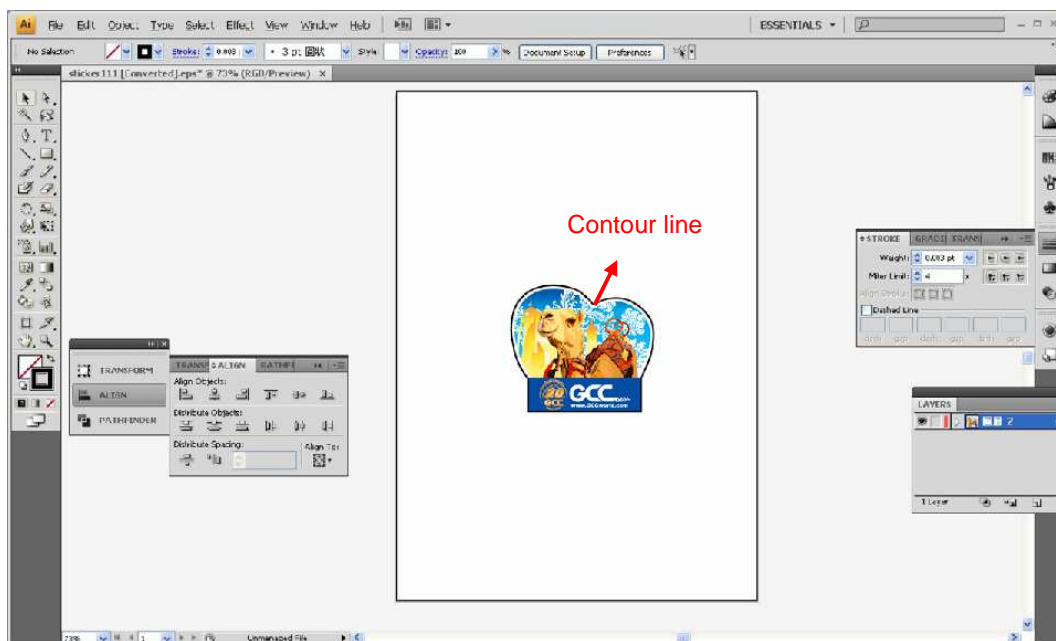


Step2: Go to the Advanced page and make sure the Enable advanced printing features box is unchecked.

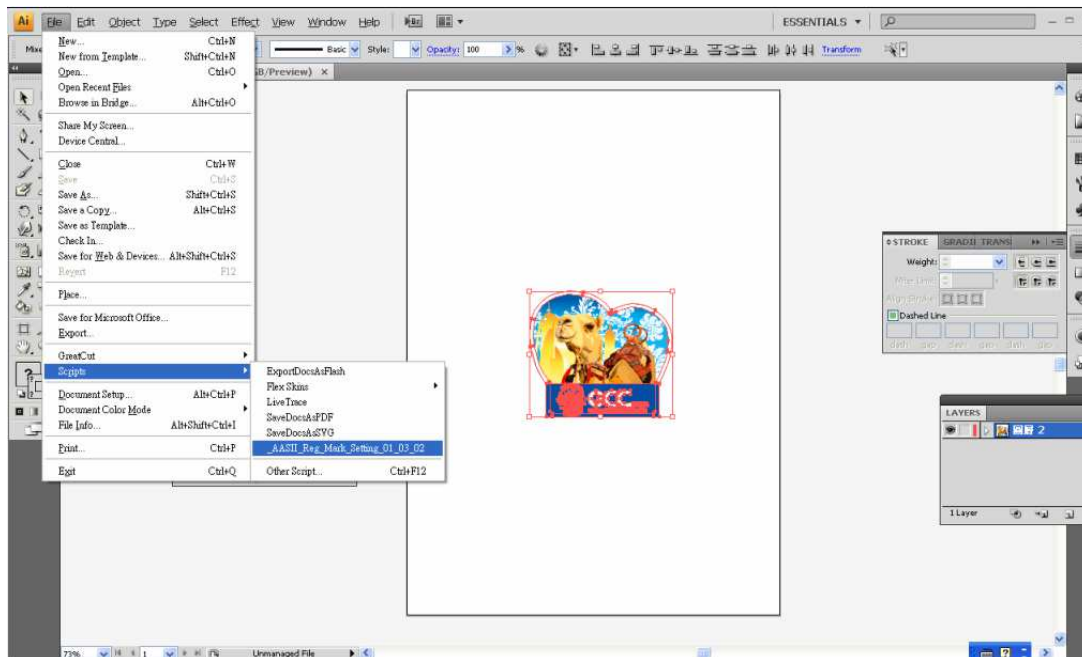


User Instructions

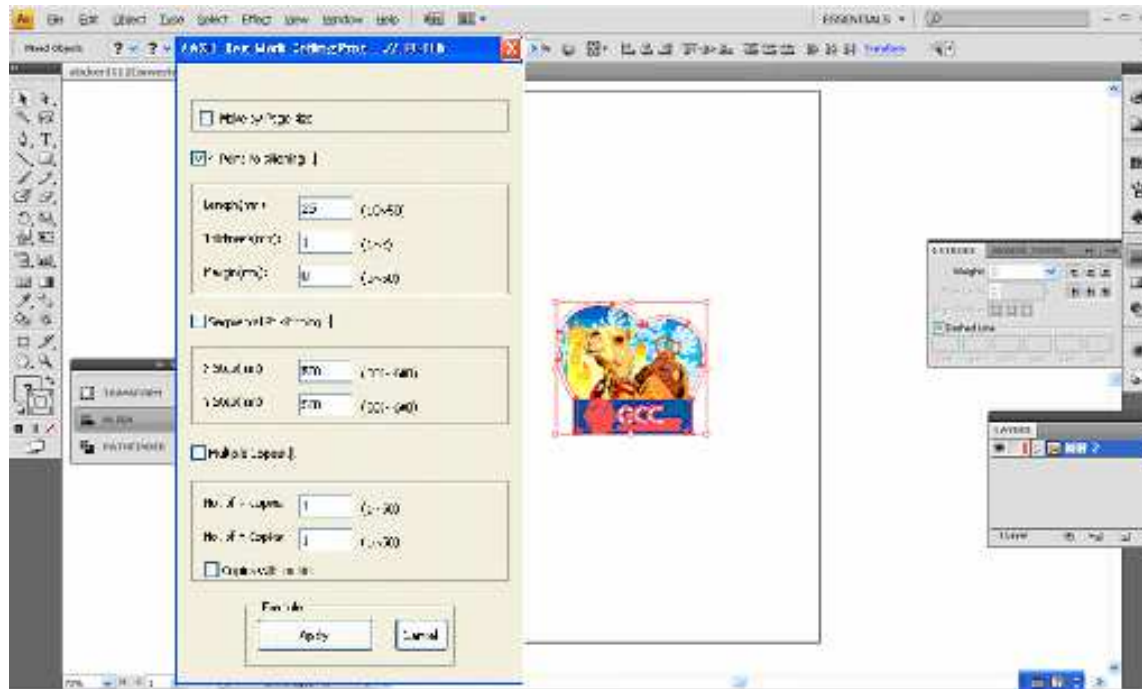
- 1) Open Illustrator.
- 2) Edit your image and create a contour line (Note: you must have the line width set as 0.001mm).



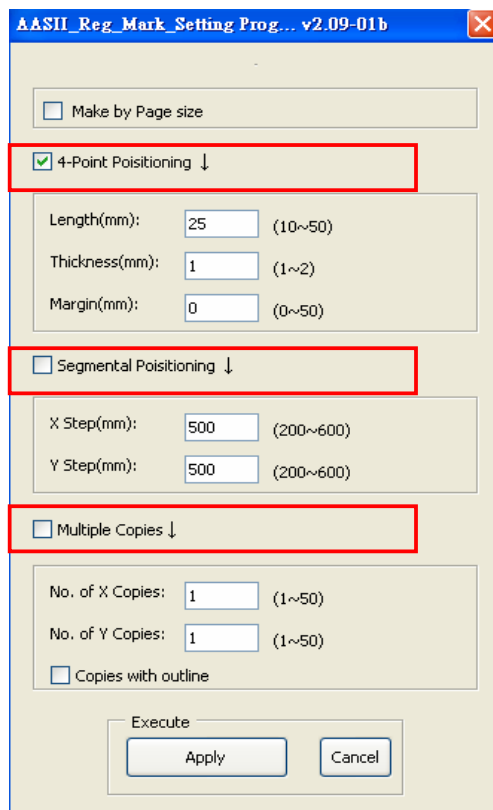
- 3) Click on the image and apply the AAS function (File→Scripts→_AASII_Reg_Mark_Setting_01_03_02)



4) Select the registration marks needed



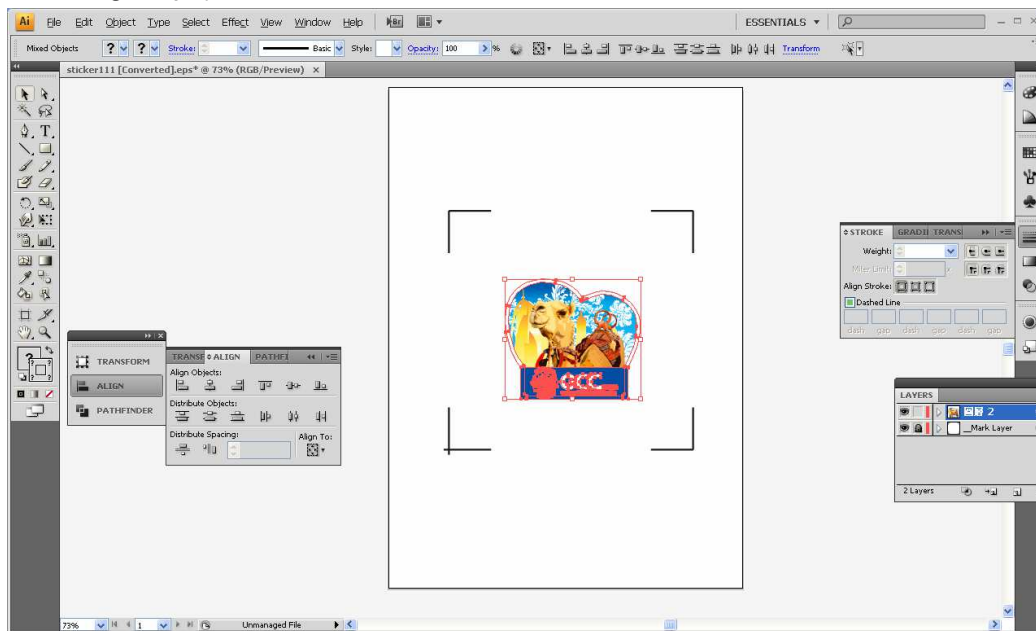
5) Three types of registration marks are introduced here: 4-Point Positioning, Segmental Positioning and Multiple Copies.



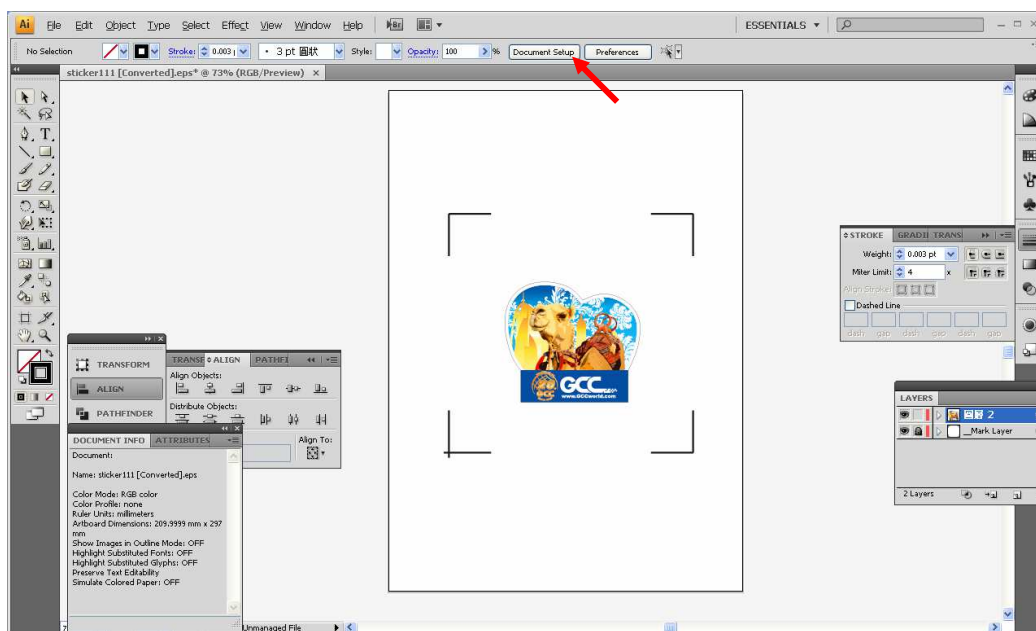
Note:

The values entered in the “4-Point Positioning” section (length, thickness and margin) will still be applied when you tick “Segmental Positioning” or “Multiple Copies”.

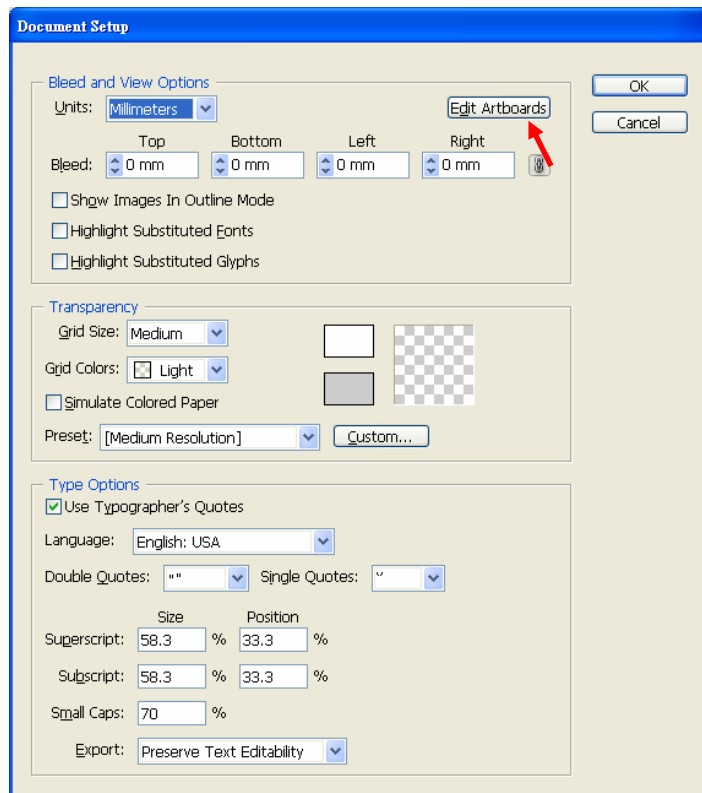
6) Confirm the registration marks (the 4-Point Position mark is used as an illustration in the following steps).



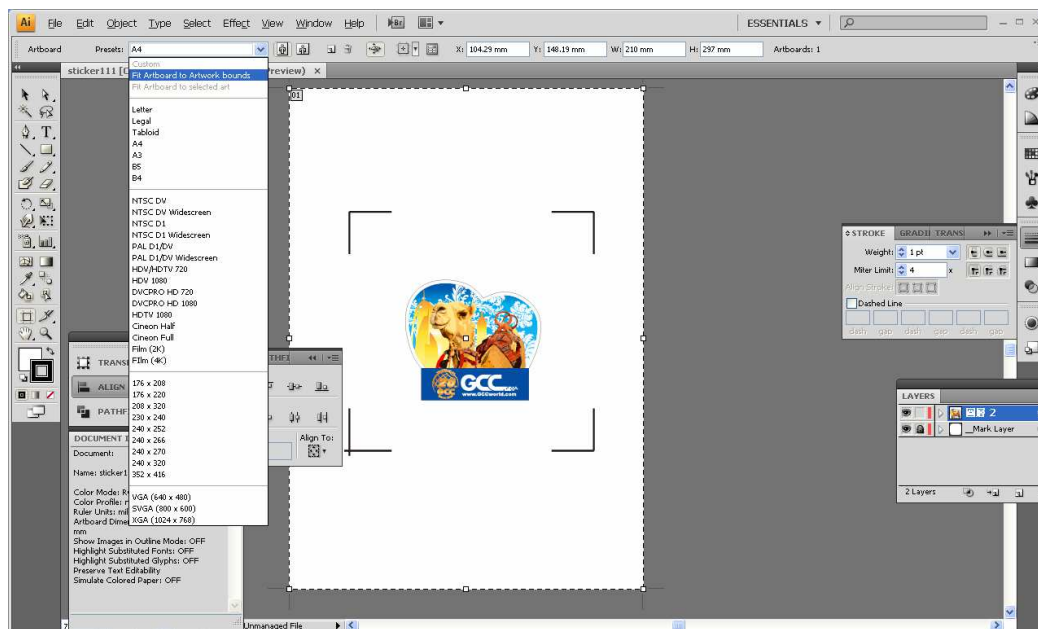
7) Click on the blank area on the page and then click “Document Setup”.



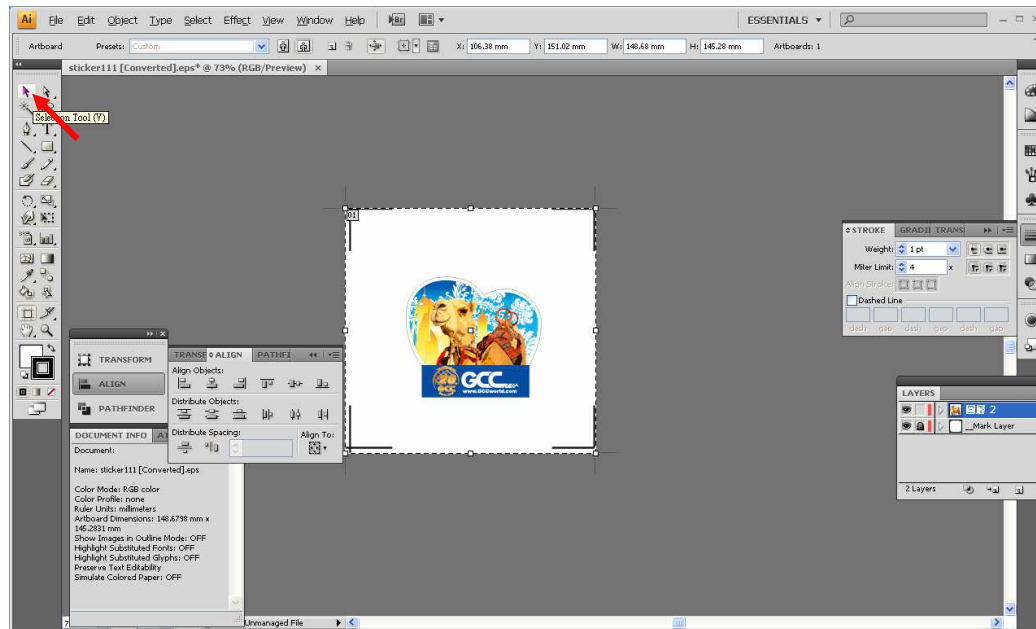
8) Hit “Edit Artboards”.



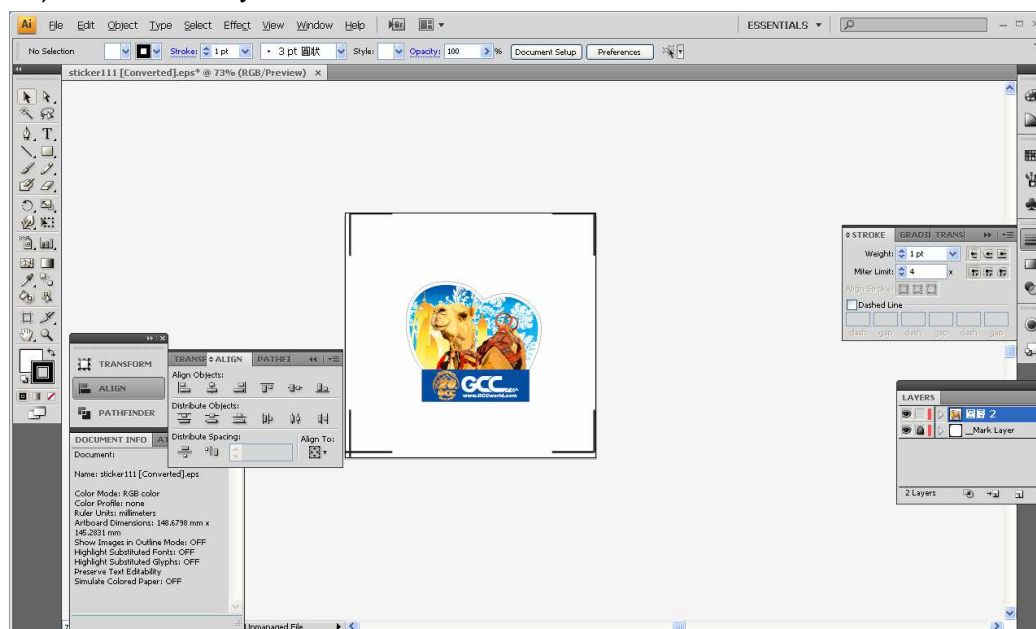
9) Click on “Presets → Fit Artboard to Artwork bounds”.



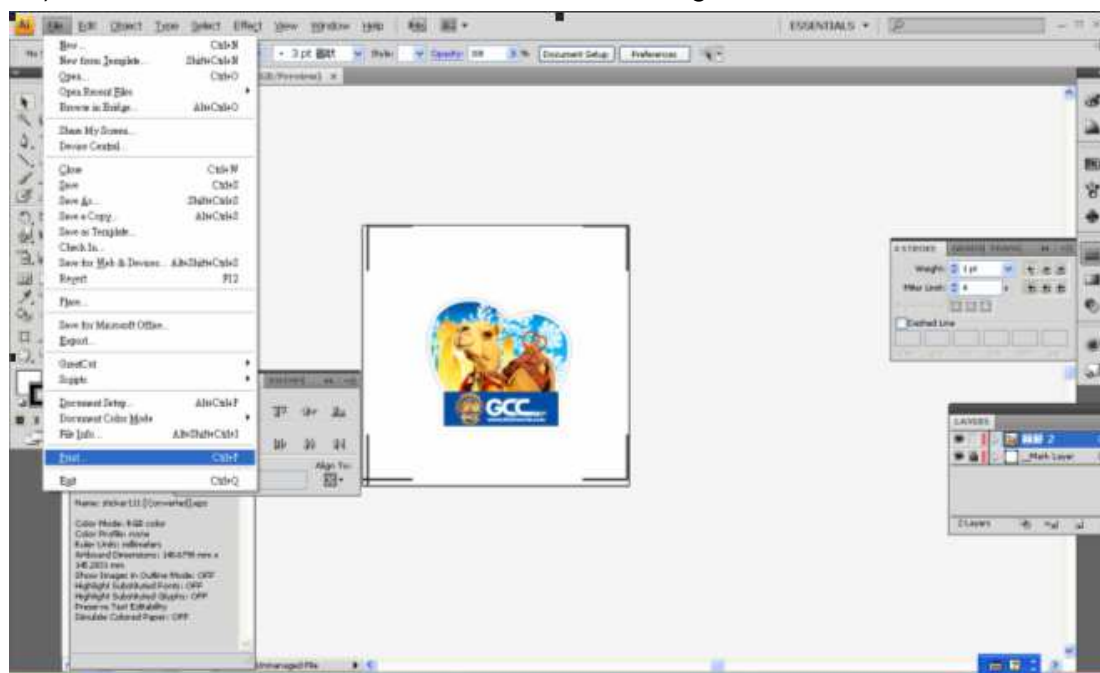
10) Please move your mouse to the tool bar on the left when step 10) is finished and then click “Selection Tool”.



11) This will take you back to the edit mode.

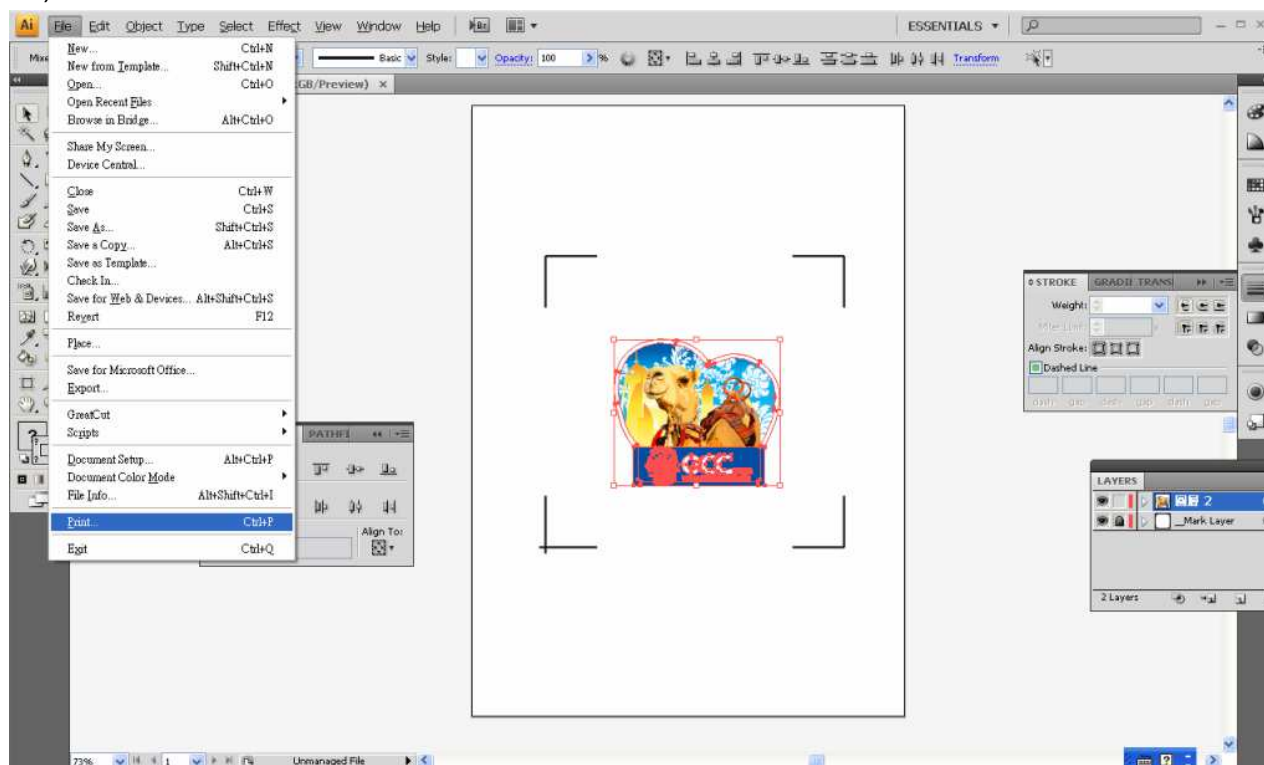


12) Print out the file with the contour line and the registration marks.

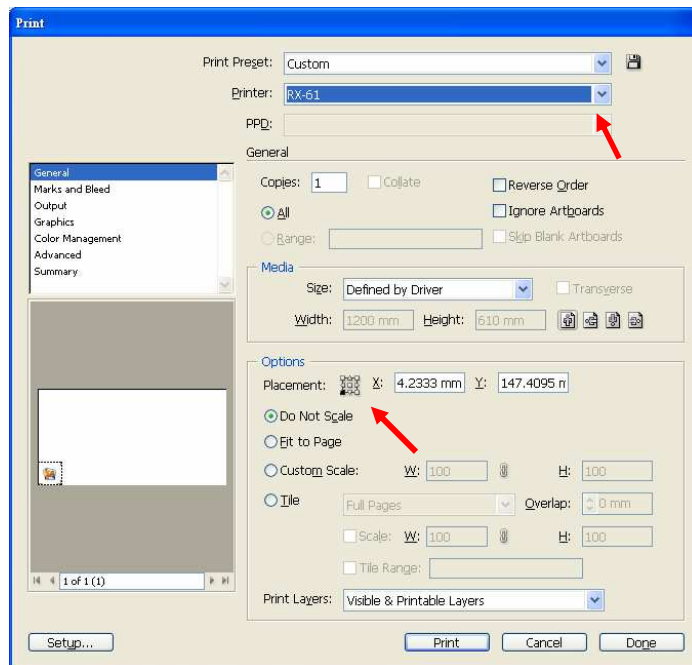


13) Place the printed file on the cutter, lower the pinch rollers and then position the carriage at the origin of the registration marks.

14) Send the file to the cutter.



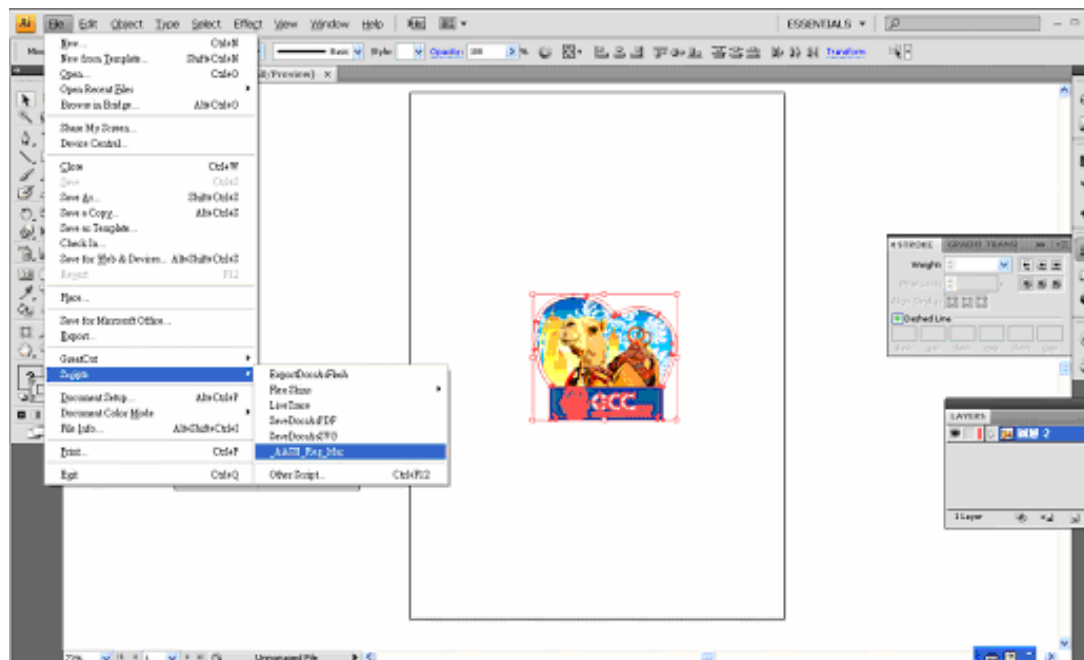
15) Select the cutter model, position the object in the bottom left corner.



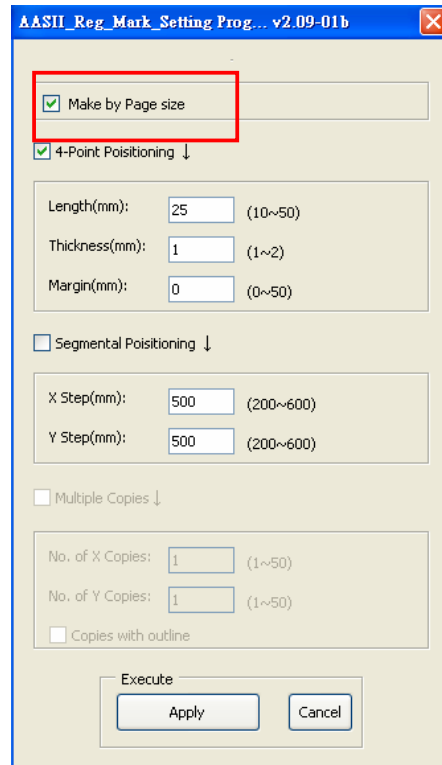
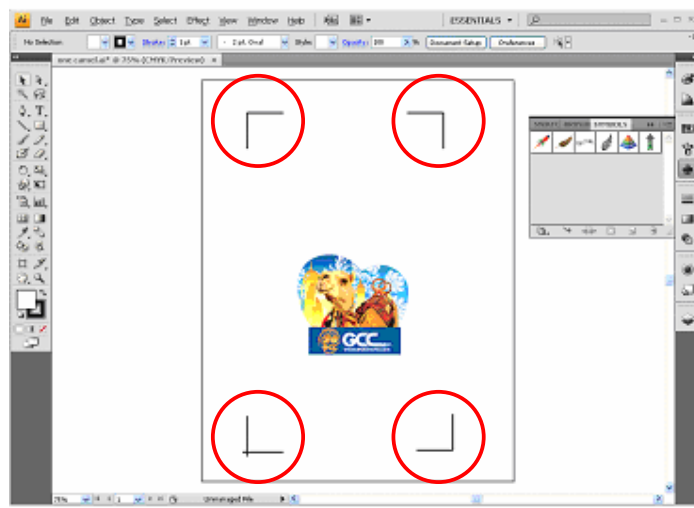
16) Your job is now completed.

Add Registration Mark by page size

If you want to create registration mark by page size, go to “Scripts” under “File” and select “_AASII_Plug_In”



Tick “Make by page size” and click “Apply” and the registration mark will be created on the 4 corners of the page automatically, shown as below.



Note:

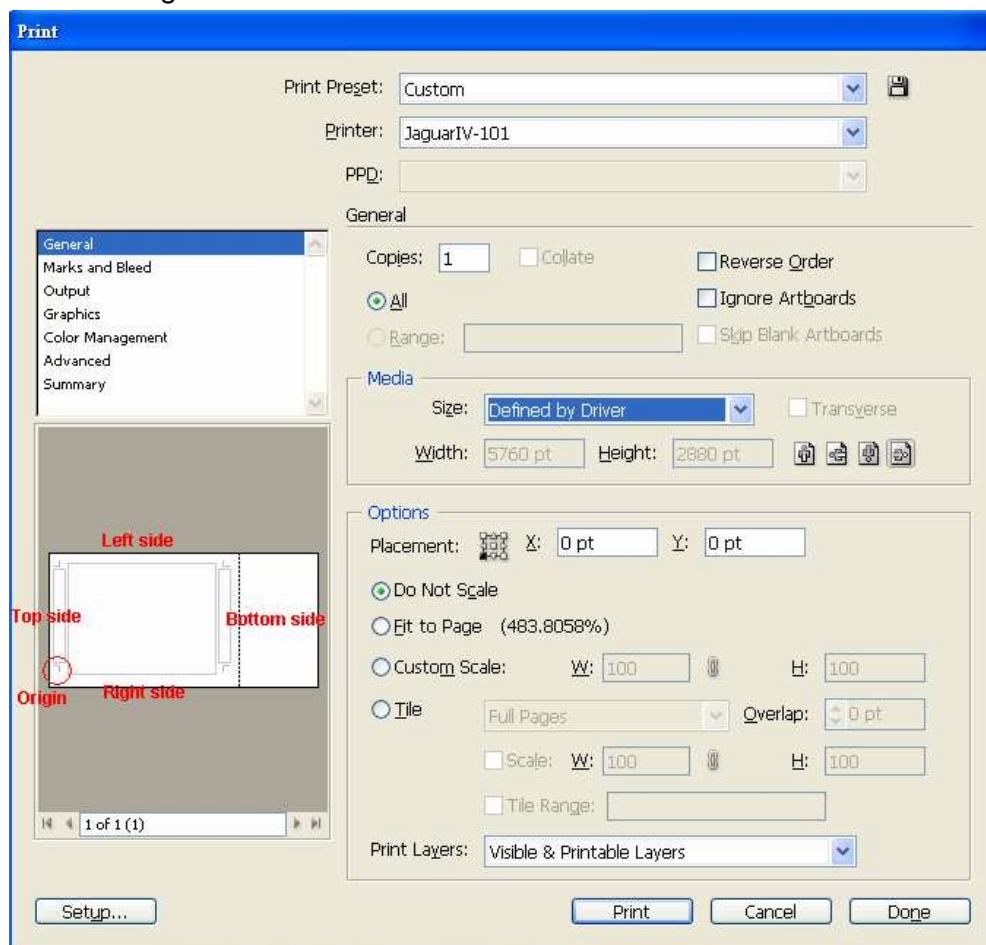
The length setting will be in the range of 10-50mm according to your page size

Workable area

It allows users to edit and cut graphics in the area outside the registration marks when adding registration marks by page.

For A4 size media sheet, the workable area is 2.5mm extended from the registration mark on left and right sides and 4.5mm extended from the registration mark on top side. On the bottom side, it is suggested to leave at least 25mm margin from the edge of media sheet to prevent sheets dropping or any error occurred while media sizing.

For A3 size media sheet, the workable area is 10mm extended from the registration mark on the left side, 9mm extended from the registration mark on the right side and 11mm extended from the registration mark on top side. On the bottom side, it is suggested to leave at least 25mm margin from the edge of media sheet to prevent sheets dropping or any error occurred while media sizing.

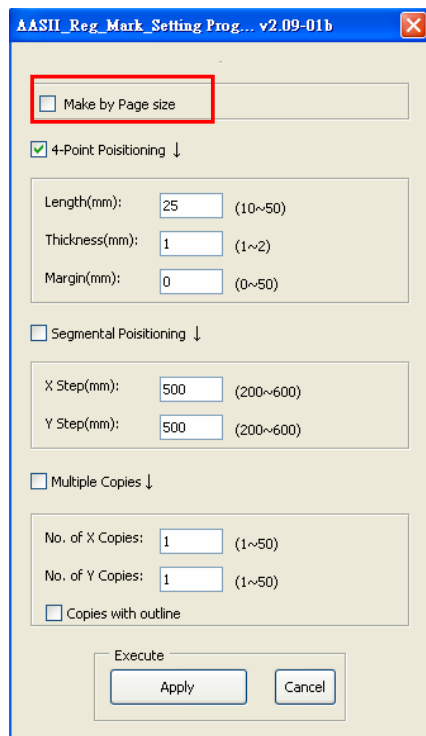
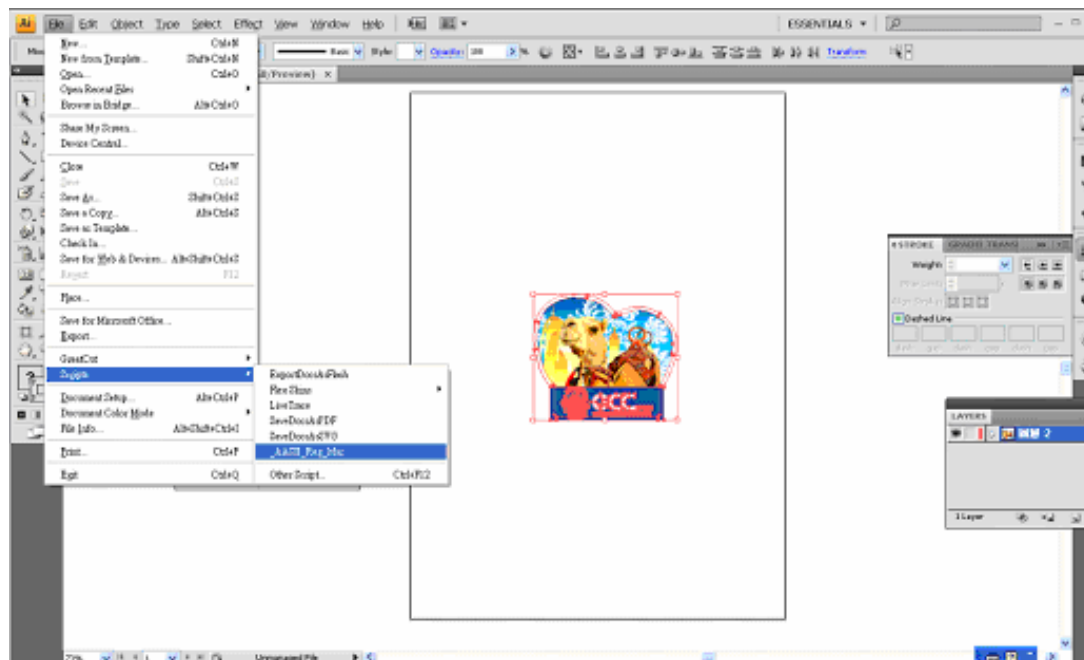


NOTE: Select “**Edge**” mode when media sizing to allow the media sheet to be unrolled. If you select “**Single**” mode, the media sheet will not be able to be moved back and hence fail to be detected by front paper sensor.

Add Registration Mark by Object

If you add registration mark by Object, you will be offered three options of registration marks.

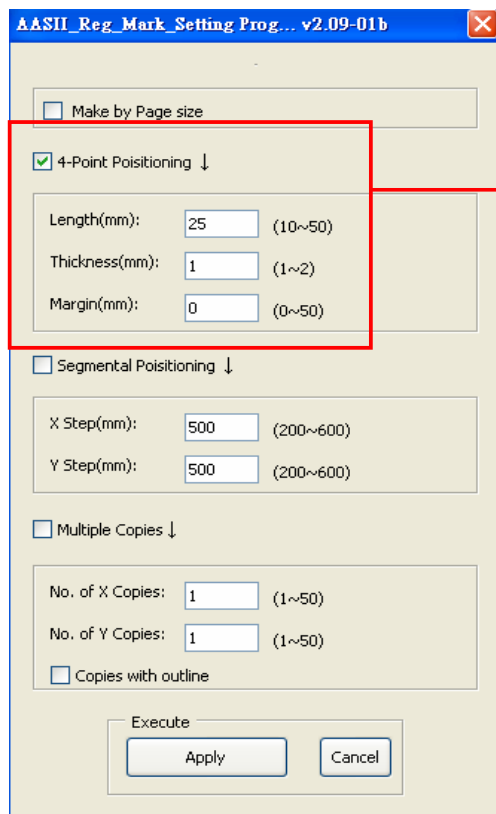
Firstly, select the graphic which you want to add registration mark on and go to “Scripts” under “File” and select “_AASII_Plug_In”.



Make sure to untick “Make by page size” and choose one of the registration mark types whichever is suitable.

Three types of registration marks

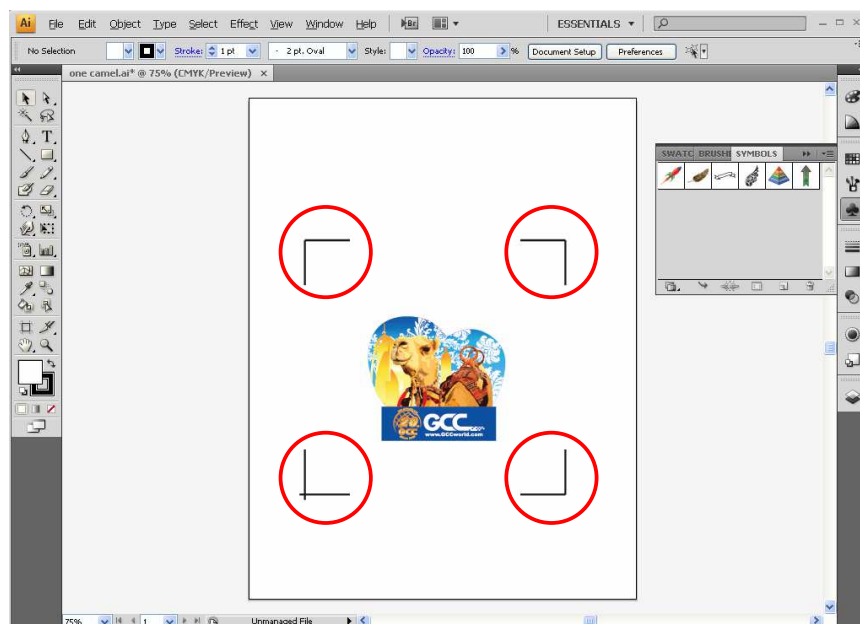
4-Point Positioning



4-Point Positioning

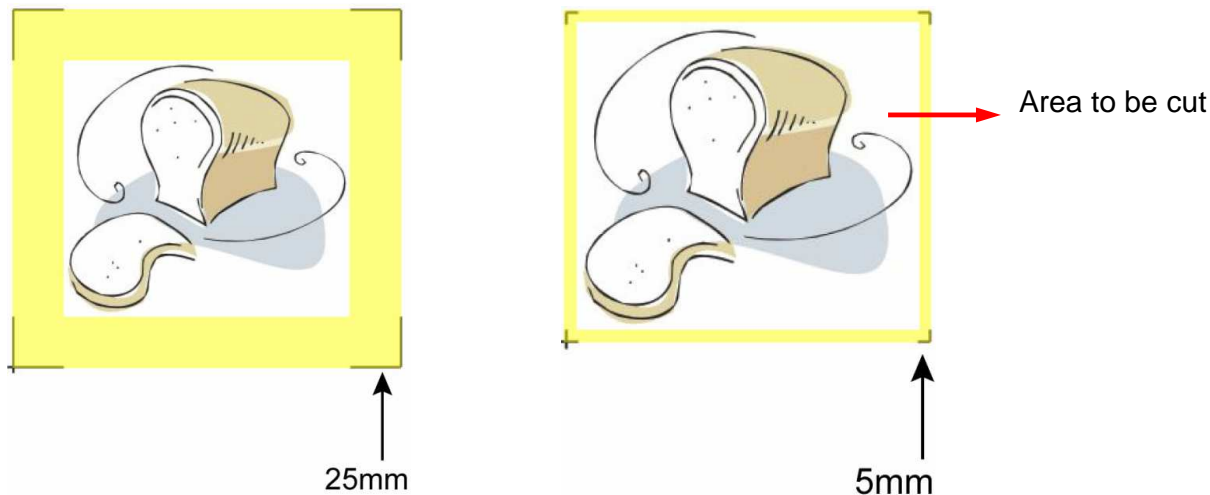
- Length: The length of marks
→ Range: 5mm~50mm
→ Optimized Setting: 25mm
- Thickness: The line thickness of marks
→ Range: 1mm~2mm
→ Optimized Setting: 1mm
- Margin: The distance between marks and images
→ Range: 0mm~50mm
→ Optimized Setting: 5mm

The system will create the 4 marks as shown in the picture below.



Note:

1. To save your materials, in addition to amending object margins, you can also adjust the length of the registration marks (5mm minimum) when you apply 4-Point Positioning (see table 1 for suggestions based on different material sizes). The smaller the size is, the smaller the distance between the object and the registration marks is (see the figures below).



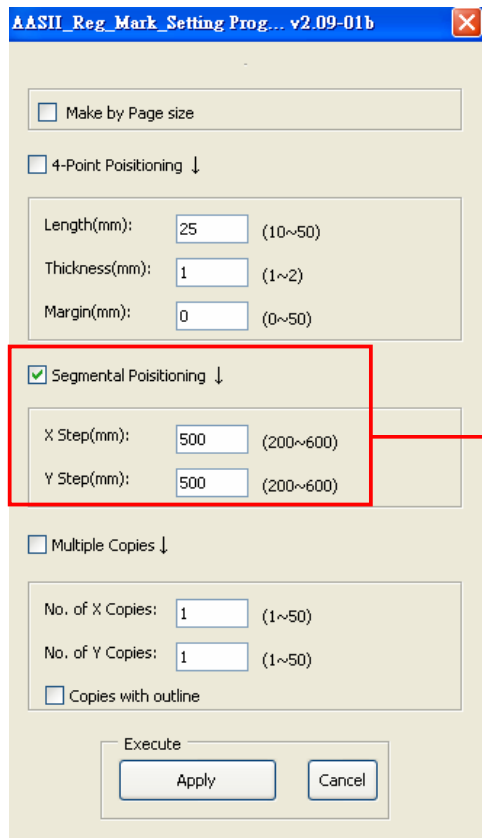
Page size (unit: mm)	Suggested mark length (unit: mm)
A6 (105 x 148)	5
A5 (148 x 210)	8
A4 (210 x 297)	11
A3 (297 x 420)	16
A2 (420 x 594)	23
A1 (594 x 841) and above	25*

Table 1

*25mm is the suggested value for the registration mark length

2. The size of the registration marks would affect the accuracy of registration mark detection so please make sure the amount you enter is reasonable.

Segmental Positioning

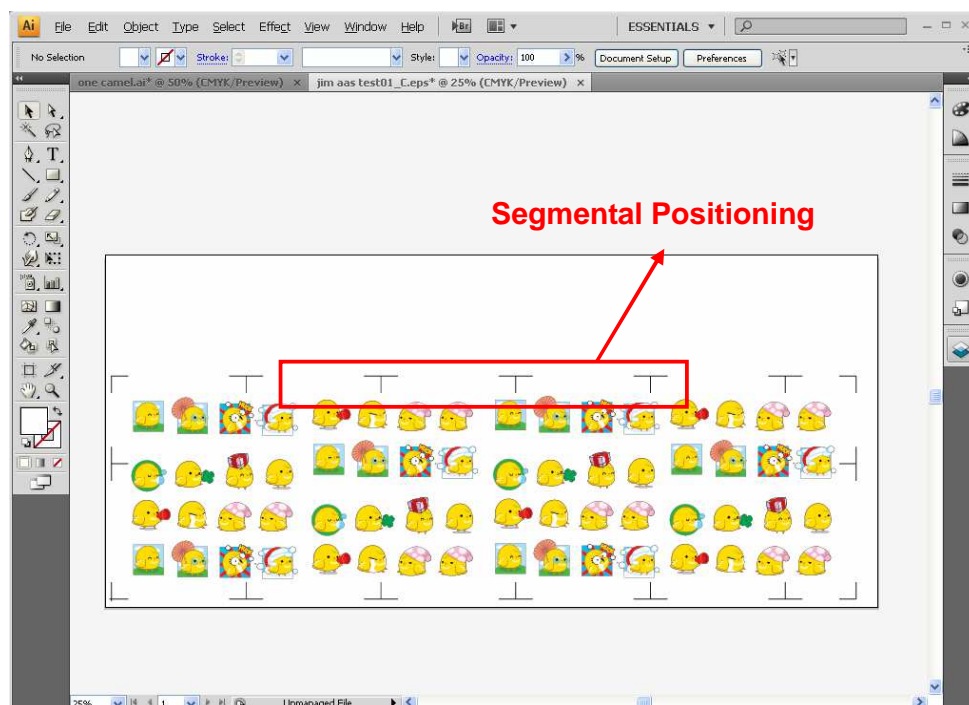


For precise cutting quality, it is suggested to select “Segmental Positioning” when you are working on an extra long or large-sized image to increase cutting accuracy.

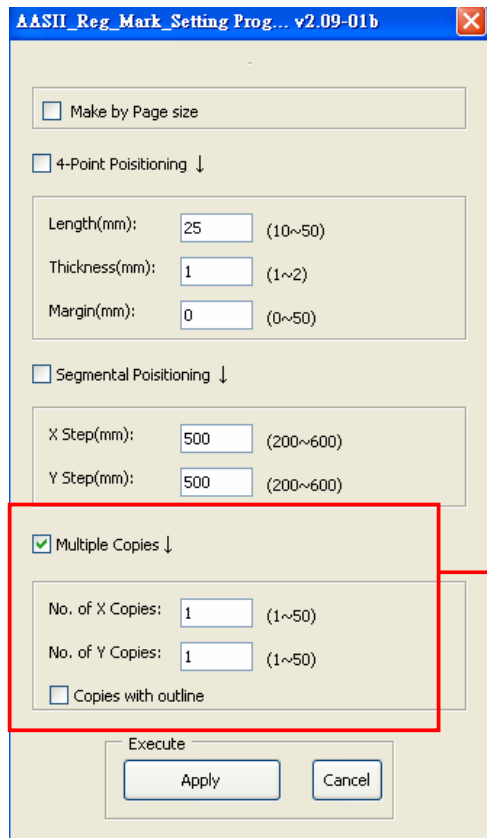
Segmental Positioning

- X Step: The distance of intermediate position on the X axis
- Y Step: The distance of intermediate position on the Y axis
 - Range: 200mm~600mm
 - Optimized Setting: Less than 500mm

The system will create the marks as shown in the picture below



Multiple Copies

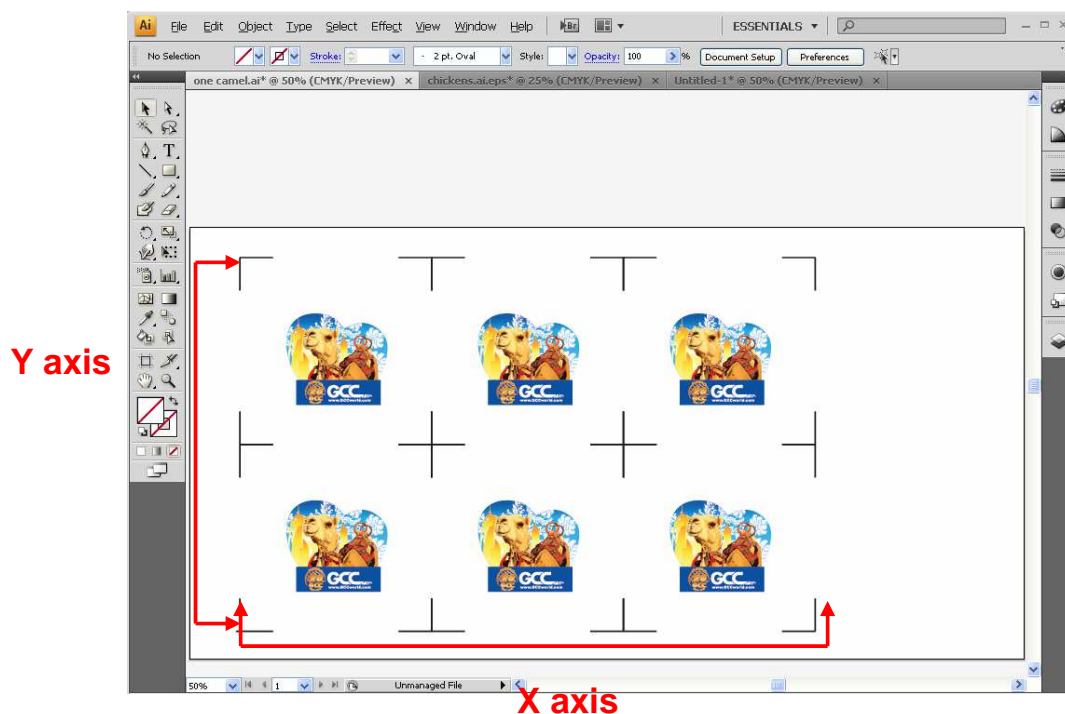


It is suggested to select “Multiple Copies” when you would like to make several copies of one image on your material to increase cutting accuracy.

Multiple Copies

- No. of X Copies: The numbers of copies on X axis
- No. of Y Copies: The numbers of copies on Y axis
→ Range: 1~50. (The more copies you make, the more time is needed for data transmission.)
→ Numbers of X Copies * Numbers of Y Copies = The total amount of image copies
- Copies with outline : To show outlines of image graphics
- Margin: Space between marks; must be 0 or ≥ 20 , no negative numbers allowed

The system will create the as shown in the picture below.



SignPal 10.5 Instruction

The new SignPal 10.5 Software is Windows System compatible and all versions support the AAS II contour cutting function of RX, Jaguar IV, Puma III, Expert 24 LX, and Expert 52 LX cutting plotters.

SignPal 10.5 Instruction Index:

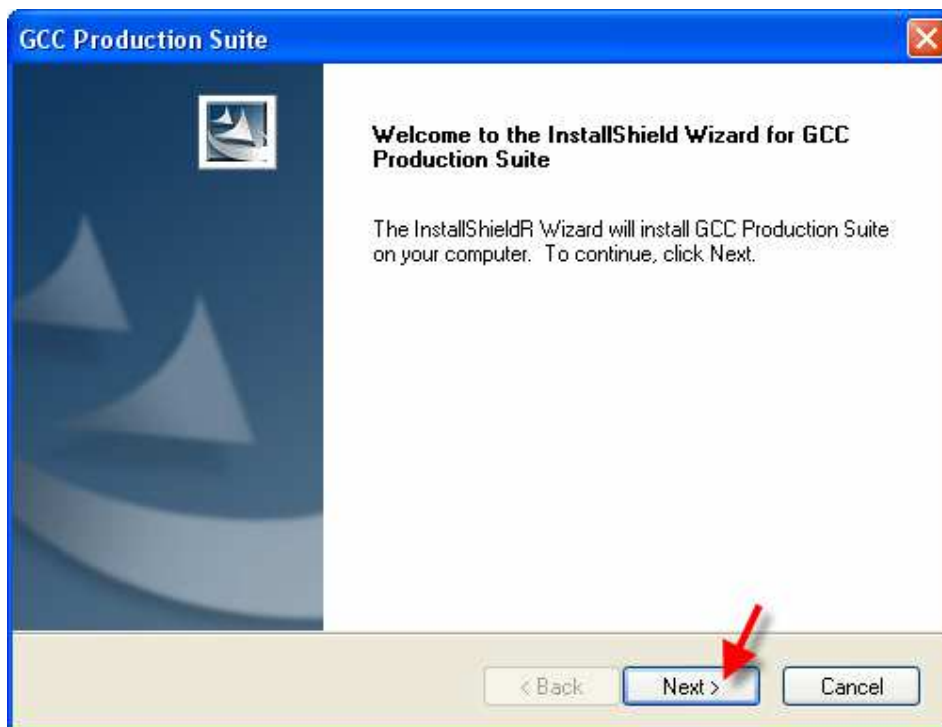
- [1] Installing the SignPal 10.5 software
- [2] Set up your GCC Cutter on Production Manager
 - SignPal AAS II Quick Start
- [3] SignPal 10.5 Feature Lists

[1] Installing the SignPal 10.5 software

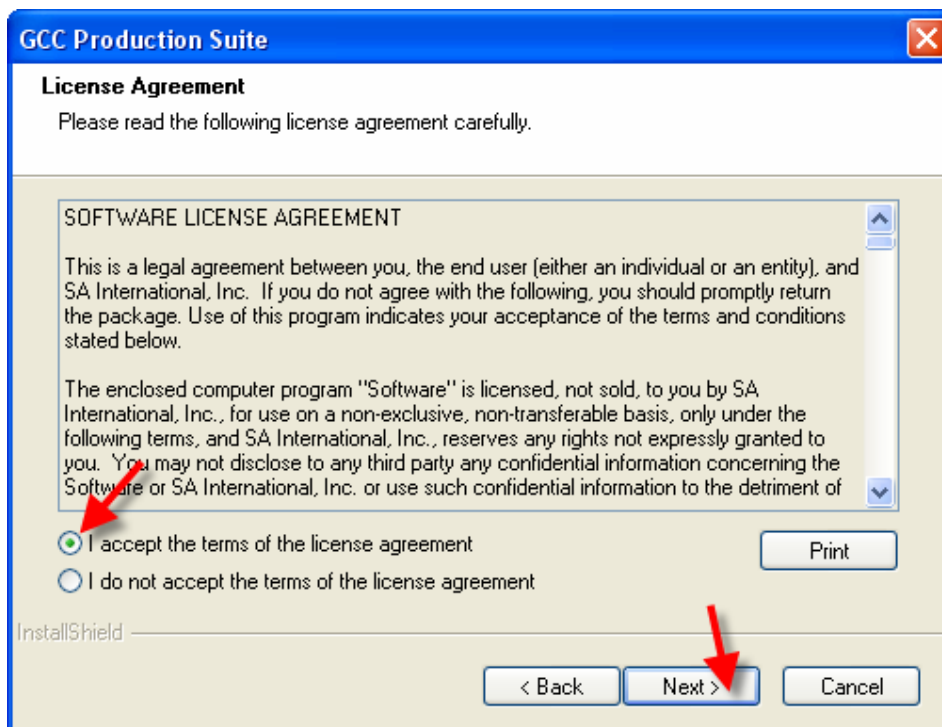
To install the software, you must have Administrator privileges. To use the software, you must have Administrator or Power User privileges. See your Windows user guide for more information.

1. Make sure the dongle is inserted.
2. Uninstall any previous version of the software.
3. Insert the Installation DVD.
4. Select a language and click **OK**.
5. Click **Next**.

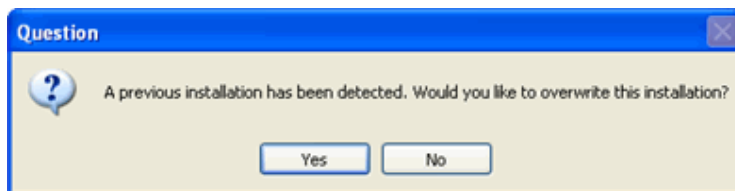
Please note that the pictures below of SignPal 10.5 serve as illustrations in the following steps.



6. Read the Software License Agreement and select **I accept the terms of the license agreement** and click **Next** to accept.

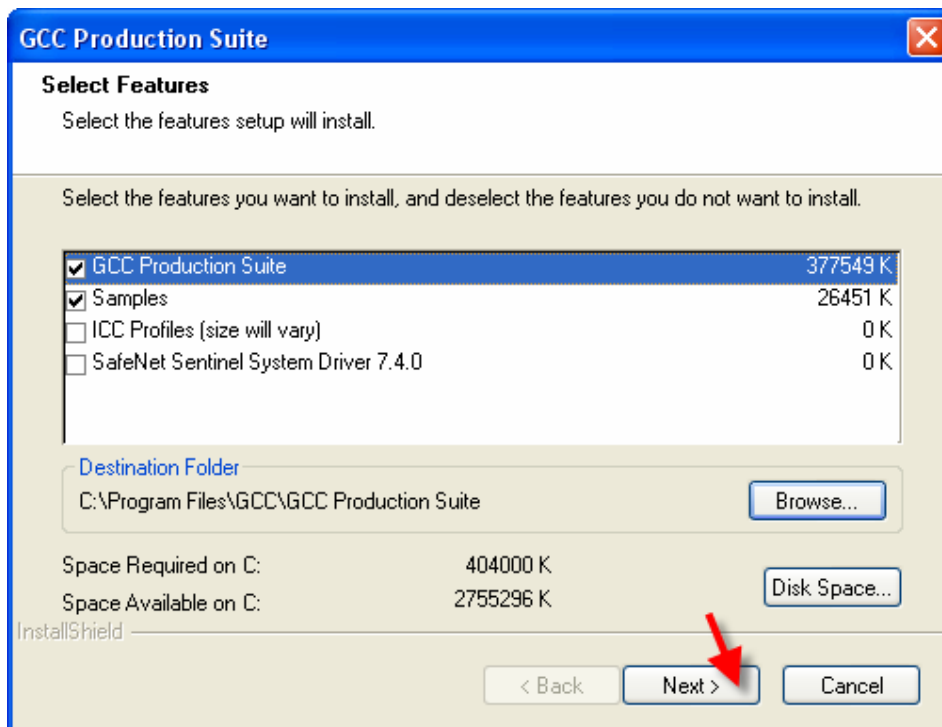


7. If you did not have any previous versions of the software installed, skip to the next step. If you still have a previous version of the software installed, you will be prompted to overwrite the existing installation. Click **Yes** to overwrite any previous installation of the software.

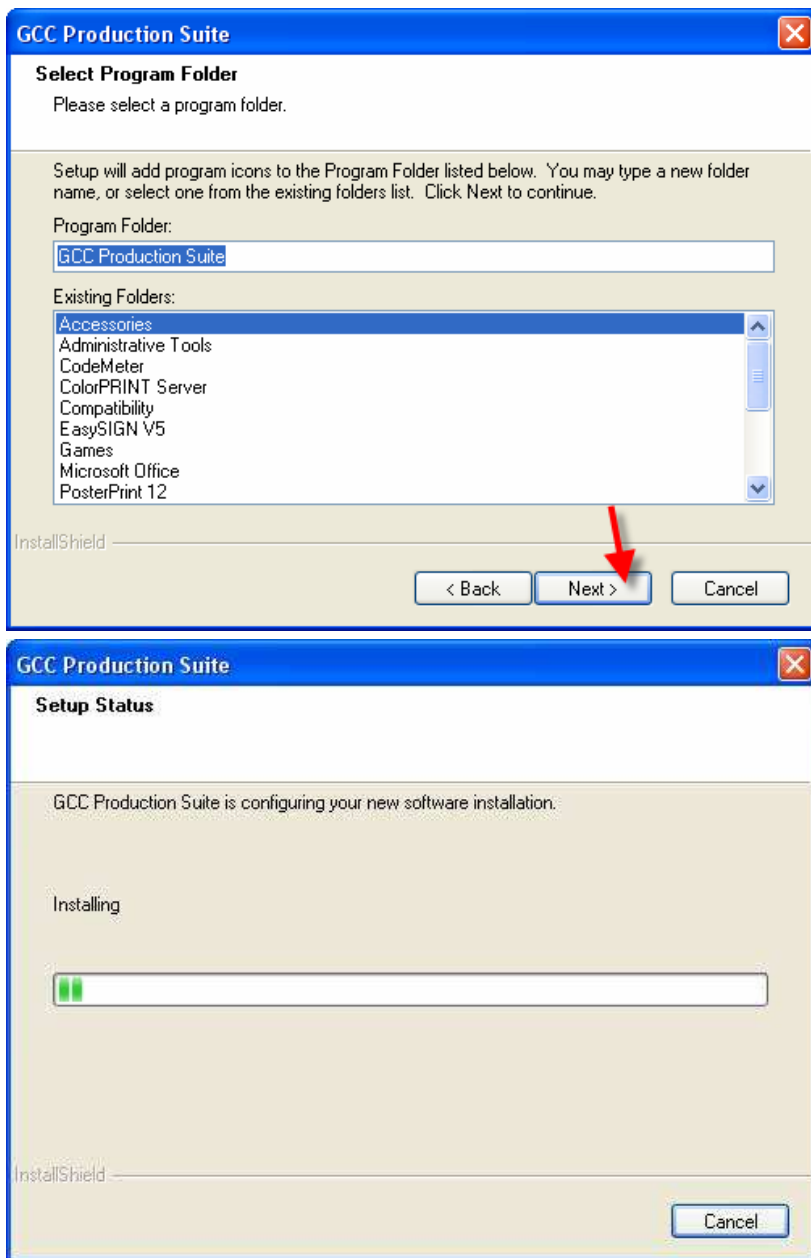


8. Select the features of the software that you want to install and click **Next**:

- Check **GCC Production Suite** to install the software.
- Check **Samples** to install sample files.
- Check **SafeNet Sentinel System Driver** to install the software driver for this key. If you do not use this type of key, you do not need to install this driver.



- A. To change the default destination folder, click **Browse** and choose a new destination folder.
 - B. To check that the drive you are installing to has enough space for the installation:
 - a. Click **Disk Space**.
 - b. From the drop-down menu, select the drive you want to install to, and verify that it has enough space for the installation.
 - c. Click **OK**. The installation drive changes to the selected drive when you click **OK**.
9. Select the Program folder where the shortcut for the software will appear. A new folder is automatically created for the product.
10. Click **Next** to install the software.



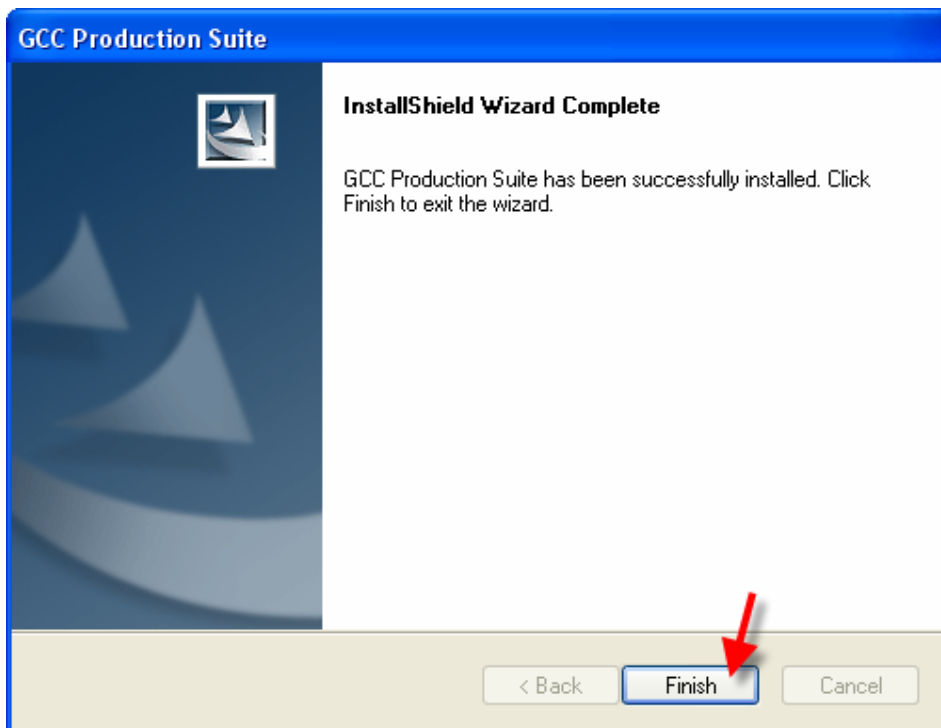
11. Once the installer is finished installing, the **Install Manager** opens. The Install Manager will automatically enable you to access the software and any optional features.

12. Click **Done**.



13. Check which icons and preferences you want to install:

- Check **Install to desktop** to install a shortcut for the software on the desktop.
- Check **Install to startup items** to install a shortcut for the software in the Startup folder of the Start menu. If this is done, each time the computer starts up, the software will automatically start up and minimize itself, displaying an icon in the system tray of the Windows system tray.
- Check **Clear Application's previous preferences** to clear the preferences or clear the check box to retain old preferences.
- Click **OK**.



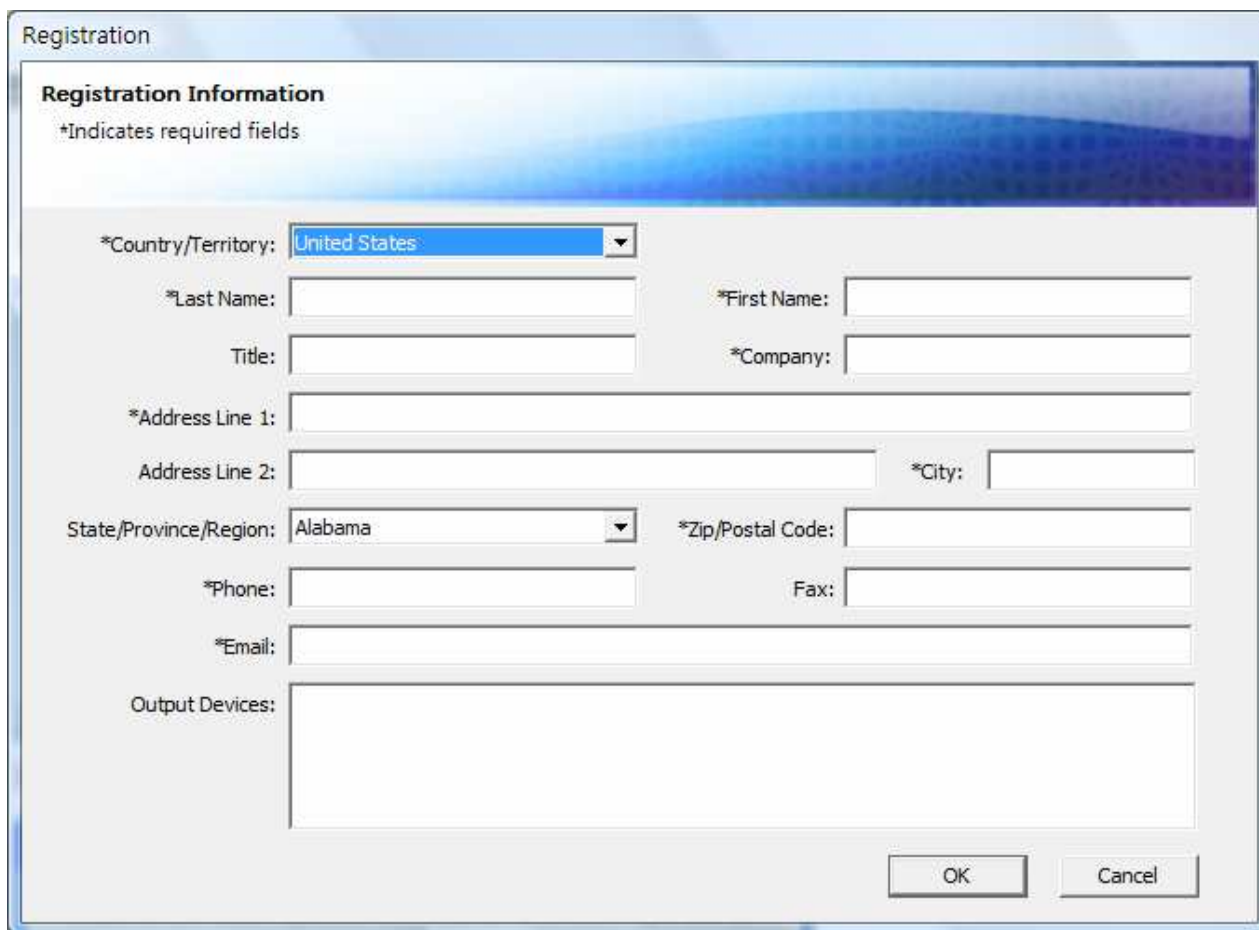
14. Open SignPal 10.5v1



15. As you have not registered before, please check on the box at bottom to register a new account.



16. Input your personal information to complete the online registration.



Registration

Registration Information

*Indicates required fields

*Country/Territory:

*Last Name: *First Name:

Title: *Company:

*Address Line 1:

Address Line 2: *City:

State/Province/Region: *Zip/Postal Code:

*Phone: Fax:

*Email:

Output Devices:

OK Cancel

17. If you have registered before, please enter your Registration code as below to open SignPal 10.5v1 software.



Registration

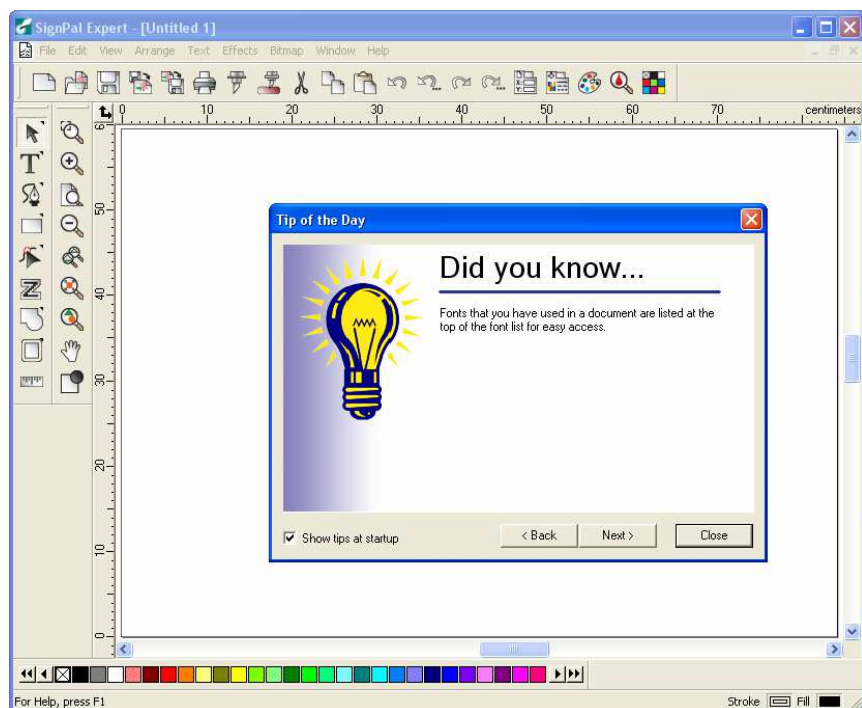
If you have previously registered with SAI, please enter your Registration ID.

Registration ID:

☐ I do not have a registration ID

OK Cancel

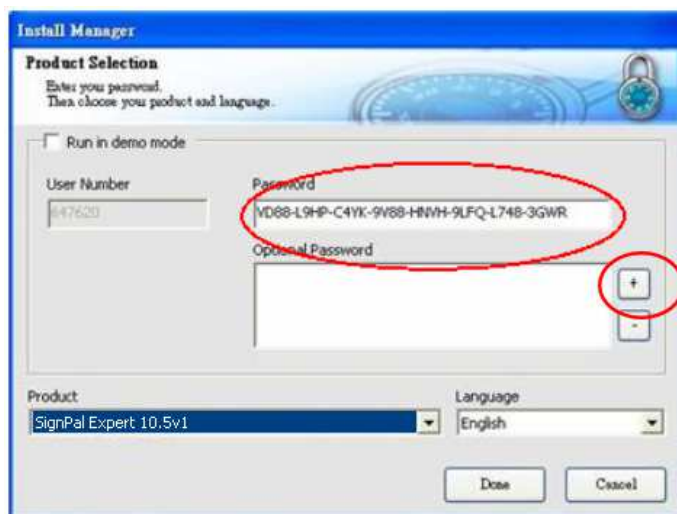
Red arrows point to the Registration ID input field and the OK button.



Note:

1. Steps 15-17 will only be compulsory for users who have never registered before.
2. You will be prompted to the demo version registration process if the version of your dongle does not match that of the software.

Do one of the following:



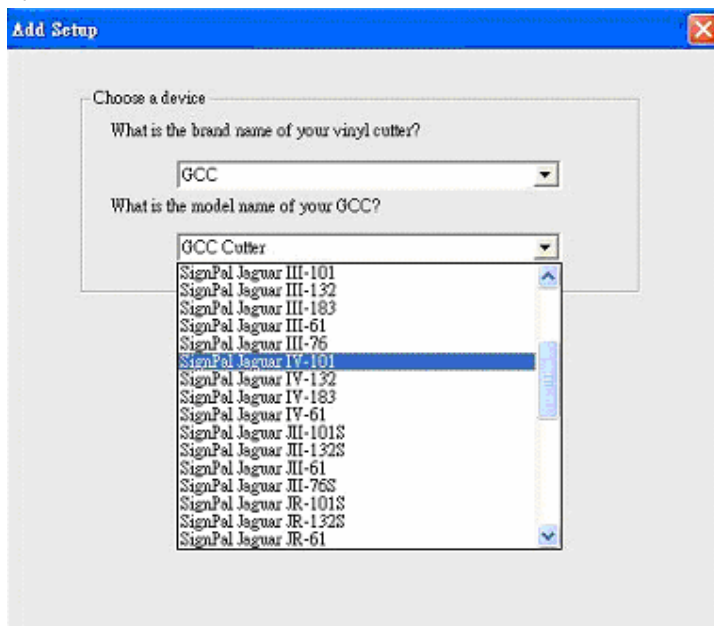
- Check **Run in demo mode** to run a demo version of any available products in any available language.
- Ignore the password that's shown in the box, use the **Add** button to enter any additional passwords in the Optional Password section to unlock optional features. If you purchased additional options or you are using a different dongle than the one you inserted when the software was run, you may enter the option passwords in this field to upgrade or access your software.
- Click **Done**.

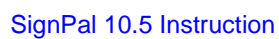


[2] Set up your GCC Cutter on Production Manager

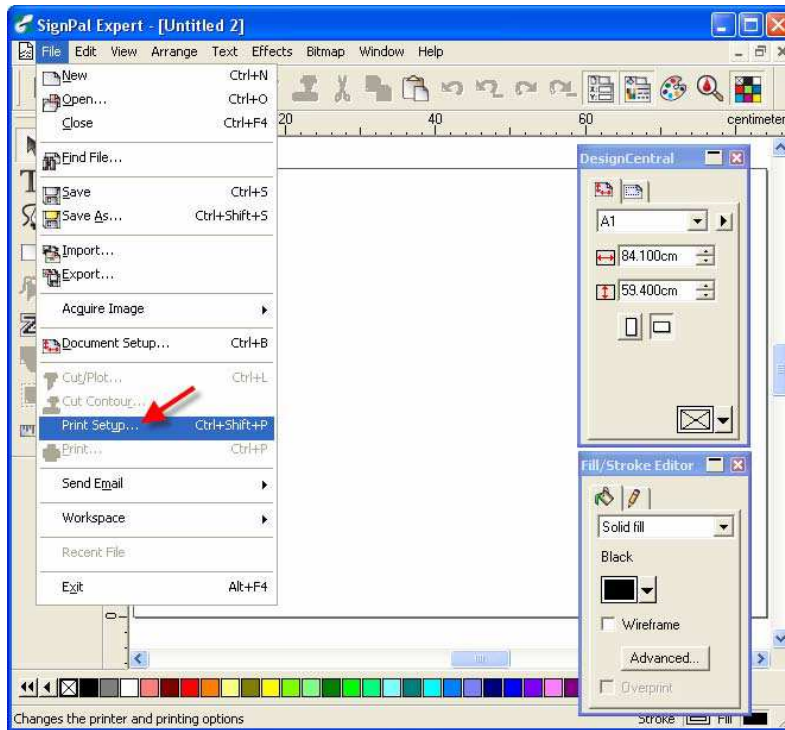
1. Open Production Manager 10.5v1
2. Choose and set up your GCC cutter.

(Note that AAS II System only works on RX, Jaguar IV, Puma III, Expert 24 LX, and Expert 52 LX.)

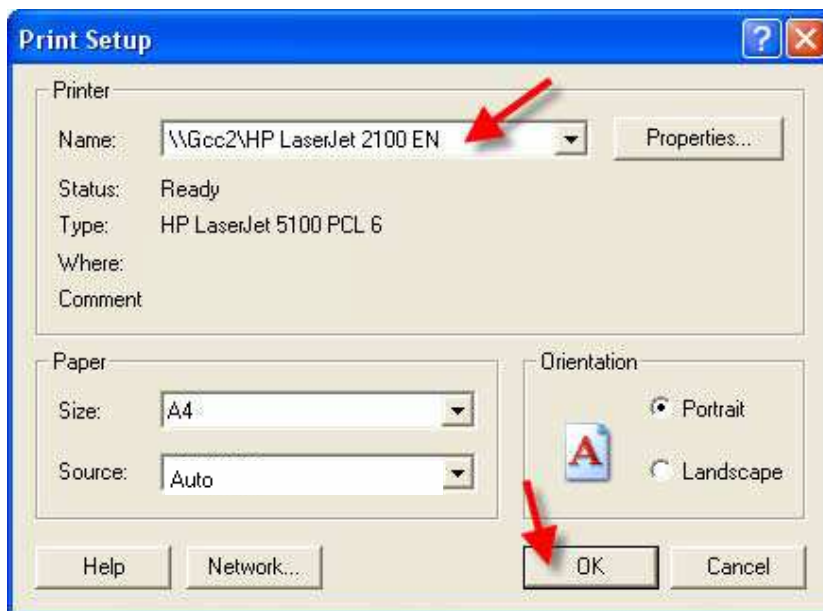


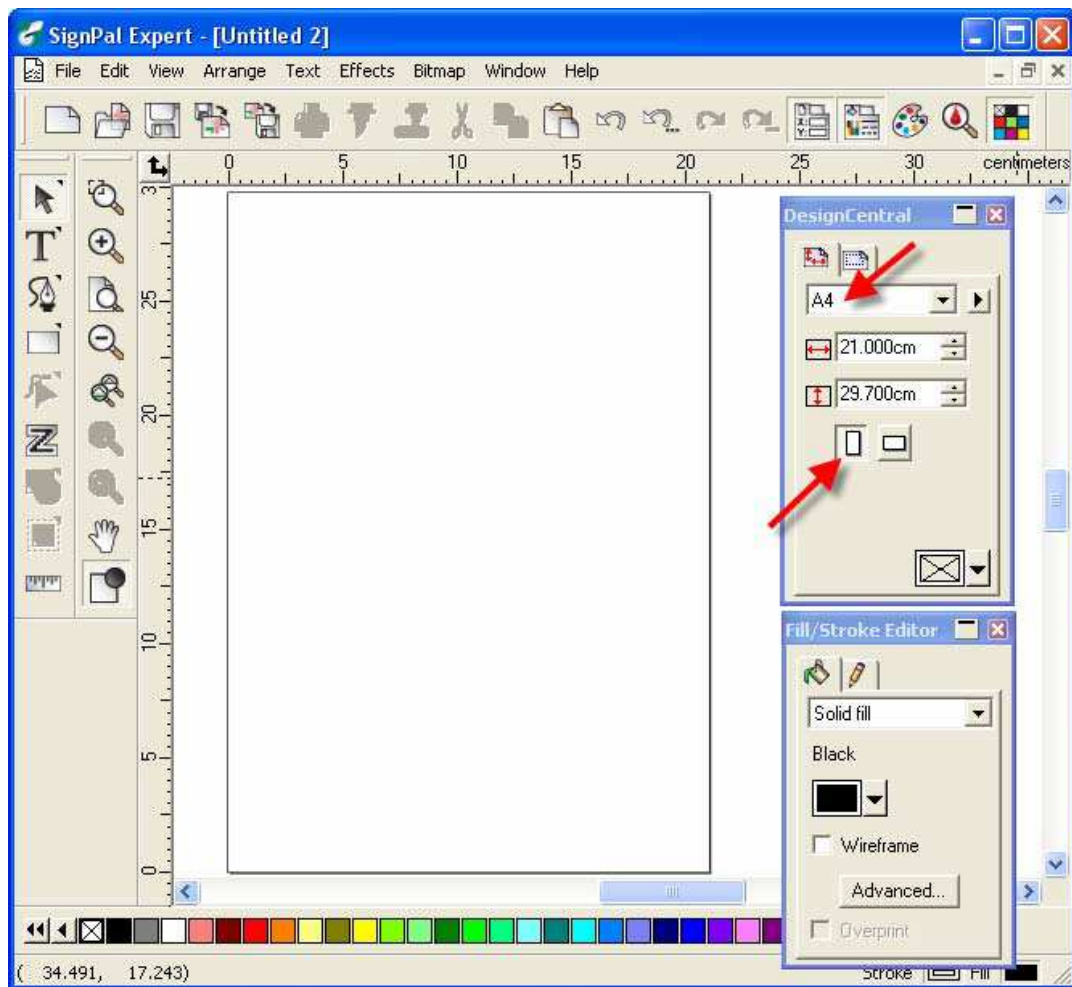


3. Select **File > Print Setup** in SignPal Software.



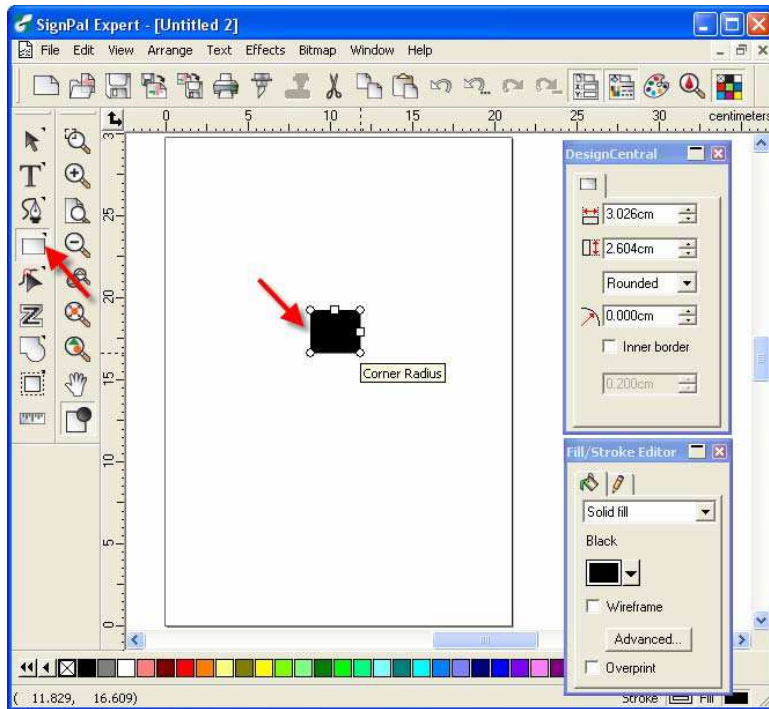
4. Select the printer and paper size.



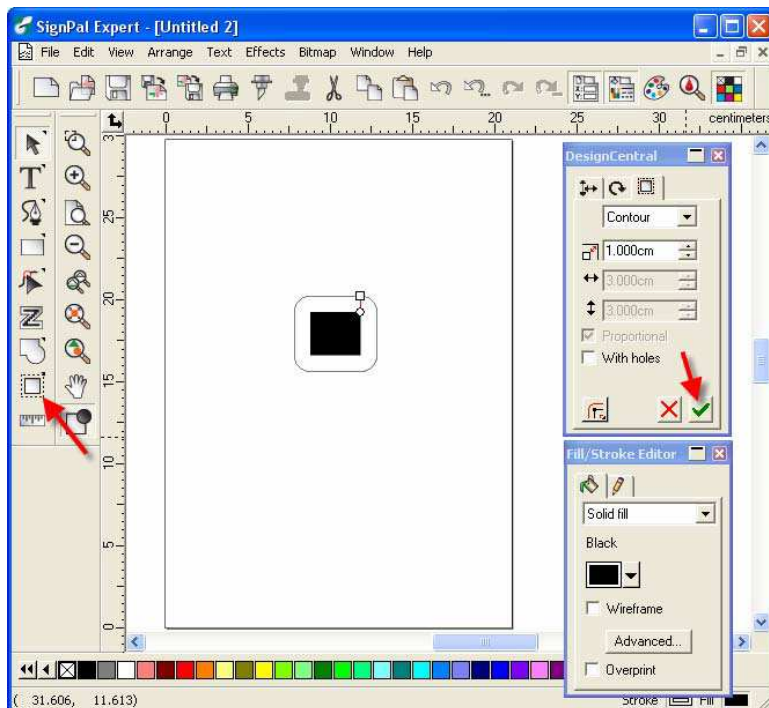


-- SignPal AASII Quick Start

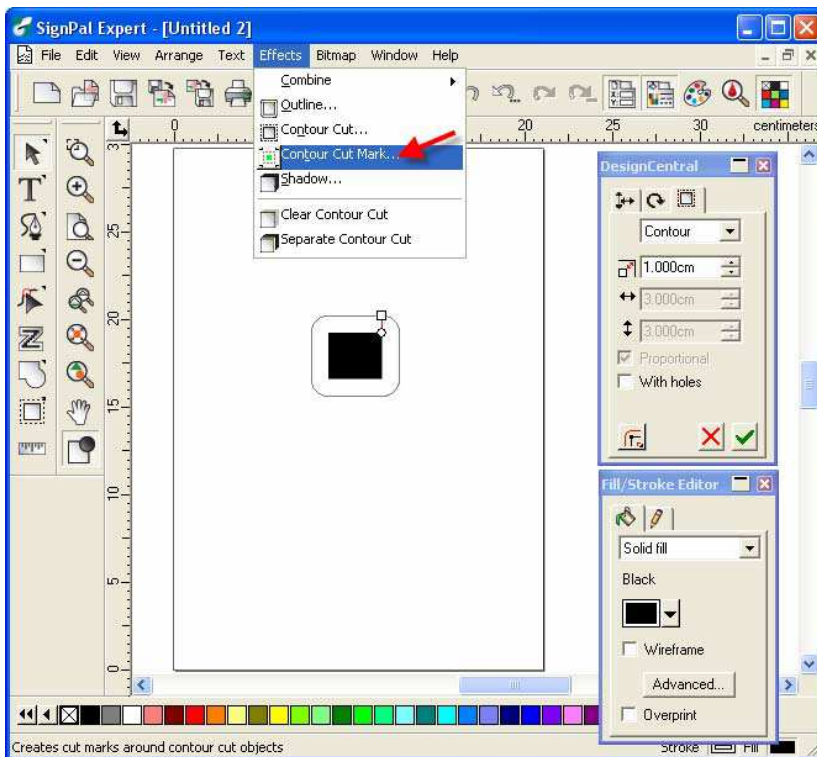
5. Use the **Rectangle Tool** to create a rectangle.



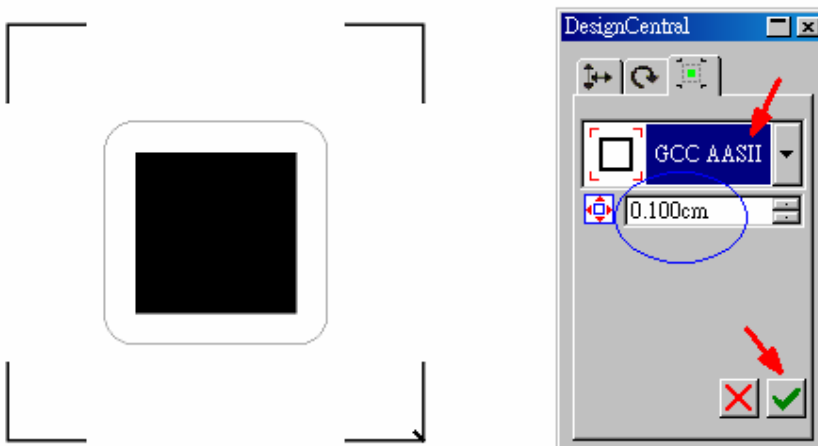
6. Select **Effect > Contour Cut**. Then click 'Apply' in DesignCentral window.



7. Apply the contour cut mark of GCC AASII by selecting **Effect > Contour Cut Mark**.

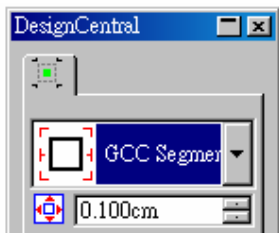


8. Select “**GCC AASII**” in SignPal DesignCentral window to create the AAS II registration marks (4-Point Positioning). Set the values as 0.1cm or above and click ‘**Apply**’ in DesignCentral window. The value is to define the distance between registration marks and image area. If the value is less than 0.1cm, it is likely that the image will overlap the marks and result in bad cutting quality.



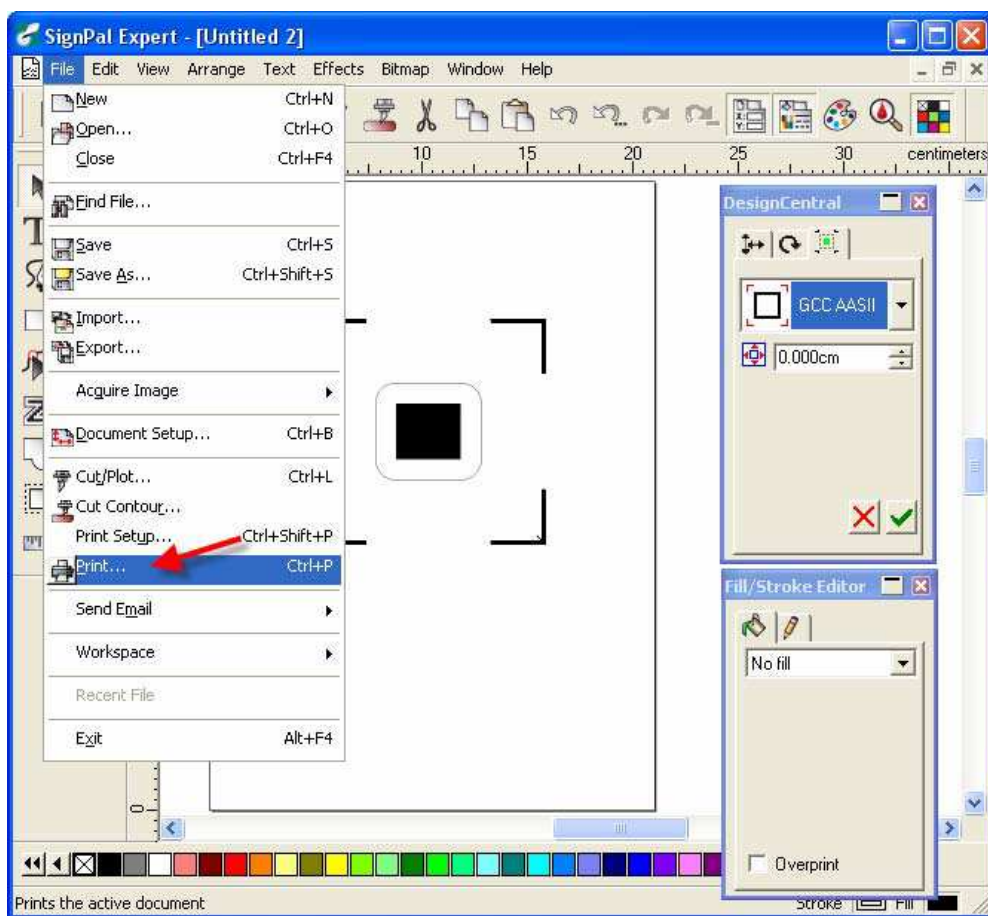
9. There are three types of GCC AASII registration marks: 4-Point Positioning, Segmental Positioning, and Multiple Copies. To make ‘Segmental Positioning’ marks, please select “**GCC**

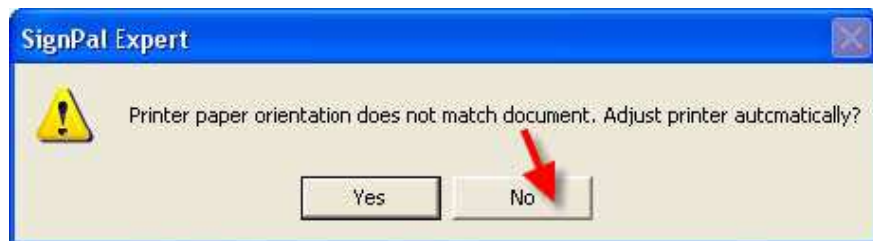
Segmentation” in DesignCentral window and then click **‘Apply’**.



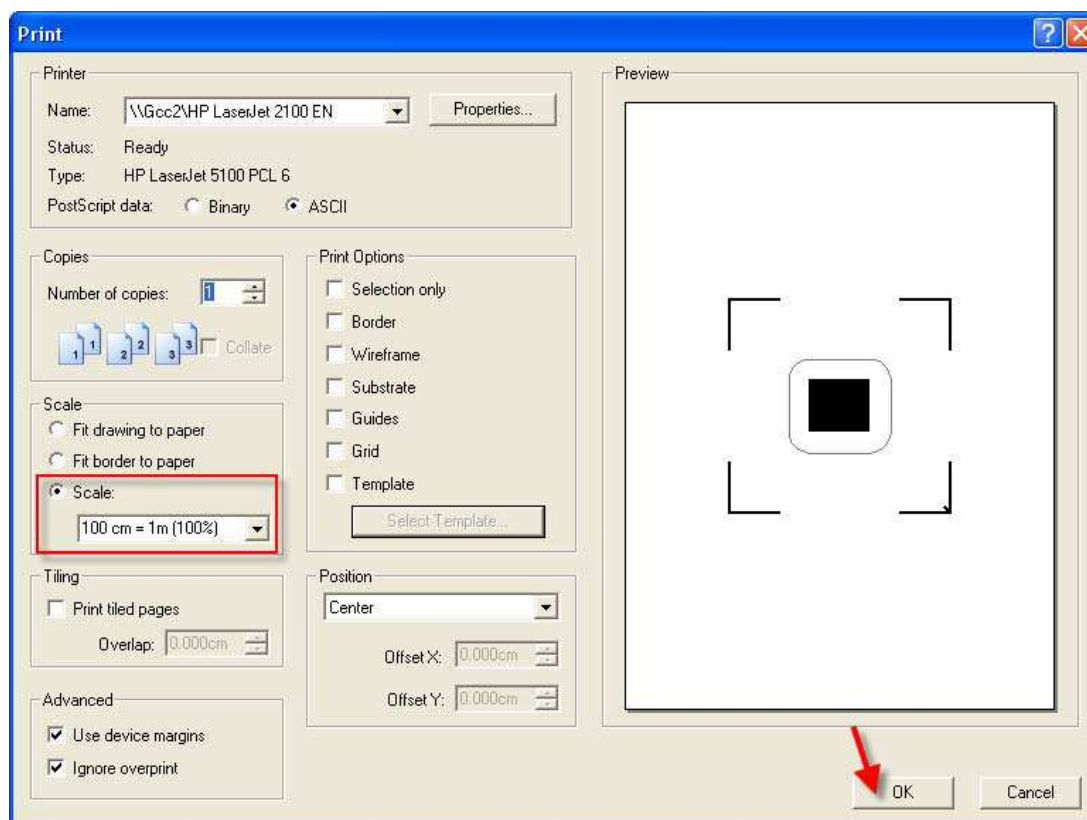
10. For ‘Multiple Copies’, this function is not available in SignPal. Currently the ‘Multiple Copies’ function is only available under CorelDraw plug-in.

11. Select **File > Print** to print out the image.

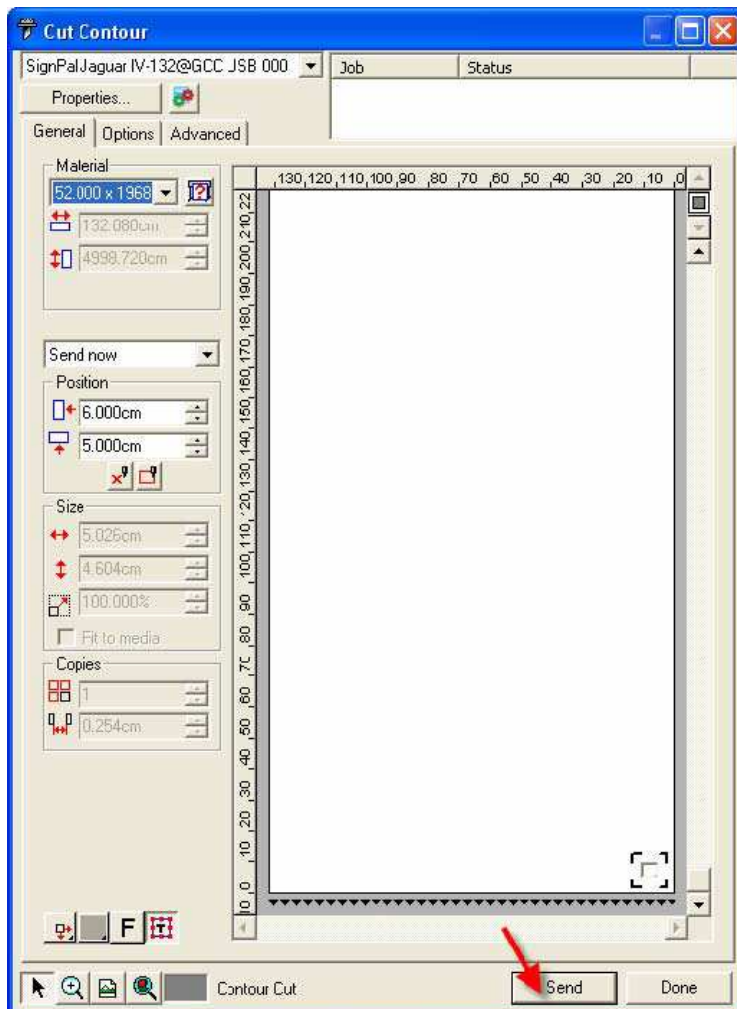
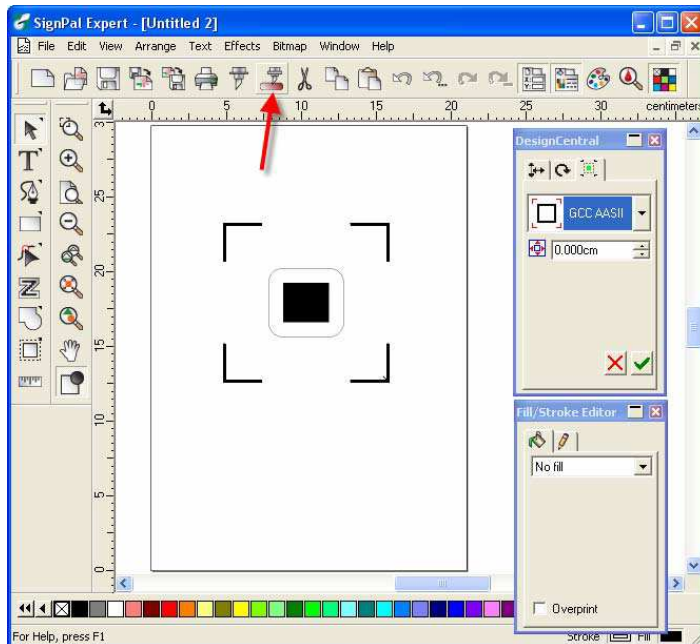




12. Set the Scale as 100cm =1m (100%) in Print page.



13. Load the printout vinyl on the plotter and select **File > Cut Contour** to send data. You can preview the job and change cutter's parameter settings in 'Properties' tab of Cut Contour window. The Production Manager will be automatic activated to complete the job.





[3] SignPal 10.5 Feature Lists

	Pro	Master	Expert	Apprentice
Text				
Text tool	•	•	•	•
Arc Text	•	•	•	
Path Text	•	•	•	
Vertical Text	•	•	•	•
Vertical Path Text	•	•	•	
Kerning	•	•	•	
Break apart/ Join	•	•	•	•
Load fonts on the fly	•	•	•	•
Drawing				
Bezier	•	•	•	•
Freehand drawing	•	•	•	•
Zoom to cursor	•	•	•	•

Shapes				
Rectangle	•	•	•	•
Oval	•	•	•	•
Polygon	•	•		
Starburst	•	•		
Fan	•			
Arrow	•			
Border tool	•	•		
Registration mark tool	•	•	•	•
Eyedropper	•			
Measure tool	•	•	•	•
Path Editing				
Select Point Tool	•	•	•	•
Remove point	•	•	•	
add point	•	•	•	
straighten path	•	•	•	
Round corner	•	•	•	
Sharpen Corner	•	•	•	
Optimize by Curve	•	•	•	
Optimize by smooth arc	•	•	•	
Optimize by 3point arc	•	•	•	
Make Arc	•	•	•	
Reduce Points	•	•	•	
Close path	•	•	•	
Change Start Point	•	•	•	
Cleaver	•	•	•	
Scissors	•	•	•	
Make right angle	•	•	•	
Break path	•	•	•	
Join paths	•	•	•	
Align horizontal	•	•	•	
Align vertical	•	•	•	
Align Paths	•	•	•	
Apply Length and Angle	•	•	•	

Remove tiny objects	•	•	•	
Working with Files				
Job Info	•	•	•	
Scanning	•	•	•	
Send email as jpg	•	•		
send email as pdf	•	•		
send email as native	•	•	•	•
Workspaces	•	•	•	•
View				
Design Editor	•	•		
Color mixer	•	•	•	•
Snap	•	•	•	•
Arrange				
Group	•	•	•	•
Compound	•	•	•	•
Mask	•	•	•	•
Lock	•	•		
Guides	•	•	•	•
Contour Cut	•	•	•	•
Dimension	•	•		
Convert to outlines	•	•	•	•
convert linked to native	•	•	•	•
Path direction	•	•	•	•
Order	•	•	•	•
Align	•	•	•	•
Distribute	•			
Step and Repeat	•	•	•	
Effects				
Combine	•	•	•	
Outline	•	•	•	
Contour Cut	•	•	•	•
Distort	•	•		
Shadow	•	•	•	

Color Trapping	•			
Smooth shadow	•	•	•	
Bitmap				
Marquee	•	•		
Move	•	•		
Eraser	•	•		
Pencil	•	•		
Fill	•	•		
Crop	•	•		
Autotrace	•	•		
Color Trace	•			
Change Color Mode	•			
Production				
Cut/Plot	•	•	•	•
Manual Split Lines	•	•	•	•
Tile all copies	•	•	•	•
Panel to border	•	•	•	•
Autoweld	•	•	•	•
Auto trap	•	•	•	•
Overcut	•	•	•	•
Optimize cutting order	•	•	•	•

DirectCut Instruction

DirectCut Mac AI Plug-in is compatible with MAC OS X 10.4-10.7 (operated with Adobe Illustrator CS2-CS5).

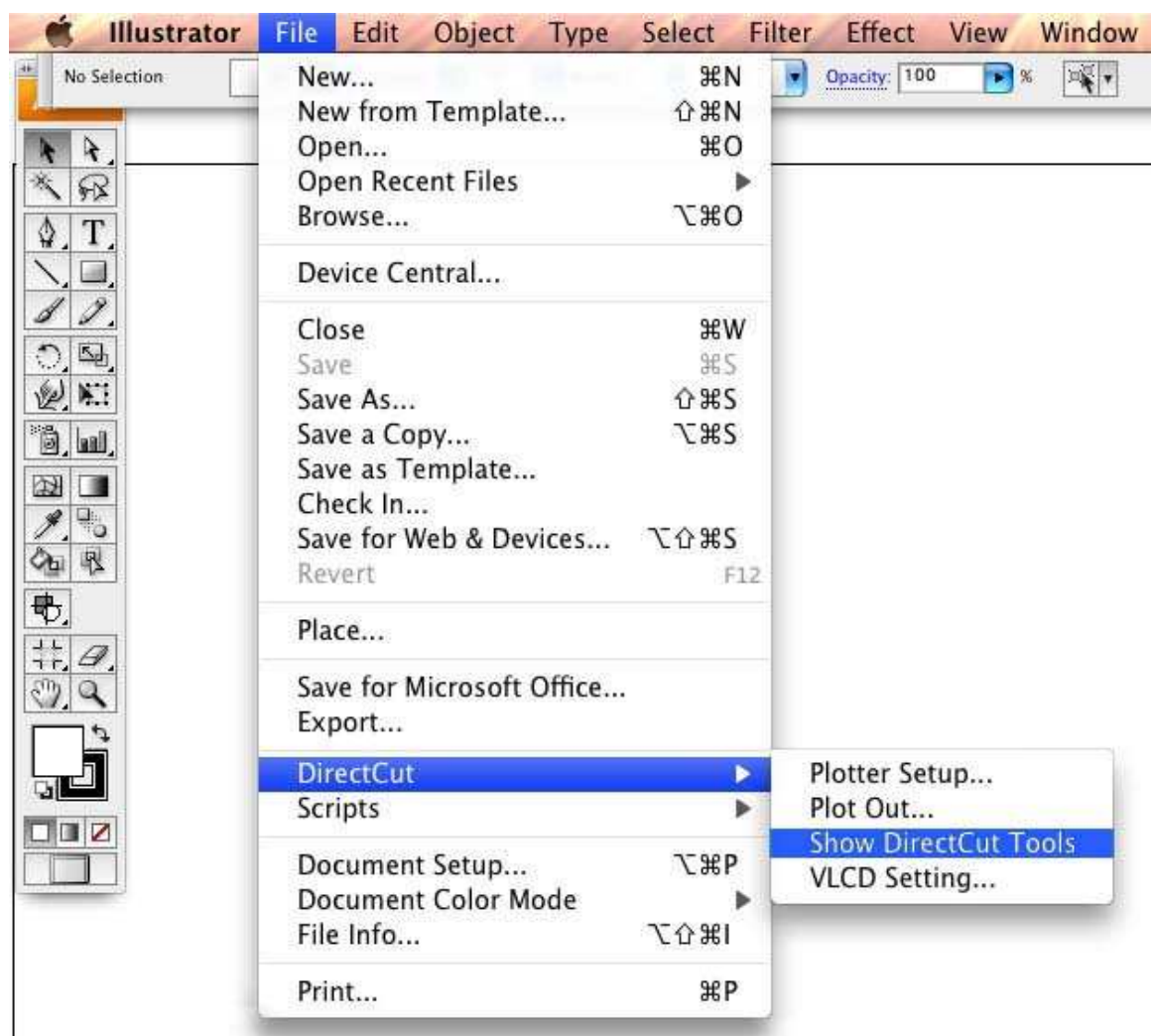
If you want to use Adobe Illustrator CS6 on your MAC, you may need Parallels Desktop software, Window OS and Windows based Adobe Illustrator CS6 to install Windows OS in your MAC computer and run Windows based software under MAC computer.

User Instructions

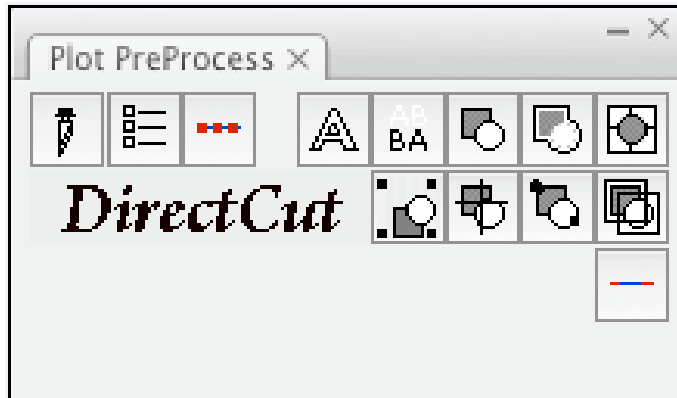
Follow the simple steps below to complete your output settings:

Step 1. Run DirectCut

1) Go to File and select "Show DirectCut Tools" under "DirectCut"



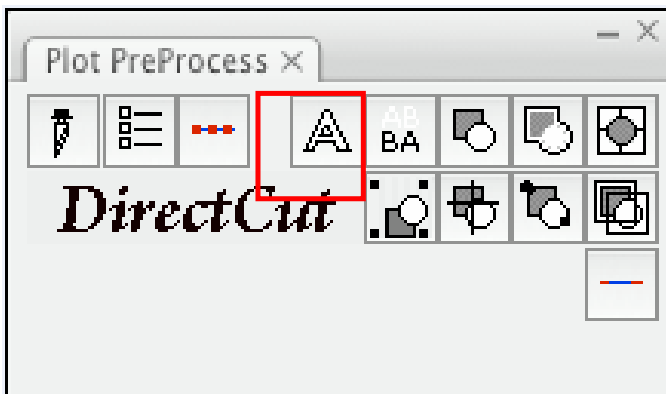
You will be presented with this dialog below:



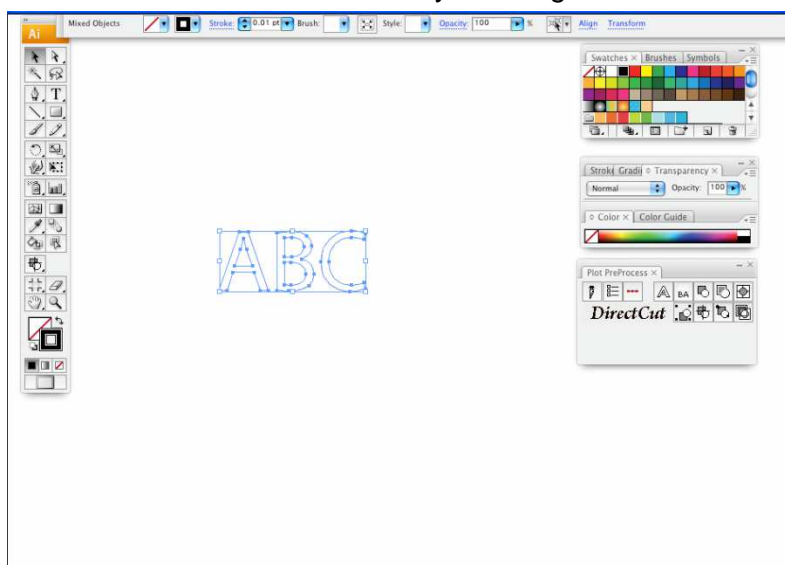
Step 2. Create/ import your image/ file.

For texts

1) Enter your texts in Adobe Illustrator, select the letters and click [Text outline] to outline the letters.



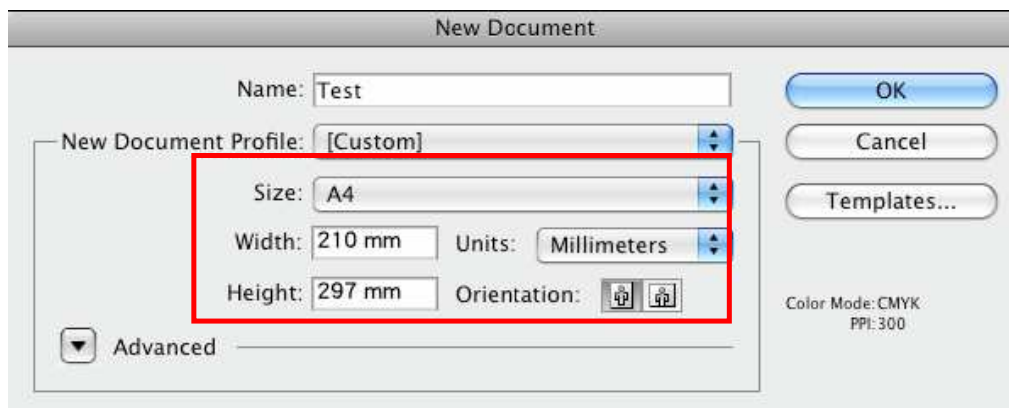
A contour line will be created for your image.



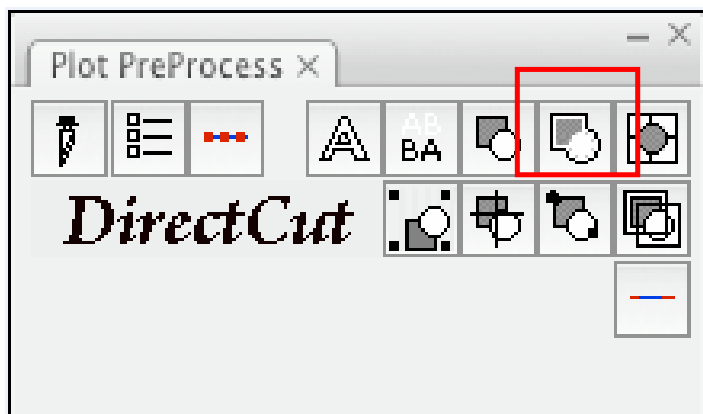
Note: The line width must be set as 0.001 mm

For Images

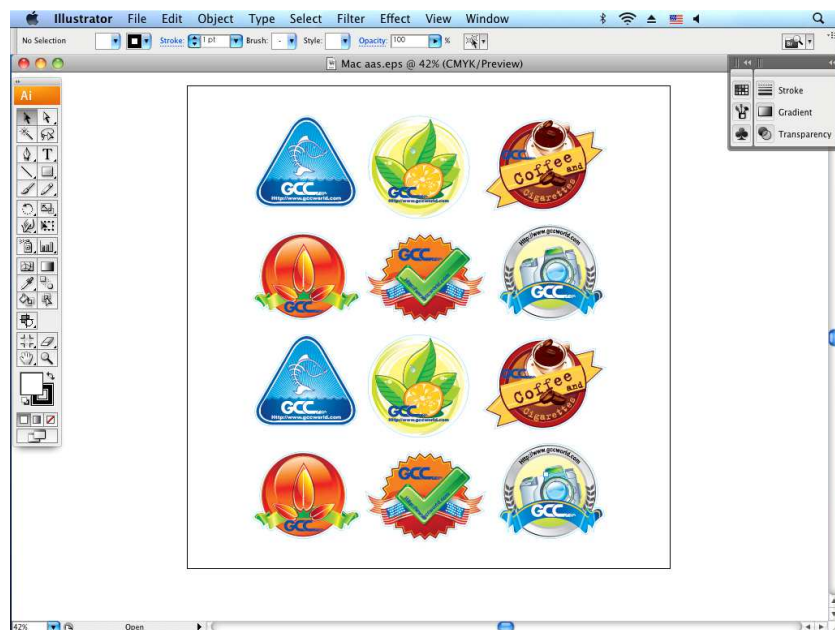
- 1) Open a new image on Illustrator and decide the size of your material.



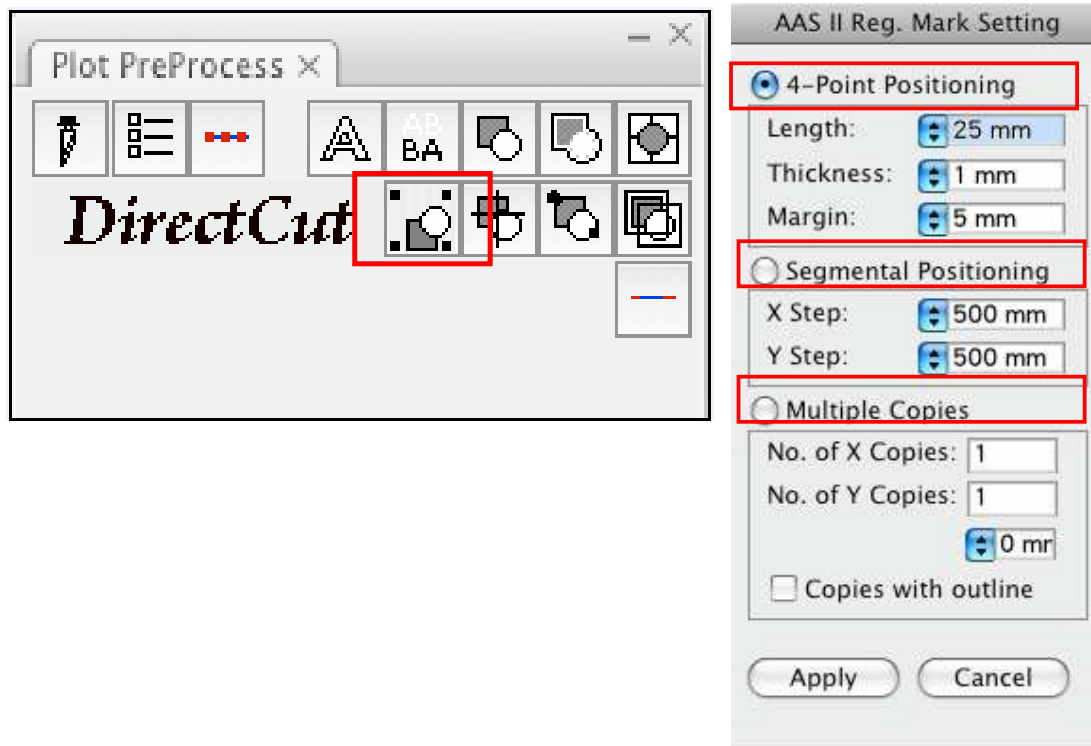
- 2) Select the image and click [Make outline and offset] to create outlines of graphics.



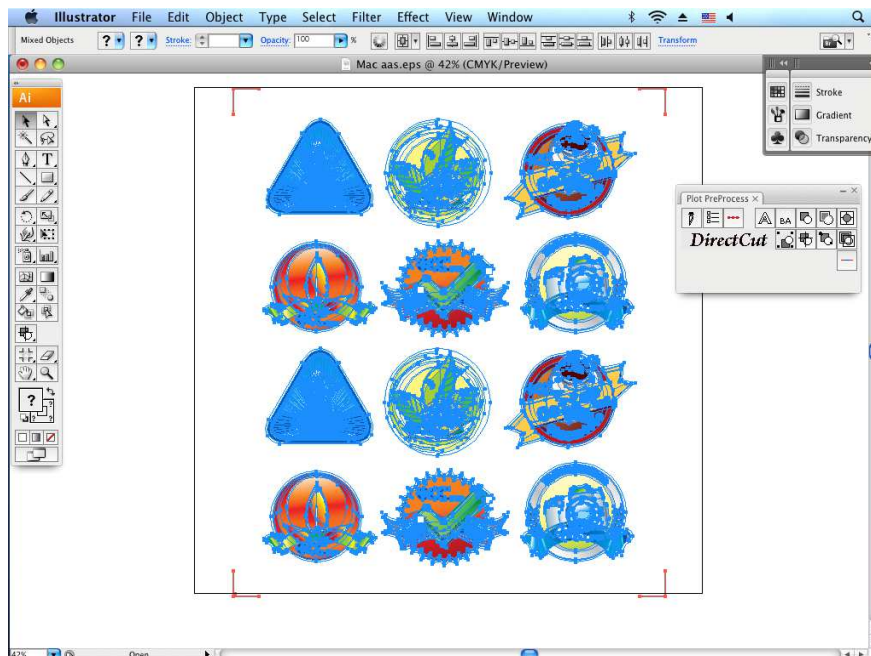
Outlines will be created for your image.



3) Click on the image and apply the AAS function by clicking the [Add registration marks] command and select the registration marks needed.

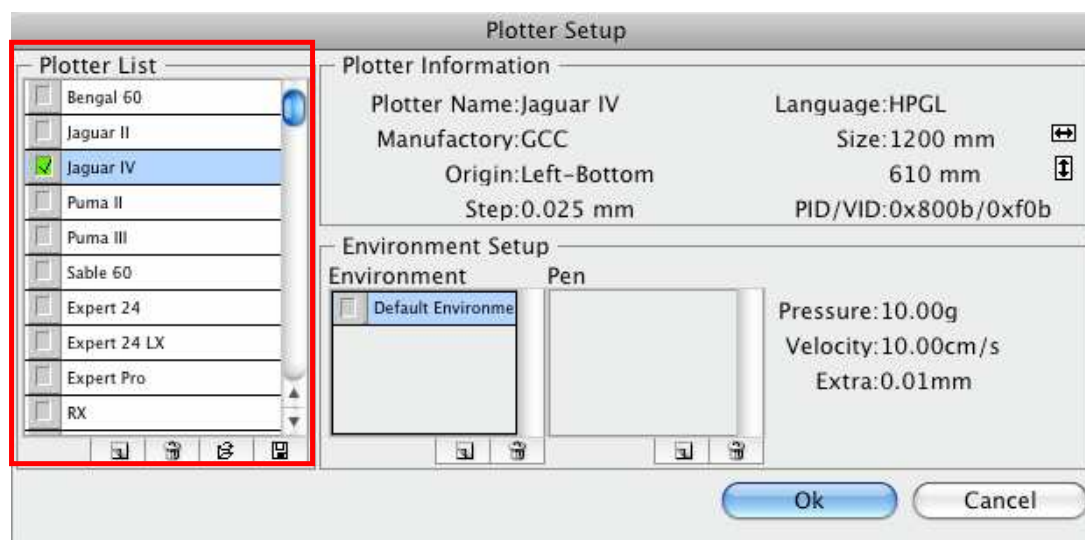
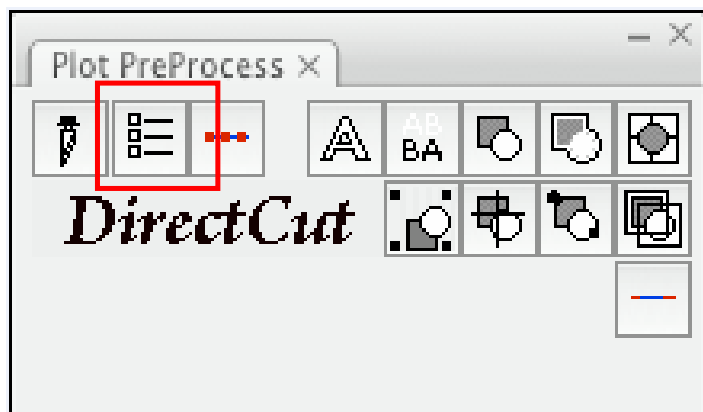


The registration marks will be created as below.

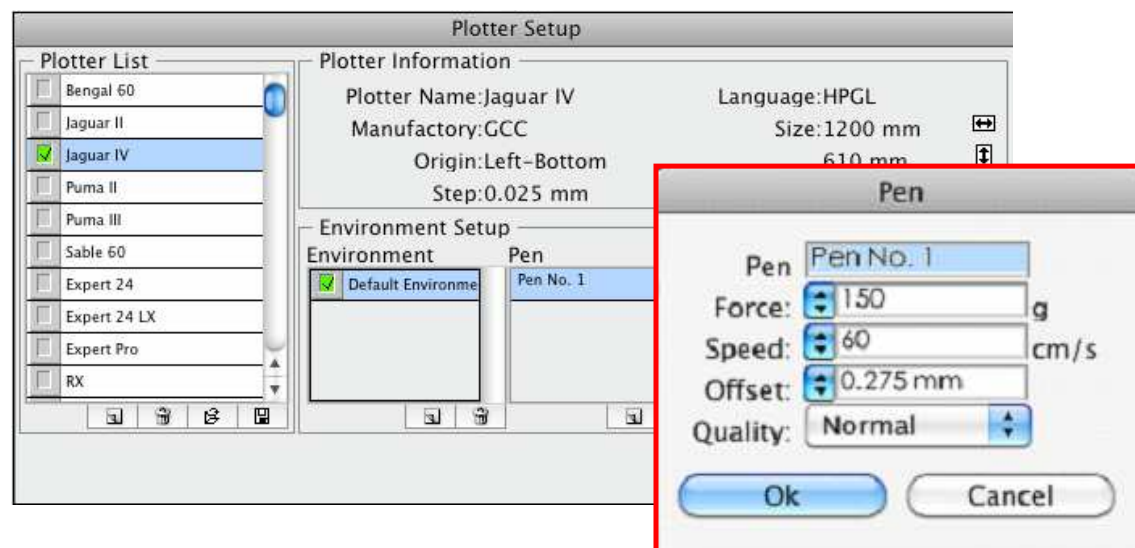


Step 3. Output

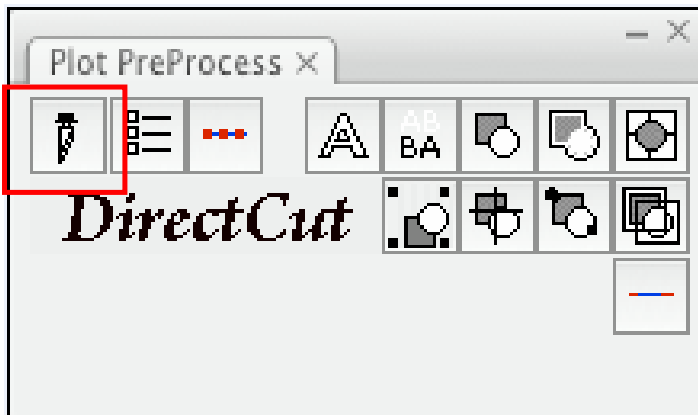
1) Click on [Plotter Setup] and select the correct model in [Plotter List].



2) Tick Default Environment to create Pen No.1 in the Pen section. Double click Pen No.1 and complete your parameter settings.



3) Select the entire object and click [Plotter Output].



4) Output the object by clicking [Export] and GCC Cutting Plotter will start cutting the image.

