Puma III Series
User Manual

http://www.GCCworld.com

Important Information

Thanks for your purchase of GCC *Puma III* Cutting Plotter. For your safety and to optimize the performance of the Puma III, please read the user manual completely and keep it in a correct location.
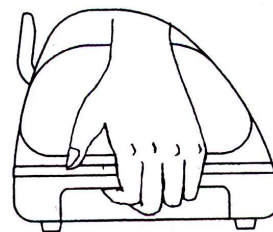
PRECAUTIONS IN USE

● For safety concern, please always hold the cutter firmly **from the bottom** when moving it. Do not move the cutter by clasping the depression area on both sides.
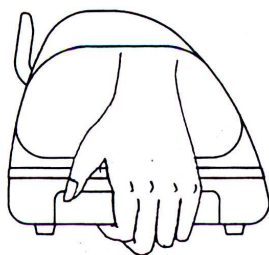
(O) hold from the bottom   (X) hold the depression area

● Do not shake or drop the blade holder, a blade tip maybe fly out.
● During operation, keep away from any moving parts of the cutter (such as the carriage, drums). Also be careful that your clothing and hairs do not be caught.
● Always connect the power cable to a grounded outlet.
● Always use the accessory power cable that 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 misoperation of the machine.
● Keep the tools away from children where they can reach.
● Always put the pinch rollers within position of the white marks.

Contents

Chapter 1 General Information

1.1 Introduction

Puma III series cutting plotters have been designed to produce computer-generated images or perform contour cutting on sheets or rolls of vinyl media.

This manual covers the following models of Puma III series cutting plotters:

‧ P3-60	for media width: 70mm(2.76") ~ 719mm(28.3")
‧ P3-132S	for media width: 70mm(2.76") ~ 1470mm(57.87")

1.2 Package Items

The package of the Puma III model contents the items listed below, please check carefully.

If you find any item missing, please consult your local dealer for further assistance.

Standard Item	Quantity
1. Cutting Plotter	**1**
2. Stand Set (for P3-132S only, optional for P3-60) ● 2 piece of T-shape stand ● 1 piece of stand beam ● 20 pieces of M6 screws ● 1 piece of M5 L-shape hexagon screw driver ● 1 piece of Installation Guide for Stand Set	**1**
3. Flexible Media Support System Package <table><tr><td>Items</td><td>P3-60</td><td>P3-132S</td></tr><tr><td>1 set of Roll Media Flange (2 pieces)</td><td></td><td>V</td></tr><tr><td>1 set of Roll Holder (2 pieces)</td><td></td><td>V</td></tr><tr><td>1 set of Roll Holder Guide Bushes (4 pieces)</td><td></td><td>V</td></tr><tr><td>1 set of Roll Holder Support (2 pieces)</td><td></td><td>V</td></tr><tr><td>32 pieces of M6 screws</td><td></td><td>V</td></tr><tr><td>1 piece of M6 L-shape hexagon screw driver</td><td></td><td>V</td></tr><tr><td>1 piece of Roll Base</td><td>V</td><td></td></tr></table>	**1**

4. Accessories ● 1 piece of User's Compact Disk ● 1 piece of AC power Cord ● 1 pieces of data cable (RS-232C) ● 1 pieces of data cable (USB cable: 3m) ● 1 set of Blade Holder Assembly (Installed in tool carriage of the cutting plotter) ● 1 piece of Blade (Installed in Blade Holder) ● 1 piece of Safe Blade ● 1 piece of Cutting Pad ● 1 piece of Tweezers ● 1 piece of Promise Card	**1**

1.3   Product Features

The following are the main features of the Puma III series cutting plotters:

·   Dual-port connectivity provides you with greater flexibility

·   Up to 400-gram cutting force

·   Up to 600mm/per second cutting speed

·   Guaranty 3-meter tracking

·   User-friendly, multi-language control panel

·   Enhanced Automatic-Aligning System for automatic contour cutting

1.4 Appearance of Puma III

1.4.1 The Front View (Figure 1-1)

Grid Drums

move the media back and forth during operation.

Slicer Groove

cuts off the extra media easily along this groove.

Control Panel

14 buttons and 1 LED and 1 LCM showing messages and menus.

Tool Carriage

performs the cutting with the installed blade or pen with AAS module.

Platen

provides the surface for supporting media while cutting

Cutting Pad

provides the protection of blade when the blade is cutting.

Alignment Rulers

media can be aligned with the clear guide line marks
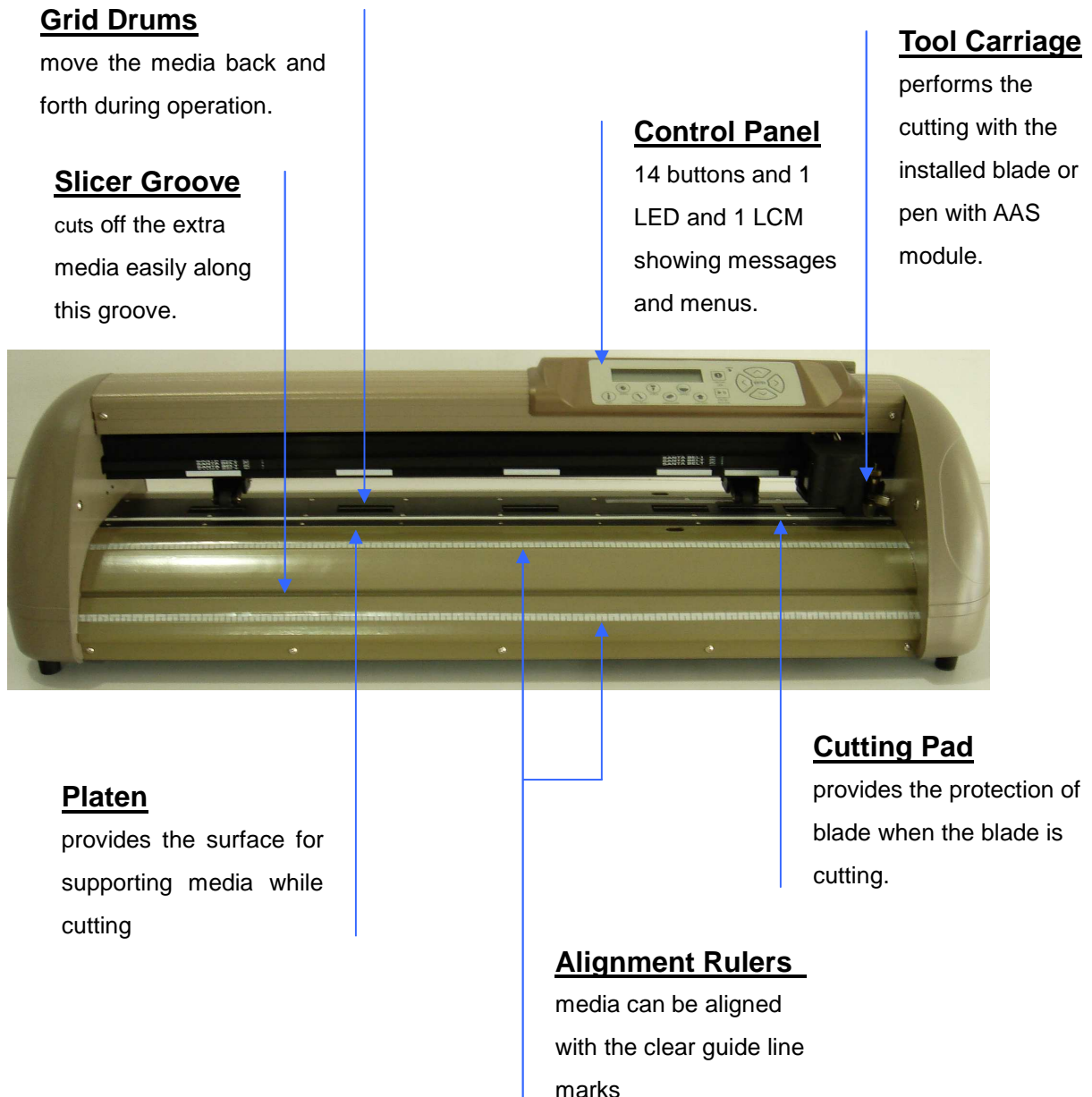
Figure 1-1

1.4.2   The Back View (Figure 1-2)

<u>Pinch Rollers</u>

hold the media during cutting.

<u>Lever</u>

raises or lowers

the pinch rollers.

Figure 1-2

1.4.3 The Whole View (Figure 1-3)

 **Stand for Puma III 60 is an optional item.
 **Stand for Puma III 132S is a standard item.

Roll Holder – holds and supplies the roll media for cutting.

Roll Holder Guide Bushes – serve to keep the roll media in place when media is pulled from the roll.

Roll Holder Support – supports roll holders.

T-Stand –supports the cutting plotter

T-Stand –supports the cutting plotter

Stand Beam – stabilizes the body.
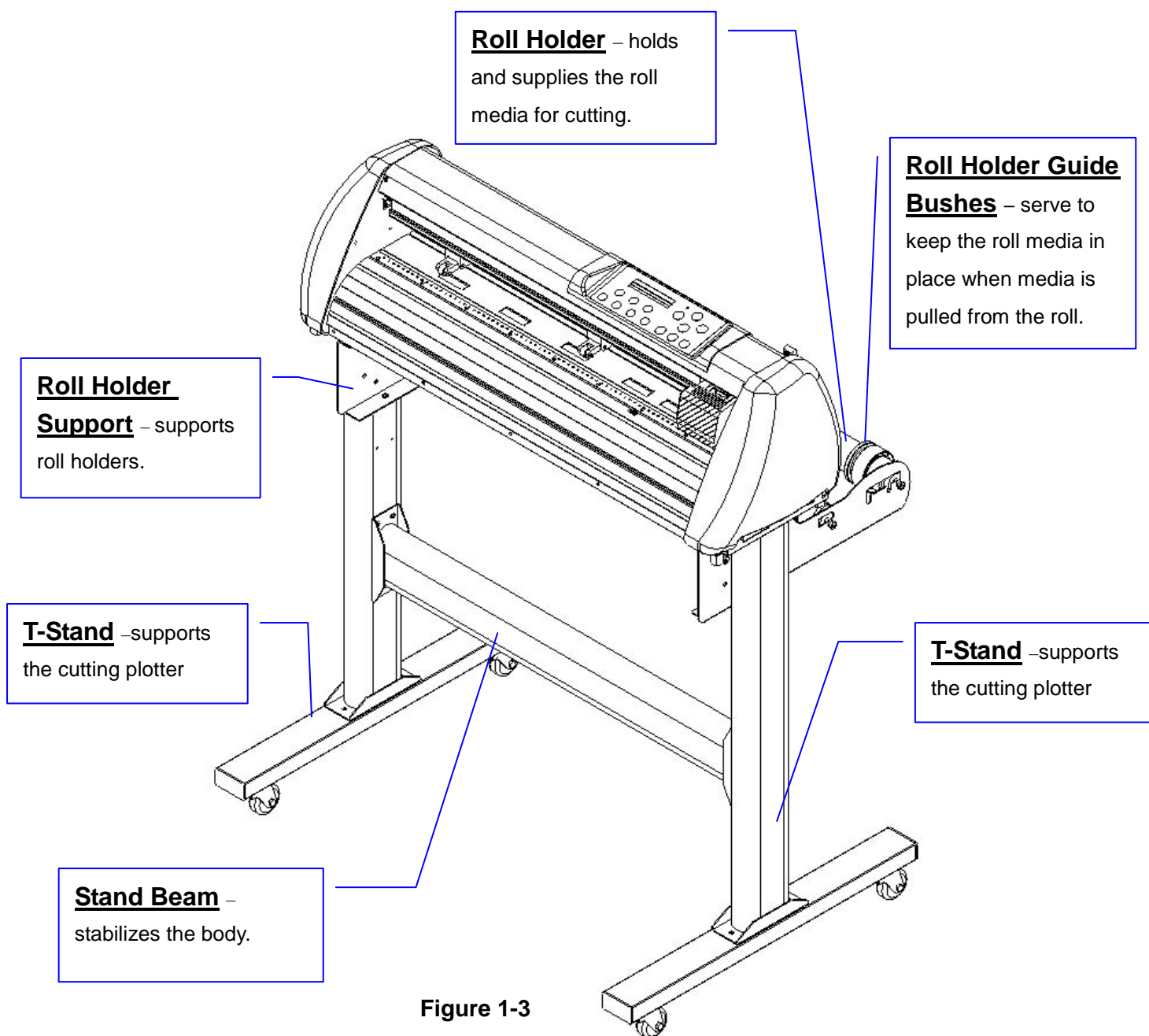
Figure 1-3

1.4.4 The Left-hand Side (Figure 1-4)

Power Switch – On when switches to [I]; Off to [O]

Fuse – 3 Amp.

AC Power Connector
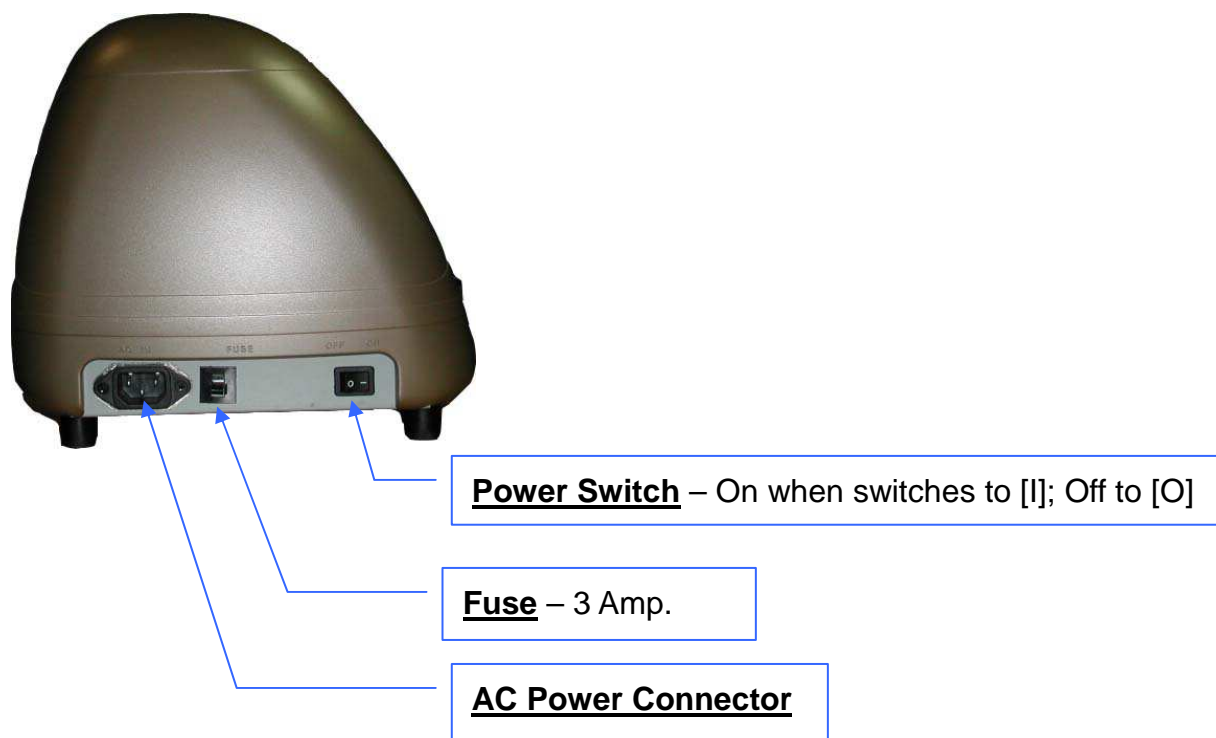
Figure 1-4

1.4.5 The Right-hand Side of Puma III (Figure 1-5)

Serial Interface Connector (RS232C)
used to connect the cutting plotter to a
computer through a serial interface cable.

Figure 1-5

USB Connector
used to connect the cutting plotter to a
computer through a USB cable.

Chapter 2 Installation

2.1 Precaution

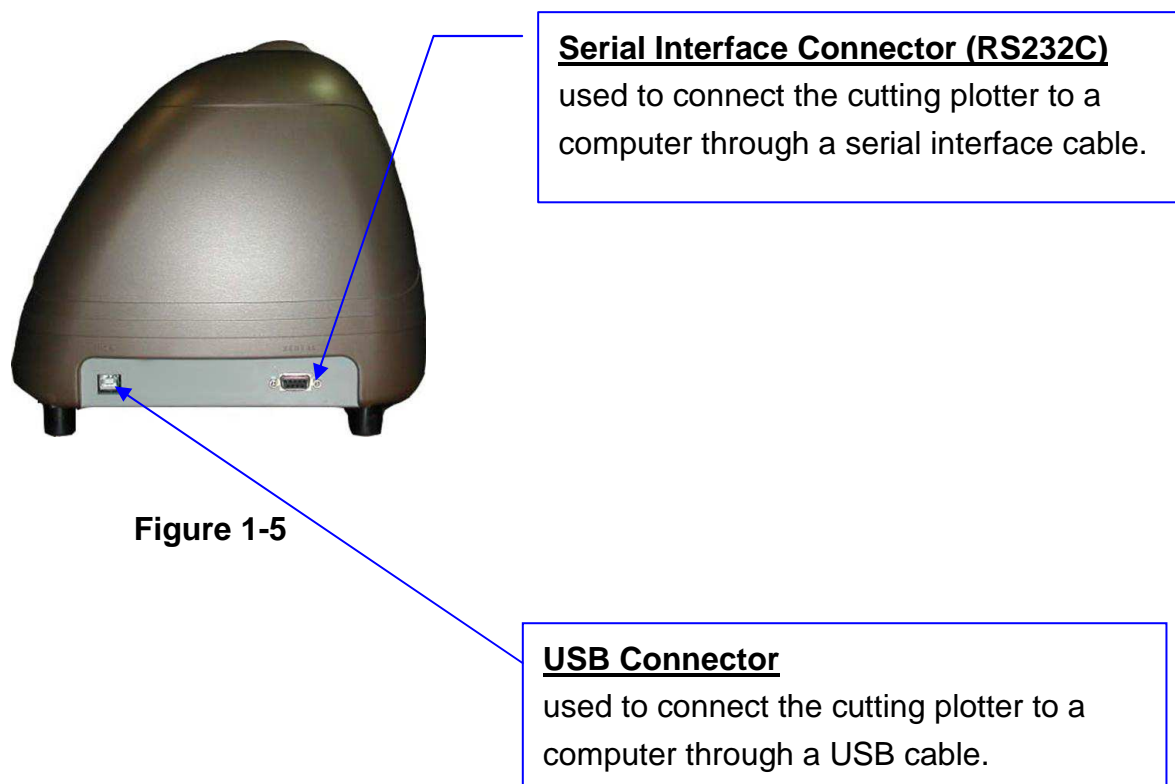### Notice 1

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

Notice 2   A proper place for installation the cutting plotter

Please select a proper location that meets the following conditions.

❖ The machine can be approached easily from any direction.
❖ Keep at least 60 cm space in front and behind the machine.
❖ Make sure the cutter is placed on a flat, level and sturdy surface
❖ The operation temperature should be 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 air current.
❖ Preventing the machine from direct sunlight.

Notice 3   Connecting the Power Supply

Check the plug of the power cord to see if it matches 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 & Flexible Media Support System

2.2.1 Stand Installation(for P3-132)

Please follow procedure below to assemble stand and media support system.

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

Stand is a optional item for Puma III-60, Item List：

- 2 piece of T-shape stand
- 1 piece of stand beam
- 20 pieces of M6 screws
- 1 piece of M5 L-shape hexagon screw driver
- 1 piece of Installation Guide for Stand Set

Step 2

- Remove the plotter body and the accessories from the shipped carton.
- Place the stand beam upright on the T-stand and follow the number ❶❷ to assemble.
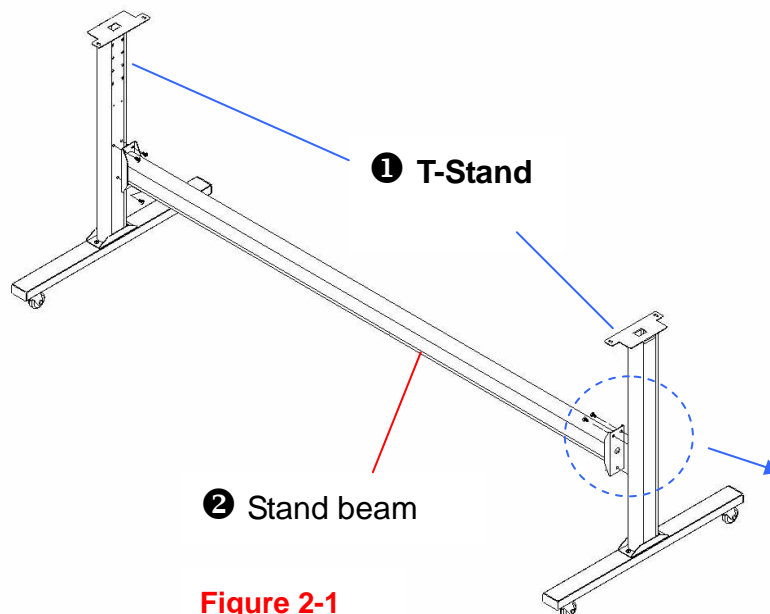
(See Figure 2-1 & 2-2)

❶ **T-Stand**

❷ Stand beam

Figure 2-1

Figure 2-2

Step 3

Position the stand beam perpendicularly to part ❶ and put the screws into the holes and tighten them as Figure 2-2. Then the complete picture of stand will be like Figure 2-1.

Step 4

Remove the cutting plotter from the carton. Position your stand under the plotter, and then insert the screws into the holes on plotter's bottom and tighten them up as shown in Figure 2-3.
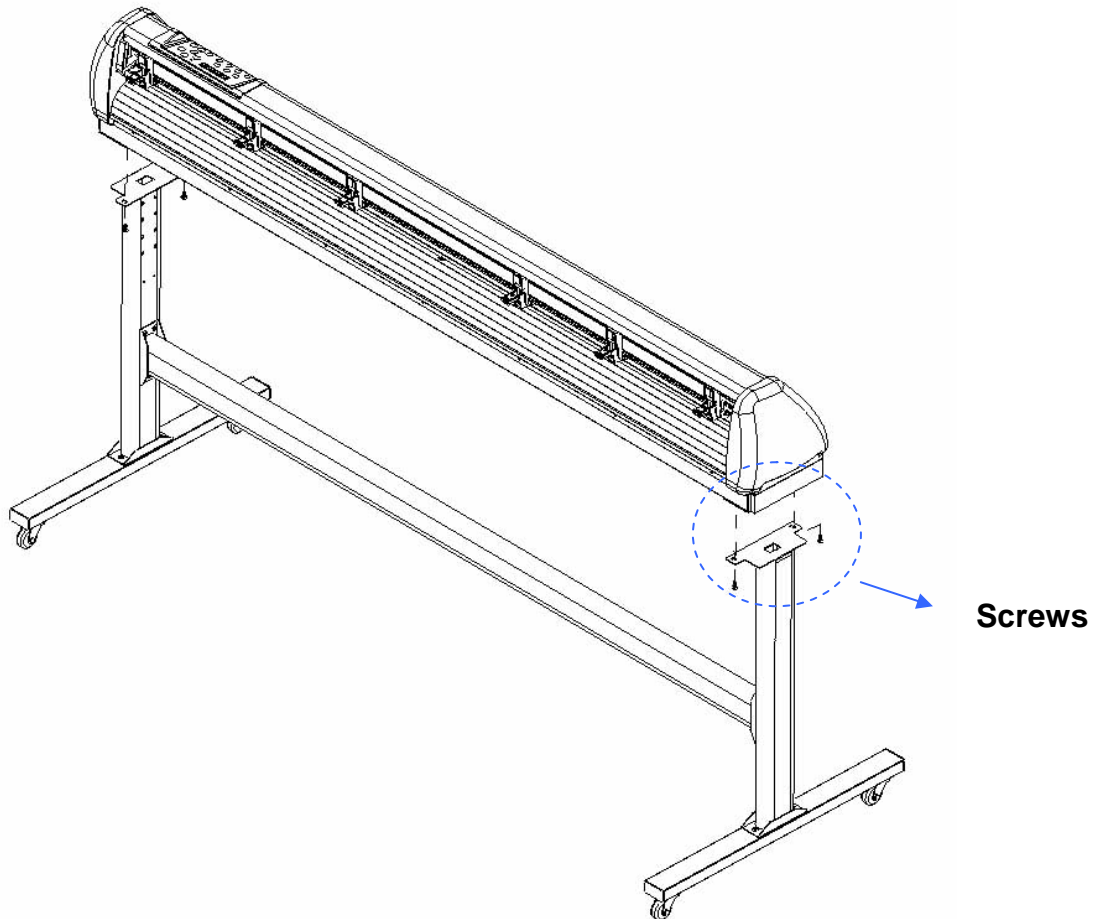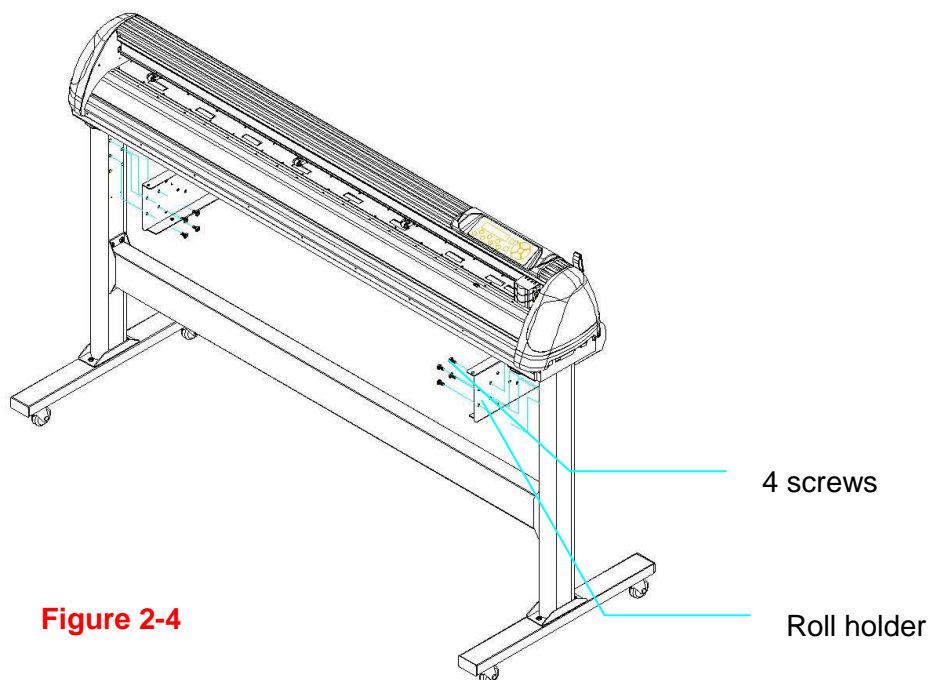
Screws

Figure 2-3

Step 5

Insert the roll holder support with the screws into the holes of the stand, and then tighten them up as shown in Figure 2-4. You could decide roll holder support's position by inserting into different holes.

4 screws

Figure 2-4

Roll holder

Step 6

Place two roll holders onto the roll holder support and ensure the white protrusion is wedged in the groove. (Figure 2-5)

Roll holder support

Roll holders
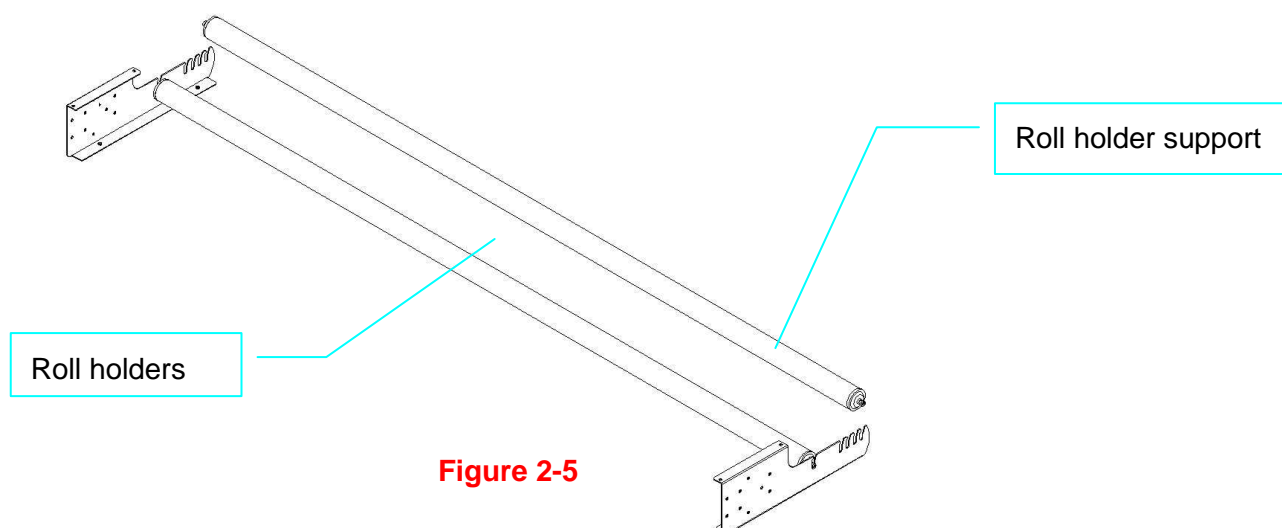
Figure 2-5

Step 7

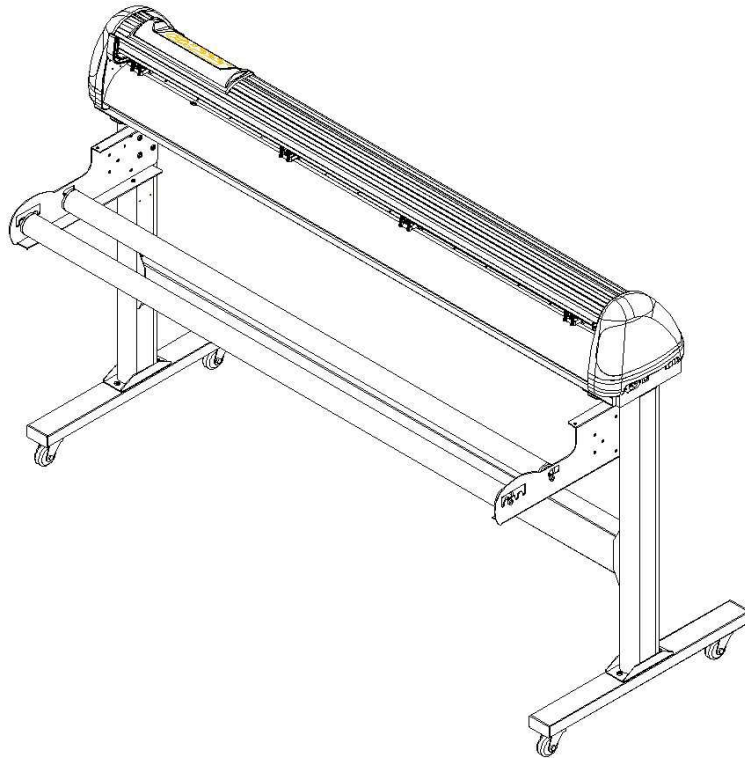Lastly, the complete picture will be shown like below. (Figure 2-6)

Figure 2-6

2.3 Blade Installation

! Caution

Do not touch the tip of the blade by your fingers.

! Notice

The blade is a consumable item, which will affect the cutting quality significantly.

Please replace with a new blade when having the following situations:

1. The tip of blade is broken.

2. The cutting traces are not as good as they were.

3. Uncut area remains the same even the blade force has been raised significantly.

Figure 2-11 is the picture of the blade holder. Insert a blade into the bottom of the

blade holder. Pushing the pin on the top of blade holder can remove the blade. Be sure to keep your fingers away from the blade tip.
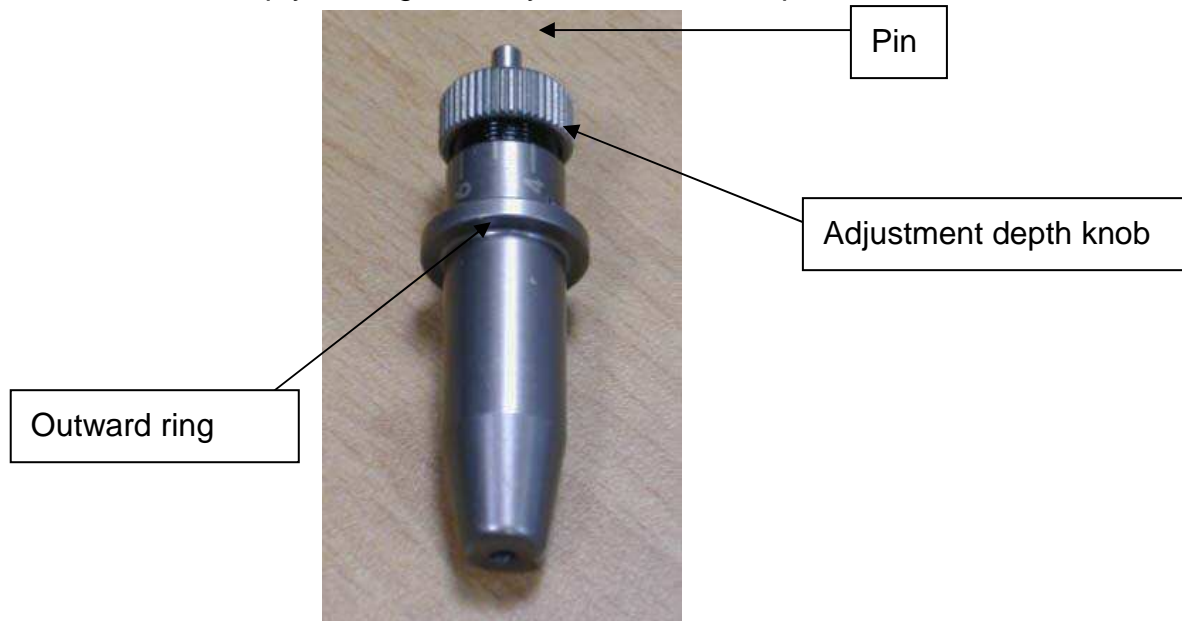

Pin

Adjustment depth knob

Outward ring

Figure 2-11

1. Install Blade. (Figure 2-12)

Figure 2-12

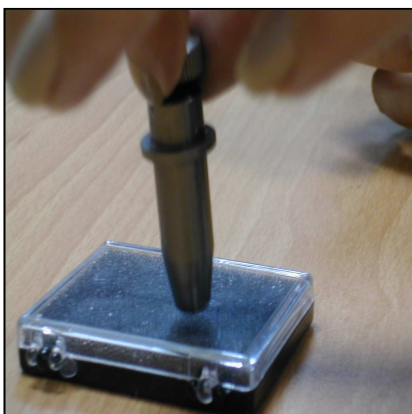2. Push the blade to the bottom of the blade holder. (Figure 2-13)

Figure 2-13

3. Adjust the blade tip to suitable length by rotating "Blade tip adjustment screw" clockwise or counterclockwise. (Figure 2-14)

Figure 2-14

Tips:
"The proper length" means the blade length is about 0.1mm more than film's thickness. For example, if the thickness of film is 0.5mm, then the blade length is properly adjusted to 0.6mm and it can completely cut through the film layer without cutting though the paper backing.

4. Insert the blade holder into tool carriage. Please note the outward ring of the holder must put into the groove of carriage firmly (Figure 2-15) and lock the grip. (Figure 2-16)

Figure 2-15   **Figure 2-16**

5. Reverse steps mentioned above to remove the blade holder.
6. Press the push-pin to remove the blade from the blade holder when replacing blade. (Figure 2-17)

Figure 2-17

2.4   Cable Connections

Puma III communicates with a computer through **USB (Universal Serial Bus), or 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.

Serial Interface Connector (RS232C)
used to connect the cutting plotter to a computer through a serial interface cable.

Figure 2-18

USB Connector
used to connect the cutting plotter to a computer through a USB cable.

2.4.1   USB Interface

Puma III build-in USB interface is based on the Universal Serial Bus Specifications Revision 1.1. USB is not available in Windows 95, Windows NT.

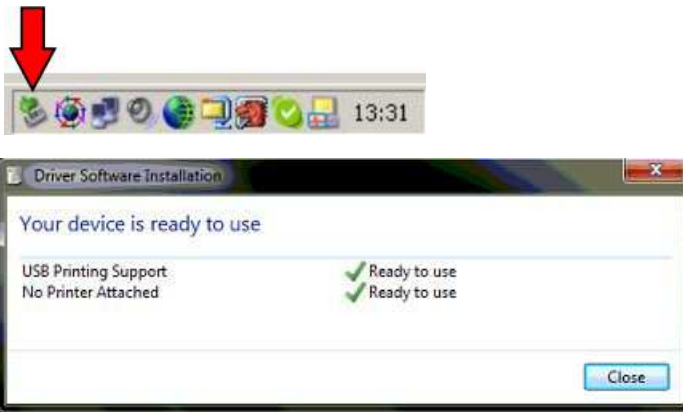■   USB driver installation

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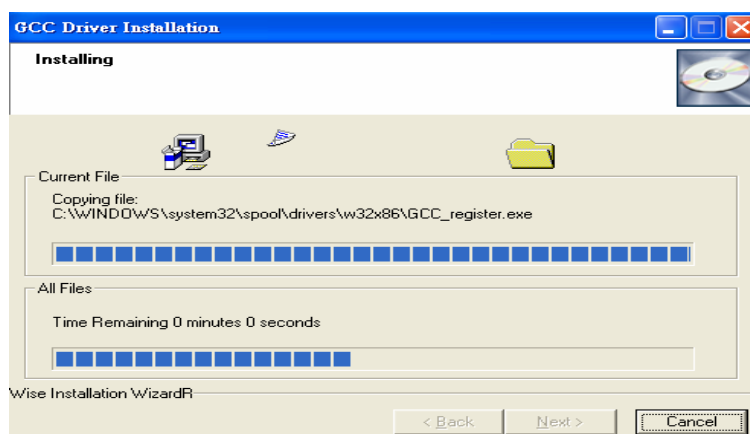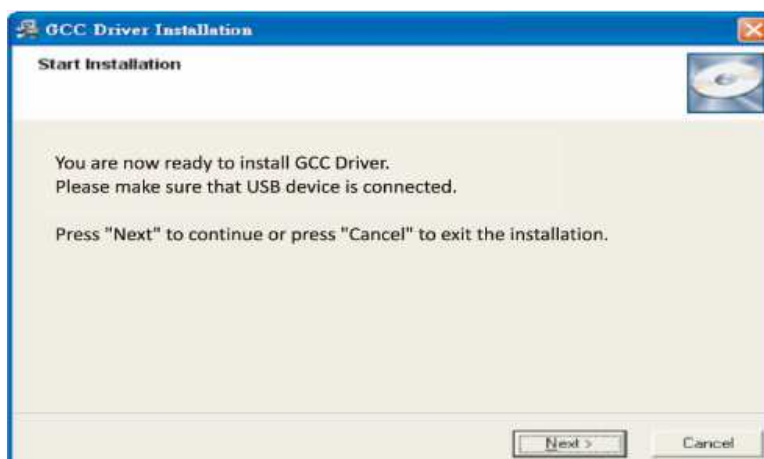
(4) The installation will take a few minutes to complete and you will see a message below and click on "OK" upon completion. Enjoy your GCC cutter!

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.
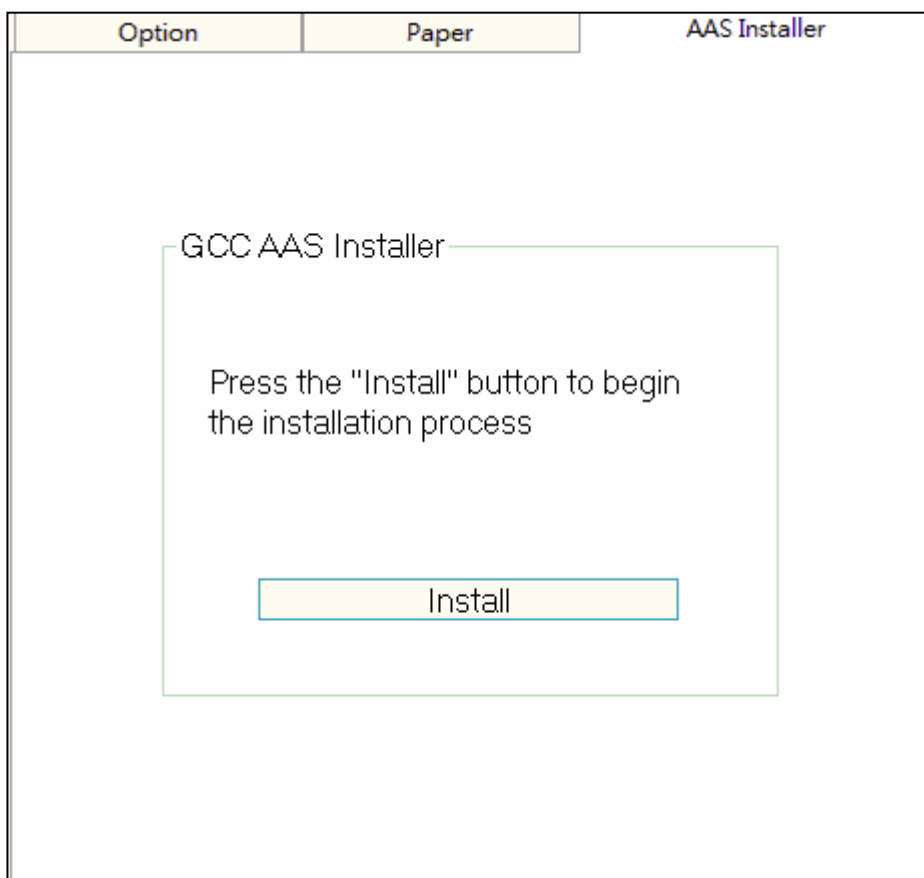
2.4.2 Driver Un-installation

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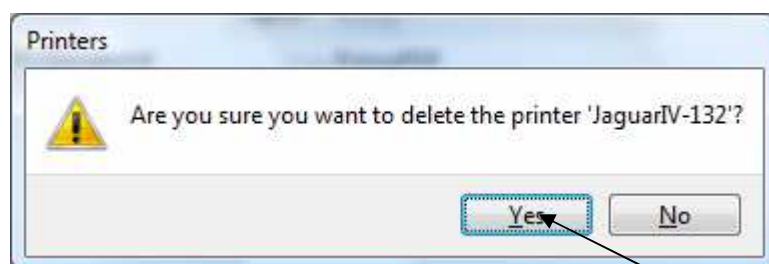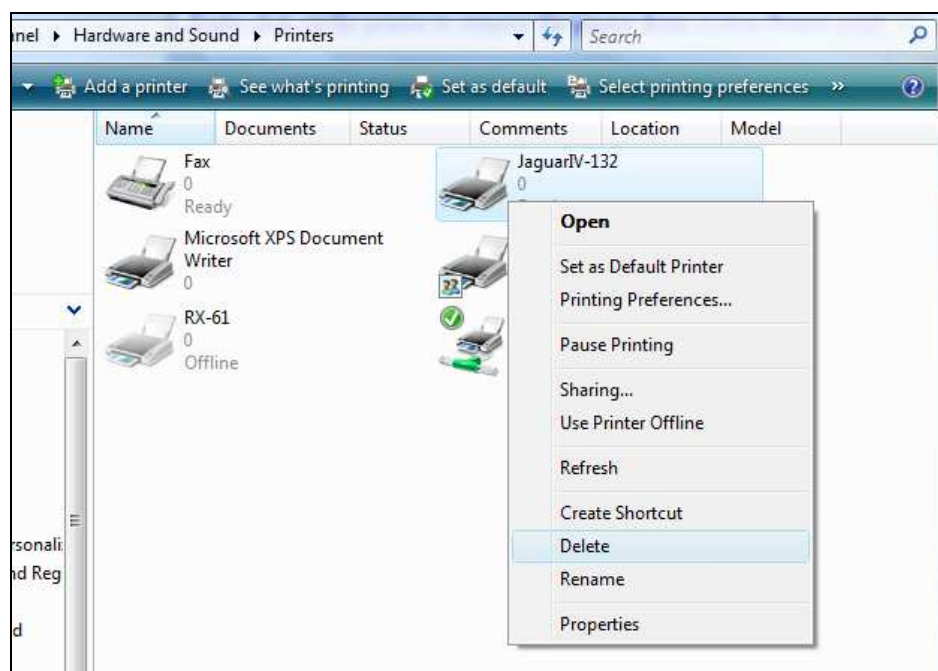
2. After removing the unit, right click on any empty space on the page and select "Server Property"

3. Select "Driver" page
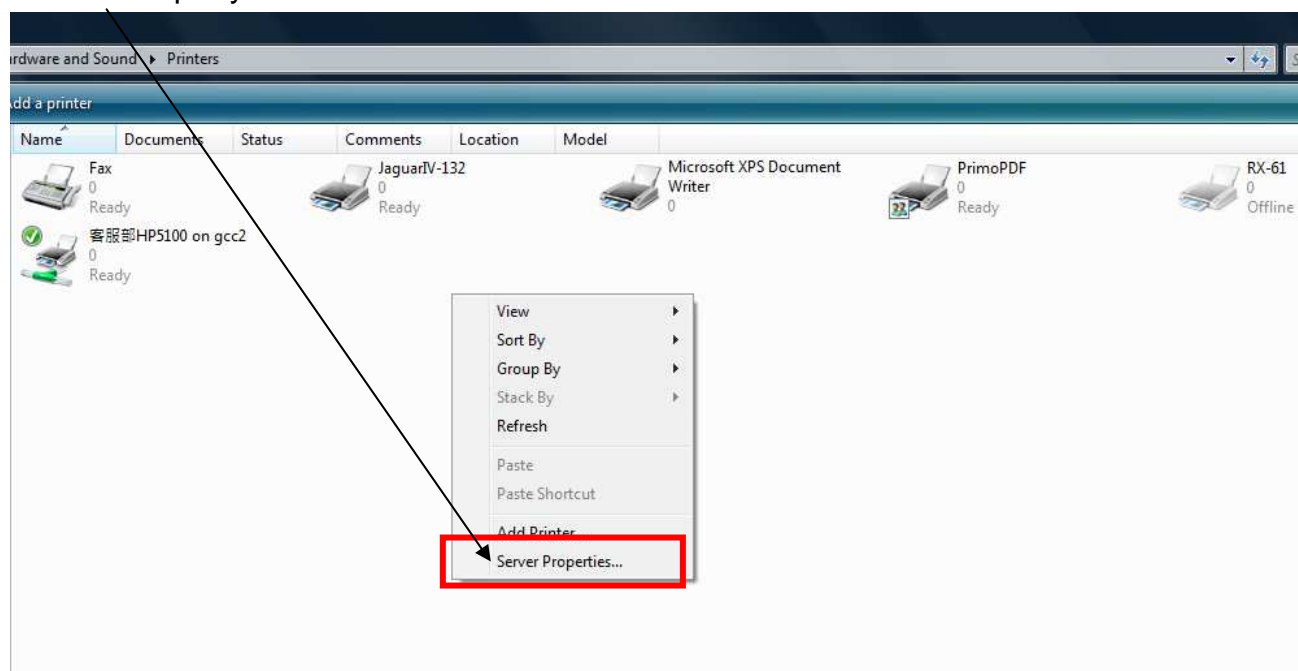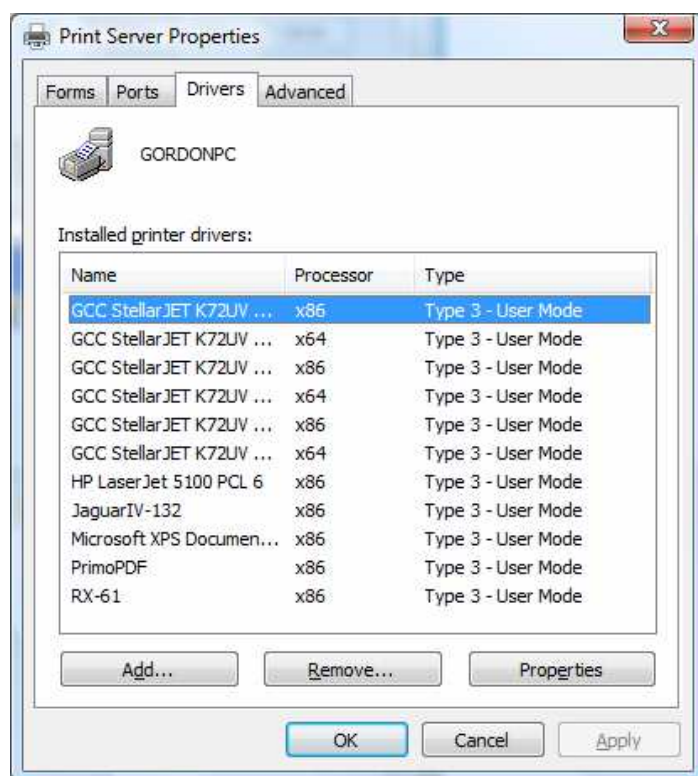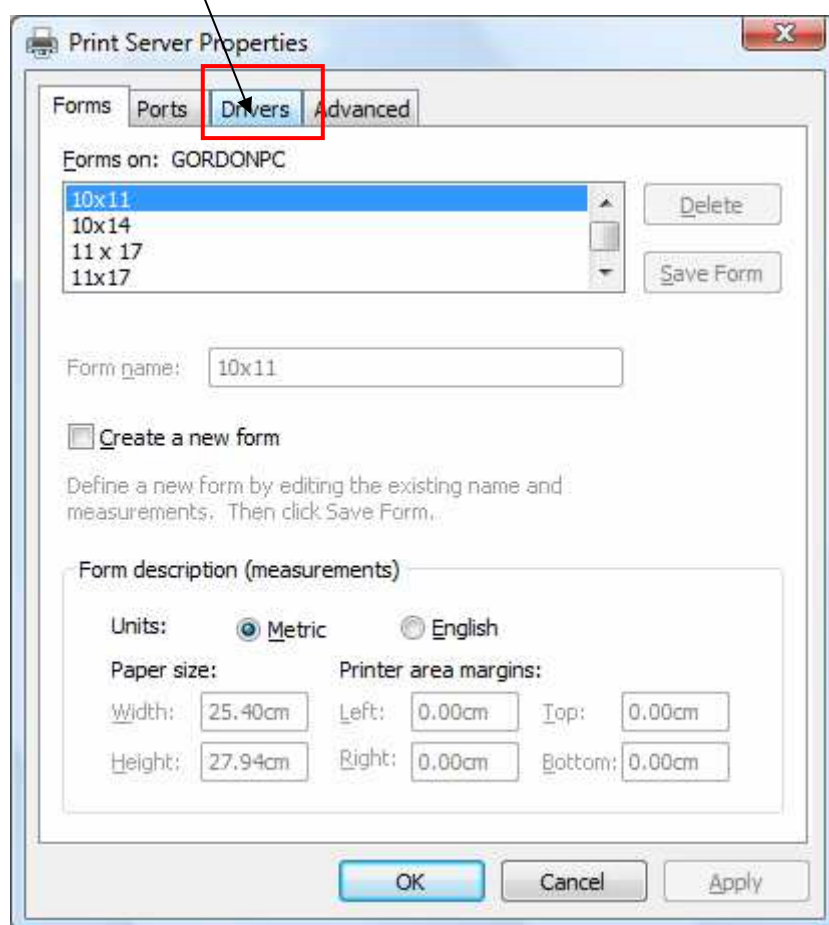
Select the model and click on "Remove".

Click on "OK"
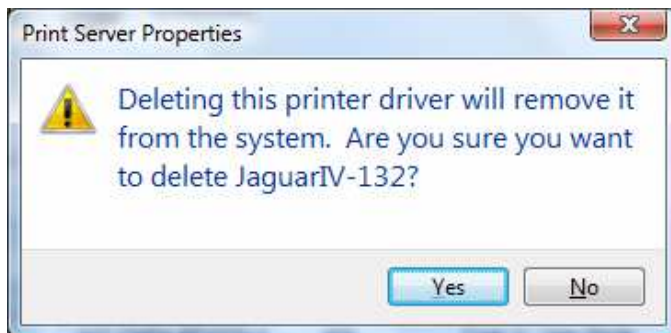
Click on "Yes"

The driver installed on PC is completely removed.

2.4.3 RS-232 Interface

■ Connecting to the RS-232 (Serial) Port

1. For Personal Computer users, connect the RS-232C cable to the serial connector of the assigned serial port (COM1 or COM2) on your host computer.

2. Set up the communication parameters (Baud Rate and Data Bits/Parity) to match the setting of software package, refer to chapter 3 – "MISC" key description.

Caution!! Please turn off the plotter before plugging the RS-232C cable.

2.4.4 Data Transmitting

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 **HP-GL** or **HP-GL/2** commands. As long as the file is **HP-GL** or **HP-GL/2** format, the cutting plotter can output the data precisely.

2.4.5 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.
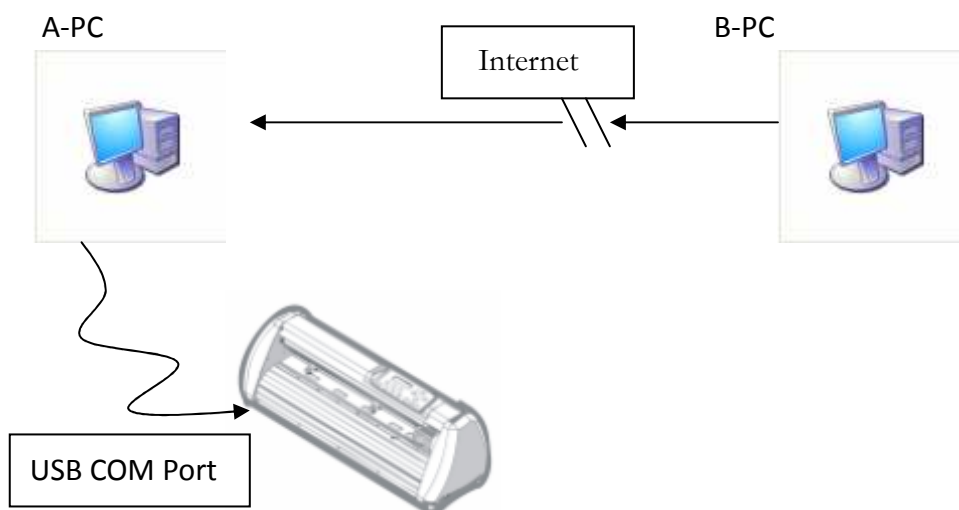
Step1.

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")
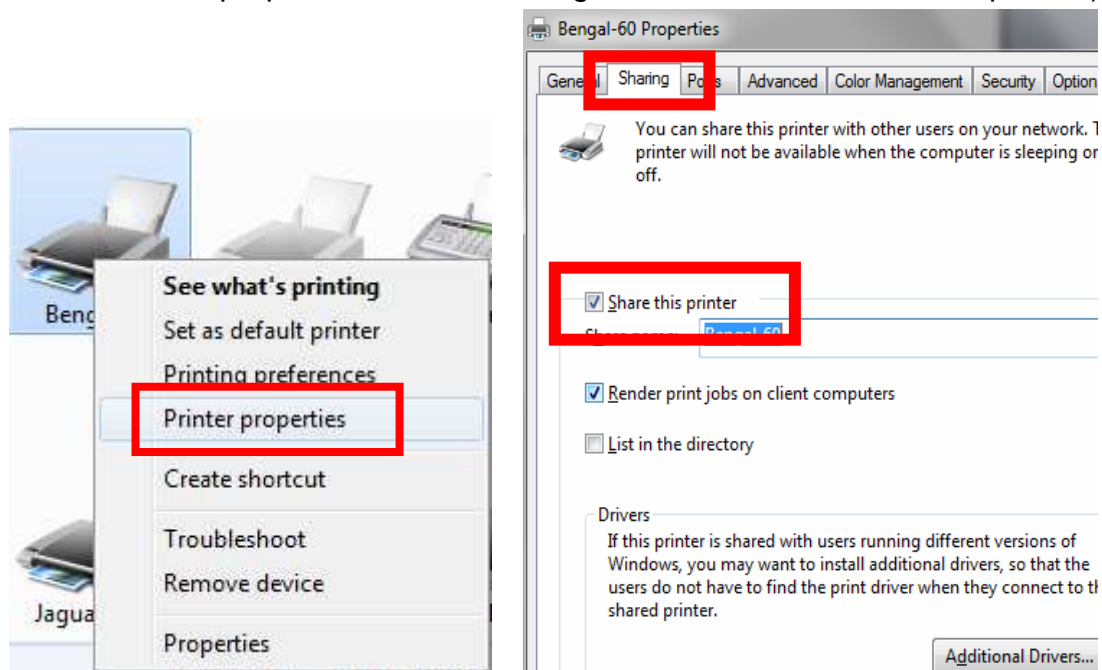
Step2.

Click "Advanced" tab, then choose "Print directly to the printer" option.
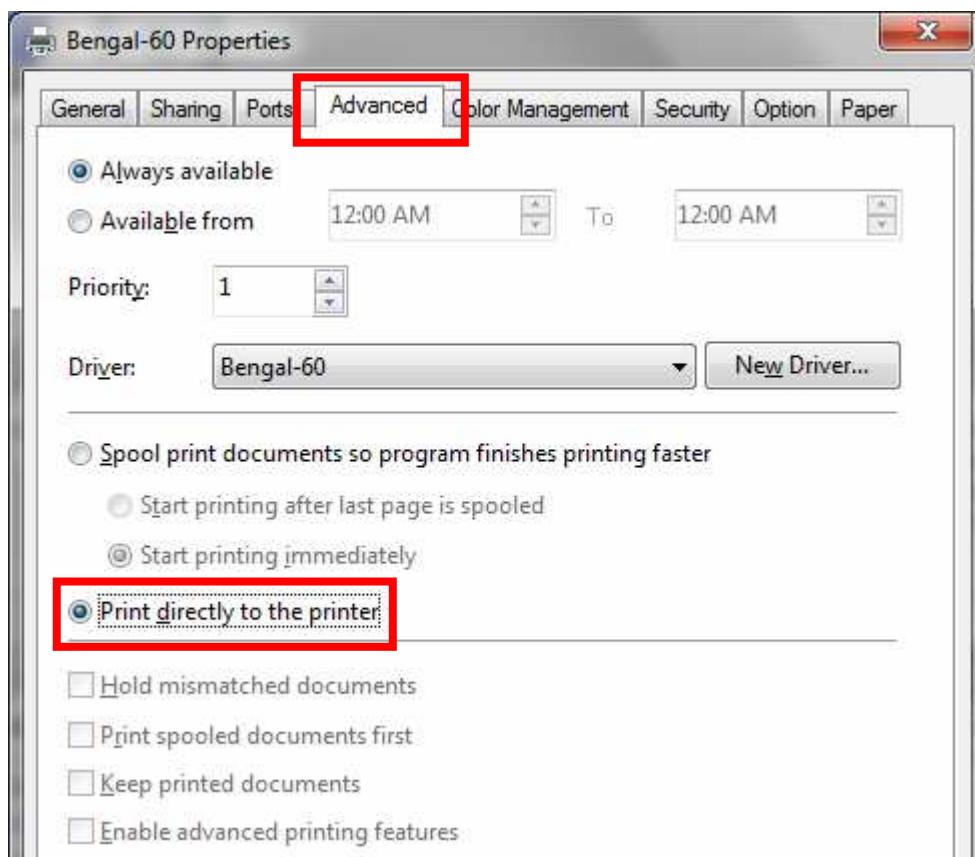
Step3.

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

Expert 24 LX

Try to send a job to check if the port is working.
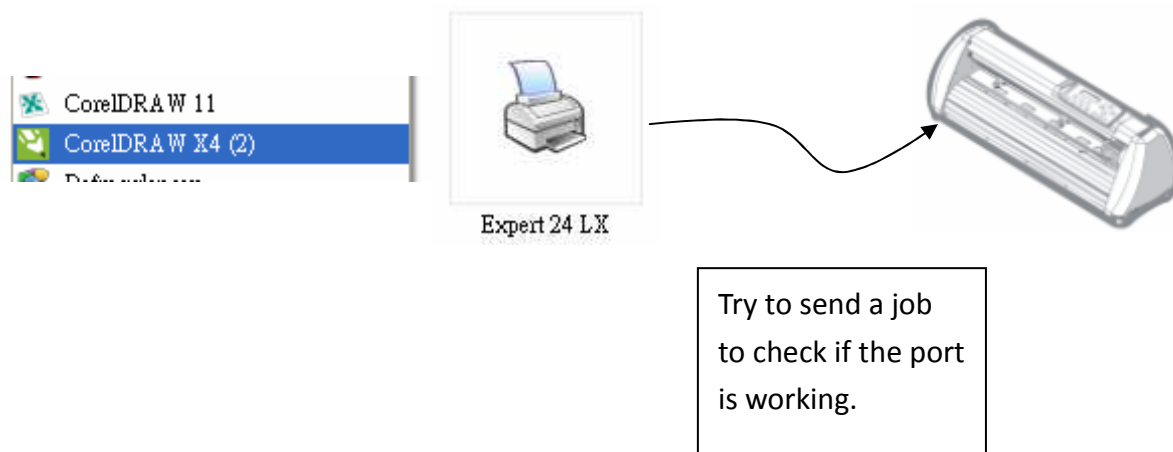
Step4.

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

Bengal-6

JaguarIV
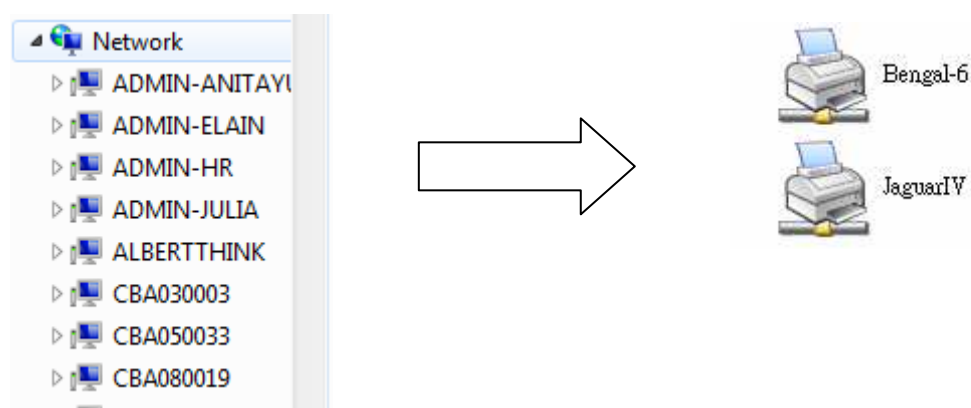
Step5.

Right-click on printer icon, and select "Connect" to connect A-PC's printer.
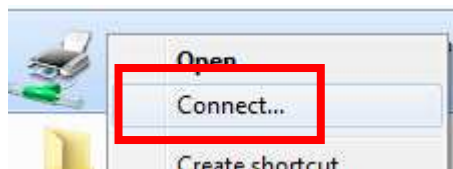
Chapter 3 The Control Panel

This chapter describes the button operations with the LCM menu flowcharts of Puma III. When the cutting plotter is ready for use as described in Chapter 1 & 2, all functions are under default parameters.

3.1 The LCD Panel
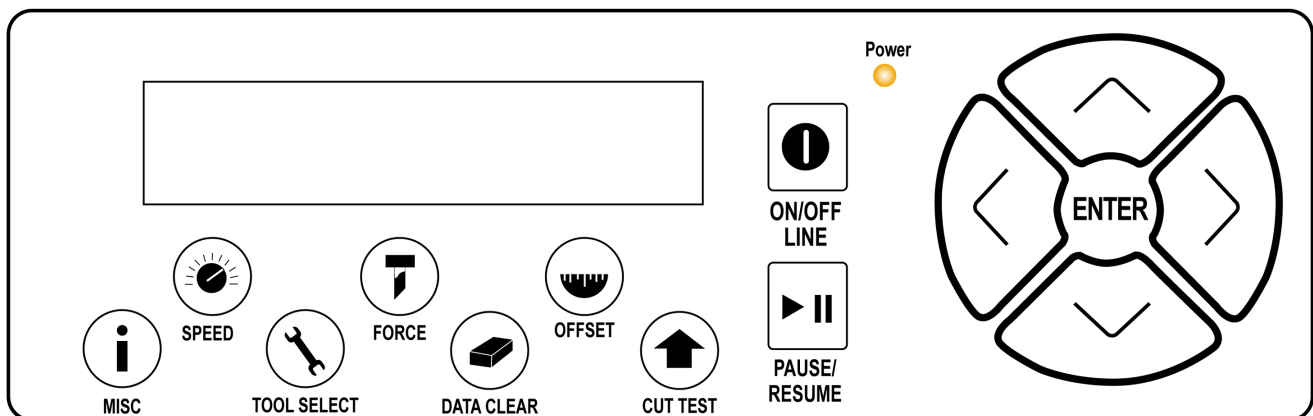
< LCD Control Panel on Puma III series >

| Key	Function
LCD Screen	To display functions and error messages.
Power LED	To indicate the power status (light up: power on; light off: power off)
4 Arrow Keys	To move position, select function, or change setting.
ENTER	To set item or register the immediately preceding input value.
PAUSE/RESUME	To temporarily halt cutting process or to continue
ON/OFF LINE	To switch modes, stop cutting job, or abort changes of settings.
OFFSET	To adjust the value of blade's offset.
FORCE	To adjust the value of cutting force.
SPEED	To adjust the value of cutting speed and quality.
CUT TEST	To perform cutting tests on different media
DATA CLEAR	To clear up buffer memory.
TOOL SELECT	To select tools.
MISC	To set up functions.

Please see details in "3.4 Menu Items"

3.2   Menu in On-line Mode

Power On   Puma III in processing

```
┌─────────────────────────┐
│   GCC Cutter            │
│   LCM Version- - -      │
└─────────────────────────┘
            │
            ▼
┌─────────────────────────┐
│ Puma III                │
│ Firmware:    Copyright:  │
└─────────────────────────┘
            │
            ▼
┌─────────────────────────┐
│ Place Media And Then Lower │
│ Down The Lever          │
└─────────────────────────┘
            │
            ▼
┌─────────────────────────┐
│ Roll    Edge    Single  │
│  △       ▽       ▷      │      use △  ▽   ▷ to select
└─────────────────────────┘
            │
            ▼
┌─────────────────────────┐
│ Sizing Media Width Lever Up │
│ To Abort                │
└─────────────────────────┘
            │
            ▼
┌─────────────────────────┐
│ Sizing Media Length Lever Up │
│ To Abort                │
└─────────────────────────┘
```
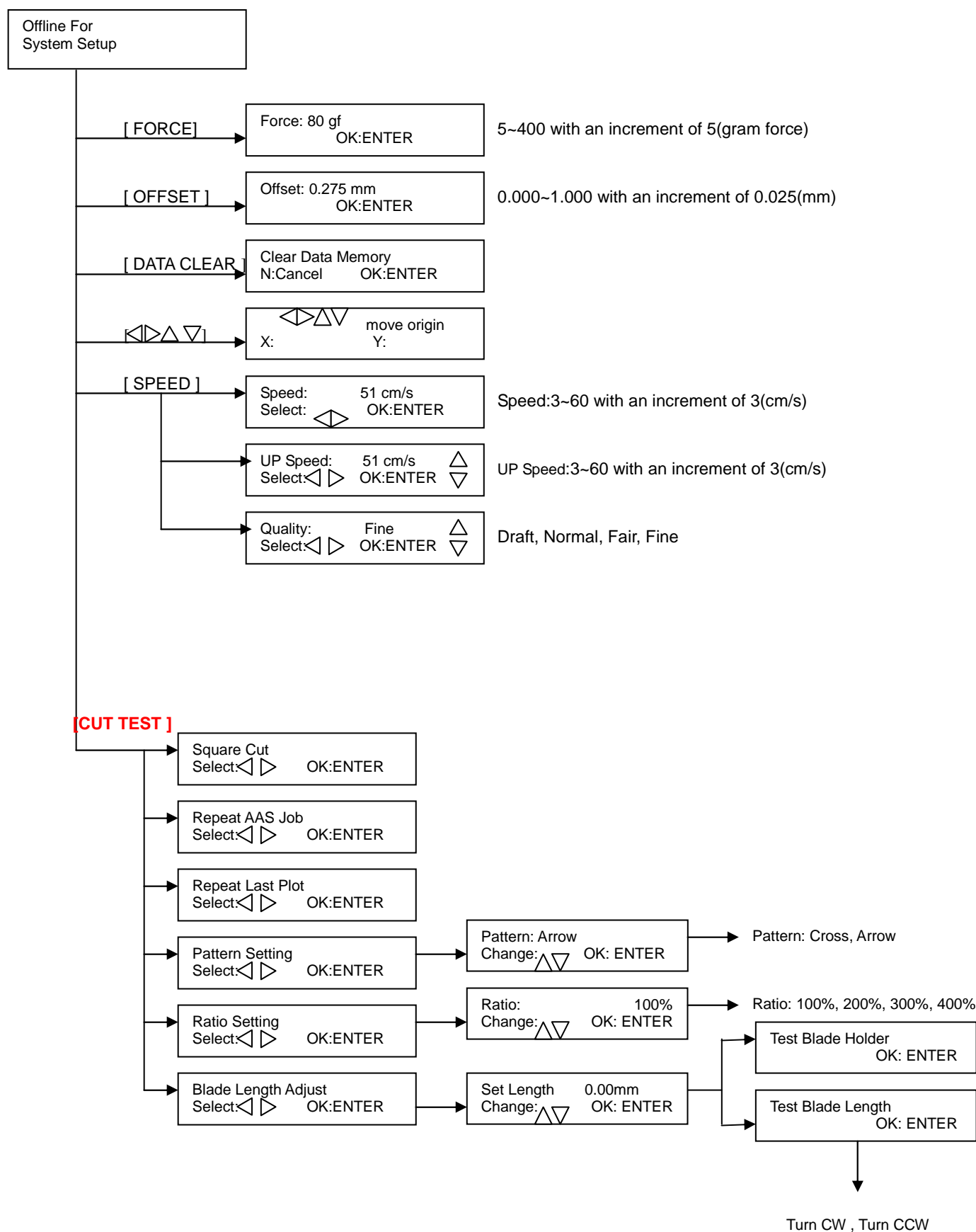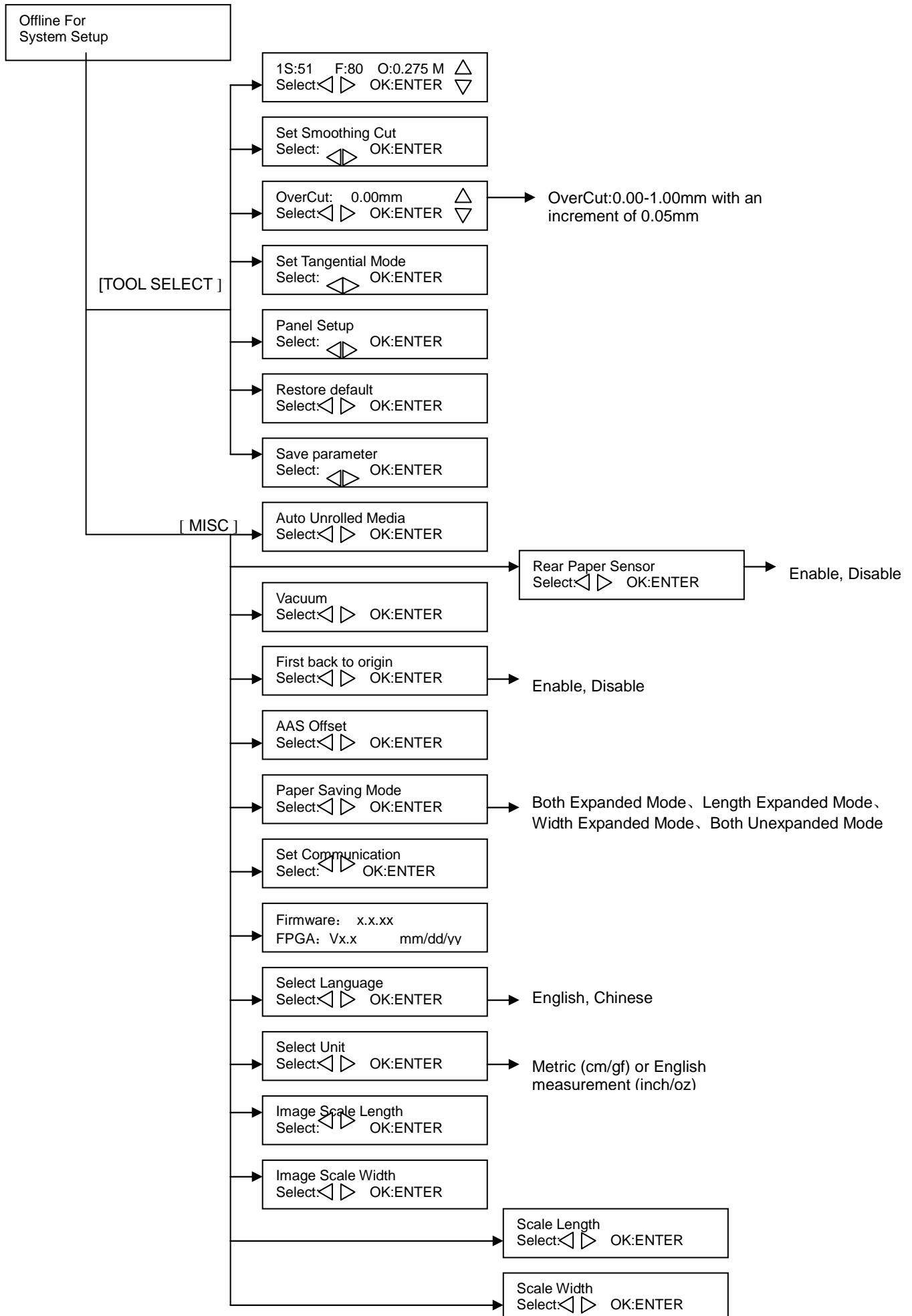
Top menu

```
┌─────────────────────────┐
│ S--- F----- O----       │
│                         │
│ L-------- W-----T1M     │
└─────────────────────────┘
```

Sending data

[PAUSE] →
```
┌──────────────────────────────┐
│ Pause   Setup    Resume      │
└──────────────────────────────┘
```

[FORCE] →
```
┌──────────────────────────┐
│ Force:80 gf          △   │
│            OK:ENTER  ▽   │
└──────────────────────────┘
```
use △▽ to select; [ENTER] to enable the setting

[SPEED] →
```
┌──────────────────────────┐
│ Speed:        51cm/s  △  │
│ Select:◁ ▷  OK:ENTER  ▽  │
└──────────────────────────┘
```

[OFFSET] →
```
┌──────────────────────────┐
│ Offset: 0.275 mm     △   │
│            OK:ENTER  ▽   │
└──────────────────────────┘
```

```
┌──────────────────────────┐
│ UP Speed:    51 cm/s  △  │
│ Select:◁ ▷  OK:ENTER  ▽  │
└──────────────────────────┘
```

[DATA CLEAR] →
```
┌──────────────────────────┐
│ Clear Data Memory        │
│ N:Cancel    OK:ENTER     │
└──────────────────────────┘
```

```
┌──────────────────────────┐
│ Quality:     Fine     △  │
│ Select:◁ ▷ OK:ENTER   ▽  │
└──────────────────────────┘
```

[TOOL SELECT] →
```
┌──────────────────────────┐
│ 1S:51   F:80  O:0.275 M △│
│ Select:◁ ▷  OK:ENTER   ▽ │
└──────────────────────────┘
```

```
┌──────────────────────────┐
│ Set Smoothing Cut        │
│ Select:◁ ▷   OK:ENTER    │
└──────────────────────────┘
```

```
┌──────────────────────────┐
│ OverCut:     0.00mm   △  │
│ Select:◁ ▷  OK:ENTER  ▽  │
└──────────────────────────┘
```

```
┌──────────────────────────┐
│ Set Tangential Mode      │
│ Select:◁ ▷   OK:ENTER    │
└──────────────────────────┘
```

3.3 Menu in Off-line Mode

Press [ON/OFF LINE] to switch to the offline mode

```
┌─────────────────┐
│ Offline For     │
│ System Setup    │
└────────┬────────┘
         │
[ FORCE]         ┌──────────────────────┐
─────────────────►│ Force: 80 gf         │   5~400 with an increment of 5(gram force)
                  │         OK:ENTER     │
                  └──────────────────────┘

[ OFFSET ]       ┌──────────────────────┐
─────────────────►│ Offset: 0.275 mm     │   0.000~1.000 with an increment of 0.025(mm)
                  │         OK:ENTER     │
                  └──────────────────────┘

[ DATA CLEAR ]   ┌──────────────────────┐
─────────────────►│ Clear Data Memory    │
                  │ N:Cancel    OK:ENTER │
                  └──────────────────────┘

◁▷△▽]           ┌──────────────────────┐
─────────────────►│   ◁▷△▽   move origin │
                  │ X:          Y:       │
                  └──────────────────────┘

[ SPEED ]        ┌──────────────────────┐
─────────────────►│ Speed:      51 cm/s  │   Speed:3~60 with an increment of 3(cm/s)
                  │ Select: ◁▷  OK:ENTER │
                  └──────────────────────┘
                  ┌──────────────────────┐
                 ►│ UP Speed:   51 cm/s △│   UP Speed:3~60 with an increment of 3(cm/s)
                  │ Select:◁ ▷ OK:ENTER ▽│
                  └──────────────────────┘
                  ┌──────────────────────┐
                 ►│ Quality:      Fine  △│   Draft, Normal, Fair, Fine
                  │ Select:◁ ▷ OK:ENTER ▽│
                  └──────────────────────┘
```

[CUT TEST]

```
         ┌──────────────────────┐
        ►│ Square Cut           │
         │ Select:◁ ▷  OK:ENTER │
         └──────────────────────┘
         ┌──────────────────────┐
        ►│ Repeat AAS Job       │
         │ Select:◁ ▷  OK:ENTER │
         └──────────────────────┘
         ┌──────────────────────┐
        ►│ Repeat Last Plot     │
         │ Select:◁ ▷  OK:ENTER │
         └──────────────────────┘
         ┌──────────────────────┐      ┌──────────────────────┐
        ►│ Pattern Setting      │─────►│ Pattern: Arrow       │────► Pattern: Cross, Arrow
         │ Select:◁ ▷  OK:ENTER │      │ Change:△▽  OK: ENTER  │
         └──────────────────────┘      └──────────────────────┘
         ┌──────────────────────┐      ┌──────────────────────┐
        ►│ Ratio Setting        │─────►│ Ratio:        100%   │────► Ratio: 100%, 200%, 300%, 400%
         │ Select:◁ ▷  OK:ENTER │      │ Change:△▽  OK: ENTER  │
         └──────────────────────┘      └──────────────────────┘
                                                          ┌──────────────────────┐
                                                         ►│ Test Blade Holder    │
                                                          │           OK: ENTER  │
         ┌──────────────────────┐      ┌──────────────────────┐
        ►│ Blade Length Adjust  │─────►│ Set Length   0.00mm  │
         │ Select:◁ ▷  OK:ENTER │      │ Change:△▽  OK: ENTER  │
         └──────────────────────┘      └──────────────────────┘
                                                          ┌──────────────────────┐
                                                         ►│ Test Blade Length    │
                                                          │           OK: ENTER  │
                                                          └──────────┬───────────┘
                                                                     │
                                                                     ▼
                                                          Turn CW , Turn CCW
```

Offline For
System Setup

1S:51   F:80   O:0.275 M △
Select:◁ ▷ OK:ENTER ▽

Set Smoothing Cut
Select: ◁▷   OK:ENTER

OverCut: 0.00mm   △
Select◁ ▷ OK:ENTER   ▽   → OverCut:0.00-1.00mm with an
                                           increment of 0.05mm

Set Tangential Mode
Select: ◁▷   OK:ENTER

[TOOL SELECT]

Panel Setup
Select: ◁▷   OK:ENTER

Restore default
Select◁ ▷ OK:ENTER

Save parameter
Select: ◁▷   OK:ENTER

[MISC]
Auto Unrolled Media
Select◁ ▷ OK:ENTER

                            Rear Paper Sensor
                            Select◁ ▷ OK:ENTER   → Enable, Disable

Vacuum
Select◁ ▷ OK:ENTER

First back to origin
Select◁ ▷ OK:ENTER   → Enable, Disable

AAS Offset
Select◁ ▷ OK:ENTER

Paper Saving Mode
Select◁ ▷ OK:ENTER   → Both Expanded Mode、Length Expanded Mode、
                                Width Expanded Mode、Both Unexpanded Mode

Set Communication
Select:◁▷ OK:ENTER

Firmware： x.x.xx
FPGA：Vx.x   mm/dd/yy

Select Language
Select◁ ▷ OK:ENTER   → English, Chinese

Select Unit
Select◁ ▷ OK:ENTER   → Metric (cm/gf) or English
                                measurement (inch/oz)

Image Scale Length
Select:◁▷   OK:ENTER

Image Scale Width
Select◁ ▷ OK:ENTER

                            Scale Length
                            Select◁ ▷ OK:ENTER

                            Scale Width
                            Select◁ ▷ OK:ENTER

3.4   Menu Items

Below describes the functions of menu items

Menu or Key	Function	Setting	Default
--- Media sizing ---			
Roll	To measure media width.	Maximum Tracking 150 meters	
Edge	To measure media width and pull the media back till the front paper sensor open.	Maximum Tracking 150 meters	
Single	To measure media width and length.	Maximum Tracking 10 meters	
--- POWER ---			
	To indicate the power status.		
[Arrow Keys]			
	1. To move the tool carriage position on X or Y axis. 2. To select functions or change values of settings.		
[ENTER]			
	1. The displayed parameters will be saved automatically. 2. To set a new origin at the present tool carriage position. In "offline" mode, moving the tool carriage to desired position by [Arrow Keys], then press [ENTER] key to set a new origin. While moving with the parameters of XY-axes displayed, press [MISC] key will enable fine-tune movement; press [MISC] key again to disable the function.		
[PAUSE/RESUME]			
	To temporarily halt the cutting process. To resume the process by press [Pause/Resume] key again.		
[ONLINE/OFFLINE]			
	1. To switch between online mode and offline mode. 2. To stop the cutting job or abort the change of setting. Once press this key, the cutting job will be terminated immediately and cannot be resumed.		
[OFFSET]			
	To set or modify the distance between the blade tip and the center axis.	0.000~1.000mm	0.275mm
[FORCE]			
	To set or modify the value of tool force.	5~400gram; 5 gram/per step	80 gram
[SPEED]			
Speed	To set or modify tool speed at horizontal moving.	3~60cm/sec; 3cm/sec per step	51cm/sec
Up Speed	To set or modify tool speed at vertical moving.	3~60cm/sec; 3cm/sec per step	51cm/sec
Cutting Quality	To set or modify cutting quality. [Slower speeds / higher quality - Faster speeds / lower quality] The Set Cutting Quality Page allows you to adjust and balance vector mode's quality and speed settings based on your specific job. Draft Mode offers the highest output speed, sacrificing quality. Whereas Quality Mode offers the highest quality, sacrificing output speed. Keep in mind that speed and quality are usually at a tradeoff.	Draft, Normal, Fair, Fine	Normal
[CUT TEST]			

Square Cut	To perform a cutting test at present blade position. For more information, please refer to "4.3 Adjusting the Cutting Force and Offset" to adjust blade force and cutting speed.		
Repeat AAS Job	To repeat AAS jobs automatically without having to operate on the computer side. Please be noted that this feature is mainly applied to the Single paper mode; please ensure a new piece of material you wish to apply this feature on is loaded and the origin repositioned to the first registration mark before starting. When the first AAS job repeat completes, the user will be offered the choice of "Repeat AAS Job Again", please press "Online/Offline" to return to the main menu.		
Repeat Last Plot	Recut: To repeat the last job without re-sending the data.	1~99; 1 per step	
	Copy: To copy the last job without re-sending the data. * 1mm gap will be auto-generated between 2 copies). * If the media length is not enough to continue, it will show below message on LCM: `Out Of Space;  # of Copies finished` If both functions are enabled at the same time, the cutter will perform the last setting only.	1~99; 1 per step	
Pattern Setting	To provide two patterns for cut test Note: It is recommended to select "Cross" if you are working on thick pieces of materials.	"Arrow" and "Cross" patterns	"Arrow"
Ratio Setting	To adjust the size of the pattern	100%, 200%, 300%, 400%	100%
Blade Length Adjust	To adjust the length of the blade Note: 1. Keep your blade length as 0 before you start adjusting. 2. Test the blade holder first and then test the blade length by pressing ENTER. 3. Keep the blade holder at the same position when you perform blade holder and blade length tests. 4. When blade holder and blade length tests are finished, the screen will show you to what degree (the unit of the value following "CW" or "CCW" is "circle") and in which direction [CW (clockwise) or CCW (counterclockwise)] you should turn the adjustment knob. EG, Turn CW 0.5 is telling you that you should turn the knob for half a circle clockwisely. 5. The value on the screen will be 0.0 when the blade length is perfect and no more adjustment needs to be made. You may start cutting at this point.	0.00mm-5.00mm	0.00mm
[DATA CLEAR]			
	To clear up buffer memory.		
[TOOL SELECT]			
Save Parameter	To save pattern(s) of cutting parameters for later use. There are 4 sets of parameters saved in the panel. Use Page Up and Page Down keys to select the set of parameters you wish to adjust, press "Enter" to confirm (the number shown on the upper left corner will change accordingly). Each set of	Patterns1~4	Pattern 1

	parameters includes Speed, Force, Offset, Up Speed, Quality and Scaling though the latter three will not be displayed in this section. To adjust or check individual parameters, go back to the responding keys on the panel and press "Enter" to confirm.		
Set Smoothing Cut	To enable smooth-cutting function.		Enable
Over Cut	To generate an overcut to facilitate weeding.	0.00mm-1.00mm 0.05mm/per step	0.00mm
Set Tangential Mode	To enable the emulated tangential-cutting mode for thicker media types and small letter cuts. Note: while the Offset value setting at 0.000 mm, "Set Tangential Mode" will automatically be disabled.		Disable
Panel Setup	Accept setup command: To accept commands of the Force, Speed, Cutting Quality, and Offset only via software.		
	Control panel only: To accept commands of the Force, Speed, Cutting Quality, and Offset only via control panel of the cutter.		
Restore Default	To turn all parameters of the menu items to factory-default settings.		
[MISC]			
Auto Unrolled Media	To avoid paper jam and motor crash by automatically unroll media (50cm and up) before cutting while enabled. . * Auto-unroll only effects on roll/edge media. * Using Single mode to size media will disable this function automatically. * If the length of the rolled media is less than 2 meters or the weight is light, it is recommended to set this mode disabled.		Enable
Rear Paper Sensor	To detect if the rear paper sensor is covered to determine the following process; when it is enabled, the cutter will detect if the material has covered the rear paper sensor under the Roll and Edge mode; when disabled, the rear paper sensor will not be functioning. Note: Rear paper sensor only functions under "Roll" and "Edge" mode.	Enable Disable	Enable
Vacuum	To help improve tracking and cutting accuracy by turning on the fans. If you turn off the vacuum system, the fans will remain inactive during cutting or plotting.		Enable
First Back to Origin	To enable the carriage back to the previous origin; when "Enable" is selected, the carriage will not go back to the previous origin while the selection of "Disable" allows the carriage to do so.	Enable Disable	Enable
AAS Offset	To set or modify AAS offset value. You can refer to "5.3 Printer Test" for more details.		
Paper Saving Mode	To save media by four different modes: 1. Length expanded mode 2. Width expanded mode 3. Both expanded mode 4. Both unexpanded mode		Length expanded mode
Set Communication	To build up the communication between host computer and cutter. *Baud Rate* is to determine the speed of data transmission. *Data Bits* refers to the size of one block of data. *Parity* is used to check if data was revived correctly or not. 9600, n, 7, 1, p 9600pbs, 7 Bits with NO Parity 9600, o, 7, 1, p 9600pbs, 7 Bits with ODD Parity		

	9600, e, 7, 1, p 9600pbs, 7 Bits with EVEN Parity 9600, n, 8, 1, p 9600pbs, 8 Bits with NO Parity 9600, o, 8, 1, p 9600pbs, 8 Bits with ODD Parity 9600, e, 8, 1, p 9600pbs, 8 Bits with EVEN Parity 19200, n, 7, 1, p 19200pbs, 7 Bits with NO Parity 19200, o, 7, 1, p 19200pbs, 7 Bits with ODD Parity 19200, e, 7, 1, p 19200pbs, 7 Bits with EVEN Parity 19200, n, 8, 1, p 19200pbs, 8 Bits with NO Parity 19200, o, 8, 1, p 19200pbs, 8 Bits with ODD Parity 19200, e, 8, 1, p 19200pbs, 8 Bits with EVEN Parity		
Firmware Version	To display the version number of Firmware and FPGA code.		
Select Language	To select displayed languages on LCM panel in English, Spanish, Italian, Deutsch, Japanese, Portuguese, Polish, Turkish or French.		English
Select Units	Provide two-unit systems for users convenient.	cm/gram; inch/oz	Metric
Image Scale Length	To adjust the image scale of media length and width that may cause by the thickness of the media. The Numerator is the ideal length, and the Denominator is the actual length measured from the resultant. For example, cutting a line with 500.0 mm length. The procedure as follows:		500/500 mm
Image Scale Width	1. Press the [LEFT ARROW] to choose the Numerator and select 500.0 mm, 2. Cut the length by sending a graph file, 3. Measure the length then use the [RIGHT ARROW] key to choose the Denominator, then 4. Press [UP ARROW /DOWN ARROW] to change the values of the actual length.		
Scale Length	Fixed scaling, for maintenance only.		
Scale Width			

Chapter 4 Operation

4.1   Media Loading

4.1.1   Loading the Sheet Media

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

Pull the lever upward to raise the pinch rollers. (Figure 4-1)
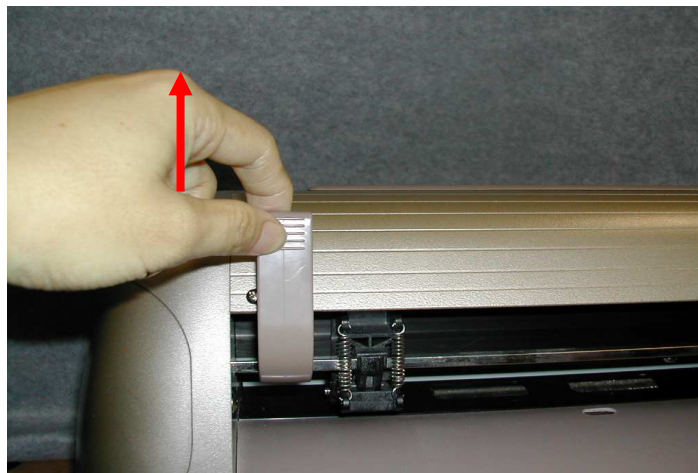
Figure 4-1

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.

> **Note:**
> Be sure that the media must be covered by the paper sensors on the platen when loading the media. At least one of the two paper sensors should be covered. Once the media covers the sensor, the cutting plotter will size width and length of media automatically.

Then move the pinch rollers manually to the proper position. Be sure the pinch rollers must be positioned above the grid drum. The **white marks** on top trail will help you position pinch rollers when media on the platen. (Figure 4-2)

White Marks

Figure 4-2

Push the lever downward to lower down the pinch rollers.

Turn on the power; the machine will be initialized. Then follow the instruction of LCM to measure the size of the media.

Note:

Move the pinch roller by applying force at the rear portion of the pinch roller support. Do not move it by holding its front rubber roller.

Figure 4-3 correct way to move pinch rollers

4.1.2 Loading the Roll Media

Step 1

Firstly, put the roll media guide bushes on two roll holders. (Figure 4-4)

Roll media guide bushes
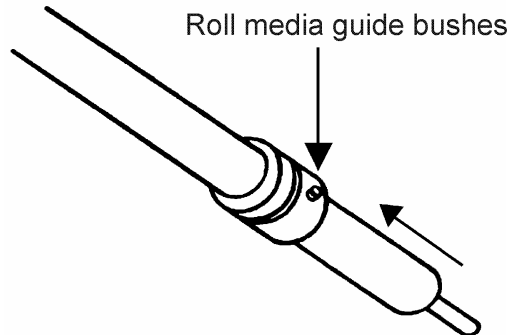
Figure 4-4

Step 2

Option A (Use the media flange)

Insert a roll media flange at the end of each roll media and tighten the thumbscrew until the roll media is firmly gripped. (Figure 4-5)
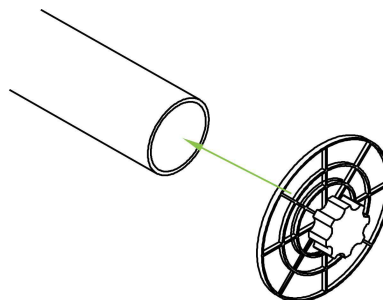
Figure 4-5

Then put the roll media on the roll holders. Adjust the position of the roll media ensure that the media flange is able to run in the groove of media guide bushes. (Figure 4-6)

Figure 4-6

Option B

Insert the two roll holders into the roll media support set, and then place the roll media directly between the two roll holders. (Figure 4-7)
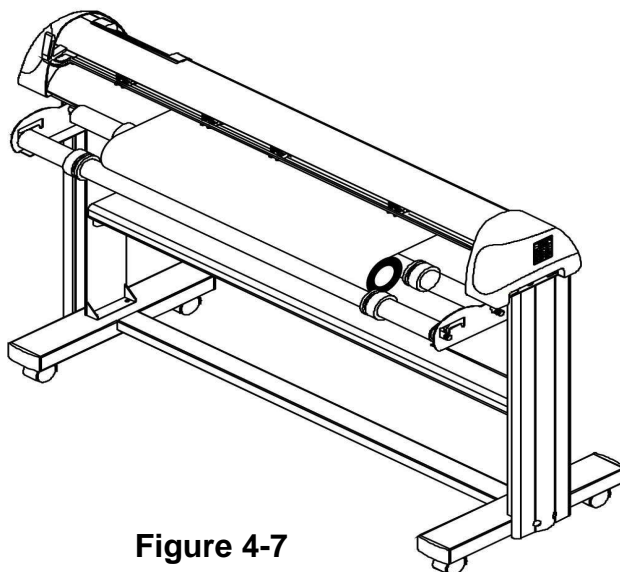
Figure 4-7

Step 3

Load the media on the platen. After loading the roll media, flatten the media on the platen and hold the front edge of the roll media firmly (Figure 4-8)
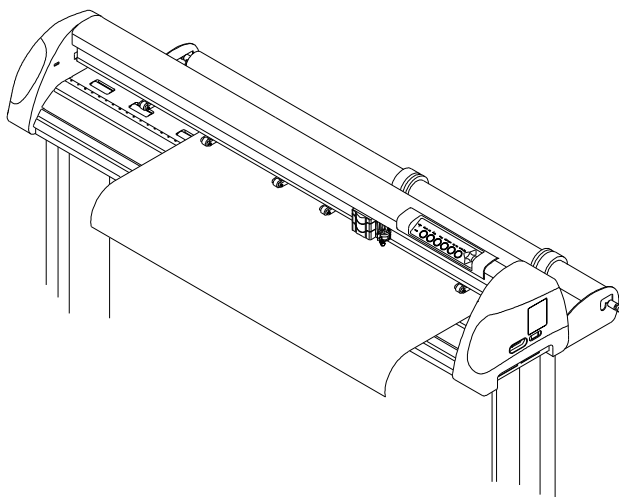
Figure 4-8

Step 4

Then turn the roll downward to make an equal tension across the media. (Figure 4-9)
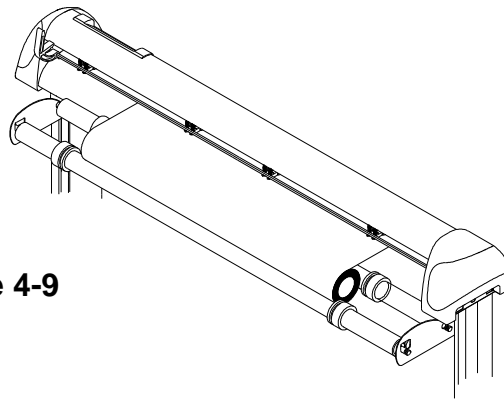
Figure 4-9

Step 5

Move the pinch rollers to the precise location and be careful that the pinch rollers must be positioned above the grid drums.

Step 6

Push the lever downward to lower down the pinch rollers.

Step 7

Fixes roll media guide bushes on the roll holder to secure the roll media.

Step 8

Turn on the power switch and select Roll, Edge or Single mode appropriate for one time setup, or set to Default Roll in Sizing Setting and Roll type sizing will be performed when the machine is turned on. Then the cutting plotter is ready to work.

Step 9

Unloading media：Reversing steps mentioned above to remove the media.

For the users of Puma III-60, you can also use the "Roll Base" (a standard accessory of Puma III-60) to feed a roll media. Please adjust the position of roll base to get a good cutting result. (Figure 4-10)
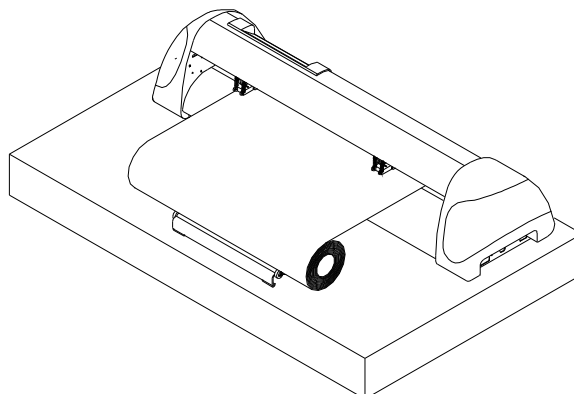
4.2 Tracking Performance

In order to achieve the best tracking performance for a long plot, please leave the margin of 0.5mm~25mm in the left and right edges of the media.(Figure 4-11)

0.5mm-25mmm   0.5mm-25mm

Pinch roller   **Figure 4-11**   Pinch roller
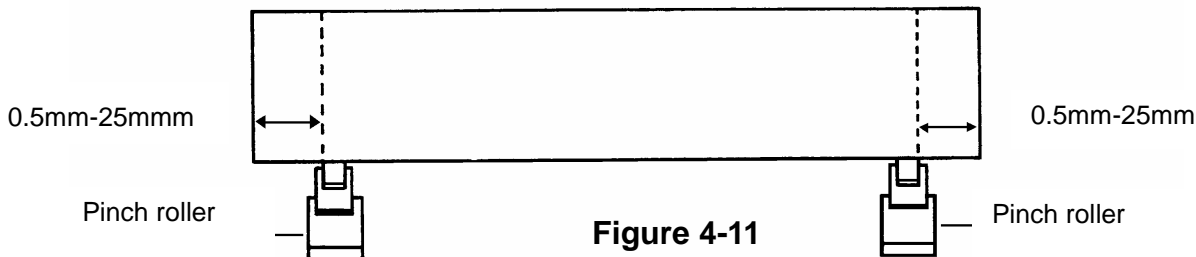
4.3 Cutting Force and Offset Adjustment

Before sending your designs from computer to Puma III for cutting, please make "Cut Test" to adjust cutting force and offset value.

The "Cut Test" should be repeated several times until the optimum settings are achieved.

Please follow procedure below to optimum the cutting force and offset settings.

Step1.
After sizing the media, press [CUT TEST] button to select the "Square Cut", and press [ENTER KEY] to confirm.

The default cutting force and offset value of the cutting test are 80gf and 0.275mm respectively.

Step2.
Press [ARROW KEY] to move the tool carriage to the position where you would like to cut. Then, press the [ENTER KEY] to make a "Cut Test".

Note: At the same time, the new origin is also set at the cut test position.

Step3.
When the "Cut Test" is completed, a pattern appears (please refer to Figure 4-12). Peel off the pattern to see if it can be easily separated from the media base. If the output result is good, the cutting force is set appropriately. If not or it cut through the back paper of media, press [FORCE KEY] to adjust the tool force until an optimum force is obtained.

Step4.

If the pattern appears to be BB or CC layout (see Figure 4-12), press [OFFSET KEY] to adjust the offset value until AA pattern is shown.
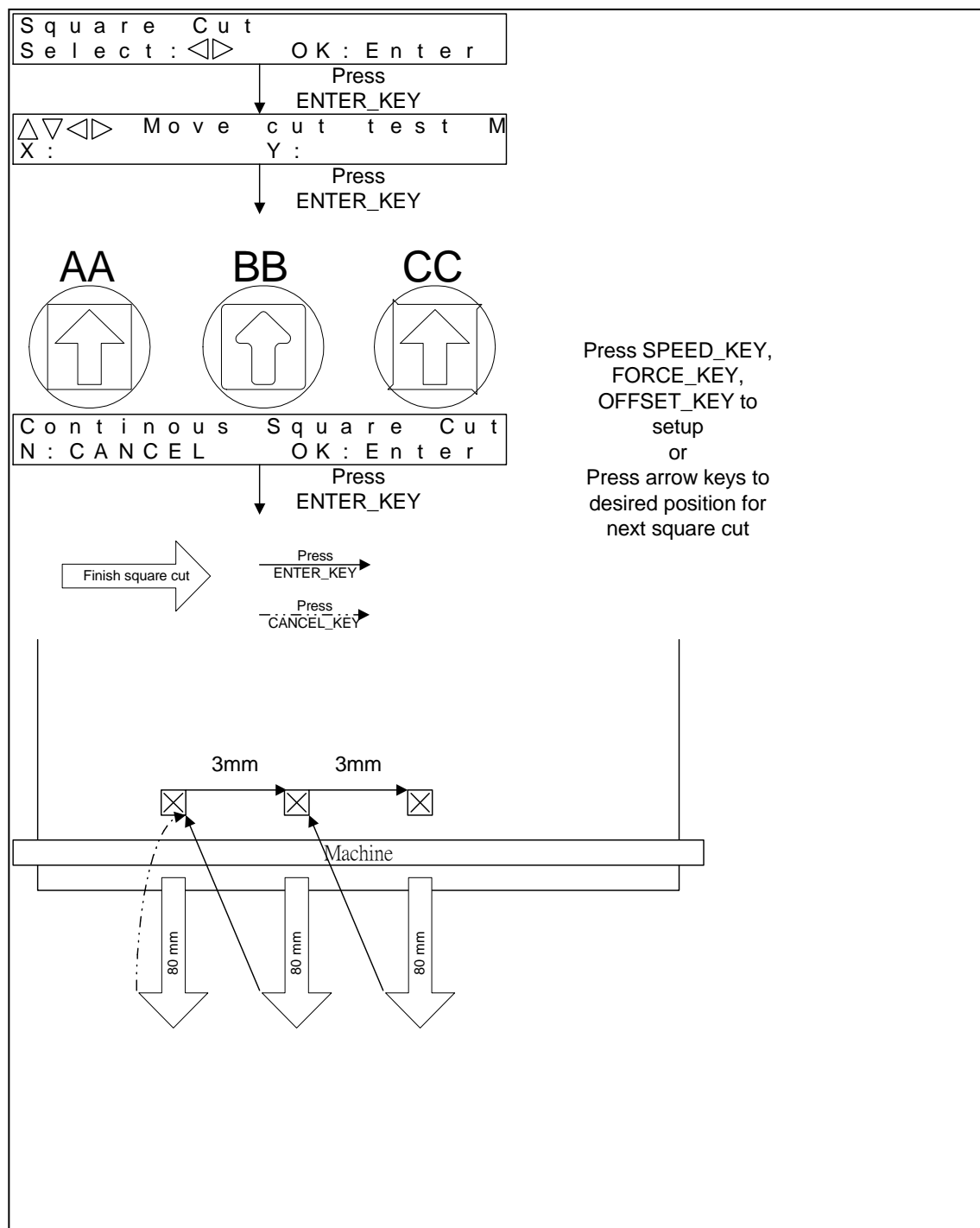
Figure 4-12

4.4   When Completing the Cutting Job

After completing the cutting job, raise the sheet-loading lever, and then remove the material. You can also cut off the finished job by the Safe Blade (a standard accessory) along the knife guide. (Figure 4-13)

Figure 4-13

4.5 Puma III Print Driver setting

4.5.1 Puma III 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 1 and 2).
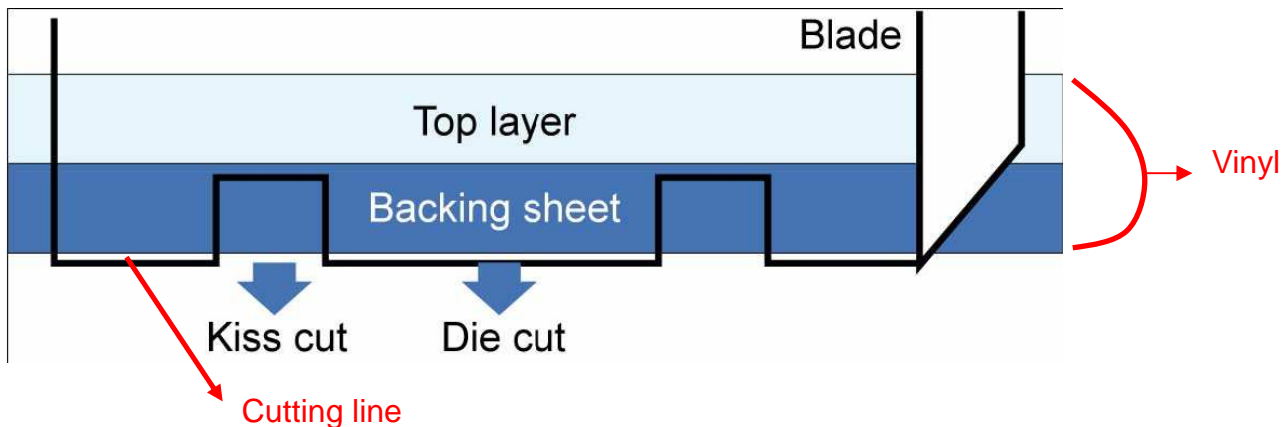
Figure 1
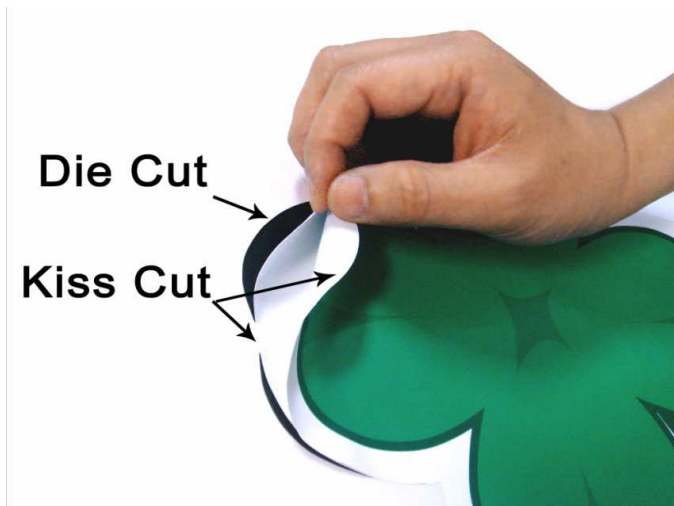
Figure 2

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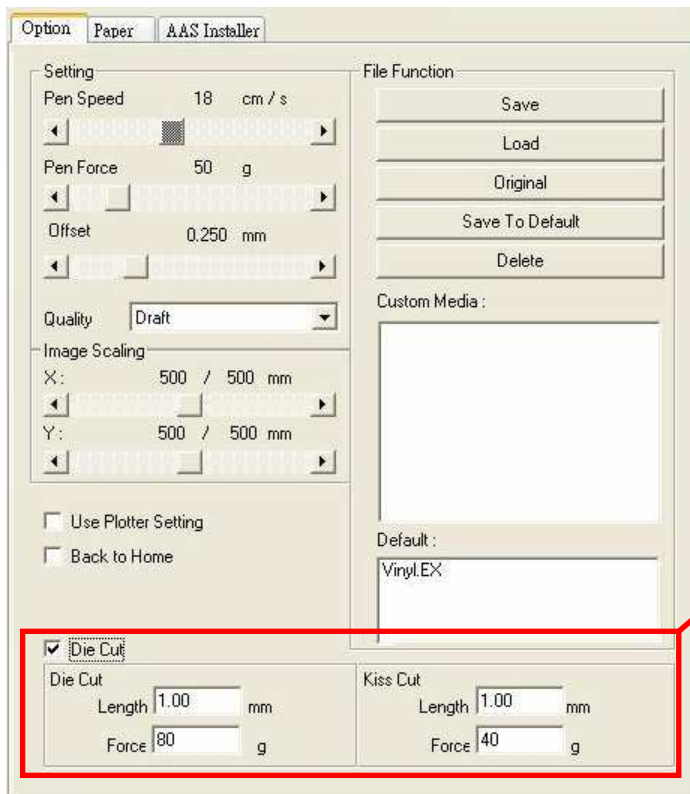
*Note:
The length setting for the cutting line of Die Cut is in the range of 0-2000mm whereas that of Kiss Cut is 0-100mm.

Figure 3

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 4).
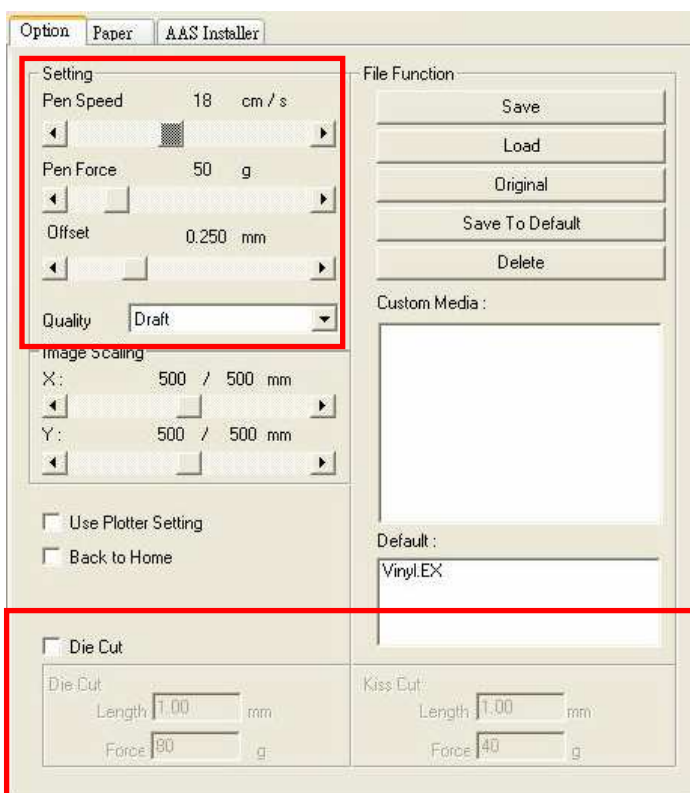
Note: the extension of the blade has to be set to cut through both the top layer and the backing in the very beginning. You then adjust the tool force for the best cutting performance.

Figure 4

4.6 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

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: 08_A-3 CorelDraw Plug-In, 08_A-6 GreatCut, 08_A-7 Illustrator.

5.1   Introduction

The Puma III series 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.
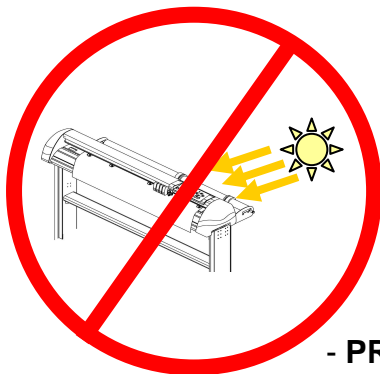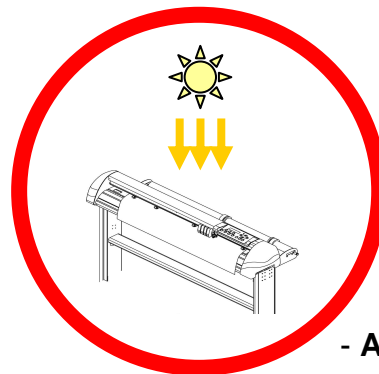
- **PROHIBITED**   - **ACCEPTABLE**

- 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 4.1 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 SignPal 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 Puma III

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, EasySign 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", '**Appendix A-4** : SignPal 8.5 Instruction', '**Appendix A-5** : EasySIGN Instruction' and '**Appendix A-6** : 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
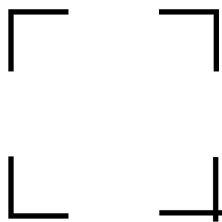
2. **Segmental Positioning**

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
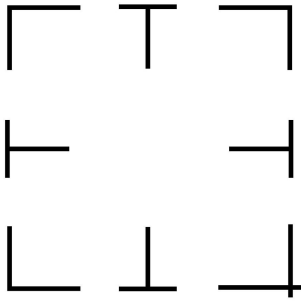
3. Multiple Copies

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:**
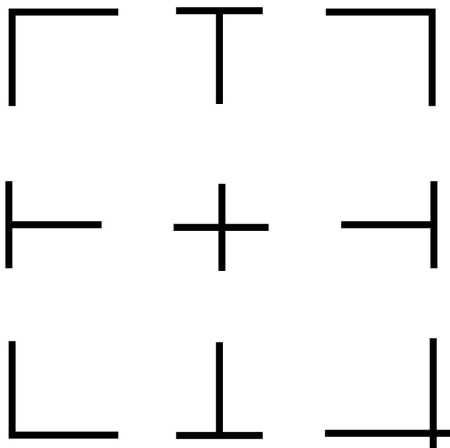
5.3 Printer Test

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 Puma III.

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   Puma III 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.
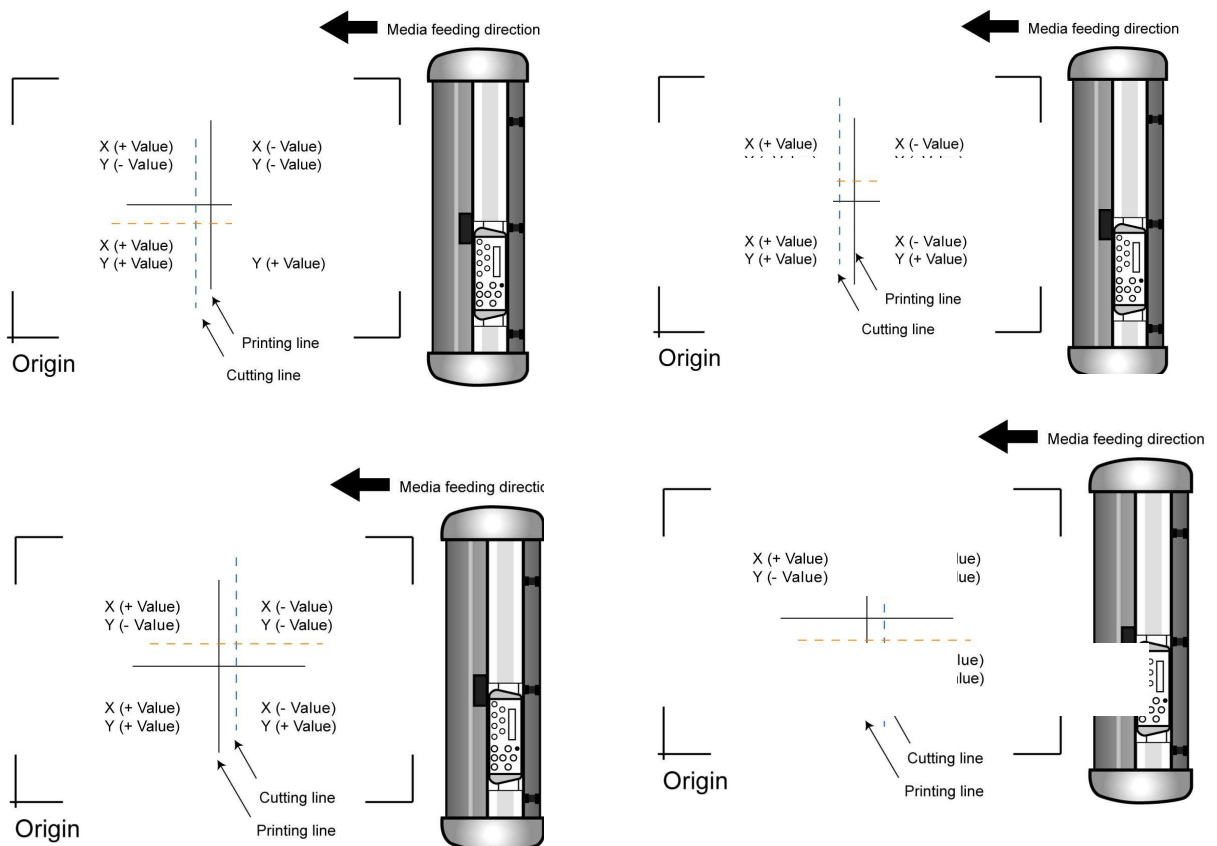
Note:

- 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.

Registration Mark Length range: 5 ~ 50 mm
L (Registration Mark Length)
S (Deviation of Registration Mark)
2nd Mark
1st Mark
0
+
−
Deviation range : $-\dfrac{L}{2} \leq S \leq \dfrac{L}{2}$
Registration Mark Length range: $5mm \leq L \leq 50mm$
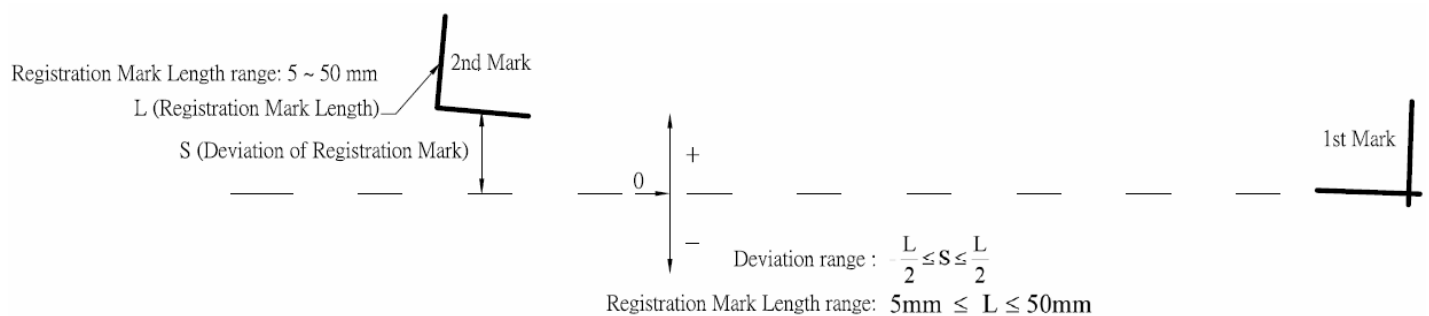
5.5 Contour Cutting

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.

BABY IN CAR

■ Create a contour for cutting around the graphic.

BABY IN CAR

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:
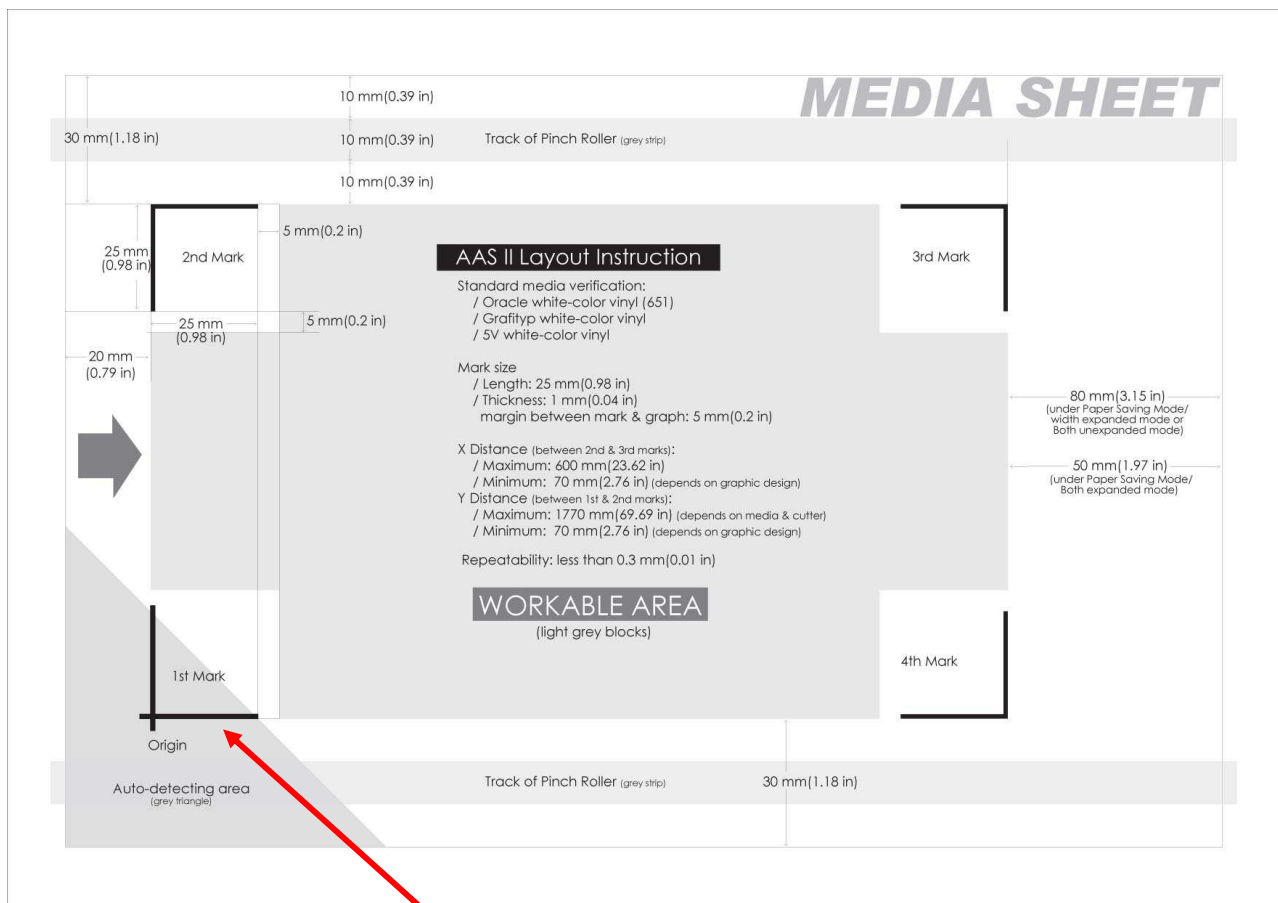
* Auto-detection function on the 1st mark covers the grey area

■ Suggested 30mm margin on both left and right sides of media sheet.

■ Suggested 20~30mm margin on top of media sheet, and at least 50mm margin on the bottom edge to prevent sheets dropping or any error occurred while media sizing.

Step 3　**Print the Graphics**

■ Print the graphic and the marks with your printer
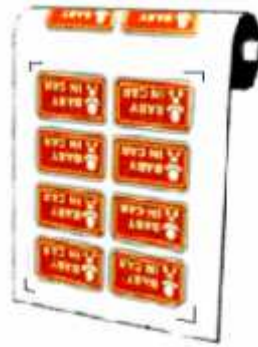
(Scaling = 100%).

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

Step 4   **Load the printout onto cutter**

■ The Origin Mark is is different from the rest registration marks. Please make sure the media is fed with correct direction.
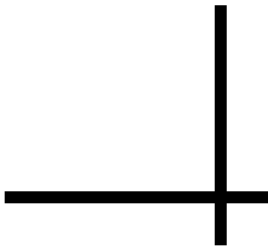
Step 5   **Cut the Contour**

■ 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 Puma IIIdriver property.
  STEP 1 Find the **Puma III 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 **1200**mm.
- Adjust the cutting speed to between 300~600mm/sec.
- Avoid the registration marks locating on the tracks of pinch rollers.

Chapter 6 Basic Maintenance

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

6.1   Cleaning the Cutting Plotter

In order to keep the cutting plotter under good condition and 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 with a damp cloth or an alcohol-immersed cloth. Wipe with water to rinse off any residue and dry with a soft, lint-free cloth.

❖ Wipe all dust and dirt from the tool carriage rails.

❖ Use a vacuum cleaner to empty any accumulated dirt and media residue beneath the pinch roller housing.

❖ Clean the platen, paper sensors and pinch rollers with a damp cloth or an alcohol-immersed cloth, and dry with a soft, lint-free cloth.

❖ Wipe dust and dirt from the stand.

6.2 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 brush (a toothbrush is acceptable) to remove dust from the drum surface. Rotate the drum manually while cleaning. Refer to Figure 6-1
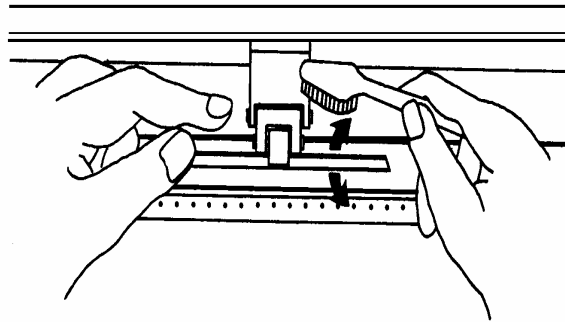
Figure 6-1

6.3 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 finger to hold the pinch rollers not to rotate.

If needed to remove the embedded or persistent dust, use the lint-free cloth or cotton swab moistened with rubbing alcohol.

Note: The daily maintenance of your cutting plotter is very important. Be sure to clean up the grid drum and pinch rollers regularly for better cutting accuracy and output quality.

Chapter 7 Trouble Shooting

This chapter is to help you 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 having your cutting plotter serviced, please make sure that the malfunction is in your cutting plotter, not the result of an interface problem or a malfunction in your computer or a software problem.

Why is the cutting plotter not functioning?

Possible Causes:

7.1 Non-Operational Problems

Check the following first:

- Does the AC power cord plug in properly?
- Does the AC power cord connected to the power connector properly?
- Does the power LED still illuminate?

Solutions:

If the LCM is able to display the message, the cutting plotter should be in a normal condition. Switch off the cutting plotter and turn it on again to see if the problem still existing.

If the LCM is not able to display any message, contact the technician from your dealer.

7.2   Operational Problems

Some mechanical problems or failure during operation will cause some problems. The error messages shown on the LCM present the problem first, and followed by recommended actions. If the problem still exists after the recommended actions have been done, have your cutting plotter serviced.

Error, Check Media Or Drum or X Motor	This message indicates that there might be a problem on the **X axis**. Check if the drum is working well and if the media is well loaded. Correct the problem and re-power on to reboot system.

Error, Check Media Or Y Motor	This message indicates that there might be an obstruction to carriage relating to a problem on the **Y axis**. Correct the problem and re-power on to reboot system.

Error, Check Carriage Sensor or VC Motor	This message indicates that the blade up/down sensor malfunction. Re-power on to re-boot system. If the problem still exists, find a serviceman.

Graph Was Clipped. Data In Buffer	This message indicates that the cutting exceeds the cutting limit. Reload larger media or re-scale the plot to a smaller size; then press the key followed by the display of LCM to continue.

7.3 Cutting Plotter/Computer Communication Problems

The messages showed below present problems in relation to cutting plotter/computer communication.

```
Communication Error
Setup: MISC. key
```

```
Is the connection cable
connected to the cutting plotter
and computer properly?
```
Yes   No

```
Has the interface setting
been done correctly?
```

```
Refer to Chapter 2-
Connecting your cutting
plotter.
```

Yes   No

```
Try the communication
between your cutting plotter
and computer. If it still does
not work, have your cutting
plotter serviced.
```

```
Refer to the "MISC" key in
Chapter 3 - Description of
Operation for the port setup.
```

Note:
The computer also needs to set up compatible communication parameters to the cutting plotter set up.

```
HP-GL/2 Cmd. Error
```

If your cutting plotter can not recognize the HP-GL/2 or HP-GL commands, please check the HP-GL/2 or HP-GL commands applied to your cutting plotter are used properly.

7.4 Software Problems

Check the following first:

Does your software package indicate that it will work with your computer and cutting plotter?
Does your software support HP-GL and HP-GL/2 drivers?
(* check the configuration settings of your software.)

Yes | No

Does the cutting plotter interface match the requirements of your software?

Most well known cutting softwares in the world have drivers for our cutting plotters. If not, use software that has HP-GL and HP-GL/2 emulation supports and you can chose the following three drivers:
- A3 size: HP7475A
- A1 size: HP7580A
- A0 size: HP Draf Pro Exl or HP Draf Master

Yes | No

Does your software recommend using a different cable?

Refer to Chapter 2 - Connecting your cutting plotter.

Yes | No

Try using the recommended cable.

Does the software vendor provide a sample file?

Yes | No

Re-power on the cutting plotter and try to send the file again.

Do something about the error message display on LCM, or consult your software vendor.

7.5 Cutting Quality Problems

> **Note:** The daily maintenance of your cutting plotter is very important. Be sure to clean up the grid drum and pinch rollers regularly for better cutting accuracy and output quality.

Is the blade installed correctly and the blade holder fastened securely?

Yes → Is the blade dull or chipped?

No → Refer to Chapter 2.3 " Blade Installation"

Is the blade dull or chipped?

Yes → Replace with a new blade

No → Is tool force set up properly? (The default for tool force is 80 gf)

Is tool force set up properly? (The default for tool force is 80 gf)

Yes → Is the tool offset set up properly?

No → Adjust the tool force to obtain an optimum blade force. Refer to Chapter 4.3 "Cutting Force and Offset Adjustment"

Is the tool offset set up properly?

Yes → Is there any dirt adhered to the blade?

No → Adjust the tool offset to obtain an optimum value.

Is there any dirt adhered to the blade?

Yes → Remove the blade and clean it.

No → Please contact your dealer for technician support.

Puma III Specification

Model Name/No.	P3-60	P3-132S
Operational Method	Roller-Type	
Max. Cutting Width	600mm(23.6in)	1300mm(51.18in)
Max. Cutting Length	50m(164ft)	
Max. Media Loading Width	719mm(28.3in)	1470mm(57.87in)
Min. Media Loading Width	50 mm(1.97in)	
Acceptable Material Thickness	0.8mm (0.03 in)	
Number of Pinch Rollers	2	4
Motor Drive	DC Servo Control	
Cutting Force	400 g	
Max. Cutting Speed	Up to 600 mm /sec (23.62 ips)	
Offset	0~1.0 mm (with an increase of 0.025 mm)	
Mechanical Resolution	0.009 mm (0.00035")	
Software Resolution	0.025 mm (0.00098")	
Distance Accuracy	±0.254 mm or ±0.1% of move, whichever is greater	
Repeatability	±0.1mm up to 3 meters (* certified media)	
Automatic-Aligning System	Completely Automatic Contour Cutting System for print to cut solution	
Memory Buffer	4MB	
Interfaces	USB 2.0 (Full Speed) and Serial (RS-232C)	
Type of Command	HP-GL, HP-GL/2	
Control Panel	LCD (20 digits x 2 lines), 14 Keys, 1 Power LED	
Dimension (HxWxD) mm	220x 879x258 8.67 x34.61x10.16in	1065 x 1632 x 620 (including stand) 41.93 x62.25x24.41in
Net Weight	13kg / 28.6lb	53 kg / 116.4 lb
Stand	Optional	Standard
Power Supply	AC 100-240V, 50~60 Hz (auto switching)	
Power Consumption	Max.110watts	
Environment Temperature	15℃~35℃ / 60℉~86℉ (operating)	
Environment Humidity	25%~ 75% relative humidity (operating)	

- 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.

Blade

Central line

Blade tip →

← →
offset

Protrusion Length of the Blade

Thickness of the media (t1)

Protrusion length of the blade

Thickness of the base paper (t 2)
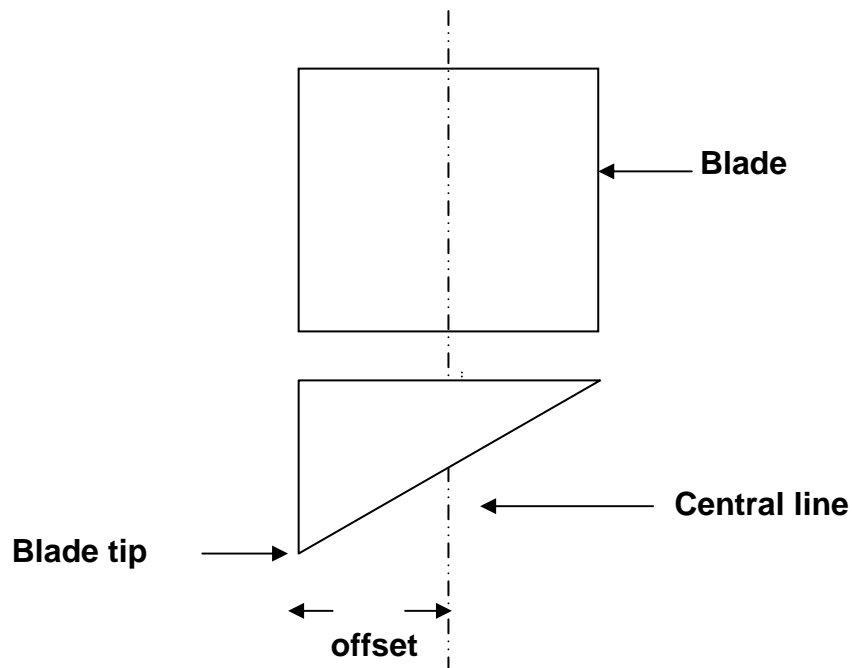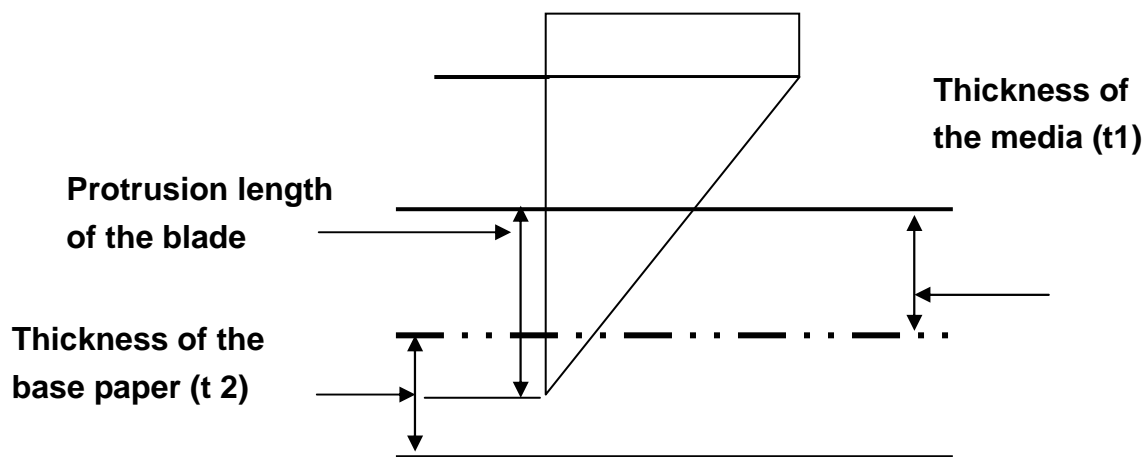
Length of protrusion = t1 + t 2/ 2, but for your convenience you may just make it about 0.3mm ~ 0.5mm beyond the blade holder tip.

CorelDRAW Plug-In Instruction

AASII VBA Installer is applicable for CorelDRAW Version 11, 12, 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.
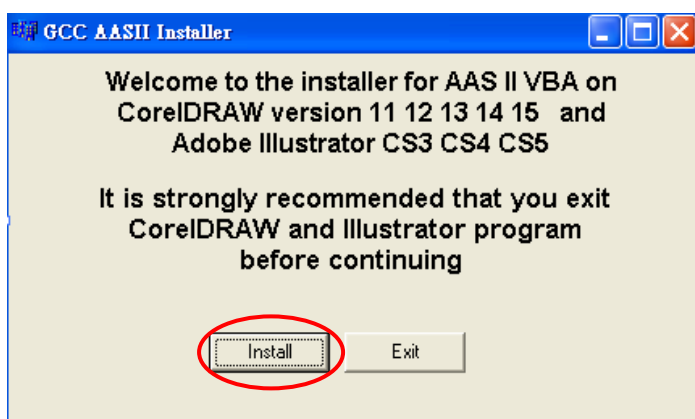
User Instructions

1. Run CorelDRAW to edit your graphics and select all images at once when you wish to plot.
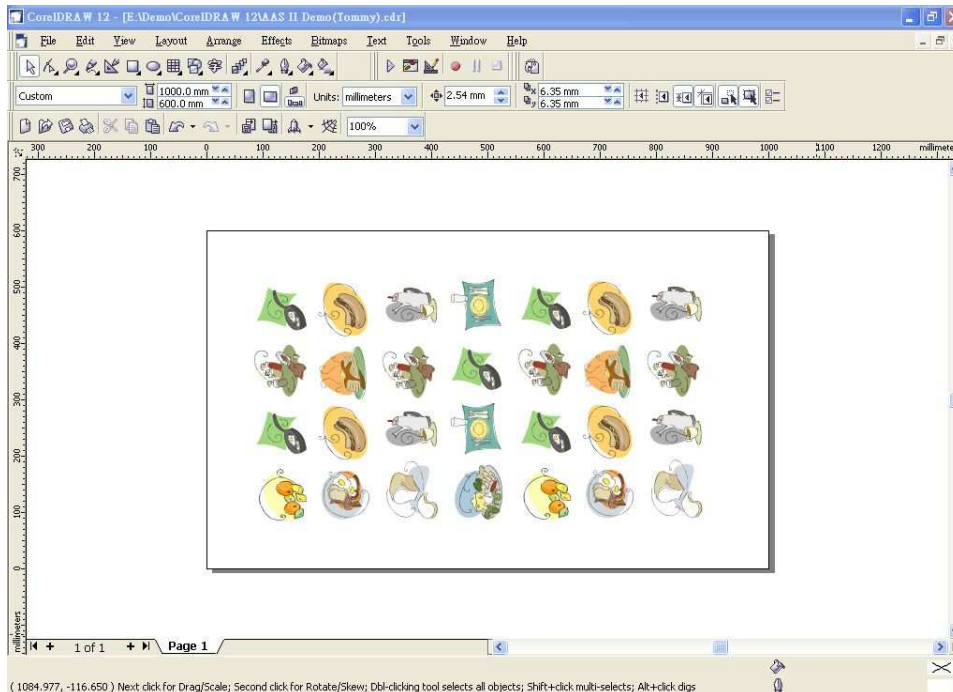
2. Select "Tools→Visual Basic→Play".
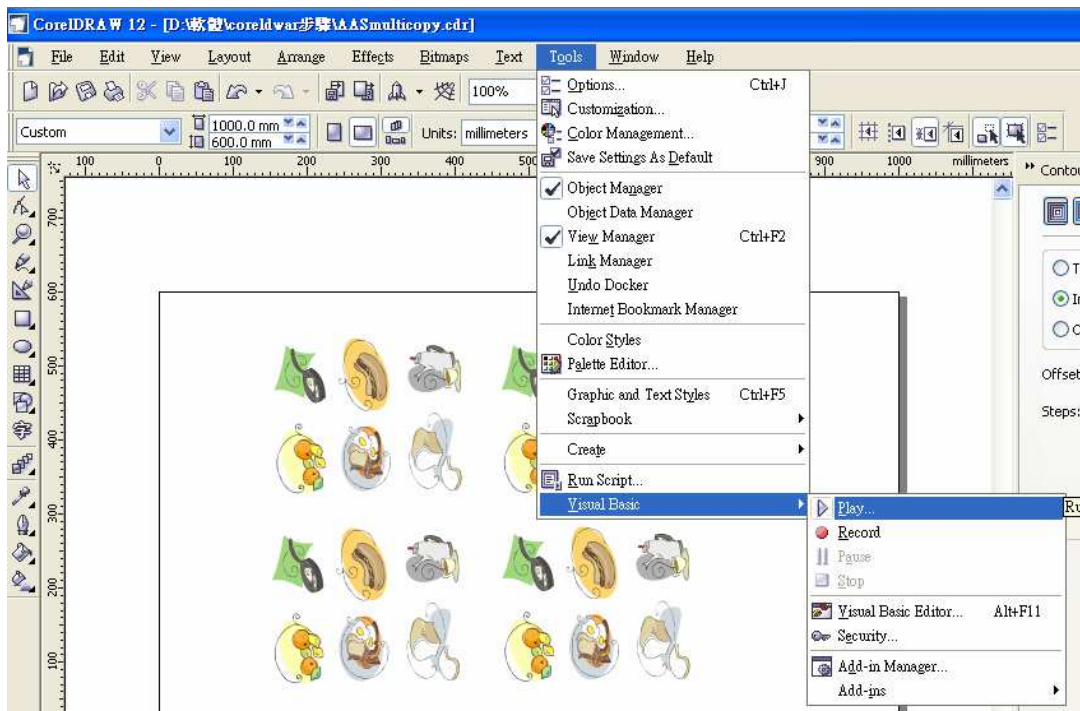
The Visual Basic for Applications Marcos window will pop up.
Select Global Macros(GCCAASII_Draw13.gms) under the "Macros in" manual, and press "Run".
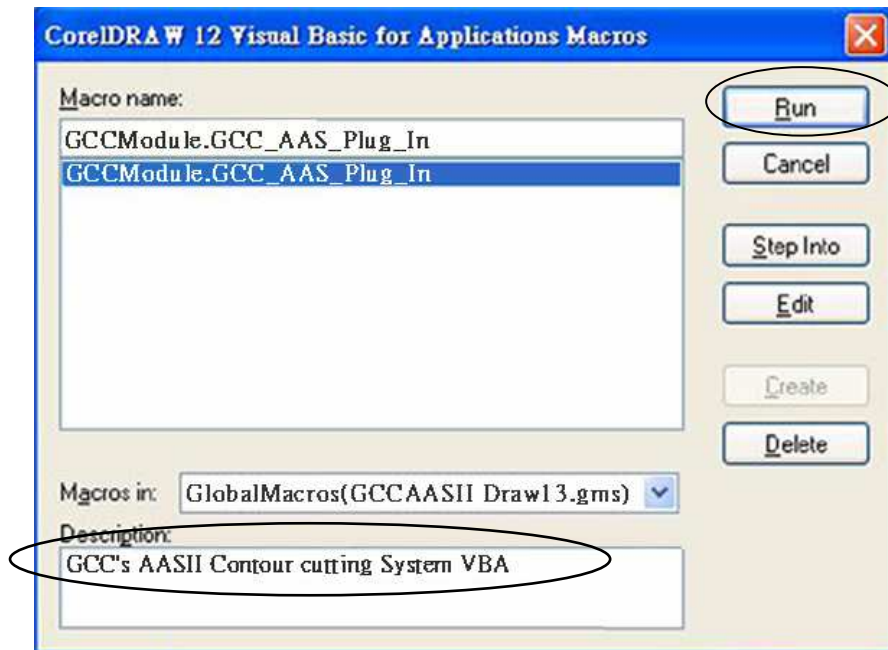
3. Click on "Apply" and select whether you would like to add the registration marks by page size or by object.
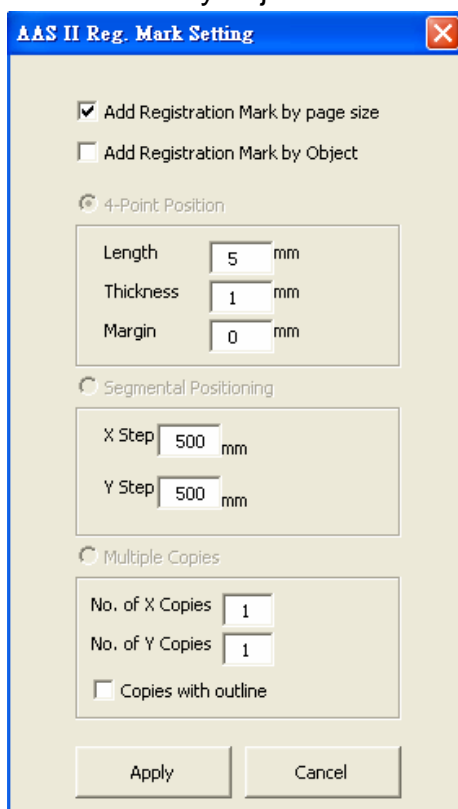
Note: "Add Registration Mark by Object" will be the default selection if you click on the image whereas "Add Registration Mark by page size" will be the default one when the blank area on the page is clicked.

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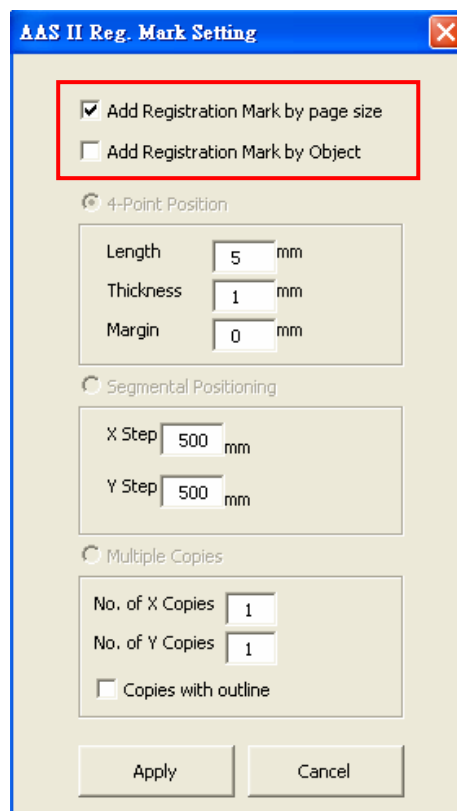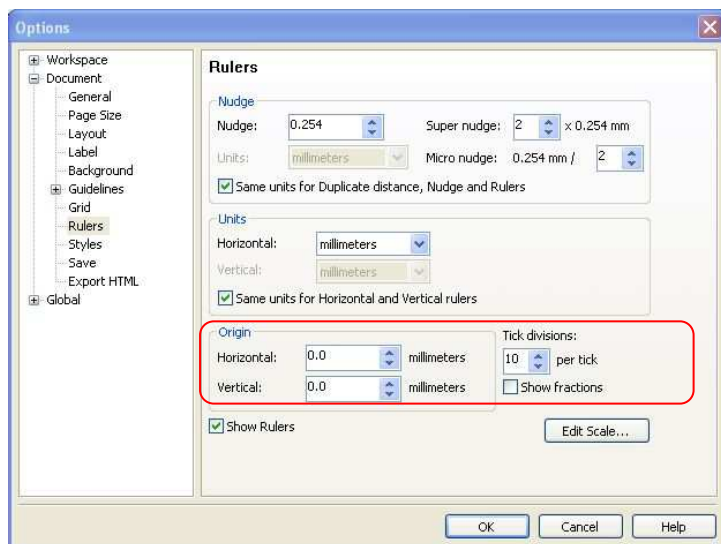
The system will create the 4 marks on the 4 corners of the page as shown in the picture below wherever you move your image.
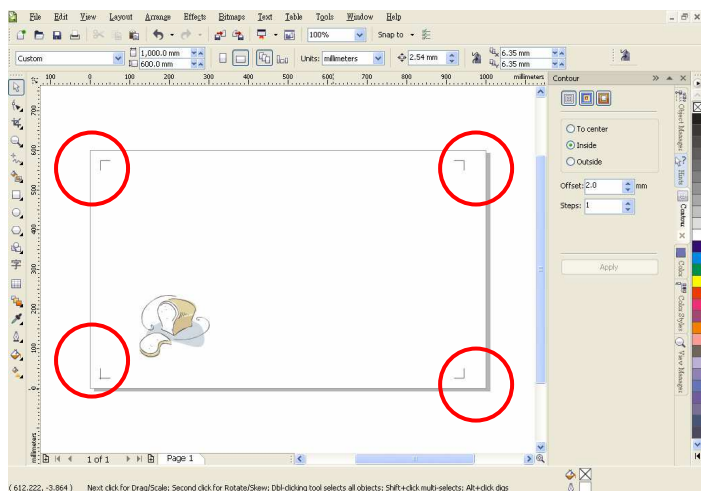
Add Registration Mark by Object

If you tick "Add Registration Mark by Object", you will be offered three options of registration marks as shown below.
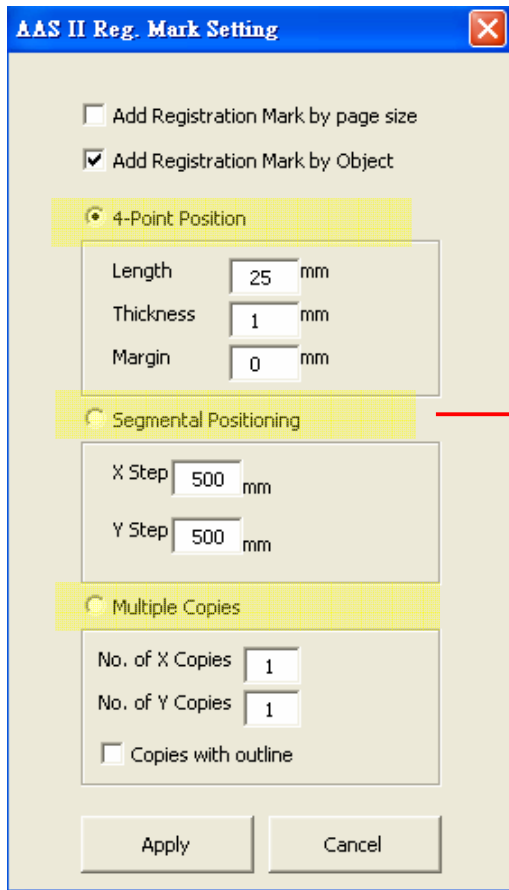
4-Point Positioning

●   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
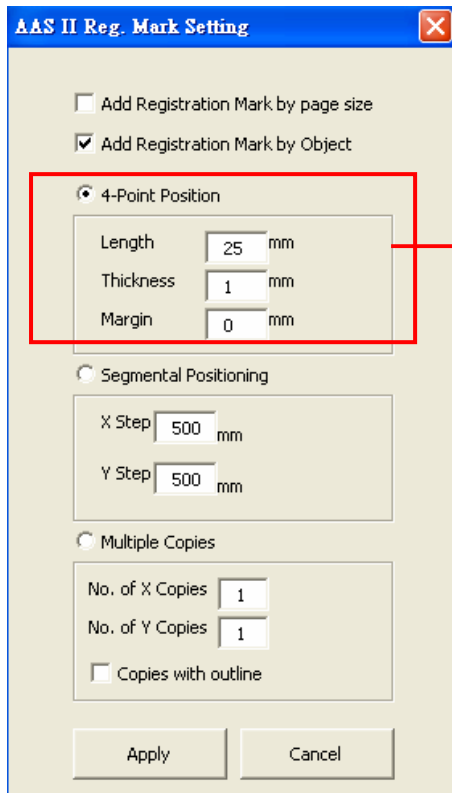
4-Point Positioning

- 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).

Area to be cut

25mm

5mm

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

AAS II Reg. Mark Setting

- ☐ Add Registration Mark by page size
- ☑ Add Registration Mark by Object
- ○ 4-Point Position
  - Length 25 mm
  - Thickness 1 mm
  - Margin 0 mm
- ● Segmental Positioning
  - X Step 300 mm
  - Y Step 300 mm
- ○ Multiple Copies
  - No. of X Copies 1
  - No. of Y Copies 1
  - ☐ Copies with outline

Apply   Cancel

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

Segmental Positioning

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.

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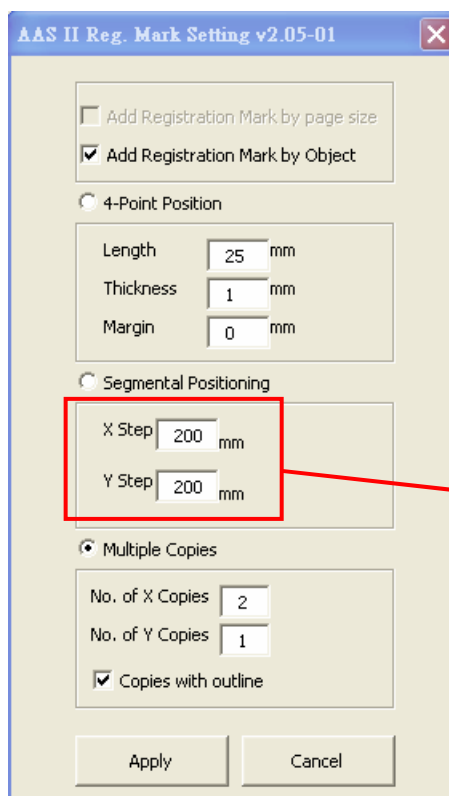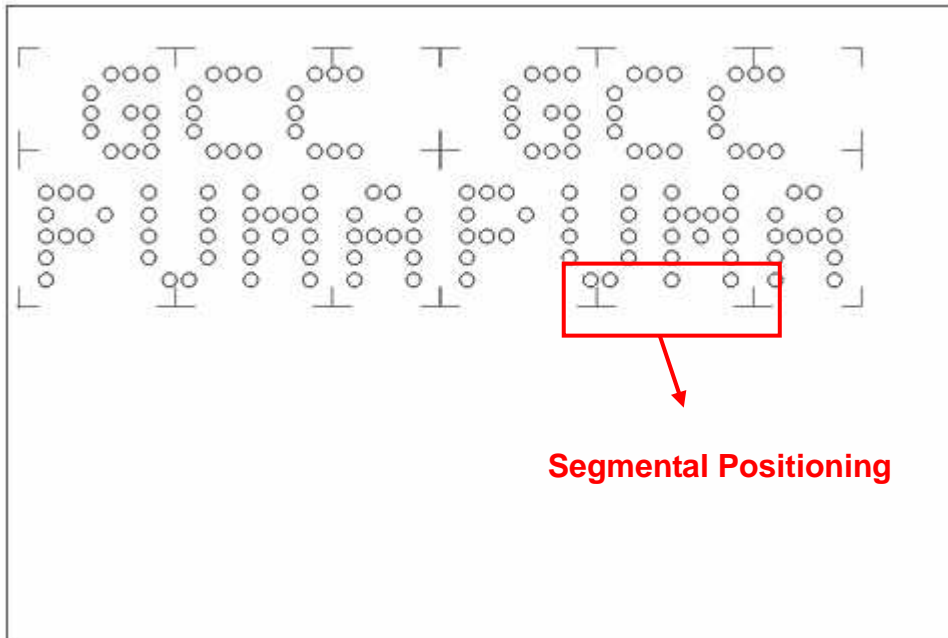
Please make sure you are happy with the settings for Segmental Positioning as these will be applied to the copies created.

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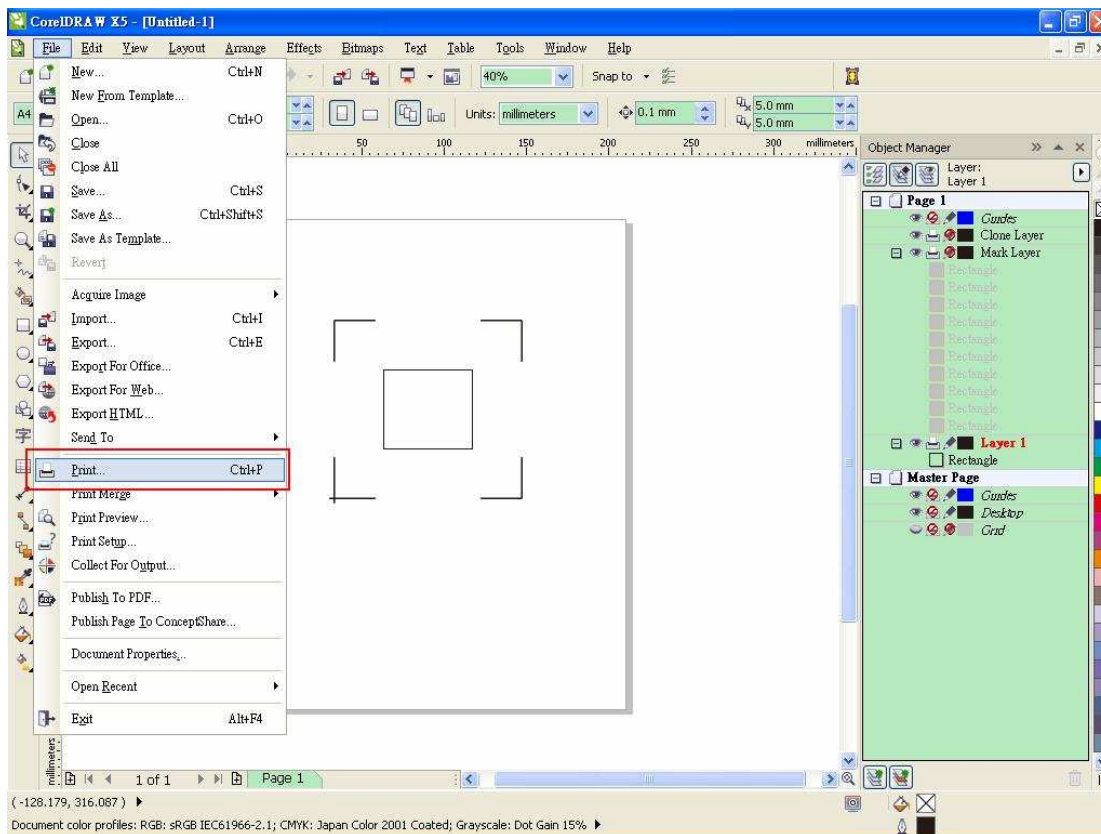
Please note that if you use CorelDraw X5, you must follow the steps below.

Click the "color" page and go to the "Color conversions performed by:" and then select the model name of you cutter.
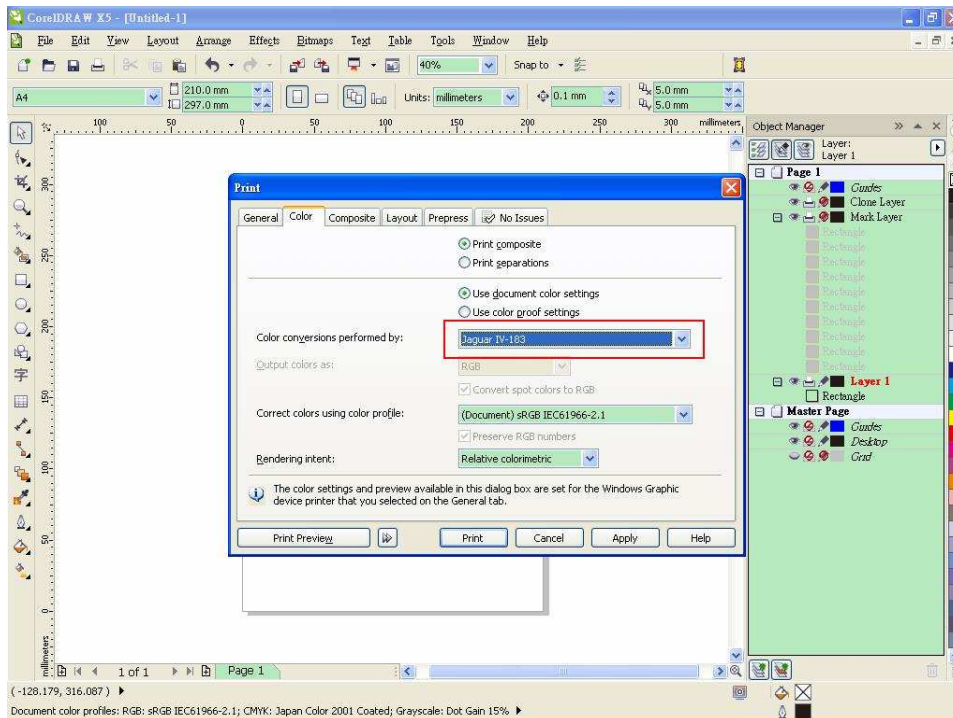
Step 2: Go to the "Layout" page and select Bottom left corner at "Reposition images to".
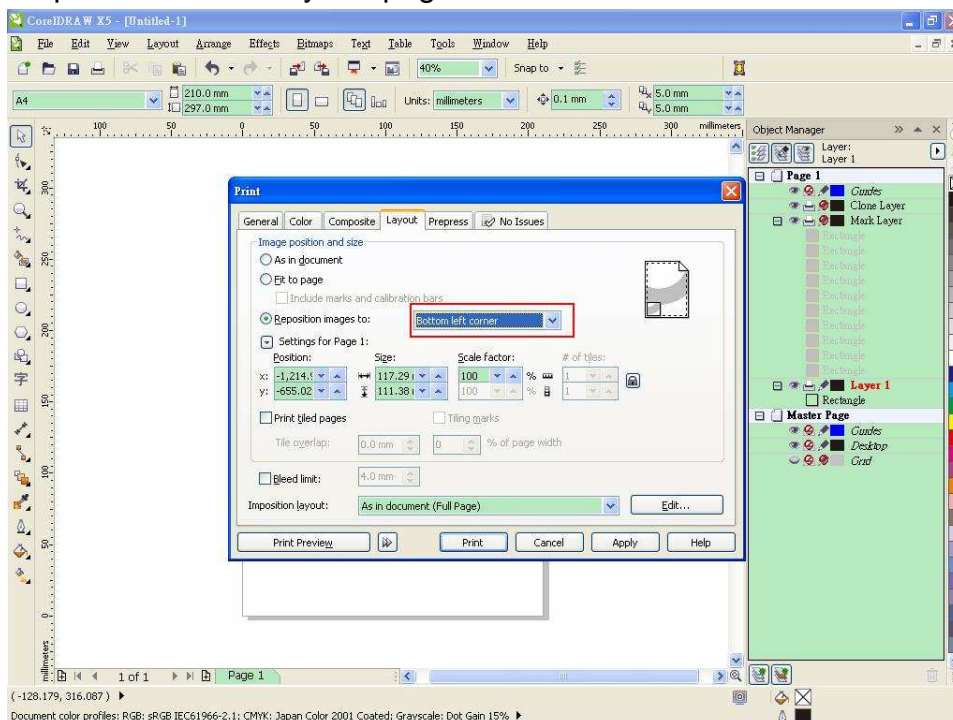
Step 3: Click "Print".

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

Step 1: Select "Tools→Customization→Commands→Macros".
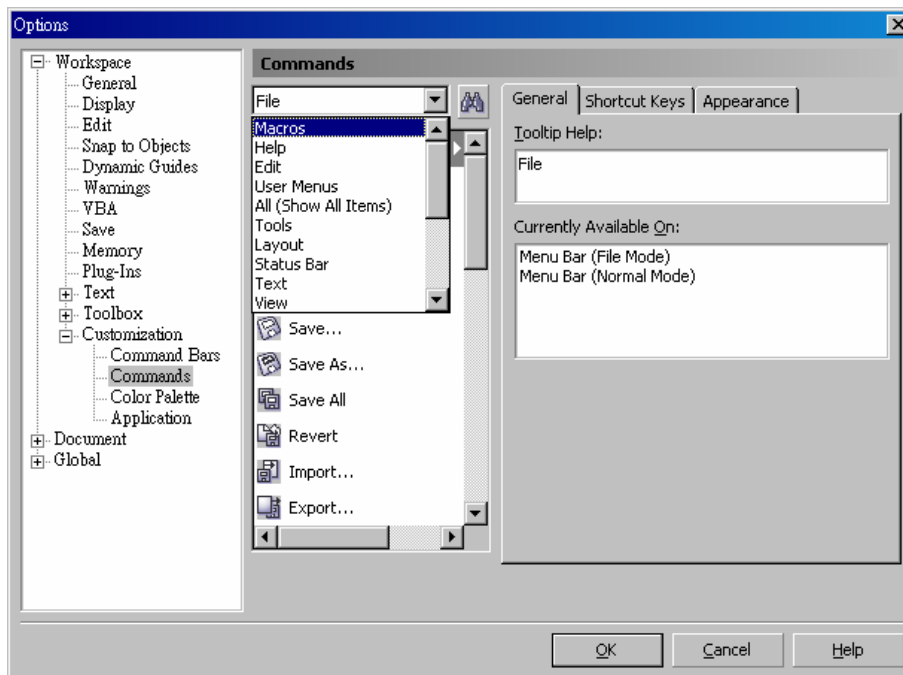
Step 2: Choose【GCC_CorelDraw_AASII.GCCModule.GCC_AASII】and drag it to the "commands" bar.

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.
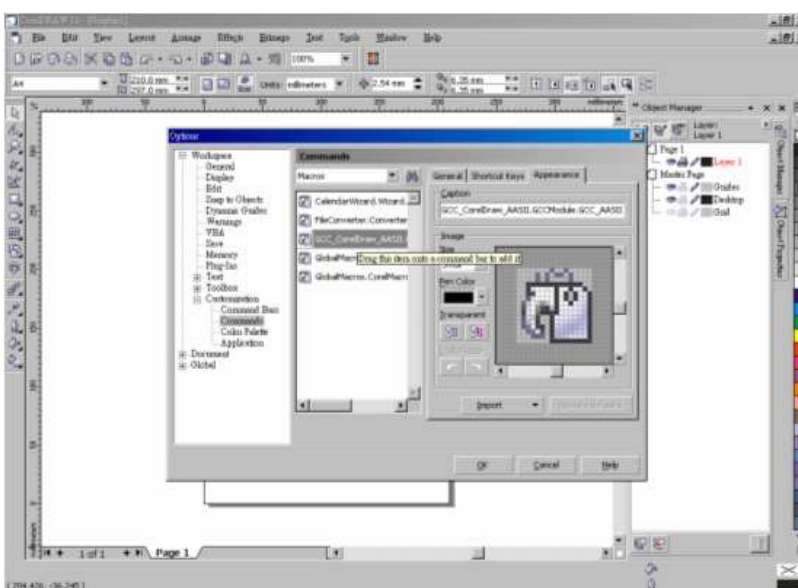
SignPal 10.5 Instruction

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.
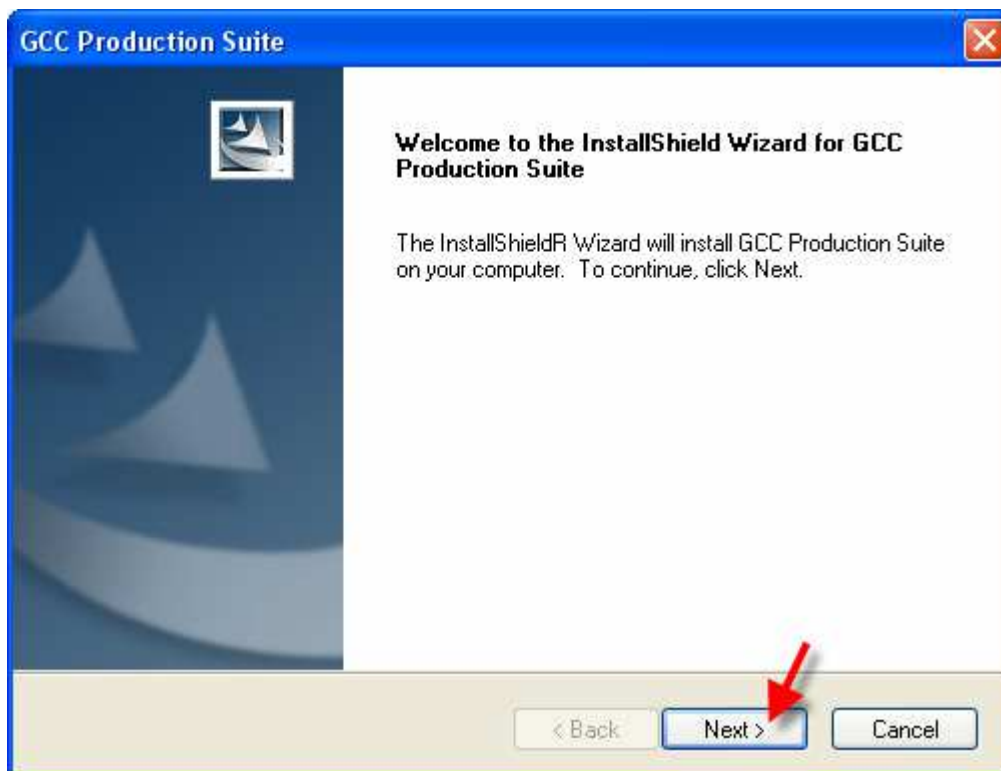
6. Read the Software License Agreement and select **I accept the terms of the license agreement** and click **Next** to accept.
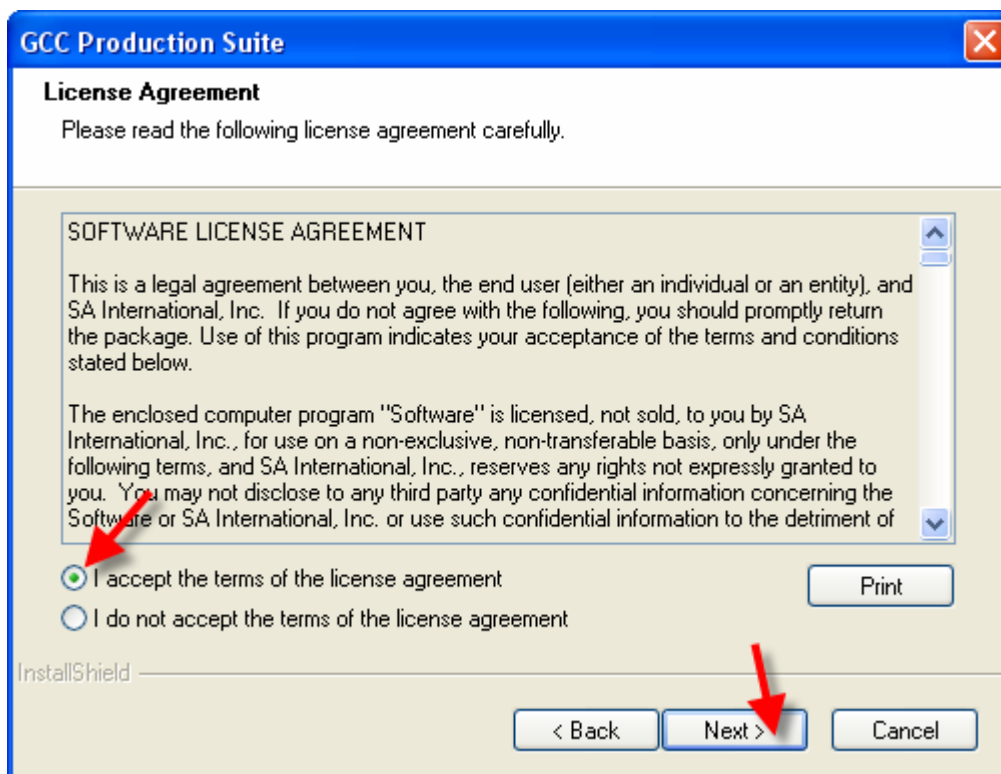
7. If you did not have any previous versions of the software installed, skip to the next step. If you still have a previous version of the software installed, you will be prompted to overwrite the existing installation. Click **Yes** to overwrite any previous installation of the software.
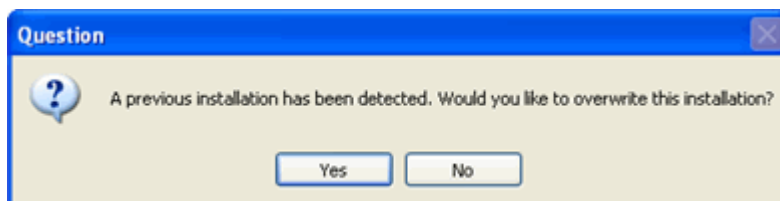
8. Select the features of the software that you want to install and click **Next**:

- 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.
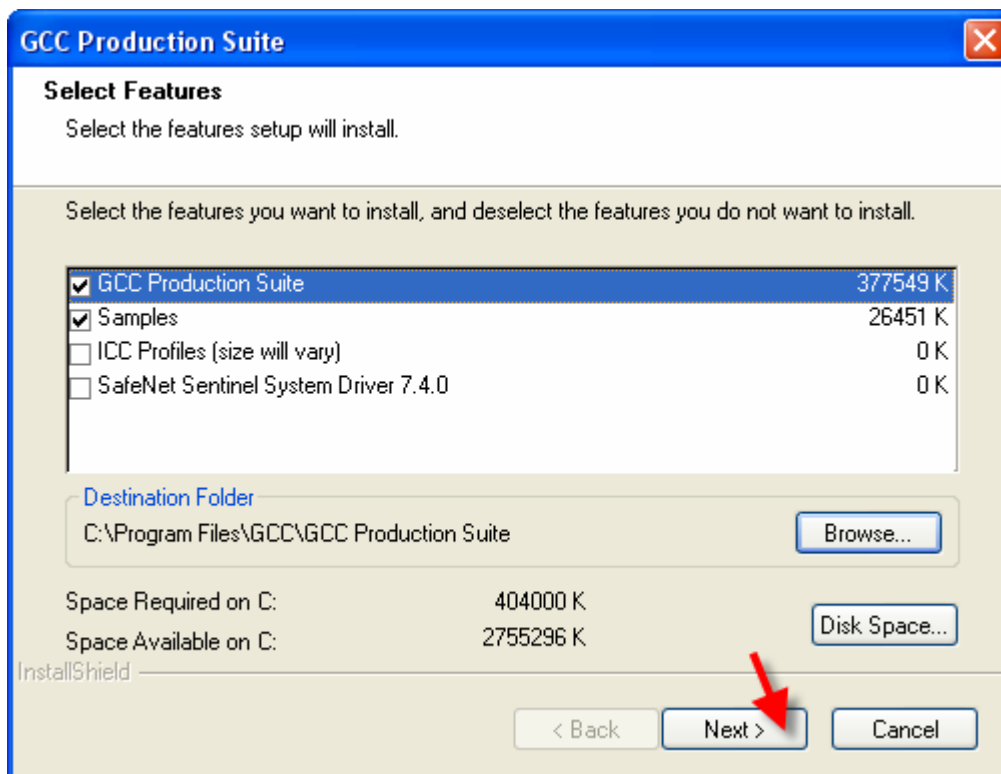
A. To change the default destination folder, click **Browse** and choose a new destination folder.

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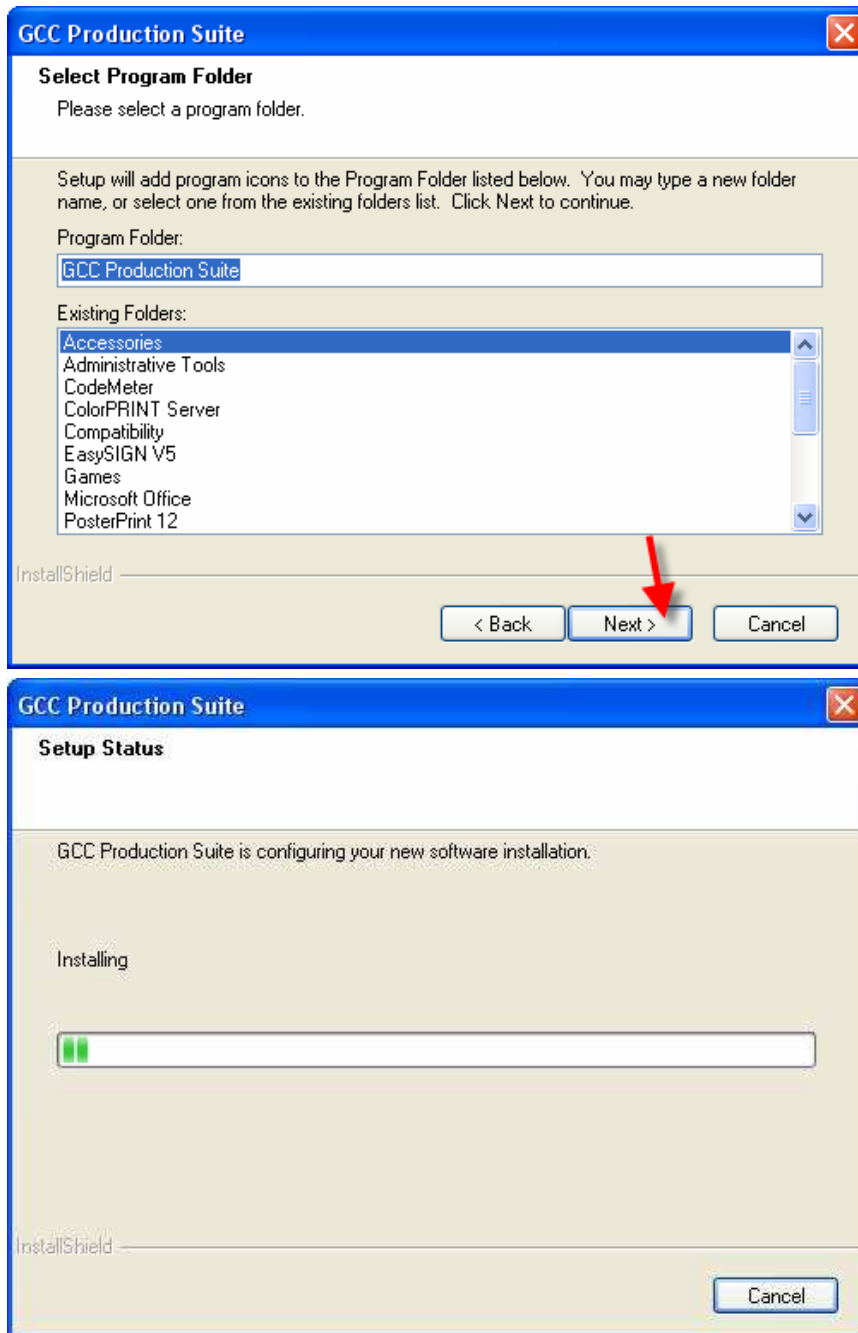
11. Once the installer is finished installing, the **Install Manager** opens. The Install Manager will automatically enable you to access the software and any optional features.

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**.
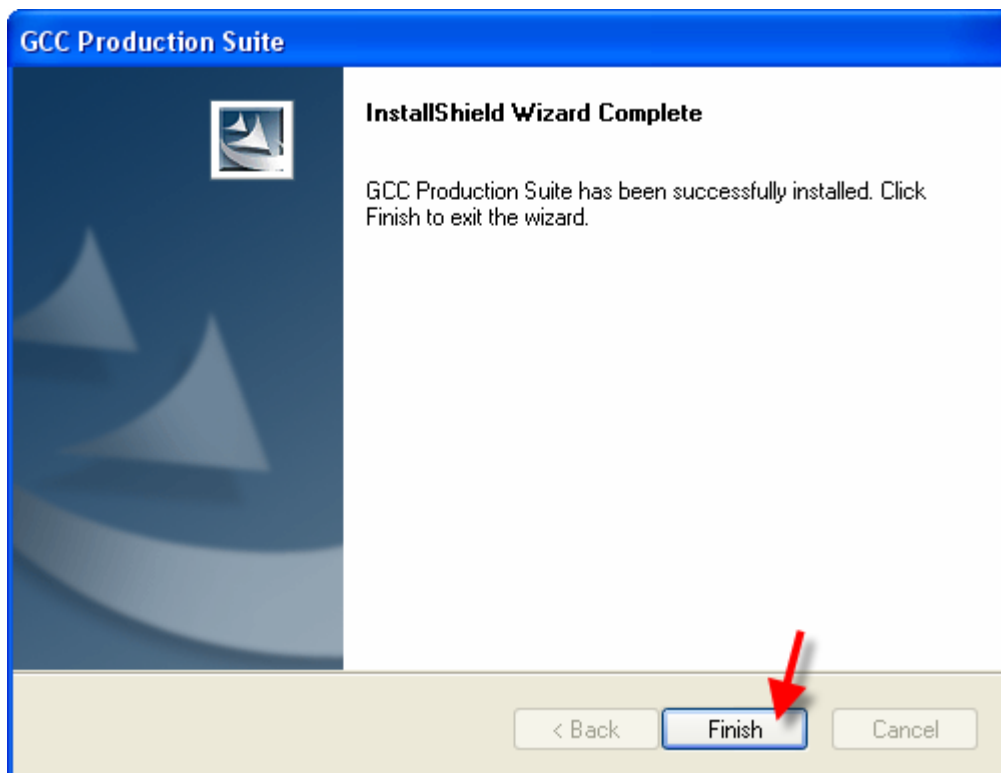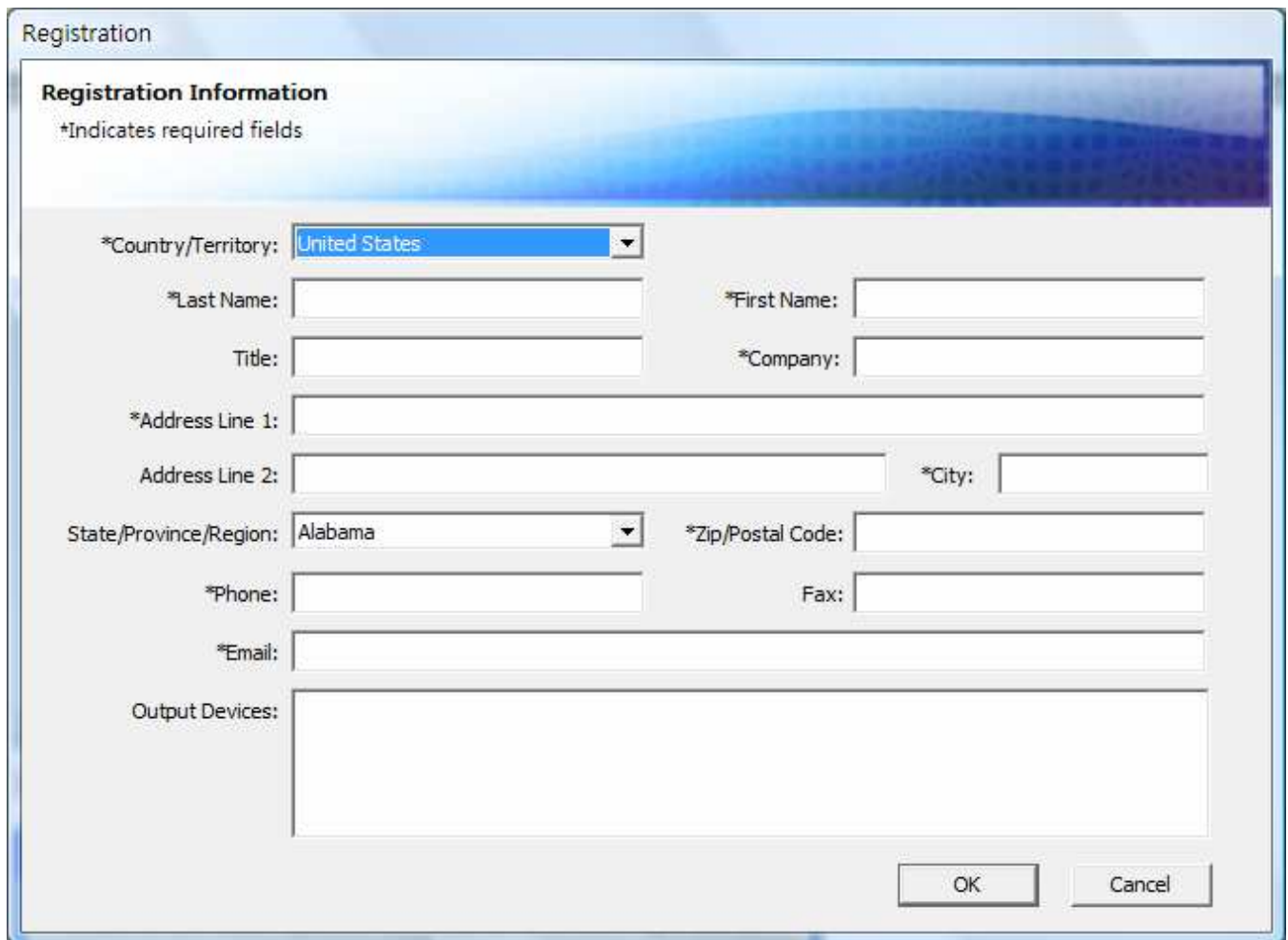
14. Open SignPal 10.5v1
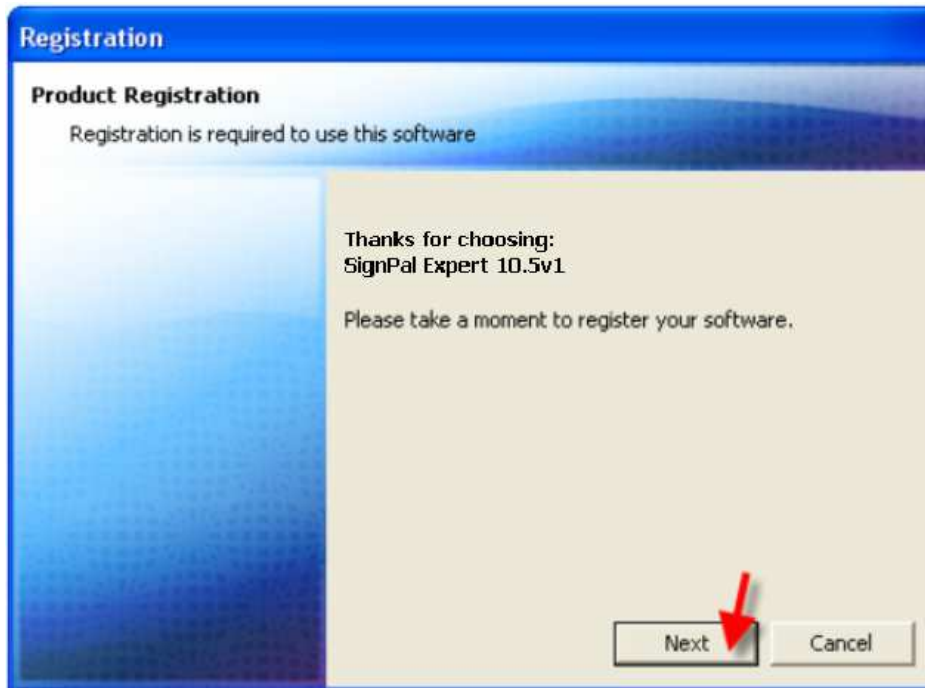
15. As you have not registered before, please check on the box at bottom to register a new account.

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

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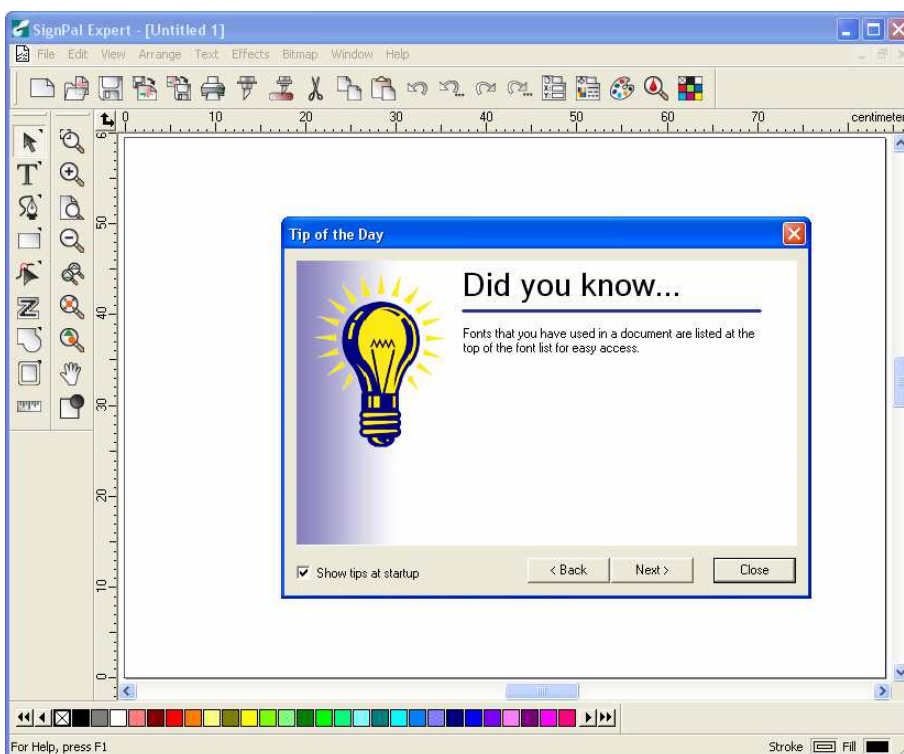
Note:

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:
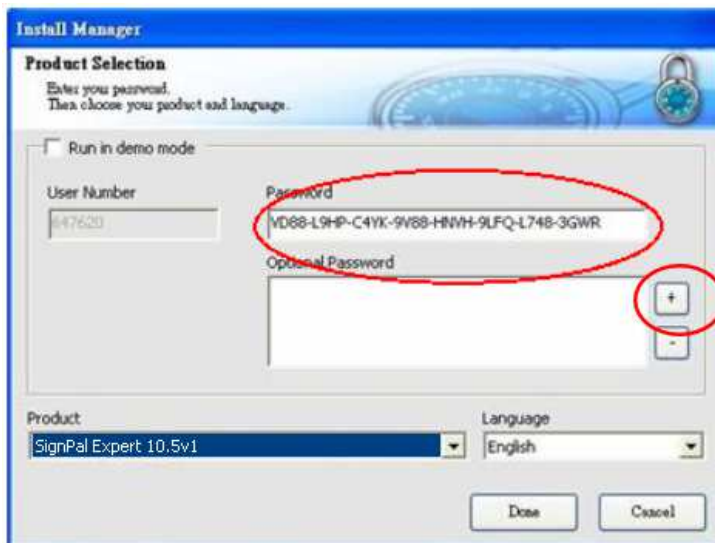
- Check **Run in demo mode** to run a demo version of any available products in any available language.

- 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.)
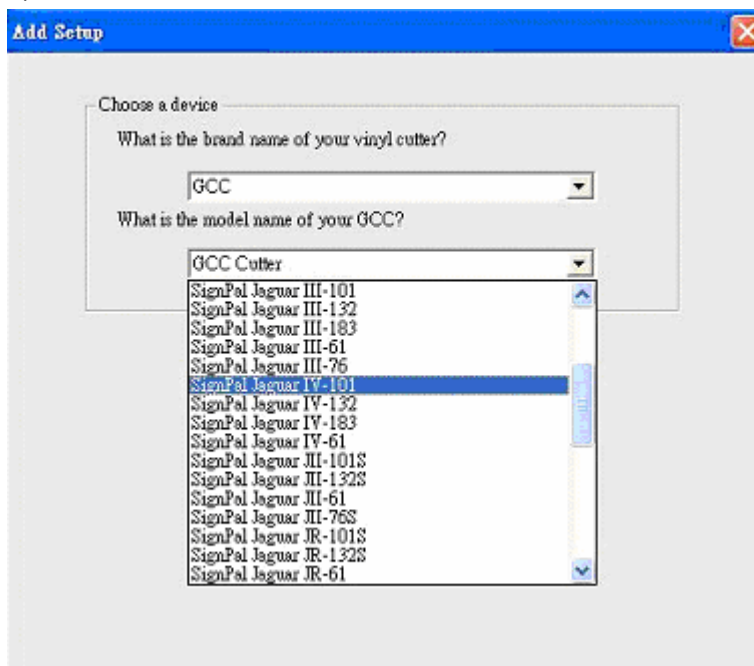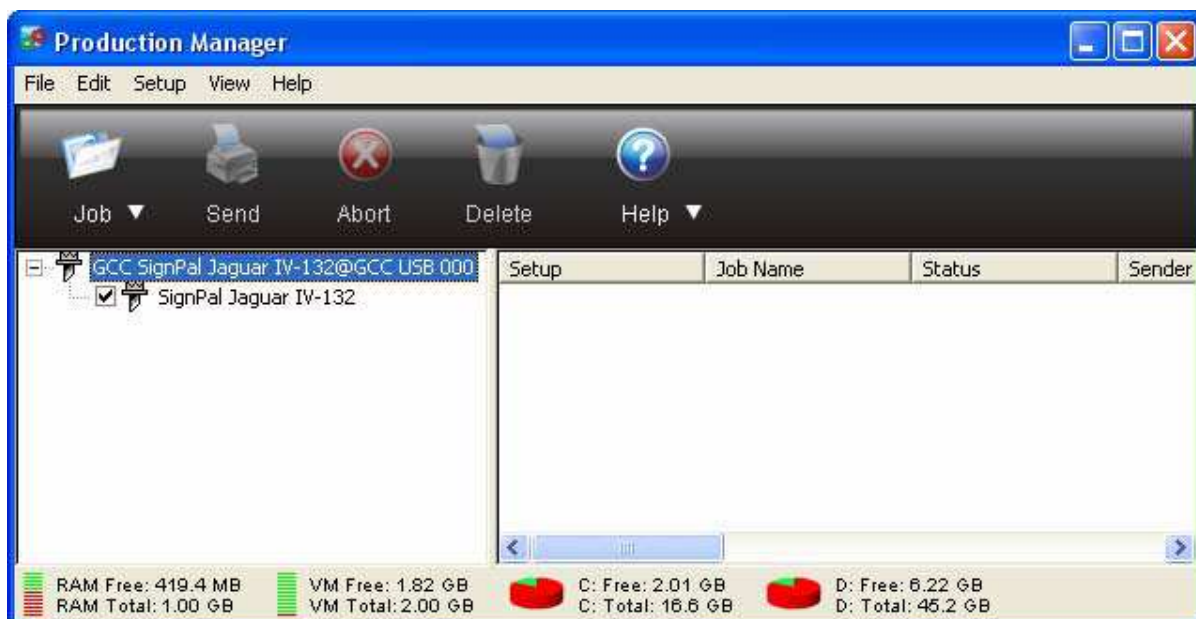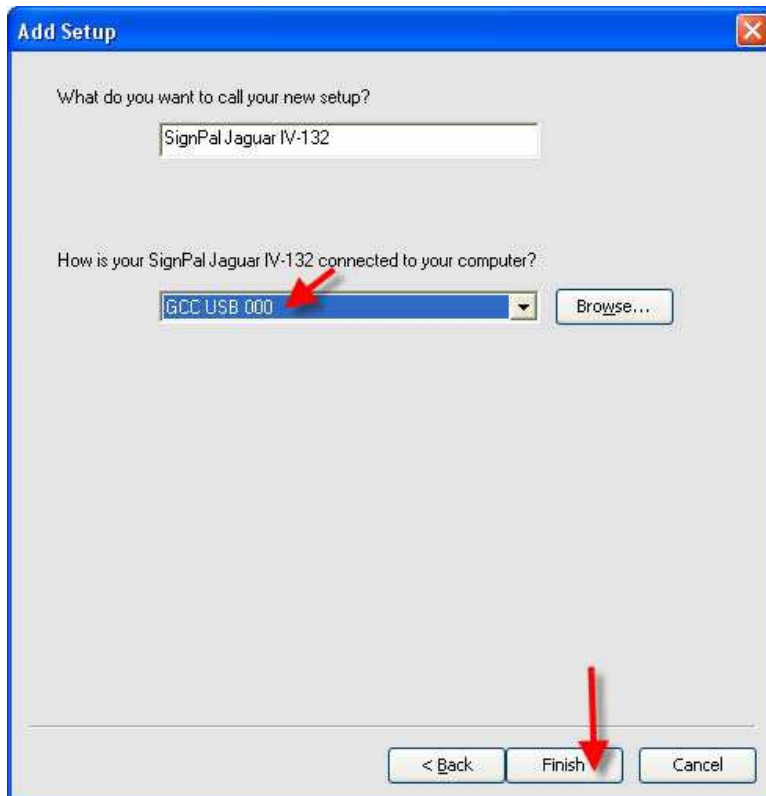
3. Select **File > Print Setup** in SignPal Software.
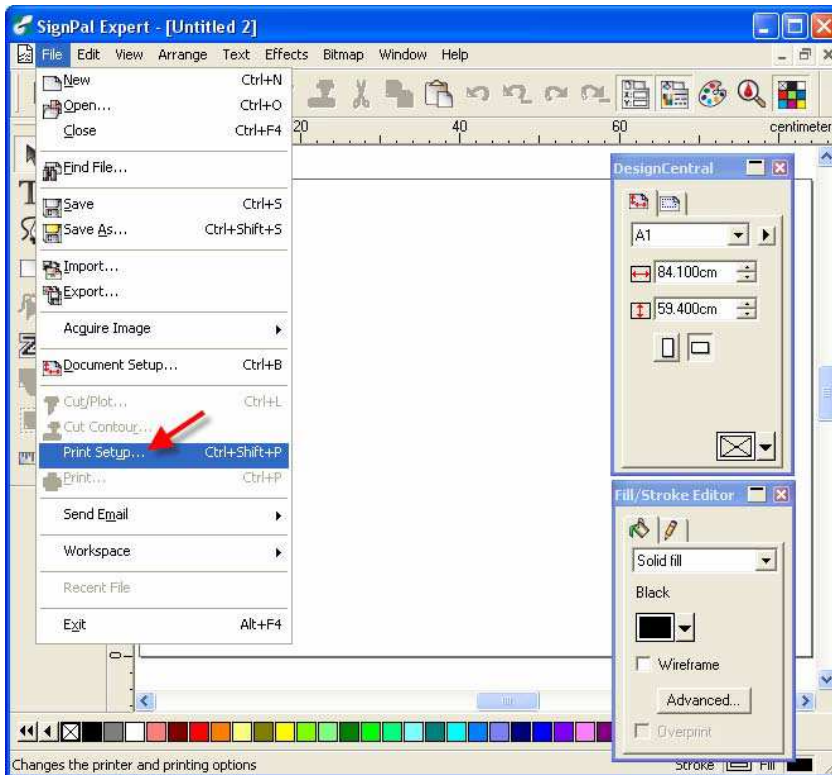
4. Select the printer and paper size.
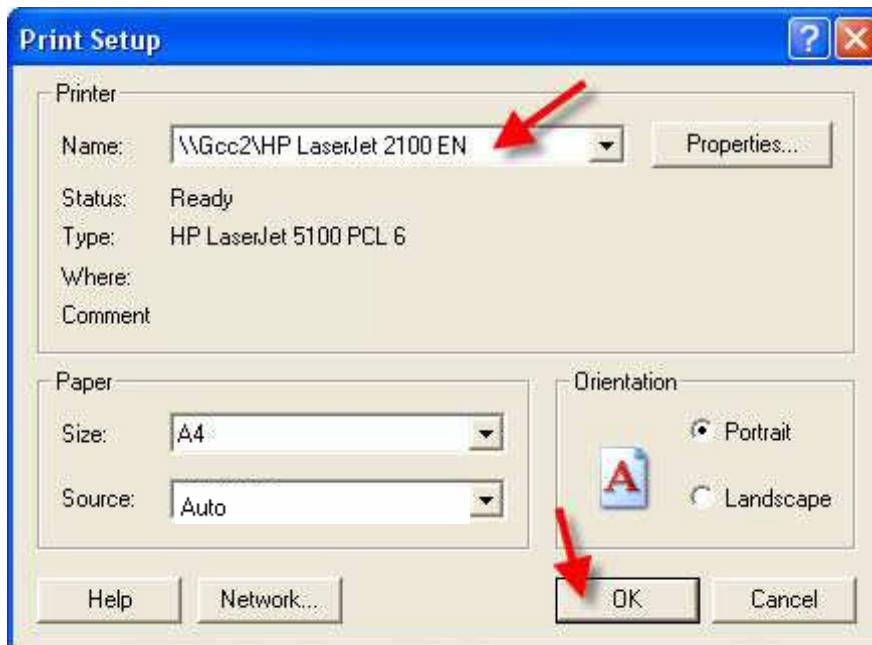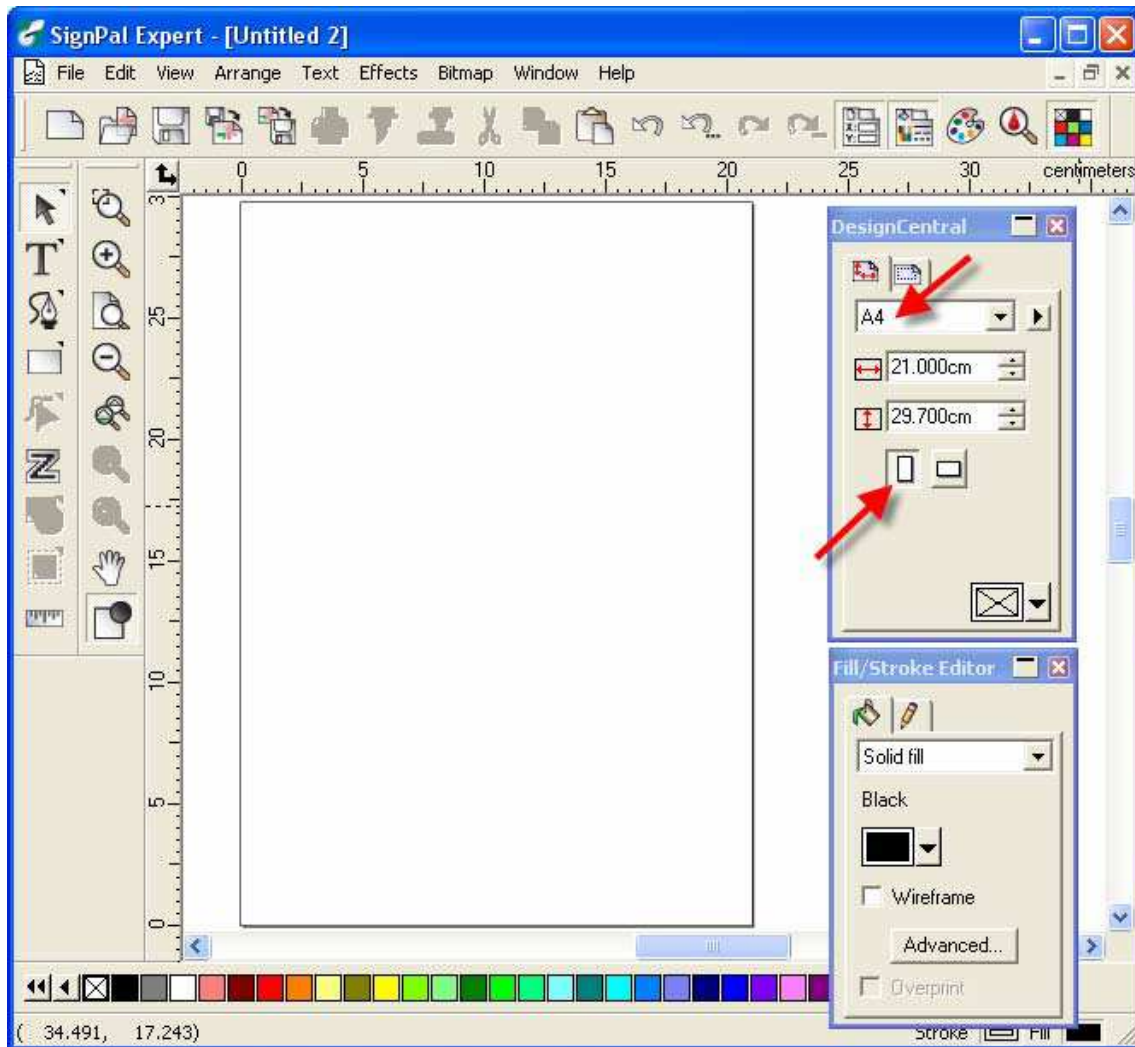
-- SignPal AASII Quick Start

5. Use the **Rectangle Tool** to create a rectangle.
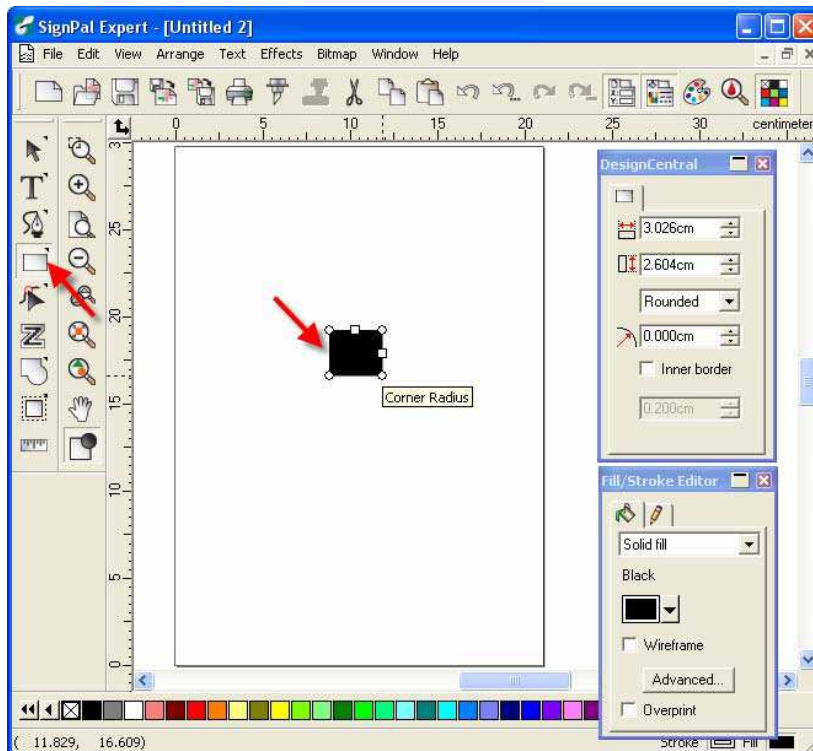
6. Select **Effect > Contour Cut**. Then click 'Apply' in DesignCentral window.
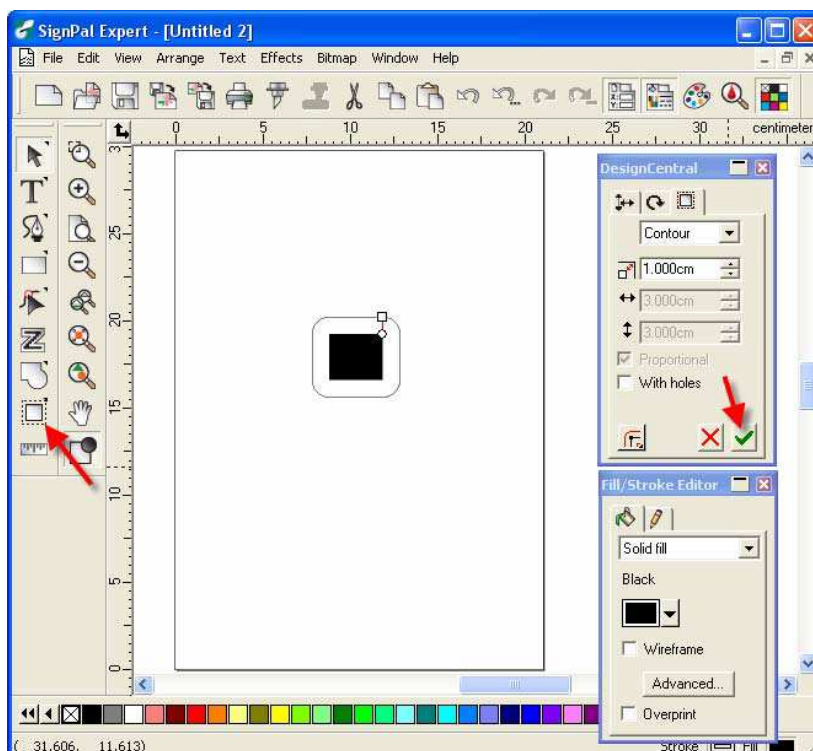
7. Apply the contour cut mark of GCC AASII by selecting **Effect > Contour Cut Mark**.
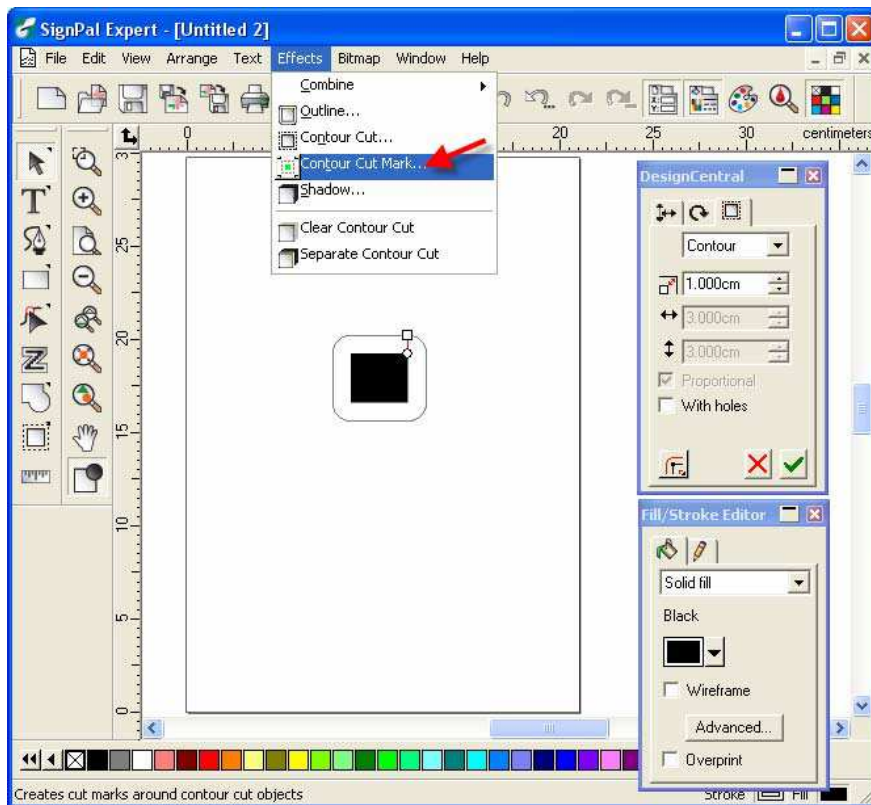
8. Select "**GCC AASII**" in SignPal DesignCentral window to create the AAS II registration marks (4-Point Positioning). Set the vales as 0.1cm or above and click '**Apply**' in DesignCentral window. The value is to define the distance between registration marks and image area. If the value is less than 0.1cm, it is likely that the image will overlap the marks and result in bad cutting quality.
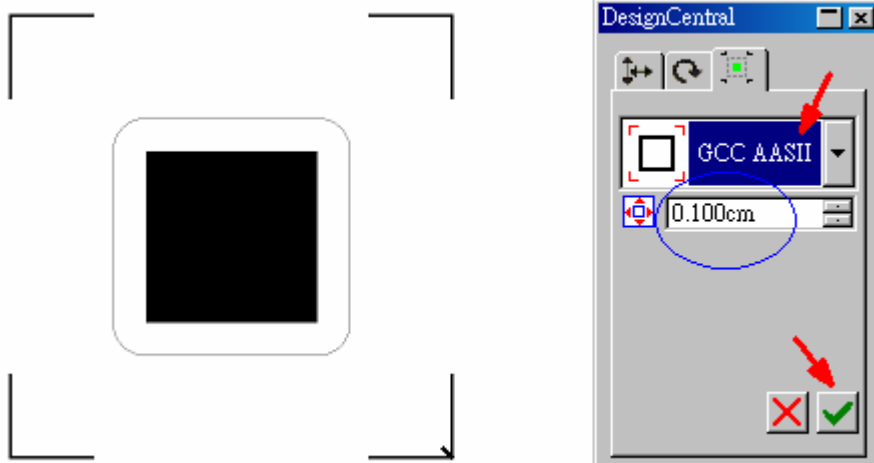
9. There are three types of GCC AASII registration marks: 4-Point Positioning, Segmental Positioning, and Multiple Copies. To make 'Segmental Positioning' marks, please select "**GCC**

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.
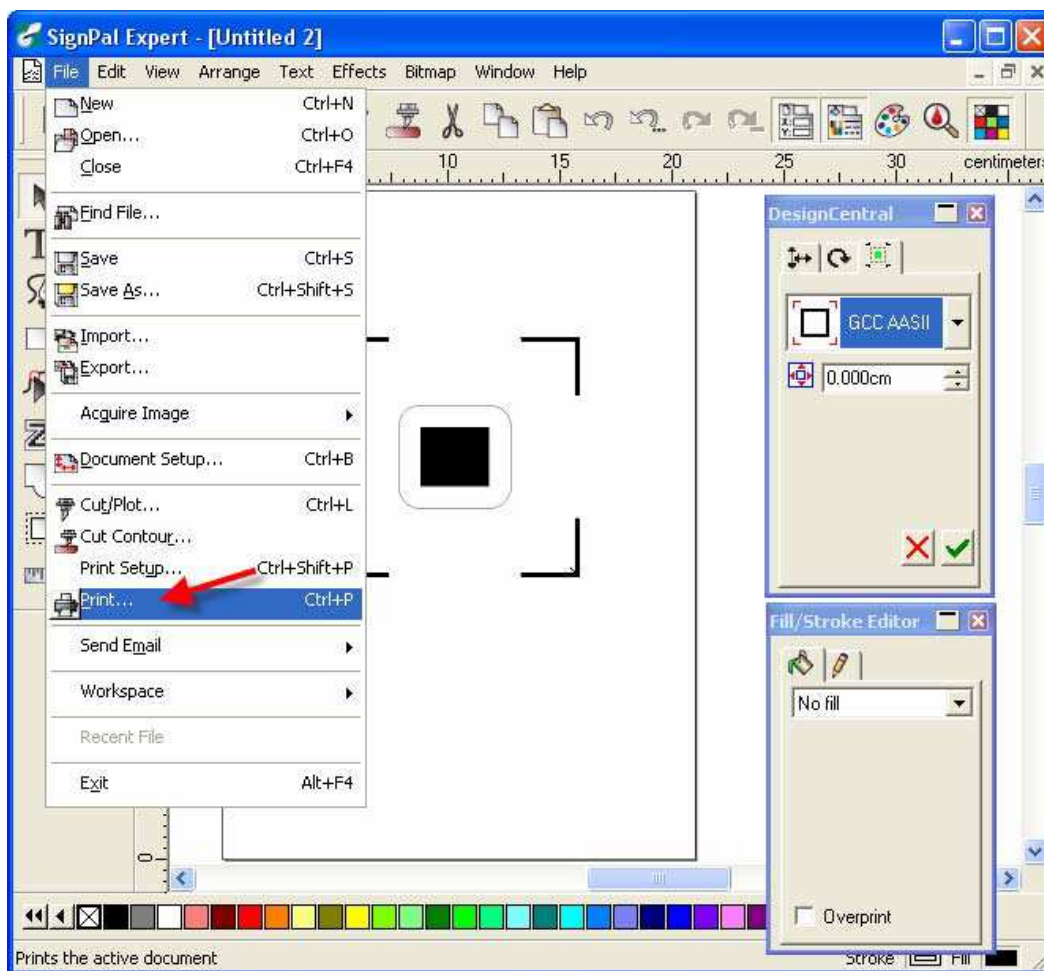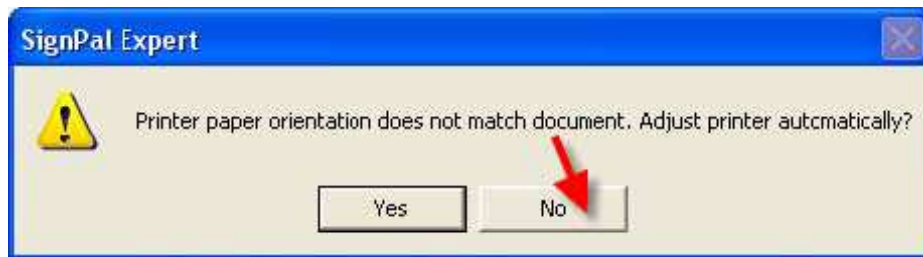
12. Set the Scale as 100cm =1m (100%) in Print page.
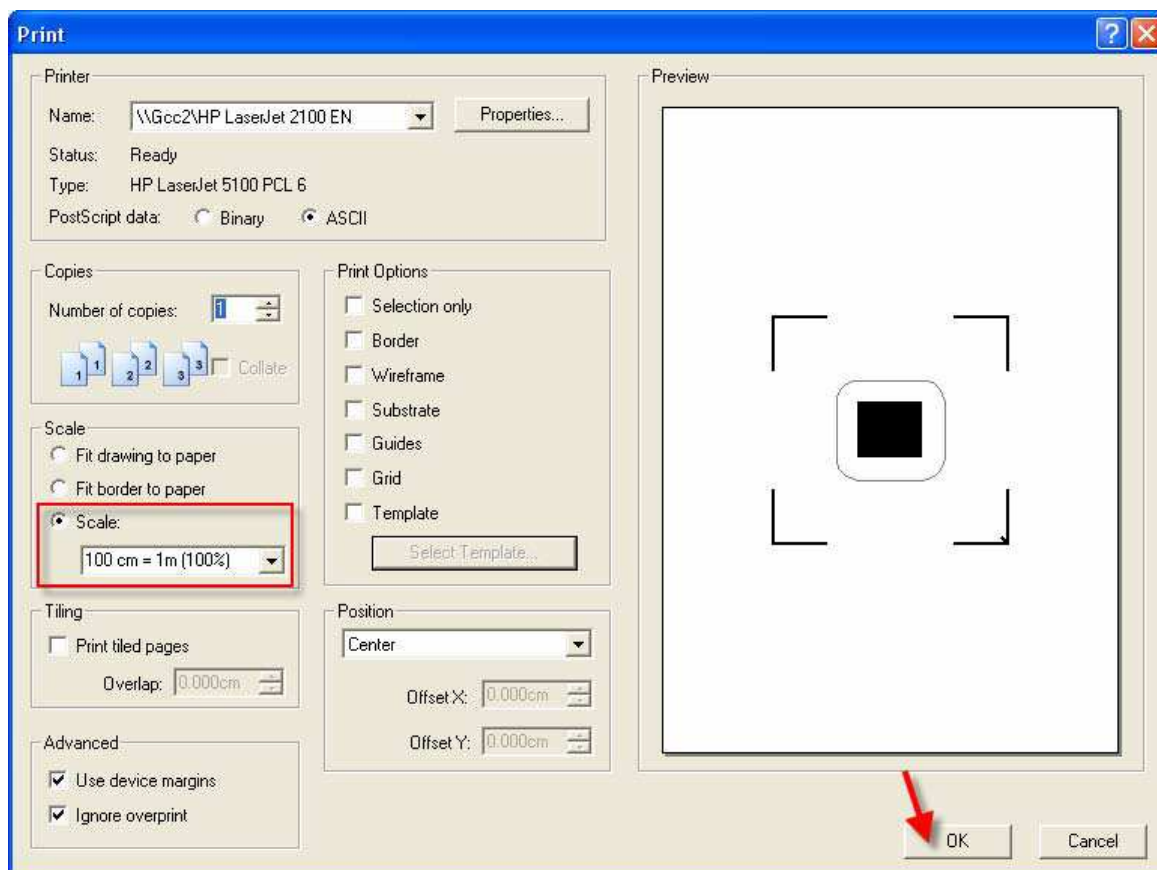
13. Load the printout vinyl on the plotter and select **File > Cut Contour** to send data. You can preview the job and change cutter's parameter settings in 'Properties' tab of Cut Contour window. The Production Manager will be automatic activated to complete the job.
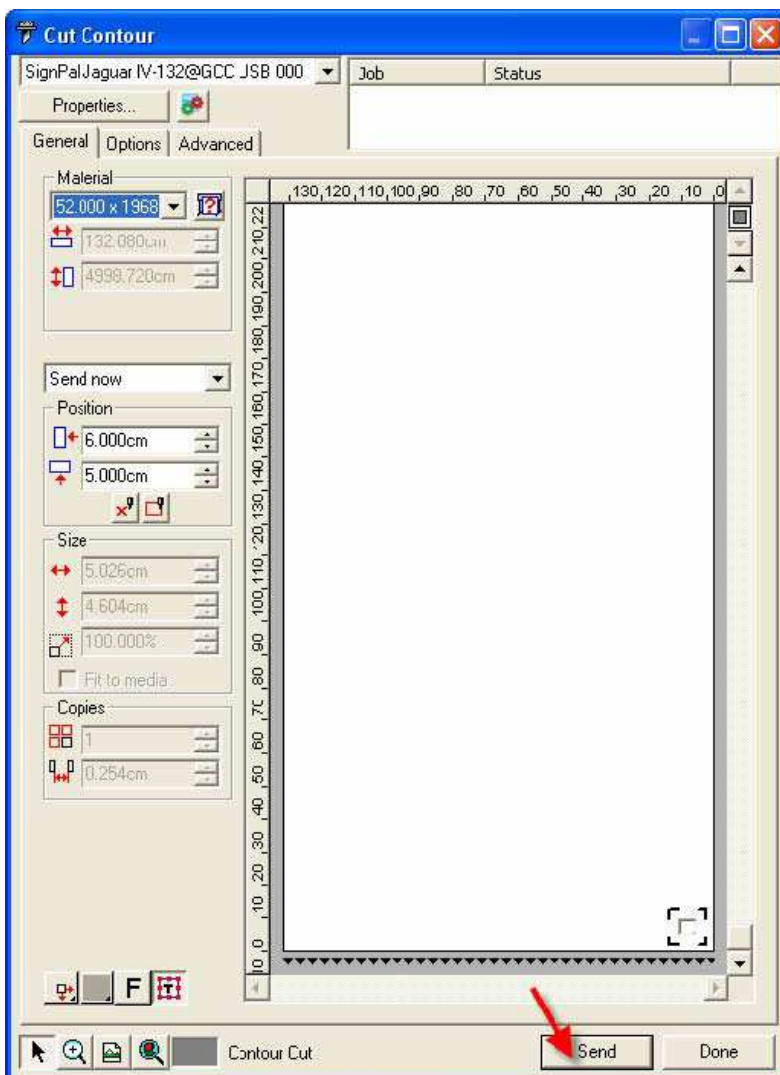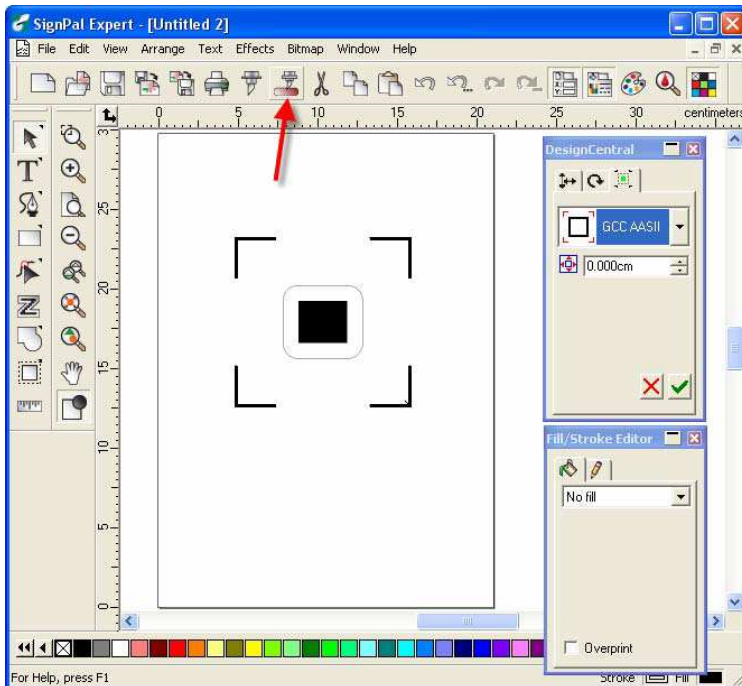
[3] SignPal 10.5 Feature Lists

	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	●	●	●	●

EasySIGN Instruction

The user manual of EasySIGN software is available on the EasySIGN program CD, or you can refer to the getting started manual available on the EasySIGN webpage at http://www.easysign.com/mainwebv1/DownGT.aspx.

GCC AASII Corpmark System

This application note will show you how to use the GCC AASII corpmark system. It assumes that you have installed your GCC plotter correctly, and that you are able to cut simple jobs on it. If not, please refer to the "Getting started" manual available through the menu "Help, Various, GettingStarted.pdf".

1. Make or import a design
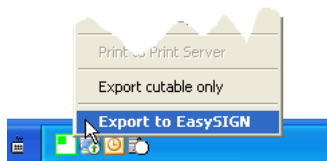
You can either make the design in EasySIGN or import an existing design from another application. For making the design in EasySIGN refer to the "Getting Started" manual. To import a design (for example an Adobe illustrator file) into EasySIGN, use either the compatibility option, or use direct import (menu : "File, Import"). The easiest way is to use compatibility. To do this, start EasySIGN, then use the menu "File, Compatibility", and click the software of your choice.

This software will now start, and can be used to design or open the required job. Click the icon in the system tray to easily send the file into EasySIGN.

2. Create print & cut lines.

When your design is successfully imported into EasySIGN, you should then select the line or lines that you want to cut on your plotter. After selecting them, use the command "Edit, Convert to, Line type, Print&cut line". The lines that will be cut are now shown in a dotted red line. Copy the design as you like.

3. Enable the cropmarks.
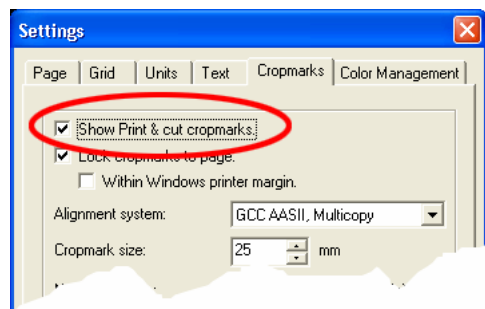
Right-click on an empty part of the worksheet, and choose the command "Cropmark settings".
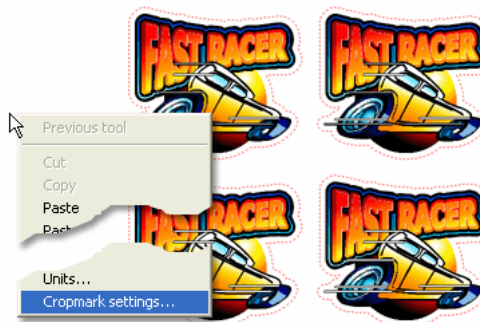
This will show a dialog.

Please tick the box called "Show Print & cut cropmarks".

Next, you need to make a choice which system that you want to use, there are three different systems:

GCC AASII	This system uses four cropmarks, and one copy. It is meant for jobs that are not very large (like 60 cm or smaller) and that are going to be printed on single sheets.
GCC AASII, Multicopy	Use this system when you want to cut multiple copies of a small job. This will give you very high accuracy, but the plotter will scan every copy of the job separately, which is of course slower than one big job.
GCC AASII, Multisegment	Use this system when the job is large. We recommend it for jobs bigger than 60 centimeter. It will place extra markers on the sheet, which will enhance the accuracy but will take extra time to scan.

The size of the cropmarks is fixed at 25 mm. Just click "OK" to close the dialog. If you have chosen the "Multicopy" cropmarks, there will be extra settings for horizontal copies, vertical copies etc, please ignore these for now, we will get back to them later.

4. Position the cropmark

Use the panelling tool from the left toolbox to drag the cropmarks around your job.

Make sure that the cropmarks have some white space around them, there should not be any objects inside them, to make sure they can be scanned accurately.

5. Export the job for printing

Your design is now ready for production. Click "File, Export", and a dialog will come up that enables you to create a file. We advise you to use "EPS Encapsulated Postscript (*.EPS)" as the output format, this can be read by any RIP or other print software. Print the resulting EPS file with the software of your choice.

6. Cut the result

Place the resulting print in your plotter. Set the plotter to "offline" and use the arrow keys to position the laser within the lower right cropmark, then set the plotter to "online".
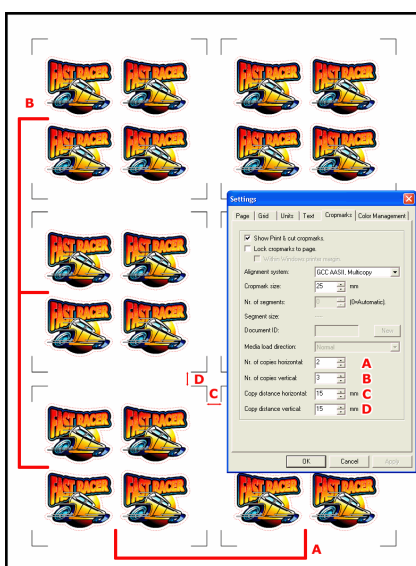
If you have chosen the cropmarks "Multicopy", there is one extra step: right-click the page and go to the "Cropmark settings" dialog again. In the dialog, enter the correct values for "nr. Of copies horizontal", "Nr of copies vertical" and "Copy distance horizontal", "copy distance vertical", then click "OK".

In the EasySIGN software, choose "File, Plotting". A dialog will come up that allows you to change the plotter settings.
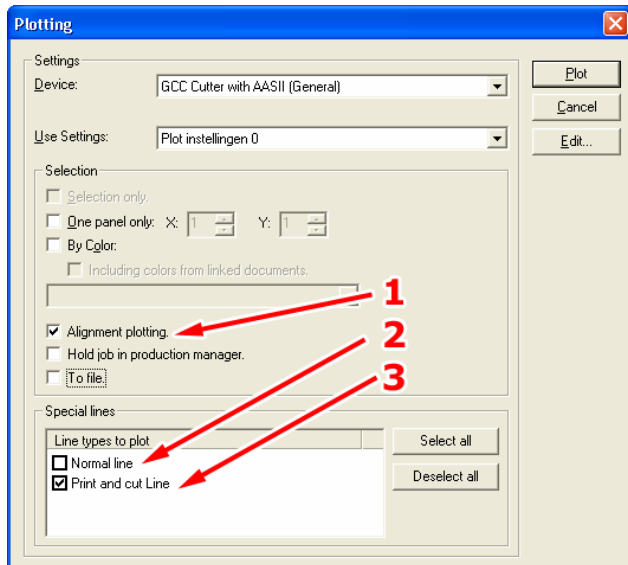
Just make sure that the following settings are made:

Alignment plotting (1)	Switched on
Normal line (2)	Switched off
Print and cut line (3)	Switched on

Then click "OK". Your plotter will then start scanning the cropmarks, and after that the job will be cut.

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.

<p style="text-align:center">Edit your image in CorelDRAW</p>

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).
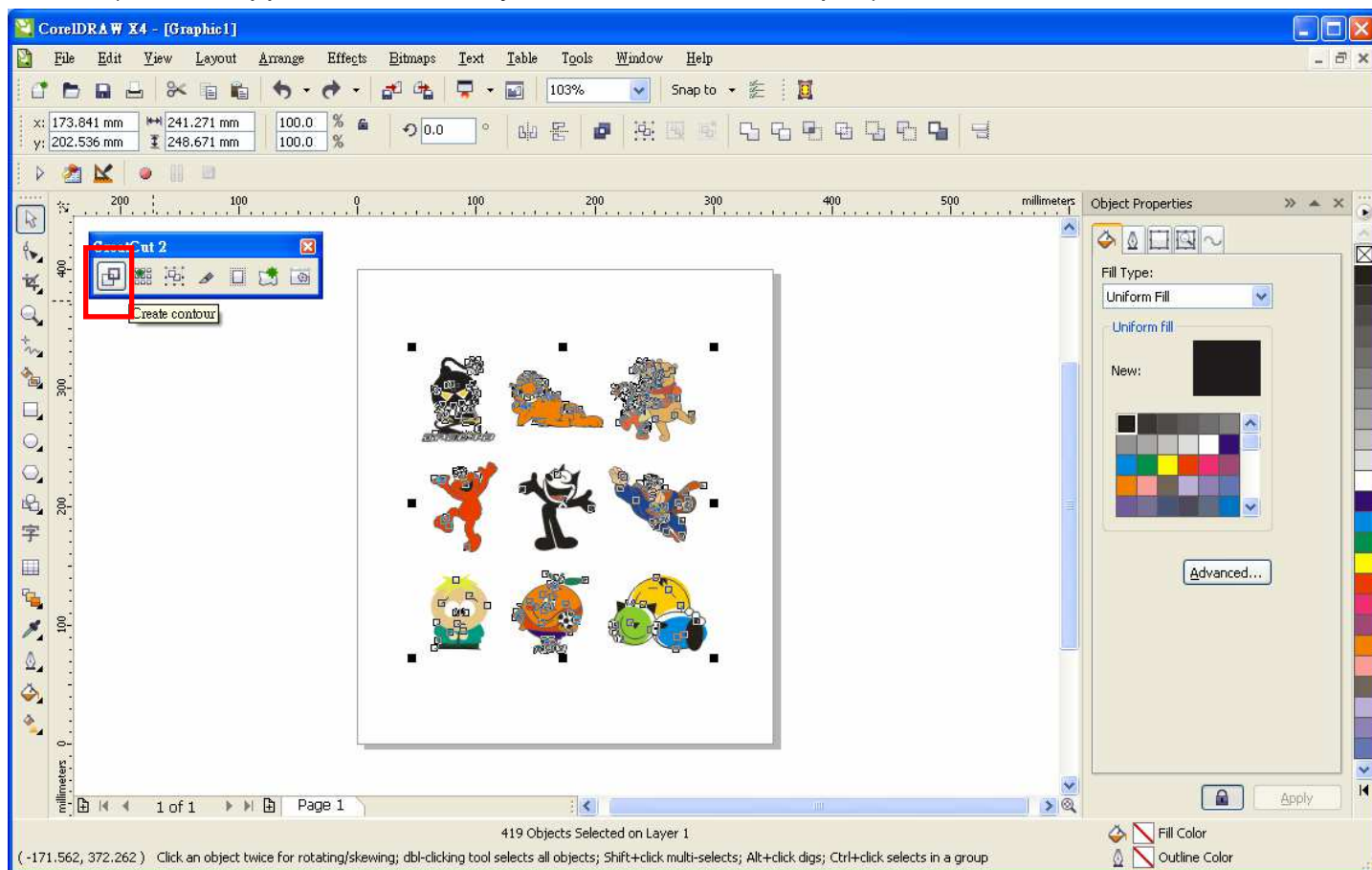
Step 2. Complete contour line settings (including contour offset value) and press Calculate to confirm.
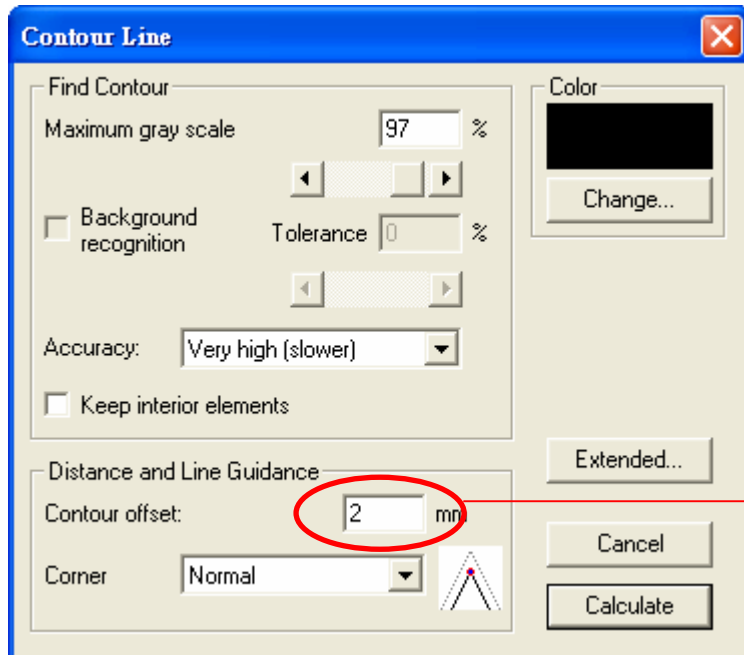
Contour lines will be added to the images.
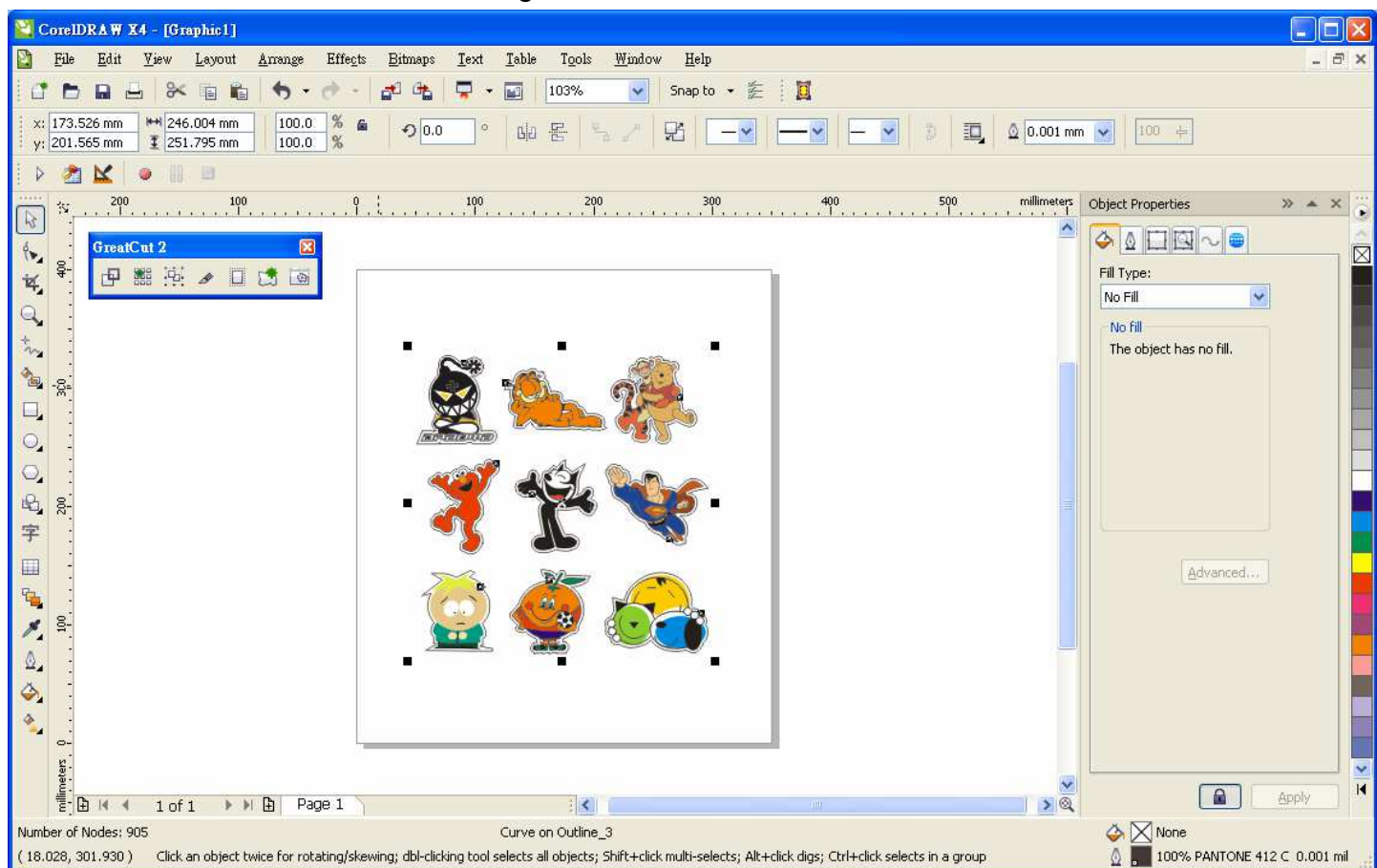
Step 3. Press the Settings icon on the GreatCut 2 toolbar.
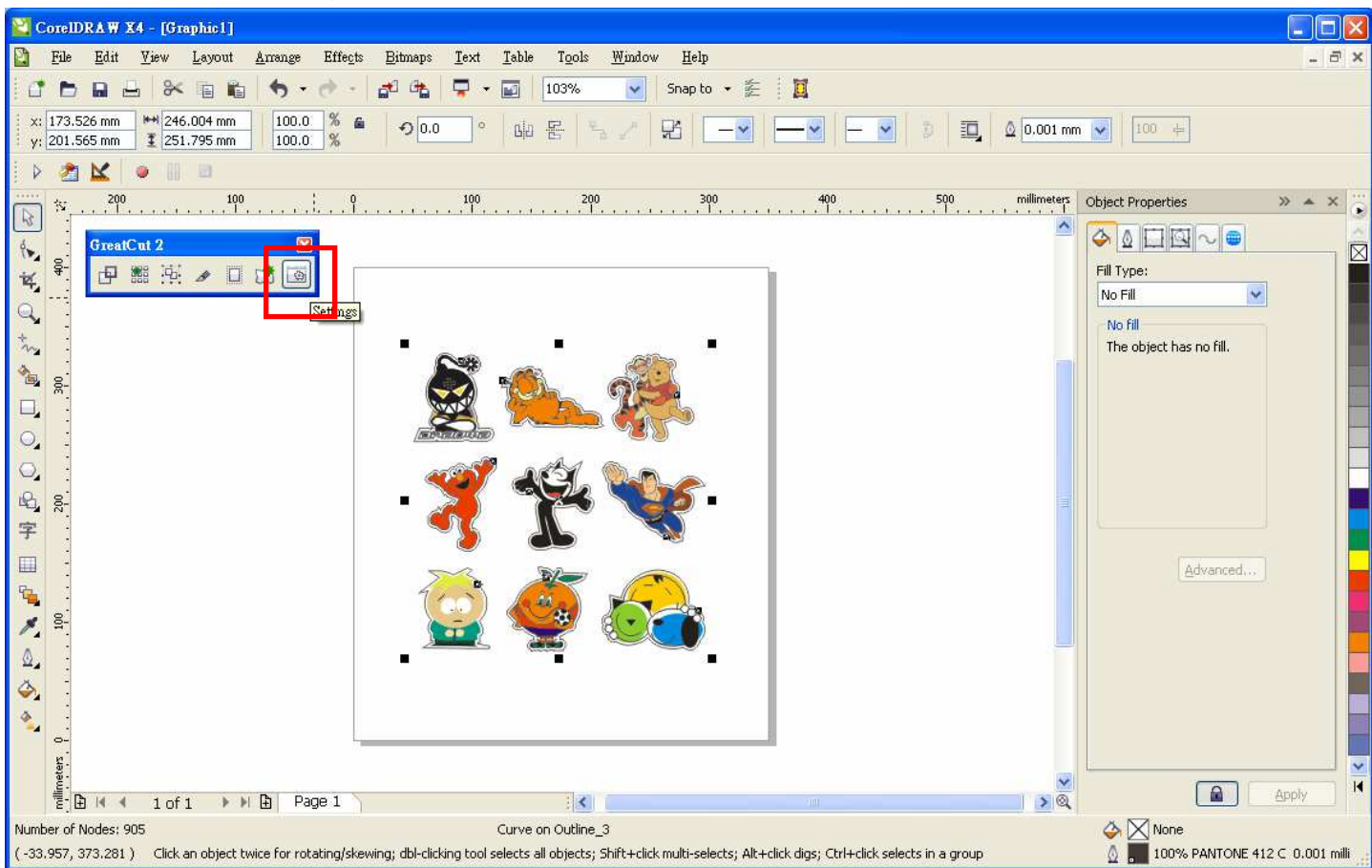
Step 4. Press the button on the right of Jog marks.
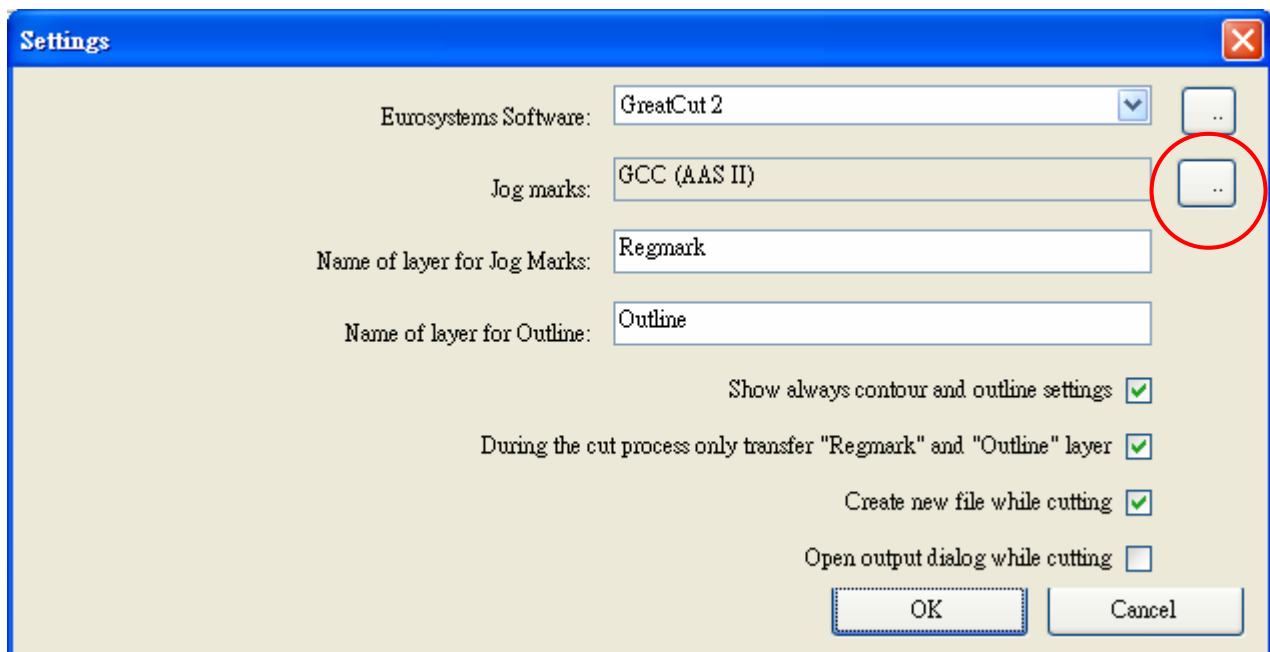
Step 5. Adjust the size, object margin and line thickness of your registration marks in the Setup-Jog Marks window and click OK.
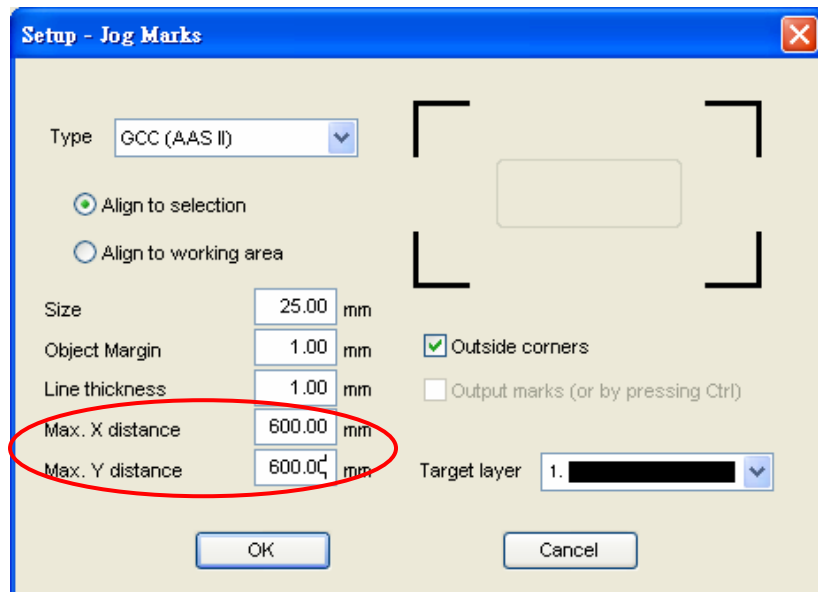
4-Point Positioning
● **Size:** The length of marks
  → Range: 5mm~50mm
  → Optimized Setting: 25mm
● **Object margin:** The distance between marks and images
  → Range: 0mm~50mm
  → Optimized Setting: 5mm
● **Line thickness:** the line thickness of marks
  → Range: 1mm~2mm
  → Optimized Setting: 1mm

Step 6. Ensure the three items below are selected and click OK.
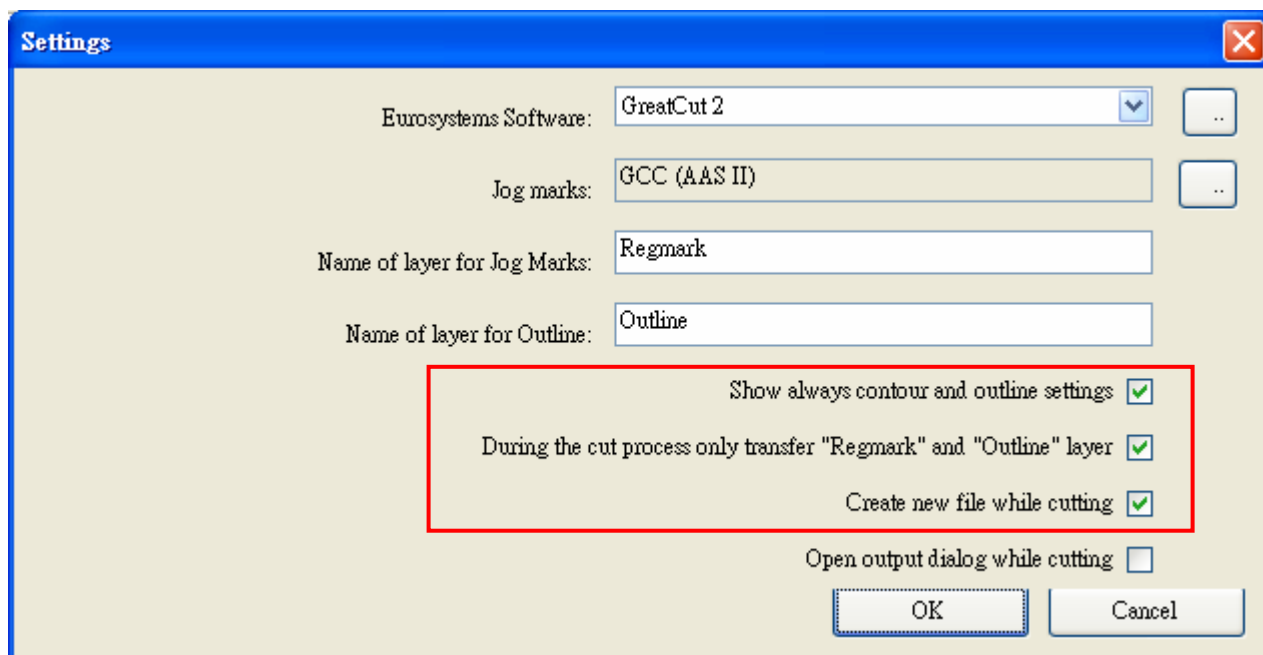
Step 7. Click the Set Jog Marks Icon in the GreatCut 2 toolbar.
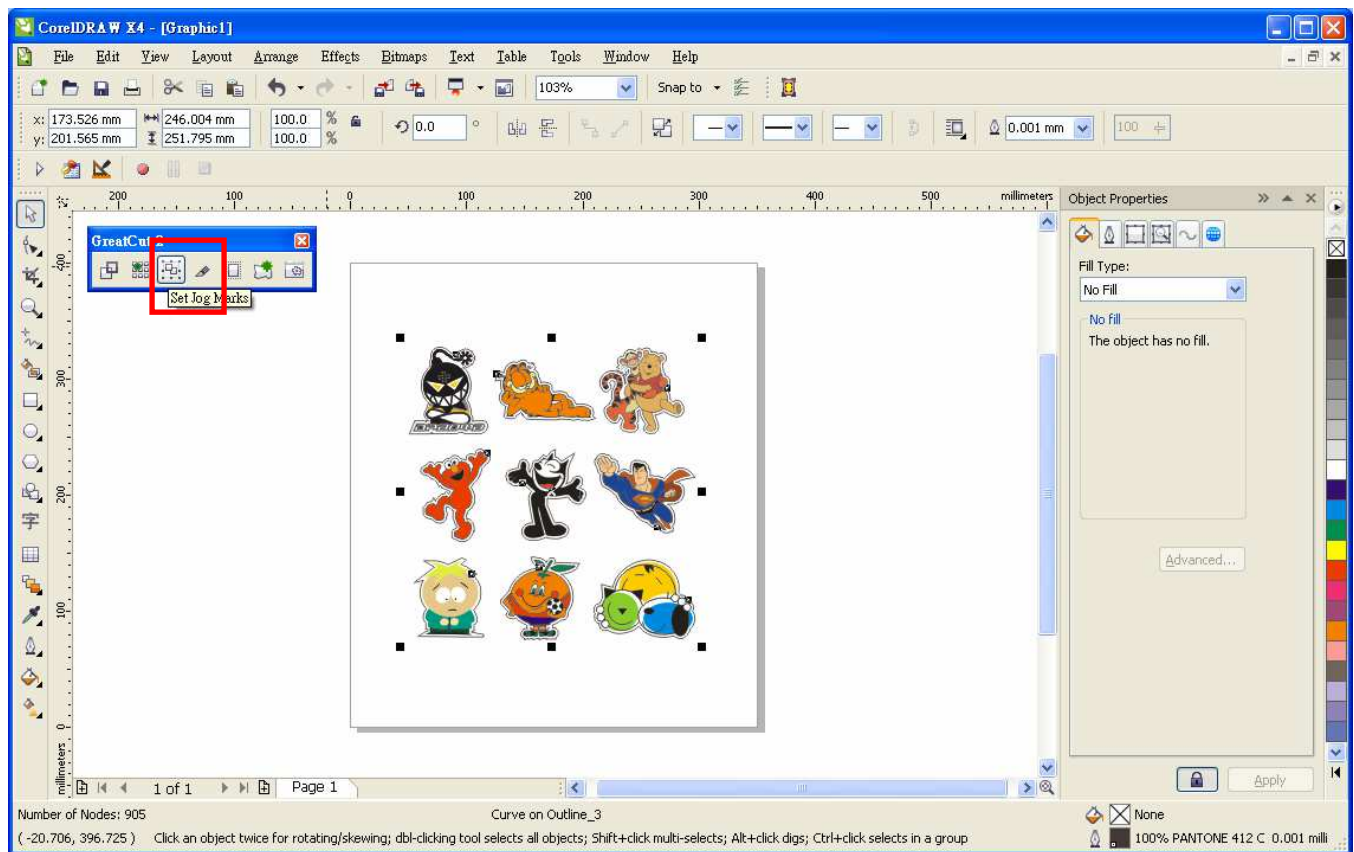
The system will create the 4 marks as shown in the picture below.
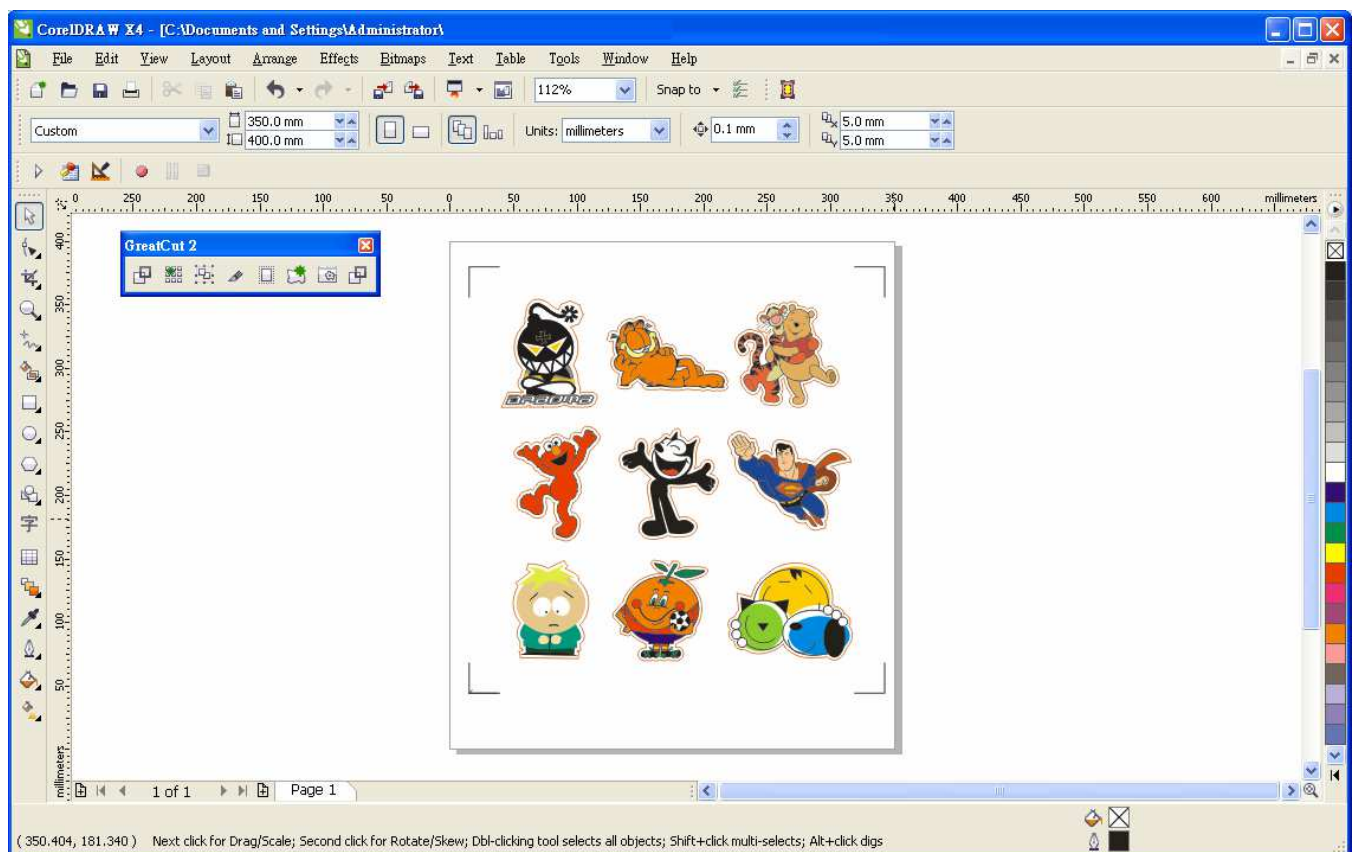
Note:

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).

Area to be cut

25mm

5mm

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.

Complete the settings of AAS Offset, Pressure, Speed, Material width and so forth.

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

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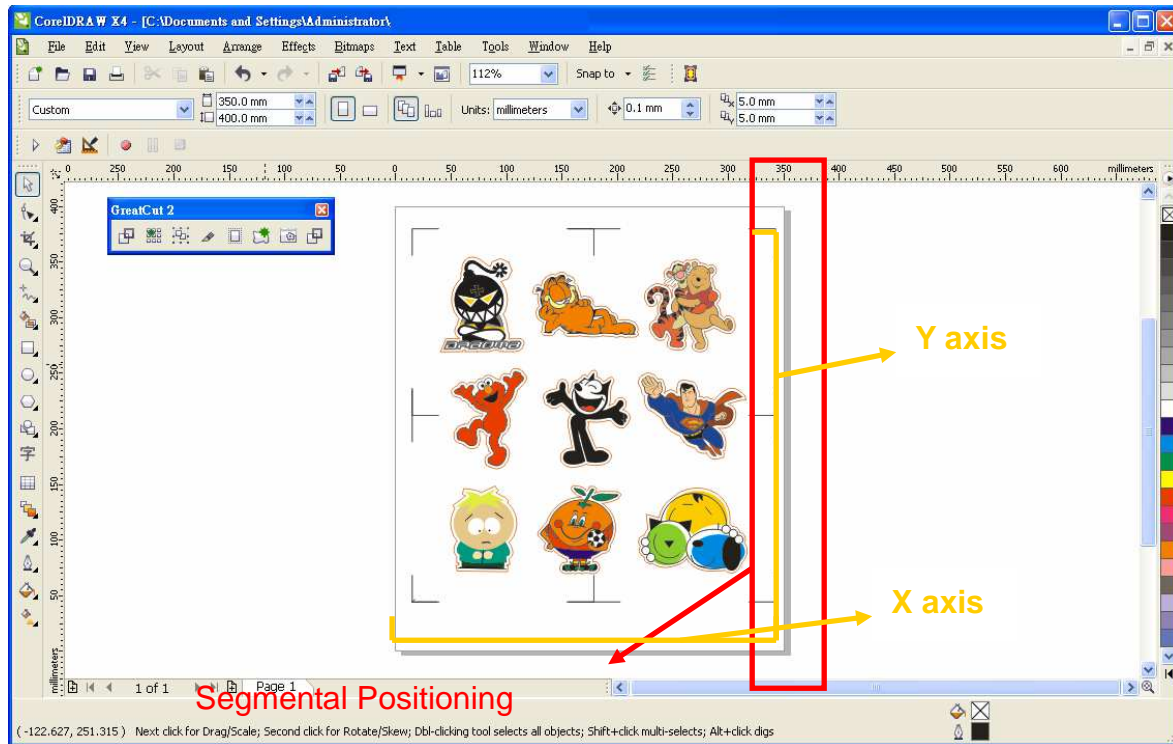
Follow the same steps in the **Output** section to output your image to GCC Cutting Plotter.

Multiple Copies

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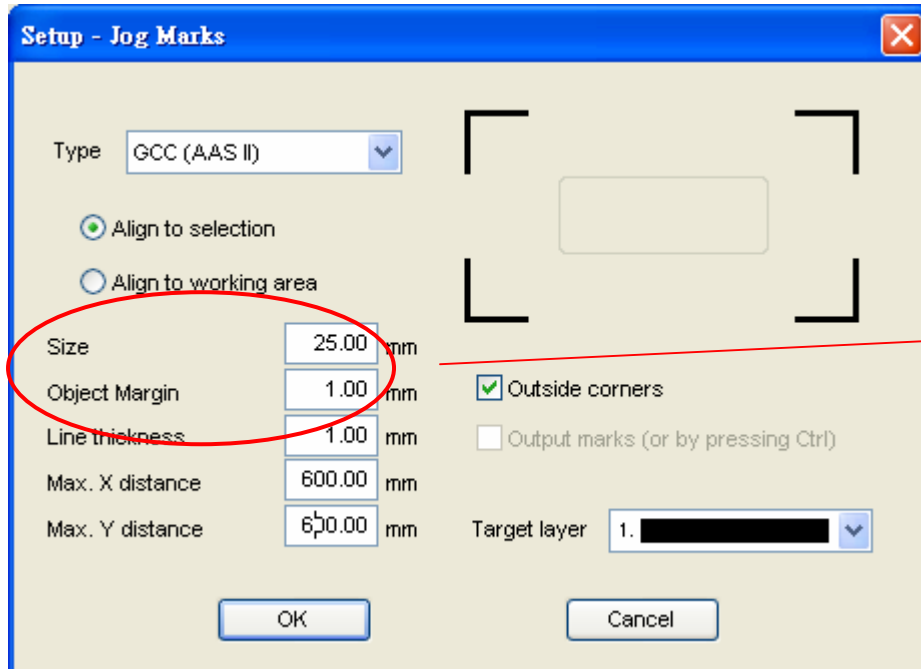

When you apply the "Multiple Copies" function, the value that has been set in this section will still be applied.

Click the Set Jog Marks Icon in the GreatCut 2 toolbar and 4 marks will be created as shown in the picture below.
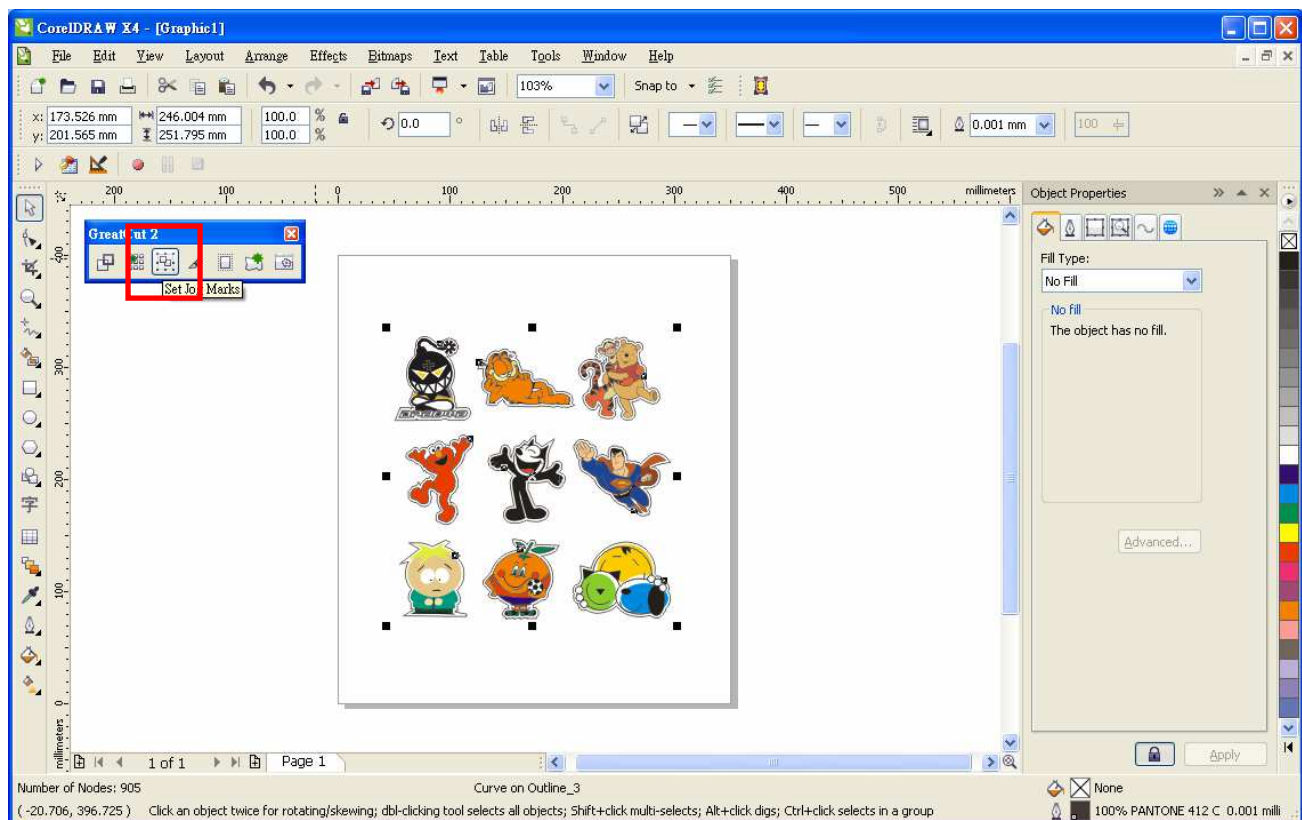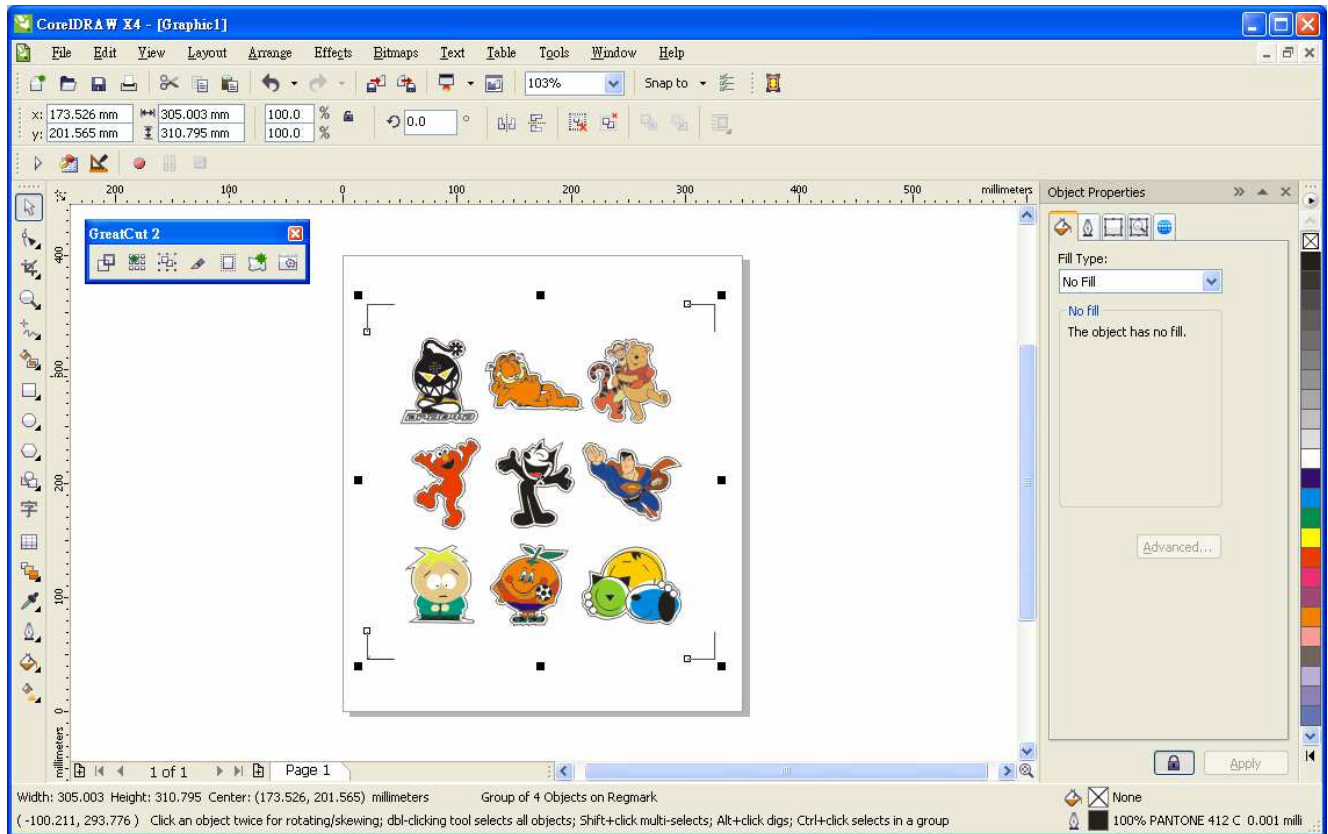
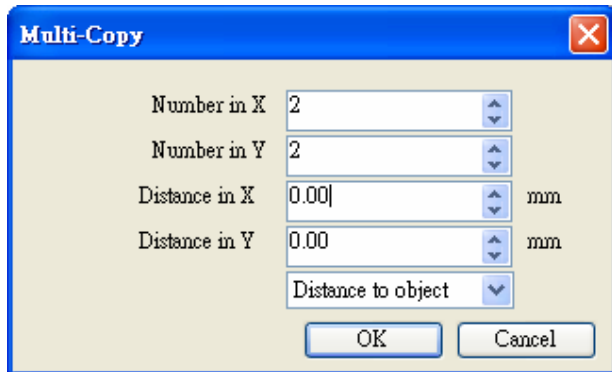Click the Multi-copy Icon in the GreatCut 2 toolbar and complete the Number in X/Y (the number of copies desired on the X/Y axis) and Distance in X/Y (distance between each copy) settings then click OK.

Note: The spacing of vertical & horizontal (Offset X & Y) should be ≥ 20mm or = 0mm; 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.
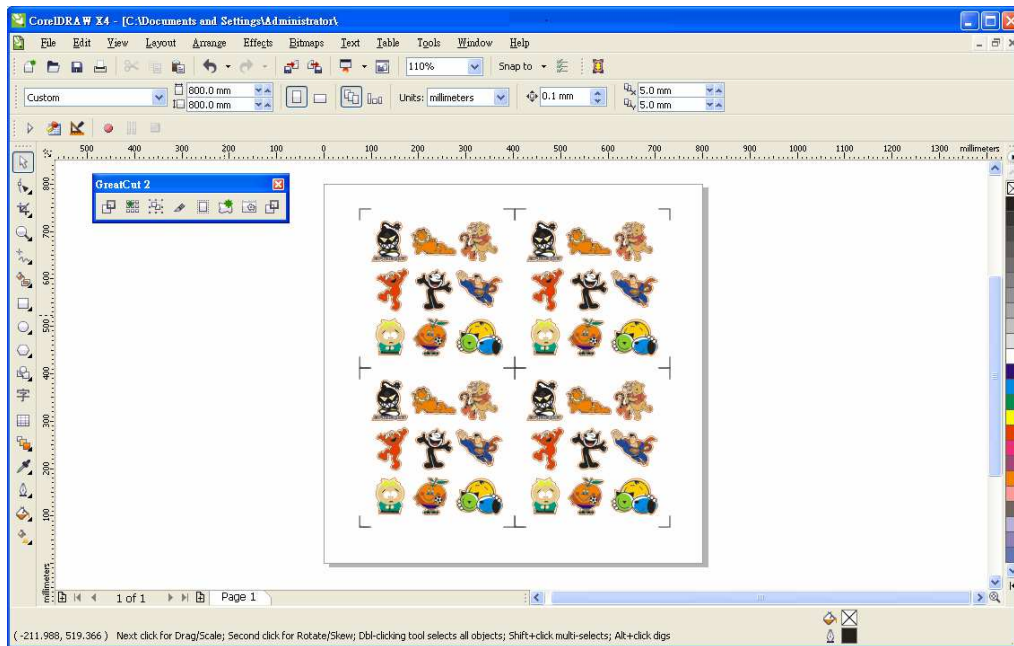
Follow the same steps in the **Output** section to output your image to GCC Cutting Plotter.

Edit your image in Adobe Illustrator

4-Point Positioning

Step 1. Create a new file in Adobe Illustrator.
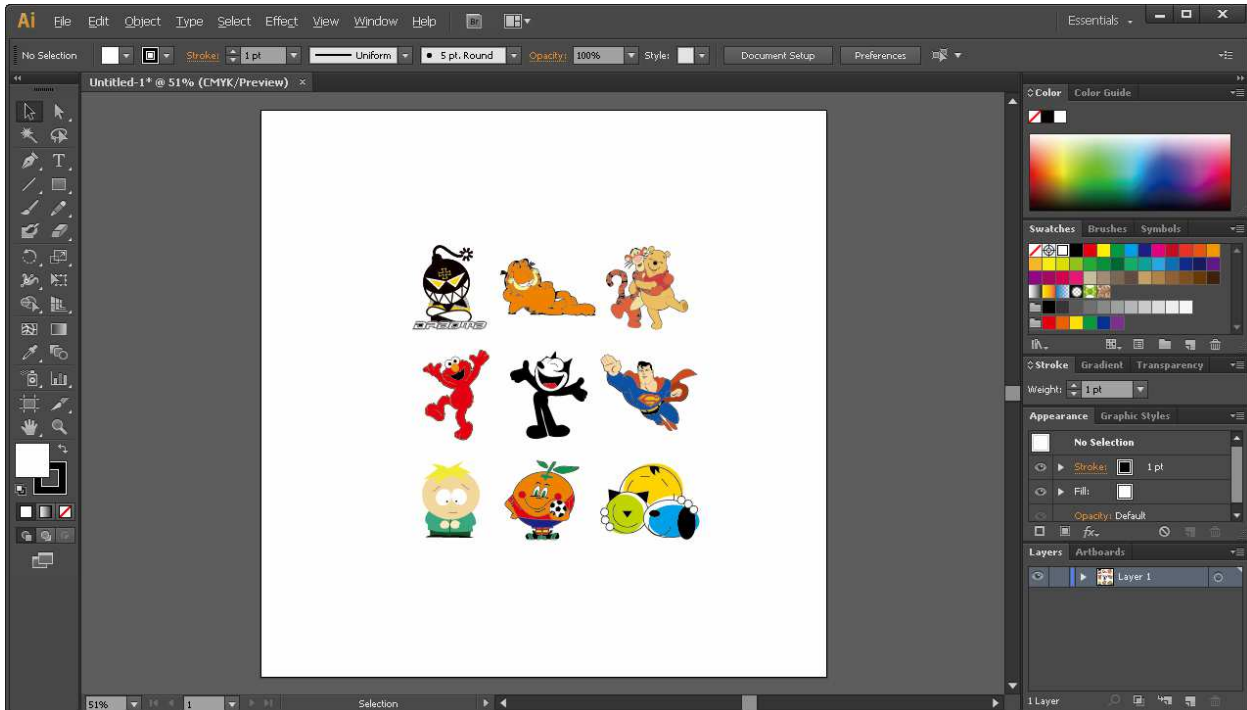
Step 2. Select the image and go to Contour in GreatCu2 in File.
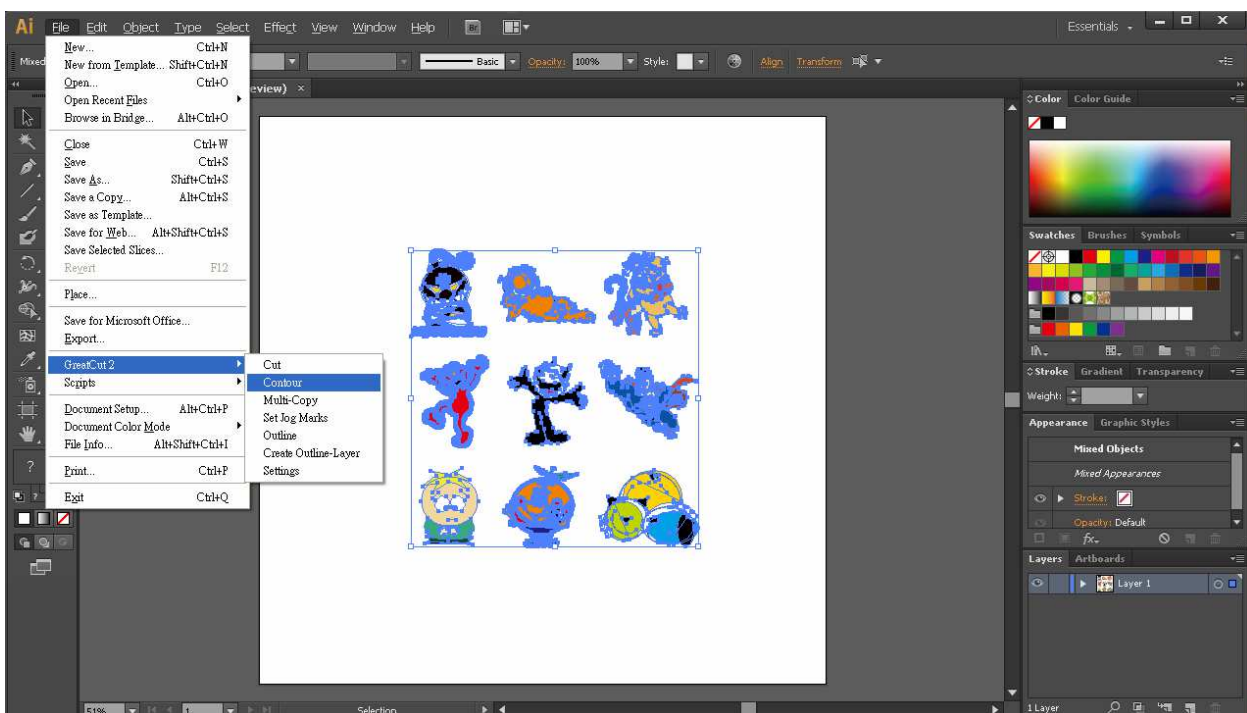
Step 3. Complete contour line settings (including contour offset value) and press Calculate to confirm.
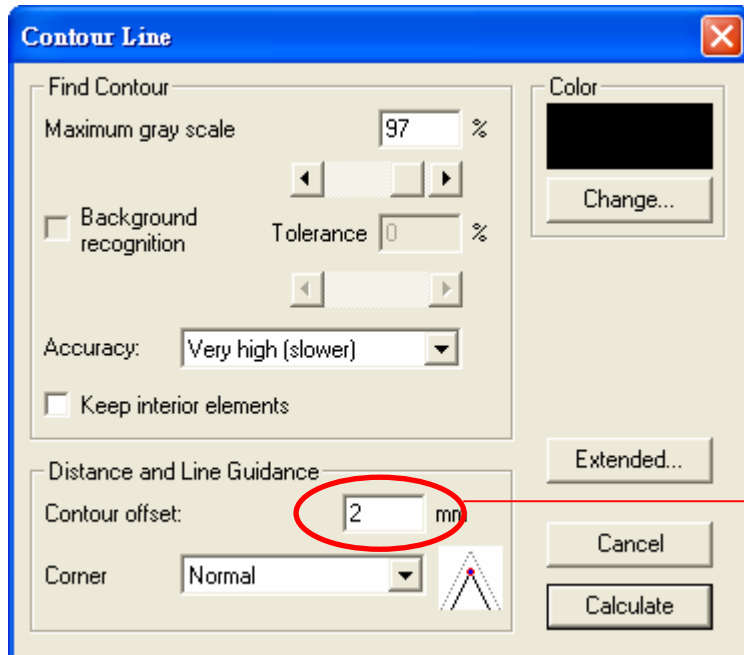
Contour offset is the distance between the object and the contour line.

Contour line is now added to the object.
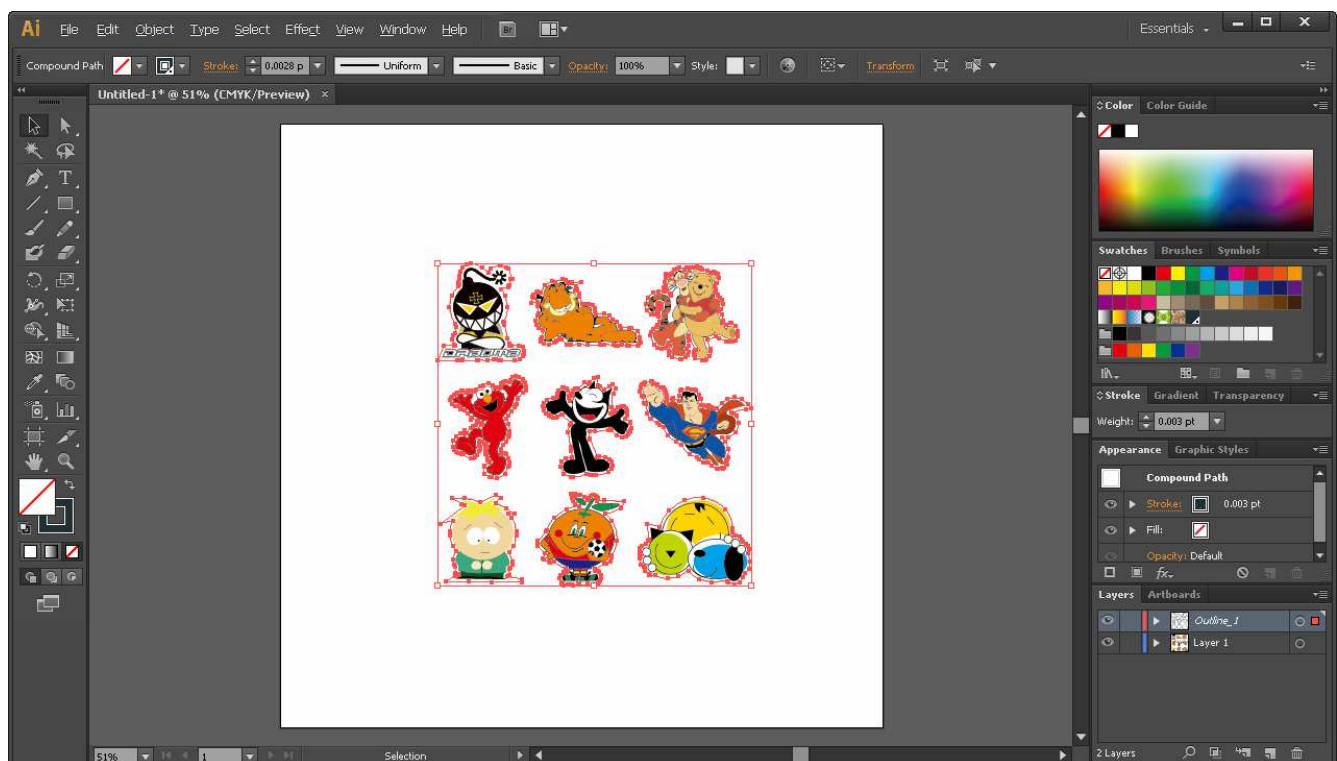
Step 4. Click Settings in GreatCut 2 under File.
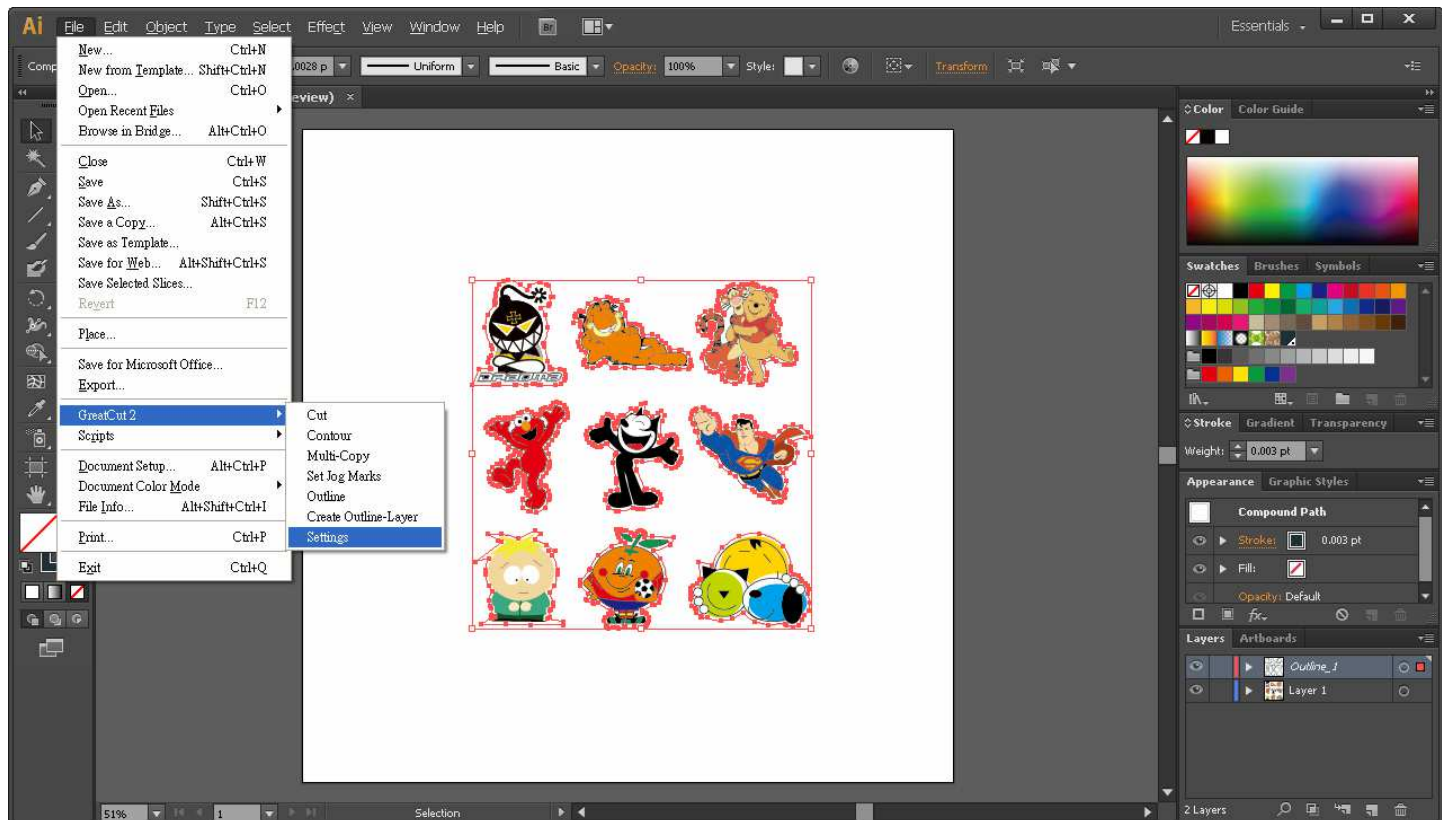
Step 5. Press the button on the right of Jog marks.
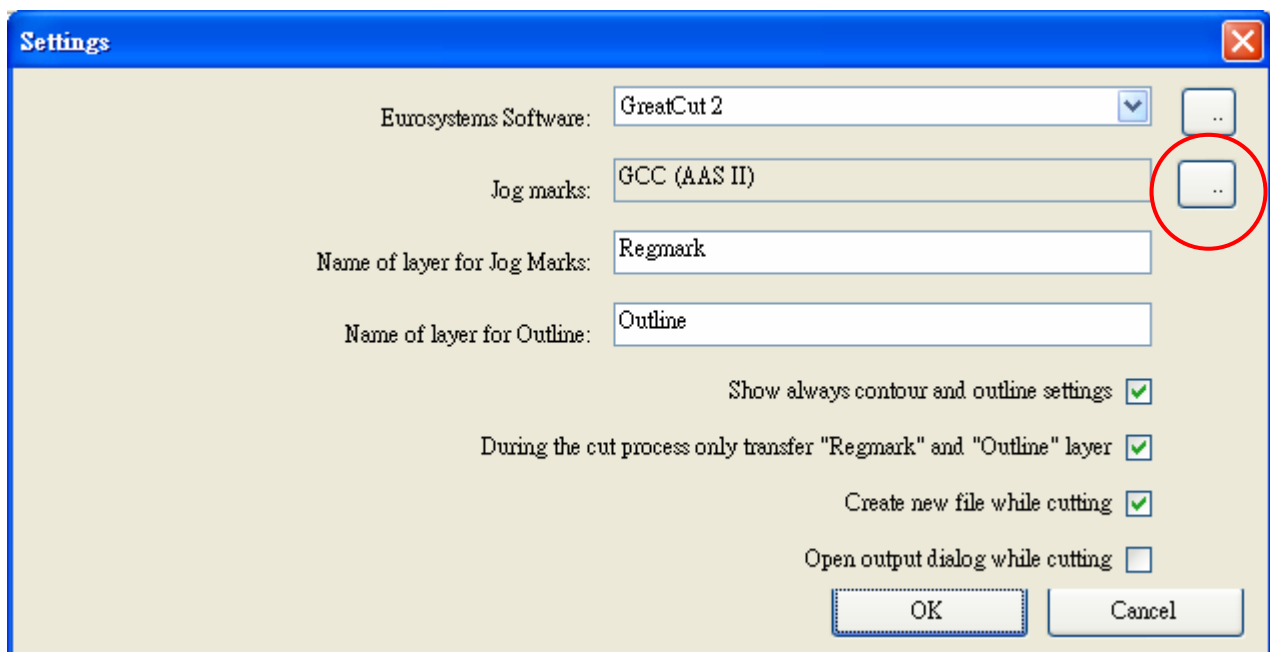
Step 6. Adjust the size, object margin and line thickness of your registration marks and click OK.
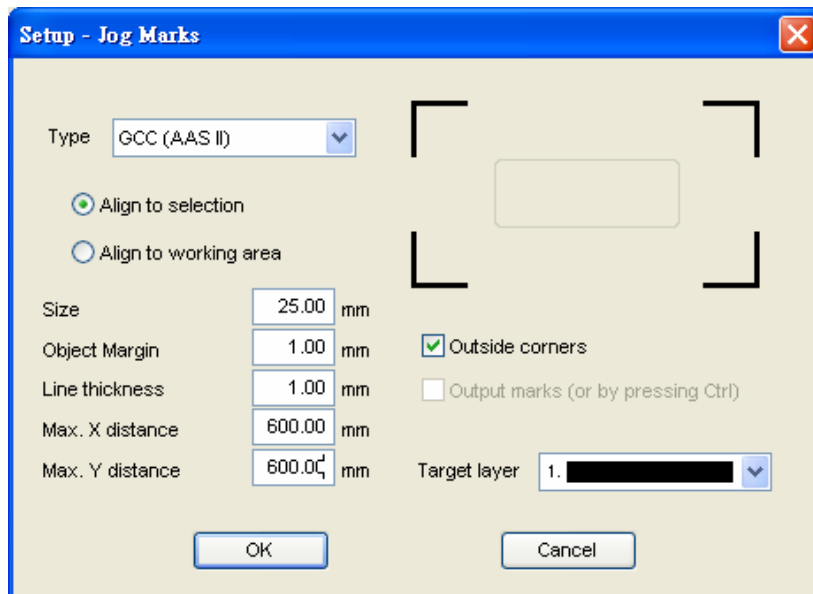
4-Point Positioning
- **Size:** The length of marks
  → Range: 5mm~50mm
  → Optimized Setting: 25mm
- **Object margin:** The distance between marks and images
  → Range: 0mm~50mm
  → Optimized Setting: 5mm
- **Line thickness:** the line thickness of marks
  → Range: 1mm~2mm
  → Optimized Setting: 1mm

Step 7. Ensure the three items below are selected and click OK.
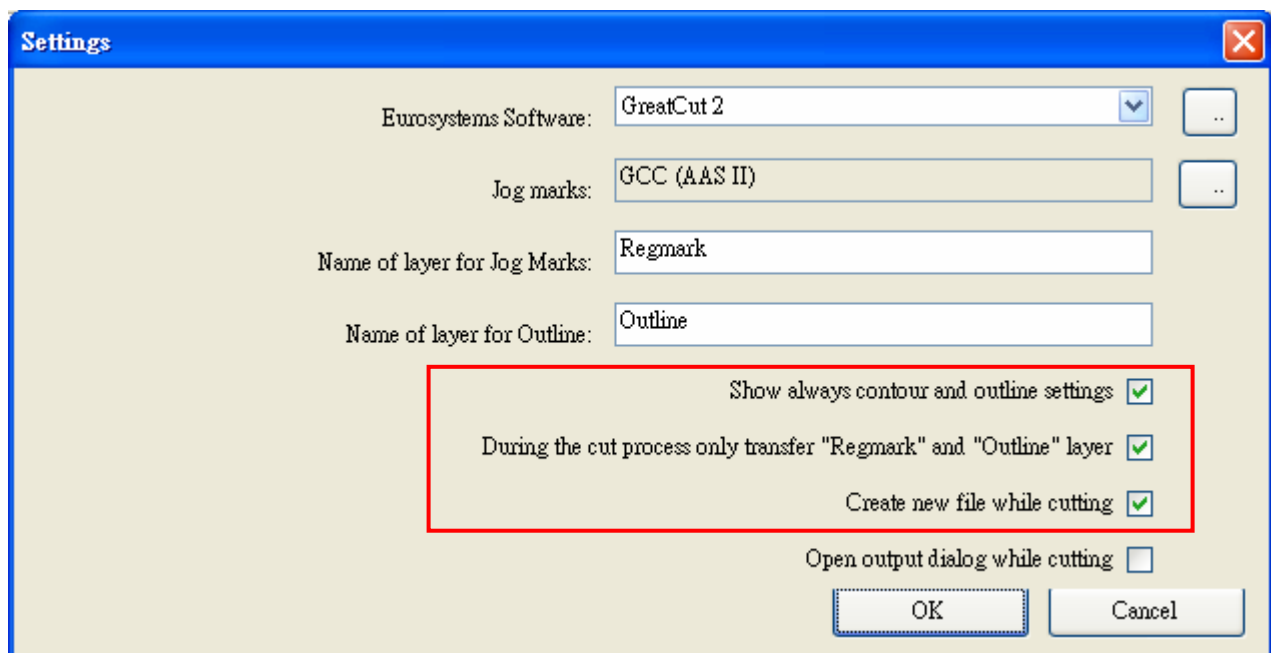
Step 8. Click Set Jog Marks in GreatCut2 under File.
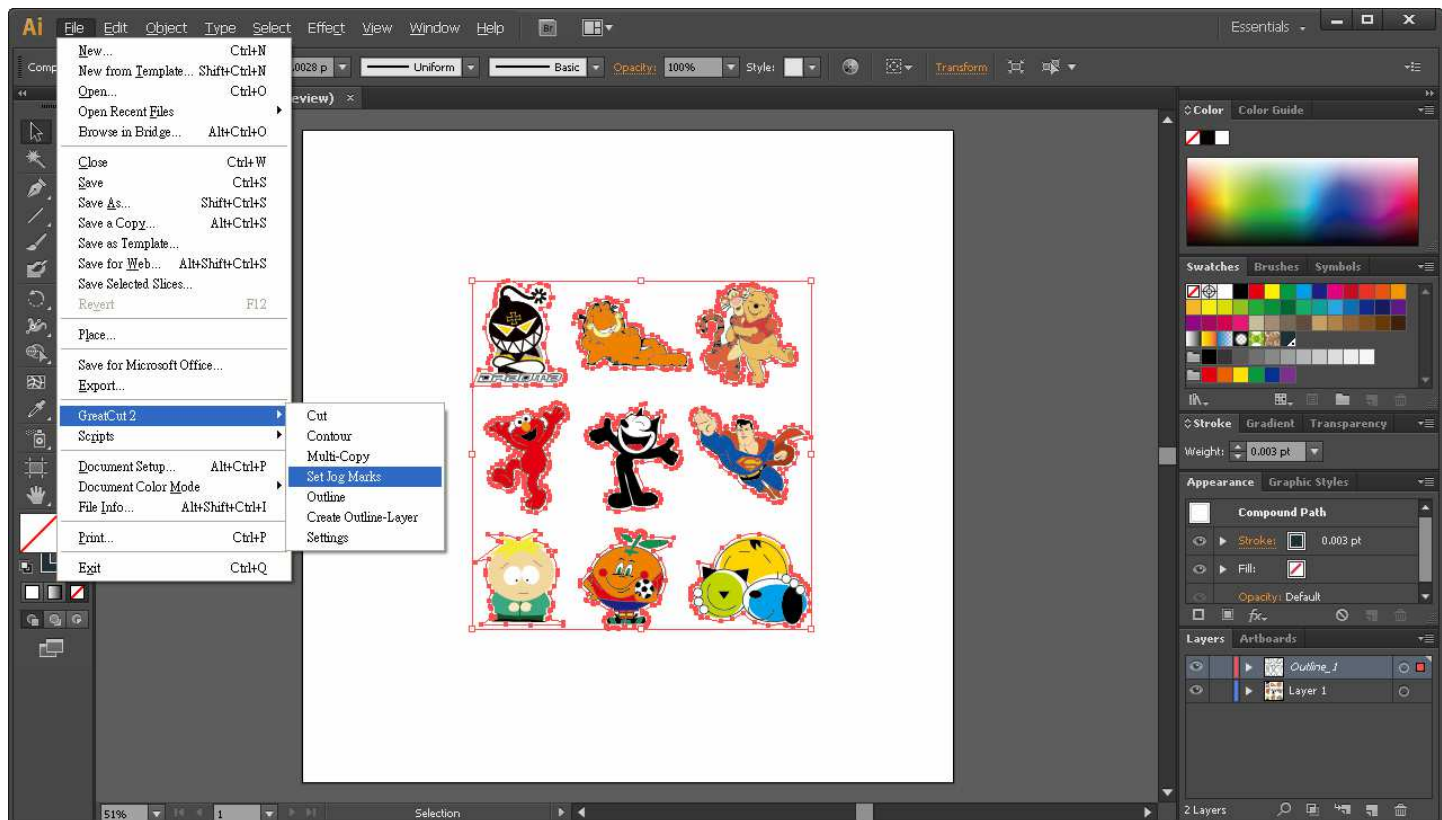
The system will create the 4 marks as shown in the picture below.
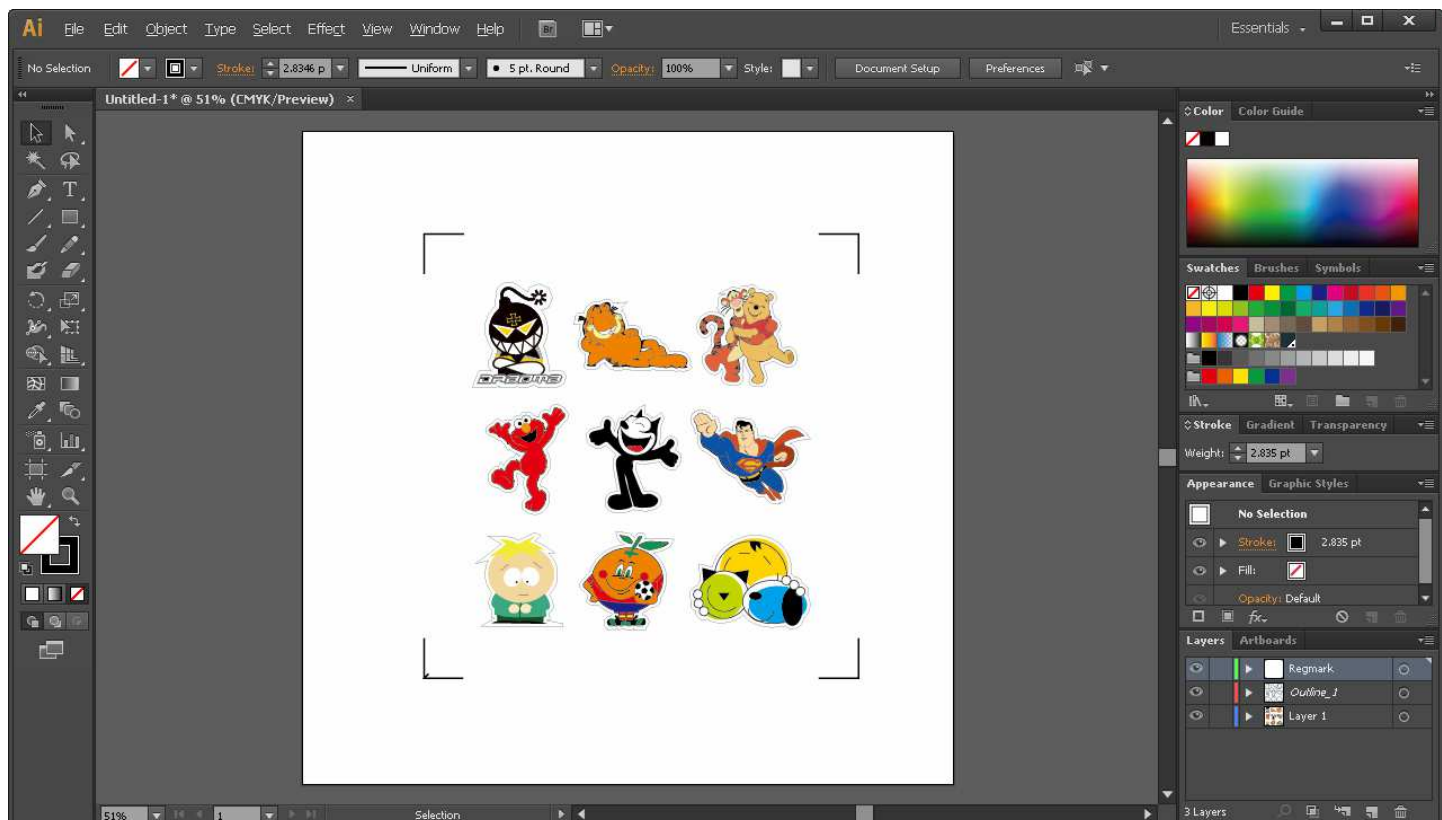
Output

Step 1. Select both the entire object (including registration marks and the contour line) then click Cut in GreatCut2 under File.
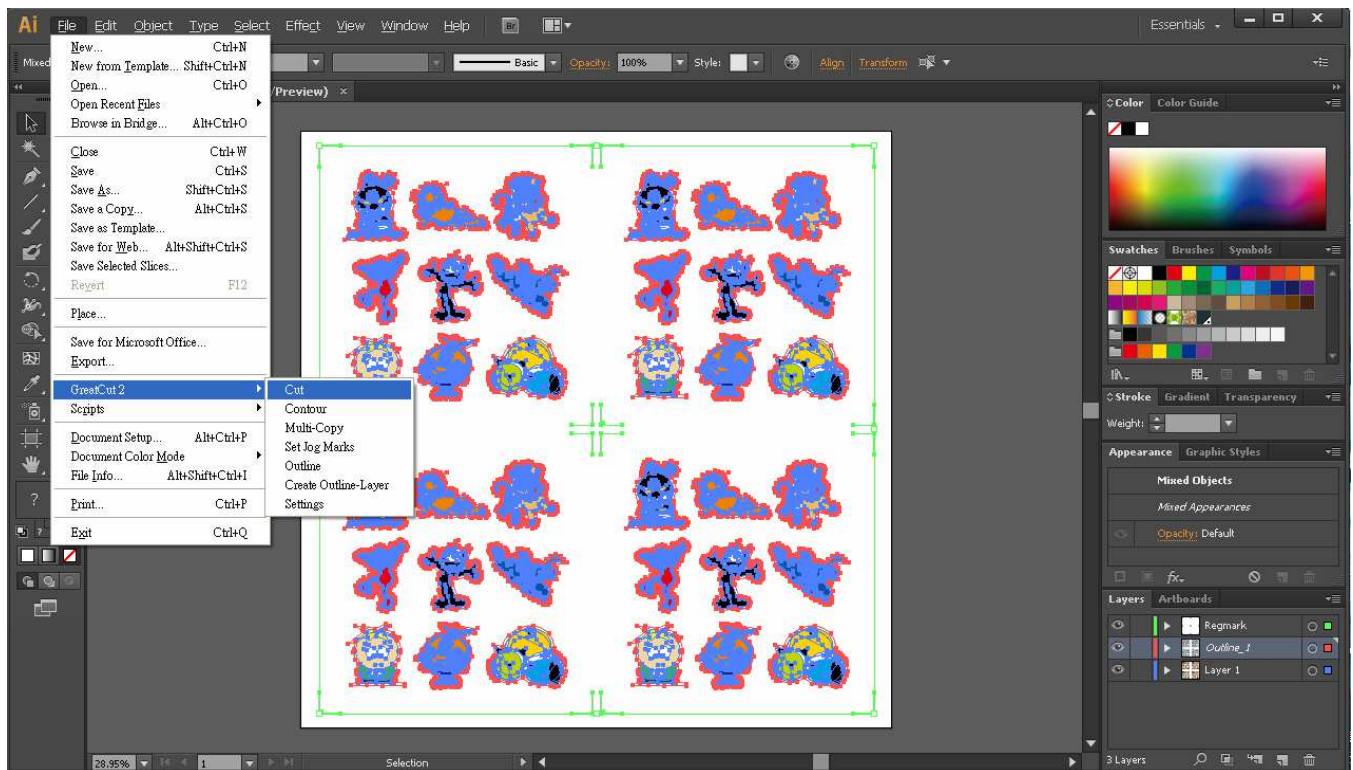
Step 2. The system will activate GreatCut2 automatically and import the registration marks and contour line to GreatCut 2.
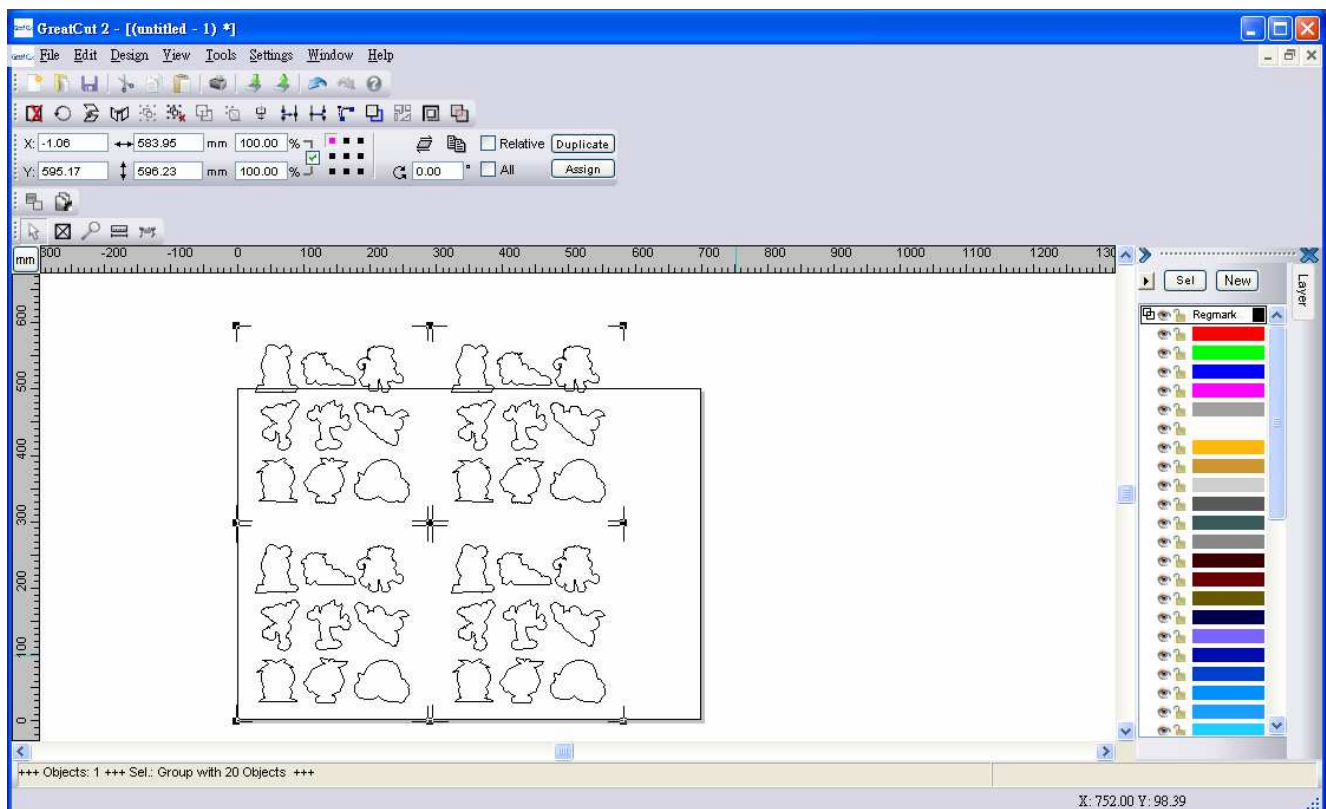
Step 3. Select Output under File.
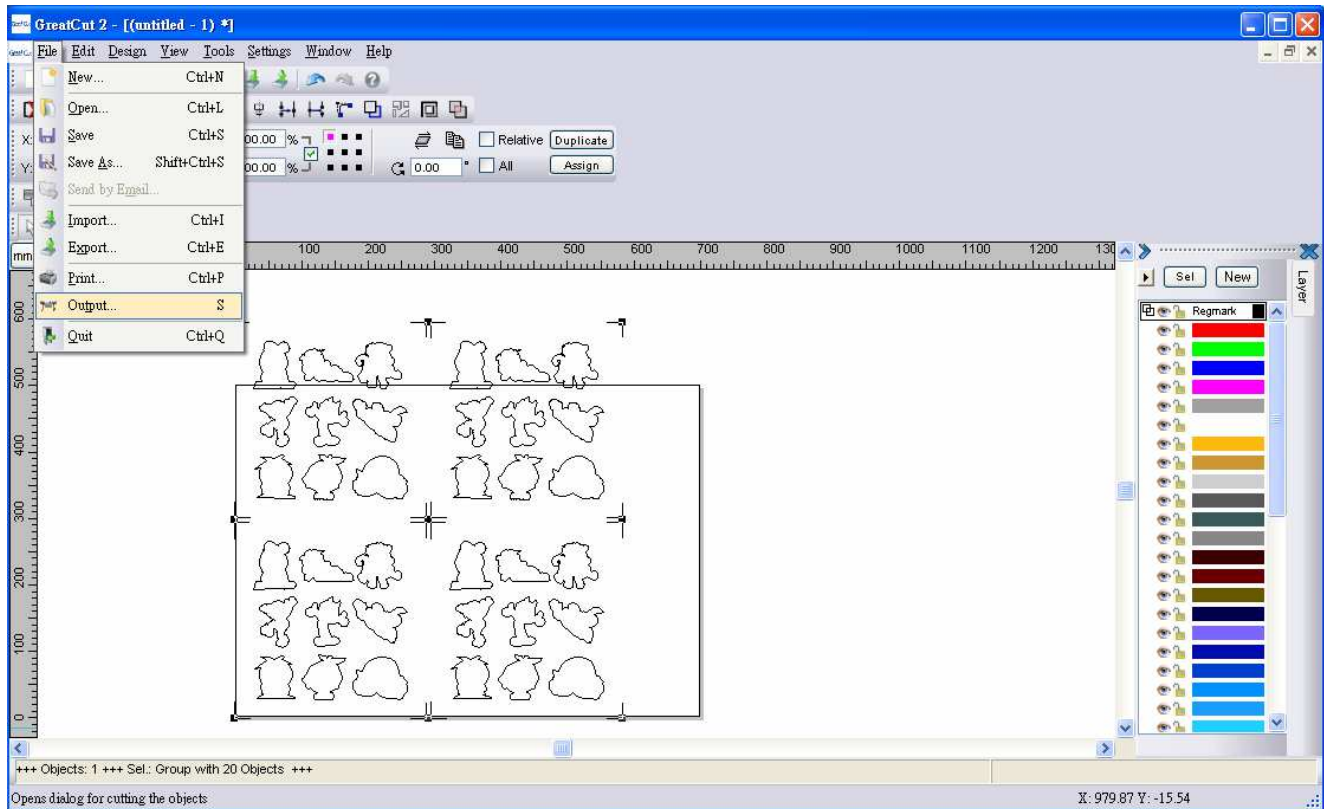
Step 4. Select Cut with AAS in Mode/Tool in the Output to device window.

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

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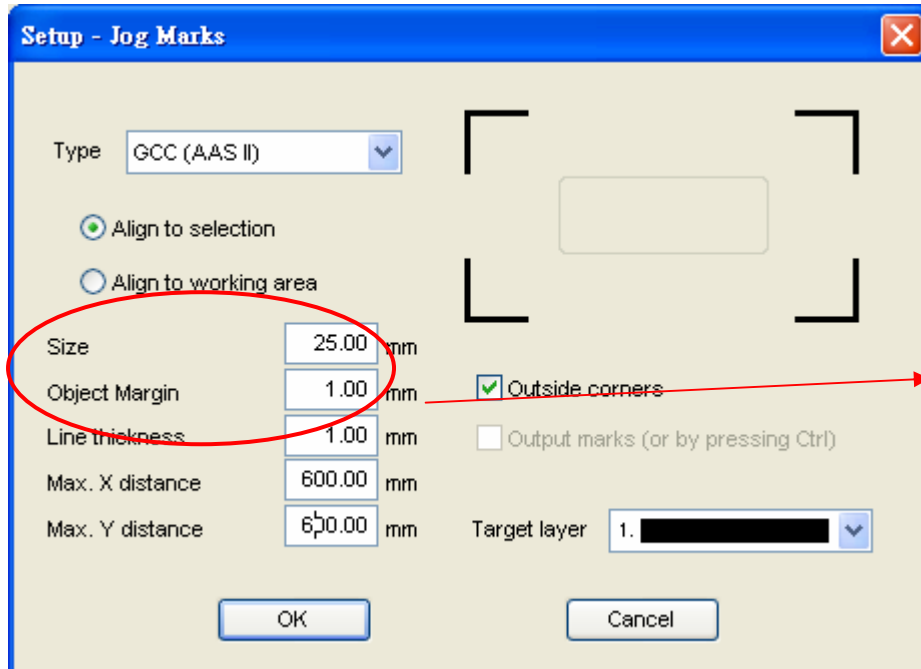
When you apply the "Multiple Copies" function, the value that has been set in this section will still be applied.

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.
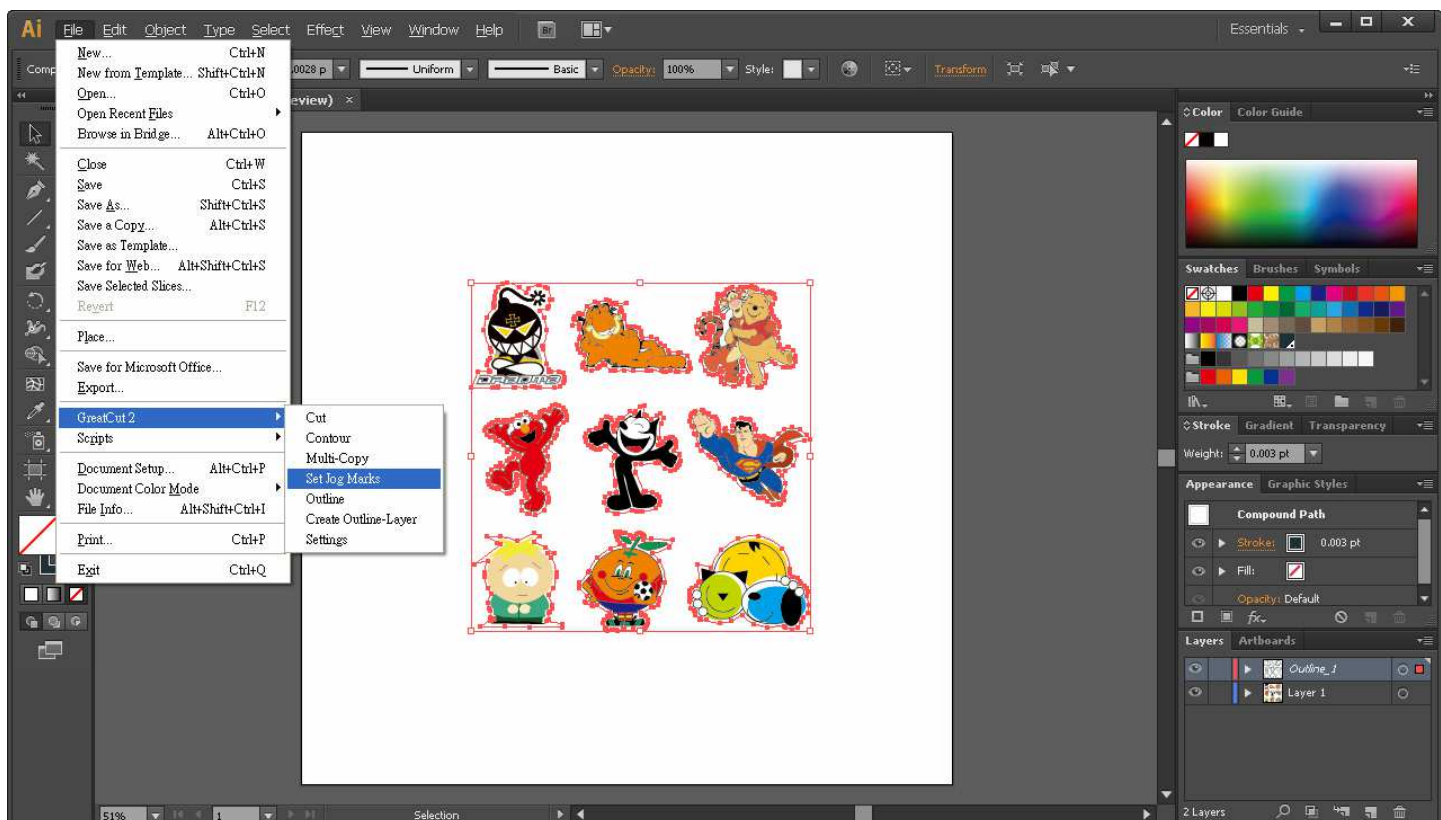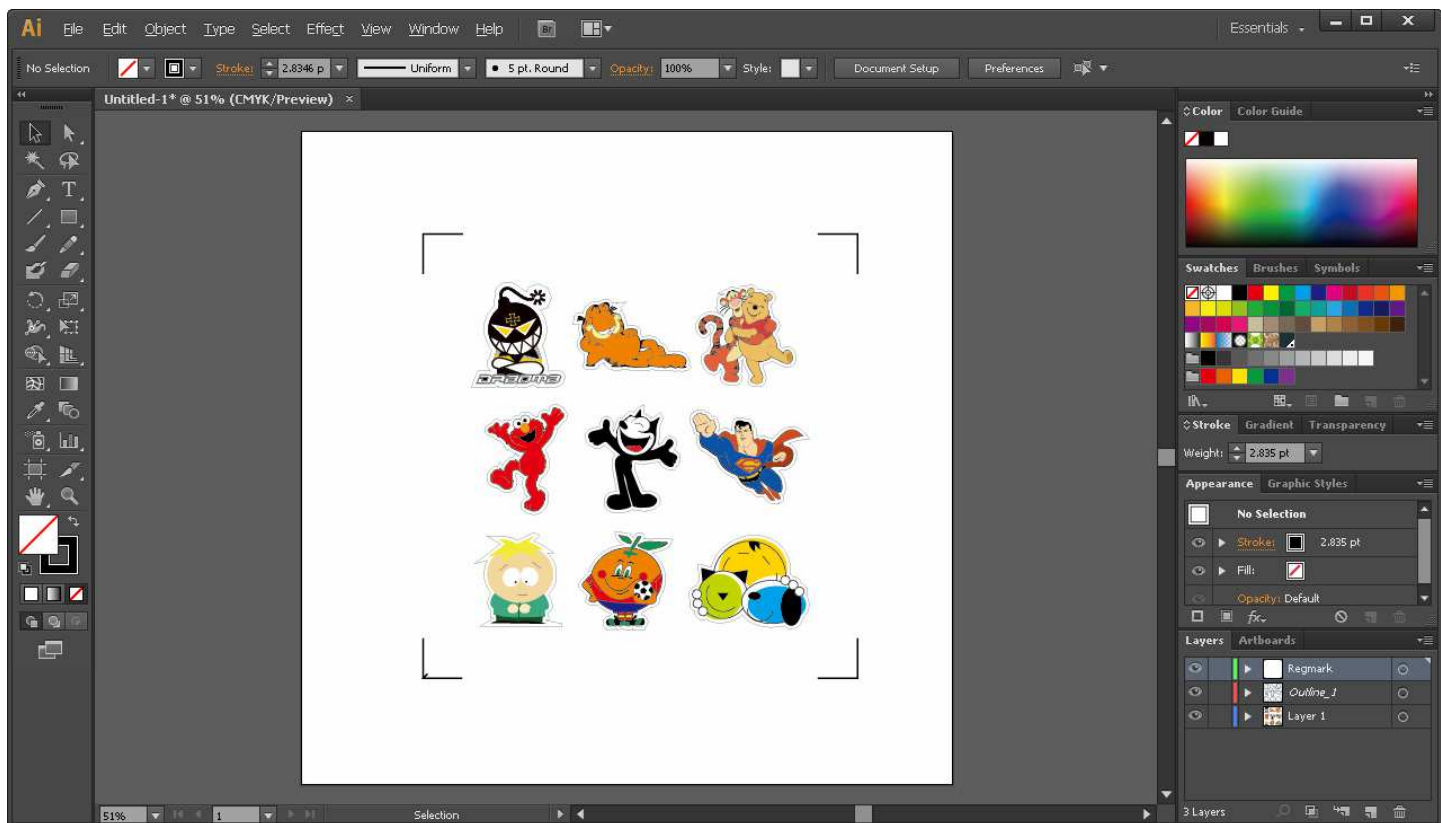
Click Multi-Copy in GreatCut2 under File.
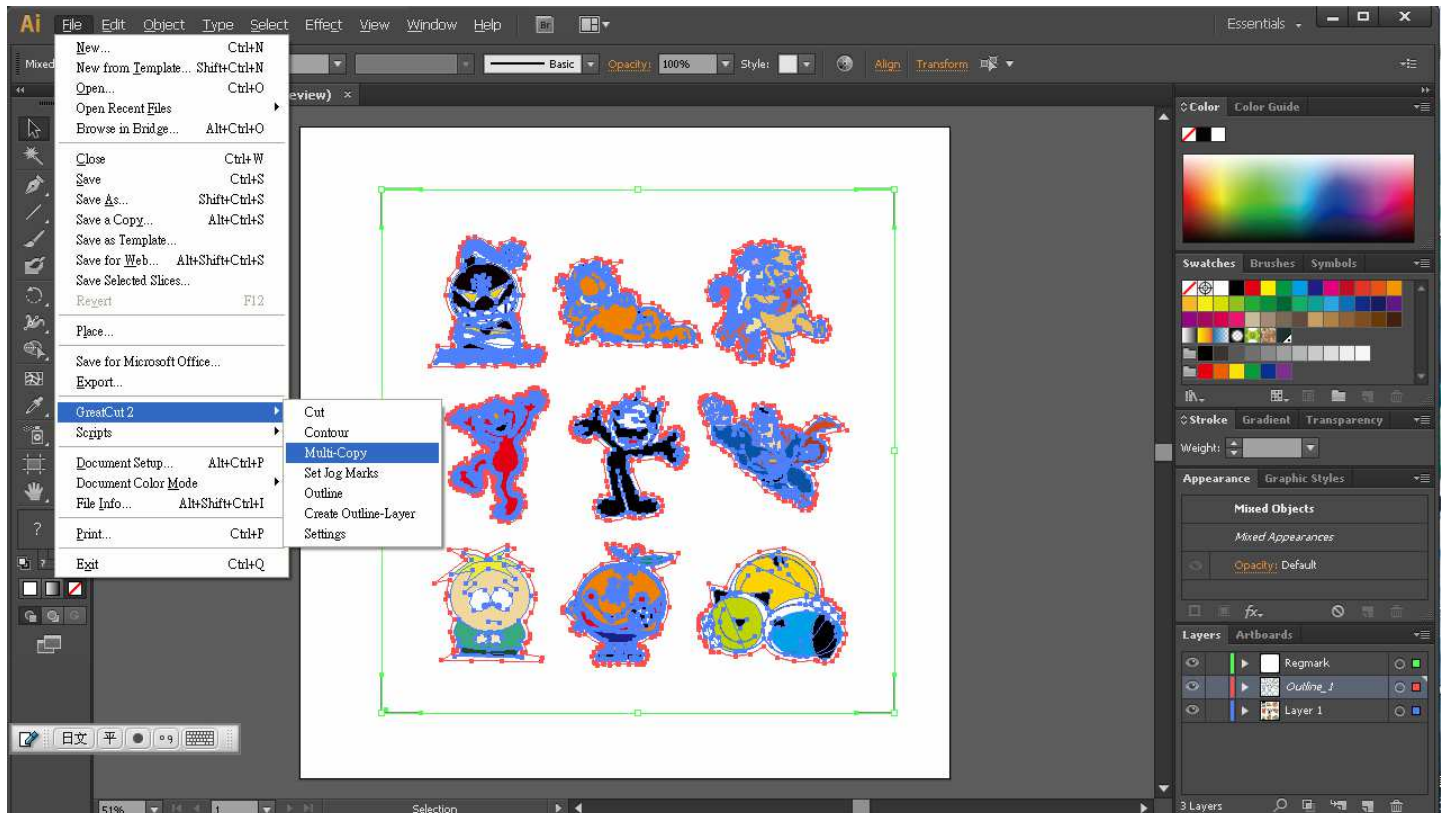
Complete the Number in X/Y (the number of copies desired on the X/Y axis) and Distance in X/Y (distance between each copy) settings then click OK.

Note: The spacing of vertical & horizontal (Offset X & Y) should be ≥ 20mm or = 0mm; 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.
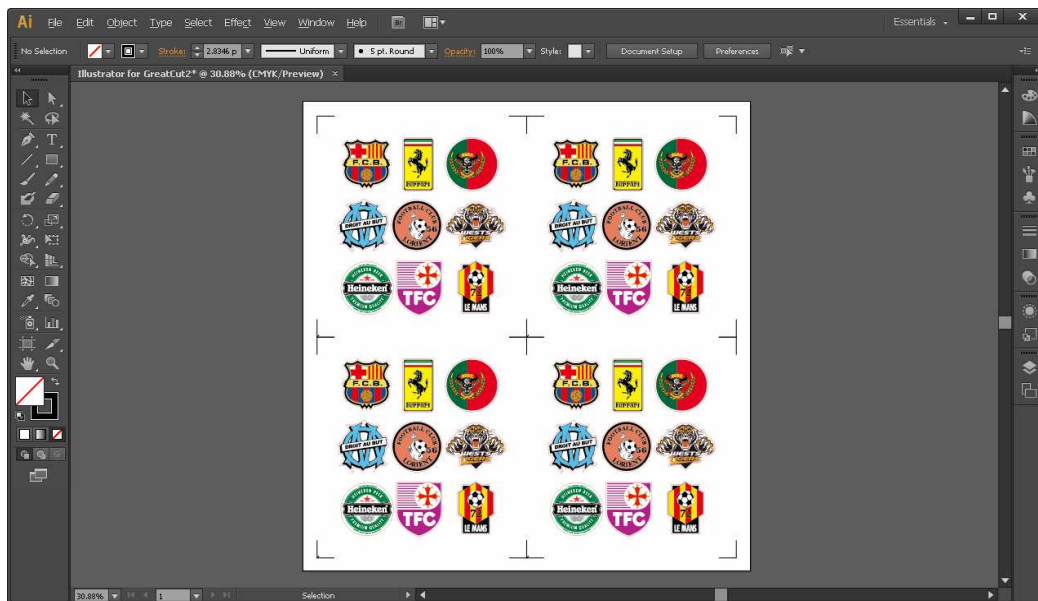
Follow the same steps in the **Output** section to output your image to GCC Cutting Plotter.

Illustrator Plug-In Instruction

AASII VBA Installer is applicable for Illustrator Version CS3, CS4, CS5, CS6.

Installation

1. Check the "AAS Illustrator Installer" folder in Jaguar IV 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.
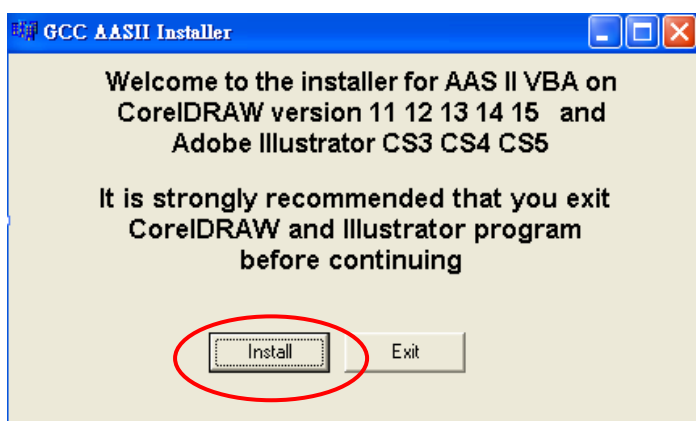
Printer Setting

Step1: Right click on the printer and select Properties to open the Printer Properties page
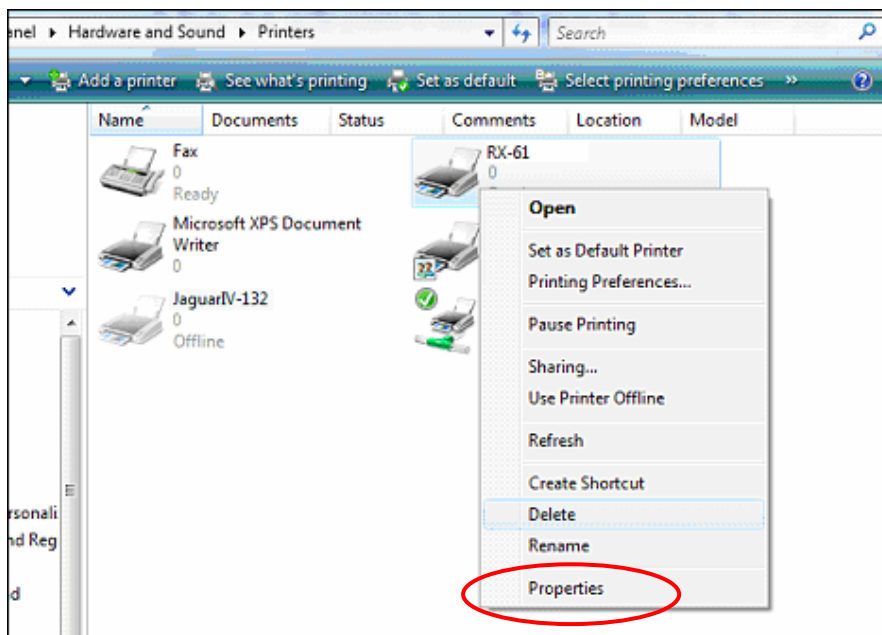
Step2: Go to the Advanced page and make sure the Enable advanced printing features box is unchecked.
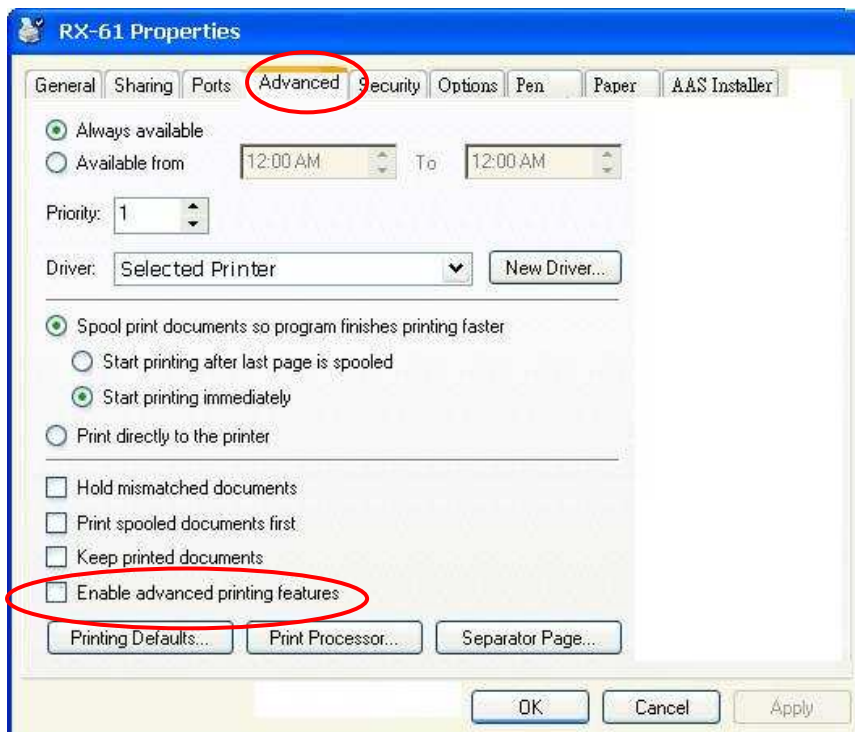
User Instructions

1) Open Illustrator.

2) Edit your image and create a contour line (Note: you must have the line width set as 0.001mm).
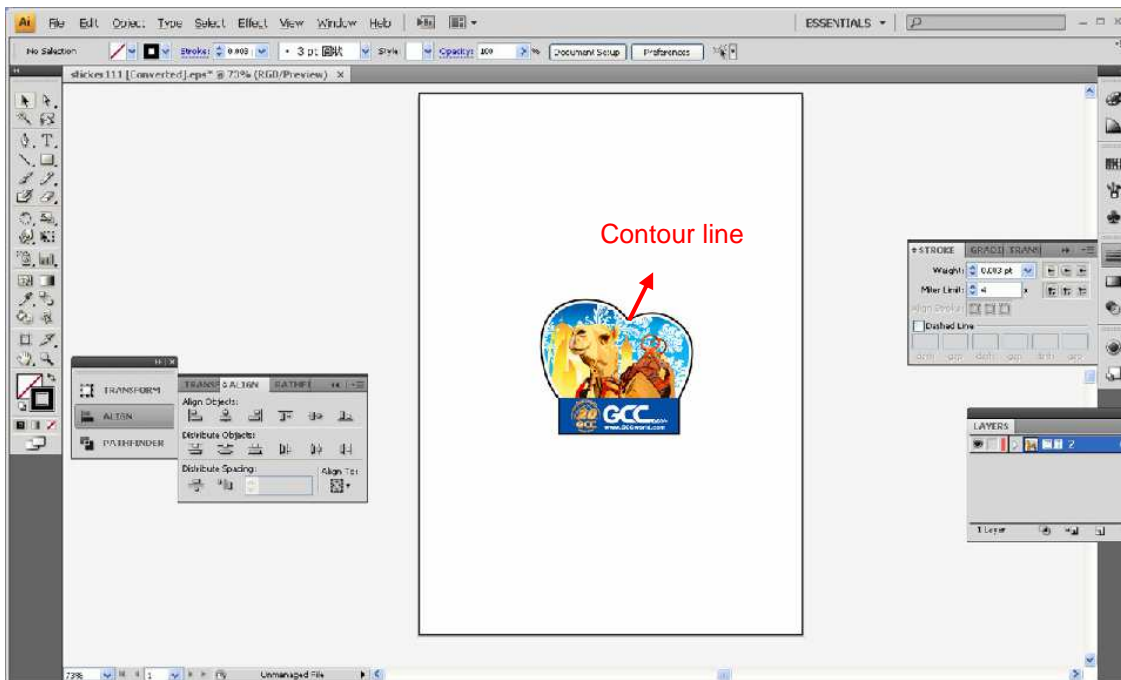
3) Click on the image and apply the AAS function (File→Scripts→_AASII_Plug_In)
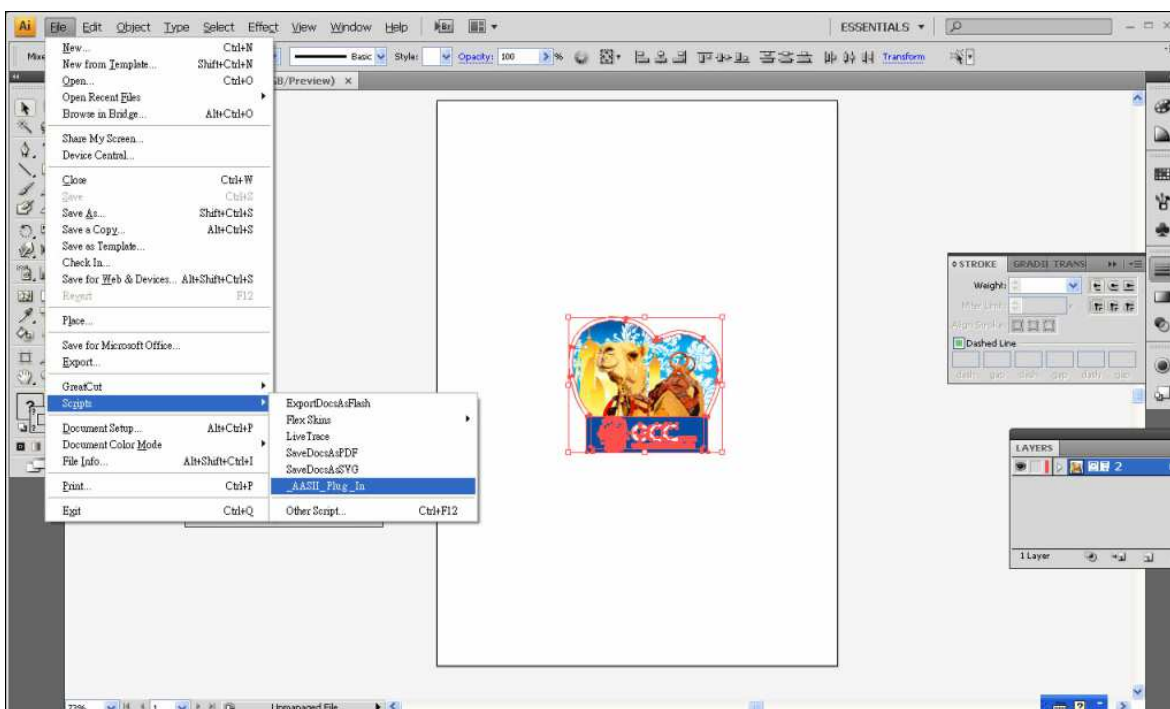
4) Select the registration marks needed
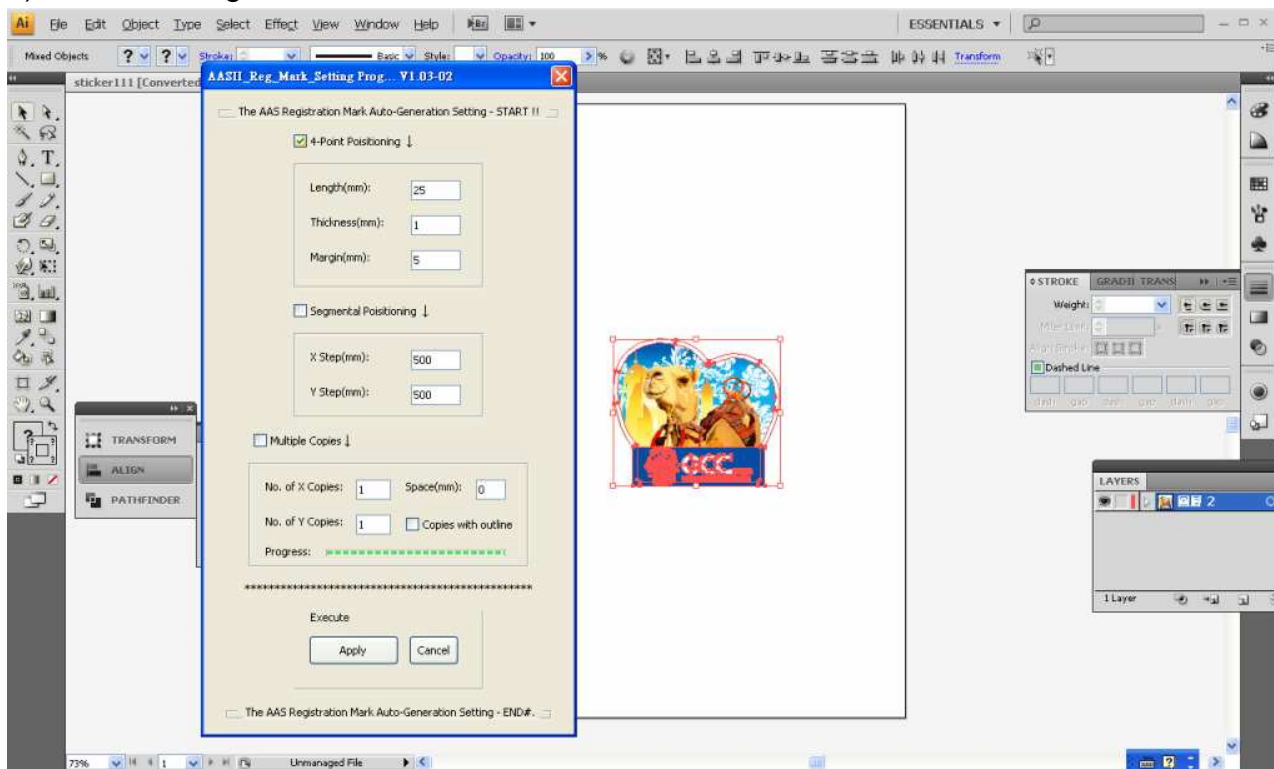
5) Three types of registration marks are introduced here: 4-Point Positioning, Segmental Positioning and Multiple Copies.
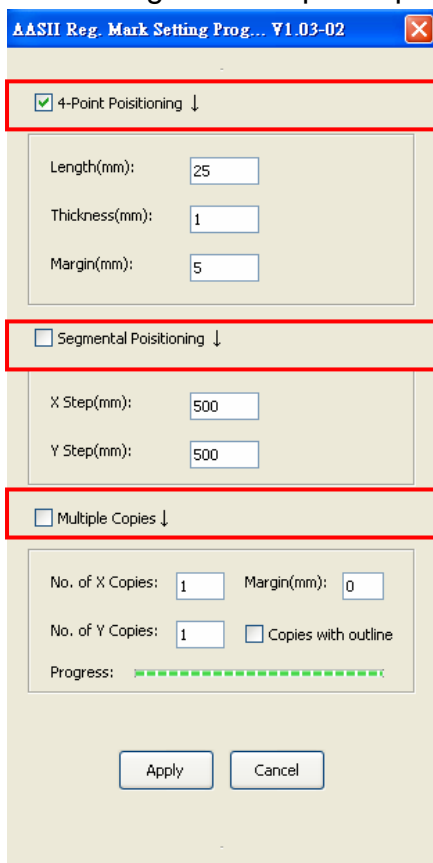
Note:

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).
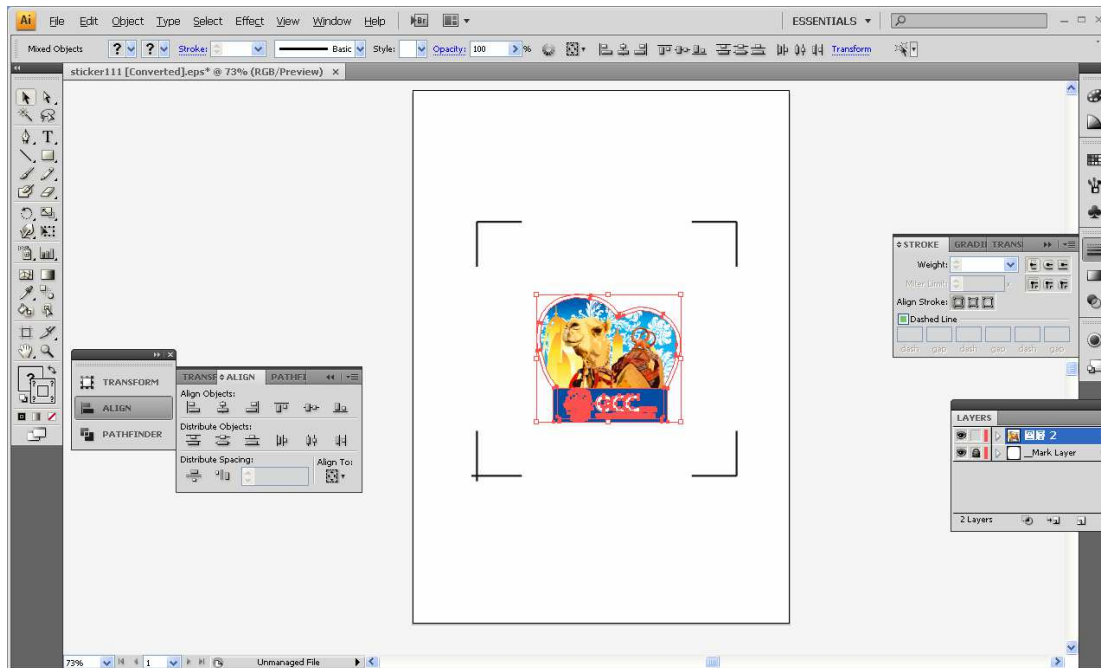
7) Click on the blank area on the page and then click "Document Setup".
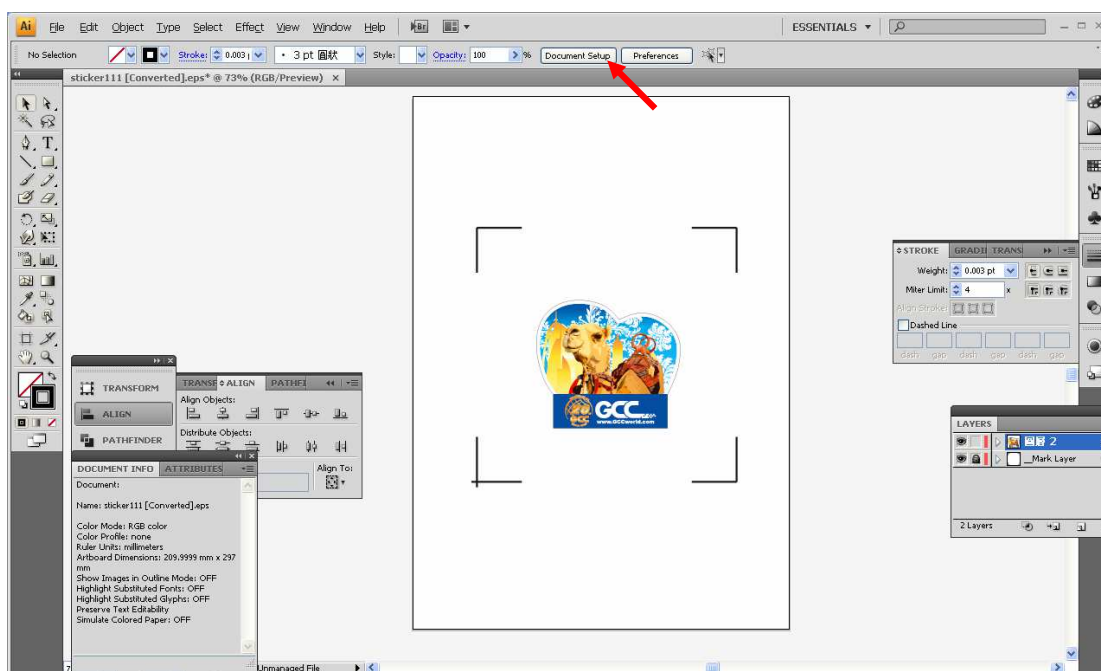
8) Hit "Edit Artboards".
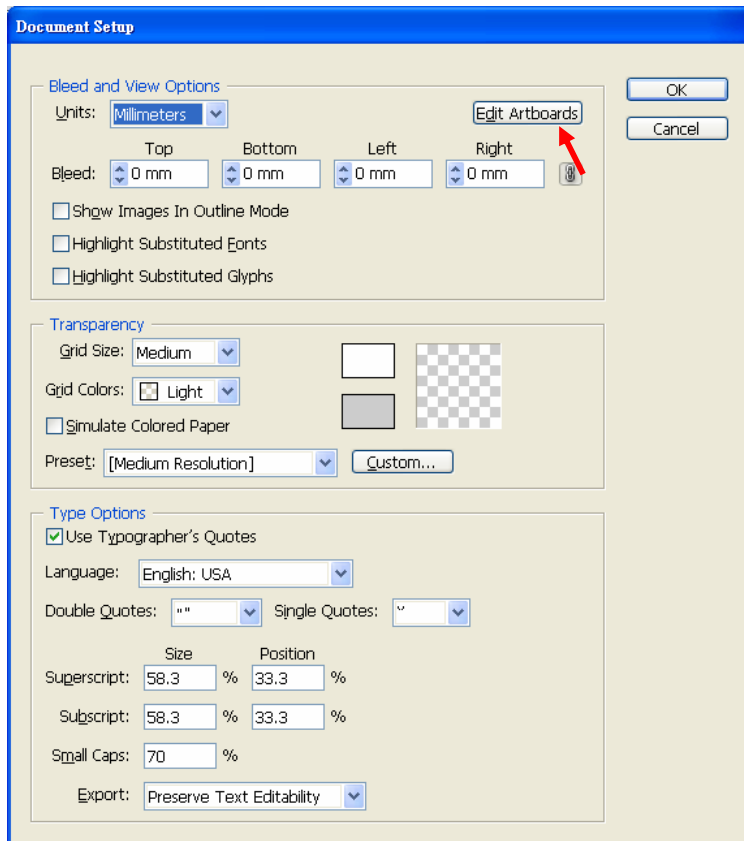
9) Click on "Presets → Fit Artboard to Artwork bounds".
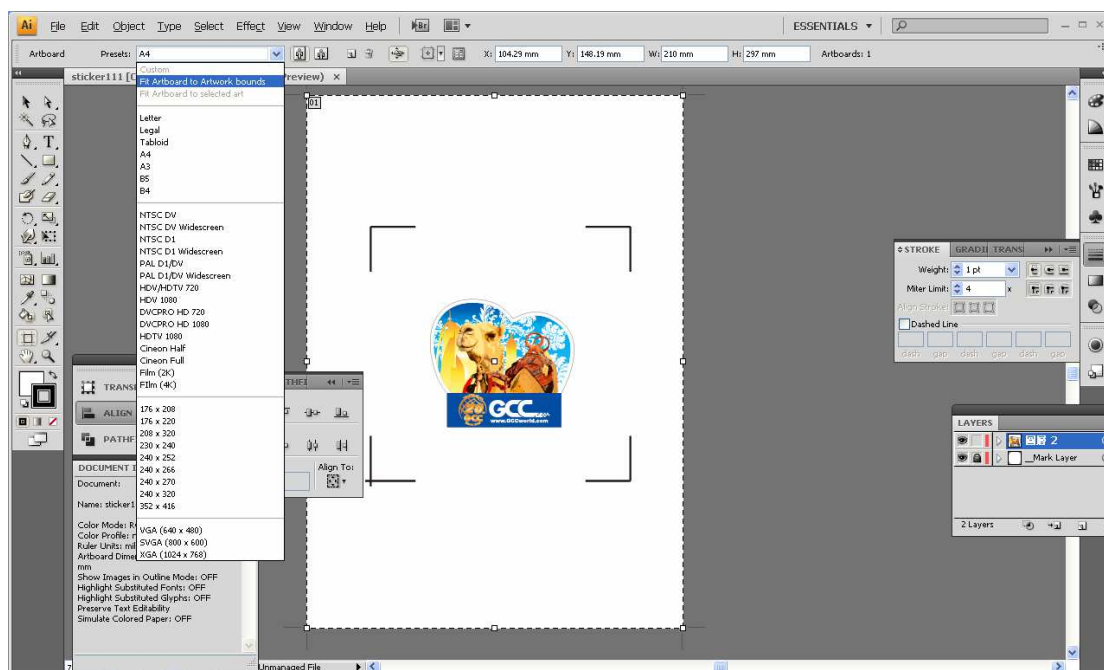
10) Please move your mouse to the tool bar on the left when step 10) is finished and then click "Selection Tool".
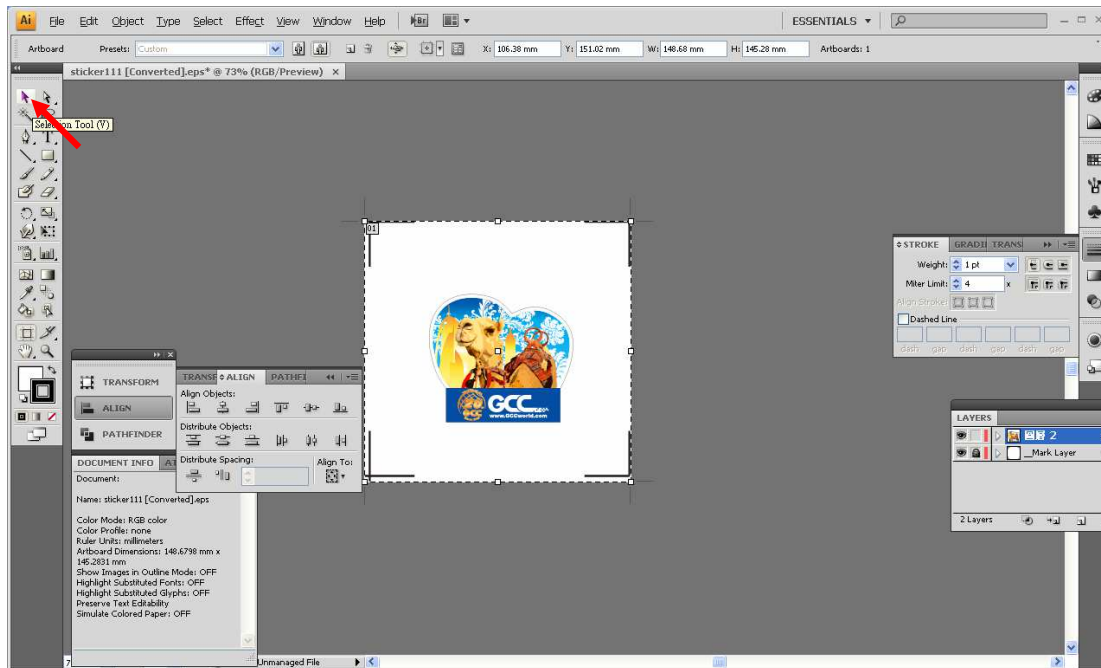
11) This will take you back to the edit mode.
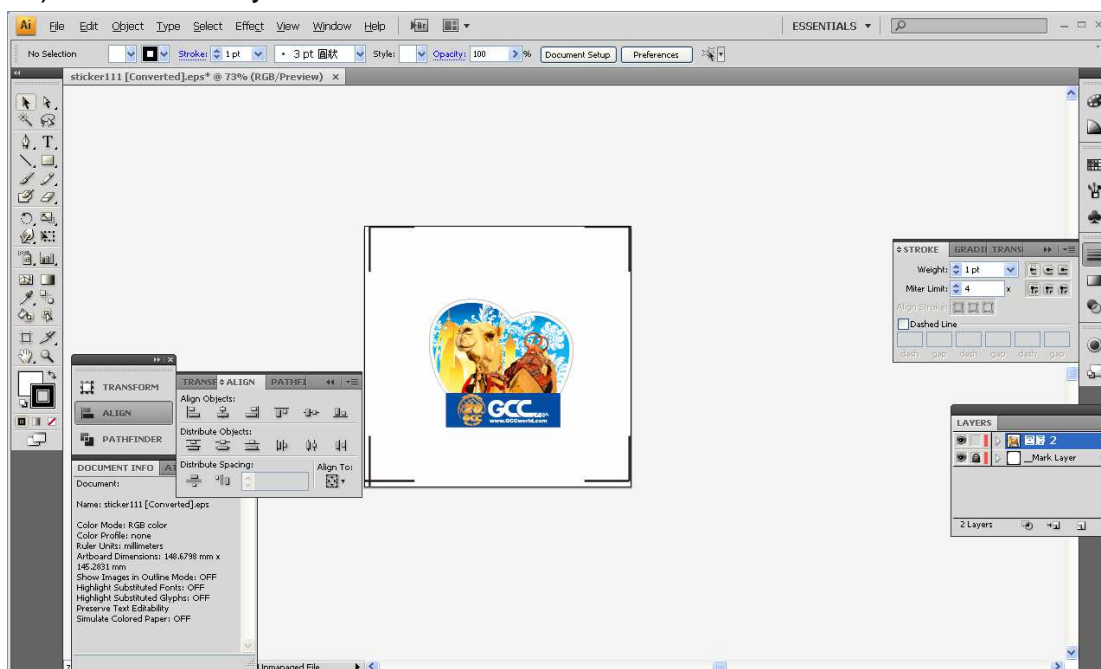
12) Print out the file with the contour line and the registration marks.
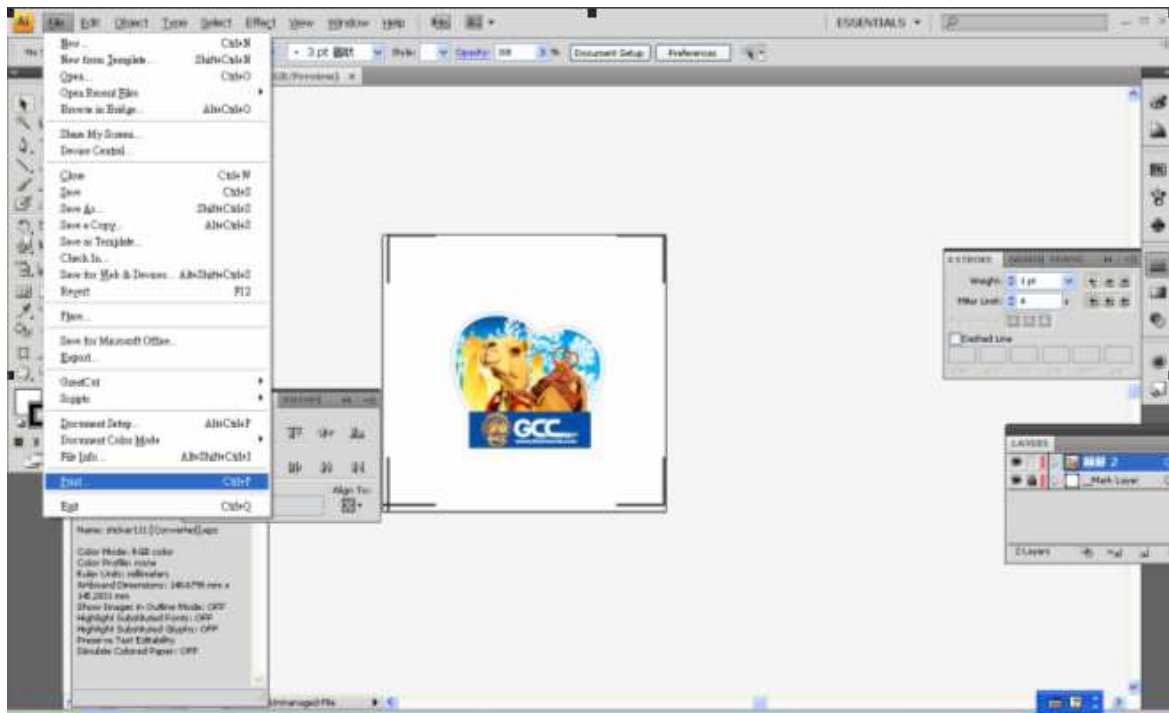
13) Place the printed file on the cutter, lower the pinch rollers and then position the carriage at the origin of the registration marks.

14) Send the file to the cutter.
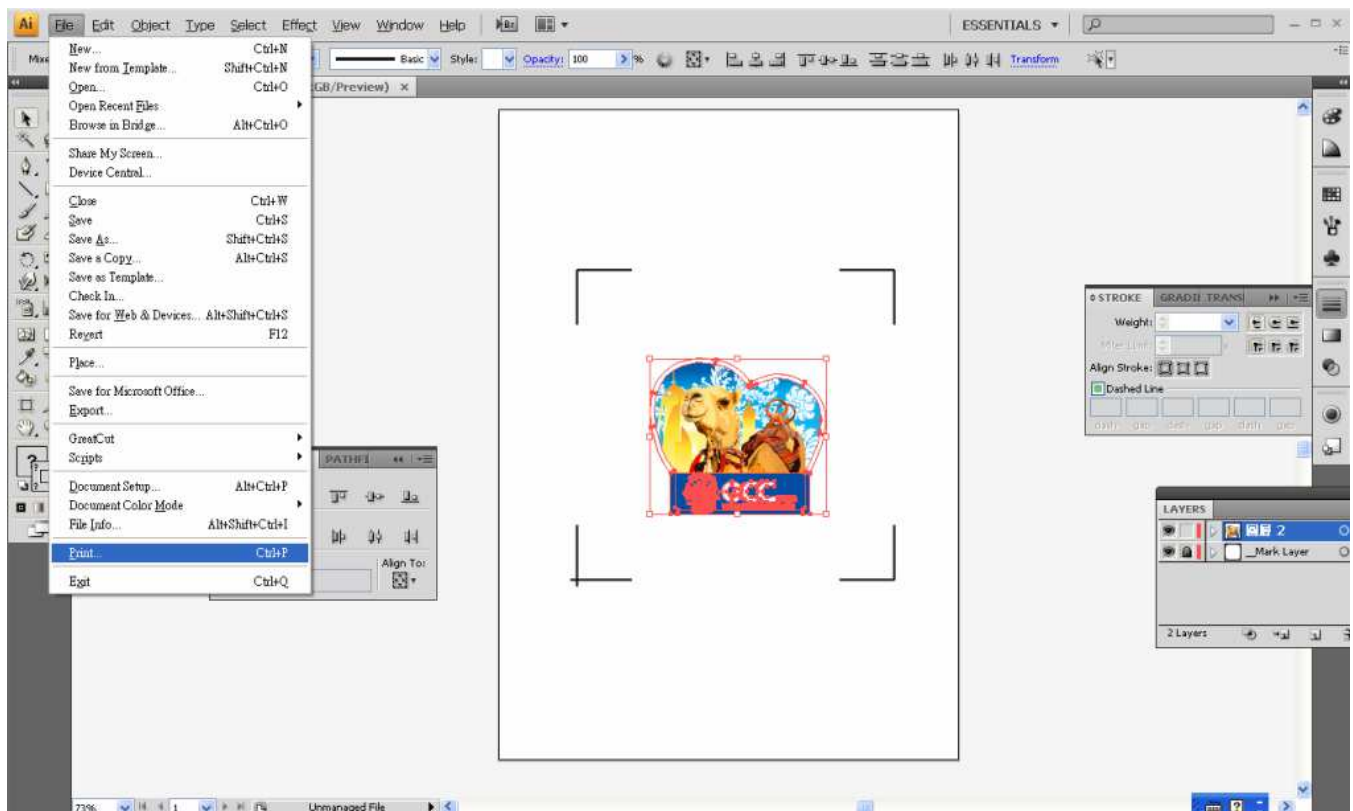
15) Select the cutter model, position the object in the bottom left corner and then click "Print".
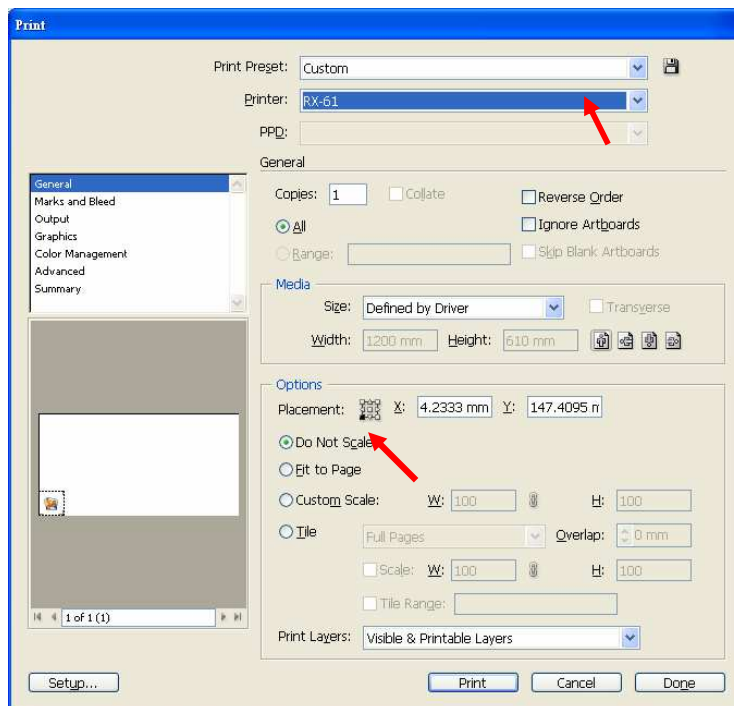
16) Your job is now completed.

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).

Area to be cut

25mm   5mm

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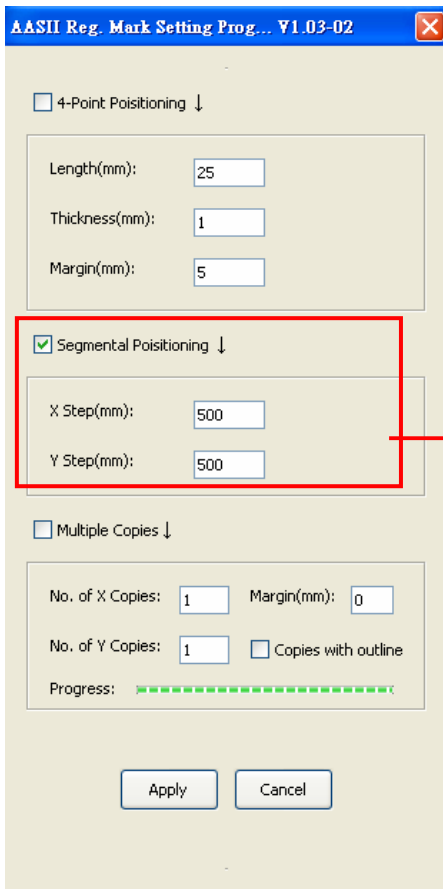
For precise cutting quality, it is suggested to select "Segmental Positioning" when you are working on an extra long or large-sized image to increase cutting accuracy.

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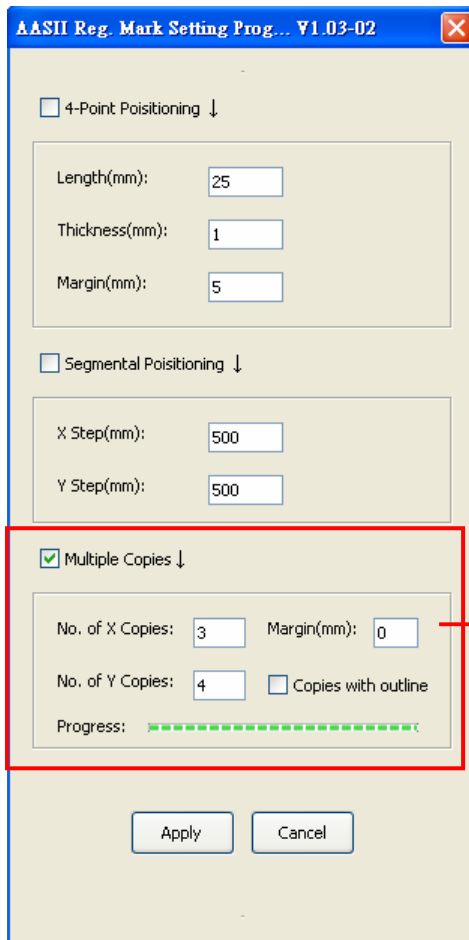
It is suggested to select "Multiple Copies" when you would like to make several copies of one image on your material to increase cutting accuracy.

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 $\geq$ 20, no negative numbers allowed

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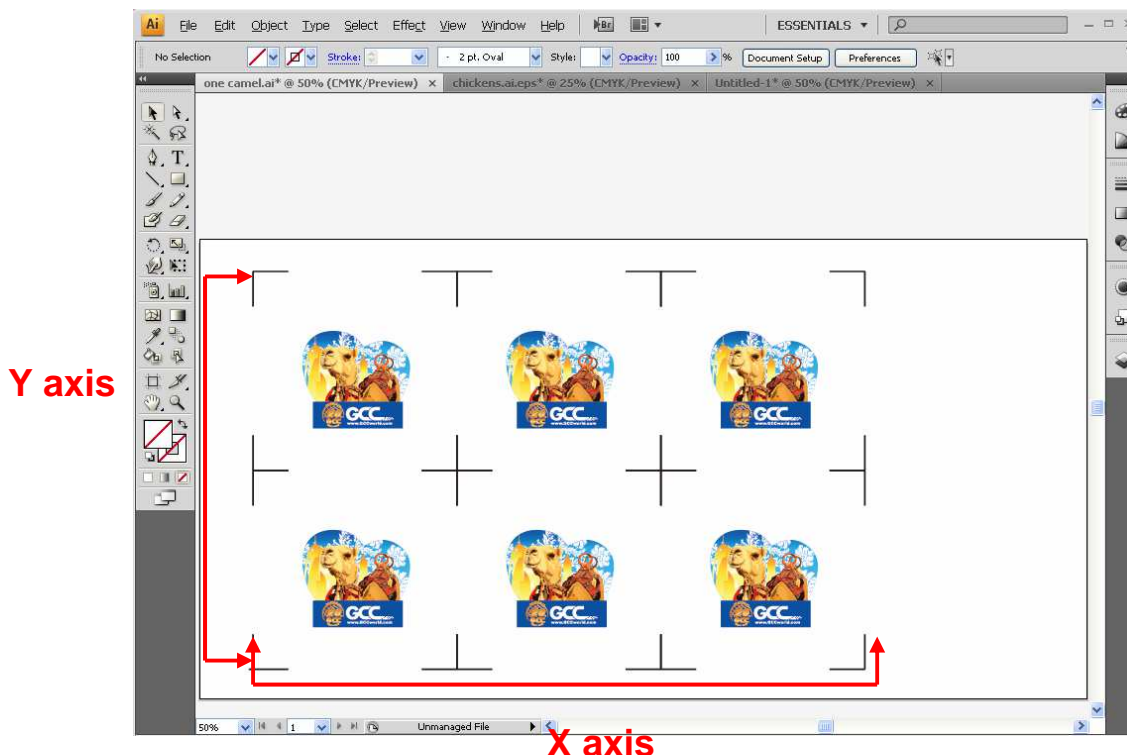
DirectCut Instruction

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.

<u>User Instructions</u>

Follow the simple steps below to complete your output settings:

<u>Step 1. Run DirectCut</u>

1) Go to File and select "Show DirectCut Tools" under "DirectCut"
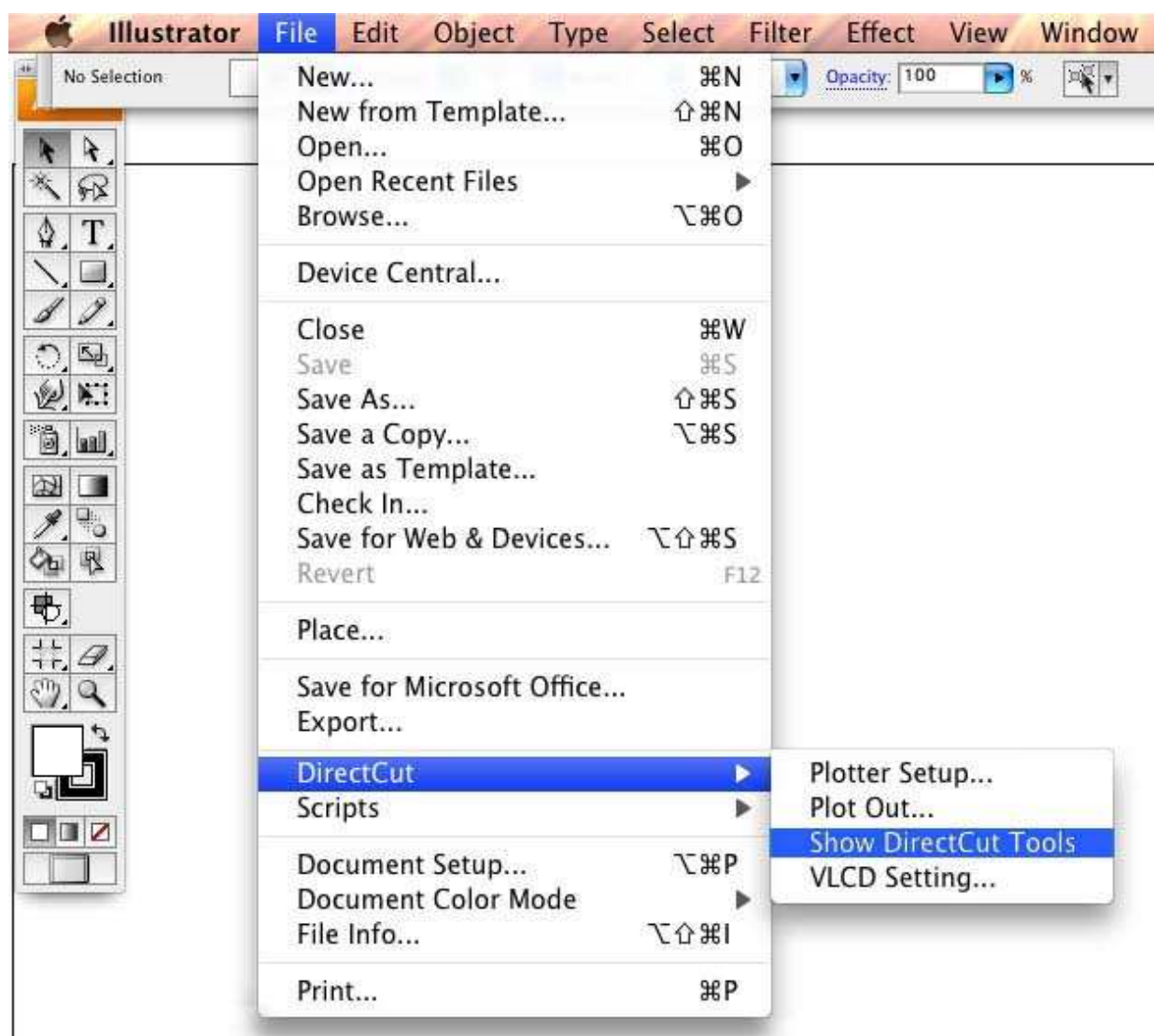
You will be presented with this dialog below:
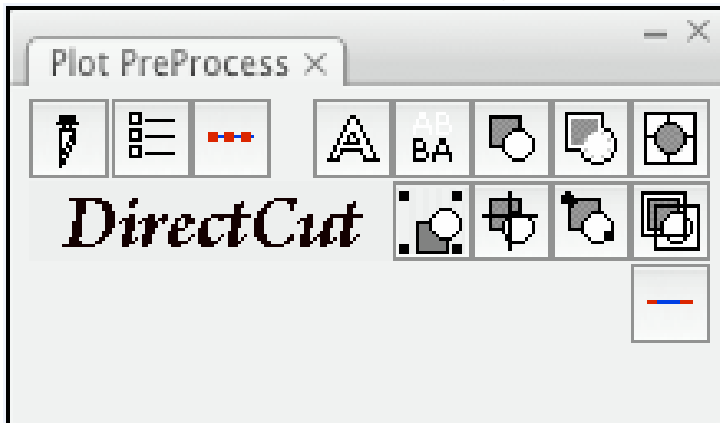
Step 2. Create/ import your image/ file.

For texts

1) Enter your texts in Adobe Illustrator, select the letters and click [Text outline] to outline the letters.
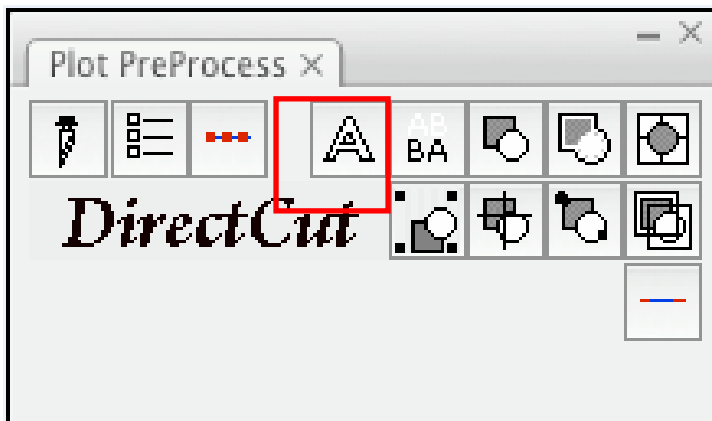
A contour line will be created for your image.
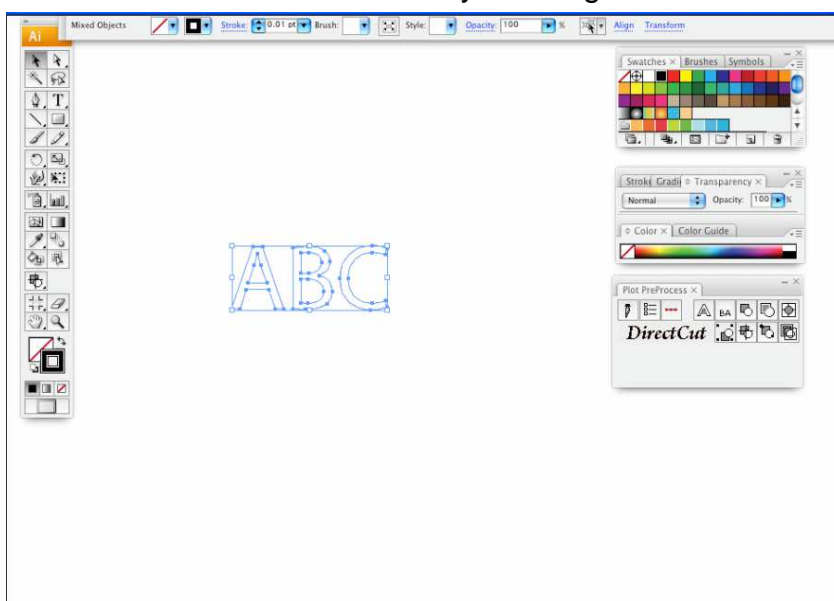
Note: The line width must be set as 0.001 mm
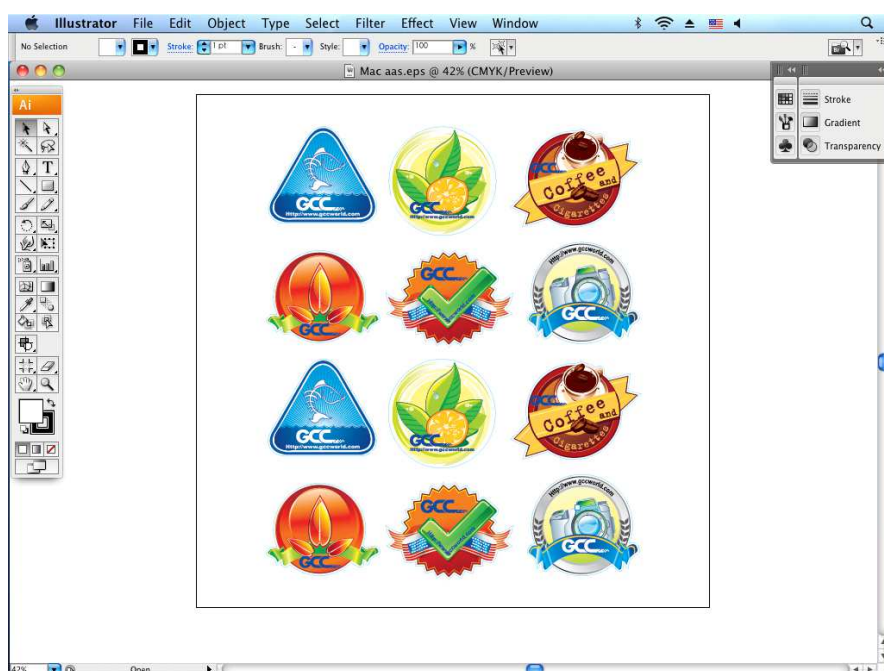
For Images

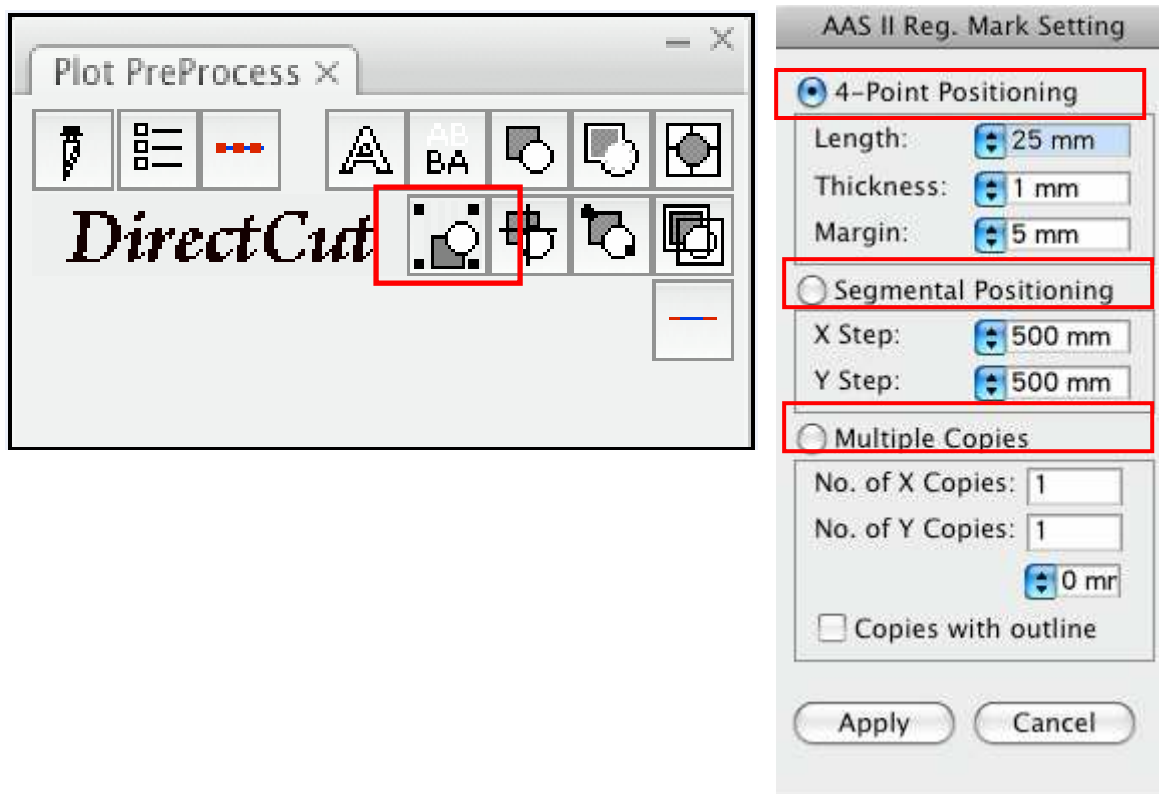1) Open a new image on Illustrator and decide the size of your material.
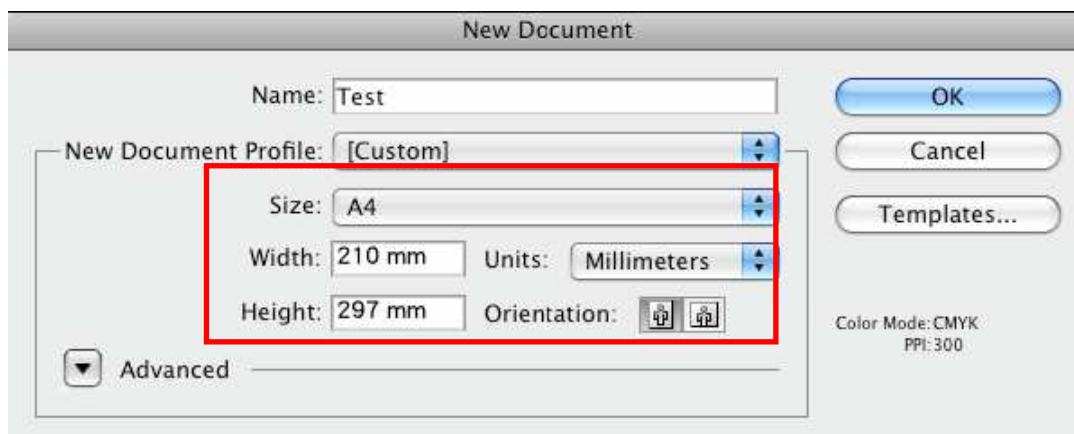
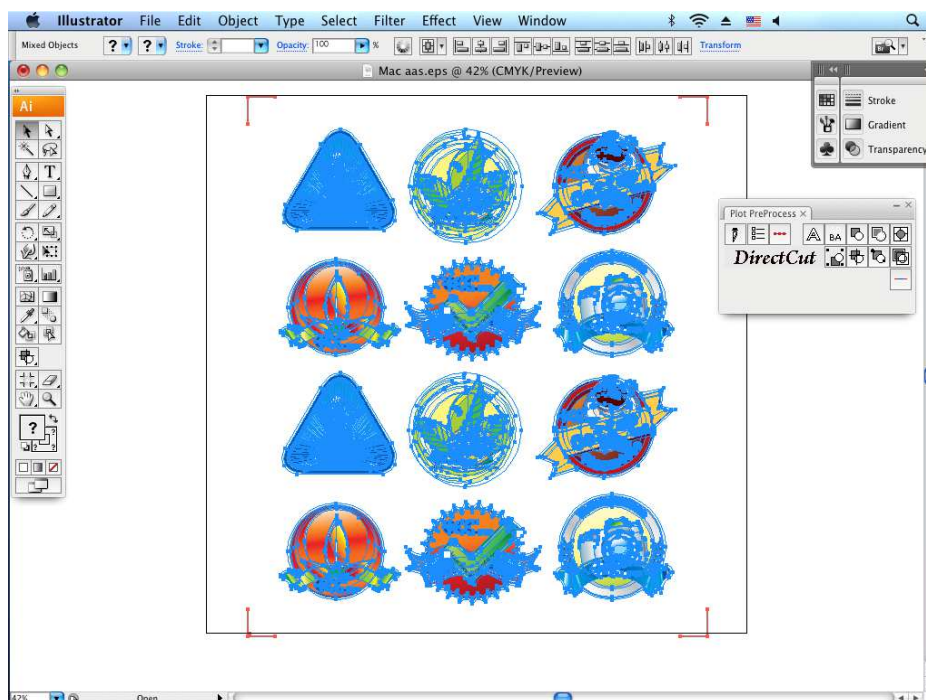2) Select the image and click [Make outline and offset] to create outlines of graphics.
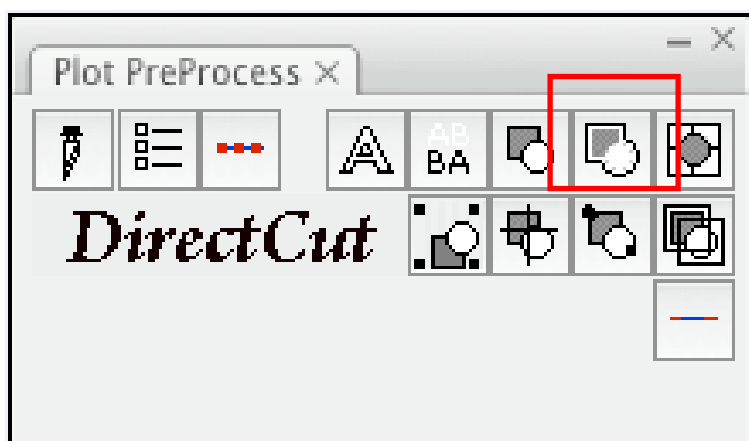
Outlines will be created for your image.

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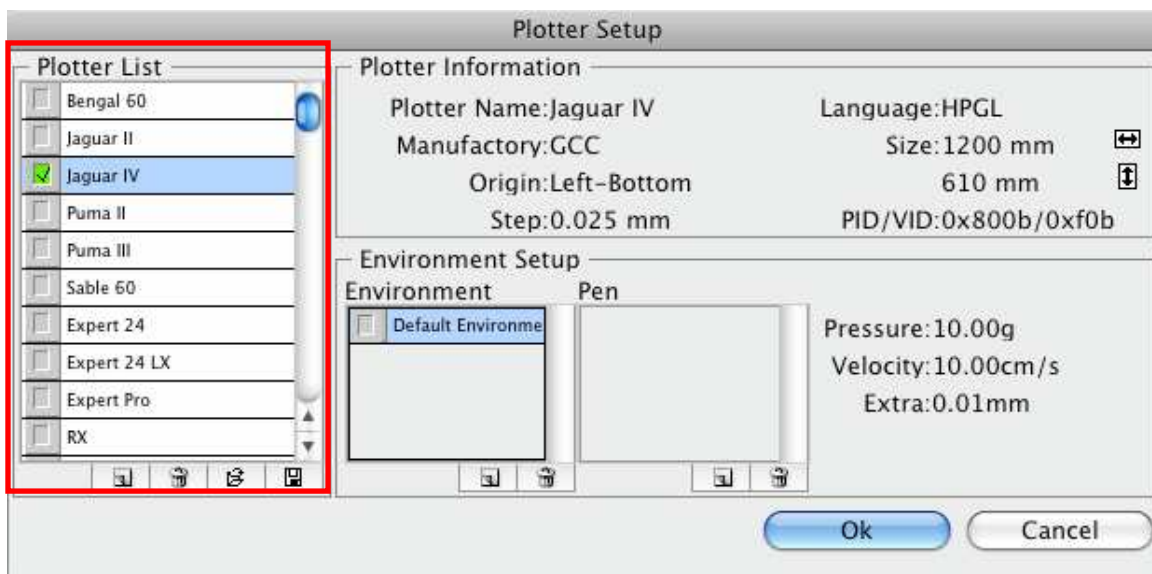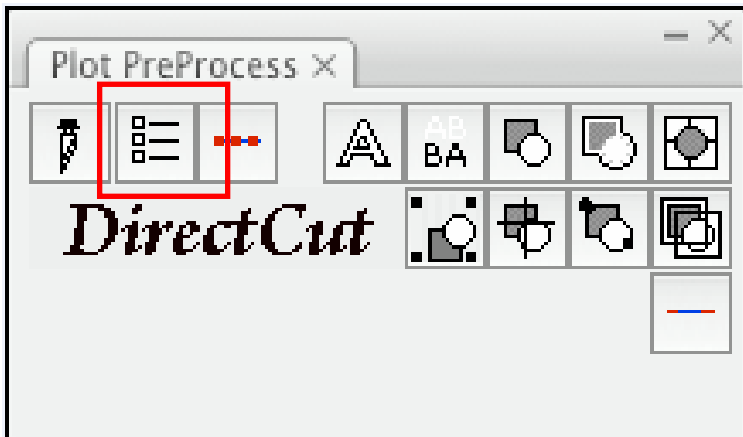

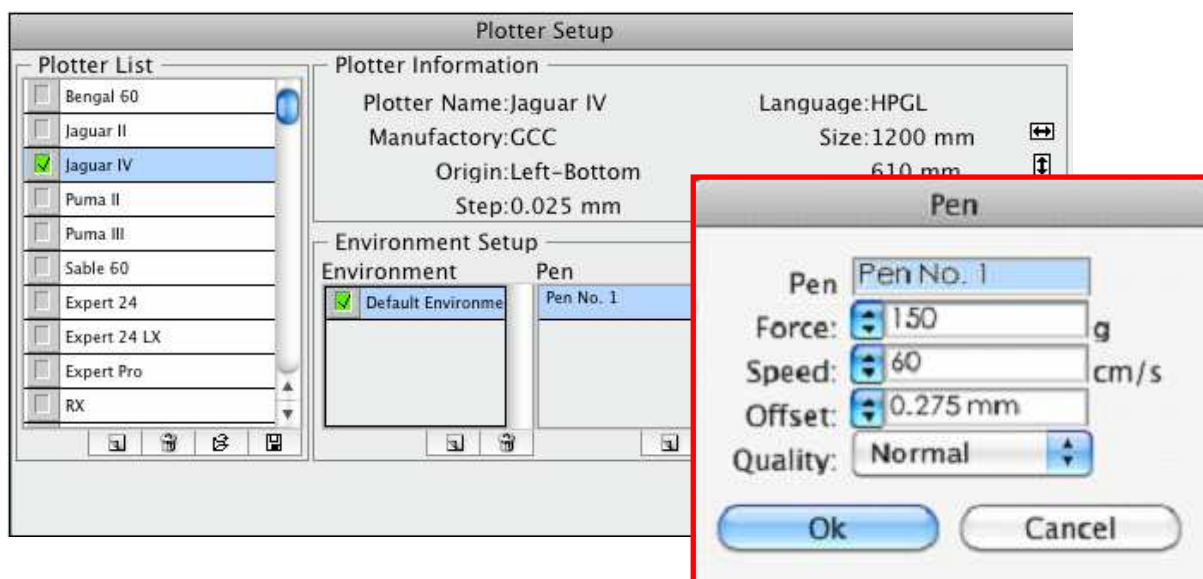The registration marks will be created as below.
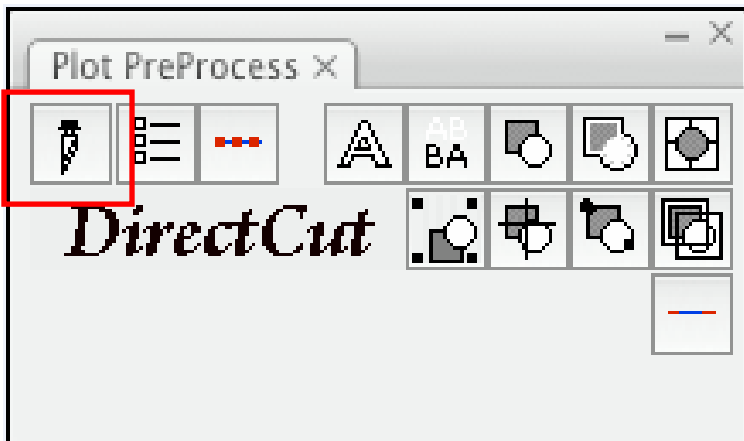
Step 3. Output

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.