



EXPERT 24 LX

CUTTING PLOTTER

User Manual

NOTICE

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

Important Information

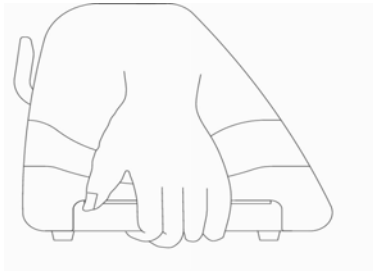
Thank you for purchasing the **Expert 24 LX Cutting Plotter**.

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

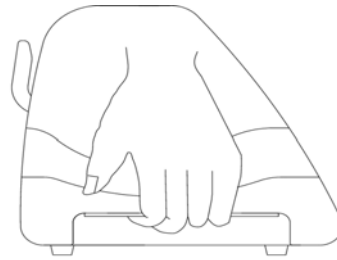


SAFETY PRECAUTIONS!

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



O (correct)



X (Incorrect)

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

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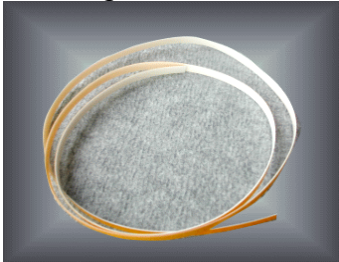




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1. General Information

1.1 Package Items

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

Item	Quantity	
Cutting Plotter	1 Set	
Accessories	1 Set	
1. Installation CD	2. AC Power Cord	3. Desktop Support Brackets
		
4. Cutting Pad	5. USB Cable	6. RS-232 Cable
		
7. Tweezers	8. Paper Slicer	
		

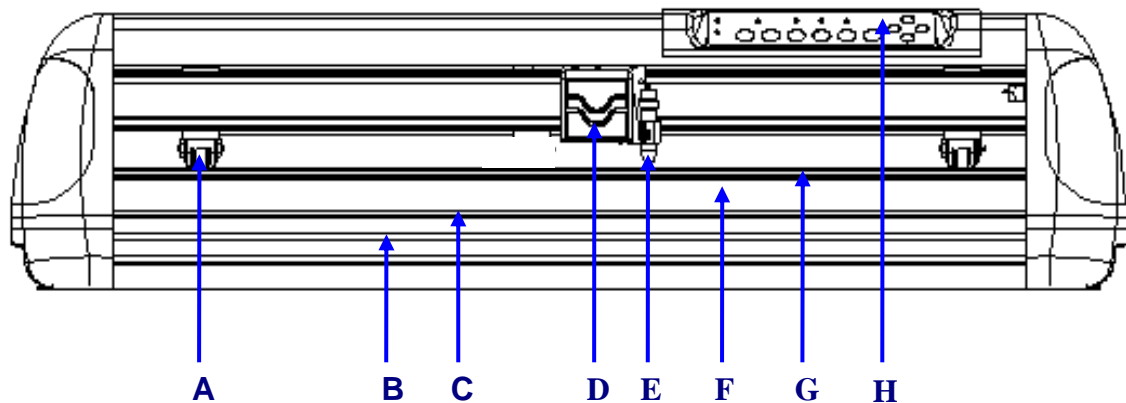
1.2 Product Features

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

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

1.3 The Appearance (EX-24 LX)

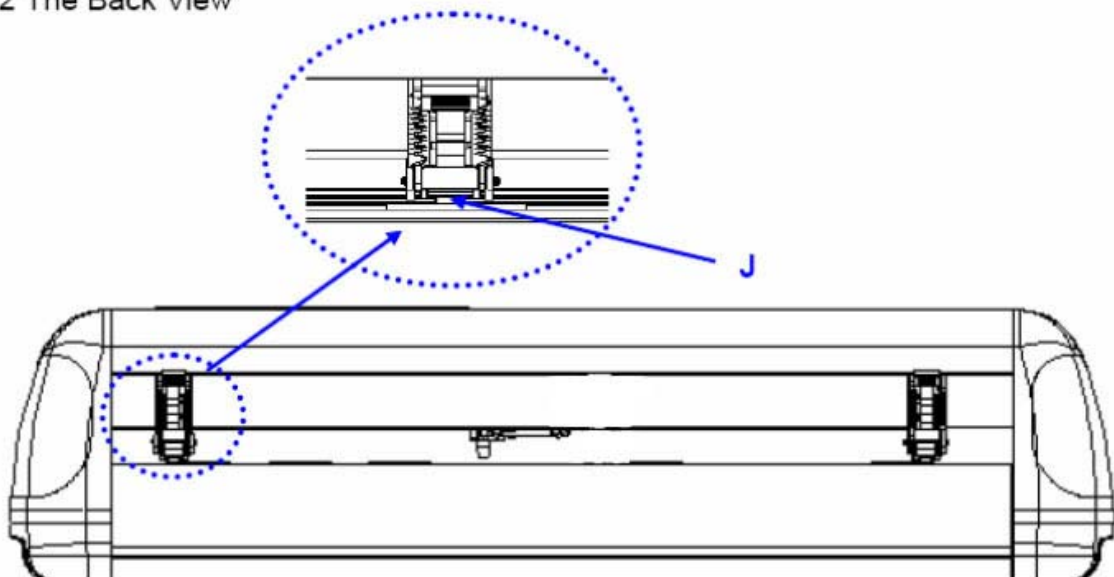
1.3.1 The Front View



【Figure 1-1】

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

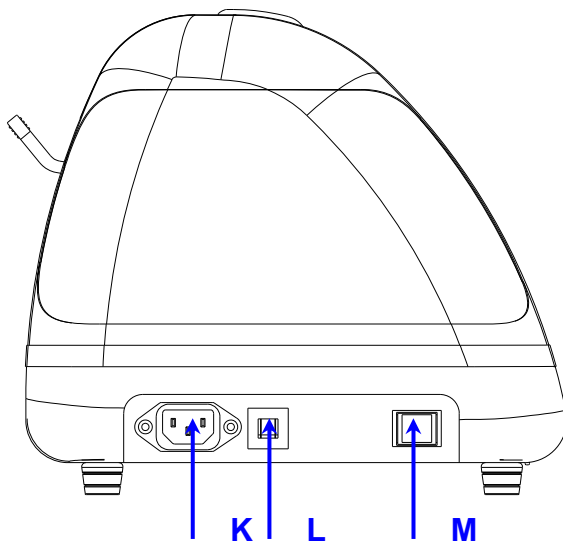
1.3.2 The Back View



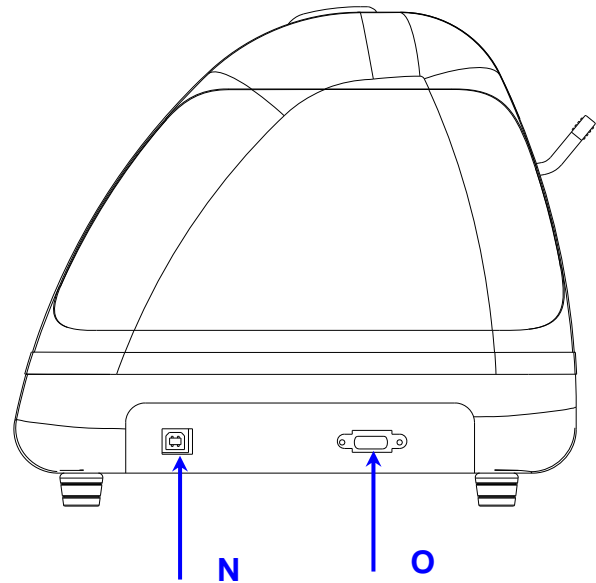
【Figure 1-2】

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

1.3.3 The Side Views



【Figure 1-3】



【Figure 1-4】

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

2. Installation

2.1 Precaution

Please read below information carefully before you start installation.

Notice 1

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

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

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

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

Notice 3 Connecting the Power Supply

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

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

2.2 Stand Installation

2.2.1 Stand Installation

Please follow the procedures below for assembling the stand.

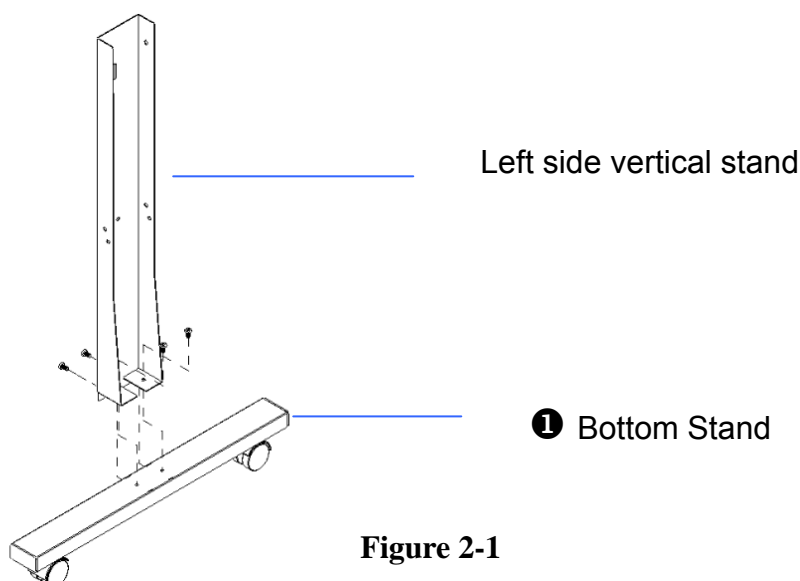
Step 1 Please examine the supplied items in the accessory box of the stand carton before you install:

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

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

Step 2

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



Step 3

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

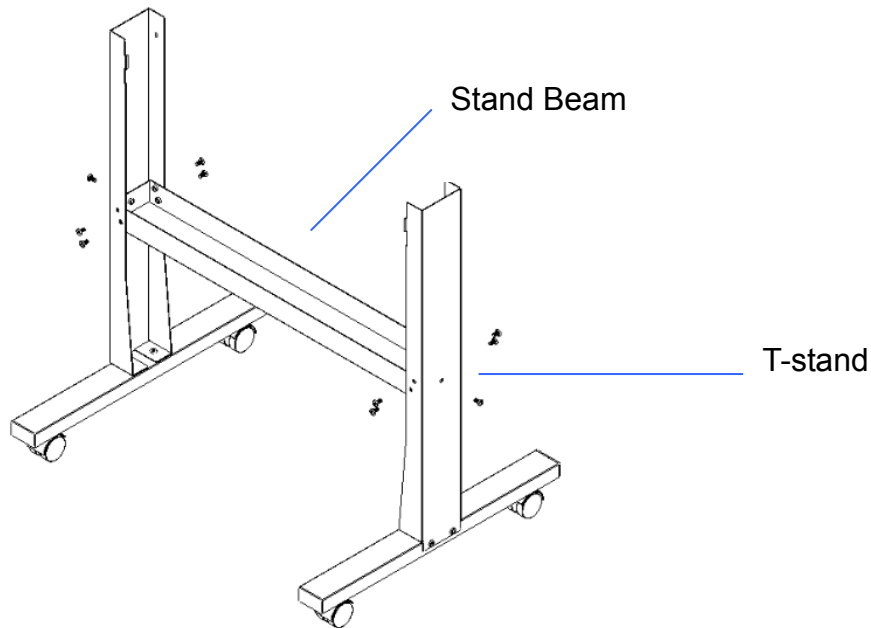


Figure 2-2

Step 4

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

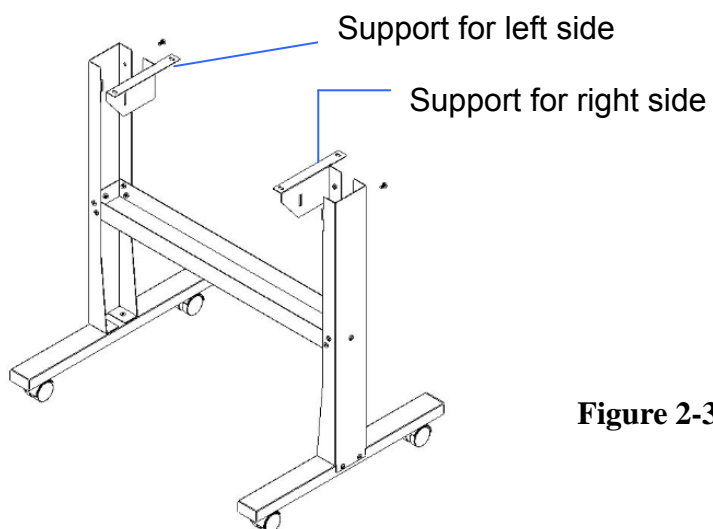
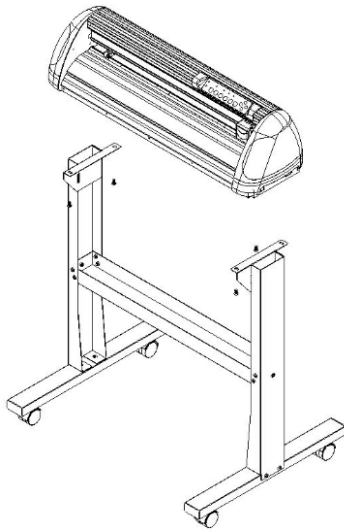


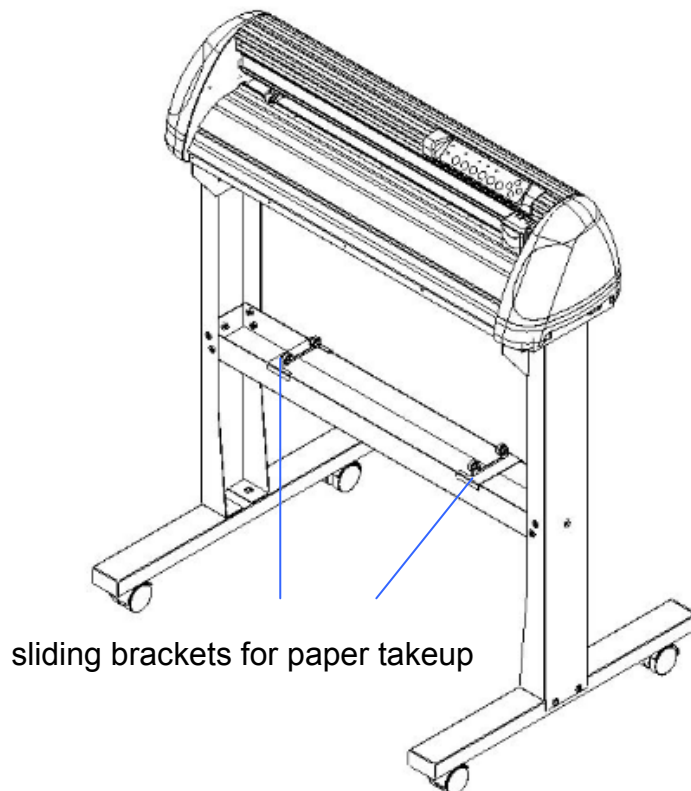
Figure 2-3

Step 5

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

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

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

**Figure 2-5**

2.3 Blade Installation

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

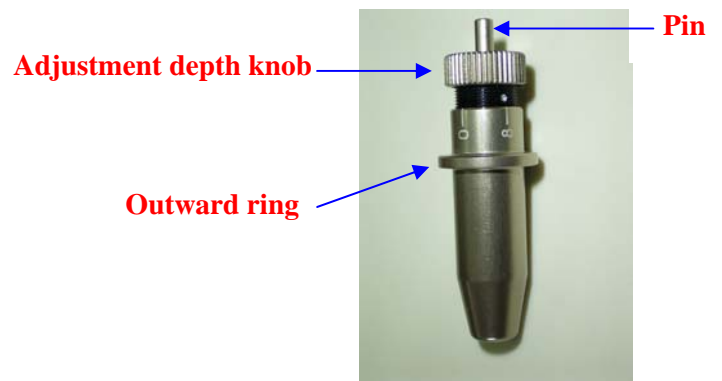


Figure 2-6

Step 1

Install blade (Figure 2-7).



Figure 2-7

Step 2

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



Figure 2-8

Step 3

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



Figure 2-9

Tips:

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

Step 4

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



Figure 2-10



Figure 2-11

Step 5

Use the reversing steps to remove the blade holder.

Step 6

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

Caution

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

Tips - When to replace a new blade:

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

2.4 Media Loading

2.4.1 Loading the Sheet Media

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

Step 1

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

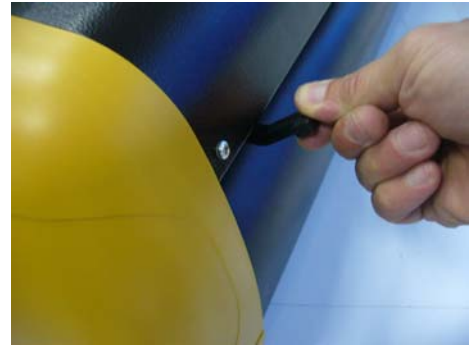


Figure 2-12

Step 2

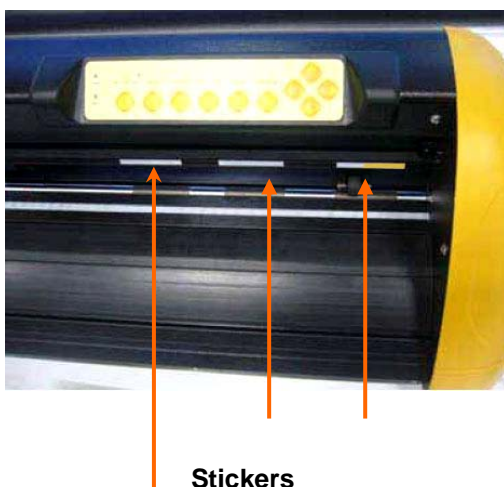
Load your media on the platen and slide it under the pinch rollers from either the front side or the backside. The **alignment rulers** on the platen extension will help you to adjust the media precisely (Figure 2-13).



Figure 2-13

Step 3

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



Stickers

Figure 2-14

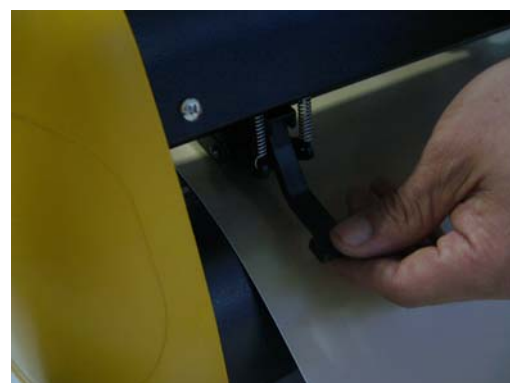
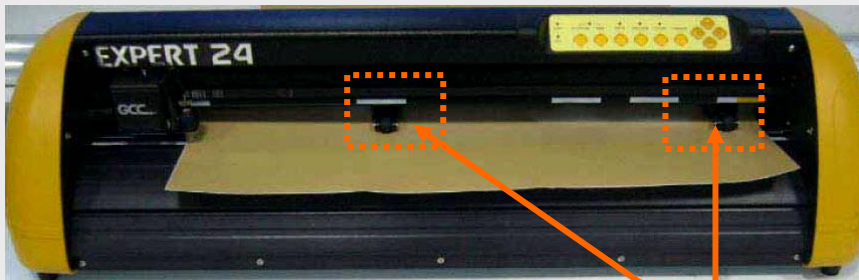


Figure 2-15

CAUTION!!

- ✓ Make sure the Pinch Rollers are set to right positions.
- ✓ Position the Pinch Rollers at the right and left sides of media.

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

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

Step 5

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

Note:

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

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

2.4.2 Loading the Roll Media

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

2.5 Cable Connection

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

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

2.5.1 USB Interface

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

■ USB driver installation

Caution!!

✓ If you are using Windows 2000 / XP / Vista / 7 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

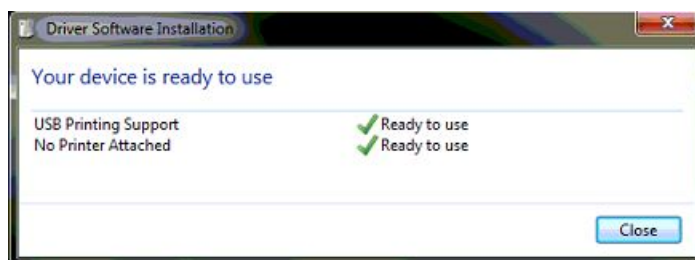
1. Connect the USB connector to the machine and then USB driver will installed automatically.

NOTE

Check that the USB mode option is set to Common USB Mode before running the installation.

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.**

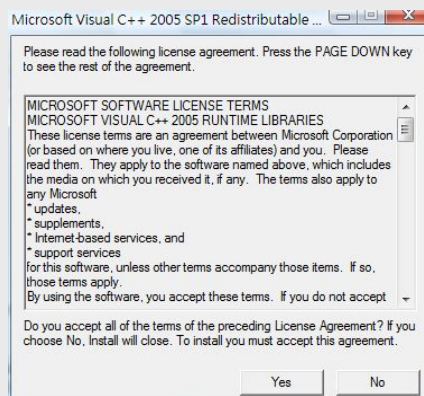


- (2) Choose the model you want to install from the driver list and click on either the 32 bit or 64 bit driver installation depending on the operating system installed on your computer to start the installation. (The Expert Pro model is used as an illustration in the following steps.)

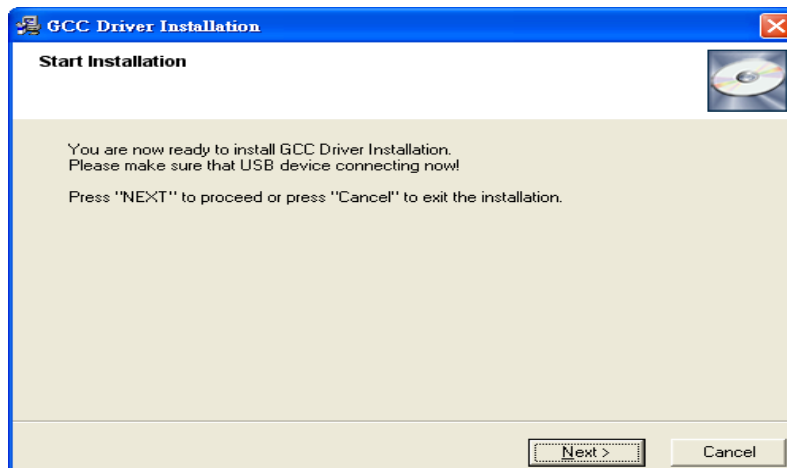


NOTE

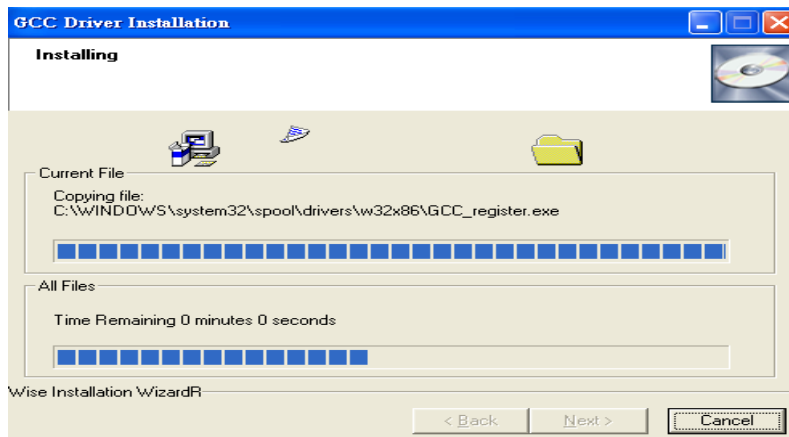
If you use the Windows 7 / Vista 64 bit program, please note that a pop-up window will be shown upon the initial installation as shown below:



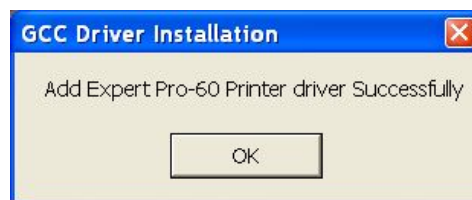
Click "Yes" to continue.



(3) Click “Next”



(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!

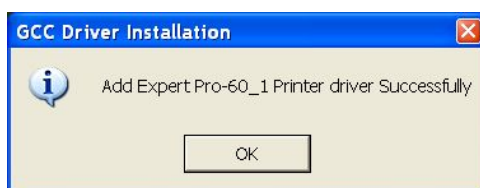


Note:

(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.



2.5.2 How to switch the USB mode?

- Step 1. Press ON/Offline button to switch to the “offline” status.
- Step 2. Press “Pause” and “Origin Set” button at the same time and you will find the current status of the USB mode indicated by the three LEDs as shown below.

◎ Flashing ● LED on

Operation System	Repeat	Data Clear	Cut Test
Common USB Mode	●	●	◎
GCC USB Mode	●	◎	●

A. 【Switching to GCC USB mode】

If you want to switch the USB mode from Common USB mode to GCC USB mode, please press the “Data Clear” button and then press the “origin set” button to finish your set up.

B. 【Switching to Common USB mode】

If you want to switch the USB mode from GCC USB mode to Common USB mode, please press the “Cut Test” button and then press the “origin set” button to finish your set up.

- Step 3. Please re-connect the USB cable and complete the installation.

2.5.3 RS-232 Interface

■ Connecting to the RS-232 (Serial) Port

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

3. Operation

3.1 The Control Panel

3.1.1 The Outline of control panel

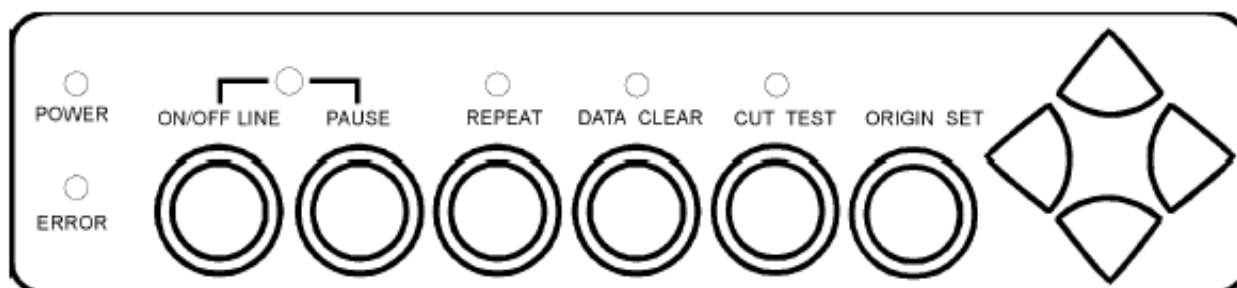


Figure 3-1

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

3.1.2 Reset Origin

Note:

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

Step 1 Move the carriage to a new position.

Step 2 Press the ORIGIN SET button to reset origin.

3.1.3 Cut Test

Note:

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

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

Step 2 Move the carriage to a preferred position.

Step 3 Press CUT TEST button to perform.

3.1.4 Repeat

Note:

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

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

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

3.2 VLCD

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

3.2.1 Installation

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

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

Note:

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

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

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

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

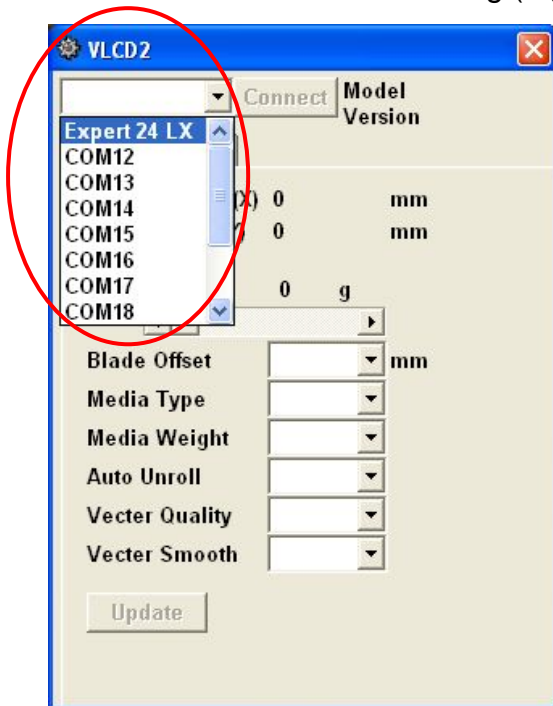


Figure 3-2

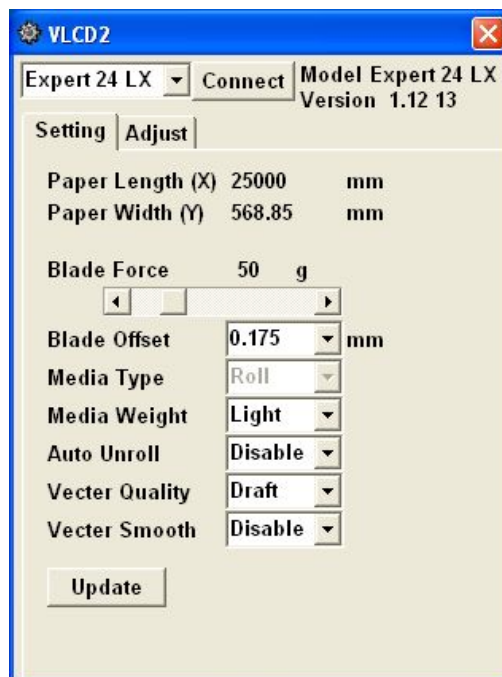


Figure 3-3

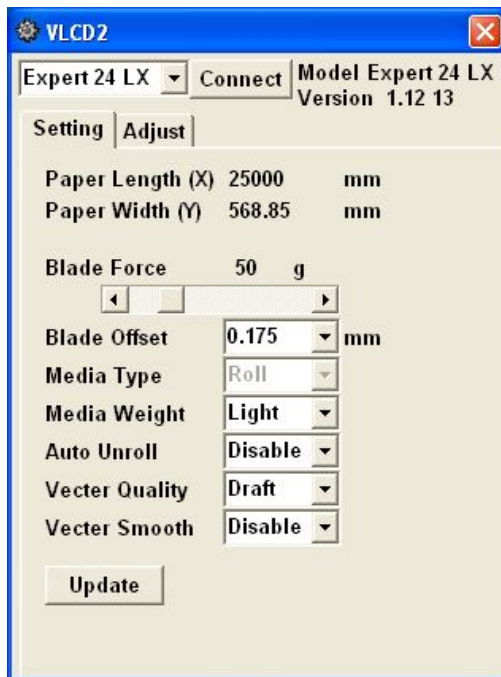
3.2.2 Functions of VLCD

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

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

■ Poll Size

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



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

Figure 3-4

■ Force

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

■ Media Weight

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

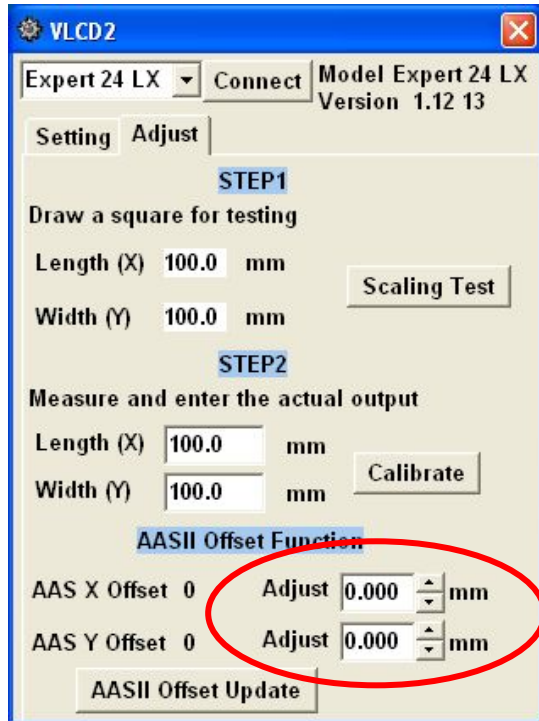
■ Offset

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

■ AAS Offset

To set or modify AAS offset value.

You can refer to “5.3 Printer Test” for more details.



■ Auto Unroll

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

■ Update Setting

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

3.3 File Uploader

3.3.1 Installation

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

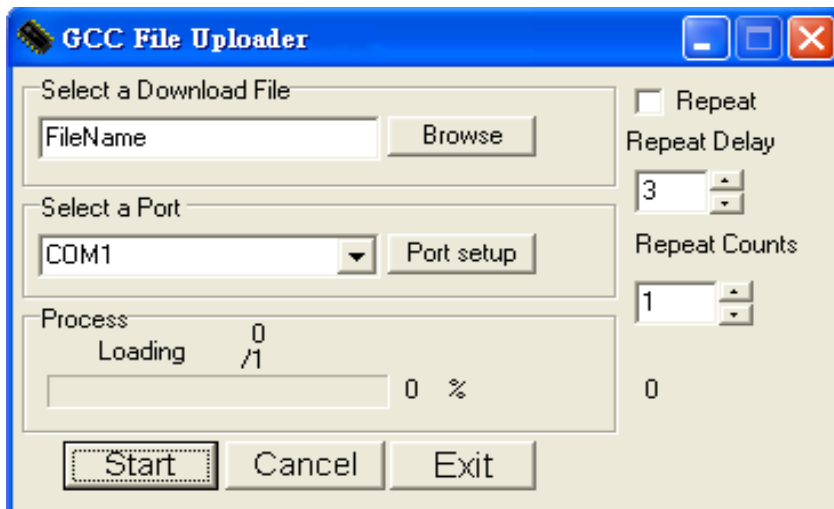


Figure 3-5

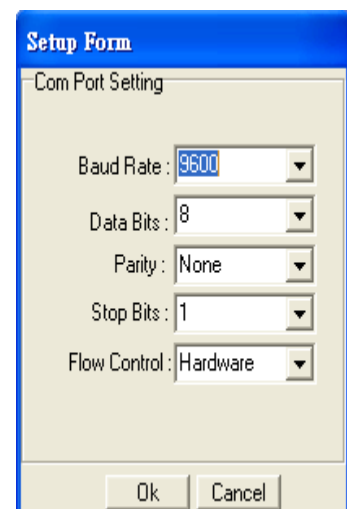


Figure 3-6

3.3.2 Functions of File Uploader

■ Port setup

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

■ Repeat

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

3.4 Data Transmission

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

- Option 1:** With proper interface settings, the data can be transmitted from your application software package to the cutting plotters directly.
- Option 2:** Most cutting software packages are able to emulate **HPGL** or **HPGL/2** commands, therefore. As long as the file is **HPGL** or **HPGL/2** format, the cutting plotter can output the data precisely.

4. Basic Maintenance

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

4.1 Cleaning the cutting plotter

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

[Precaution in Cleaning](#)



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

[Recommended Methods](#)

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

4.2 Cleaning the Grid Drum

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

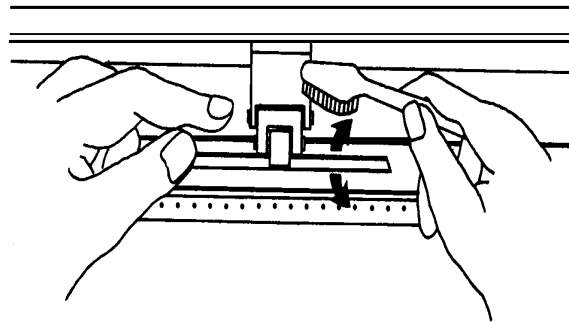


Figure 4-1

4.3 Cleaning the Pinch Rollers

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

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

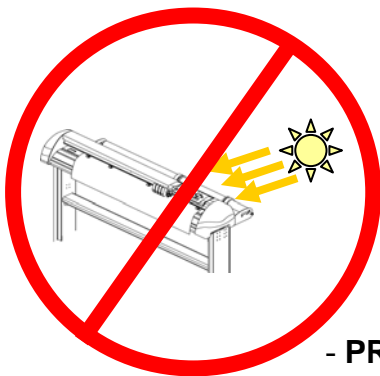
Chapter 5 Accu-Aligning System

5.1 Introduction

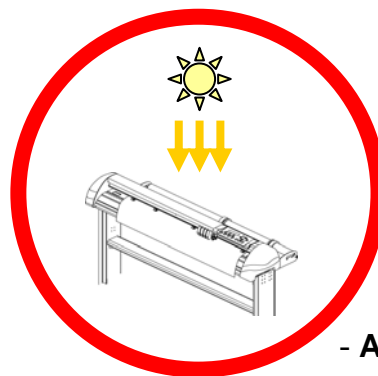
The Expert 24 LX cutting plotters feature a standard Accu-Aligning System (AAS II) to guarantee precise contour cutting quality by detecting the registration marks printed around the graphic.

Notice

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



- PROHIBITED



- ACCEPTABLE

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



- PROHIBITED

5.2 AAS Calibrating the System

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

5.2.1 Media Calibration

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

■ When to use

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

5.2.2 AAS Calibration

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

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

The registration marks have to be:

- Created by cutting software like GreatCut or GCC CoreIDRAW plug-in
- In black color
- "L" Mark Length: 10mm~50mm, suggested 25 mm
- "L" Mark Thickness: 1mm~2mm, suggested 1 mm
- Margin: 1mm~50mm, suggested 5 mm

The cutter can not detect the marks while:

- Cutter carriage is not located near the outside area of first mark before detecting (See the picture in page 5-7 for auto-detecting area of first mark.)
- Medium thickness is more than 0.8mm
- Transparent medium is used

- Non-monochrome drawing. The marks can't be read if is printed on colored medium
- Dirty or creased medium surface

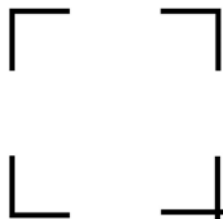
5.2.3 AAS II on Expert 24 LX

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

1. 4-Point Positioning

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

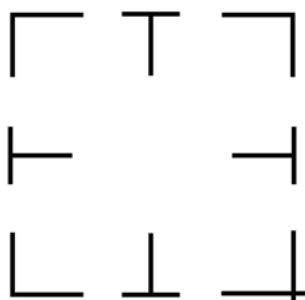
- Command: Esc.D1;(XDist);(YDist):
- Layout: 4 L-shaped marks at the 4 corners around the design



2. Segmental Positioning

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

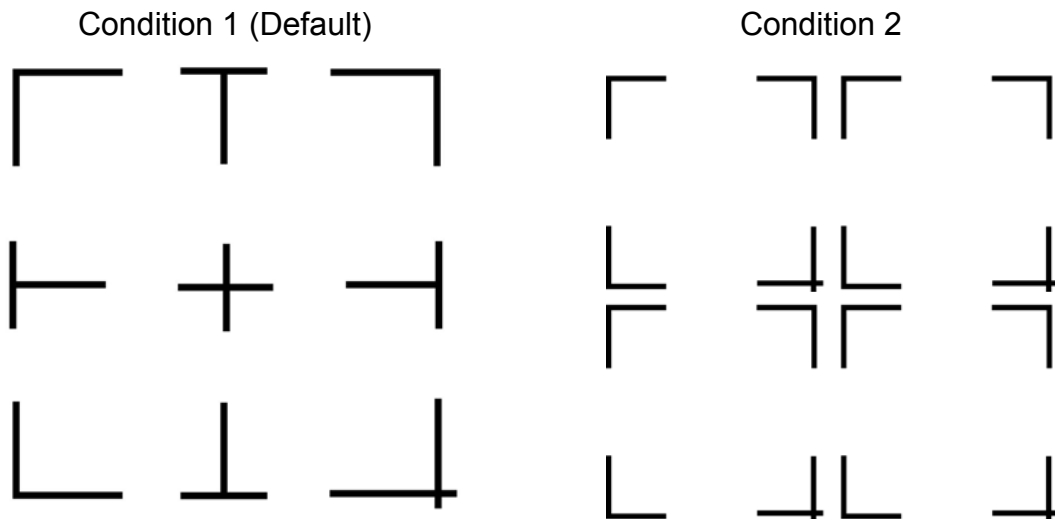
- **Command:** Esc.D2;(XDist);(YDist);(XStep);(YStep):
- **Layout:**
In-between distance on X: 200~600mm, default 300mm
In-between distance on Y: 200~600mm, default 300mm



3. Multiple Copies

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

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



5.3 Printer Test

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

There are two testing files for AASII:

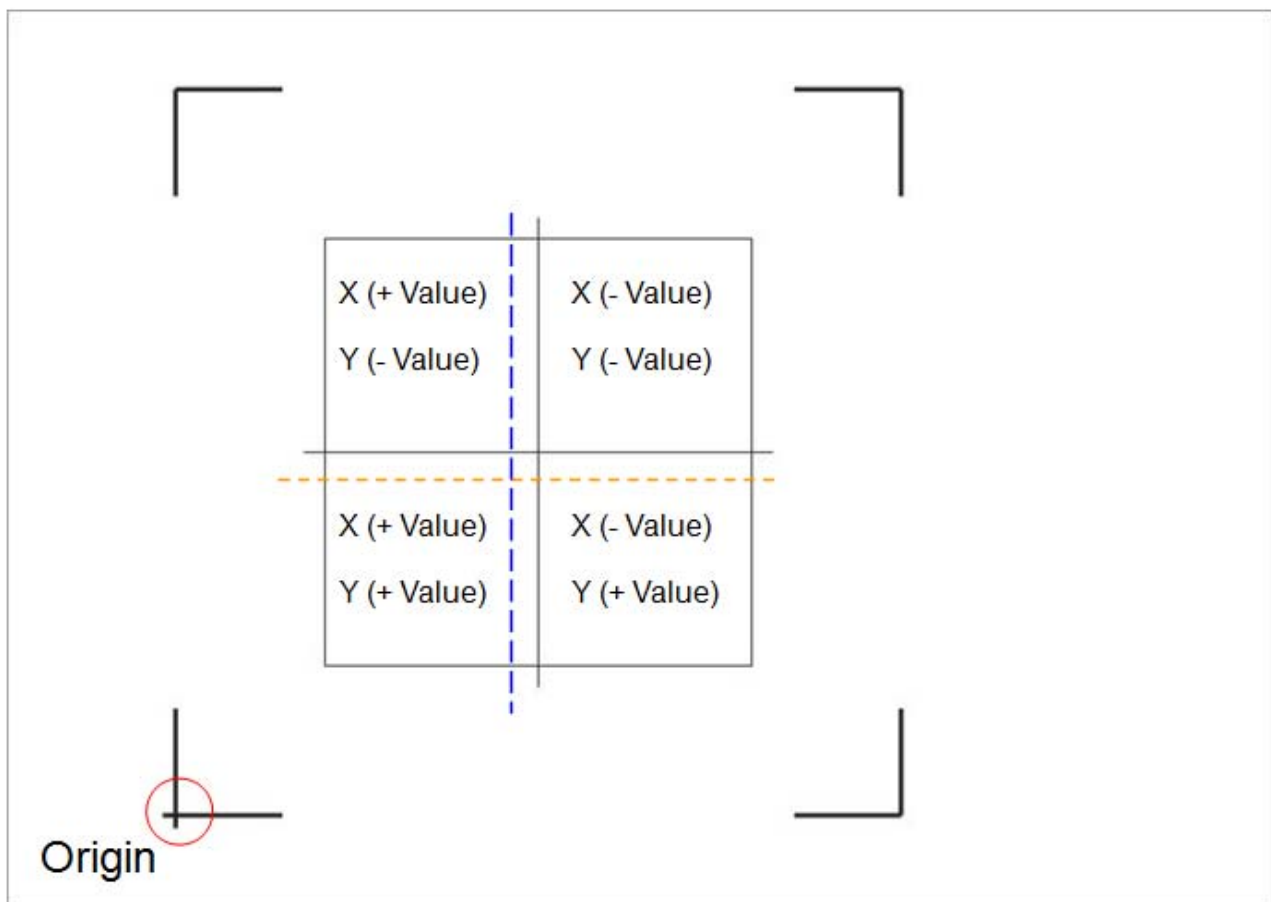
1. AAS II_X_Y_Offset_Caberation_A4 .eps (A4 size)
2. AAS II_X_Y_Offset_Caberation_600_600 .eps (Default setting, it is recommended for testing)
 - Print out the testing graphic. (Please use high precision printer)
 - Load the graphic to Expert 24 LX and sent the file to test the cutting job
 - If there is any adjustments had 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 through the VLCD window for the values you just measured, then press "AASII Offset Update"
 - * 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 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. This method apply on both X and Y axle.

For example:

If the values set in cutter is X: 0.50 mm Y 0.50 mm and the measurement is X1:-0.25 mm Y 1:+0.25 mm. (In following figure, the Blue Line refers to the Y Value, and the Yellow Line refers toe the X value.)

We need to adjust AASII offset X new : $(X + X1)$ Y new : $(Y + Y1)$ which means X new : 0.25 mm Y new : 0.75, then save the set new value to cutter.



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 Contour Cutting

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

Step 1 Creating Graphics

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



- Create a contour for cutting around the graphic.



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

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

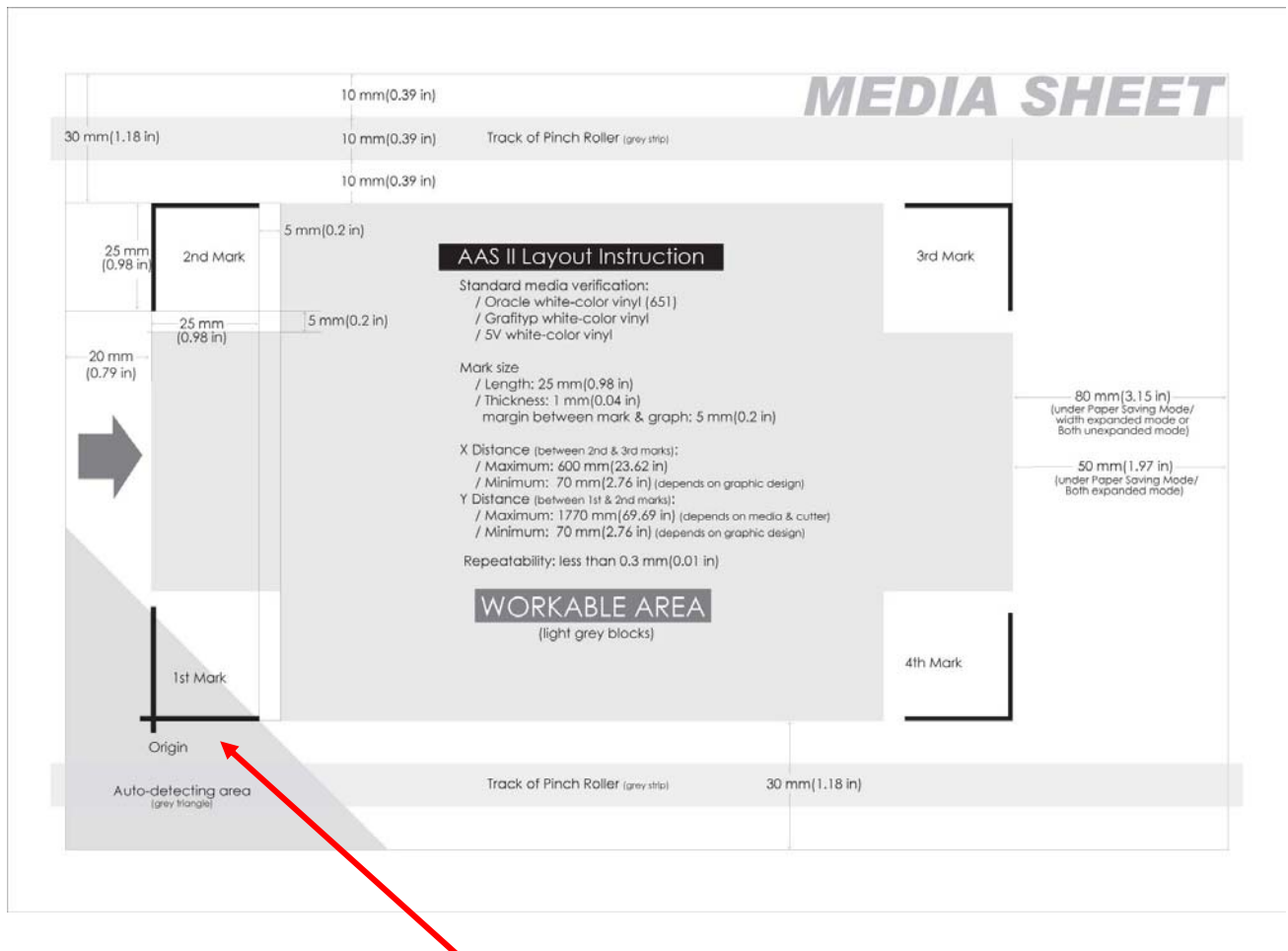
- Add registration marks around the graphic.

Note:

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

Step 2 Placing the Registration Marks

- The AAS Layout Instruction:

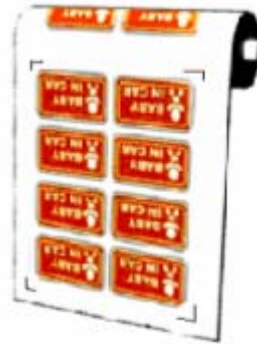


* The Auto Detection function will succeed as long as the carriage is positioned within the grey area.

- It is recommended to leave a 30mm left/right margin, 20mm margin on the top of the media sheet, and a bottom margin of at least 50mm to avoid sheets from dropping off or other errors that may occur during media sizing.
- Please note that the position of the 1st AAS registration mark should not be located within the area indicated by the yellowish part of the sticker on the main beam in Expert 24 LX cutting plotter. If the registration mark is located in the yellowish part of the sticker then the registration mark will fail to be detected.

Step 3 Print the Graphics

- Print the graphic and the marks with your printer

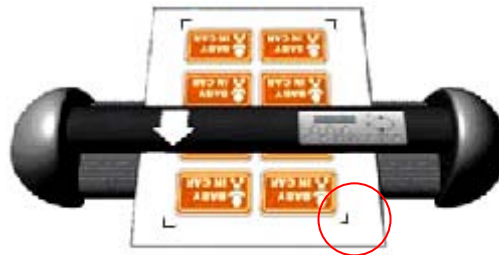
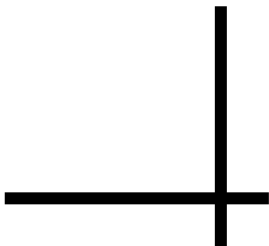


(Scaling = 100%).

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

Step 4 Load the printout onto cutter

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

**Step 5 Cut the Contour**

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

5.5 Tips for AAS

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

- Keep light sources simple and avoid illuminating from the sides of cutter.
- Before operating AAS, change the maximum paper size in Expert 24 LX driver property.
 - STEP 1** Find the **Expert 24 LX model** in the “Printer & Fax” folder of your PC.
 - STEP 2** Open the Properties window and select the “Paper” tab.
 - STEP 3** Change the maximum Paper Size of X to **1200mm**.
- Adjust the cutting speed to between 200~400mm/sec.
- Avoid the registration marks locating on the tracks of pinch rollers.

6. Troubleshooting

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

Note:

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



Why doesn't the cutting plotter operate?

6.1 What if Expert 24 LX cannot operate?

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

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

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

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

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







6.2 Light Indicators

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

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

6.2.1 Warning Indicators

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

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



= flash



= on



= off

Warning 1 The graph is clipped

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

You can solve the problem by:

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

Warning 2 HPGL/2 command error

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

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

Warning 3 Lever up or no media

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

Warning 4 Cannot repeat cutting

There are two possibilities:

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

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

Warning 5 Communication error

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

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

Warning 6 Width sensor error

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

Note:

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

6.2.2 Error Indicators

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

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



= flash



= on



= off

Error 1 and 2

Please contact your local dealer to replace SRAM or DRAM.

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

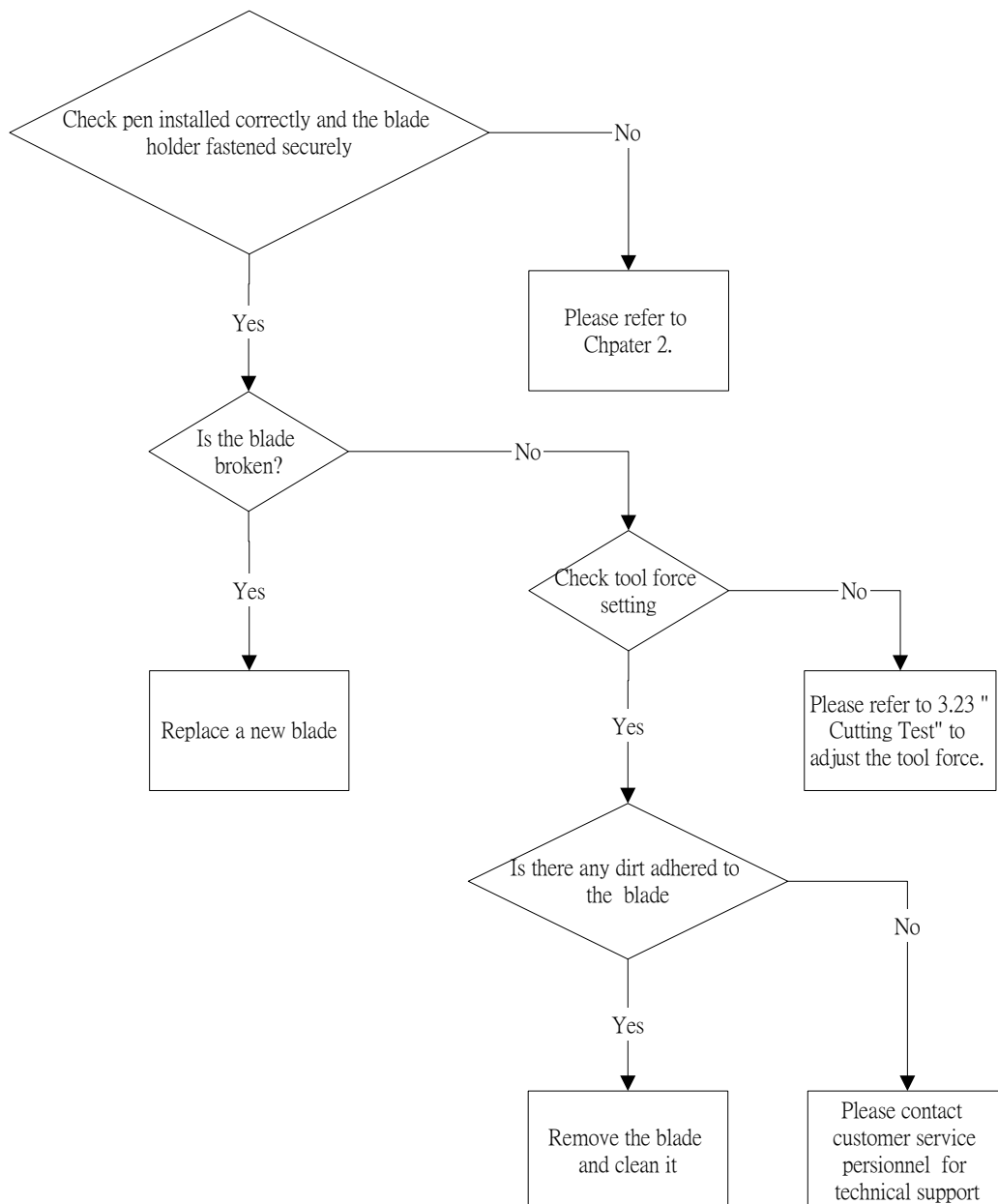
This message indicates that there might be a problem on the **X-axis**.

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

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

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

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





6.3 Cutting Quality Problems

Expert 24 LX Specification

Model		EX-24 LX
Max. Cutting Width		600mm (23.6")
Max. Media Width		719mm (28.3")
Material Thickness		0.8mm
Max. Cutting Force		250g
Max. Cutting Speed(Diagonal)		400 mm /sec (15.7"/sec)
Software Resolution		0.025 mm
Repeatability		±0.1mm
Re-plot Memory		500 Kbyte
Interfaces		USB & RS-232
Commands		HPGL, HPGL/2
Configurable Origin		Yes
Control Panel		6 LEDs/10 Keys
Stand		Optional
Accu-Aligning System		Standard AAS II
Operation Environment	Temperature	15°C~30°C / 60°F~86°F
	Humidity	25% ~ 75%

- Compatible with Windows 2000/XP/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

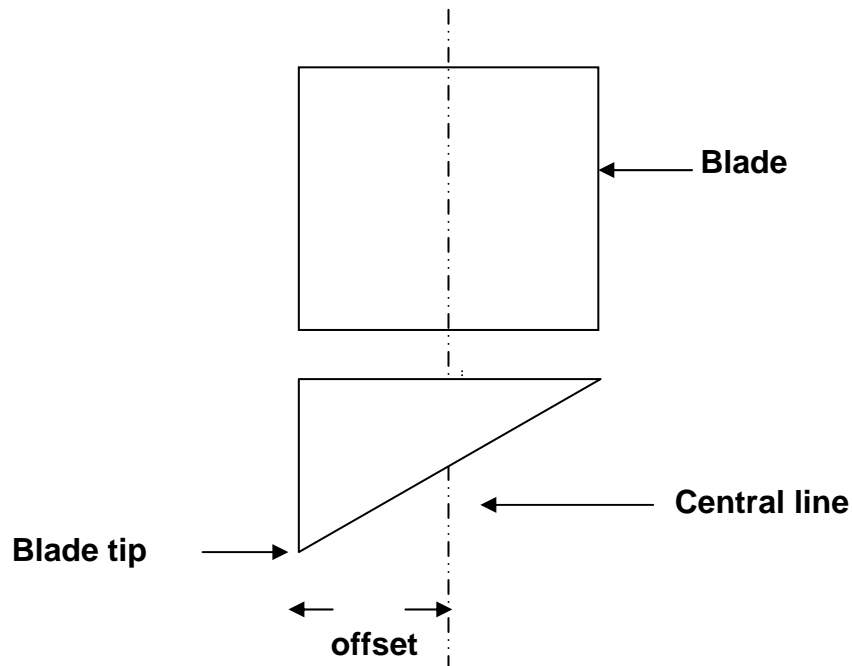
Blade Specification

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
	
26500058G	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
	

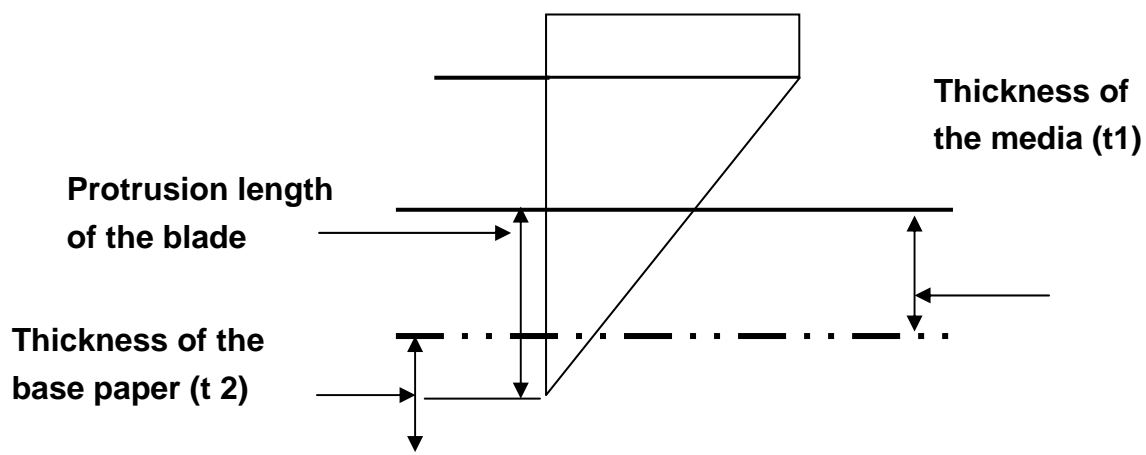
About the Tool

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

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



Protrusion Length of the Blade



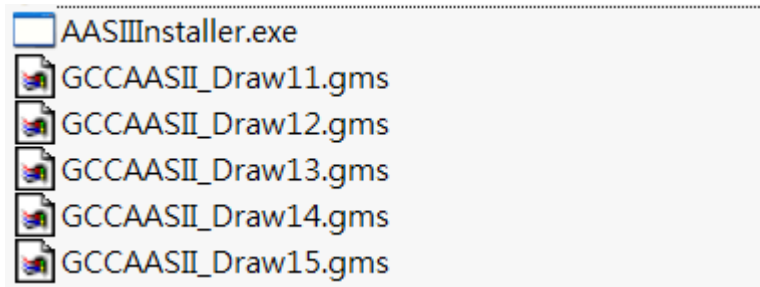
Length of protrusion = $t_1 + t_2 / 2$, but for your convenience you may just make it about 0.3mm ~ 0.5mm beyond the blade holder tip.

CorelDRAW Plug-In Instruction

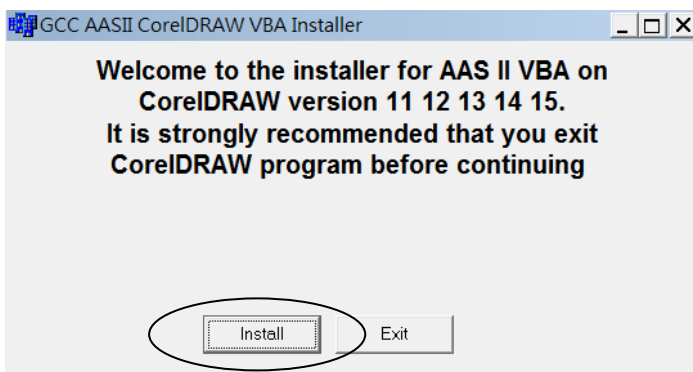
AASII VBA Installer is applicable for CorelDRAW Version 11, 12, 13, 14, 15

Installation

1. Check the “AAS CorelDraw Installer” folder in Expert 24 LX Installation CD, and double click the “AASIIVBAInstaller.exe” file to run the installation program.

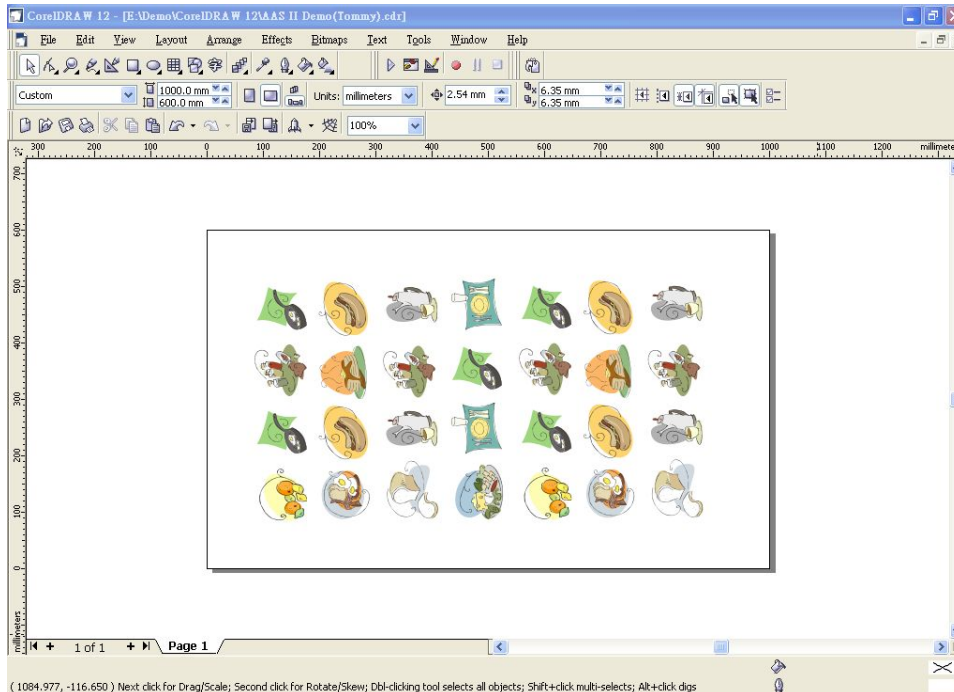


2. Press the “Install” button to begin installing GCC AASII CorelDRAW VBA.

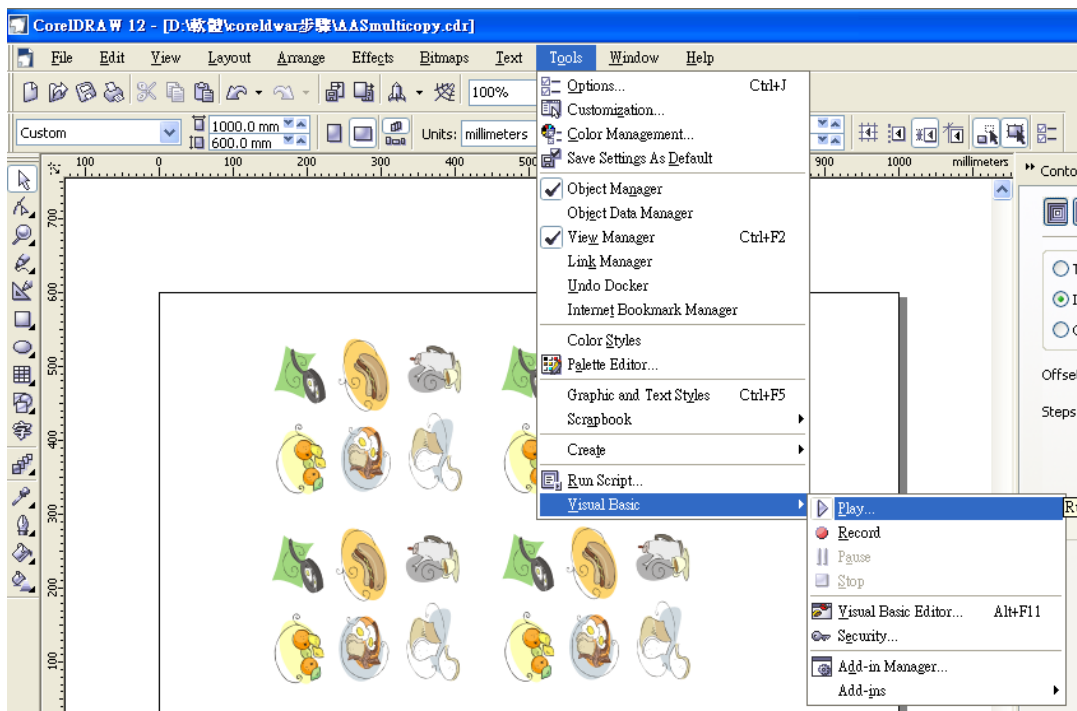


User Instructions

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

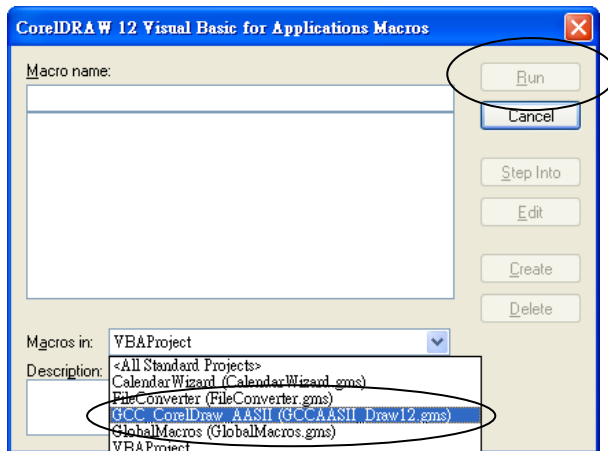


2. Select “Tools→Visual Basic→Play”.

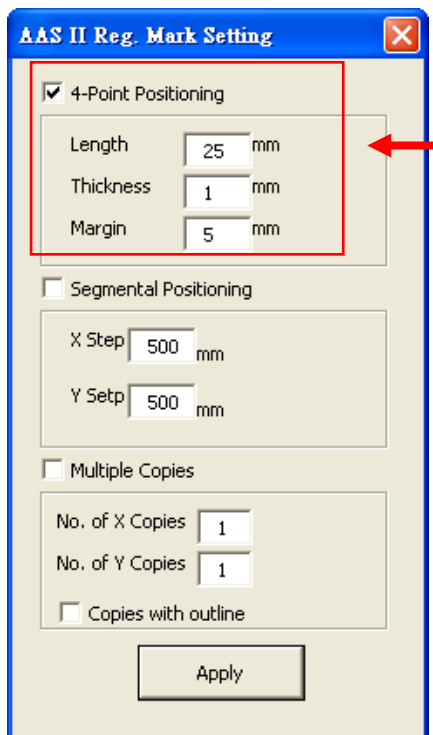


The **Visual Basic for Applications Marcos** window will pop up.

Select **GCC_CorelDraw_AASII (GCCAASII_Draw12.gms)** under the “Macros in” manual, and press “Run”.



3. Click on “Apply”.



4-Point Positioning

- Length: The length of marks
→ Range: 10mm~50mm
→ Optimized Setting: 25mm
- Thickness: The line thickness of marks
→ Range: 1mm~2mm
→ Optimized Setting: 1mm
- Margin: The distance between marks and images
→ Range: 1mm~50mm
→ Optimized Setting: 5mm

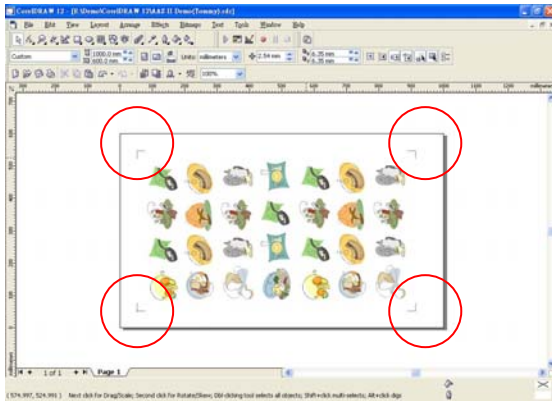
Segmental Positioning

- 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

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

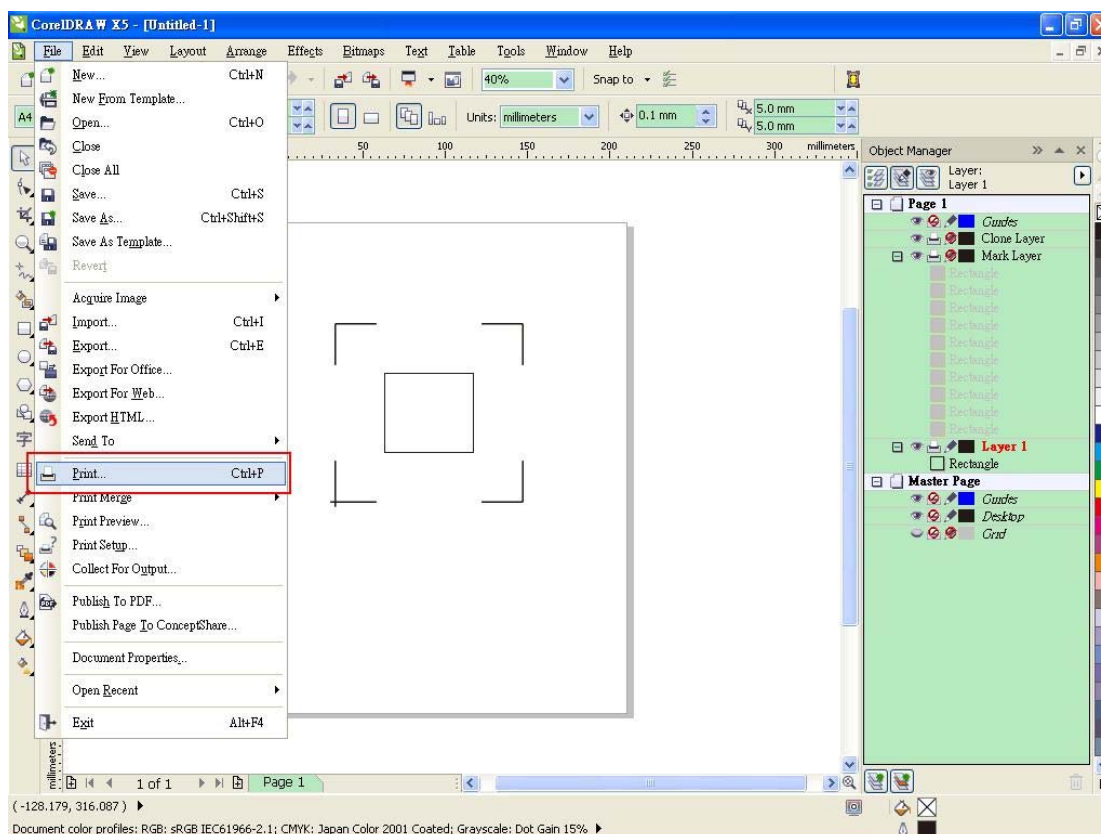


4. Now you can print out the image file with registration marks.

Contour cutting through CorelDraw

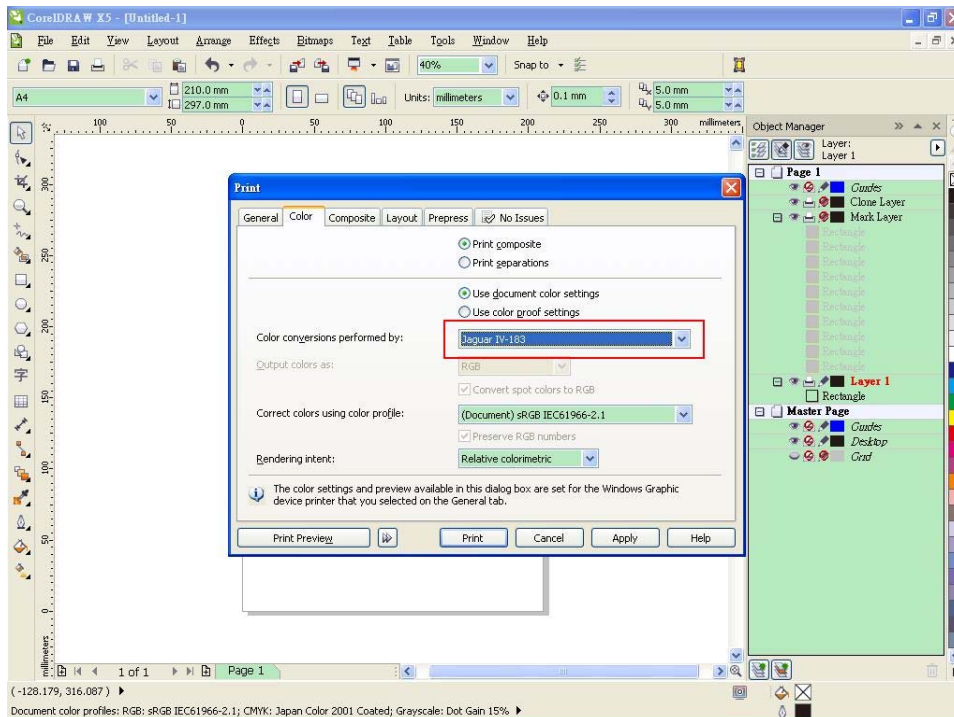
Step 1: Position the paper with registration marks printed by your printer on the GCC cutter.

Step 2: Select “Files→Print”.

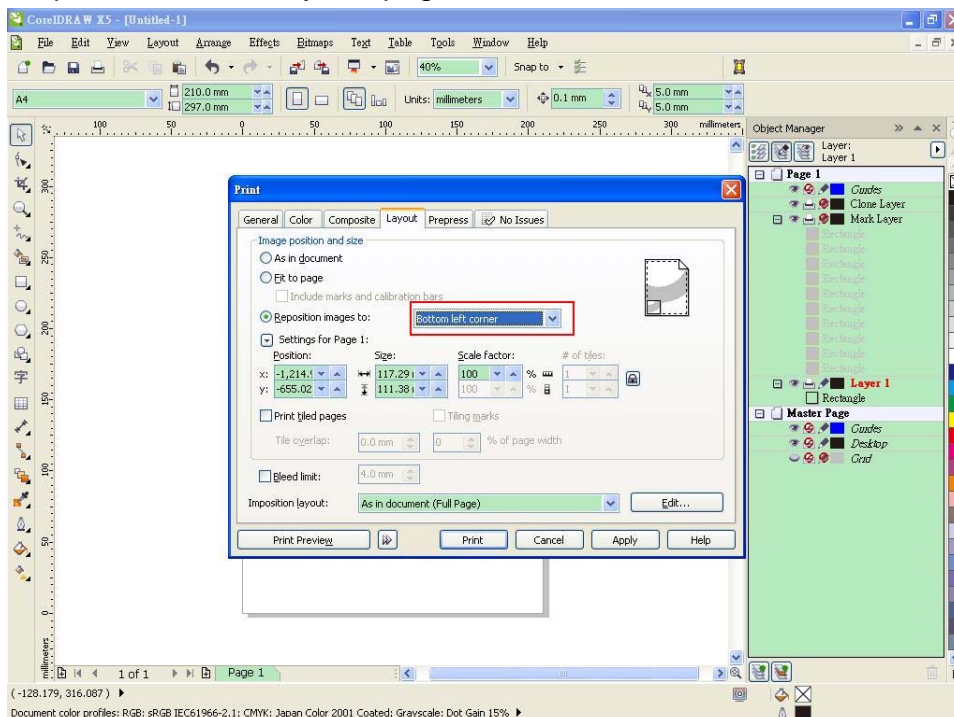


Please note that if you use CorelDRAW X5, you must follow the steps below.

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



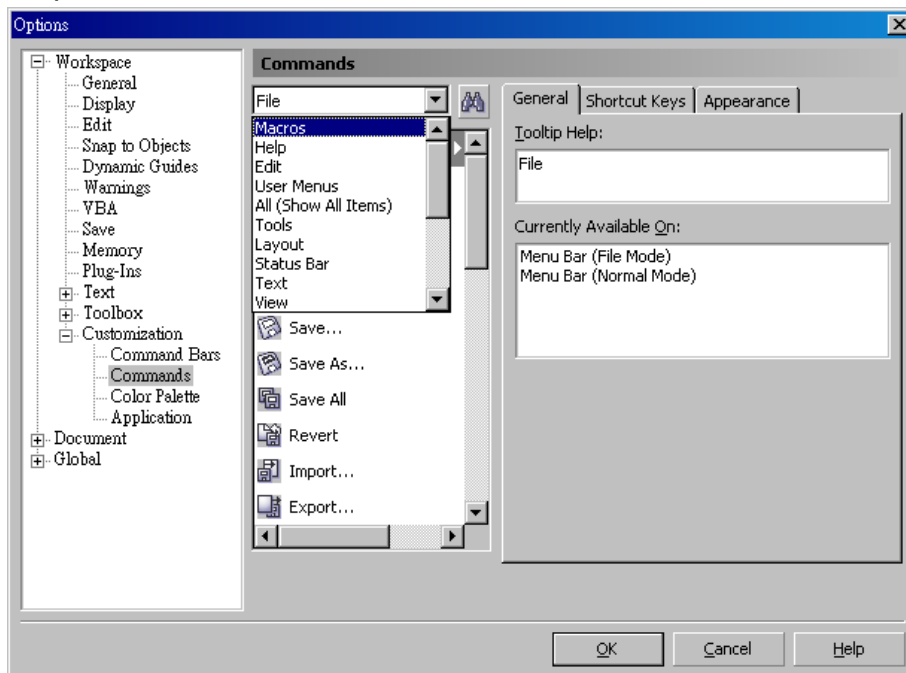
Step 2: Go to the “Layout” page and select Bottom left corner at “Reposition images to”.



Step 3: Click “Print”.

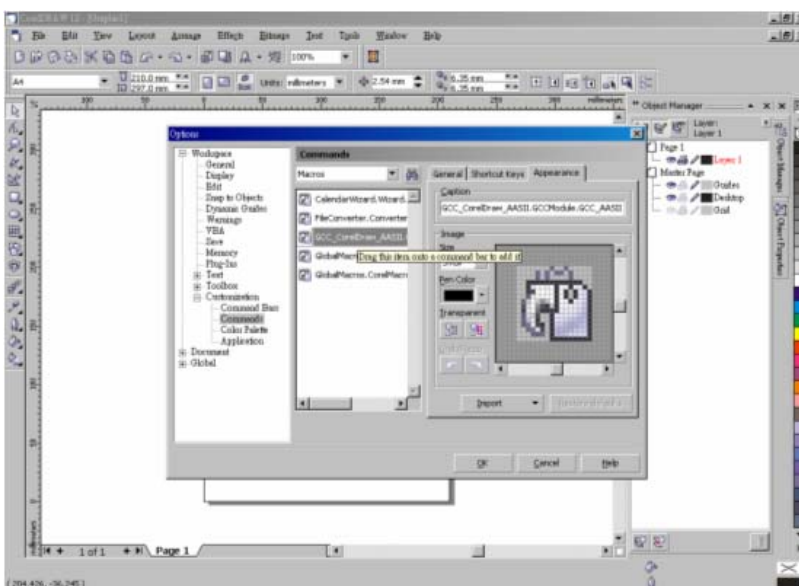
You can also add a Hot Icon for the AAS II Plug-in

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



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

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



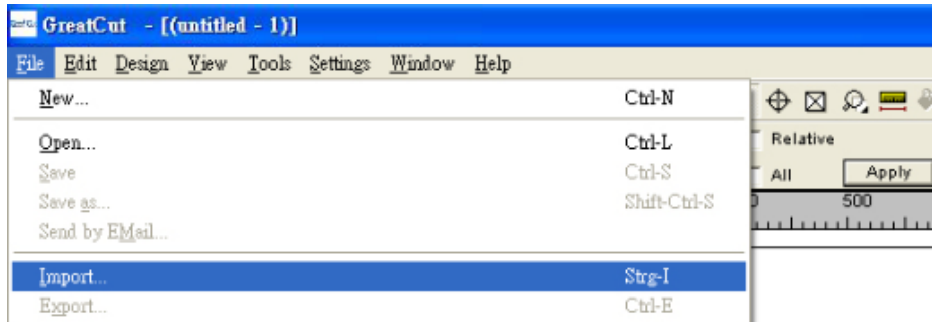
GreatCut Instruction

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

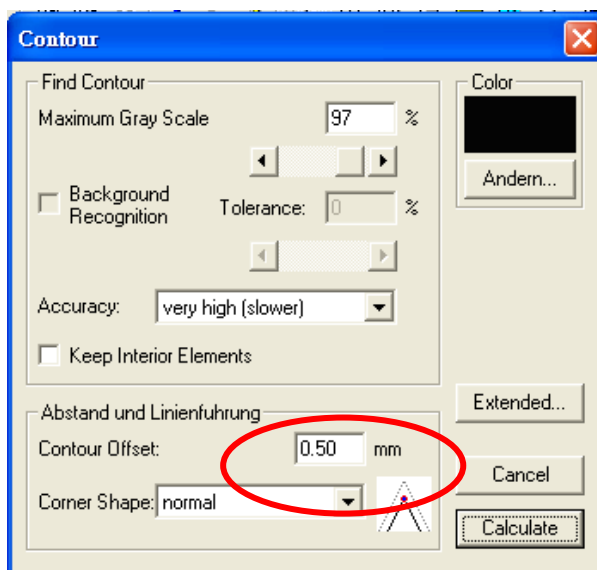
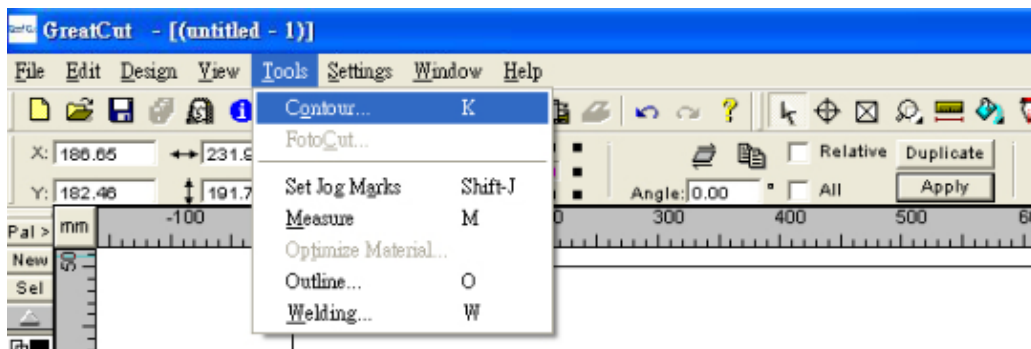
GCC AASII System

Below are step-by-step instructions when using the AAS function of GreatCut software.

Step 1 Import the image you want to print and cut.



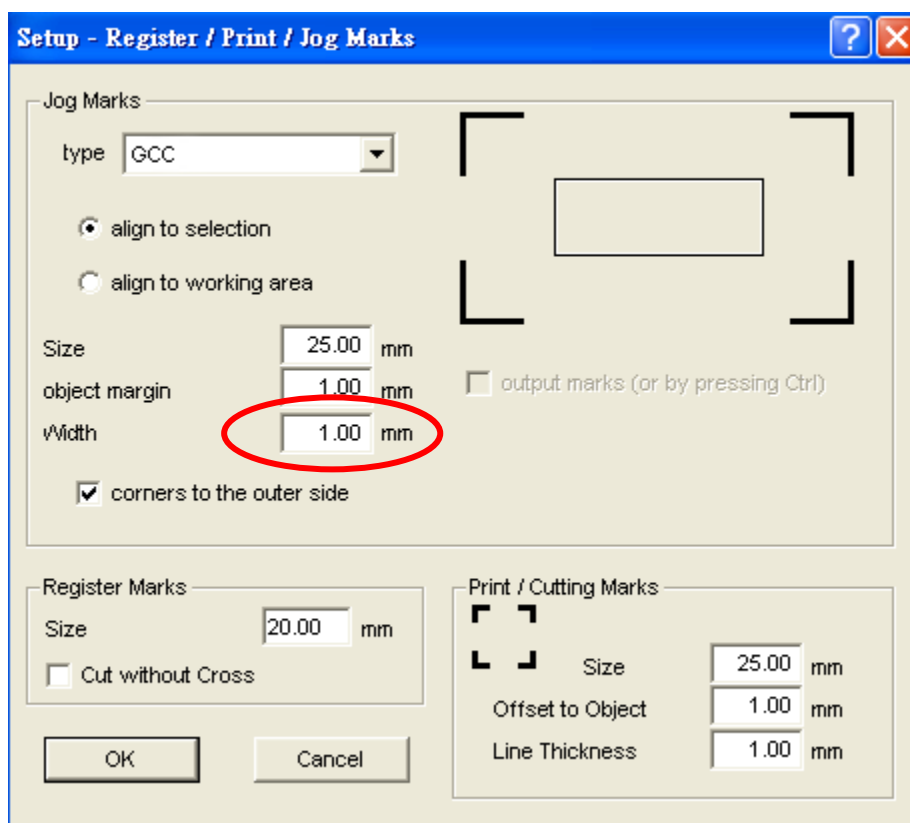
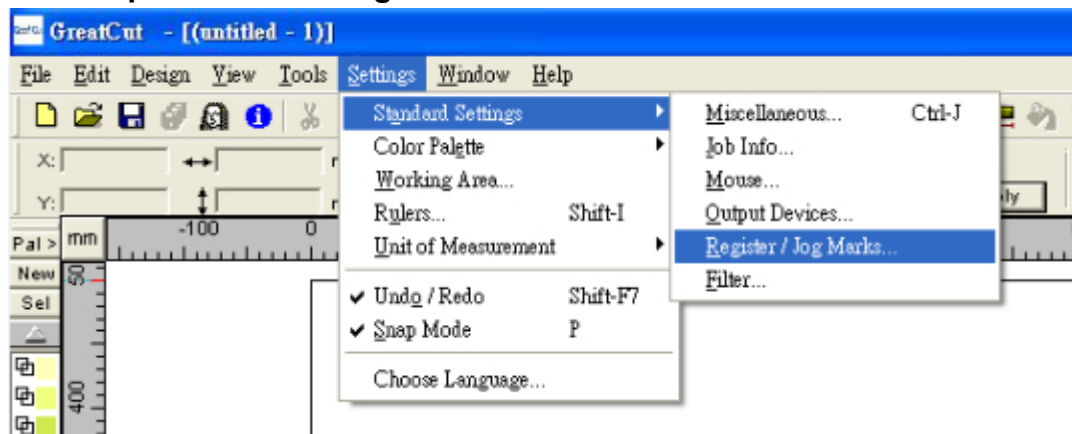
Step 2 Add the contour line.



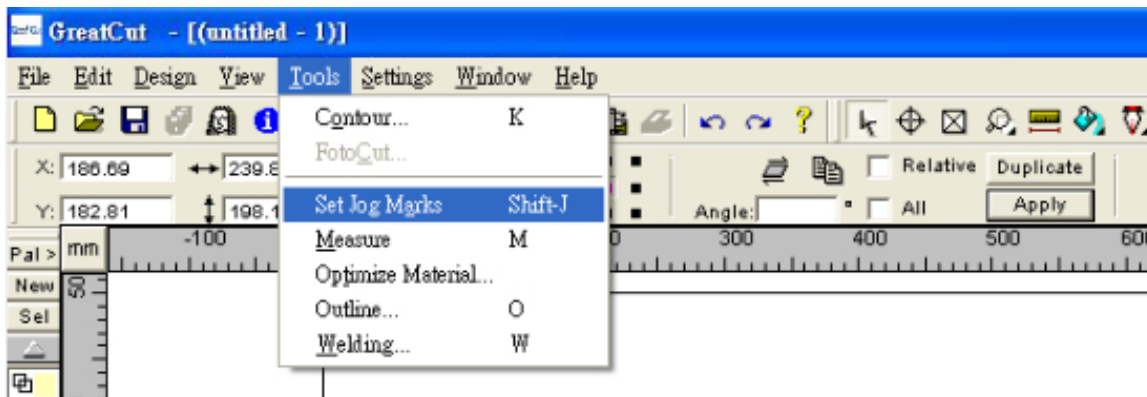
The value of Contour Offset should be $\geq 0.5\text{mm}$.

Step 3 Add the registration marks

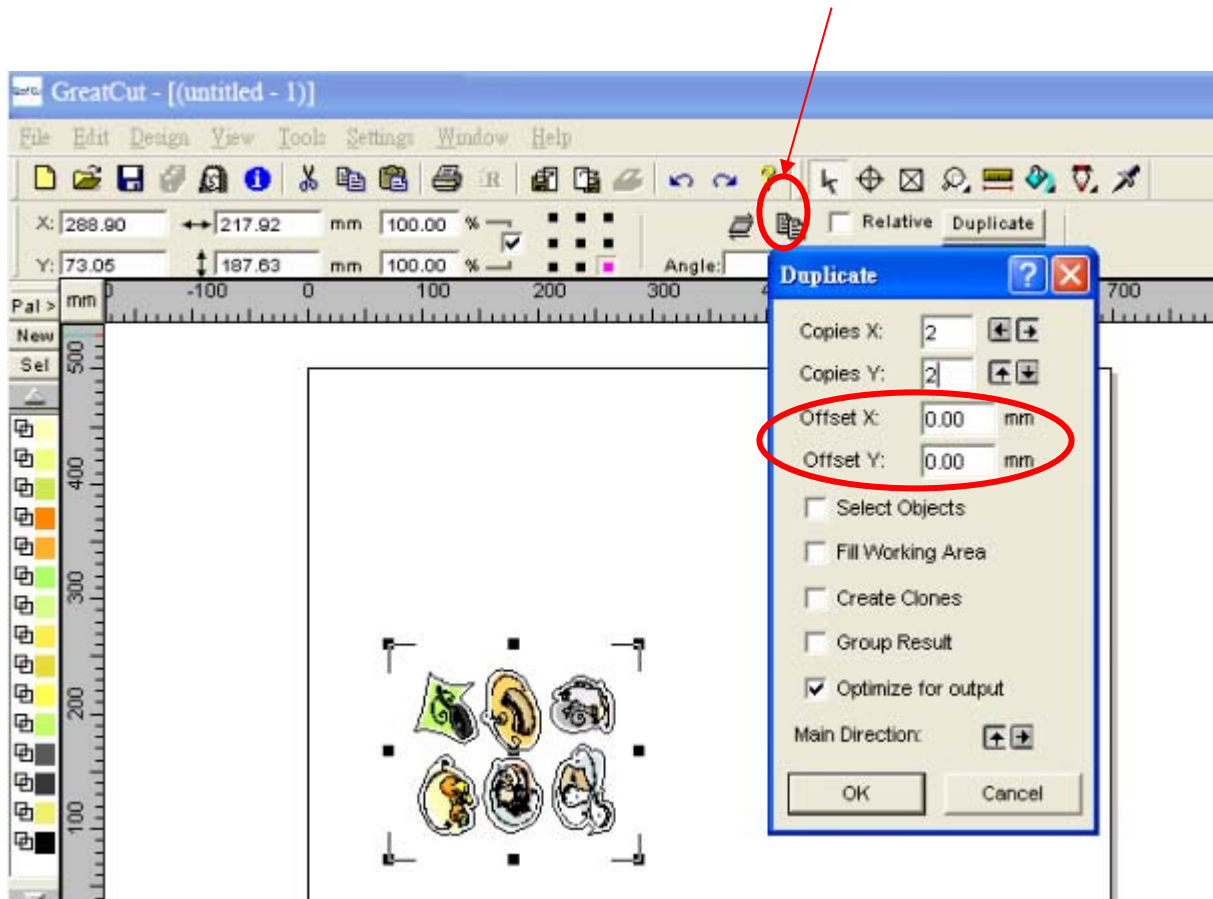
A. Set up the value of registration marks.



The value of width should be $\geq 1.0\text{mm}$.

B. Set the registration marks.

Step 4 Select the whole image including registration marks and click the multiple copies button.



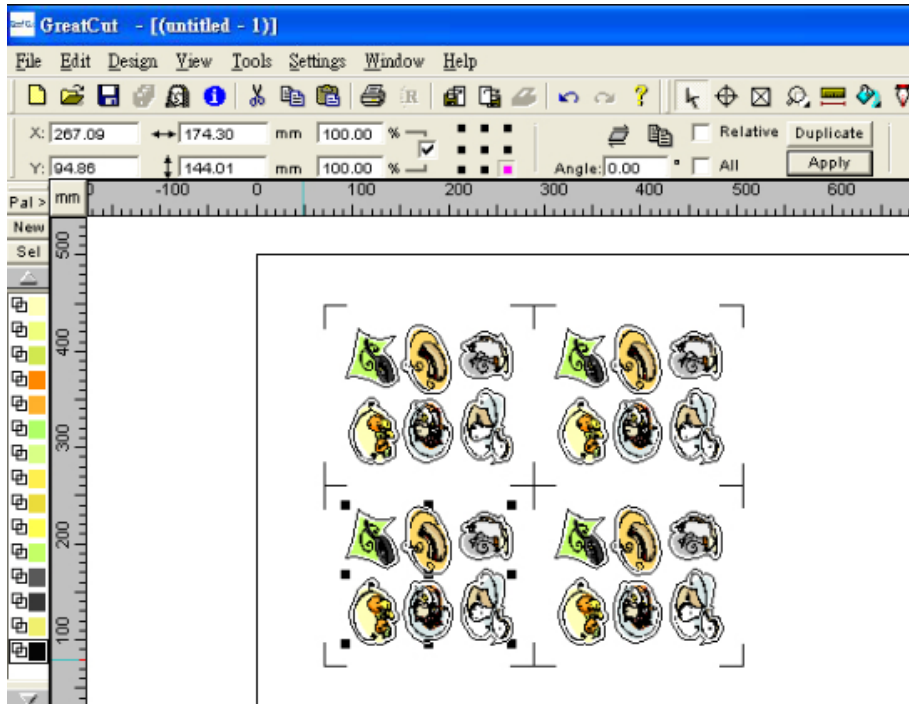
Note: The spacing of vertical & horizontal (Offset X & Y) should be $\geq 20\text{mm}$ or $= 0\text{mm}$.

Step 5 Print out the image.

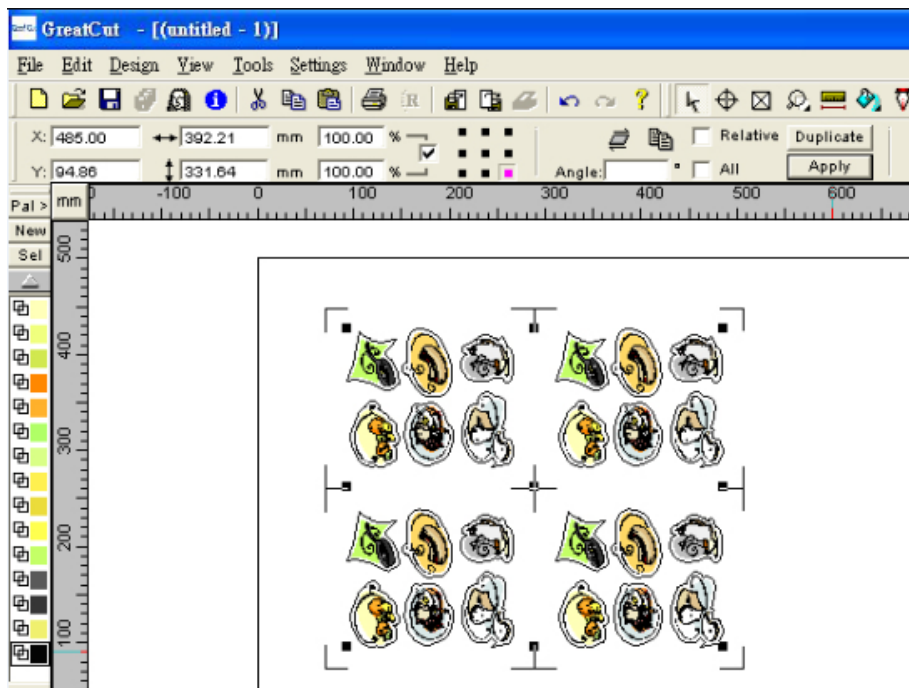
Step 6 Set up the multiple copies function with GCC cutting plotter.

*Please note that you cannot select the whole images when output the multiple copies of images. You only need to select the contour line of original one and set up the value with GearCut and then you can send it to GCC cutting plotter. See the example as below.

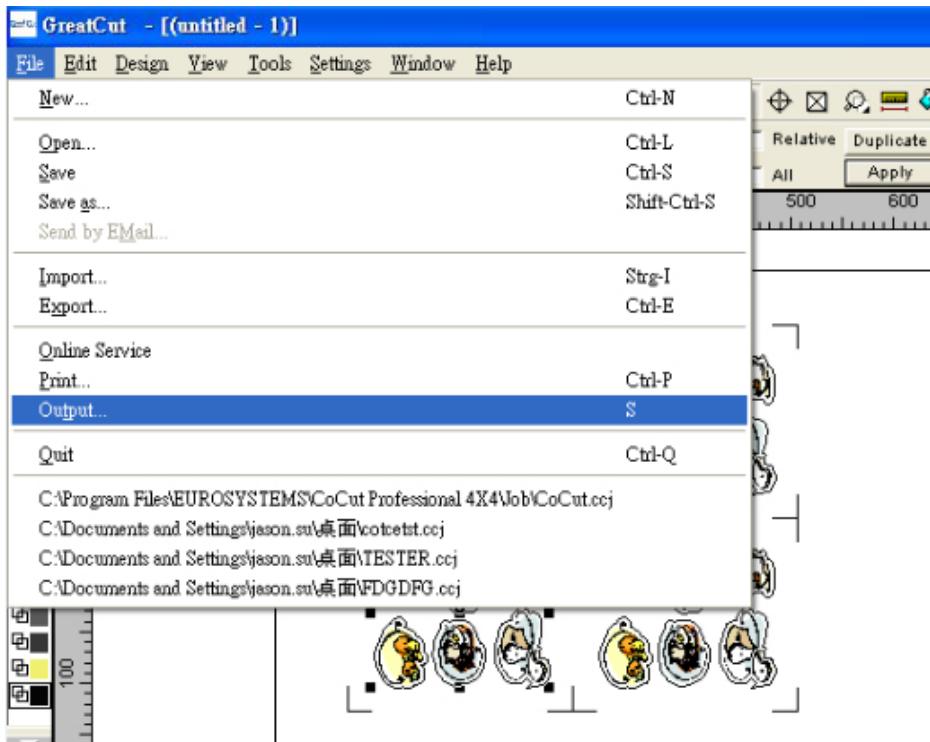
Right: (You should select the contour line but not the image.)



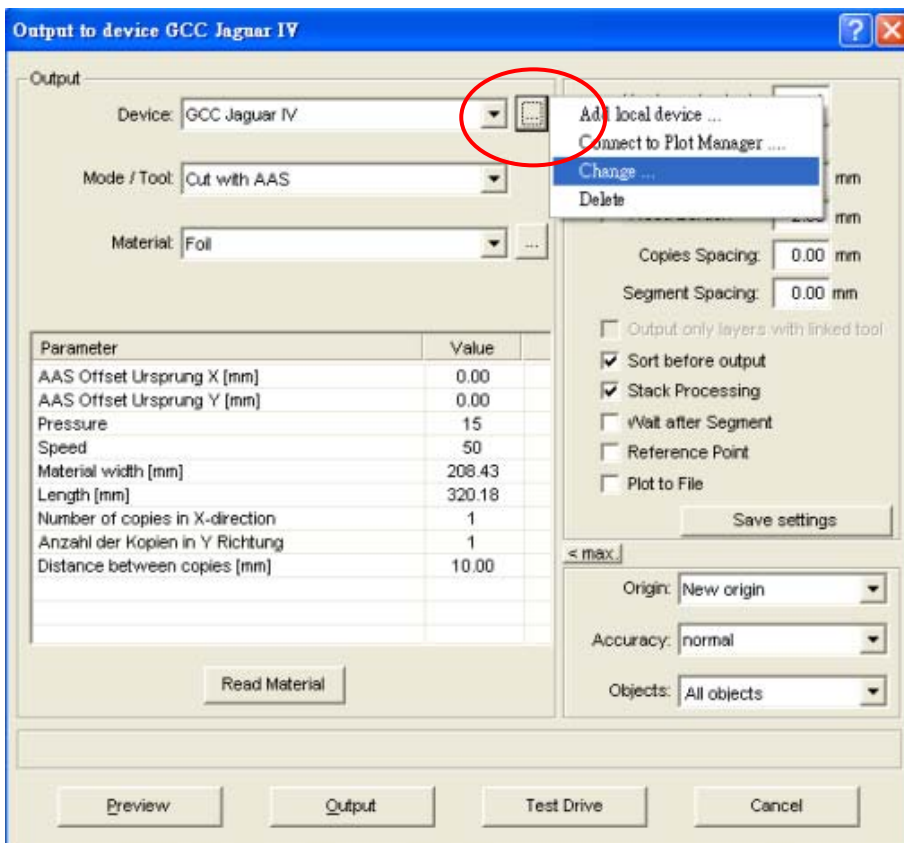
Wrong: (You cannot select the whole images.)



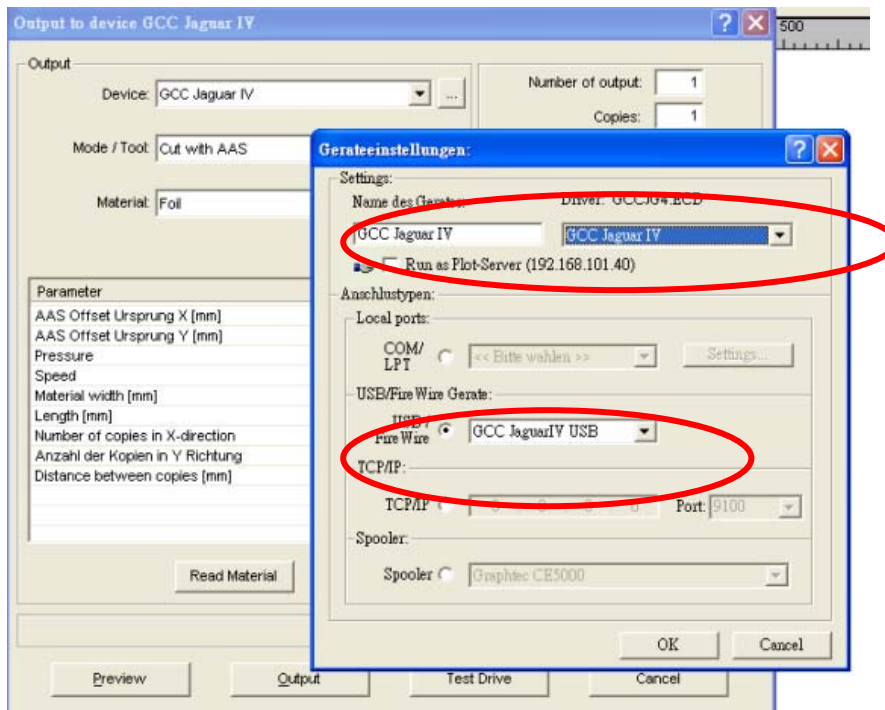
Now you can output the image.



A. Before output, you need to set up your cutter.



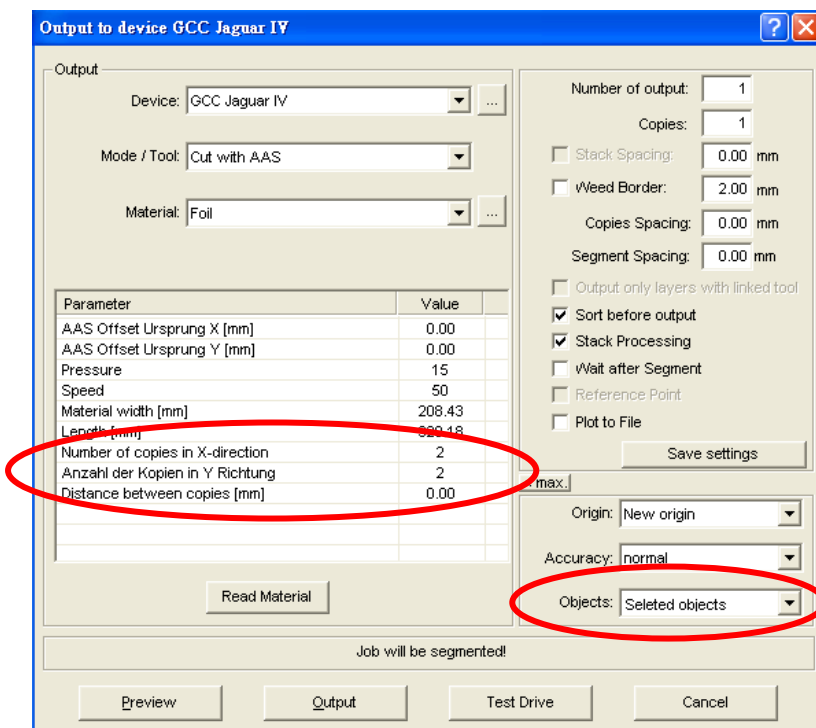
B. Select the series of cutter and the USB port.



C. Set up the number of copies you need to cut here.

Note:

1. The number of copies and distance between copies should be the same as you made before (Step 4).
2. You should confirm that the option of objects must show "Selected objects".



Step 6 You now have a perfectly cut image.

Enjoy!