[DirectCut] Installation Procedure

[For Macintosh]

* This screen describes installation for the Windows version. The same steps can be followed to install the Mac version.

① Start up your computer. Insert the installation disk, and open the disk from My Computer.

② Run **DirectCut(CS2).mpkg, DirectCut(CS3).mpkg, DirectCut(CS4).mpkg or DirectCut(CS5).mpkg** by double-clicking on it .

- Please run the responding program according to the AI version installed (CS2, CS3, CS4 or CS5)

③ The [Select the Folder to Install] screen is displayed. Put a check next to the version of Illustrator that you use, and verify that the Plug-ins folder of Illustrator is selected. If this folder is not selected, click on the browse button, otherwise click on the install button.

- Reference: This image displays on the screen when Illustrator is installed by default

④ The [Browse Folders] screen is displayed. Select the [**Plug-ins**] folder of Illustrator to install. Click on the [**Plug-ins**] folder, and click the Select button. The “Select the Folder to Install” screen will reappear. Click on the Install button.

⑤ The [Installation Completed] screen is displayed. Click on the Close button.

⑥ Start up your copy of Illustrator, and verify that the registration screen appears. On this screen, input the serial number you acquired when you purchased the plug-in software using uppercase letters.

* Note:

① If you forgot to put a check next to the version of Illustrator or selected an incorrect folder to install to at step ③, the plug-in software may not be installed successfully. In such a case, repeat the steps to install it.

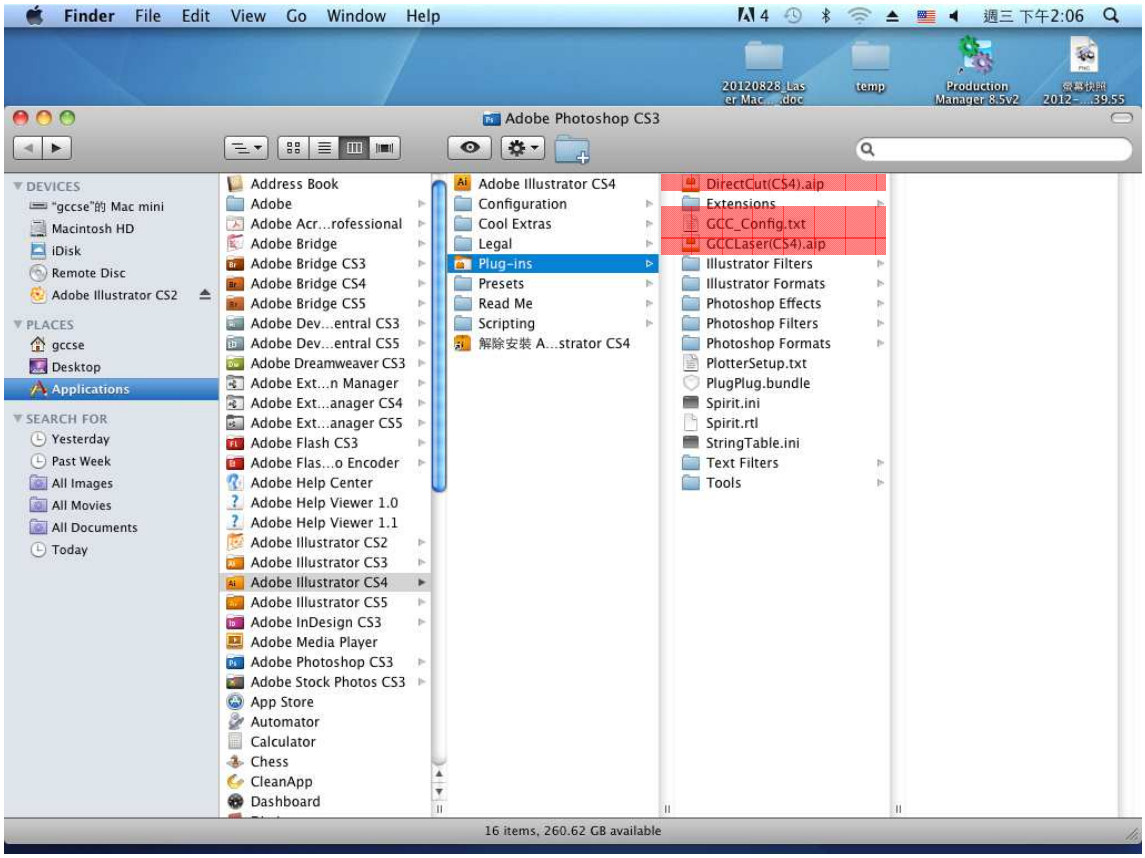
② It is strongly recommended that all running application programs are closed before you start installing DirectCut to avoid data loss.

Note to Reinstall for Updating, etc.

If you reinstall the plug-in software for updating or for some other reason, the old version of the plug-in software will not be overwritten. Please ensure that you uninstall the old version. You can uninstall it by directly deleting it from the Plug-ins folder. Also delete the files associated with the plug-in in the same way.

Please note that you must manually remove the DirectCut version previously installed according to the AI version in your MAC to enable the current installation. To do this, please follow the instruction below:

Please remove the three files below under “Places”>”Applications”>”Adobe Illustrator” (based on the version installed)>“Plug-Ins” before the installation process starts.



1. New Tool

After installing **DirectCut**, the four submenus ("RS232 SetUp," "Plotter Setup," "Plotter Output," and "Show **DirectCut** 2 Tool") and the **DirectCut** tools are added to the File menu.

[RS232 SetUp]
Determines the connection setting required for outputting your data. This setting should correspond to that of the destination plotter. You must complete this setting after you install or reinstall **DirectCut** or it will not be able to output to the plotter.

[Plotter setup]
Determines the setting for your output device. You must complete this setting after you install or reinstall DirectCut or it will not be able to output to the plotter.

[Plotter output]
Determines the detailed settings required for outputting (output position, direction, size, etc.) and sends the actual data to your output device.

[Show /Hide DirectCut Tool]
Shows or hides the DirectCut tools.

[Tools]
The tools that come with DirectCut, from which you can access all of its functions.

[Plotter
output]
Determines detailed settings required for outputting (output position, direction, size, etc.) and sends the data to your output device. This is the same function as "Plotter output" in the menu.

[Text outline]
Outlines letters.

[Invert word]
Creates vehicle letterings.

[Do line width acknowledge and merge]
Processes line width and the overlap between objects.

[Make outline and offset]
Extracts outlines of letters.

[Weeding]
Embeds peel-off tabs in elements.

[Split plot data]

Creates overlaps and auto-split lines when splitting your output.

[Check and make new start point]

Checks or changes the start point at output.

[Check group information]

Checks the output elements per group.

2. Setting

2-1 RS232 Setup

Determines the interface of your computer to connect a cable to, the data transfer criteria between your output device and the software, and so on.

* For successful output, you need to match the settings of the software with those of your output device. Make sure to refer to the manual of your output device.

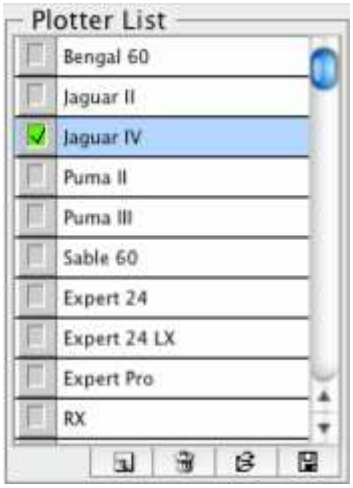
* Determines the Win output port and transfer criteria.

* DirectCut automatically finds your computer's output port so you can easily select it from the pull-down menu.

2-2 Plotter Setup

In "Plotter Setup," you can choose "Plotter List," "Environment," "Pen," and so on.

[Plotter list]

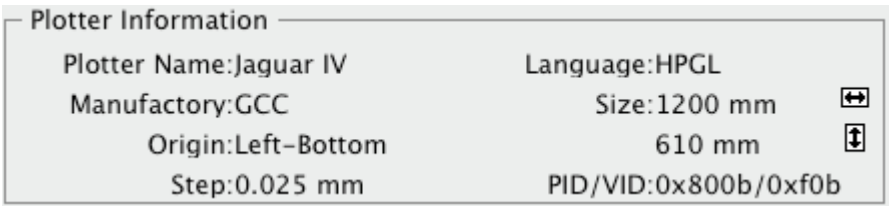


In this area, you can choose the machine type and set some basic information for your plotter such as the plotting area. The screen below shows ten cutting plotter models.

As shown above, the machine type displayed with a green check button represents the default plotter. You can click the button to enable or disable the plotter as well as double-click the name of the machine type to set the machine information.

[The Plotter setup Screen]

Double-clicking name of the cutting plotter will display the dialog below. The information shown here varies according to the model you have selected.



[Plotter name]

Enter a name for your machine here.

[Manufactory]

Enter the name of your machine's manufacturer here.

[Origin]

Allows you to choose the home position of your machine from:

[Center] ・・・center position

[Left-Bottom] ・・・lower left position

[Left-Top] ・・・upper left position

Make sure to choose the same position as you set on the plotter.

[Language]

Determines the transfer instruction format for your machine. Make sure to choose the same language as you set on the plotter.

[Step]

Enter the step size of your machine here. Make sure to choose the same size as you set on the plotter.

[Size]

Determines the maximum range for cutting.

Starting from the left:

[New plotter]

Creates new plotter information.

[Delete current plotter]

Deletes current plotter settings.

[Load plotter from file]

Retrieves saved plotter information.

[Save current plotter file]

Saves current plotter settings.

[Load plotter from file] and [Save current plotter file] work hand in hand. Users are able to save the plotter settings and retrieve them on another computer without the hassle of resetting.

[Environment setup]

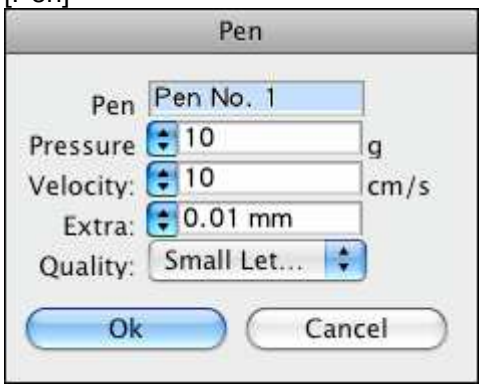
Specify the name for the output environment here. The screen below shows two different environment names. The environment name displayed with a green check button represents the default output environment file.

You can click the button to enable or disable the environment as well as double-click the name of the output environment to modify it.

Creates a new output environment file.

[Delete current environment]
Deletes the current output environment file.

[Pen]



Determines the pen settings in accordance with the name of the output environment. In the screen below, three different pen settings which correspond to the current default output environment have been created.

You can set "Pen name," "Force", "Speed" and "Offset". To change the setting, double-click the name of the setting you want to change.

[Pen name]
Enter a pen name here. Later, this name will be conjoined to a layer with which you use the pen. Type a name that is as easy for you to understand as possible.

[Pressure]
Determines pen pressure.

[Velocity]
Determines speed.

[Extra]
Determines the amount of overcutting.

Starting from the left:

[New pen]

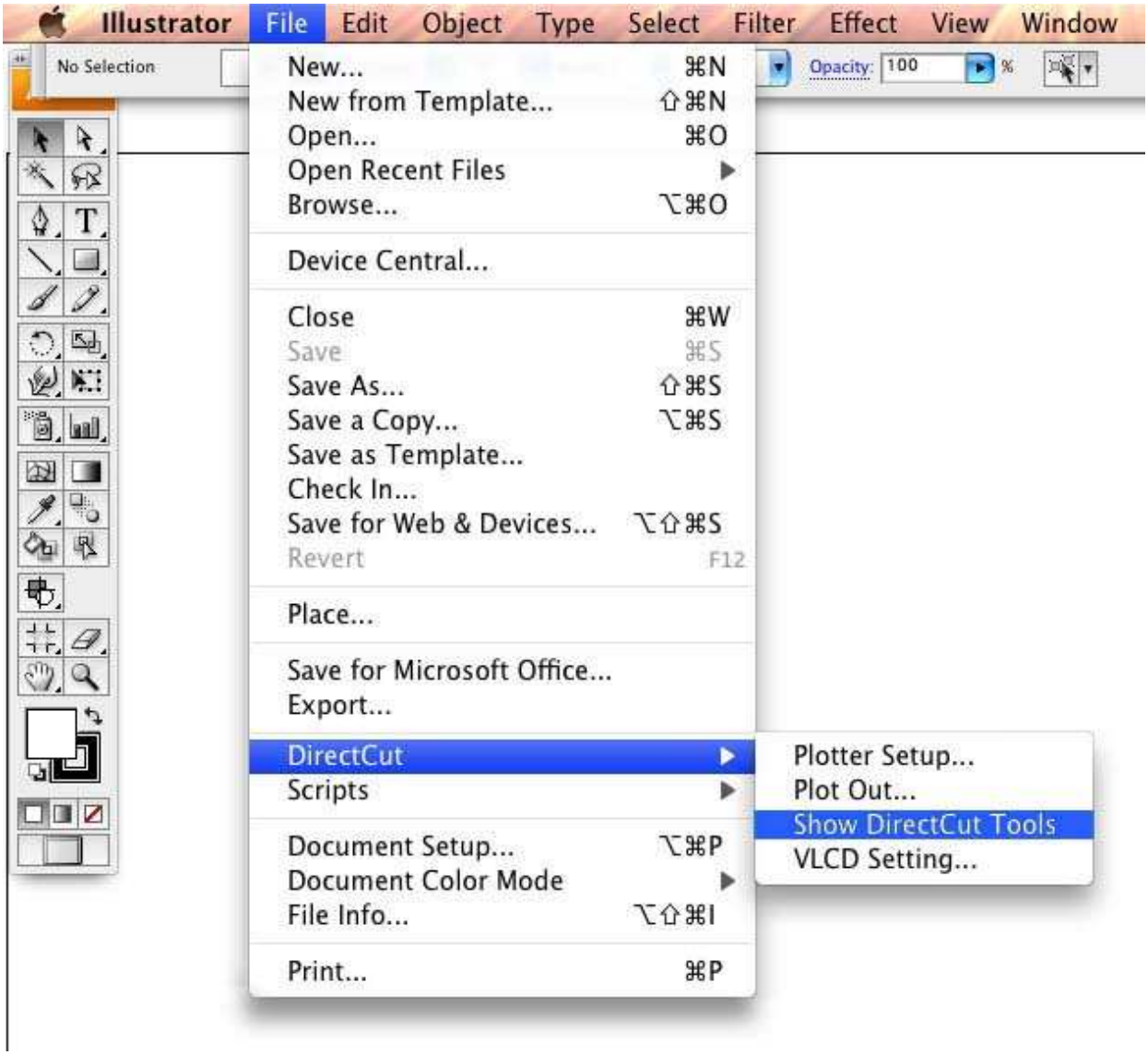
Creates new pen information.

[Delete current pen]

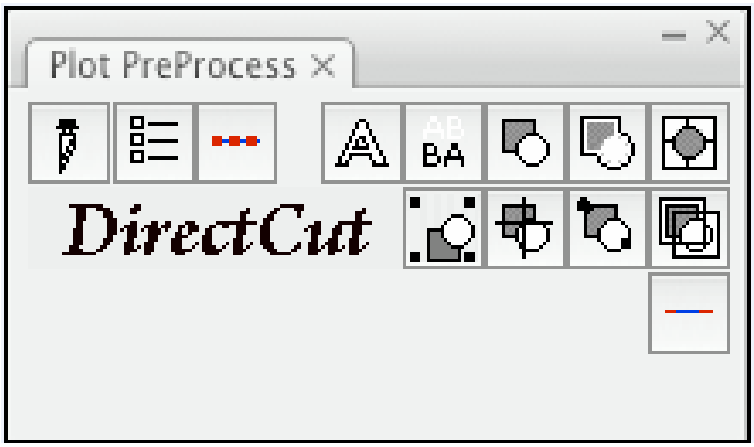
Deletes current pen information

3. Creating output data

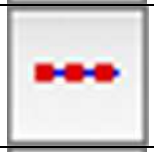
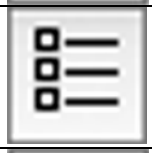
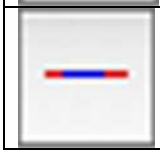
Go to File and select “Show DirectCut Tools” under “DirectCut”



You will be presented with this dialog below:



The function of each command is shown in the table below, followed by the detailed instructions of giving the commands:

	Text outline		Check and make new start point
	Make outline and offset		Check group information
	Do line width acknowledge and merge		Invert word
	Add registration marks		Die cut
	Weeding		Plotter setup
	Split plot data		Plotter output
	Over Cut		

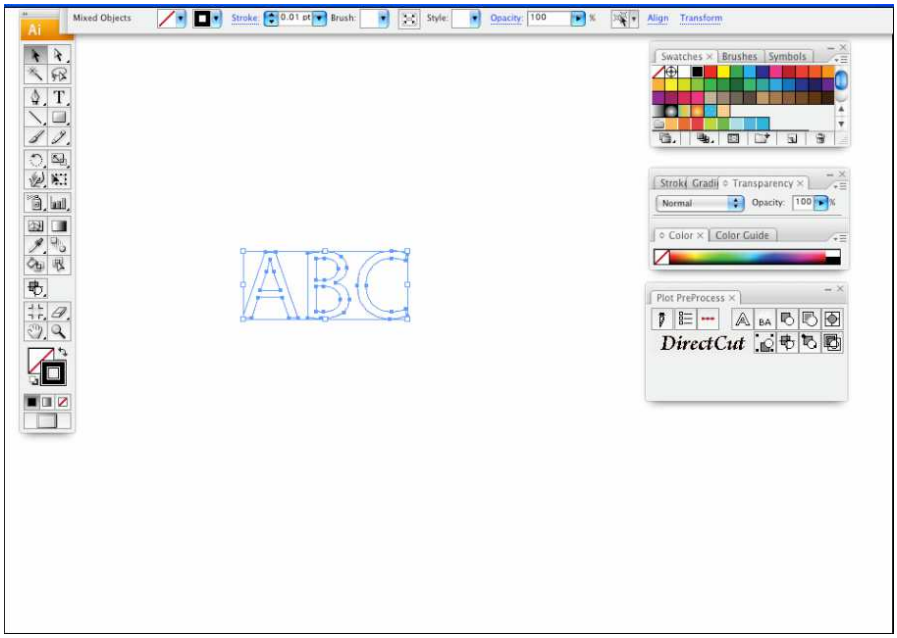
[Text outline]

This tool outlines letters.

All letters must be outlined through this tool to generate output data.

① Choose the letters that you want outlined.

② Choose the Text outline command and a contour line will be created for your image.



Note:
1. The line width must be set as 0.001 mm
2. [Text outline] must be applied first before applying [Make outline and offset]

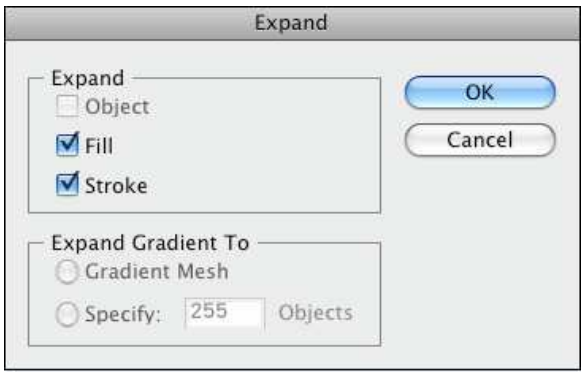
[Make outline and offset]

Extracts outlines of graphics.

① Choose a graphic from which to extract an outline.

② Choose the Make outline and offset command.

③ Enter the amount of offset and then click “OK” when the “Expand” window is presented.

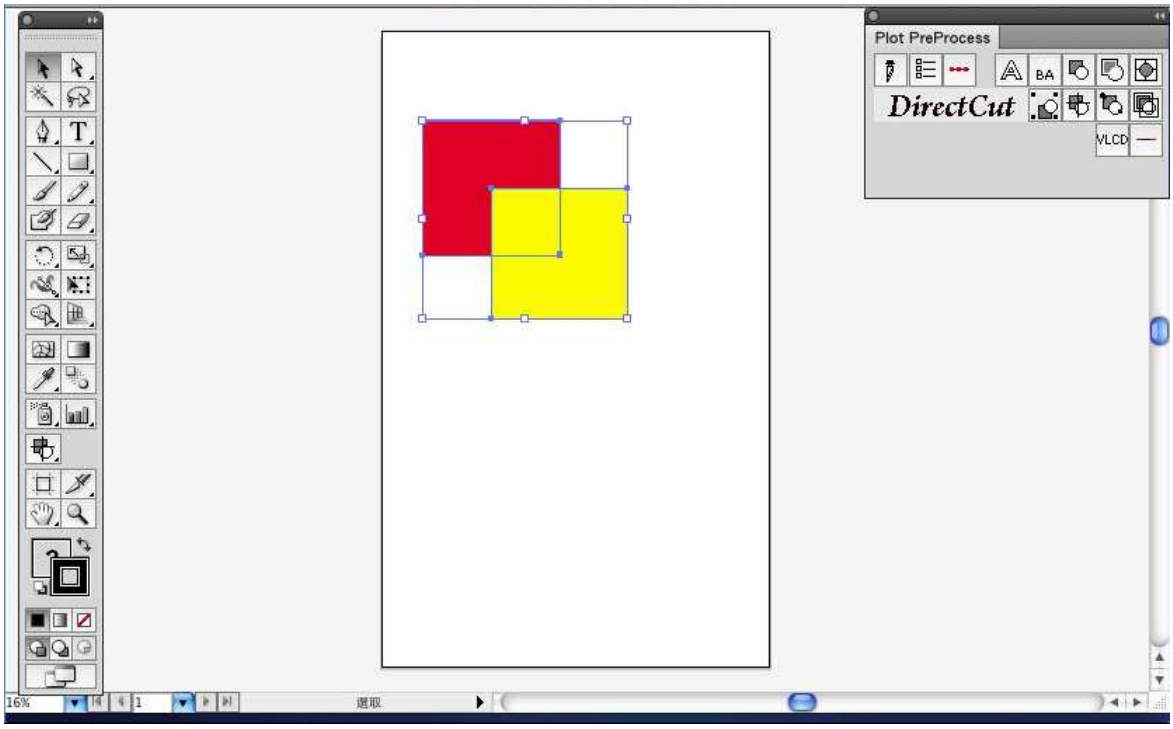


* If you want to use the previous offset value as it is, you need to shift-click.

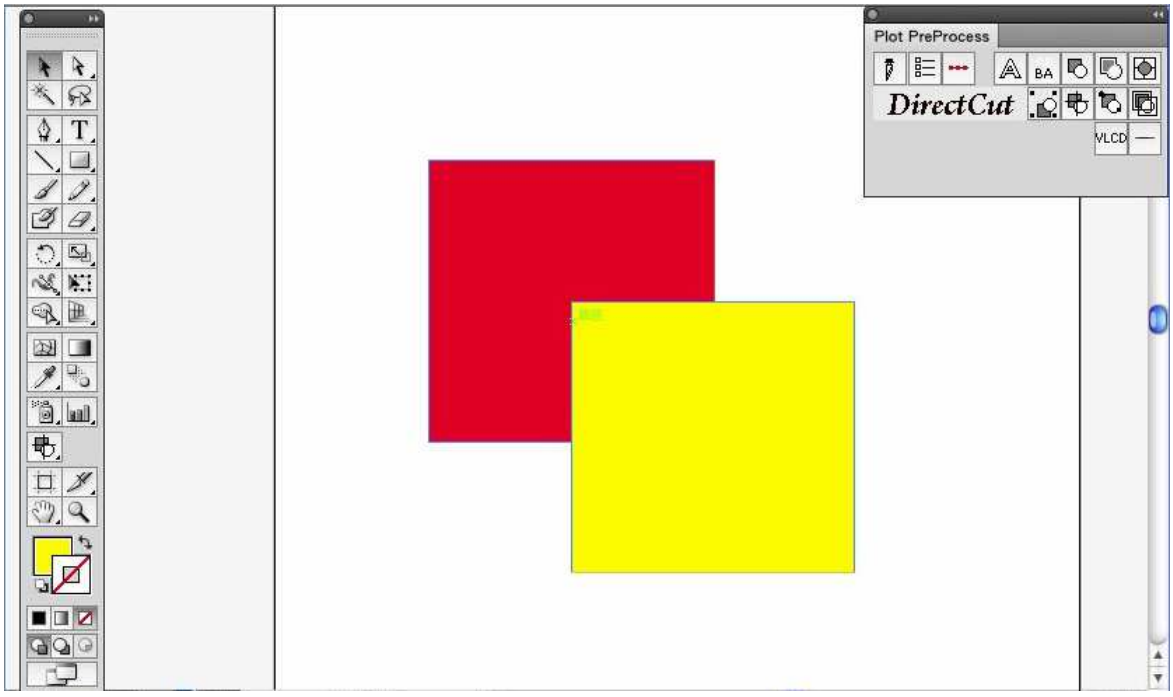
[Do line width acknowledge and merge]

Captures the line width of the objects created with Illustrator's line width function and generates the outline data. If the objects are overlapped, DirectCut computes the overlapped part to generate the output data.

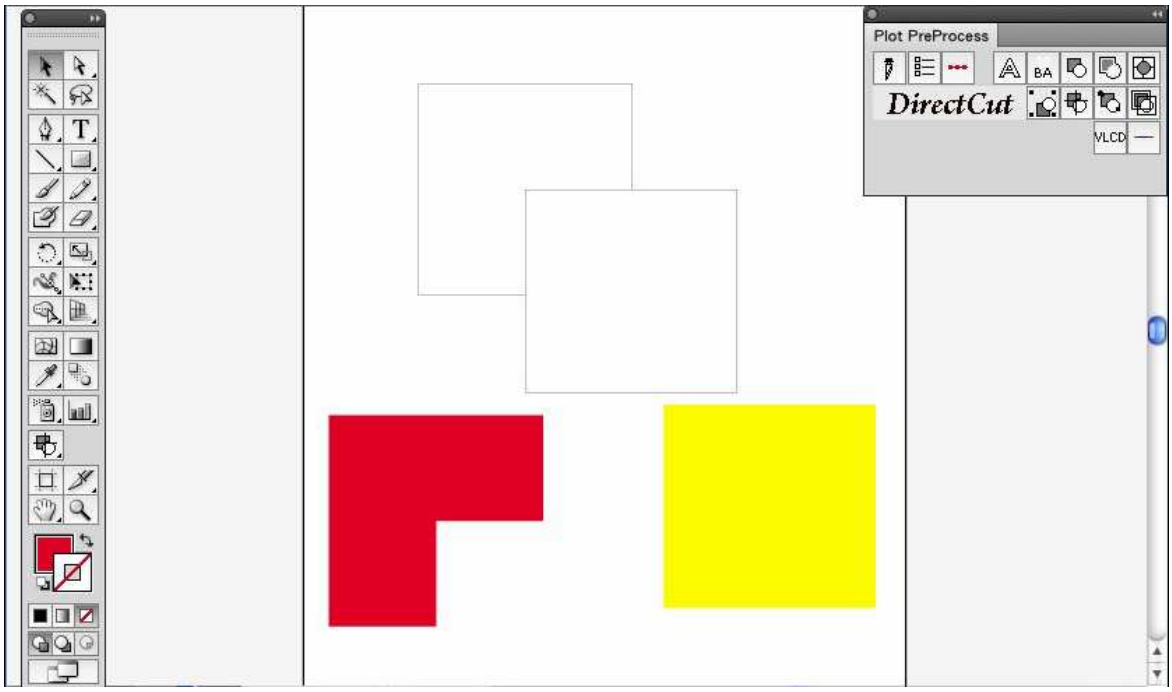
① Choose a graphic that you want to process and make contour lines.



② Group the overlapped images and apply the [Do line width acknowledge and merge] command and a joint outline will be created.



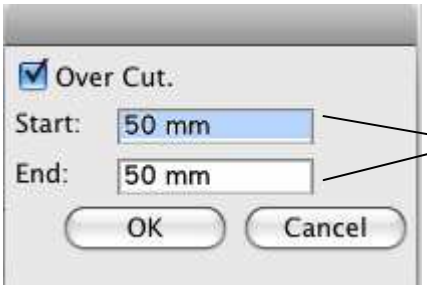
* This figure shows that the data was ungrouped and moved to another position after it was generated.



[Over Cut]

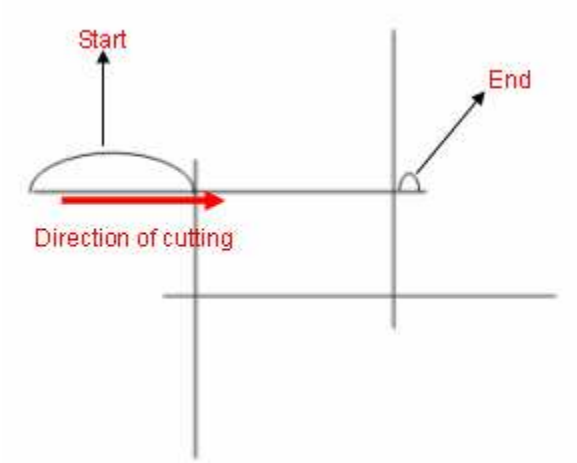
Over-cuts the cutting line segments to ensure all angles are fully cut and materials are easily peeled from the backing.

Click on the [Over Cut] command, make sure the [Over Cut] box is ticked and enter the Start and End segment values when the dialogue below shows up.



Range of setting: 0.0mm-1.0mm

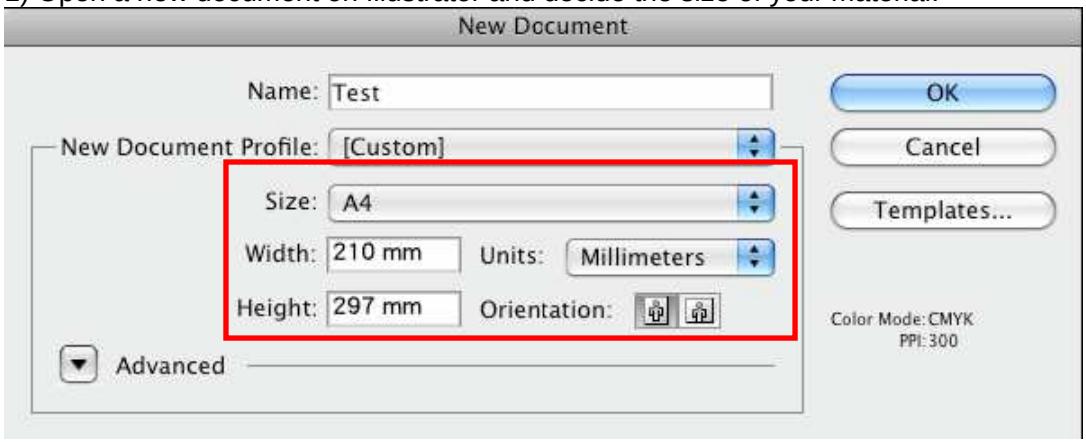
The command of over-cutting would then be given as shown below



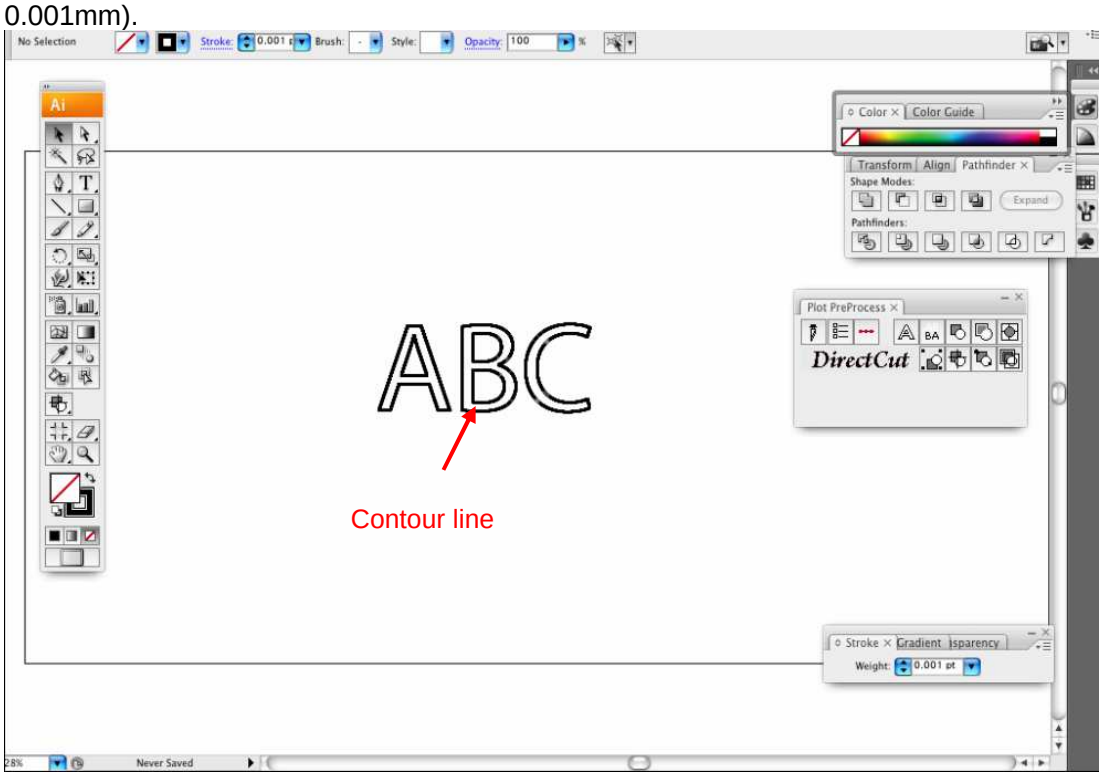
User Instructions

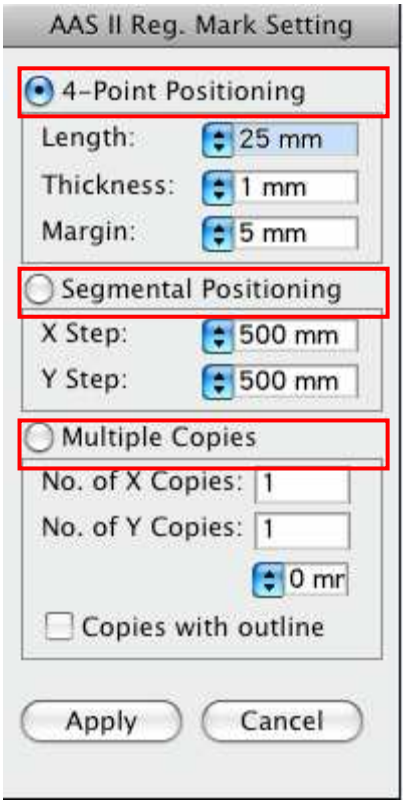
[Add registration marks]

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



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



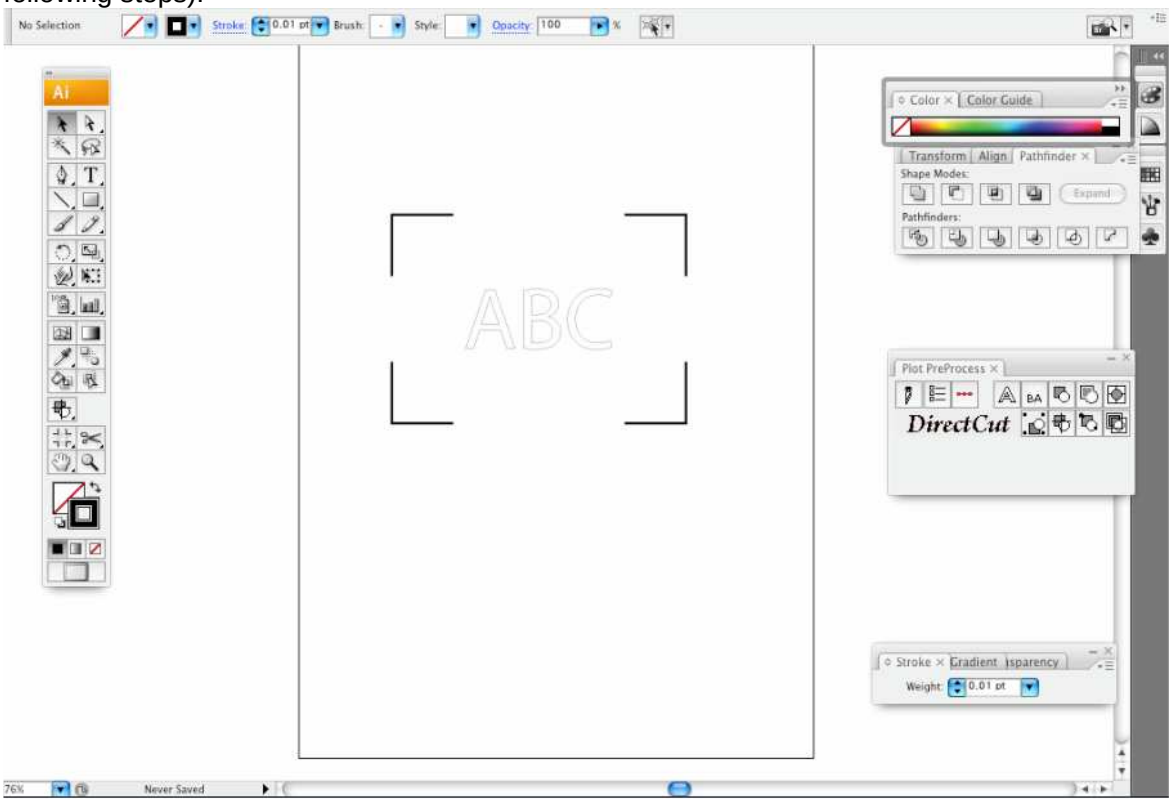


3) Click on the image and apply the AAS function by clicking the “Add registration marks” command and select the registration marks needed.

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

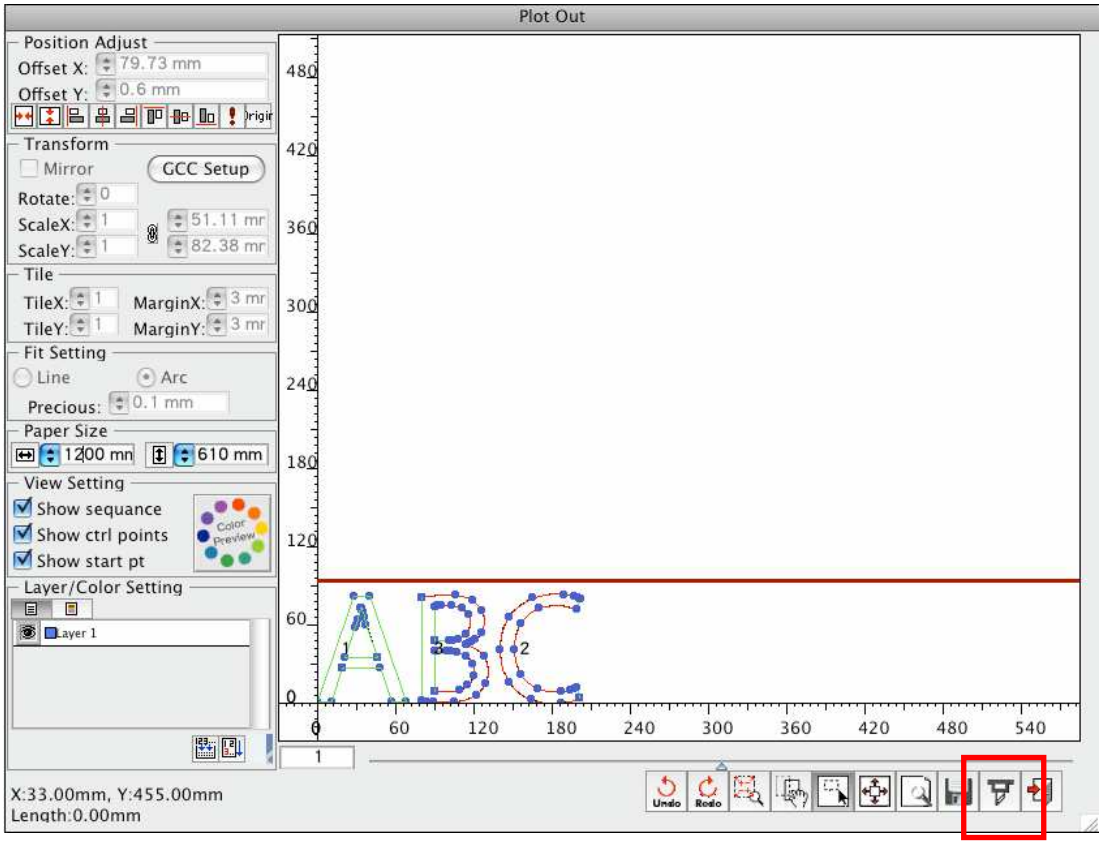
Note:
The values entered in the “4-Point Positioning” section (length, thickness and margin) will still be applied when you tick “Segmental Positioning” or “Multiple Copies”.

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



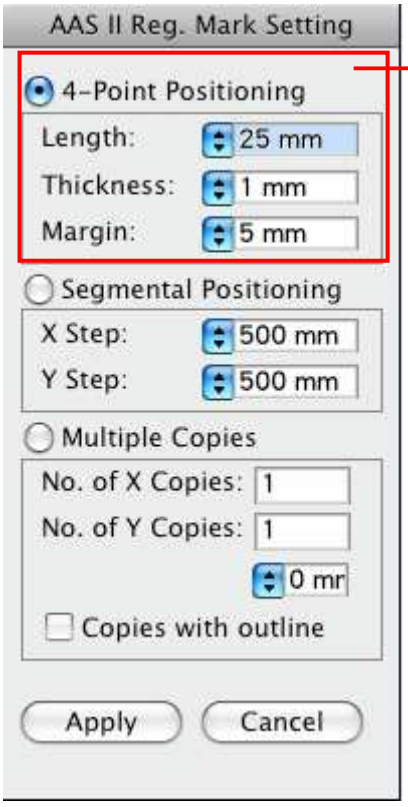
7) Print out the file with the contour line and the registration marks. Place the printed file on the cutter, lower the pinch rollers and then position the carriage at the origin of the registration marks.

8) To output the image, click on the [Plotter output] command and you can see the position of the image on the material; click [Best fit tools] to reposition the object to click the “Export” command and your object will be sent to the cutter.



Three types of registration marks

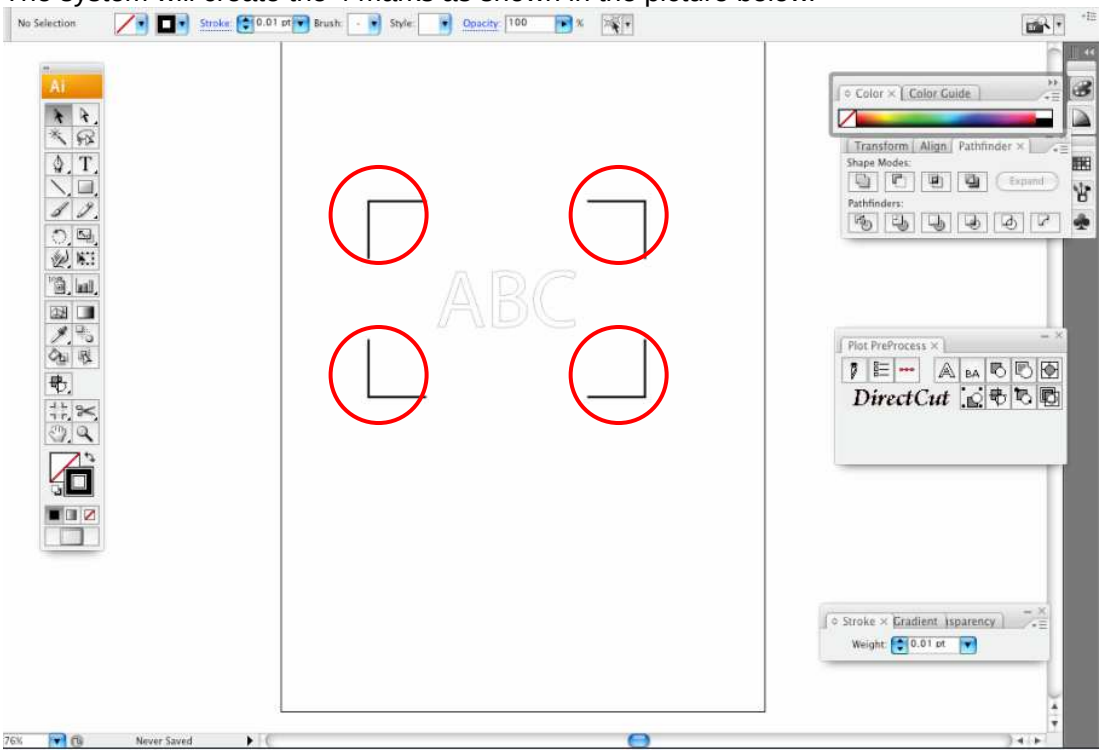
4-Point Positioning



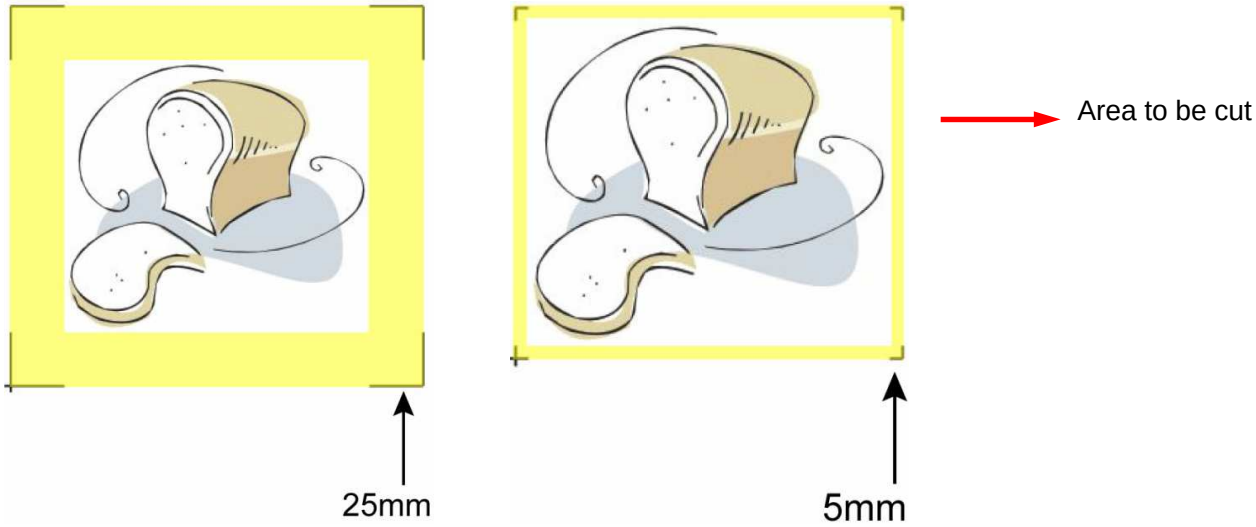
4-Point Positioning

- 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:
To save your materials, in addition to amending object margins, you can also adjust the length of the registration marks (**10**mm minimum) when you apply 4-Point Positioning (see table 1 for suggestions based on different material sizes). The smaller the size is, the smaller the distance between the object and the registration marks is (see the figures below).



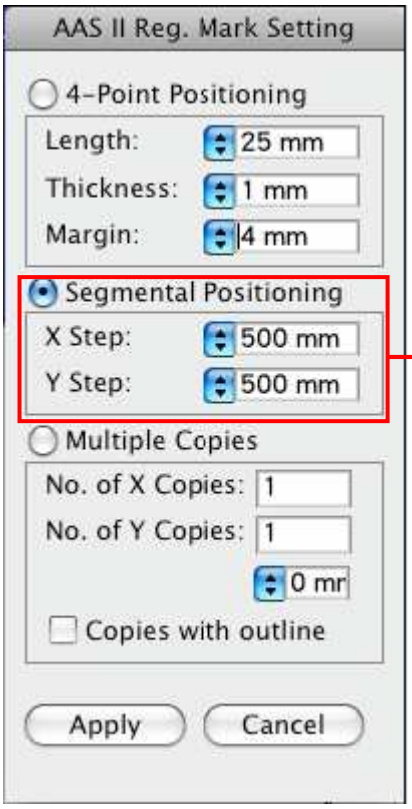
Page size (unit: inch)	Suggested mark length (unit: mm)
A6 (4.13 × 5.83)	5
A5 (5.83 × 8.27)	8
A4 (8.27 × 11.69)	11
A3 (11.69 × 16.54)	16
A2 (16.54 × 23.39)	23
A1 (23.39 × 33.11) and above	25*

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

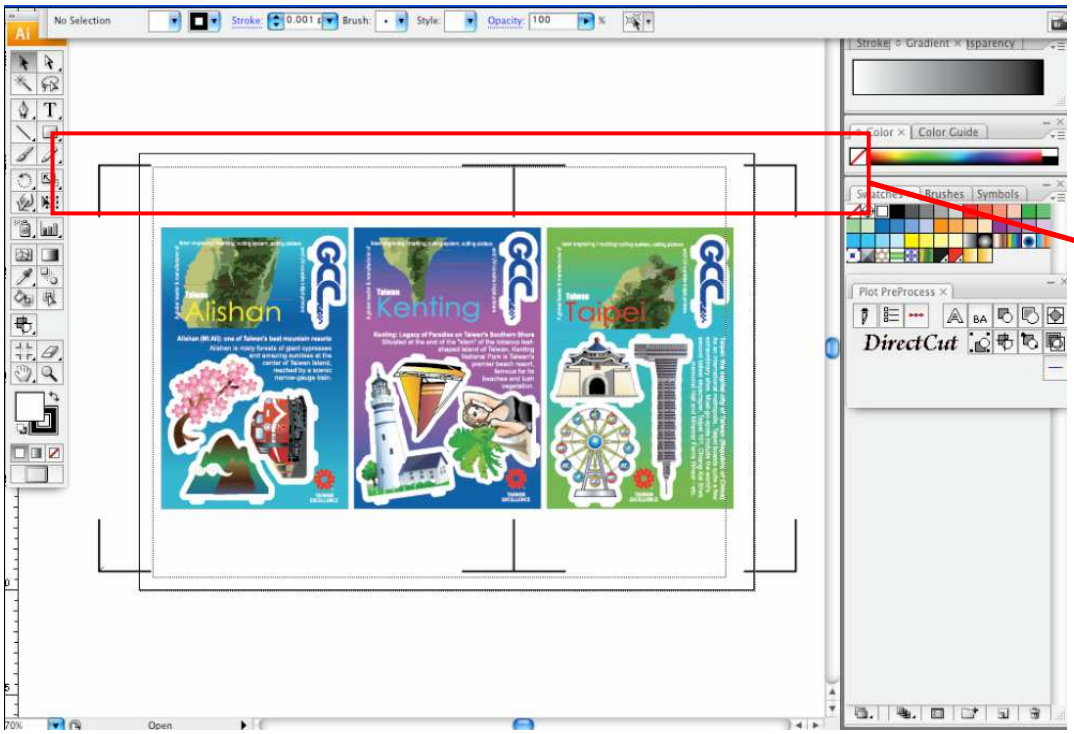
For precise cutting quality, it is suggested to select “Segmental Positioning” when you are working on an extra long or large-sized image to increase cutting accuracy.



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

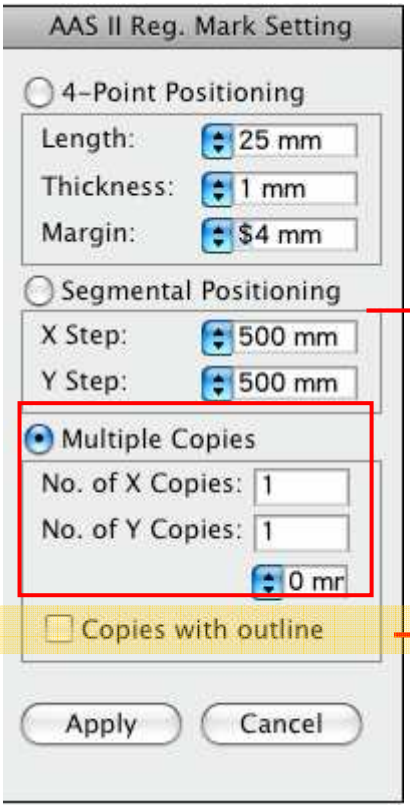
The system will create the marks as shown in the picture below



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.

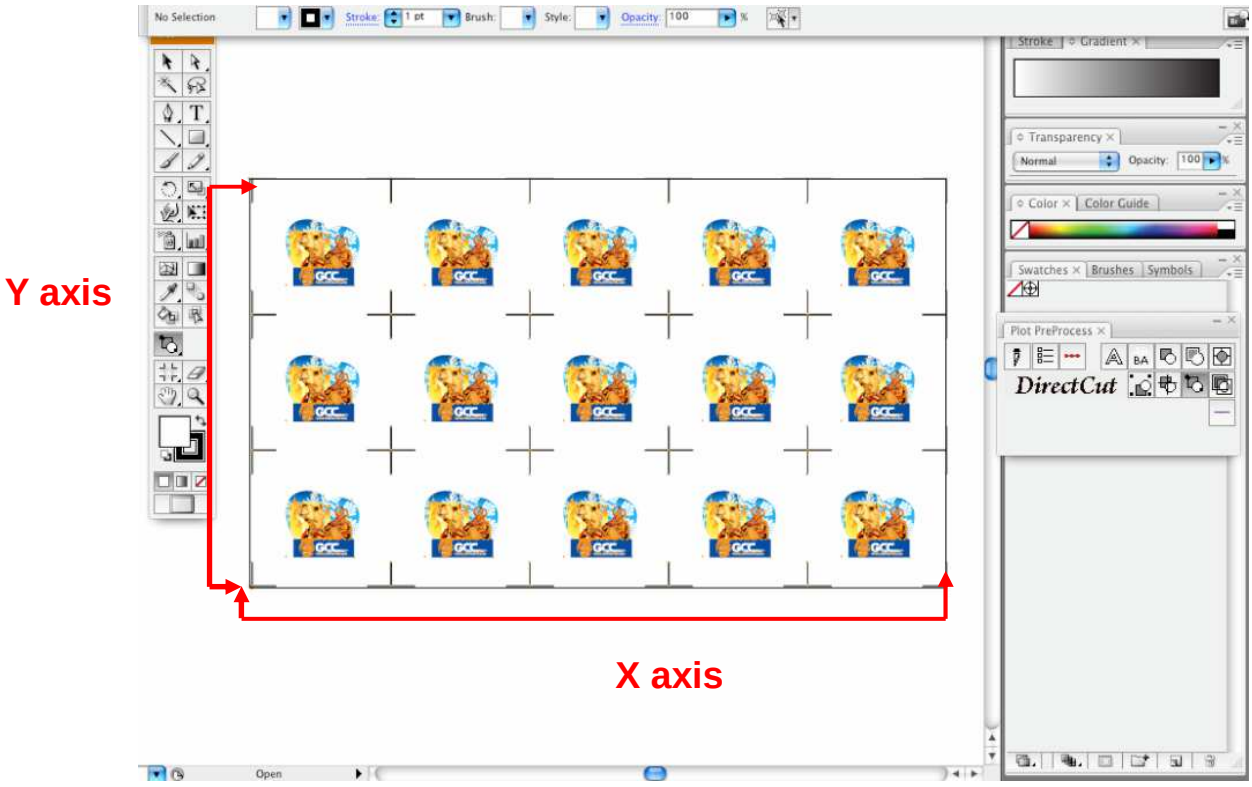


Multiple Copies

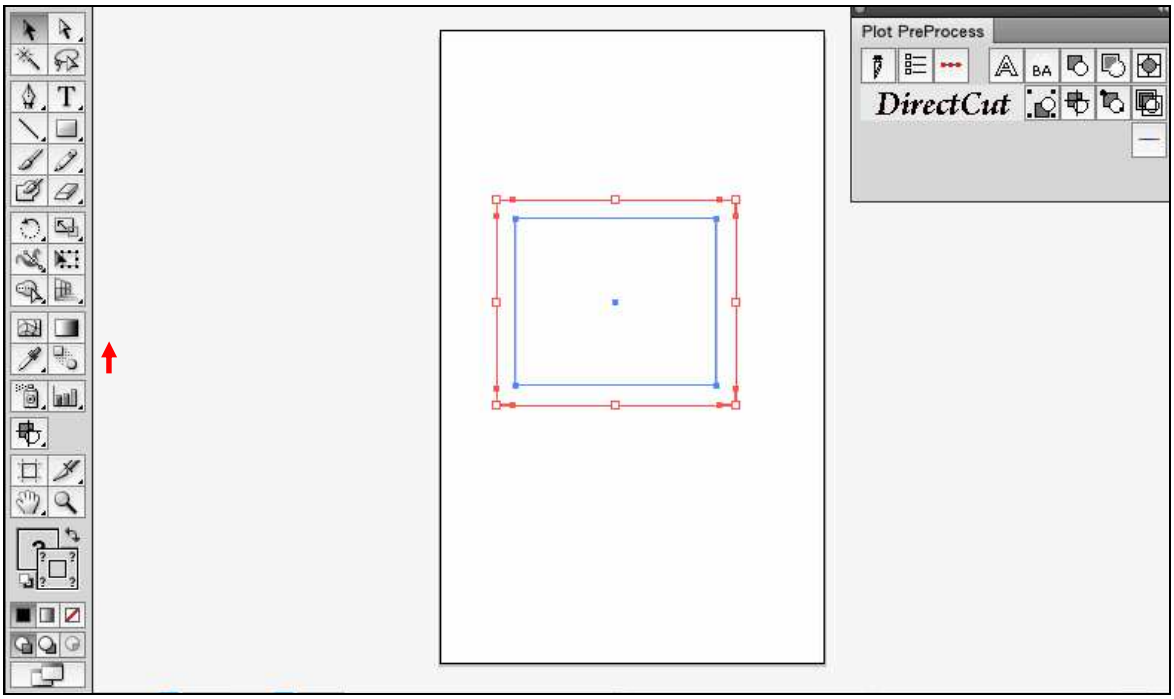
- No. of X Copies: The numbers of copies on X axis
- No. of Y Copies: The numbers of copies on Y axis
  → Range: 1~10. (The more copies you make, the more time is needed for data transmission.)
  → Numbers of X Copies * Numbers of Y Copies = The total amount of image copies
- Copies with outline： To show outlines of image graphics
- Margin: Space between marks; must be 0 -100, no negative numbers allowed

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

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



Note: The object and the marks must all be selected before the object is outputted.



[Weeding]

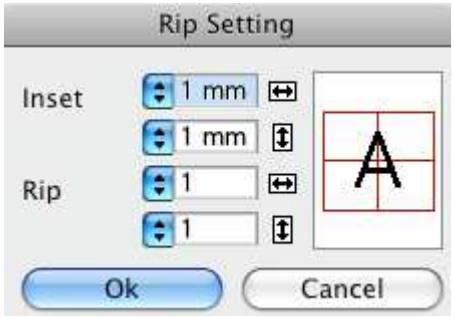
Creates peel-off tabs for graphics.

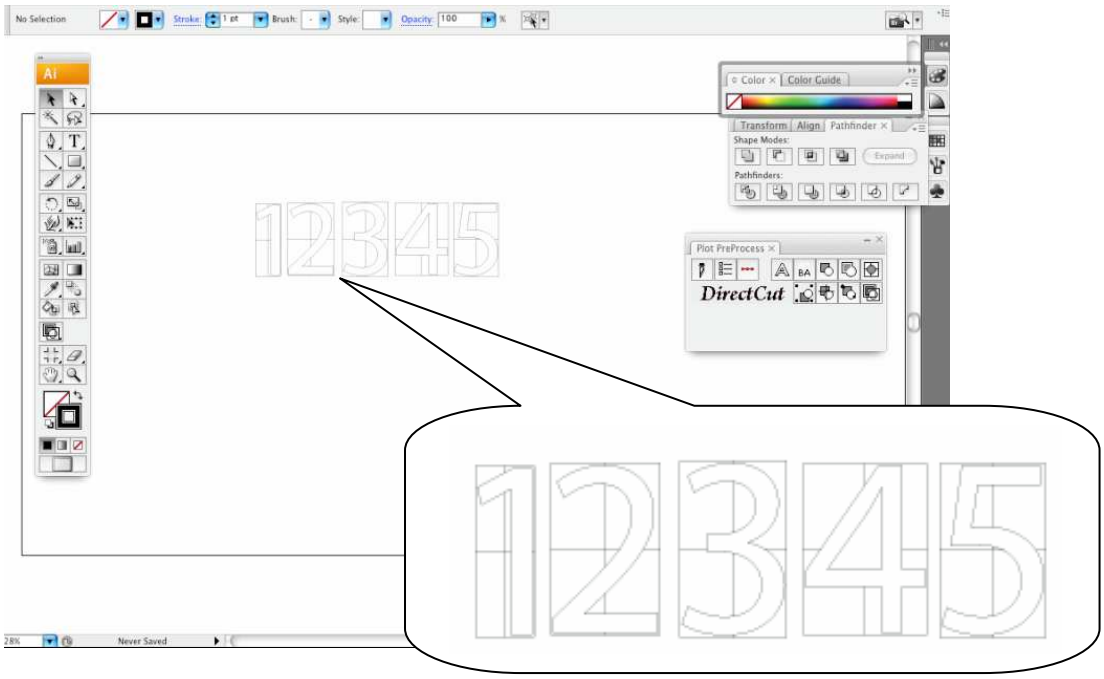
① Choose the graphic for which you want to create peel-off tabs.

② Choose the Weeding command.

③ Determine the width of the peel-off tabs and the number of horizontal and vertical slips.

<<Finished>>





* If you want to use the previous setting as it is, you need to shift-click.

*This command creates peel-off tabs on large objects, enabling users to peel them off from the materials easily.

[Split plot data]

Creates overlaps ("flaps" to be pasted together) and auto-split lines when splitting up an output. This command divides a large object into several segments when cutting. These segments are then combined to create the entire image.

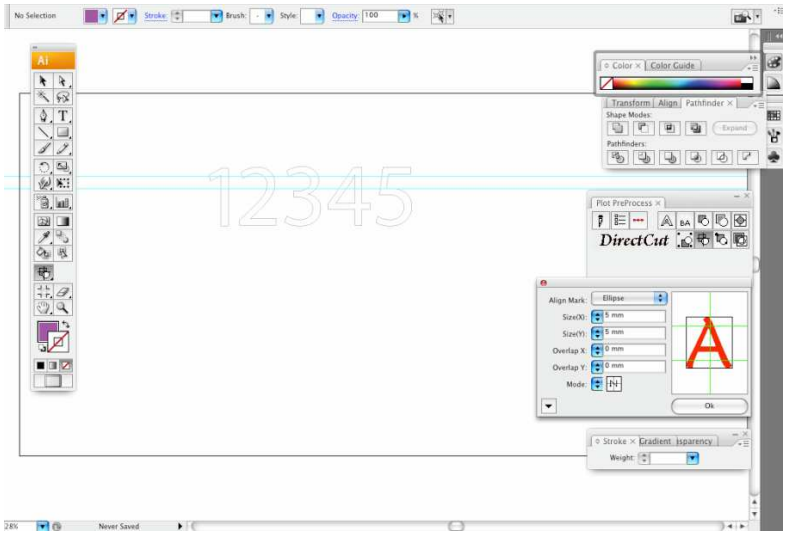
① Choose the graphic that you want to split up.

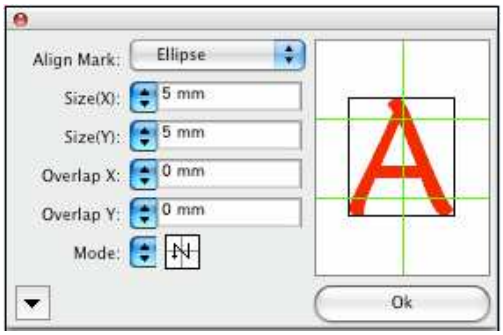
② Choose the Split plot data tool.

③ Click on the position where you want to split the data. Shift-clicking at this point will split the data vertically on the screen, while normal clicking will do so horizontally.

④ Split lines appear.

⑤ Determine the shape and the size of the flaps in the dialog box.





[Align mark]

Determines the shape of the flaps.

[Size X/Y]

Enter the size of the flaps in proportion to the split line you have created.

[Overlap X/Y]

Enter the width of flaps to be overlapped.

[Mode]

Determines the sequence of source data.

⑥ Click OK.

When you switch to another command, DirectCut finishes splitting the output data.

[Difference between the results depending on the sequence]

[Check and make new start point]

Allows you to confirm or modify the start point when outputting to your plotter for specified cutting environments. You can also adjust the start point of your object through this command.

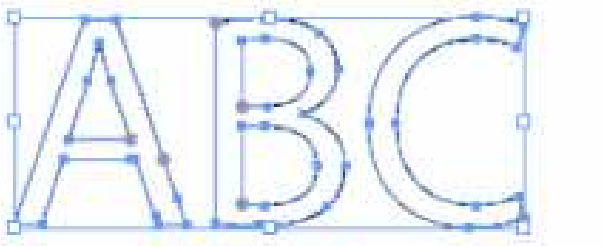
① Choose the Check and make new start point command.

<<An orange dot will appear on each path>>

② Click on the path to change the start point.

First, move the mouse pointer to the center of the orange dot. The pointer's appearance will change to  .

This shape represents the current start point.



Next, move the mouse pointer onto the path itself. Click when the pointer's appearance changes to  . An anchor point will be added to the path, and the position where you clicked will become the new start point.

[Check group information]

① Choose the Check group information command.

② Drag from the point you like and you can see how your objects are grouped as below:

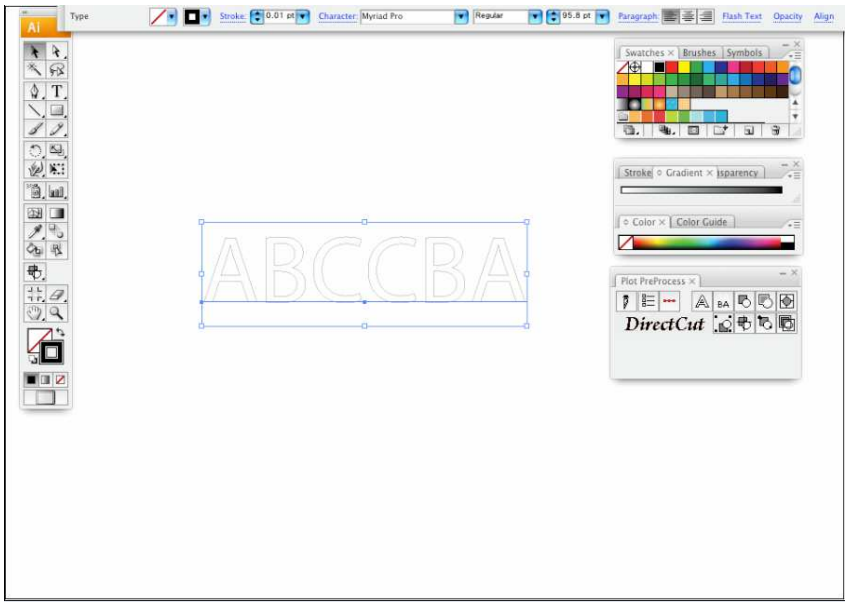
* In step ②, dragging while pressing the Shift key enables you to zoom.

[Invert word]

Creates vehicle letterings.

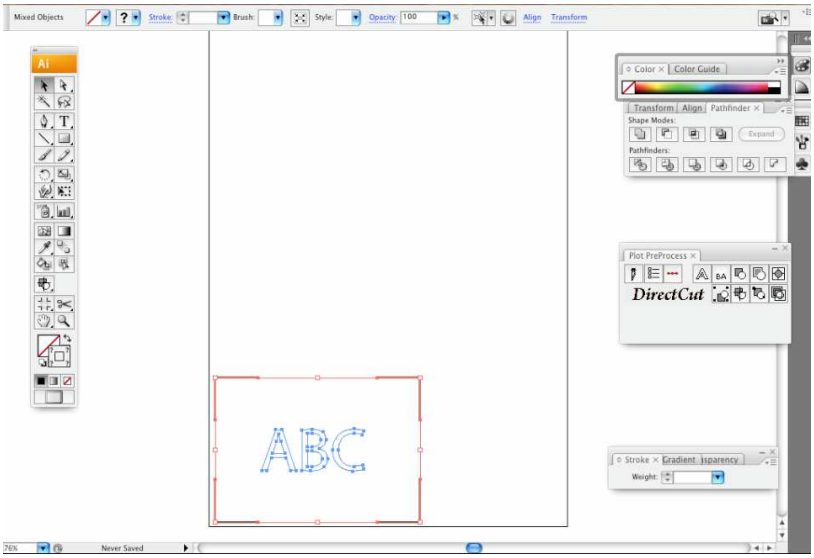
① Choose the letters that you want use to make vehicle letterings.

② Choose the Invert word command.

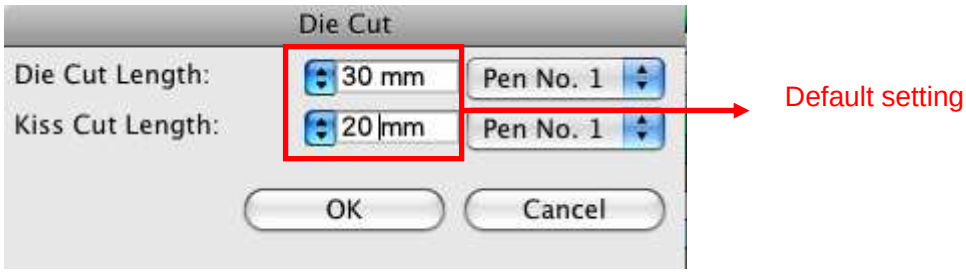


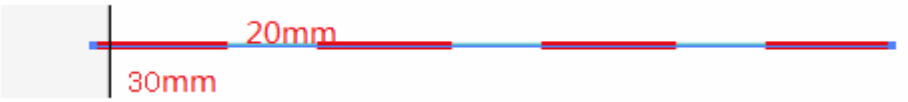
[Die cut]

Select the image you would like to output



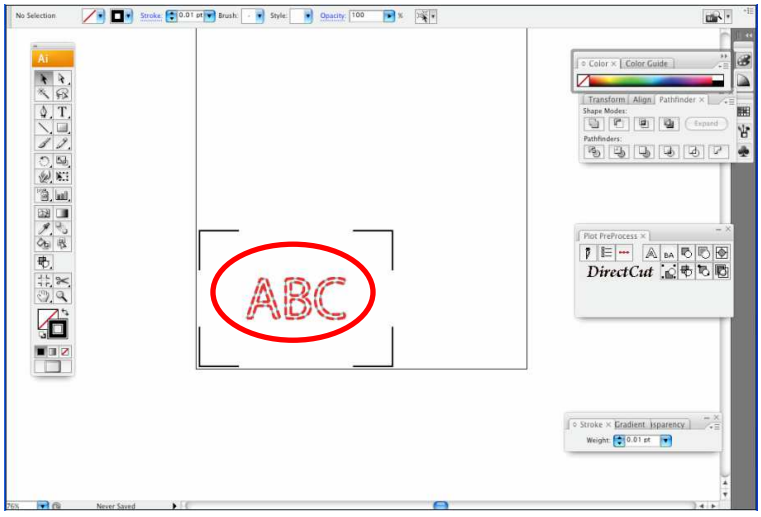
Select the “Die cut” command and adjust “Die Cut Length” and “Kiss cut Length” and then click “OK”.



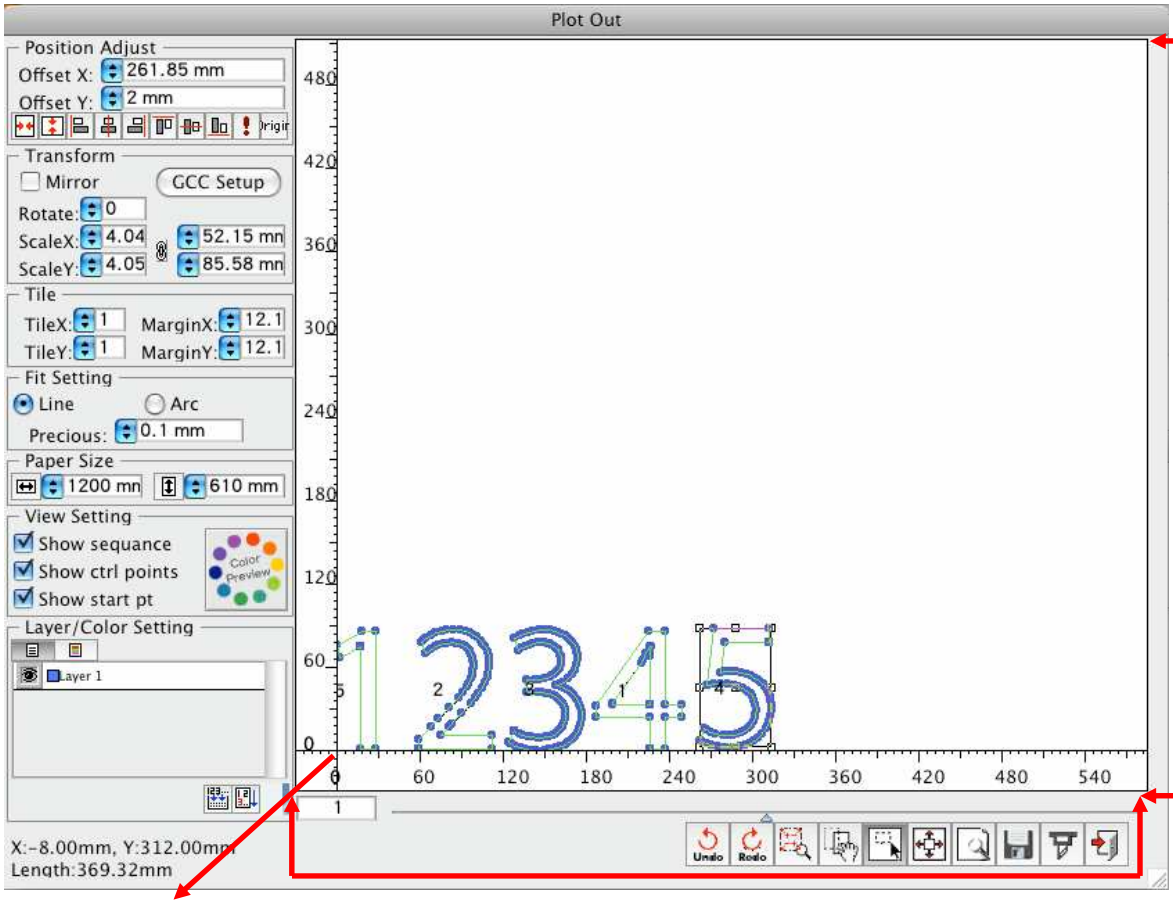


Note: Pen No.1 and Pen No. 2 will be applied alternately when the cutting plotter is in motion.

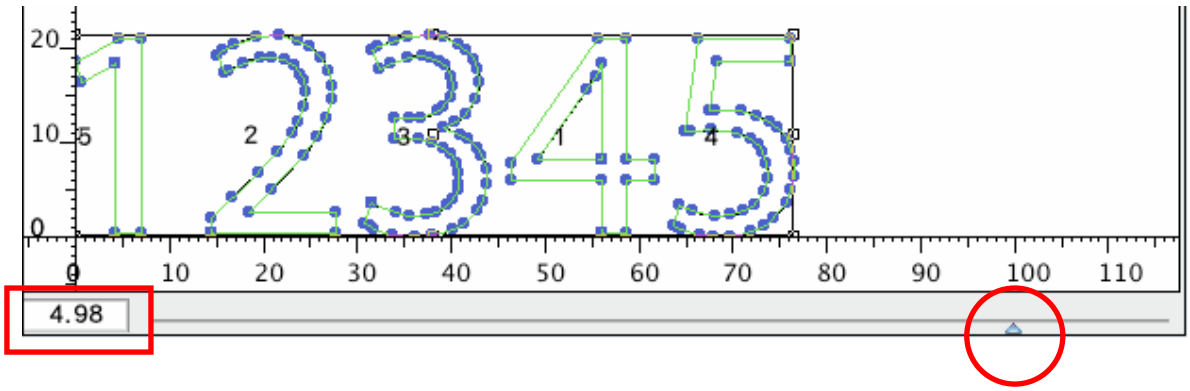
The Die Cut and kiss cut lines will then be added to your object as shown below:



4. Plotter Output



You can zoom in or zoom out by dragging the triangle below the ruler or changing the value in the small box on the bottom left corner.



[Plotter output]

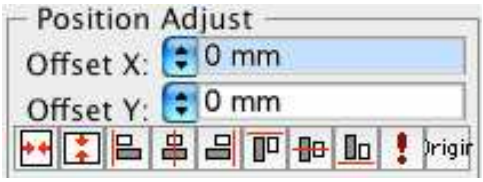
Displays the output data that has already been processed and confirmed on the layout screen of DirectCut.

① Choose the graphic that you want to output.

② Choose the Output command.

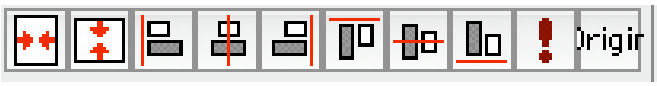
<<The dialog for output appears>>

[Position Adjust]



[Offset X] / [Offset Y]　Numerically determines where on the sheet to output.

Starting from the left, the nine buttons are:



[Center X]　Moves the position of the selected graphic horizontally to the center of the plotter area.

[Center Y] Moves the position of the selected graphic vertically to the center of the plotter area.

Click on [Best Fit tools] to show the entire object.

[Align left]

Aligns all the selected graphics to the far left of its graphic group.

[Align X center]

Aligns all the selected graphics to the horizontal center of its graphic group.

[Align right]

Aligns all the selected graphics to the far right of its graphic group.

[Align top]

Aligns all the selected graphics to the top edge of its graphic group.

[Align Y center]

Aligns all the selected graphics to the vertical center of its graphic group.

[Align bottom]

Aligns all the selected graphics to the bottom edge of its graphic group.

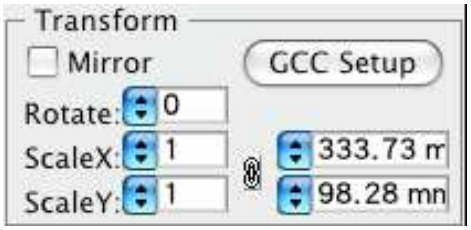
[AutoGroup]

Maximize paper space utilization on the basis of a rectangle circumscribed about the graphics.

[Origin]

Move the objects to the original position on the plotter area.

[Transform]



[Mirror]

Inverts a graphic on the y-axis.

[Rotate]

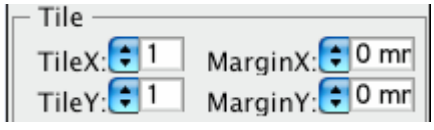
Rotates a graphic by 90 degrees clock-wisely at a time on the center of its circumscribed rectangle.

[Scale X] / [Scale Y]

Expands or contracts a graphic in the direction of the x- and y-axes. You can either enter a magnification value or directly specify the final size. The chain icon being pressed down indicates the original size, while not being pressed down indicates that scaling has occurred.

* Entering the final size always scales the graphic up or down.

[Tile]



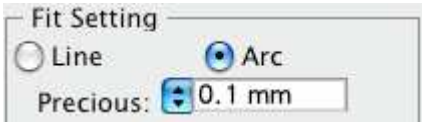
[Tile X] / [Tile Y]

Copies the selected graphic in the direction of the x- or y-axes.

[Margin X] / [Margin Y]

Determines the space between the graphics that are copied in the direction of the x- or y-axes.

[Fit setting]



[Line] / [Arc]

Determines whether to output any layout data including curves by either fine straight lines or by arcs. If you set it to Arc, your output device will operate more smoothly. Please note that neither setting affects cutting speed.

[Precious]

Determines the approximate accuracy for a path. Decreasing the value will increase the approximate accuracy, and vice versa. Increasing the accuracy will slow down the output speed, and vice versa.

[Paper size]

Paper size is already set to the value that you chose at "Plotter Setup," but you can change it by entering other values here. However, you cannot enter a higher value than the one you specified at "Plotter Setup."

This function automatically scans the plotter size.
* At "Plotter Setup," make sure to set a value higher than the original plotting area of your plotter. If you specify a value lower than the original plotting area of your plotter, this button will be disabled.

* The auto-scan is available only for HP-GL.
* This function is only available for plotters which have an auto-scan function.

* Before you use the auto-scan, you need to set a sheet on your plotter to get it ready for cutting. Make sure that the plotter is scanning the sheet size.

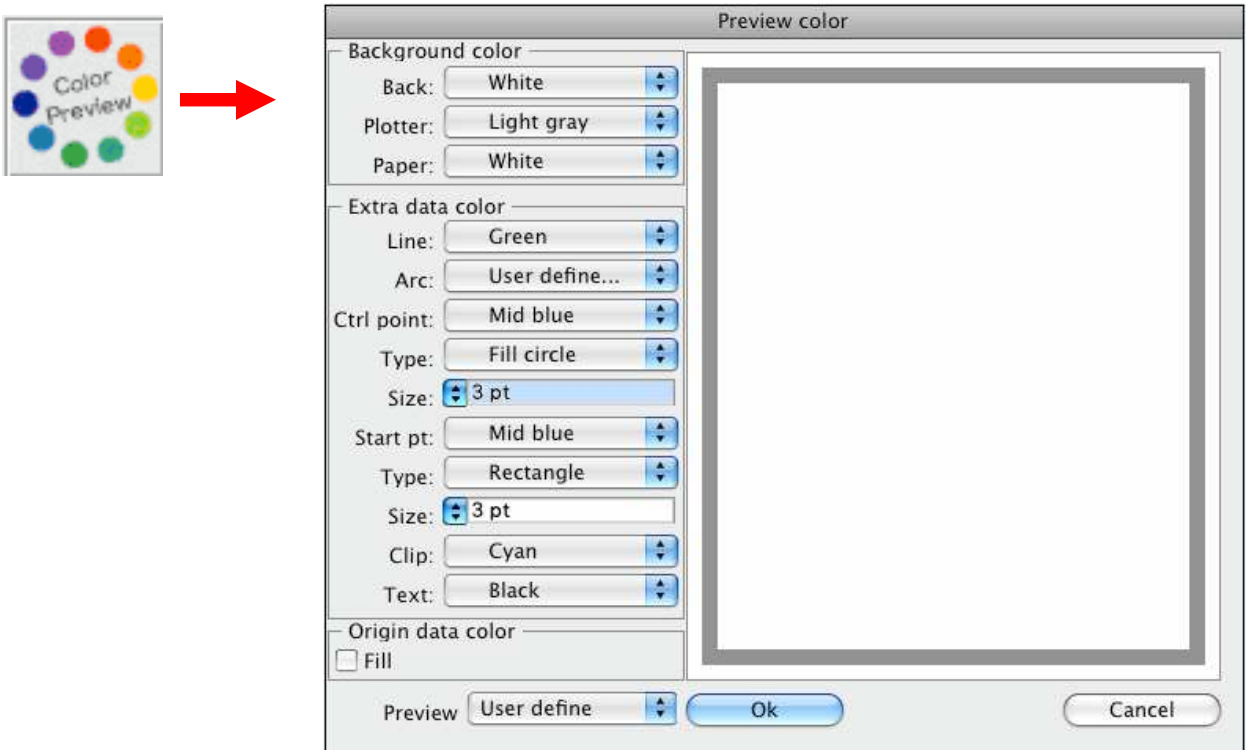
[View settings]

Changes the appearance of the preview screen to the right of the Plotter output dialog.
[Show sequence]
Shows or hides the output sequence.
To show, click the Show sequence check box.

[Show ctrl points]
Shows or hides the control points.
To show, click the Show ctrl points check box.

[Show start points]
Shows or hides the output start points.
To show, click the Show start points check box.

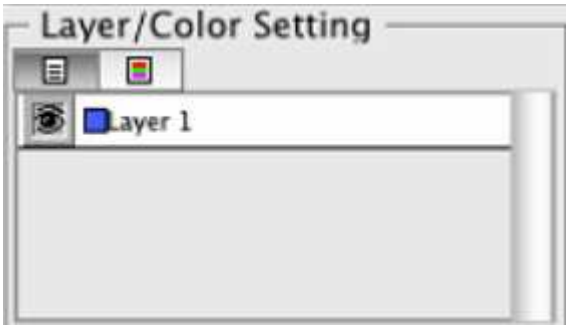
[ColorPreview]



The Autosort is processed for each layer or color. In the case of Figure 1, Layer 1 and Layer 2 will be sorted separately. If the layers are broken down by color as shown in Figure 2, sorting will be performed separately for each of the three colors.

"ColorPreview" allows you to set in detail the color information (background, screen display) for the preview screen and so on. You can also configure user customization.

[Layer / Color setting]



Controls the function for outputting your data for each layer or color.

<Layer view> <Color view>

Allows you to toggle between show and hide. In the left figure, Layer 1 is hidden while Layer 2 is shown. The hidden data is not outputted.

As shown in the left figure, you can change the output sequence by dragging each entry arranged by layer or color. If you arrange the entries in the way shown in the left figure, the output sequence becomes Layer 2 -> Layer 1.

Double-clicking an entry name will open the dialog shown below, where you can specify a pen for outputting and give detailed instructions for preprocessing and postprocessing.

[Autosort]

Rearranges automatically the output sequence by the shortest cut.

[Manusort]

Rearranges the output sequence in ascending order by specifying the inside of a group. Specifying the outside of the graphics will finish manual sorting.

[Exchange sort]

Specifies two groups in order to alternate their output sequence.

* Manual sorting and Exchange sort will be performed separately for each layer or color that is currently selected. For example, if you perform manual sorting with Layer 3 selected as shown in Figure 3, the preview screen will display only the elements of Layer 3. If none of the layers are selected, the top layer (e.g., Layer 3 in Figure 3) will be the target for manual sorting.

[Undo]

Cancels the current operation on [Plotter Output] and goes back to the previous one.

[Redo]

Restores the canceled operation.

[Zoom tools]

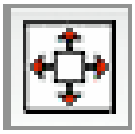
Dragging from top left to bottom right with your mouse will scale up the data within the selected area, while dragging from bottom right to top left will scale down the data. Simply clicking on the data will reset the magnification to "x1."

[Move tools]

Allows you to grab the paper and move it to other positions by dragging.

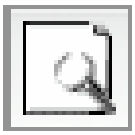
[Select tools]

Selects the object in the preview screen. The selected data turns green. You can either rubber-band select multiple object by dragging or select each single objects by clicking. To deselect the object that you have selected, just shift-click it.



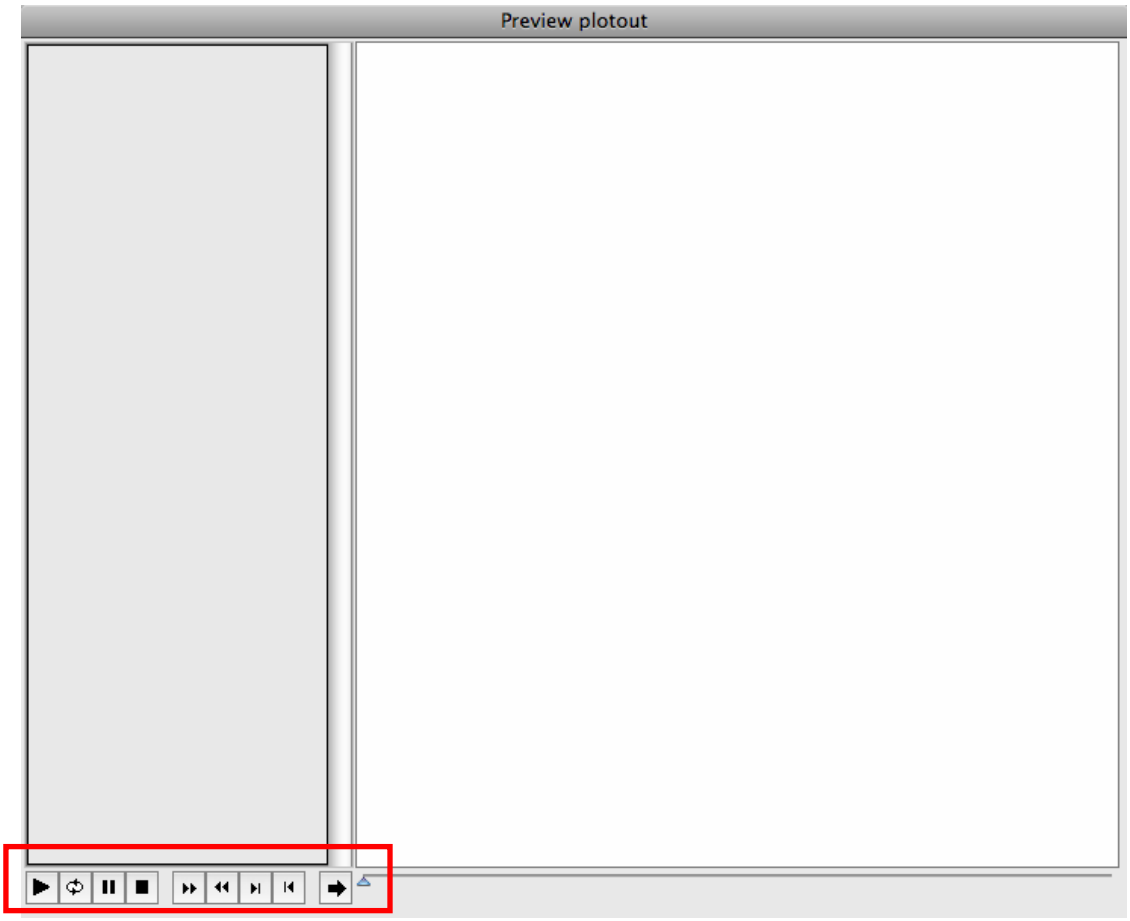
[Best fit tools]

Displays all the graphics at once within the domain of the preview screen.



[Plot preview]

Allows for on-screen simulation of the commands and the behavior that DirectCut will output.



The instruction of the ten commands above is given below:

[Play]

Starts simulation. * To replay, click this button and then click it again.

[Loop]

Repeats playback until you click the Stop button or the Exit button.

[Pause]

Pauses simulation. To resume the simulation, press this button again.

[Stop]

Exits simulation.

[Fast]

Each time you press this button, the simulation will speed up.

[Slow]

Each time you press this button, the simulation will slow down.

[Step forward]

Moves the plotter command forward by one step.

[Step backward]

Moves the plotter command back by one step.

[Exit]

Closes the dialog for output simulation.

[Slider]

You can use this to move the plotter command forward or back.

[Make plot file]

Allows you to name the output data file and save it.

[Export]

Allows DirectCut to output to your output device.

[Exit]

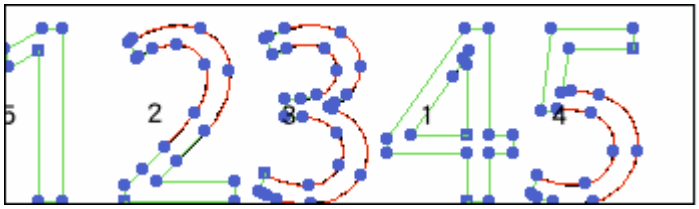
Closes this dialog.

[How to operate preview screen]

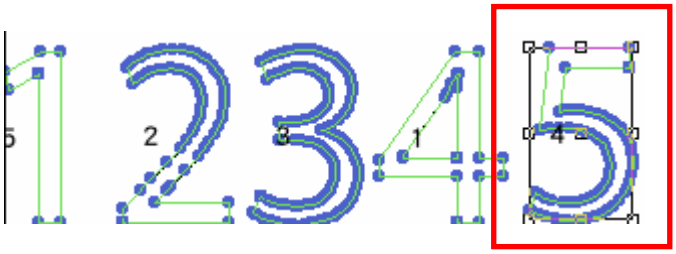
The graphic that you selected with the Select button  is displayed with its circumscribed rectangle and nine control points.

If you hold the eight control points on the four sides of the rectangle and drag them, you can expand or contract the graphic. If you drag them while pressing the Shift key, you can scale the graphic vertically or horizontally at a constant ratio.

If you hold the control point at the center of the rectangle and drag it, you can move the graphic to any position. If you drag it while pressing the Shift key, the direction in which you move it will be fixed at vertical, horizontal, or 45 degrees.



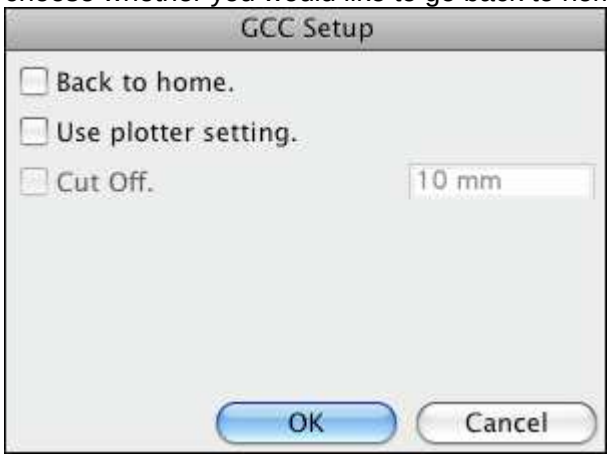
Nothing is selected



Elements are selected.

[GCC Setup]

Click on the [GCC Setup] command and the dialogue below will show up where you can choose whether you would like to go back to home or use plotter setting.



5. VLCD

“VLCD” is a program for modifying parameters of cutting functions.

[Installation]

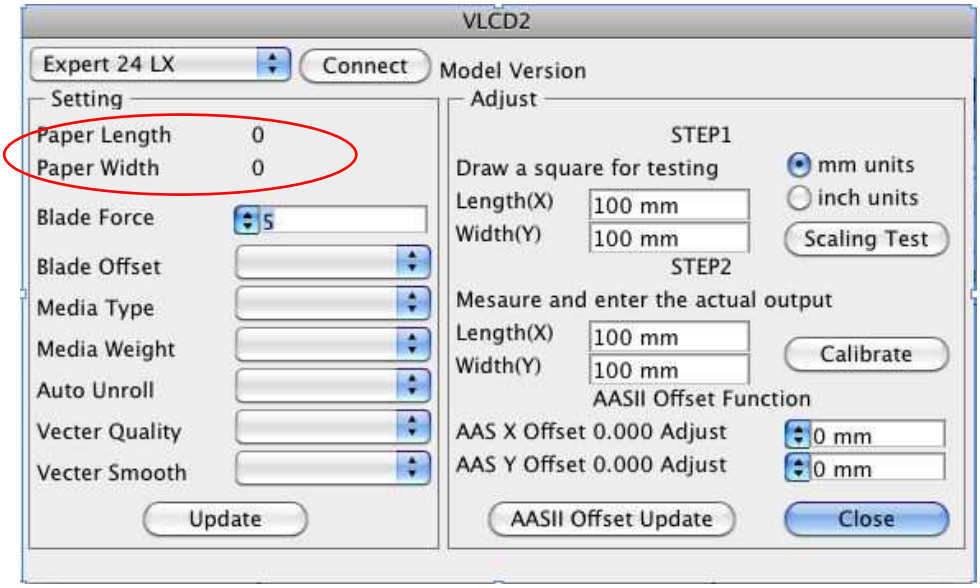
① Copy the VLCD.exe file in the Accessories folder of the Sable Installation CD onto your local drive.

② Launch VLCD by double-click on the icon.

> **Note:**
> ✓ Make sure the machine is in on-line mode to enable this program.
> ✓ The media is loaded on the machine.

③ Choose the correct port setting that is used for connecting the cutter to your computer
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.

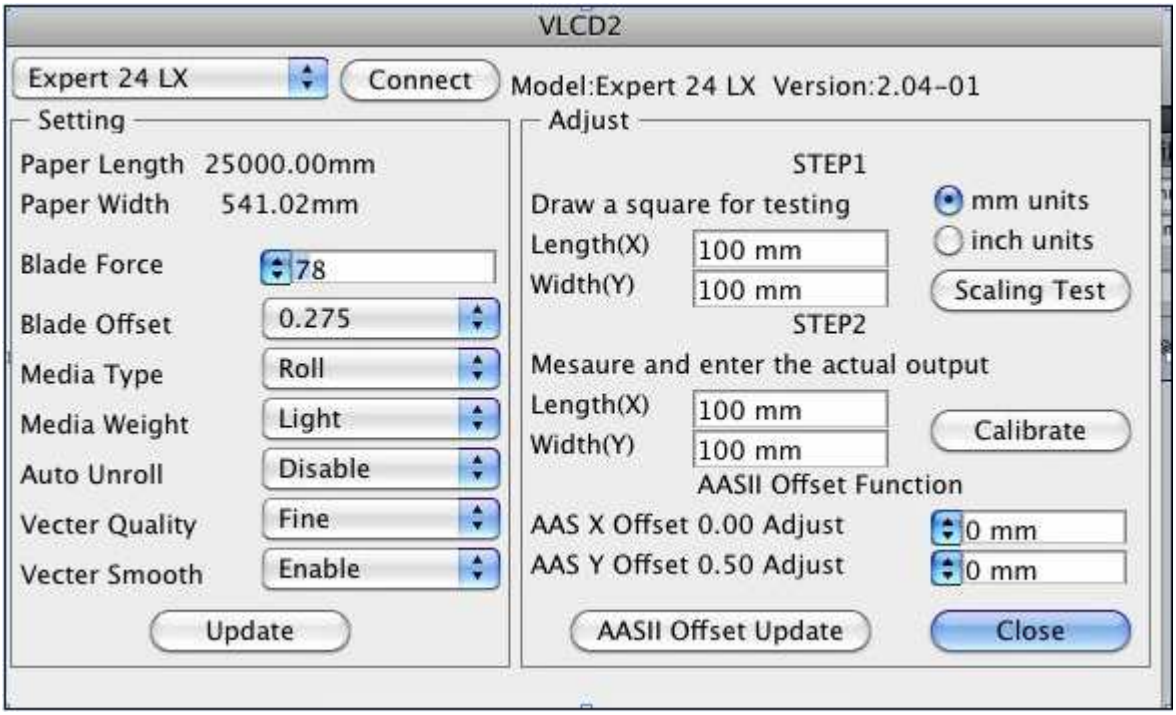
④ Press the **Connect** button to connect your computer and the cutter.
If the connection succeeds, the model info, firmware version, and adjustable parameter columns will be shown.



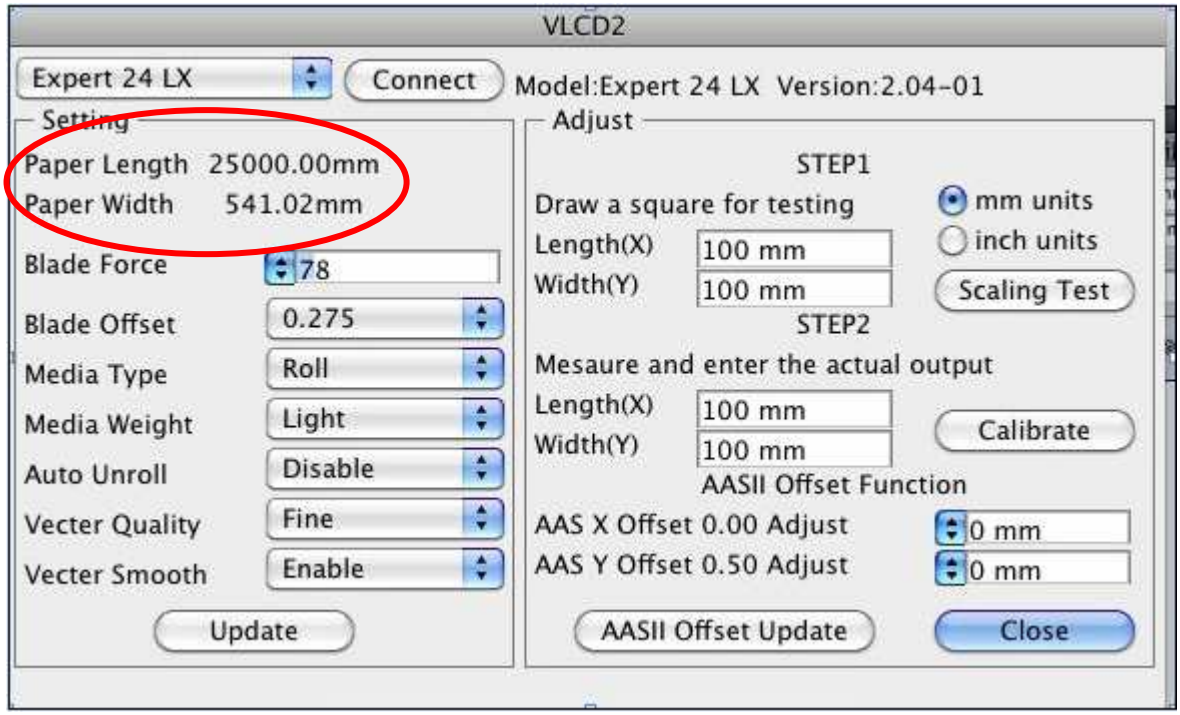
[Functions of VLCD]

Below are the functions adjustable in VLCD.

- Poll Size
- Blade Force
- Blade Offset
- Media Type
- Media Weight
- Auto Unroll
- Vector Quality
- Vector Smooth
- Update Setting
- AAS Offset



- **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 541.02mm.

- **Blade Force**
  To adjust the blade force between 0 and 600 (Default = 50).

- **Blade 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.

- **Media Type**
  To reflect the type of media: Roll/ Edge/ Single

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

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

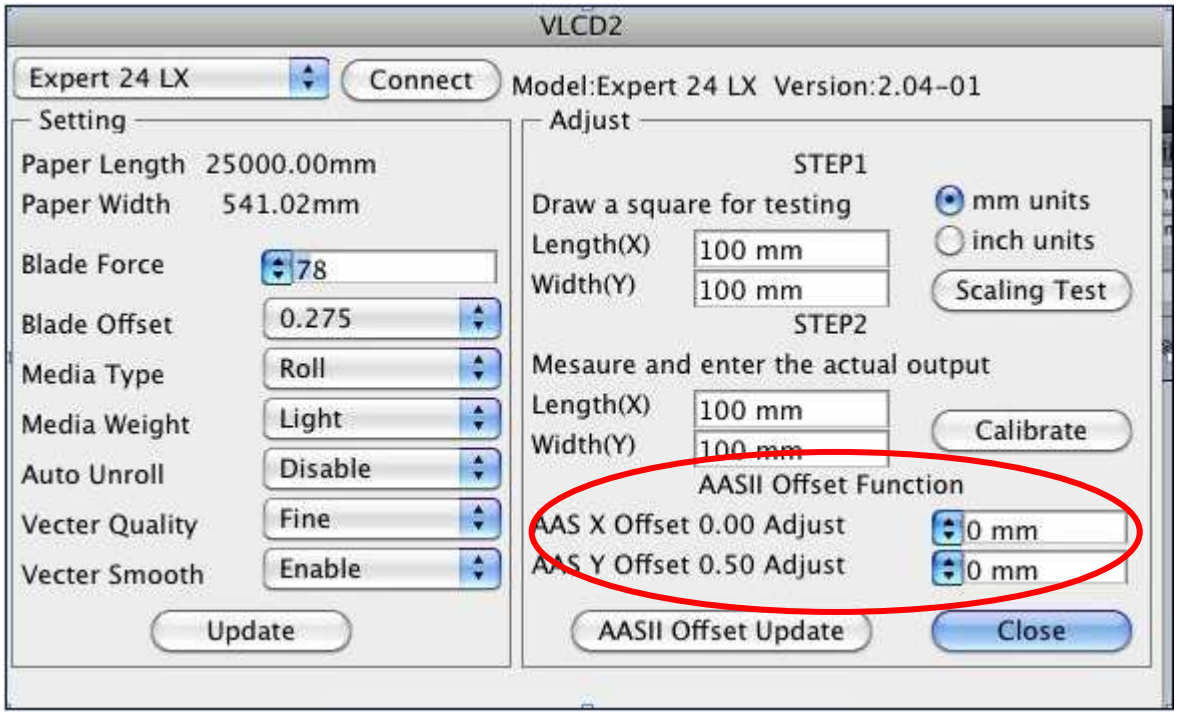
- **Vector Quality**
  To set or modify cutting quality.

- **Vector Smooth**
  To enable smooth-cutting function.

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

- **AAS Offset**

  To set or modify AAS offset value.



6. Troubleshooting

The DirectCut menu cannot be added

Question: The DirectCut menu and tools have not been added to Illustrator though it starts up all right.

Answer:

① Something may have gone wrong when you installed DirectCut. Please refer to the " Installation Procedure".

② Choose the File menu > Preferences > Plug-in/Virtual storage disk, and please make sure that the location indicated in the "Plug-in folder" field is the same as that of Illustrator's plug-in folder.

③ The serial number you entered may be wrong. Please confirm the number and enter it correctly.

On output

Question: When I press the Exoprt button, the message, nothing happens.

Answer:

① The choice in the Port field of "RS232 setup" is wrong. Choose the port to which a cable is currently connected.

② For the Macintosh version, please make sure that the port set for AppleTalk is not the same as the choice in the Port field of "RS232 setup"

Question: My plotter doesn't respond at all if I press the Export button.

Question: My computer freezes if I press the Export button.

Question: An error occurs in my plotter if I press the Export button.

Answer:

① Please check again if the cable is connected properly.

② The data transfer criteria may not be appropriate. Please check each transfer criterion in the "Plotter setup" as well as the "Language" setting.

③ Is the currently connected cable an original product or a recommended product of your output device's manufacturer? Commercially available cables may cause a malfunction. Please check with the manufacturer of your output device.

Question: The outputted data is bigger or smaller than the original.

Answer: The "Step" setting in the Plotter setup menu is not in tune with your plotter's step size. Try to match the software's setting and the plotter's setting.

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