14.1 Basic operation of printing and cutting

This section explains the flow from creation of registration mark to cutting when dedicated application is used.

Because the procedure differs for each application, see the following depending on the application you want to use.

- Graphtec Pro Studio / Cutting Master 4

  Step 1: Create registration mark (alignment mark) data.
  Step 2: Create design data for printing and cutting.
  Step 3: Print design data.
  Step 4: Cut the printed media.

- Graphtec Studio

  Step 1: Create registration mark (alignment mark) data.
  Step 2: Create design data for printing and cutting.
  Step 3: Print design data.
  Step 4: Cut the printed media.

Graphtec Pro Studio / Cutting Master 4

Step 1: Create registration mark (alignment mark) data.

When printing and cutting, it is necessary to attach registration marks (alignment marks) in order to know exactly the printing position.

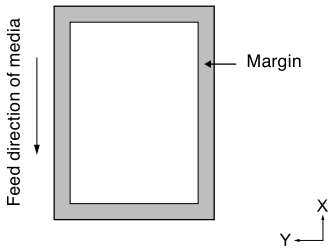
Margin is necessary around the registration marks.

When printing on sheet media, the following margins are required.

	Leading edge	Trailing edge	Right and left edges
MARK TYPE 1	15 mm or more	35mm or more	15mm or more
MARK TYPE 2	17mm or more	37mm or more	15mm or more

When printing on roll media, it is necessary to provide a margin of 6 mm or more between the registration mark of the first sheet and the registration mark of the second sheet. In addition, margins of 15 mm or more must be provided at the left and right edges.

* The printing position may be different depending on the printer you want to use, therefor It's recommended to take a margin as long as several mm.



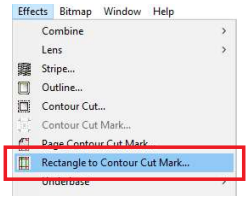
Operation

1-1 Create registration marks for printing and cutting.

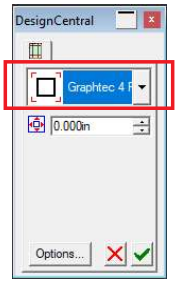
When using Graphtec Pro Studio

1 Create rectangles on the design screen using "Rectangle" tool.

2 Select the rectangles and select "Effects" - "Rectangle to Contour Cut Mark".



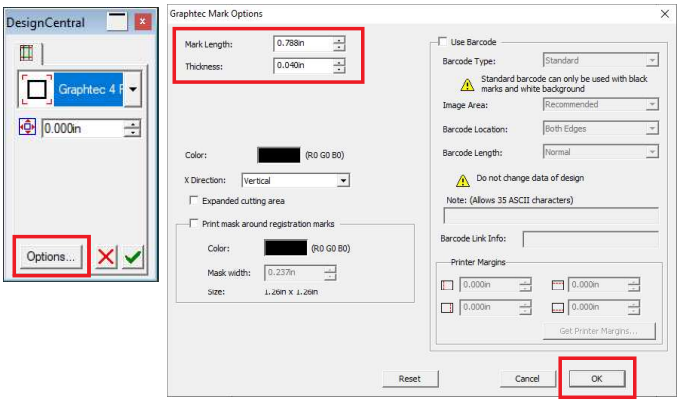
3 Select a type of registration mark on the "DesignCentral" screen.



4 Press the "Options".

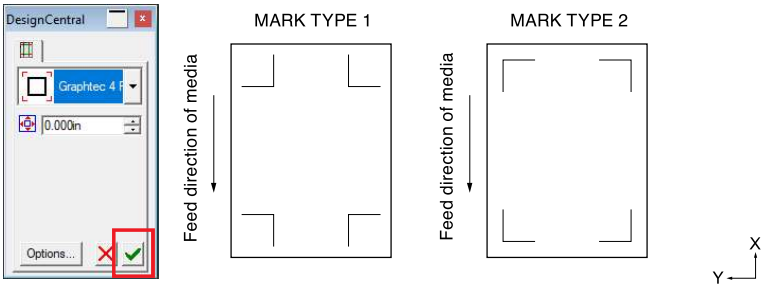
Specify the length and thickness of the registration mark on the displayed "Graphtec Mark Options" screen.

Press the “OK”.



5 Press the on the "DesignCentral" screen.

Registration marks are created on the design screen.



When using Cutting Master 4

1 Create rectangles on the design screen using the "Rectangle" tool in Adobe Illustrator or CorelDRAW.

2 In Adobe Illustrator, select the rectangle and then select "Cutting Master 4" - "Registration Marks" from the File menu.

In CorelDRAW, select "Launch" - "Registration Marks (CM4)" from the tool bar.

* If selecting from the application launcher in CorelDRAW version X7 or earlier and, the Registration Marks screen will be displayed.

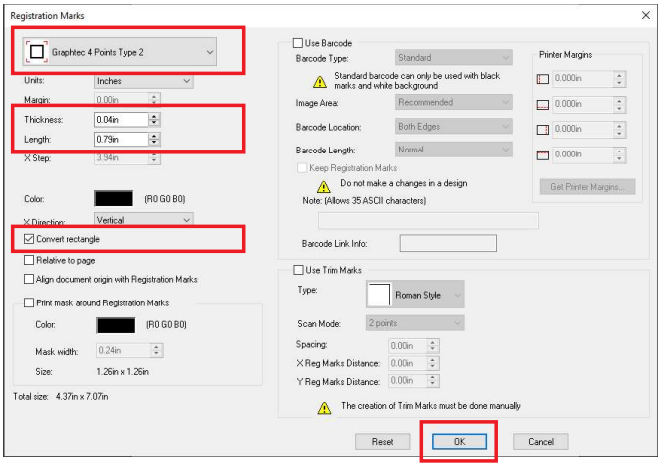
Set type, thickness and length of registration mark.

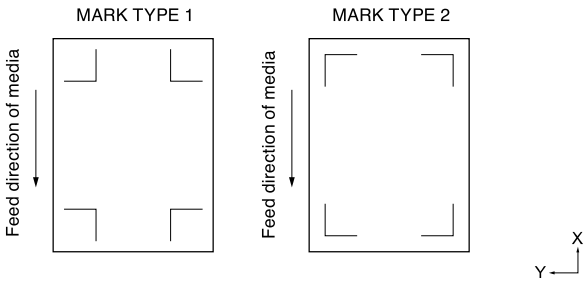
Check the "Convert rectangle".

Press the “OK”.

Registration marks are created on the design screen.

* The following screen is the screen when starting from Adobe Illustrator.



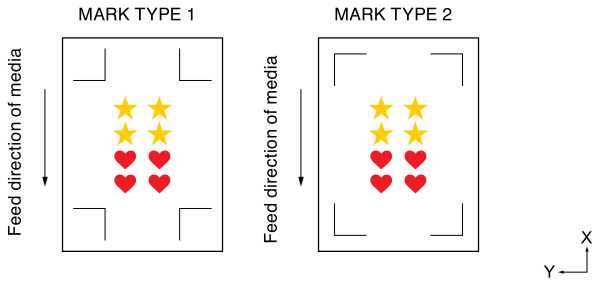


Step 2: Create design data for printing and cutting.

Design the drawing pattern that you want to print and the contour to be cut.

Operation

2-1 Create print design for printing and cutting.

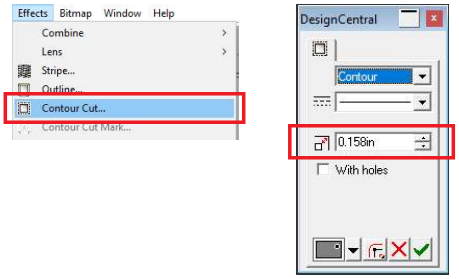


2-2 Create cut design for printing and cutting.

When using Graphtec Pro Studio

1 Select the print data and select "Effects" - "Contour Cut Mark".

Select the offset value of contour on the "DesignCentral" screen.

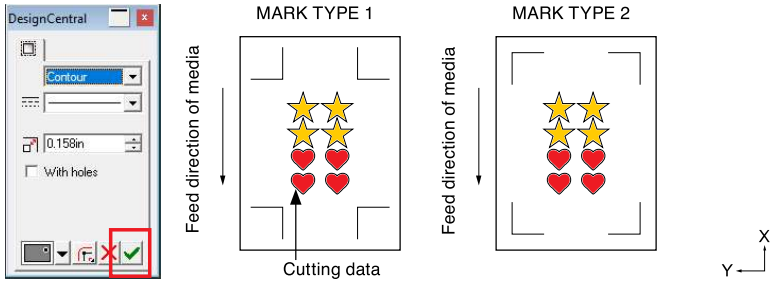


Supplement

If this setting is not performed, "Step 4: Cut the printed media" - "Contour Cut Mark" icon in Step 4-2 is not enabled.

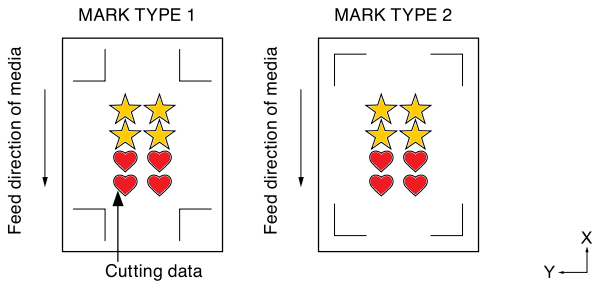
2 Press the ✔ on the "DesignCentral" screen.

Cutting data is created on the design screen.



When using Cutting Master 4

1 It's recommended that the cut design is created on a layer different from the print design.



Step 3: Print design data.

After creating the design, print it on the media.

Supplement

Pay attention to the following when printing to prevent registration mark scan from failing when cutting.

- Set the enlarge/shrink scale to 100%.
- Set the printing position (center/lower left etc.) so that the positional relationship between the created document and the printed result is the same.

Operation

3-1 Print design data for printing and cutting.

When using Graphtec Pro Studio

1 Select the printer to use from the Print menu of Graphtec Pro Studio and print the created data.

When using Cutting Master 4

1 Print using the Adobe Illustrator or CorelDRAW function.

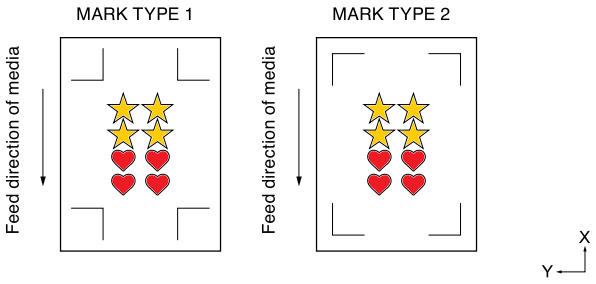
Set the layer of cut data to Hide before printing.

Step 4: Cut the printed media.

Cut the media prepared in Step 3 with the cutting plotter.

Operation

4-1 Load the printed media on the cutting plotter.



Supplement

- For loading media, see "Loading Media (Paper or Marking Film)".
- If a registration mark scanning error occurs, check the registration marks etc. (See "ARMS".)

4-2 Send the cutting data to the cutting plotter.

When using Graphtec Pro Studio

1 Click on the "Cut Contour" icon.

2 The "Cut Contour" screen is displayed.

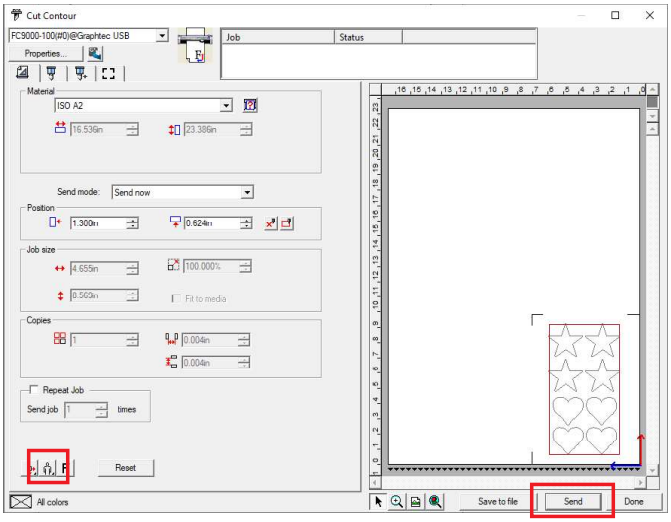
Set the ROTATE to to match the setting direction of the media.

Press the "Send".

Supplement

The ROTATE can be set only when using 4POINTS.

For other registration marks, load the media according to the orientation of the preview.



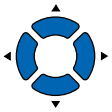
Supplement

When the "Cut Contour" screen is displayed for the first time, the "Add Device" screen is displayed. Follow the instructions on the screen to select the model name to use.

- For USB connection, select the "Graphtec USB".
- For network connection, select the "TCP/IP" and then enter the IP address of the cutting plotter.

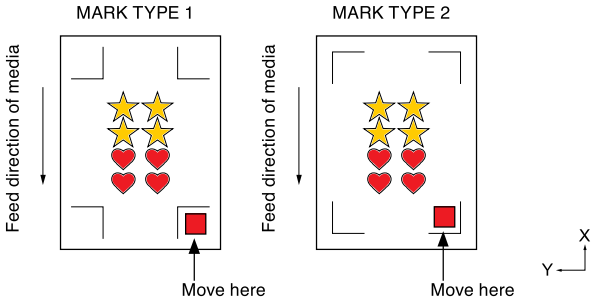
3 The confirmation screen is displayed.

Using the cutting plotter's POSITION (▲▼◀ ▶) key, move the tool to the lower right registration mark (within the red rectangle).



Press “OK” on the confirmation screen of Graphtec Pro Studio.

Registration marks are scanned. Cutting starts when all registration marks are detected.



Supplement

If a registration mark scanning error occurs, check the registration marks etc. (See "ARMS".)

When using Cutting Master 4

1 In Adobe Illustrator, select "Cutting Master 4" - "Cut/Plot" from the File menu.

In CorelDRAW, select "Launch" - "Cut/Plot (CM4)" from the tool bar.

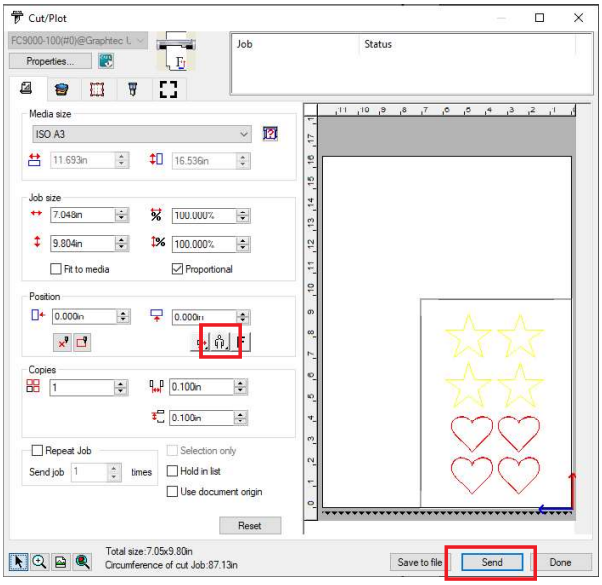
* If using CorelDRAW version X7 or earlier, select from the application launcher.

Before selecting the Cut/Plot, set the layer of printing data to Hide .

2 "Cut/Plot" screen is displayed.

Set the ROTATE to  to match the set direction of the media.

Press the "Send".



Supplement

The ROTATE can be set only when using 4POINTS.

For other registration marks, load the media according to the orientation of the preview.

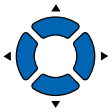
Supplement

When the "Cut Contour" screen is displayed for the first time, the "Add Device" screen is displayed. Follow the instructions on the screen to select the model name to use.

- For USB connection, select the "Graphtec USB".
- For network connection, select the "TCP/IP" and then enter the IP address of the cutting plotter.

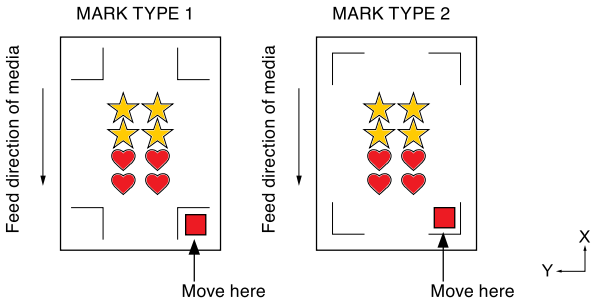
3 The confirmation screen is displayed.

Using the cutting plotter's POSITION (▲▼◀ ▶) key, move the tool to the lower right registration mark (within the red rectangle).



Press “OK” on the confirmation screen of Cutting Master4.

Registration marks are scanned. Cutting starts when all registration marks are detected.



Supplement

If a registration mark scanning error occurs, check the registration marks etc. (See "ARMS".)

Step 1: Create registration mark (alignment mark) data.

When printing and cutting, it is necessary to attach registration marks (alignment marks) in order to know exactly the printing position.

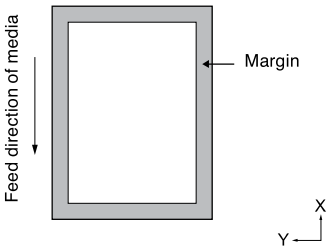
Margin is necessary around the registration marks.

When printing on sheet media, the following margins are required.

	Leading edge	Trailing edge	Right and left edges
MARK TYPE 1	15mm or more	35mm or more	15mm or more
MARK TYPE 2	17mm or more	37mm or more	15mm or more

When printing on roll media, it is necessary to provide a margin of 6 mm or more between the registration mark of the first sheet and the registration mark of the second sheet. In addition, margins of 15 mm or more must be provided at the left and right edges.

* The printing position may be different depending on the printer you want to use, therefor It's recommended to take a margin as long as several mm.

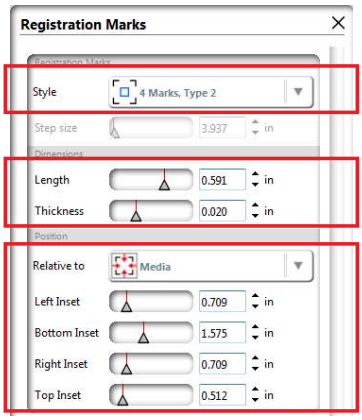


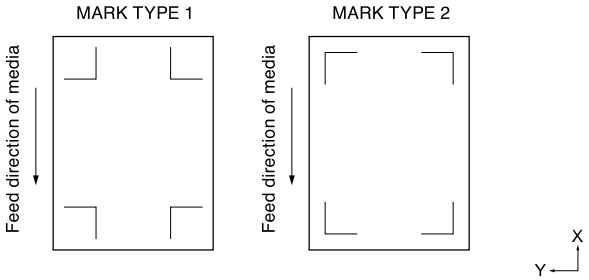
Operation

1-1 Open the "Registration Marks" tab.

Specify the pattern, length, thickness, reference position of registration mark.

Registration marks are created on the design screen.





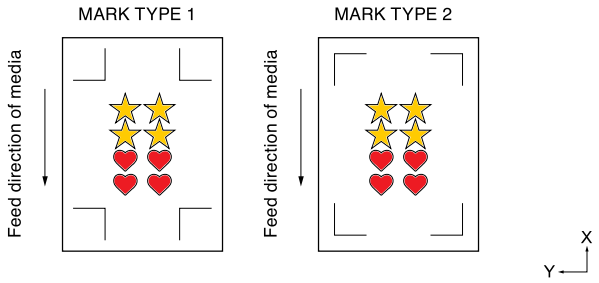
Step 2: Create design data for printing and cutting.

Design the drawing pattern that you want to print and the contour to be cut.

Operation

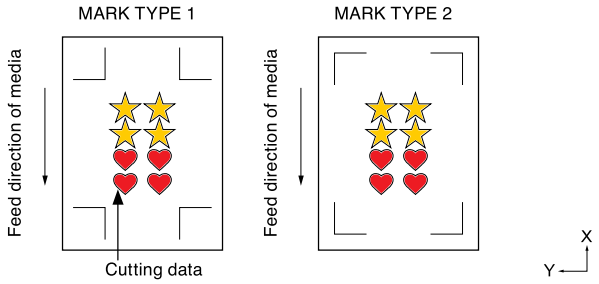
2-1 Create print design for printing and cutting.

For cutting data, specify a color that is not used in print data.



2-2 Create cut design for printing and cutting.

It is recommended that cutting data be created by specifying a color that is not used in print data.



Step 3: Print design data.

After creating the design, print it on the media.

Supplement

Pay attention to the following when printing to prevent registration mark scan from failing when cutting.

- Set the enlarge/shrink scale to 100%.
- Set the printing position (center/lower left etc.) to "Not change".

Operation

3-1 Select the printer to use from the Print menu of Graphtec Studio and print the created data.

Step 4: Cut the printed media.

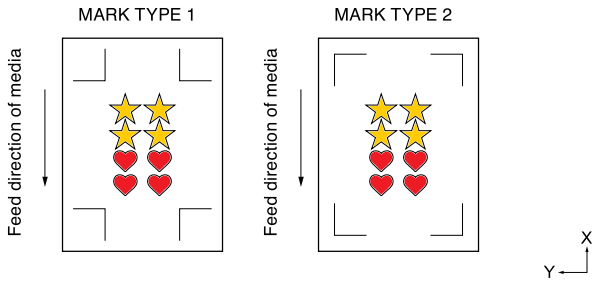
Cut the media prepared in Step 3 with the cutting plotter.

Operation

4-1 Load the printed media on the cutting plotter.

Supplement

For loading media, see "Loading Media (Paper or Marking Film)".



4-2 Open the "Configure Cut Job" screen.

Select the "By Color" from the "Apply Conditions" and select the color to cut.

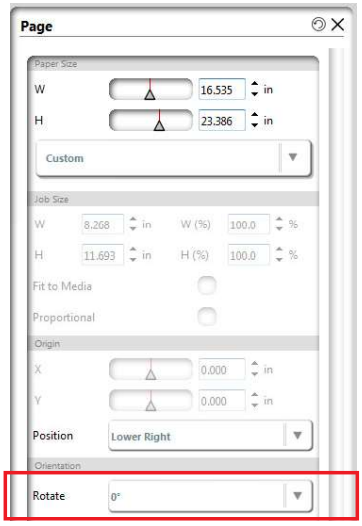
4-3 Open the "Page" screen.

Set the ROTATE to "0°" to match the setting direction of the media.

Supplement

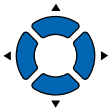
The ROTATE can be set only when using 4POINTS.

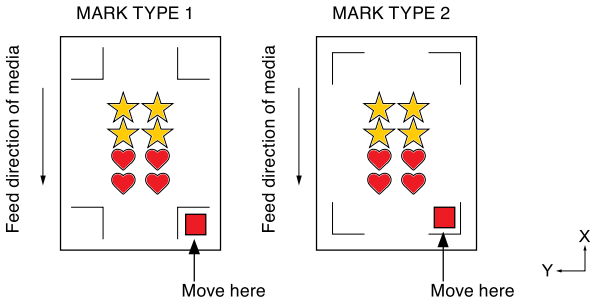
For other registration marks, load the media according to the orientation of the preview.



4-4 Open the "Cutting Plotter" screen.

4-5 Using the cutting plotter's POSITION (▲▼◀▶) key, move the tool to the lower right registration mark (within the red rectangle).





4-6 Press the "Send Cut Job".

When registration mark scanning starts and all registration marks is completed to scan, cutting starts.

Supplement

If a registration mark scanning error occurs, check the registration marks etc. (See "ARMS".)

14.2 Basic operation of barcode

This section describes how to print and cut with the data link function of cutting plotter after creating standard barcode in dedicated application.

The procedure to read the data linked to the barcode from the USB memory is explained.

Because the procedure differs for each application, refer to the following depending on the application to be used.

- Graphtec Pro Studio / Cutting Master 4

  Step 1: Create registration mark (alignment mark) data and design data for printing and cutting.
  Step 2: Add barcode data.
  Step 3: Print design data.
  Step 4: Save cutting data in USB memory.
  Step 5: Cut the printed media.

Supplement

- Graphtec Studio does not have a barcode function.

Graphtec Pro Studio / Cutting Master 4

Step 1: Create registration mark (alignment mark) data and design data for printing and cutting.

See "14.1 Basic operation of printing and cutting" to create design with registration marks for printing and cutting.

Step 2: Add barcode data.

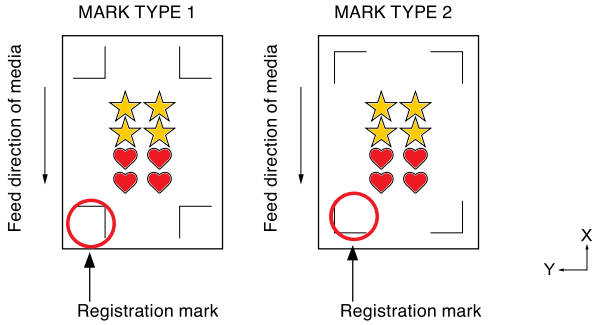
For the data link, it is necessary to add barcode data in order to link the printed print data for printing and cutting with the cutting data saved in the USB memory.

Operation

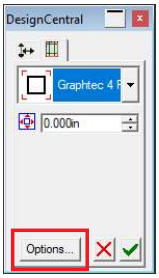
2-1 Create a barcode to use the data link function.

When using Graphtec Pro Studio

1 Click on the registration mark on the design screen.

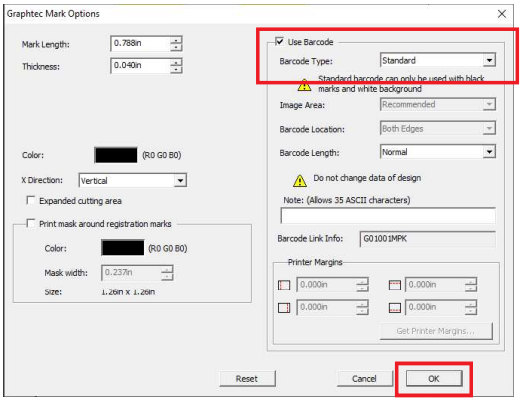


2 Press the "Options" on the "DesignCentral" screen.



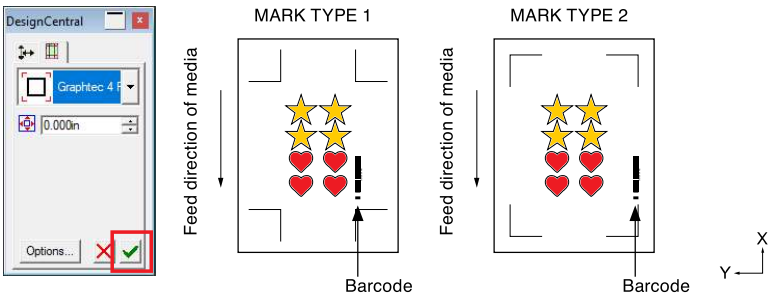
3 The "Graphtec Mark Options" screen is displayed.

Check the "Use Barcode" and select the "Standard" from the "Barcode Type". Press the “OK”.



4 Press the ✔ on the "DesignCentral" screen.

Barcode is created on the design screen.



When using Cutting Master 4

1 In Adobe Illustrator, select "Cutting Master 4" - "Registration Marks" from the File menu.

In CorelDRAW, select "Launch" - "Registration Marks (CM4)" from the tool bar.

* If selecting from the application launcher in CorelDRAW version X7 or earlier and, the Registration Marks screen will be displayed.

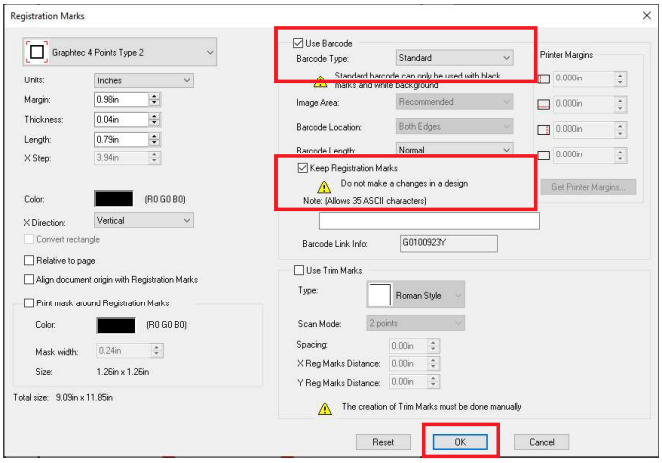
2 Check the "Use Barcode".

Select the "Standard" from the "Barcode Type".

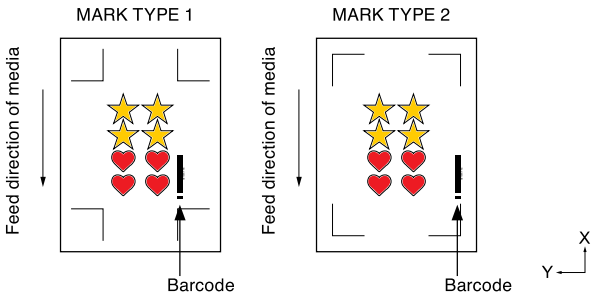
3 Check the "Keep Registration Marks".

Press the “OK”.

* The following screen is the screen when starting from Adobe Illustrator.



4 A barcode is created on the design screen.



Step 3: Print design data.

After creating the design data, print it on the media and prepare the media to be cut.

Supplement

Pay attention to the following when printing to prevent registration mark scan from failing when cutting.

- Set the enlarge/shrink scale to 100%.
- Set the printing position (center/lower left etc.) so that the positional relationship between the created document and the printed result is the same.

See "14.1 Basic operation of printing and cutting" to print design with standard barcode for printing and cutting.

Step 4: Save cutting data in USB memory.

Create an XPF file (file dedicated to saving USB memory) and save it to USB memory.

When you save cutting data and barcode information in this XPF file, the cutting plotter will be able to find the correct cutting data.

Operation

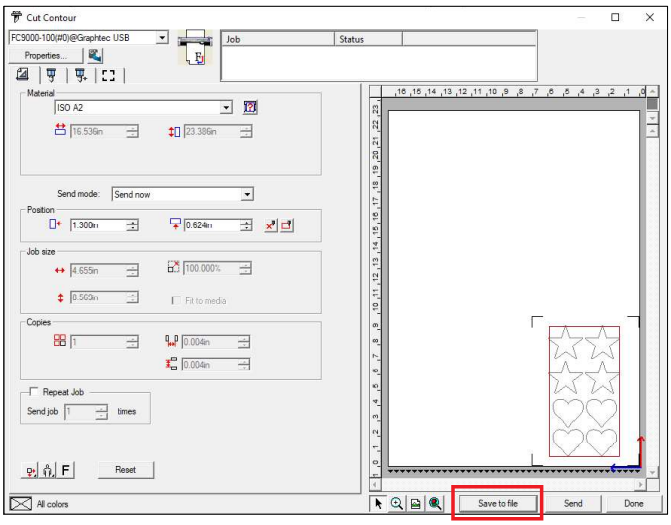
4-1 Insert a USB memory into the computer.

When using Graphtec Pro Studio

1 Click on the "Cut Contour" icon.

2 The "Cut Contour" screen is displayed.

Press the "Save to file".



Supplement

When the "Cut Contour" screen is displayed for the first time, the "Add Device" screen is displayed. Follow the instructions on the screen to select the model name to use.

- For USB connection, select the "Graphtec USB".
- For network connection, select the "TCP/IP" and then enter the IP address of the cutting plotter.

3 When "Save As" screen is displayed, specify "USB memory" to save the "XPF file".

* You can save it to an arbitrary folder and then move it to USB memory.

When using Cutting Master 4

1 In Adobe Illustrator, select "Cutting Master 4" - "Cut/Plot" from the File menu.

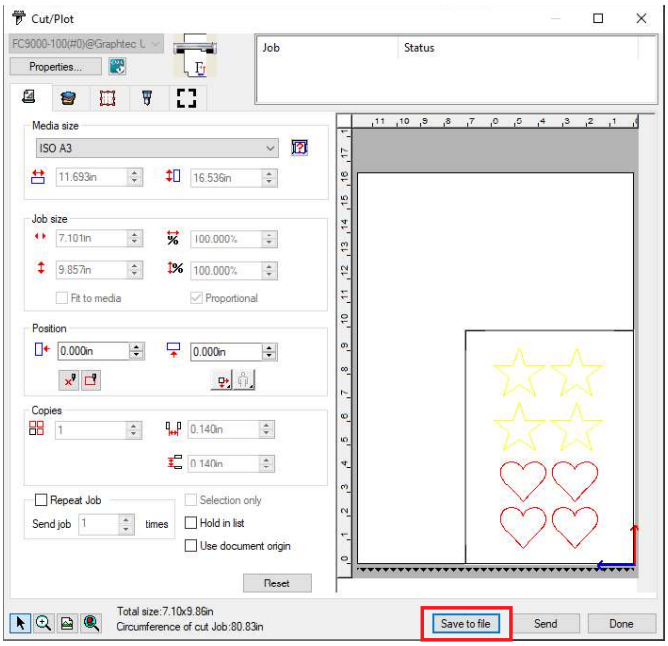
In CorelDRAW, select "Launch" - "Cut/Plot (CM4)" from the tool bar.

* If using CorelDRAW version X7 or earlier, select from the application launcher.

Before selecting the Cut/Plot, set the layer of printing data to Hide .

2 The "Cut/Plot" screen is displayed.

Press the "Save to file".



3 When "Save As" screen is displayed, specify "USB memory" and save the "XPF file".

* You can move to USB memory after saving in any folder.

Supplement

When the "Cut Contour" screen is displayed for the first time, the "Add Device" screen is displayed. Follow the instructions on the screen to select the model name to use.

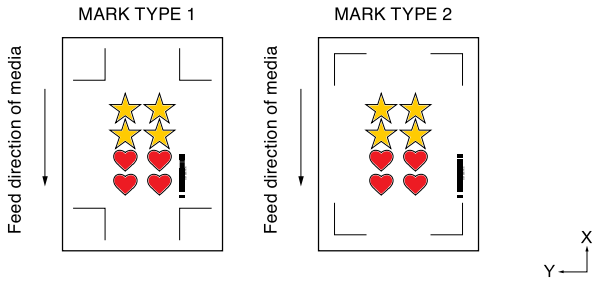
- For USB connection, select the "Graphtec USB".
- For network connection, select the "TCP/IP" and then enter the IP address of the cutting plotter.

Step 5: Cut the printed media.

Using the cutting data saved in the USB memory in Step 4, cut the media prepared in Step 3 with the cutting plotter.

Operation

5-1 Load the printed media on the cutting plotter.



Supplement

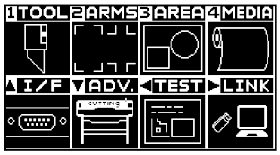
For loading media, see "Loading Media (Paper or Marking Film)".

5-2 Insert the USB memory that saved the file into the USB memory slot of the cutting plotter.

5-3 Set the menu of cutting plotter.

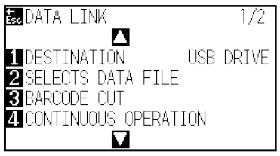
5-4 Press the [PAUSE / MENU] key.

▷ MENU screen is displayed.



5-5 Press the (▶) key (LINK).

▷ DATA LINK screen (1/2) is displayed.

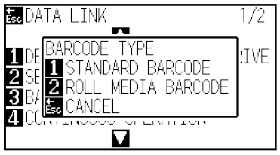


Supplement

Confirm that the "Destination" is "USB memory".

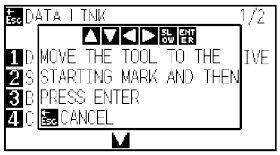
5-6 Press the [3] key (BARCODE CUT).

▷ The following message is displayed.



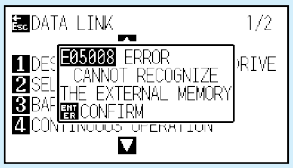
5-7 Press the [1] key (STANDARD BARCODE).

▷ The following message is displayed.



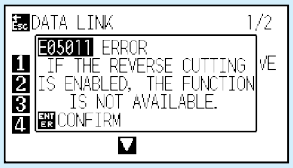
Supplement

- If the USB memory is not inserted, the following screen is displayed.

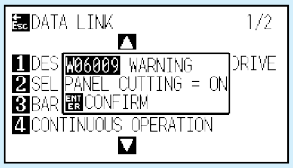


- When the ROTATE is set to ON, the following screen is displayed.

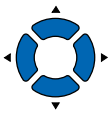
- When the MIRROR is set to ON, the following screen is displayed.



- When the PANEL CUTTING is set to ON, the following screen is displayed.



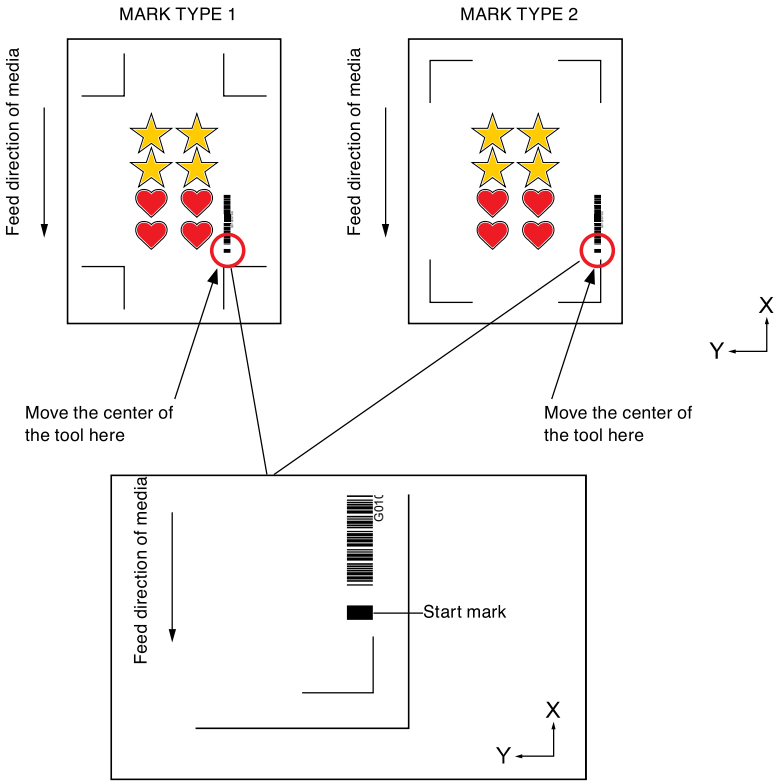
5-8 Using the the cutting plotter's POSITION (▲▼◀▶) key, move the tool to the start mark (see figure) under the barcode and press the [ENTER] key.



Supplement

If the start mark cannot be scanned, check the print result of start mark and the detect start position etc.

The barcode is scanned, the corresponding data is read out from the USB memory, and cutting starts when the registration mark is completed to scan.



14.3 Application of barcode cutting (continuous operation)

This section describes how to print and cut with the data link function of cutting plotter after creating roll media barcode in dedicated application.
The procedure to receive the data matching roll media barcode from the personal computer.
By using roll media barcode, multiple designs printed on one roll media can be printed and cut consecutively.
Refer to the following depending on the application to be used.

- Graphtec Pro Studio / Cutting Master 4

  Step 1: Create design data for printing and cutting.
  Step 2: Add barcode data.
  Step 3: Print design data.
  Step 4: Save cutting data in data link server.
  Step 5: Start data link server.
  Step 6: Set up cutting plotter.
  Step 7: Cut the printed media.

Supplement

- Graphtec Studio does not have a barcode (continuous operation) function.
- In continuous operation, even if paper feed command and cross cut command are included in the data, it becomes invalid.
- It's recommended that a take-up device (model-specific option) is used during continuous operation.during continuous operation.
- When using a basket, please do not let the media protrude from the basket.
  If you do not use a basket, please make sure that media does not accumulate on the floor. If you do not take action, the media may skew.
- When doing continuous operation, load the roll media without making slack of the medium at the back of the machine.
- It cannot be used when connecting via RS-232C interface.

Graphtec Pro Studio

Step 1: Create design data for printing and cutting.

See "14.1 Basic operation of printing and cutting" to create design for printing and cutting.

⚠ CAUTION

To use continuous operation, select the media size for the design according to the width of the roll media to be printed.

For example, when using roll media of A0 size, select the media size with the arbitrary length specified by A0 (portrait), A1 (landscape), or A0 width.

Supplement

- Before creating design, select the printer driver to be used for printing in advance.
- Create only design for printing and design for cutting. Then create registration marks and barcode in the next procedure.

Step 2: Add barcode data.

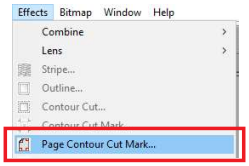
When barcode cutting is performed in continuous operation, it is necessary to attach a special barcode called "Roll media barcode".

Operation

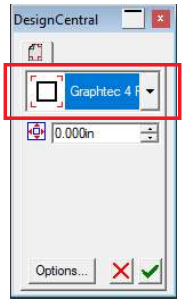
2-1 Create registration marks and a barcode for data link (continuous operation).

When using Graphtec Pro Studio

1 Select "Effects" - "Page Contour Cut Mark".



2 Select a type of registration mark on the "DesignCentral" screen.



3 Press the "Options".

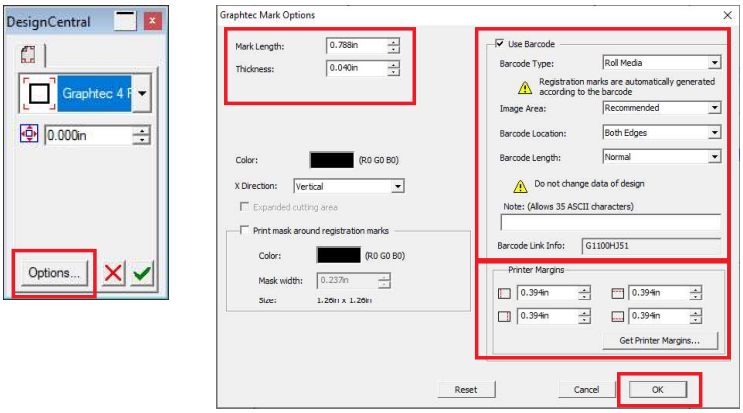
Specify the length and thickness of the contour cut mark on the displayed "Graphtec Mark Options" screen.

Check the "Use Barcode".

Select the "Roll Media" from the "Barcode Type".

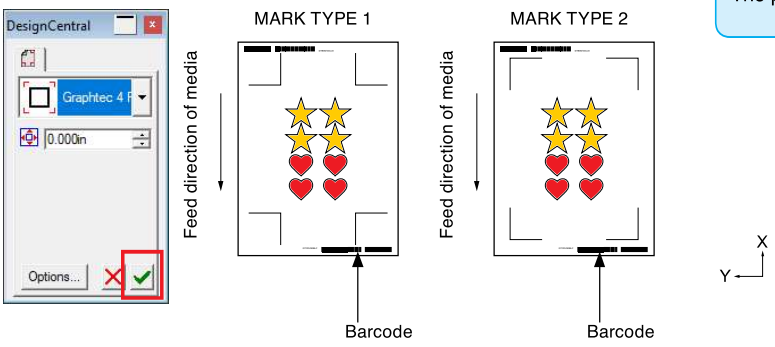
The margins of the printer driver selected in the application are initialized in "Printer Margin". When changing the printer, acquire margin information by pressing the "Get Printer Margins".

Press the “OK”.



4 Press the on the "DesignCentral" screen.

Registration mark and barcode are created on the design screen.



Supplement

Registration marks are placed automatically.
The position cannot be changed.

When using Cutting Master 4

1 In Adobe Illustrator, select "Cutting Master 4" - "Registration Marks" from the File menu.

In CorelDRAW, select "Launch" - "Registration Marks (CM4)" from the tool bar.

Set type, thickness and length of registration mark.

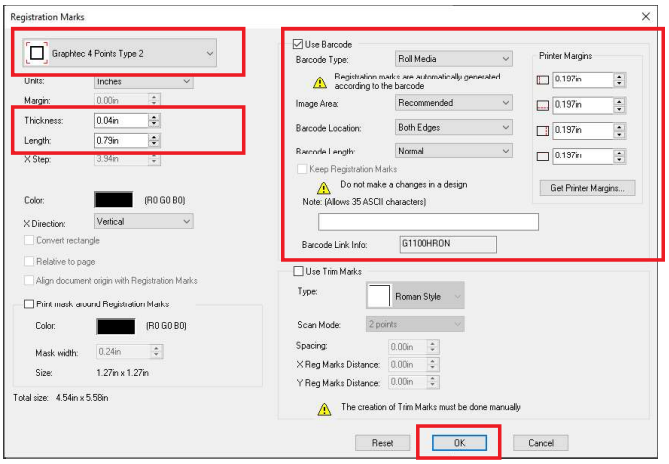
Check the "Use Barcode".

Select the "Roll Media" from the "Barcode Type".

The margins of the printer driver selected in the application are initialized in "Printer Margin". When changing the printer, acquire margin information by pressing the "Get Printer Margins".

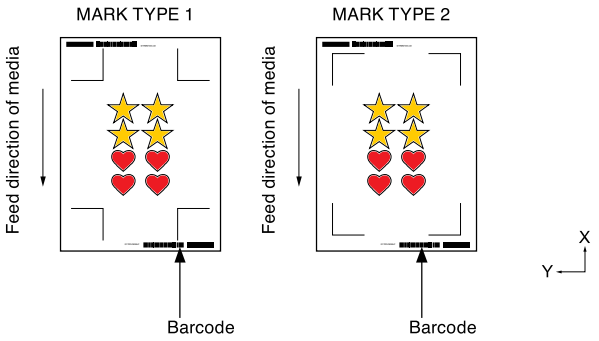
Press the “OK”.

* If selecting from the application launcher in CorelDRAW version X7 or earlier and, the Registration Marks screen will be displayed.



* The following screen is the screen when starting from Adobe Illustrator.

2 Registration marks and barcode are created on the design screen.



Supplement

Registration marks are placed automatically.
The position cannot be changed.

Step 3: Print design data.

After creating the design, print it on the media.

Supplement

Pay attention to the following when printing to prevent registration mark scan from failing when cutting.

- Set the enlarge/shrink scale to 100%.
- Set the printing position (center/lower left etc.) to "Not change".
- In continuous operation, it is necessary that two or more data are printed on the roll media.
  It is convenient to prepare printing and cutting data in advance and print them collectively.
- Set the "Cross Cut" setting of the cutting plotter to OFF.
- Print using the printer selected in "1. Prepare the design for data link (continuous operation)".

Operation

3-1 See "14.1 Basic operation of printing and cutting" and print the design with registration marks and roll media barcode for printing and cutting.

Step 4: Save cutting data in data link server.

Create a job file and save it in the data link server.

Since cutting data and barcode information are recorded in this job file, the cutting plotter will be able to find the correct cutting data.

Operation

4-1 Save the file for data link (continuous operation) in the personal computer (data link server).

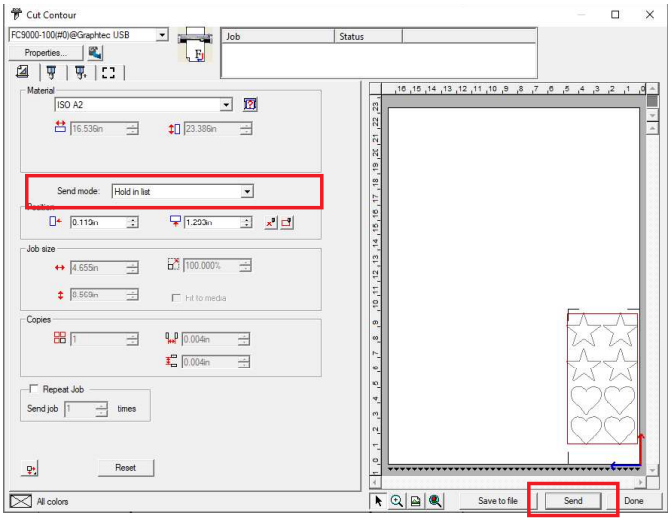
When using Graphtec Pro Studio

1 Click on the "Cut Contour" icon.

2 The "Cut Contour" screen is displayed.

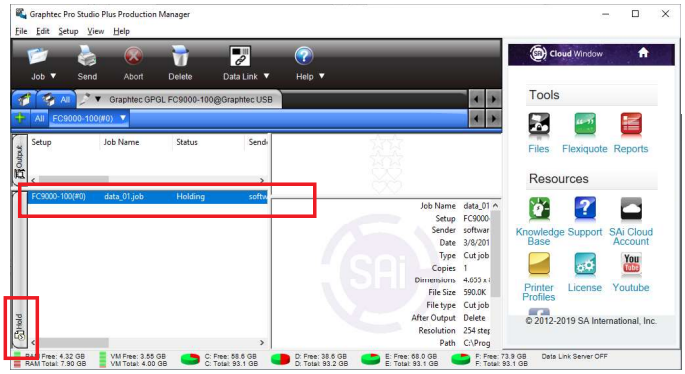
Select the "Hold in list" from the "Send mode".

Press the "Send".



3 Switch to Production Manager.

Confirm that the sent file is held in the "Hold" item.



Supplement

When the "Cut Contour" screen is displayed for the first time, the "Add Device" screen is displayed. Follow the instructions on the screen to select the model name to use.

- For USB connection, select the "Graphtec USB".
- For network connection, select the "TCP/IP" and then enter the IP address of the cutting plotter.
- The explanation here is limited to using a personal computer instead of the server for the data link server.

When using Cutting Master 4

1 In Adobe Illustrator, select "Cutting Master 4" - "Cut/Plot" from the File menu.

In CorelDRAW, select "Launch" - "Cut/Plot (CM4)" from the tool bar.

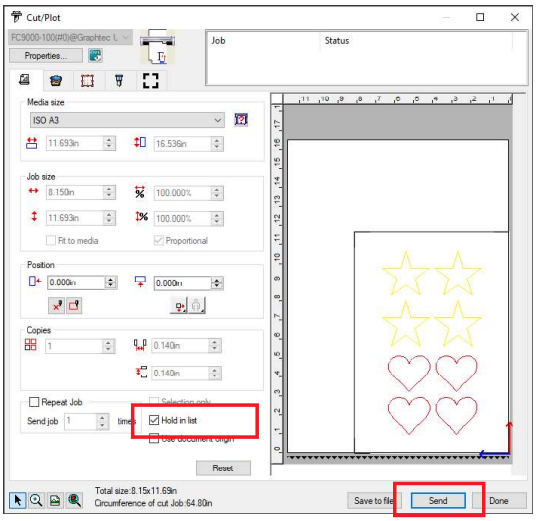
* If using CorelDRAW version X7 or earlier, select from the application launcher.

Before selecting the Cut/Plot, set the layer of printing data to Hide.

2 "Cut/Plot" screen is displayed.

Check the "Hold in list".

Press the "Send".



Supplement

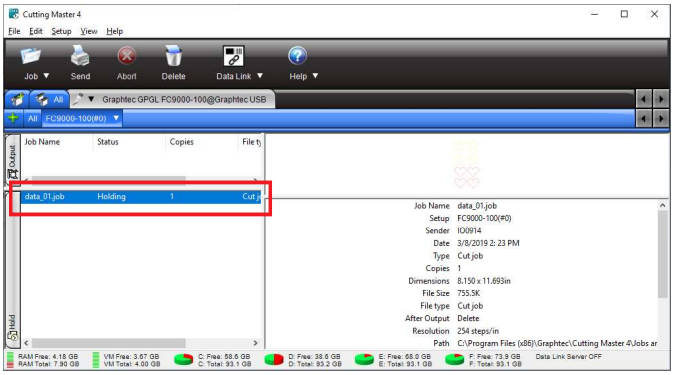
When the "Cut/Plot" screen is displayed for the first time, the "Add Device" screen is displayed. Follow the instructions on the screen to select the model name to use.

- For USB connection, select the "Graphtec USB".
- For network connection, select the "TCP/IP" and then enter the IP address of the cutting plotter.
- The explanation here is limited to using a personal computer instead of the server for the data link server.

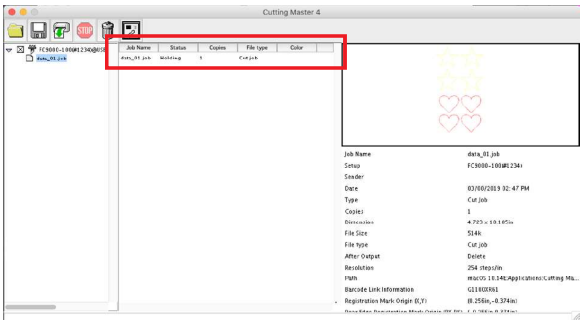
3 Switch to Cutting Master4.

Confirm that the sent file is held in the "Hold" item.

<Windows>



<Mac>



Step 5: Start data link server.

Start the data link server to send job file information to the cutting plotter.

Operation

5-1 Start the data link server.

When using Graphtec Pro Studio

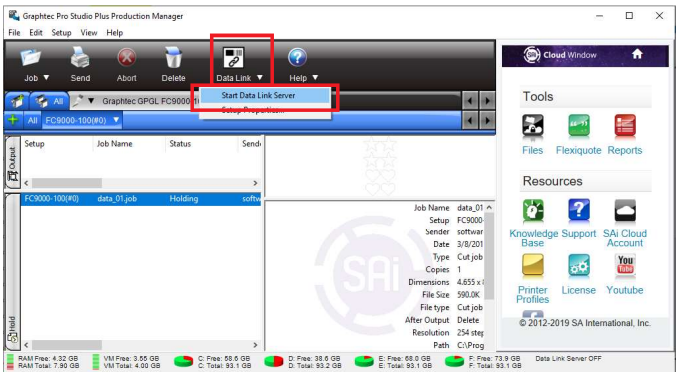
1 Click on the "Data Link" icon.

2 Each time the icon is clicked, start/stop of the datalink server is switched.

In the start state, a red frame is displayed around the icon.

Start

Stop



Supplement

- The cutting plotter supports only one data link server. Connecting two or more data link servers to a single cutting plotter may not work properly.
- When using the data link server, do not use USB connection and network connection at the same time. Connect to the interface only that uses the data link server.
- When using a data link server with network connection, always connect with a LAN cable. When connecting with wireless (Wi-Fi), it may not operate properly.

When using Cutting Master 4

1 Click on the "Data Link" icon.

2 Each time the icon is clicked, start/stop of the datalink server is switched.

In the start state, a red frame is displayed around the icon.

<Windows>

Start

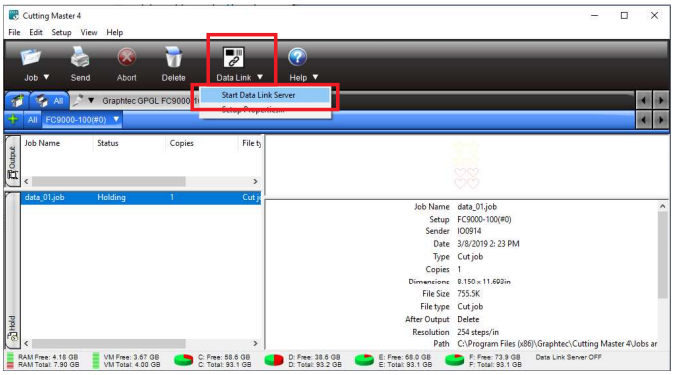
Stop

<Mac>

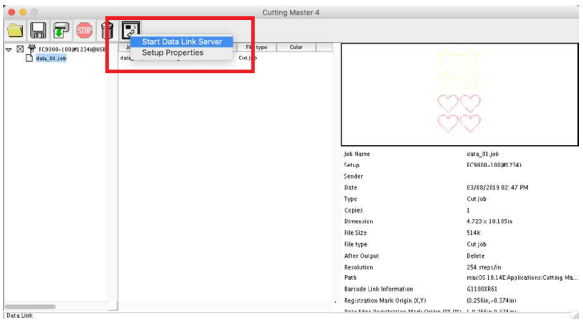
Start

Stop

<Windows>



<Mac>



Supplement

- The cutting plotter supports only one data link server. Connecting multiple data link servers to a single cutting plotter may not work properly.
- When using the data link server, do not use USB connection and network connection at the same time. Connect to the interface only that uses the data link server.
- When using a data link server with network connection, always connect with a LAN cable. When connecting with wireless (Wi-Fi), it may not operate properly.

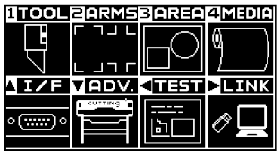
Step 6: Set up cutting plotter.

Set the data link connection method to receive cutting data from the data link server.

Operation

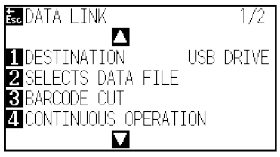
6-1 Press the [PAUSE / MENU] key.

▷ MENU screen is displayed.



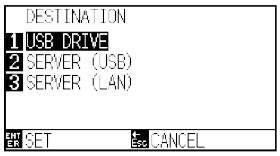
6-2 Press the POSITION (▶) key (LINK).

▷ DATA LINK screen (1/2) is displayed.



6-3 Press the [1] key (DESTINATION).

▷ DESTINATION screen is displayed.



6-4 Press the [2] key (SERVER (USB)) or the [3] key (SERVER (LAN)).

* Select the connection method to the personal computer set in "Step 5: Start data link server".

Supplement

It is not necessary to set the IP address of the data link server in the cutting plotter.

6-5 Confirm the setting and press the [ENTER] key (SET).

▷ Setting will be confirmed and it will return to DATA LINK screen (1/2).

6-6 Press the [PAUSE/MENU] key.

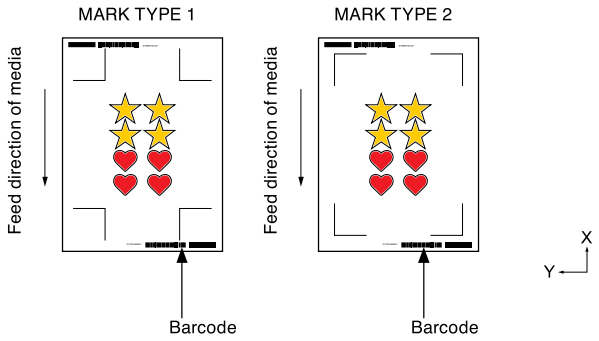
▷ It will return to default screen.

Step 7: Cut the printed media.

Cut the media prepared in Step 3 with the cutting plotter.

Operation

7-1 Load the printed media on the cutting plotter.



Supplement

For loading media, see "Loading Media (Paper or Marking Film)".

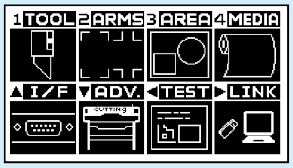
7-2 Press the [BARCODE] key in the default screen.

▷ The following message is displayed.

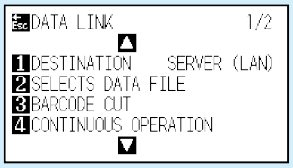
Supplement

You can go from the MENU screen to the Continuous Operation starting screen.

Press the [PAUSE/MENU] key in the default screen. The following screen will be displayed.

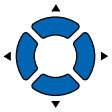


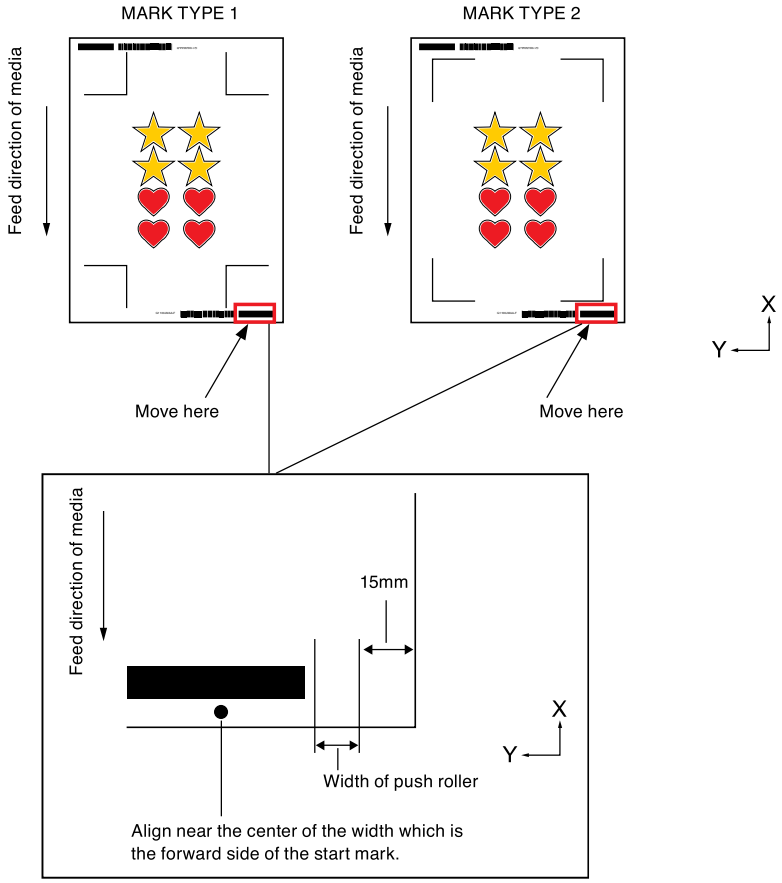
Press the [▶] key (LINK). The following screen will be displayed.



Press the [4] key (Continuous Operation). The following screen will be displayed.

7-3 Using the POSITION (▲▼◀▶) key, move the tool to the black rectangle (red frame in figure) next to the barcode.





Supplement

If the start mark cannot be scanned, check the print result of start mark and the detect start position etc.

7-4 Confirm the tool position and press the [ENTER] key.

Barcode scanning starts, the corresponding data is read from the personal computer, and cutting starts when the registration mark scanning is completed.

* In continuous operation, after cutting of the first data is completed, the cutting plotter automatically scans the barcode, receive the data and repeat the cut without having to perform the previous operation again.
* When media skews beyond the value set in "Skew detection" of the cutting plotter, continuous operation is stopped to prevent media misalignment .

  For the "Skew detection", see the "Skew detection" in Chapter 12.