

# **Cutting Plotter Controller**

User's Manual

MANUAL NO.OPS675-UM-152



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### Disclaimer

Some of the software images used in this manual are those that were used when the software was under development, and they may be slightly different from those actually displayed. There are no differences between the functions and setting layouts shown here and those of the actual version. We ask for your understanding.

### **About This Manual**

This manual explains how to set up and operate the cutting plotter ( the "plotter") by using the Cutting Plotter controller (the "controller") from a computer.

For information on setting up the plotter and installing the software, see "Setup Manual". For information on operations from the control panel of the plotter, see "User's Manual".

\*Chapter 2 and Chapter 4 through Chapter 9 in this manual describe the operations and settings that can be done from the menu screen that is shown by pressing the [CONDITION] key or the [MENU] key on the operation panel of the plotter. These chapter titles are followed by the corresponding plotter key or menu item names so that you can easily refer to "User's Manual".

### **Symbols Used in This Manual**

The following symbols are used in this manual.

- CAUTION : Used to indicate cautions and restrictions to be observed for proper operation. Be sure to read the description that follows this label.
- Reference : Used to indicate information useful for operation and additional explanations.
- : Used to indicate pages and User's Manuals that contain relevant information.
- [] : Used to indicate the keys on the computer keyboard and the buttons on the controller.

### Screen Images Used in This Manual

Screens that appear when FC8600 is connected to Windows 7 are used.

## **Table of Contents**

Software Usage Agreement Cautions About This Manual Symbols Used in This Manual Screen Images Used in This Manual	2 2 3 4 4 5
1 Introduction to the Controller	6
Features Preparation to Use Starting the Controller Nomenclature (Main Screen)	6 6 7 9
2. Setting Tool Conditions [CONDITION]1	1
Basic Settings	1  3  4
3. Managing Media List1	6
4. Tools Setting [TOOL]1	8
5. Setting Area Parameters [AREA]2	21
6. Interface Setting [I/F]2	23
7. ARMS Setting [ARMS]       2         Registration Marks Setting       2         Settings in the [Registration Mark Settings] Screen       2         Settings in the [ARMS Setting] Screen       2	24 25 26
8. Media Setting [MEDIA]2	28
9. Advance [ADV.]	0
10. Option Settings	31
<b>11. Troubleshooting</b>	<b>33</b> 33

12. Index	34

### **Features**

#### • Easy Setting from Your Computer

The controller enables you to set up and operate the plotter from your computer. Relevant settings are displayed on a single screen and you can easily find the setting that you want to see. You can use the driver to start the controller from the print menu in the application software and efficiently proceed a series of works ranging from image design to cutting.

#### •Saving Tool Conditions

Up to 100 tool conditions that are set in the controller can be saved to the media list. Contents in the media list can be saved as a file and loaded to your computer.

#### •Loading Plotter Setting/Uploading Settings to the Plotter

Tool conditions that are set in the operation panel of the plotter (Condition No. 1 through 8) can be loaded to the controller. You can edit the loaded settings in the controller and upload them to the plotter.

#### •Retrieving Information from the Plotter

You can retrieve error and condition information from the plotter and save it as a file.

#### Importing/Exporting Advanced Settings

You can save advanced settings to any location on your computer as well as load setting files that have been saved.

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 $\cdot$  Do not control more than one plotters by the controller. Depending on the operations, the settings in the plotters may not be properly controlled.

When using the Cutting Master 3 / Graphtec Studio, do not use the controller. You will not be able to properly control the plotter settings.

### - 💭 Reference

Cutting Master 3, the software that comes with the plotter, can output data that is created in Adobe® Illustrator
 @ or CoreIDRAW® (Windows only) directly to the plotter. Use Cutting Master 3 to output data that is created in Adobe® Illustrator® or CoreIDRAW®. For more information on Cutting Master 3, see the User's Manual provided with Cutting Master 3.

• The data created by the Graphtec Studio software supplied with the plotter can be directly output to the Plotter. For more information about the Graphtec Studio, see the User's Manual included with the Graphtec Studio.

### **Preparation to Use**

### **Operation Environment**

The following system environment (higher environment than one your OS recommends) is required to use the controller.

OS	Windows XP/Vista/7/8 (32bit/64bit)
CPU	Intel Pentium 4/AMD Athlon 64 or greater
Memory	1GB or greater
Monitor	1024 x 768 True Color is supported
Network interface	10 Base-T/100Base-TX
USB Interface	USB 2.0 (Full Speed)
Serial Interface	RS-232C compliant
Device	Mouse
	DVD-ROM drive

### 

To use the controller, the plotter must be connected to the computer using a USB, LAN (network), or RS-232C interface.

### **Checking the Settings in the Plotter**

To use the controller, [USER PRIORITY] in the plotter must be set to [KEYPAD/BY PC]. For more information on the setting, see Chapter 4 "Convenient Functions" in User's Manual.

### **Installing the Controller**

The controller is installed with the driver when you set up the plotter in Windows XP/Vista/7/8. For more information on how to install the controller, see "Setup Manual". For information on how to uninstall the controller, see "Uninstalling the Controller" (>page 33).

6

### **Starting the Controller**

The controller can be started either from the print menu in the application software or the Start menu on the desktop.

### **A** CAUTION

- To use the controller, [USER PRIORITY] in the plotter must be set to [KEYPAD/BY PC]. For more information on the setting, see Chapter 4 "Convenient Functions" in User's Manual.
- · Before starting the controller, make sure that your computer and the plotter are connected properly and that media is set in the plotter.
- $\cdot$  Cuttings other than test and cross cuttings cannot be done when you start the controller from the Start menu.
- To start the controller from the print menu, [Start up the controller] must be checked. This option is in the [Options] tab of [Printing Preferences] in the driver software.

### Reference -

For more information on operating the controller screen, see "Nomenclature (Main Screen)" (>page 9).

### **Starting from the Print Menu**

- 1. Open an image that you want to plot in the appropriate application software.
- 2. Select the print command from the menu.



Operations are different depending on the types of application software. For more information, see the manual provided with the application software.

#### 3. Select the plotter from the printer list.

Select Printer	
Add Printer	🖶 Microsoft XPS Documen
🚍 Fax Graphtec FC8600	
•	•
Status: Ready	Print to file Preferences
Location:	
Comment:	Fin <u>d</u> Printer
Page Range	
Ali	Number of <u>c</u> opies: 1
Selection	
Pages: 1-65535	
Enter either a single page number or a single page range. For example, 5-12	1 2 33

\*The screen image above is an example from a Microsoft WordPad print screen.

The controller starts.



### **Starting from the Start Menu**

1. From the Start menu, select [(All) Programs], [Graphtec Cutting Plotter Controller for FC8000], and then [Cutting Plotter Controller for FC8000].

The controller starts.

FC8600-75					User1 : User No.
Tool Condition Condition No. M 1 k 2 (f 3 C 4 C 5 F 6 F 7 H 8 (f Edit Media List	Media Name hdoor vinyl Pen) Jutdoor vinyl Jear film Jear film	CB09U Upload Sett	Force : Speed : Accel : Offset :	14 30 4 0 Cut Test	Position
Rotate	T Registration M	Marks Mark Distance Mark Distance X: 00 Y: 00 Kill Settings Read Marks			Help About Option Close



You can select a tool condition suitable for the plotted media or run a test cutting or cutting by specifying the position of the tool and the orientation of the media. You can also display the help and version information of the controller or open the screen for advanced and optional settings.

### - 💭 Reference -

Some of the buttons are assigned keyboard shortcuts. The shortcut keys are as follows:

- -[Use Keyboard]→[F6]
- –[Origin]→[F5]

-[Cut Test]→[F8]

1	User1/2: User Name	Indicates the mode to which the plotter is set: User1 or User2. The name that is set in [User Name] on the [Option] screen (⇒page 32) is displayed as the user name.		
2	Settings Display AreaDisplays the settings (tool, force, speed, accel, and offset) for the to condition that is currently selected.			
3	<b>3 Tool Condition</b> Lists tool conditions from Condition No. 1 through 8. Click a condit select it.			
4	Edit Conditions	Opens the [Edit Conditions] screen. ◆2. Setting Tool Conditions [CONDITION] (page 11)		
5	Edit Media List	Opens the [Edit Media List] screen. ◆3. Managing Media List (page 16)		
6	Upload Setting to plotter	Overwrites the condition settings (tool conditions) in the plotter by the settings (tool conditions) in the controller.		
7	Cut TestRuns a test cutting under the tool condition that you set.>Test Cutting Patterns (page 15)			
8	RotateSets the plotting direction against the media or the direction to set the media printed by the printer in the plotter. 			
9	Registration Marks Setting	gistrationUsed for a cutting where the registration mark is scanned.rks Setting+7. ARMS Setting [ARMS] (page 24)		
10	Image: Opens the [Tools Setting] screen.         →4. Tools Setting [TOOL] (page 18)			
11	Opens the [ARMS Setting] screen.         →7. ARMS Setting [ARMS] (page 24)			
12	😇 (AREA)	Opens the [Area Parameters] screen. ◆5. Setting Area Parameters [AREA] (page 21)		
13	(MEDIA)       Opens the [Media Setting] screen.         ⇒8. Media Setting [MEDIA] (page 28)			
14	<sup>™</sup> ©, (I/F)	Opens the [Interface] screen. ◆6. Interface Setting [I/F] (page 23)		
15	₩(ADV.)	Opens the [Advance] screen. ◆9. Advance [ADV.] (page 30)		
16	Cancel <sup>*1</sup>	Cancels the setting and closes the controller.		
17	Cut <sup>*1</sup>	Cuts the media based on the settings you made.		
18	Close*2	Cancels the setting and closes the controller.		

## Nomenclature (Main Screen)

19	Option	Open the [Option] screen. It is able to check the error data and conditions of the Plotter main unit, and also to import/export the set content.			
20	About	Displays the version information of your controller.			
21	Help	Displays the help of the controller. Pressing the [F1] key on the computer keyboard at each screen displays the help on the setting item.			
22	Origin	Sets the current tool position as an origin point.			
23	Cross Cut	Cuts off the media at the current tool position. In the plotter, a message that tells you to replace the media will be displayed on the LCD screen if the sheet media is set.			
		Enables the position to be moved by using the $[\leftarrow \uparrow \downarrow \rightarrow]$ keys on the computer keyboard.			
	Use Keyboard <sup>'3</sup>	Up/down/left/right	Press one of the $[\leftarrow \uparrow \downarrow \rightarrow]$ keys on the keyboard.		
24		High-speed movement	Press the [Ctrl] key and one of the $[\leftarrow \uparrow \downarrow \rightarrow]$ keys on the keyboard at the same time.		
		Skew	Press the up/down arrow key and the left/right arrow key at the same time. For example, $[\leftarrow]$ and $[\uparrow]$ or $[\downarrow]$ and $[\rightarrow]$ .		
		Moves the tool to th	e desired position.		
	Position	Up/down/left/right	Press one of these buttons: .		
25		High-speed movement	Press the [Ctrl] key on the keyboard and $\bigcirc$ , $\bigcirc$ , $\bigcirc$ , or $\bigcirc$ at the same time.		
		Low-speed movement	Press the [Shift] key on the keyboard and $\bigcirc$ , $\bigcirc$ , $\bigcirc$ , or $\bigcirc$ at the same time.		

\*1: Displayed only when the controller is started form the print menu.

\*2: Displayed only when the controller is started form the Start menu.

\*3: Can be operated when the plotter is in READY status.

#### Selecting Rotation

•When [Registration Marks] is off: Set the cutting direction against the media. To set in the plotter from upward of the image, select the upper option.



To set in the plotter from right side of the image using the roll media, select the lower option.



#### •When [Registration Marks] is on:

Set the direction to set the media printed by the printer in the plotter. Select the upper option to insert the media in the plotter from the top of the image.



Select the lower option to insert the media in the plotter from the right side of the image.



For more information on registration marks, see "7. ARMS Setting [ARMS]" (>page 24).

# 2. Setting Tool Conditions [CONDITION]

Performing one of the following tasks opens the corresponding screen for setting tool conditions, Setting method is the same for all of the screens. In this section, the [Edit Conditions] screen is used for explanation.

- In the main screen (⇒page 9), click [Edit Conditions] to open the [Edit Conditions] screen
- In the [Edit Media List] screen (⇒page 16), click [Edit] to open the [Edit] screen
- In the [Edit Media List] screen (→page 16), click [New] to open the [New] screen
- In the [Edit Media List] screen (⇒page 16), click [Copy] to open the [Copy] screen
- In the [Edit Media List] screen (→page 16), click [Load] to open the [Load] screen

In the tool condition setting screens, you can edit a tool condition or create a new one. You can also run a cutting test under the condition that you set.

### **Basic Settings**



Make the basic tool condition settings.

You can set the cutter type, force, speed, acceleration, and offset.



### CAUTION

Although installing the controller also installs a standard condition setting file, optimal settings may differ depending on the use environment, the types of media, applications, and other factors. To set values, see "Guideline for Settings (for Each Media)" (page 12), "Guideline for Settings (When Plotter Pen is Selected)" (page 12), and "Guideline of Offset Setting (for Each Cutter Blade)" (page 12). Be sure to run a cutting test to determine the optimal tool condition before performing actual cutting.

#### ➡"Cut Test" on page 14

Clicking [OK] directly after editing the settings overwrites the tool condition under the current media name. To create a new tool condition with the settings that you have edited, enter a new name in [Media Name] and then click [OK].

### Reference

Smaller values for the speed and the acceleration require longer cut time, but the quality is stable. Set small values for the speed and the acceleration when you cut wide media because such media may move during a cutting process and good cut quality may not be obtained.

When you use a plotter pen, set the FORCE to the lowest setting to prolong the pen life. Adjust the speed so there will be no faint lines.

1	Media Name	Displays the name of the tool condition that is currently selected. To save a tool condition as a new one, enter a new file name here. →Media Name (page 16)		
2	ΤοοΙ	Specify the part no. of the cutter blade, or the pen.		
2	Foros	Set the force of the o	cutter or the pen.	
ა	Force	Setting range	1 ~ 48	
Λ	Speed	Set the move speed	of the tool.	
4	Speed	Setting range	1 to 105 cm/sec.	
5	Accol	Set the acceleration	of the tool.	
9	Accel	Setting range	1 ~ 8	
6	Offset	<ul> <li>Fine-adjust the difference between the tip of the blade and the center of the plunger. Set this value based on the type of the cutter blade that you use.</li> <li>What is Offset (page 12)</li> <li>Guideline of Offset Setting (for Each Cutter Blade) (page 12)</li> </ul>		
7	About the blades	Displays detailed information on the cutter blade and the plunger of the tool that is currently selected.		
8	Advanced	Displays advanced setting items. Advanced Control of Tool Behavior (page 13)		
9	ок	Saves the set content as the current media name and closes the tool condition setting screen. To newly save it, enter the optional file name into media name.		
10	Cancel	Cancels the settings and closes the tool condition setting screen.		

**Guideline for Settings** 

Refer to the Cutter Blade Manual.

#### Guideline for Settings (When Plotter Pen is Selected)

Pen type	Part no.	Force	Speed (cm/sec.)	Acceleration
Water-based fiber-tip pen	KF7000 Series	10 ~ 12	30	4
Oil-based ballpoint pen	KB700-BK	25 ~ 28	60	4

#### What is Offset

It will adjust the difference between the tip of the blade in the plunger and the center of the plunger. There are standard adjustment values for each cutter blades. Fine adjustment will be made to that standard values here. (Adjustment will be made with standard value as 0.)



For the Pouncing, specify the distance (length) of 1 to 99mm, which allows the tool to go down.

#### **Guideline of Offset Setting**

Refer to the Cutter Blade Manual.

### **Advanced Control of Tool Behavior**

1	dit Conditions          Media Name       Indoor vinyl         Tool       Force       1       48         Speed       30       0       0         Accel       4       0       0         CB09U       Offset       0       0       0         Assign Tool       Col       Col       Col       Col         Otfset       0       Col       Col       Col         Distance Adjust       Col       Col       Col       Col
1 2 3	Force       1       105         Speed       30       1         Accel       4       1         Accel       4       5         Accel       4       5         CB09U       Offset       0         Offset       0       0         Assign Tool       Cut Test         Position       Use Keyboard         Distance Adjust       Off         Off       On         X:       0.00         V:       0.00         V:       0.00         V:       0.00         V:       0.00         Use Keyboard         Distance Adjust       On         Off       On         Off       On         Off       Mode1         Overcut       Stat :         Stat :       0.0         Mathematical Data       0.0         Initial Down Force :       0
	Up Mode : Force Up Force : 1 About the blades 5

Make advanced tool condition settings based on the property of the media that you use.



- $\cdot$  For the setting of cut line pattern, normally use the default value of off.
- For cutting by using the settings in [Cut Line Pattern] (other than [Off]), use Tool 3. Unlike normal media cutting (half cutting), cutting with a perforated pattern (cutting out) will damage the cutting mat and may affect the quality of normal cutting. Therefore, do not use Tool 1 for cutting with a perforated pattern.
- When Tool 1 is used, a fee will be charged for replacement of the cutting mat that is damaged for cutting with a perforated pattern.
- · For the Pouncing, be sure to use the Tool 1. Using the Tool 3 may possibly damage the plotter.

		Specify the tool to be used.			
		Tool 1	The tool attached in backward position of the holder is used.		
1	Assign Tool	Tool 2 <sup>*1</sup>	The tool attached on the station is used.		
	g	Tool 3	The tool attached in forward position of the holder is used. This setting is used when cutting off the media completely with the backing sheet (when cutting them out).		
2	Distance Adjust	Adjust the difference between the data and the line of actual cutting or plotting that occurs due to the material or thickness of the media. In the vertical axis (Y) and the horizontal axis (X) respectively, specify the percentage to use for the adjustment.			
4		Off	Adjustment is not performed.		
		On	Adjustment is performed.		
		Setting range	-2.00 ~ +2.00 %		
3	Tangent Emulation	Use this function to cut media whose thickness is equal to or greater than 0.3 mm. Off/Mode1/Mode2:→What is Tangential Emulation (page 14)			
		Setting range	[Overcut (Start, End)] 0.0 to 0.9 mm [Initial Down Force] 0 to 20		
		Specify whether to perform full line or dashed (perforated) line cutting. →Cut Line Pattern (page 14)			
Δ	Cut Line Pattern	Off	Full line cutting is performed.		
		On	Dashed (perforated) line cutting is performed. When setting to On, you can either select a pattern from 0 to 7 or set an arbitrary pattern (User).		
5	Simple	Hides advanced setting items.			

\*1: Available only when you use a plotter with the 2 pen option.

#### What is Tangent Emulation

The blade does not rotate smoothly when cutting media whose thickness is equal to or greater than 0.3 mm and the start and end points may not match or the corners cannot be cut finely. Tangent Emulation enables you to cut thick media finely by fine-controlling the movement of the tool during a cutting process.

For both Mode1 and 2, you can specify the overcut lengths (extra cut lengths) for the start and end points, from 0.0 to 0.9 mm.

In addition, when cutting thick media, the cutter blade may not be able to go down deep in the media at the beginning of the cutting even if the force required to the cutting is set, and there may be uncut portion left at the start point. By setting initial down force, tool down is performed with the combined force of cutting force and initial down force only at the start point and, therefore, the media is cut properly from the start point. For both Mode1 and 2, the possible values for [Initial Down Force] are from 0 to 20.

Mode1	Overcuts at the start and end points as well as the sharply angled corners to prevent any uncut portion from being left. At the sharply angled corners, the blade is raised to the surface of the media and made rotate before it is lowered again so that sharp cutting can be realized.
Mode2	Overcuts only at the start and end points. The blade is raised to the surface of the media and made rotate only at the start point. Because the control in this mode is simpler than that in Mode1, you can use this mode to reduce the cut time.

#### Cut Line Pattern

When [Cut Line Pattern] is On, the media is perforated at the interval that you set. If the length of the part that is left uncut is too short, the cut object can easily be cut off. In the case where the object is cut off during the cutting process, set a value that specifies a longer uncut length.

You can select a pattern from the following eight predefined patterns or set an arbitrary pattern by selecting [User].

Type No.	Uncut length for cutting distance of 8 mm		
0	0.15 mm		
1	0.20 mm		
2	0.25 mm		
3	0.30 mm		
4	0.35 mm		
5	0.40 mm		
6	0.45 mm		
7	0.50 mm		
Lloor	Up	Specify the length of the part to be left uncut. The possible values are from 0.1 to 10.0 mm.	
USEI	Cut	Specify the length of the part to be cut. The possible values are from 0.1 to 100.0 mm.	

Once the pattern is selected, make the following setting as necessity.

Up Mode	Specify whether to raise the tool totally at the uncut part (Up) or to perform the cutting with		
	reduced force (Force).		
Up Force	If you set [Up Mode] to [Force], specify the cutting force at tool up. The possible values are		
	from 1 to 48.		

### **Cut Test**



Run cutting tests to determine if the media is cut properly under the tool condition that you set.

### - 💭 Reference

• The tool condition is set appropriately if the media is cut off completely and a slight trace left on the backing sheet. Readjust the settings if any uncut portion exists on the media or the backing sheet is cut. Also readjust the blade length of the cutter (+Chapter 2 "Preparing to Cut" in User's Manual).

 $\cdot$  Some of the buttons are assigned keyboard shortcuts. The shortcut keys are as follows:

- –[Test for force]→[F9]
- -[Test for cutter offset]→[Shift] + [F9]

-[Cut Test]→[F8]

Test for force/Test for cutter offset (three times with the original

		Click this key and then use the keyboard to move the tool to the position at which the you want to cut the test pattern.		
1	Position (Use Keyboard)	Up/down/left/right	Press one of the $[\leftarrow \uparrow \downarrow \rightarrow]$ keys on the keyboard.	
		High-speed movement	Press the [Ctrl] key and one of the $[\leftarrow \uparrow \downarrow \rightarrow]$ keys on the keyboard at the same time.	
		Skew	Press the up/down arrow key and the left/right arrow key at the same time. For example, $[\leftarrow]$ and $[\uparrow]$ or $[\downarrow]$ and $[\rightarrow]$ .	
2	Test for force	Runs three cutting tests by changing the cutting force by 1. The tests are performed with the value that you set and the values that are increased or decreased by 1 from the original value.		
3	Test for cutter offset	Runs three cutting tests by changing the offset value by 1. The tests are performed with the value that you set and the values that are increased or decreased by 1 from the original value.		
4	Cut Test	Runs one cutting test under the tool condition that you set. ◆Test Cutting Patterns (page 15) ◆How to Check Offset (page 15)		

#### **Test Cutting Patterns**







#### How to Check Offset

Check if the offset value is set correctly by using the following information as a reference:





In the main screen (⇒page 9), click [Edit Media List] to open the [Edit Media List] screen. In the [Edit Media List] screen, you can create a new tool condition and delete, replicate, or edit the existing tool conditions. You can also load settings from the plotter or assign a Condition No. (1 to 8) to a condition. The condition with a Condition No. can be called in the plotter.

You can save a tool condition as a file to any location on your computer (export) or load a setting file that have been saved (import).

### 

- Although installing the controller also installs a standard media list (a list of tool conditions), optimal settings may differ depending on the use environment, the types of media, applications, and other factors. Be sure to run cutting tests and set the optimal tool condition before performing actual cutting.
- On Windows Vista/7/8, the media list is saved for each logged-on user. If you want to use the same media list as before, log on as the same user.
- On Windows XP, changes made to a media list are saved when you exit the controller as long as you are logged on as administrator. If you are logged on as user other than administrator, the changes are not saved when you exit the controller.

### Reference -

Up to 100 tool conditions can be saved to the list. If you try to save tool conditions that exceed the limit of 100, a message will appear. In that case, you should delete unnecessary setting files.

1	List	Lists media names and the corresponding tool conditions. Click a condition to select it. To select multiple conditions, click them while pressing the [Ctrl] or [Shift] key on the keyboard. ➡Media Name (page 16)
2	Condition No.1 to 8	Assign a Condition No. (1 to 8) to the tool condition that is currently selected. The condition with a Condition No. can be called in the plotter. Select a tool condition from the list and click one of the buttons: [Condition No.1] to [Condition No.8].
3	New	Opens the [New] screen. ◆2. Setting Tool Conditions [CONDITION] (page 11)
4	Edit	Open the [Edit] screen. ◆2. Setting Tool Conditions [CONDITION] (page 11)
5	Delete	Deletes the tool condition that is currently selected. The tool condition to which a Condition No. (1 to 8) is assigned cannot be deleted.
6	Сору	Opens the [Copy] screen. ◆2. Setting Tool Conditions [CONDITION] (page 11)
7	Load	Loads tool conditions from the plotter and opens the [Load] screen. ◆2. Setting Tool Conditions [CONDITION] (page 11)
8	Import	Loads the media list that is stored in your computer. Import/Export Functions for Tool Conditions (page 16)
9	Export	Saves the tool condition that is currently selected to a location on your computer. Import/Export Functions for Tool Conditions (page 16)
10	Close	Closes the [Edit Media List] screen.

#### Media Name

The controller manages tool conditions by using media names. This is because the media to be used determines the tool condition. Note that, however, optimal condition settings for the same media may differ depending on the use environment or the shape of the image to be plotted. Therefore, saving a tool condition under a file name that consist of the media name and additional description by which the variation of the settings can be understood may help to find the settings that are close to the optimal condition.

#### Import/Export Functions for Tool Conditions

By using these functions, you can save a tool condition that is set in the controller to any location on your computer or load a tool condition that has been saved to your computer. You can also save multiple tool conditions as a single file and load the file. The extension of the files that can be imported or exported is ".GMIE".

Export	<ol> <li>Select a condition from the media list and click [Export].</li> <li>Enter the file name in the [Save As] screen and specify the location to which you save the condition.</li> <li>Click [Save] to save the setting file.</li> </ol>
Import	<ol> <li>Click [Import].</li> <li>Select the file to load in the [Open] screen.</li> <li>Click [Open] to load the condition and add it to the bottom of the list.</li> </ol>

## 4. Tools Setting [TOOL]



In the main screen (+page 9), click [[TOOL] to open the [Tools Setting] screen.

In the [Tools Setting] screen, you make advanced settings for the behavior of the tool and how plotting data is processed.

1	Step Pass	Set the units by which data is processed. Normally, set the value to [0]. →What is Step Pass (page 19)		
1		Setting range	0 ~ 20	
2	Offset Force	Specify the cutting force when the direction of the blade is set in the initial operation. The value is also used as the cutting force when blade rotation control is performed when tangential emulation is used.		
		Setting range	1 ~ 40	
3	Offset Angle	Specify the angle to control should be pe →What is Offset Ang	use as the reference to determine if blade angle erformed. gle (page 19)	
		Setting range	0 to 60 degrees	
4	Tool Up Height	Specify the height b (Tool Up). Set how h height.	by which the tool is raised to the surface of the media high the tool should be raised from the reference	
		Setting range	0.0 to 5.0 mm	
		Specify whether to store the data in the buffer memory and sort them before plotting starts.		
5	Data Sorting	Area	Off: Area sorting is not performed. On: Area sorting is performed.	
		Tool	Off: Sorting for each tool is not performed. On: Sorting for each tool is performed.	
6	Tool 1-2 Offset ADJ.*1	If there is any differe Tool 1 and Tool 2. C adjusted setting. ➡Tool 1-2 Offset AD	ence in the drawing, adjust the distance between lick [Test Pattern] to cut the test pattern based on the DJ./Tool 1-3 Offset ADJ. (page 19)	
		Setting range	-3.0 mm to +3.0 mm	
7	Tool 1-3 Offset ADJ.	Adjust the distance Click [Test Pattern] t ➡Tool 1-2 Offset AD	between Tool 1 and Tool 3. to cut the test pattern based on the adjusted setting. JJ./Tool 1-3 Offset ADJ. (page 19)	
		Setting range	-3.0 mm to +3.0 mm	
0	Tool Up Spood	Specify the move sp	beed of the tool when the tool is raised.	
0	lool op Speed	Setting range	Auto, 10/20/30/40/50/60 cm/sec.	
		Specify whether the panel of the plotter a	tool conditions can be set or edited from the control and from the controller.	
9	Condition Priority	Manual	Conditions can be set/edit only from the control panel.	
		Program	Conditions can be set/edit from either the control panel or the controller.	

10	Tool Select	Specify whether to enable or disable tool replace commands ("J" in GP-GL, "SP" in HP-GL), independently from the setting in [Condition Priority].		
10	Command	Enabled	Enables tool replace commands.	
		Disabled	Disables tool replace commands.	
	Initial Blade	<ul> <li>Specify the position at which initial adjustment of the blade direction is done.</li> <li>→What is initial adjustment of the blade direction (page 20)</li> </ul>		
11		2mm Below	The initial adjustment of the blade direction is done at 2 mm below the start point of the cutting.	
		Outside	The initial adjustment of the blade direction is done outside of the cutting area.	
12	Tool Up Move	Specify whether the plotter moves the tool each time it receives the coordinates or directly moves the tool to the last coordinates when the controller sends instructions in series to the plotter to raise and move the tool.		
		Enabled	The tool moves along the coordinates received.	
		Disabled	The tool moves to the last coordinates.	
	Position (Use Keyboard)	Click this key and th at which the you wa	en use the keyboard to move the tool to the position nt to cut the test pattern.	
		Up/down/left/right	Press one of the $[\leftarrow \uparrow \downarrow \rightarrow]$ keys on the keyboard.	
13		High-speed movement	Press the [Ctrl] key and one of the $[\leftarrow \uparrow \downarrow \rightarrow]$ keys on the keyboard at the same time.	
10		Low-speed movement	Press the [Shift] key and one of the $[\leftarrow\uparrow\downarrow\rightarrow]$ keys on the keyboard at the same time.	
		Skew	Press the up/down arrow key and the left/right arrow key at the same time. For example, $[\leftarrow]$ and $[\uparrow]$ or $[\downarrow]$ and $[\rightarrow]$ .	
14	ок	Saves the settings a	nd closes the [Tools Setting] screen.	
15	Cancel	Cancels the settings	s and closes the [Tools Setting] screen.	

\*1: Available only when you use a plotter with the 2 pen option.

#### What is Step Pass

A set of units by which cut data is processed is called Step Pass. If set, the cutting is performed by skipping blade control for the data that is less than the specified value. Set this setting when the space is extremely small in the cut data, to reduce cut time while performing stable blade rotation control. The smaller the value is, the finer blade control is performed and, therefore, the quality is improved but cut time becomes longer. Normally, set the value to [0]. One unit is the distance that you set [Step Size] in [GP-GL] in the [Interface] screen (>page 23).

#### What is Offset Angle

The plotter analyzes the cutting data to determine if blade angle control should be performed based on the change amount of an angle. Angle control is performed when the change amount of an angle is equal to or more than the value that you set in [Offset Angle]. If a small value is set, angle control is performed frequently for some image shapes and, therefore, the quality is improved but cut time becomes longer. On the other hand, a large offset angle value reduces the cut time but an image different from the intended one may be cut.

#### What is Data Sorting

This is a function to store plotting data in the buffer memory and arrange the process order so that more efficient plotting can be done.

By the Area sort, the process order is arranged so that the movement distance of the tool in the feed direction becomes the shortest at tool up.

By the Tool sort, the process order is arranged so that plotting with Tool 1 is performed last if the data for Tool 1 and Tool 2 are mixed in the plotting data. Available only when 2 pen (Option) is selected.

If [Data Sort] is set to on, the time before the plotting starts becomes longer because data is temporarily accumulated in the buffer memory.

Set the data sort in the controller to off when the data that has already been sorted with the application or driver software is used for plotting.

#### Tool 1-2 Offset ADJ./Tool 1-3 Offset ADJ.

Specify how much Tool 2 or Tool 3 is moved based on the Tool 1.

#### •Tool 1-2 Offset ADJ.

Adjust the positions of Tool 1 and Tool 2 in the plotter with 2 pen option. Use this setting when there is a difference between drawings by the two tools. For adjustment values X and Y, see the figure below.

#### •Tool 1-3 Offset ADJ.

Adjust the positions of Tool 1 and Tool 3 Use this setting when there is a difference between drawings by the two tools. For adjustment values X and Y, see the figure below.

- 1. Correctly set the Cutter plunger or 2 Plotter pens, and turn on the power source.
- 2. Make sure that the plotter is in ready status.
- 3. Open the [Tools Setting] screen of the controller.
- 4. Click the [Position (use Keyboard)], and then use the keyboard of PC to move the Tool carriage to the position at which you want to cut the [+] (test pattern). (For both X and Y directions, move it to 50mm and over inside of the plotting area.)
- 5. Click [Test Pattern] to cut the test pattern.
- 6. Measure the distance between 2 tools through the test pattern plotted.



As an example, in the figure above, it needs to move in negative directions for both X and Y directions, so both of the adjustment values will be negative values.

7. Repeat the procedures 5 to 6 until the difference between tools disappears.

#### What is initial adjustment of the blade direction:

Initial adjustment of the blade direction is an operation that softly puts the blade on the media to align the blade directions right after turning on the power source of plotter or after changing the condition settings.

## **5. Setting Area Parameters [AREA]**



In the main screen (>page 9), click [[AREA] to open the [Area Parameters] screen. In the [Area Parameters] screen, you set values regarding to the plotting area.

### 

• Although plotting can be performed at a position on and outside of the push rollers when the expand limit is set to a positive value in [Set Expand Limit] under [Expand], some media may not be fed properly because the push rollers move on the plotted surface.

When the expand limit is set to +8 mm or higher, Initial may be performed outside the loaded media, regardless the setting in [Initial Blade] in the [Tools Setting] screen (→page 18) In this case, caution is required because the blade may be damaged.

### Reference

· When turning mirror mode on or off, the Area settings are initialized.

• You should set a Expand setting before sending the plotting data to the plotter, When you change the setting, the plotter clears data in the buffer memory to perform initial settings.

In [Area], set the values in [Set Upper Right] and [Set Lower Left] so that the distance between them is equal to or larger than 5 mm.

1	Scale	Opens the [Scale] screen. Scale Setting (page 21)
2	Mirror	Opens the [Mirror] screen. ➡Mirror Setting (page 21)
3	Expand	Opens the [Expand] screen.
4	Area	Opens the [Area] screen. ◆Area Setting (page 22)
5	Close	Closes the [Area Parameters] screen.

#### Scale Setting



Plotting is performed with the enlarged/shrunk size.

Scales that can be set are 1/8, 1/4, 1/2, 1, 2, 3, 4, 5, 6, 7, and 8 (multiplications).

#### Mirror Setting



Sets the mirror mode that reverses the origin point and vertical and horizontal coordinate axes. Selecting On enables the mirror mode.

When the plotter power is turned off, the mirror mode is also turned off.

#### **Expand Setting**



Broaden or narrow the width of the plotting area.

When the initial value ([Default]) is used, the width expands to the internal edge of the push rollers (See the figure below).

Select [Set Expand Limit] and enter a negative value to obtain narrower width or enter a positive value to obtain broader width than when the initial value is used.

The possible values are from -10.0 to +10.0 mm.



#### Area Setting



Set the plotting area that you want. The square specified by the points that are set by using [Set Upper Right] and [Set Lower Left] is the plotting area.

This setting is used when, for example, you want to plot on a free area on the plotted media. To set a plotting area, perform the following procedure:

- 1. Click [Position (Use Keyboard)].
- Press one of the [←↑→↓] keys on the keyboard to move the tool to the position that you want to set as the lower left point and click [Set Lower Left].
- Press one of the [←↑→↓] keys on the keyboard to move the tool to the position that you want to set as the upper right point and click [Set Upper Right].

To use the setting area for use in media setting, select [Default].





Click [I/F] on the main screen (→page 9) to open the [Interface] screen. The settings related to Interface can be done in the [Interface] screen.

#### 

When the controller is started from the driver software, select the GP-GL command.

1	Command	Specify the plotting command. Select one of GP-GL command, HP-GL command or AUTO. Select [Auto] to automatically determine the command. (User's Manual Chapter 11 "Setting of controls from Computer")	
		Step Size	Specifies the movement distance per step. Select from 0.100mm, 0.050mm, 0.025mm, and 0.010mm.
		Command ":",";"	Enables/disables Command ":",";".
2	GP-GL	Command "W"	Specifies whether to raise the tool or keep the current tool state before moving the tool to the start point when "W", instruction to draw an arc, is issued. When [Tool Down] is selected, the tool moves, keeping the same state (raised or lowered) as one right before the instruction is issued. When [Tool Up] is selected, the tool is raised and then moved. This setting is valid only when the tool is a cutter blade.
3	HP-GL	Origin Point	Sets the lower left or center of the plotting area as the origin point.
		Model Emulated	Sets the response to the "OI" command. Select [7550] to set 7550 as the value of the response to "OI" command. Select [7586] to set 7586 as the value of the response to "OI" command.
		Circle Resolution	Specifies whether to automatically set the resolution or use the fixed value of 5 degrees when the instruction to draw an arc is issued.
4	ок	Saves the settings and closes the [Interface] screen.	
5	Cancel	Cancels the settings and closes the [Interface] screen.	

ARMS (Advanced Registration Mark Sensing System) is a system that automatically reads registration marks. The ARMS functions enable you to cut printed material more precisely.

The main ARMS functions include 4points (2 axes warp) adjustment, multiple registration mark adjustment, segment area adjustment, and automatic scanning of the registration marks. In the controller, you can configure and perform 4points (2 axes warp) adjustment, segment area adjustment, and automatic scanning of the registration marks.

Settings for ARMS are made in [Registration Marks] on the main screen (→page 9), the [Registration Mark Settings] screen (→page 25), and the [ARMS Setting] screen (→page 26).

### - **(AUTION** –

- ARMS is a function to align the cutting position with the print position as much as possible and does not guarantee an accuracy where the media is cut at the same print position and in the same size as defined by data.
- Unlike plotters (drawing machines), printers generally do not guarantee accuracy in terms of the print position and the size. In particular, when a laser printer and sheet media are used, the print may be distorted considerably and you may not be able to obtain a proper cutting result even if adjustment is made to the print by using the registration marks.

### **Registration Marks Setting**



1	Registration Marks Check this if you want to use registration marks to cut media that has a image printed. (Registration marks also need to be printed on the media beforehand.)	
2	Mark Auto ScanCheck this if you want to scan and read the registration marks automatically when the cutting starts. This setting is available when [Registration Marks] is checked.→Mark Auto Scan (page 25)	
3	Mark Distance	Specifies the distance between registration marks by using the vertical axis (Y) and the horizontal axis (X). Check the distance in the application software that you used to set the registration marks.
4	RM Settings	Opens the [Registration Mark Settings] screen. ➡Registration Mark Settings (page 25)
5	Read Marks	Starts reading of the registration marks. ➡Mark Auto Scan (page 25)

#### What is Registration Mark

A registration mark is a mark to align positions to cut the printed image properly. Set marks around the image before printing it. The plotter uses a registration mark sensor to read the marks and corrects the position or distortion of the image before performing cutting. For proper reading of the registration marks, ensure that the printed image does not go into or around the marks.

#### Mark Auto Scan

This is a function to scan and read the registration marks automatically when the cutting starts. Registration marks within a certain area from the current position of the tool to the center of the media are detected. However, marks may not be detected if there is no mark near the area. In such case, turn [Mark Auto Scan] off\*, move the tool above the first registration mark (Registration Mark located at the position painted with green on the drawing in main screen of the controller), and then click [Read Marks].

\*If you start the controller from the Start menu, registration marks can be read by using [Read Marks], regardless the setting in [Mark Auto Scan].

### Settings in the [Registration Mark Settings] Screen



In the main screen (>page 9), click [RM Settings to open the [Registration Mark Settings] screen. In this screen, you set detailed conditions necessary to read registration marks, including the number and the shape of the mark.



To perform a segment area adjustment (\*\*Adjustment by Using Registration Marks" on page 26), the direction where the intermediate registrations placed must be the same as the feed direction. So, load the media accordingly. Intermediate registration marks that are in the moving direction of the cutter blade cannot be read.

1	Mark Scan Mode	Set the number of registration marks to scan. ◆Adjustment by Using Registration Marks (page 26)		
2	Mark Type	Select the shape of the registration mark.		
3	Step	When [Area] is set in [Mark Scan Mode], specify the distance by which each intermediate registration mark is placed.		
		Setting range	100.0 mm to 10000.0 mm	
Λ	Longth	Specify the length of the registration mark from the corner to the end.		
4	Length	Setting range	5.0 mm to 20.0 mm	
5	Thickness	Specify the thicknes	ss of the registration mark.	
5	THICKNESS	Setting range	0.3 mm to 1.0 mm	
6	ок	Saves the settings and closes the [Registration Mark Settings] screen.		
7	Cancel	Cancels the settings and closes the [Registration Mark Settings] screen.		

#### Adjustment by Using Registration Marks

The plotter reads the registration marks to perform alignment of the origin point, adjustment of the vertical distance, and correction of the distortion. Depending on the number of marks, the adjustment method may differ.

Mark Scan Mode	Adjustment to be done
	Adjusts the horizontal distance and the tilt. Registration marks at lower left and
Opointo	lower right are read and the distance between these two marks is adjusted so as
2001115	to be the same distance as you set in the [X] of [Mark Distance] (♥"Registration
	Marks Setting" on page 24).
	Adjusts the vertical and horizontal distance and the tilt. Registration marks at
	lower left + lower right and lower left + upper left are read and the distances
3points	between each pair of the marks are adjusted so as to be the same distances as
	you set in the [X] and [Y] of [Mark Distance] (♥"Registration Marks Setting" on
	page 24).
	Registration marks at lower left, lower right, upper left, and upper left are read
Anointe	and are adjusted to the registration mark positions calculated from the distances
4001113	you set in the [X] and [Y] of [Mark Distance] (➡"Registration Marks Setting" on
	page 24).
	For a long image, like one whose length in the feed direction is more than 2
Area (segment area	m, corrects the distortion produced during the printing process. By using the
adjustment)	intermediate registration marks as boundaries, the image is divided in the feed
	direction into several areas and 4points adjustment is performed.



### Settings in the [ARMS Setting] Screen



In the [ARMS Setting] screen, you set detailed conditions to use the ARMS functions. In the main screen (>page 9), click [[ARMS] to open the [ARMS Setting] screen.

1	Paper-Weight	Set whether to hold down the media with the paper-weight when the sensor reads the registration marks.		
		Off	The paper-weight will not be used.	
		On	The paper-weight will be used.	
2	Axis Alignment Tool	Set the tool that is used for manual axis alignment. Select from [Loupe] and [Light Pointer]. ◆Axis Alignment (page 27)		
	Position (Use Keyboard)	Click this key and then use the keyboard to move the tool to the position at which the you want to cut the test pattern.		
		Up/down/left/right	Press one of the $[\leftarrow \uparrow \downarrow \rightarrow]$ keys on the keyboard.	
3		High-speed movement	Press the [Ctrl] key and one of the $[\leftarrow\uparrow\downarrow\rightarrow]$ keys on the keyboard at the same time.	
		Skew	Press the up/down arrow key and the left/right arrow key at the same time. For example, $[\leftarrow]$ and $[\uparrow]$ or $[\downarrow]$ and $[\rightarrow]$ .	
4	Sensor AdjustAutomatically adjusts the scanning level of the sensor that registration marks. Click [Execute] to start the automatic Sensor Adjust (page 27)		is the scanning level of the sensor that scans Click [Execute] to start the automatic adjustment. ge 27)	

5	Sensor Offset ADJ.	Adjust the position of the sensor that scans registration marks. ◆Sensor Offset ADJ. (page 27)
6	ОК	Saves the settings and closes the [ARMS Setting] screen.
7	Cancel	Cancels the settings and closes the [ARMS Setting] screen.

#### Axis Alignment

In Axis Alignment, you adjust the tilt of the Axis by using alignment marks (such as grits and registration marks) for 2points, 3points, or 4points as references. In addition you can adjust the distance by entering the distance between each points. Use the loupe or the light pointer for the tool to align the tool to the position of each point. Use media that has drawings (alignment marks such as grits and registration marks) required to determine the X/Y axes and the origin point.

For more information on the axis alignment procedure, see Chapter 6 "Manual Position Adjust" in User's Manual.

#### Sensor Adjust

Scan level (threshold value between the media background color and registration mark) of the sensor scanning the registration mark is automatically adjusted. Sensor is adjusted to scan the registration mark written in black lines on white background. Readjust the scan level of the sensor depending on the color and gloss of the media. If it is hard to adjust the level automatically due to media characteristics, adjust the scan level of the sensor manually. When you want to revert the sensor level back to the default, use the control panel of the plotter. For more information on the sensor level adjustment procedure, see Chapter 5 "ARMS (Advanced Registration Mark Sensing System)" in User's Manual.

#### Sensor Offset ADJ.

Sensor to scan the registration mark is positioned away from the tip of the tool (pen tip). Therefore, it is necessary to adjust the coordinate values of the scanned registration mark so it will match with the cutting position. Specify how much the cross shape, which was plotted after scanning, should be moved based on the cross shape to be scanned.

#### •Plotting Registration Mark for Adjustment

When Registration Mark is not plotted on the media, first plot the Registration Mark. Then proceed to the step of "Detect the Registration Mark for Adjustment, and enter the Value".

- 1. Load white media.
- 2. Set the water-based fiber-tip pen on the tool holder.
- 3. Open the [ARMS Setting] screen of controller.
- 4. Click [Position (use Keyboard)], and use the Keyboard of PC to move the Tool to the position at which you want to cut the Registration Mark (test pattern).
- 5. Click [Test Pattern] of [Sensor Offset ADJ.], and plot the Adjustment Registration Mark.

#### •Detect the Registration Mark for Adjustment, and enter the Value

When the Registration Mark is already cut on the Media or when the Media where Adjustment Registration Mark is cut is used using the [Test Pattern], take the following procedures.

1. Load the media with adjustment registration mark in the plotter.

- 2. Open [ARMS Setting] screen of controller.
- 3. Click [Position (use Keyboard)], and use the Keyboard of PC to move the Tool to the area at which you want to start scanning the Registration Mark.



4. Click [Scan] of [Sensor Offset ADJ.] to scan the Registration Mark for Adjustment, and plot the Registration Mark for comparison.



- 5. Using the scanned Registration Mark for Adjustment, measure the distance of how much the comparison registration mark needs to be moved so both will overlap, and record the value. As an example, in the figure above, it needs to move in negative directions for both X and Y directions, so both of the adjustment values will be negative values.
- 6. Enter the values, which were measured in the above 5, into each X/Y as the adjustment value. It is able to set for both X and Y in the range from -3.0mm to +3.0mm.



In the main screen (>page 9), click [[MEDIA] to open the [Media Setting] screen. In the [Media Setting] screen, you set values regarding to media.

#### 

Be sure to specify a longer length in [Page Length] than the plotting data. Plotting is performed only within the length specified by the [Page Length].

4	Dono Longth	Set the length of 1 page when using the roll media.		
	Fage Length	Setting range	20.0 to 5000.0cm	
2	Cross Cut Force	Specify the cutting force for cross cut. Set a smaller value for thin media and a larger value for thick media.		
		Setting range	1 ~ 48	
3	Denal Oction	Check this to cut after dividing by a specified partition length, in order to prevent skewing of the length. * Unavailable for FC8000. ➡For the Panel Cutting, see page 27.		
	i aller e alling	On	Panel Cutting is available.	
		Off	Panel Cutting is not available.	
		Setting range	1.0 to 2000.0cm	
4	Roll Set	Specify the direction or rear of the plotter	n in which roll media has been loaded: from the front . Select either [Front] or [Rear].	
5	Feed Speed	Specify the feed speed for the Pre Feed. Normally use [Normal]. Set this setting to [Slow] when heavy or slippery media is used. →What is Pre Feed (page 29)		
6	Initial Feed	Specify whether pre feed should be performed for the length specified by [Page Length] when the set lever is raised after the media is loaded. →What is Pre Feed (page 29)		
		On	Pre feed is performed.	
		Off	Pre feed is not performed.	
7	Auto Pre Feed	When checked, pre data is received. Th [Feed Length]. →What is Pre Feed	feed is performed automatically when the plotting e pre feed is performed for the length specified by (page 29)	
		Setting range	0.5 to 50.0 m	
8	AP Mode	When checked, the mode for AP (apparel industry) becomes available. →AP Mode (page 29)		
9	Pre Feed	Pre feed can be manually started. Check [Pre Feed], specify the feed length, and click [Start] to perform pre feed once. →What is Pre Feed (page 29)		
		Setting range	0.5 to 50.0 m	
10	ОК	Saves the settings and closes the [Media Setting] screen.		
11	Cancel	Cancels the settings and closes the [Media Setting] screen.		

#### Panel Catting

#### \* Unavailable for FC8000.

To prevent long skew, utilize partition length when cutting.

- When Panel Cutting is on, the machine will begin by dividing up partition length and continue cutting until one of the following data breaks appears. When the first partitioned area cut is finished, the machine will move to the next area, and repeat this until all areas have been cut.
- Data Breaks:

(1) No data sent for a few seconds after finishing cutting. (Time Out)

- (2) A feed-related command is set. (GP-GL F, SO commands, HP-GL AF, AH, PG commands)
  (3) HP-GL SP0, NR, GP-GL J0
- (4) When commands from data breaks (2) and (3) appear, that command work will begin after the partition pastern cutting is finished.
- Panel cutting will continue for each piece of data when a data break is caused by a command, even if multiple pieces of data are sent in before the cutting finishes (even when numerous pieces of panel cutting data are in the plotter buffer).
- When panel cutting and auto media transfer are both turned on, the machine will ignore automatic media transfer length settings and continue working with priority of partition length +α minutes ago (with footprints).
- When panel cutting is on, registration marks will not be seen ignored, and copy, origin point, initial feed, and cutting area cannot be changed.
- If 1 piece of data causes the buffer to be full, partition linking will not be possible. Make sure only to send data that is below the buffer size.

#### What is Pre Feed

This function prevents the loaded media from slipping by advancing the media by the specified length and then drawing back to imprint grit roller marks on the media. It also ensures stable media feed operations by acclimating long media to the operating environment. For roll media, the amount to use for plotting must be pulled out beforehand. You can let the plotter do this work.

#### AP Mode

This function is used to connect to a CAD for AP (apparel industry).

Time Out	The media is fed when data is not received within the specified time after finishing the plotting, Select a value from 0, 1, 2, 3, 5, 10, 20, 30, 60, and 120 seconds. When [0] is set, the media will not be fed.
Separator GP-GL	Set the command to be used as the separator of data. One sheet is plotted every time the data is separated. Select a value from - (no separator is set), F, J0, H, and FS.
Separator HP-GL	Set the command to be used as the separator of data. One sheet is plotted every time the data is separated. Select a value from - (no separator is set), AF, AH, PG, NR, SP, IP, SC, IW, PS, DF, and IN.
Space Rear	Specify the space for between the position where plotting data is terminated and the position for cutting off the media. The possible values are from 7.0 to 30.0 mm.



In the main screen (→page 9), click [ADV.] to open the [Advance] screen. In the [Advance] screen, you make environment settings for the plotter.

### - AUTION

When [Push Roller Sensor] is set to [Disabled], cross cutting cannot be done.

1	Language Selection	Select the language in which menus are shown on the LCD screen in the control panel of the plotter. Select from [English], [Japanese], [Deutsch], [Francais], [Italiano], [Espanol], and [Portugues]. This does not change the display language of the controller.		
2	Length Unit	Select the length unit that is shown on the LCD screen in the control panel of the plotter. Select from [metric] and [inch]. This does not change the display unit of the controller.		
3	Move Step	Set the movement distance of the carriage and the media when one of the [Position] keys ( • • • • •) is pressed. Select from [0.1mm] and [1.0mm].		
		Specify whether to use the sensor that checks if media is set and detects the media length (in the feed direction).		
4	Media Sensor	Disabled	The sensor will not be used.	
		Enabled	The sensor will be used.	
		Specify whether to check if a tool is attached on the station when the media detection is performed.		
5	Check Tool <sup>¹1</sup>	Disabled	The check will not be performed. Be sure to attach Tool2 on the station before turning the power on.	
		Enabled	The check will be performed.	
6	Fan Power	Set the air volume of the fan that sucks the media. Normally, select [Normal]. For thin media, select [Weak].		
	Beep For Key Ope.	Specify whether to beep when a key on the control panel of the plotter is pressed.		
1		Off	Beep will not be generated.	
		On	Beep will be generated.	
		Specify whether to use the push roller sensors that detect the width of the media. Normally, select [Enabled].(+Chapter 10 "Settings Regarding Operating Environment" in User's Manual)		
8	Push Roller	Disabled	The push roller sensors will not be used.	
	Sensor	Inside Disabled <sup>*2</sup>	The push roller sensors other than ones at the edges will not be used.	
		Enabled	The push roller sensors will be used.	
9	ОК	Saves the settings and closes the [Advance] screen.		
10	Cancel	Cancels the settings and closes the [Advance] screen.		

\*1: Available only when you use a plotter with the 2 pen option.

\*2: When more than three push rollers are used, the roller sensor(s) in midway will be disabled.



In the main screen (>page 9), click [Option] to open the [Option] screen. In the [Option] screen, you select the plotter to be controlled by the controller, set the unit to be used in the controller, initialize the media list, and make other settings. You can also retrieve information



On Windows Vista/7/8, the media list is saved for each logged-on user. If you want to use the same media list as before, log on as the same user.

On Windows XP, you can execute [Restore to default] under [Media List] only when you are logged on as administrator. When logging on as the users other than those, a message appears and it is unable to return to the media list of default.

1	Driver (Select)	Specify the plotter for which you want to make settings in the controller. From the [Select] pull-down list, select the driver for the plotter for which you want to make settings.
2	Firmware	Displays the firmware information for the plotter corresponding to the driver that is currently selected.
3	Unit	Specify the length unit to be used in the controller. Select from [mm] and [inch].
4	Media List (Restore to default)	Restores the media list to the default. Click [Execute], and a message asking if you are sure to restore the media list to the default appears. Click [OK] to restore to the default.
5	Plotter setting	The settings in the following screens are saved to the computer: [Tools Setting], [Area Parameters], [Interface], [ARMS Setting], [Media Setting], [Advance] and the saved settings can be loaded to the controller. Import/Export Functions in Plotter Setting (page 32)
6	Error Information	Retrieves and displays the error information on the plotter. Click [Execute] to display the error information. Click [Save] in the [Error Information] screen to save the information in text file format to the computer.
7	Condition Information	Retrieves and displays the condition information on the plotter. Click [Execute] to display the condition information. Click [Save] in the [Condition Information] screen to save the information in text file format to the computer.
8	User Name	Specify the user name to be used in the plotter. Enter desired names in [User1] and [User2]. Click [Upload] to set the names in the plotter.
9	ок	Saves the settings and closes the [Option] screen.
10	Cancel	Cancels the settings and closes the [Option] screen.

#### Import/Export Functions in Plotter Setting

By using these functions, you can save settings that are set in the controller to any location on your computer or load the settings that have been saved to your computer. The extension of the files that can be imported or exported is ".GDS".

Export	<ol> <li>Click [Export].</li> <li>Enter the file name in the [Save As] screen and specify the location to which you save the settings.</li> <li>Click [Save] to save the settings.</li> </ol>
Import	<ol> <li>Click [Import].</li> <li>Select the file to load in the [Open] screen.</li> <li>Click [Open] to load the settings.</li> </ol>

### List of Error Messages

The following list describes error messages that may appear in the controller and actions to be taken. If a problem cannot be solved, contact "Customer Service Contact".

Error message	Action	Reference
"Communication with the plotter could not be established. Please confirm that the plotter is connected correctly and that it has been turned on."	Make sure that the cable is connected properly. Make sure that the plotter is powered on.	<ul> <li>Setup Manual</li> <li>Chapter 1 "Assembling and Connection" and Chapter 2 "Preparing to Cut" in User's Manual</li> </ul>
"Cannot communicate with the plotter. Turn off the plotter's power switch, and then turn it on again."	Turn off the plotter's power switch, and then turn it on again.	<ul> <li>Chapter 2 "Preparing to Cut" in User's Manual</li> </ul>
"GITKPRNP.DLL could not be found, and so the Cutting Plotter Controller for FC8000 could not be started. Please reboot your computer or re- install the Cutting Plotter Controller for FC8000."	Reboot you computer. If the problem still exists, uninstall and then re-install the controller.	<ul> <li>◆"Uninstalling the Controller" on page 33</li> <li>◆Setup Manual</li> </ul>
"The GITKPRNP.DLL functions could not be found, and so the Cutting Plotter Controller for FC8000 could not be started. Please reboot your computer or re-install the Cutting Plotter Controller for FC8000."	Reboot you computer. If the problem still exists, uninstall and then re-install the controller.	<ul> <li>         ■"Uninstalling the Controller" on page 33     </li> <li>         Setup Manual     </li> </ul>
"Registration mark reading has failed. Confirm that the Mark Distance set is correct. Confirm that the Mark Type set is correct."	Check the settings in [Registration Marks]. Make sure that the media is loaded properly.	<ul> <li>◆7. ARMS Setting [ARMS] (page 24)</li> <li>◆Chapter 2 "Preparing to Cut" in User's Manual</li> </ul>
"Did not read the registration marks. The print and cut positions may not line up. Cut anyway?"	Read the registration marks before cutting when you cut printed material. If you are not using registration marks, set [Registration Marks] to off.	<ul> <li>7. ARMS Setting [ARMS] (page 24)</li> <li>Chapter 5 "ARMS (Advanced Registration Mark Sensing System)" in User's Manual</li> </ul>

### **Uninstalling the Controller**

Try to reboot your computer when the controller does not work properly. If it the problem persists, uninstall it by following the procedure below and re-install it properly. For more information on how to install the controller, see "Setup Manual".

- 1. Stop the controller if it is running.
- 2. From the Start menu, open the Control Panel.
- Click [Program]. (If you use the Classic view to see the Control Panel on Windows Vista/7 or if you use Windows XP, skip this step.)
- 4. Click [Programs and Features] (on Windows XP, [Add or Remove Programs]).
- 5. Select [Cutting Plotter Controller for FC8000] and click [Uninstall] (on Windows XP, [Remove]).
- 6. Complete the uninstall by following the instructions on the screen.

# 12. Index

### A

About	10
About the blades	12
Accel	12
ADV	9
Advance	
Advanced	12
Advanced Control of Tool Behavior.	13
AP Mode	
AREA	9
Area	21
ARMS	9
ARMS Setting	24, 26
Assign Tool	13
Auto Pre Feed	
Axis Alignment Tool	

#### В

Beep For Key Ope......30

### С

Cancel	9
Check Tool	30
Close	9
Command	23
Condition Information	32
Condition No	16
Condition Priority	18
Сору	16
Cross Cut	10
Cross Cut Force	
Cut	9
Cut Line Pattern	13
Cut Test	9, 14, 15

#### D

Data Sorting	18
Delete	16
Distance Adjust	13
Driver (Select)	32

### Ε

Edit	16
Edit Conditions	9
Edit Media List	9
Error Information	32
Error Messages	33
Expand	21
Export	16

#### F

Fan Power	30
Features	6
Feed Speed	28
Firmware	32
Force	12

### G

н

GP-GL.....23

′F	9
nport	16
nitial Blade	19
nitial Feed	28
nstall	6
nterface Setting	23

#### Κ

keyboard shortcuts.....9, 14

#### L

anguage Selection	30
_ength	26
_ength Unit	
list	16
_oad	16

### M

1ain Screen	9
Ianaging Media List	16
Iark Auto Scan	24
lark Distance	24
1ark Scan Mode	26
1ark Type	26
1EDIA	9
ledia List (Restore to default)	32
ledia Name	12
ledia Sensor	30
ledia Setting	28
1irror	21
love Step	30

### Ν

New ......16

#### 0

Offset	.12
Offset Angle	.18
Offset Force	.18
Dperation Environment	6
Dption	.10
Option Settings	.31
Drigin	.10

Page Length	28
Paper-Weight	26
Panel Cutting	28
Plotter setting	32
Position	10
Position (Use Keyboard)15,	19, 26
Pre Feed	28
Push Roller Sensor	30

#### R

Read Marks	24
Registration Marks	24
Registration Mark Settings24, 2	25
Registration Marks Setting	24

#### 

#### S

•	
Scale21	
Sensor Adjust27	
Sensor Offset ADJ27	
Setting Area Parameters21	
Settings Display Area9	
Setting Tool Conditions11	
Simple13	
Speed	
Starting from the Print Menu7	
Starting from the Start Menu8	
Step25	
Step Pass18	

### Т

Tangent Emulation	13
Test for cutter offset	15
Test for force	15
Thickness	
TOOL	9
Тоо!	12
Tool 1-2 Offset ADJ	18
Tool 1-3 Offset ADJ	18
Tool Condition	9
Tool Select Command	19
Tools Setting	18
Tool Up Height	18
Tool Up Move	19
Tool Up Speed	18

#### U

Uninstall	33
Unit	32
Upload Setting to plotter	9
Use Keyboard	10
User Name	9, 32

•Information in this document is subject to change without notice.

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