

enduraCUT™ 2

pro desktop cutter

User Manual



<https://www.signwarehouse.com/blog-support/>

NOTICE

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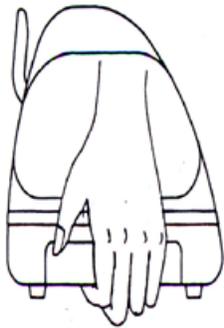
IMPORTANT INFORMATION

Thank you for your purchase of Vinyl Express EnduraCUT2 Cutting Plotter.

For your safety and to optimize the performance of the EnduraCUT 2, please read the user manual completely and keep it in a correct location.

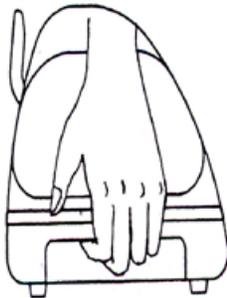
PRECAUTIONS IN USE

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



(O)

hold from the bottom



(X)

hold the depression area

- Do not shake or drop the blade holder, a blade tip maybe fly out.
- During operation, keep away from any moving parts of the cutter (such as the carriage, drums). Also be careful that your clothing and hair do not get caught.
- Always connect the power cable to a grounded outlet.
- Always use the accessory power cable provided. Make sure the power cable isn't crimped or caught between objects.
- Do not connect the power cable to branching outlet to which other machines are also connected, or use an extension

cable. There is danger of overheating and of misoperation of the machine.

- Keep the tools away from children where they can reach.
- Always put the pinch rollers within position of the white marks.

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Chapter 1: General Information

1.1 Introduction

EnduraCUT 2 cutting plotters have been designed to produce computer-generated images on sheets or rolls of vinyl media.

This manual covers the Vinyl Express EnduraCUT 2 series cutting plotter: acceptable media widths range from 2.76”(70mm) ~ 28.3”(719mm)

1.2 Package Items

The EnduraCUT 2 is shipped with the items listed below. Please check your package carefully. If you find any item missing, please consult SignWarehouse customer service for further assistance.

Standard Item	Quantity
1. Cutting Plotter	1
2. Stand Set (Optional) <ul style="list-style-type: none"> • 1 Left side vertical stand • 1 Right side vertical stand • 1 Support for left side • 1 Support for right side • 1 Stand Beam • 2 Bottom Stands with wheels • 2 Sliding brackets for paper takeup • 1 Hex Wrench (M5) 4 • 28 Socket flat head screws(M6* 12L) • 1 Installation Guide 	1
3. Accessories <ul style="list-style-type: none"> • 1 AC power Cord • 1 USB Printer cable • 1 Serial cable • 1 Blade Holder Assembly (Installed in tool carriage of the cutting plotter) • 1 Blade (Installed in Blade Holder) • 1 Safety Blade • 1 Cutting Pad • 1 Pair of Tweezers • 1 Roller Tray 	

1.3 Product Features

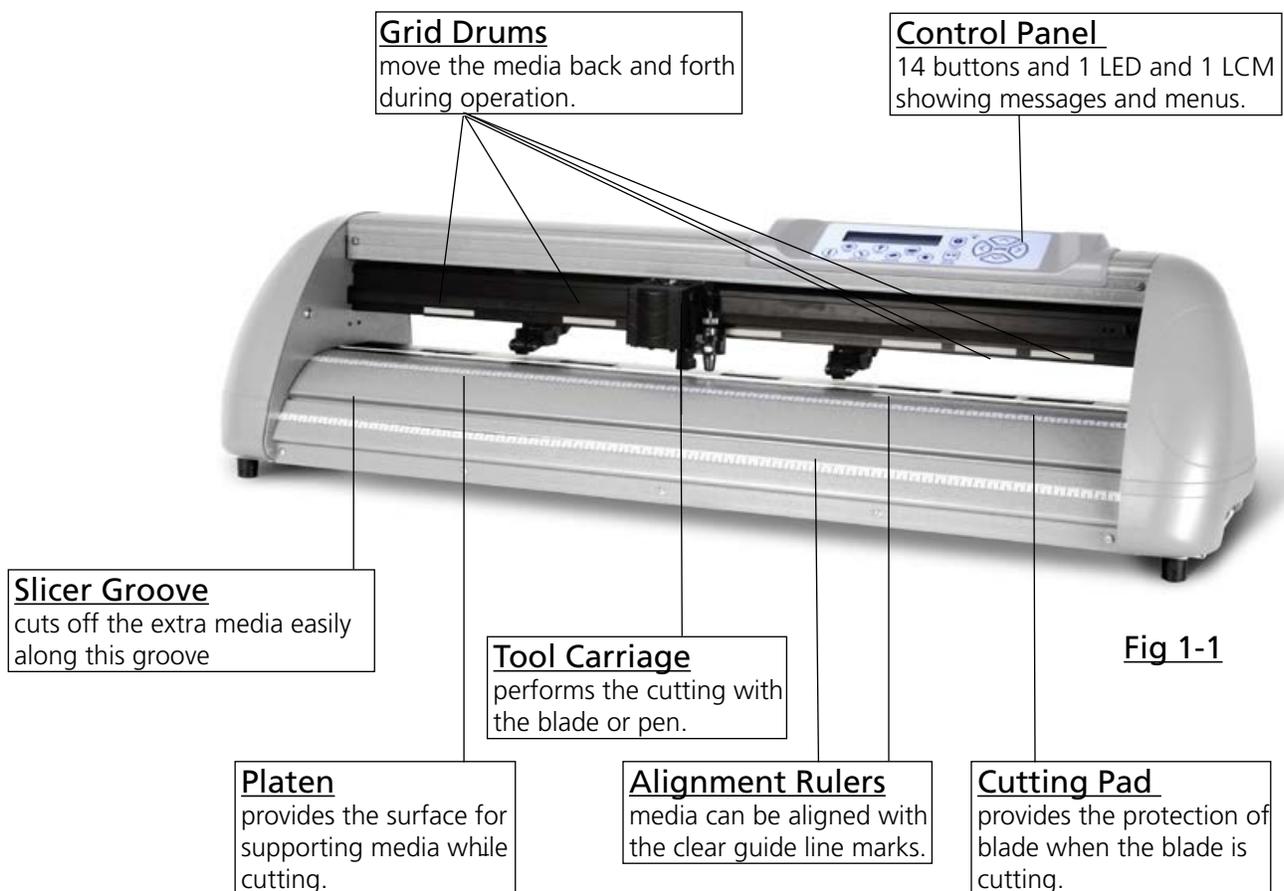
The following are the main features of the EnduraCUT 2 cutting plotter:

- Dual-port connectivity provides you with greater flexibility.
- Up to 400-gram cutting force.
- Up to 600mm/per second cutting speed.
- Guaranteed 16ft tracking.
- User-friendly, multi-language control panel

1.4 Product Appearance

The following are the main features of the EnduraCUT 2 cutting plotter:

1.4.1 Front View



1.4.2 The Rear View (Figure 1-2)

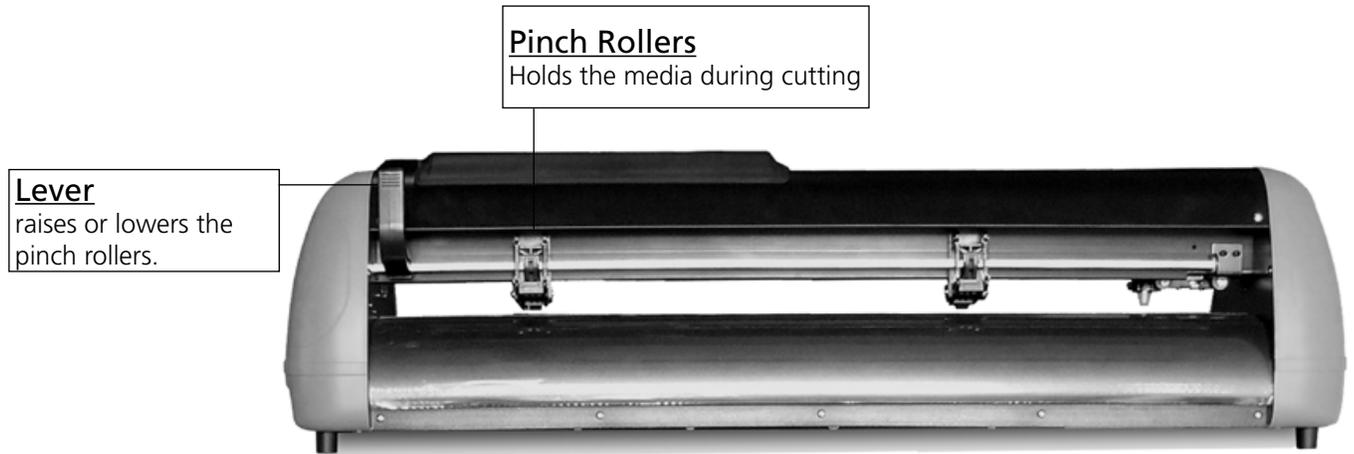


Fig 1-2

1.4.3 The Left-Side View (Figure 1-3)



1.4.4 Right-Side View (Figure 1-4)



Chapter 2: Installation

2.1 Precautions

Notice 1

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

Notice 2 A proper place for installation the cutting plotter

Please select a proper location that meets the following conditions:

- The machine can be approached easily from any direction.
 - Keep at least 2feet (60 cm) of clear space in front and behind the machine.
 - Make sure the cutter is placed on a flat, level and sturdy surface
 - The operation temperature should be between 60° and 86°F (15° to 30°C) in the workshop.
 - The relative humidity of the working environment should be between 25% to 75%.
 - Protect the machine from dust and air current.
 - Prevent the machine from direct sunlight.
-

Notice 3 Connecting the Power Supply

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

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

2.2 Desktop Roller Brackets

Step 1

Check three spacer supports on the back of the machine.

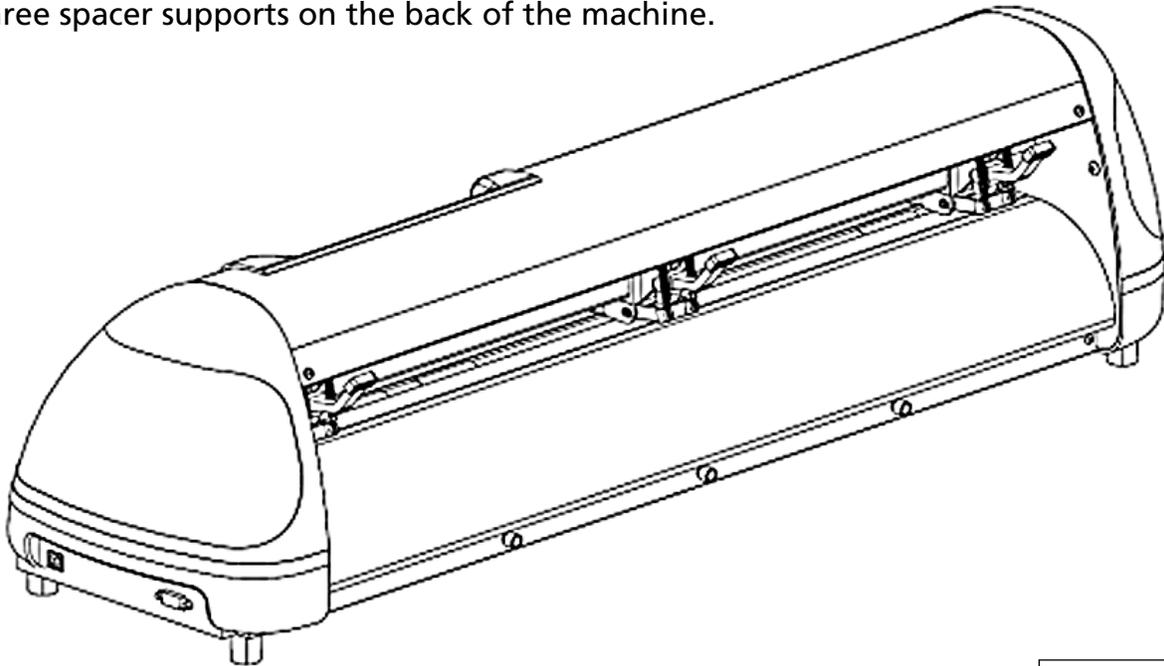


Figure 2-1

Step 2

Insert the left and right roll holder base into the spacer supports on the left and right side when 2 inches roll media is used.

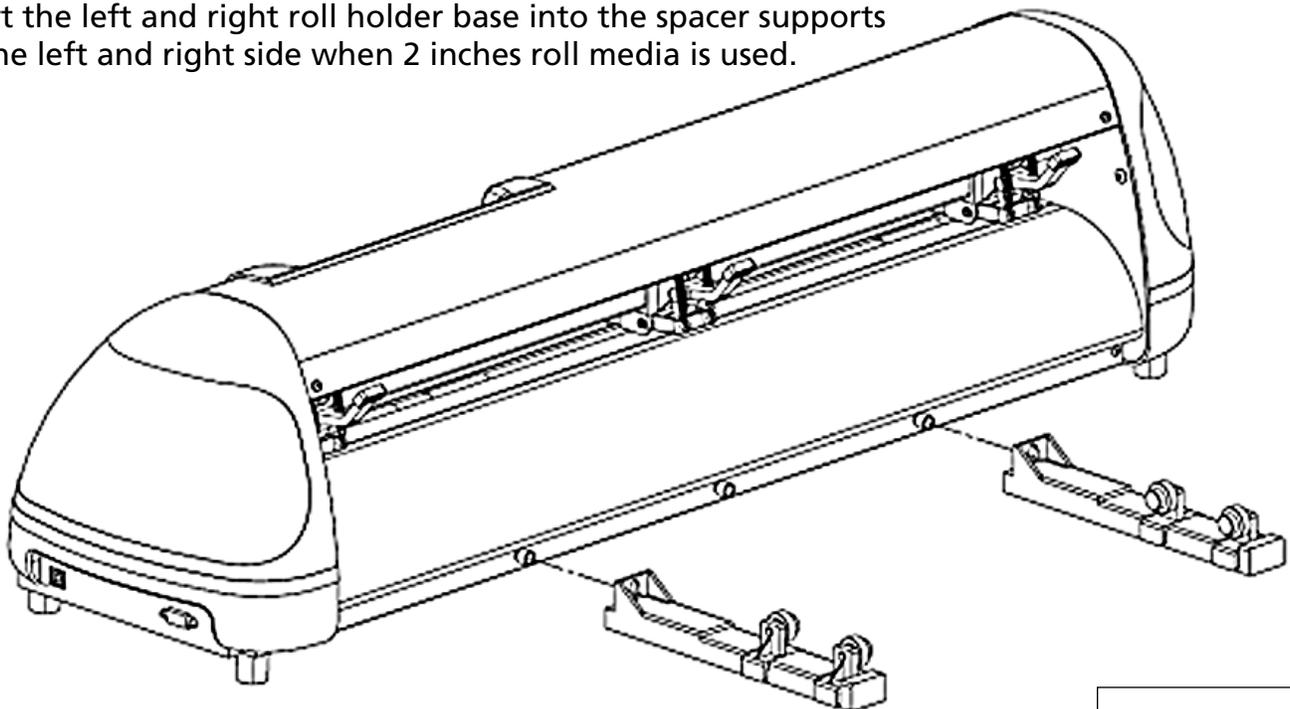


Figure 2-2

Step 3

Press the roll holder base and the installation is complete.

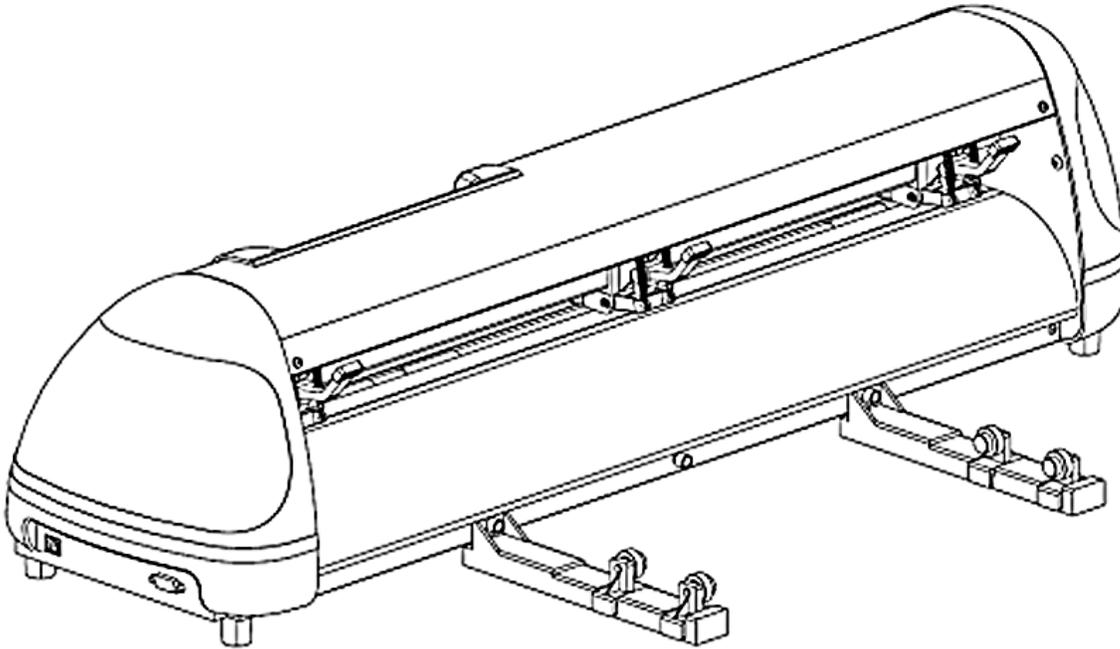


Figure 2-3

Note: Insert the left roll holder base into the middle spacer support and right roll holder base into the right one when 1 inches roll media is used.

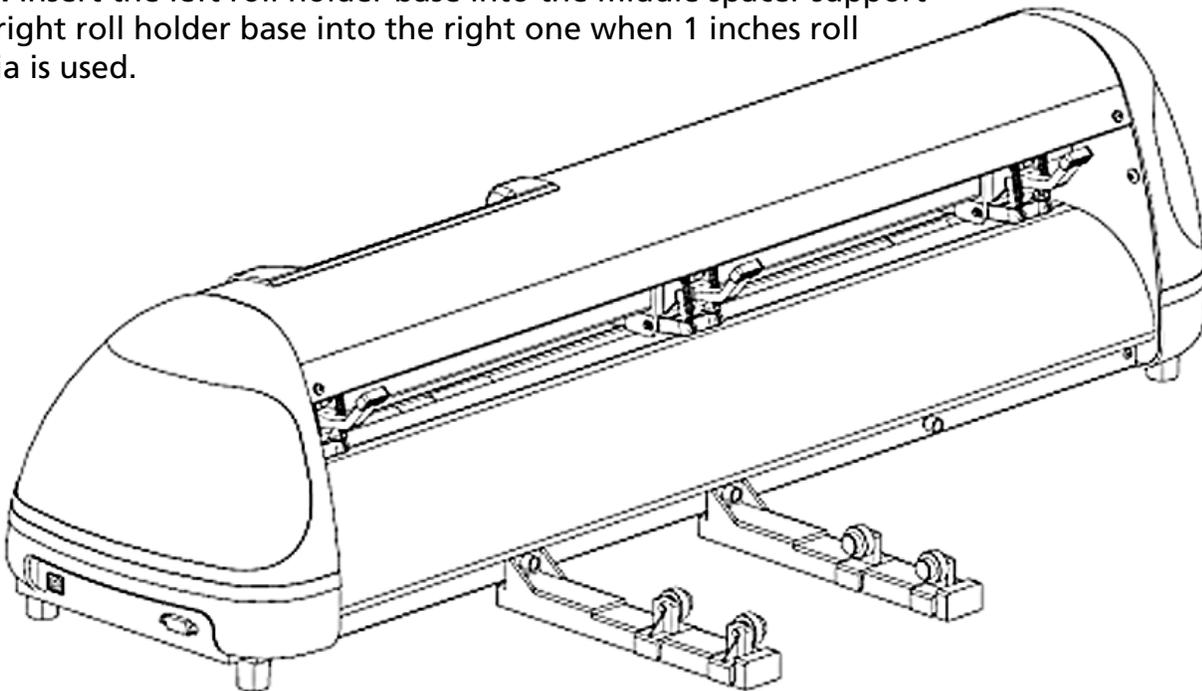


Figure 2-4

2.3 Blade Installation

Caution!

- Do not touch the tip of the blade with your fingers!

Notice!

The blade is a consumable item, which will affect the cutting quality significantly. Please replace with a new blade when having the following situations:

1. The tip of blade is broken.
2. The cutting traces are not as good as they were.
3. Uncut area remains the same even the blade force has been raised significantly

Figure 2-5 is the picture of the blade holder. Insert a blade into the bottom of the blade holder. Pushing the pin on the top of blade holder can remove the blade. Be sure to keep your fingers away from the blade tip.

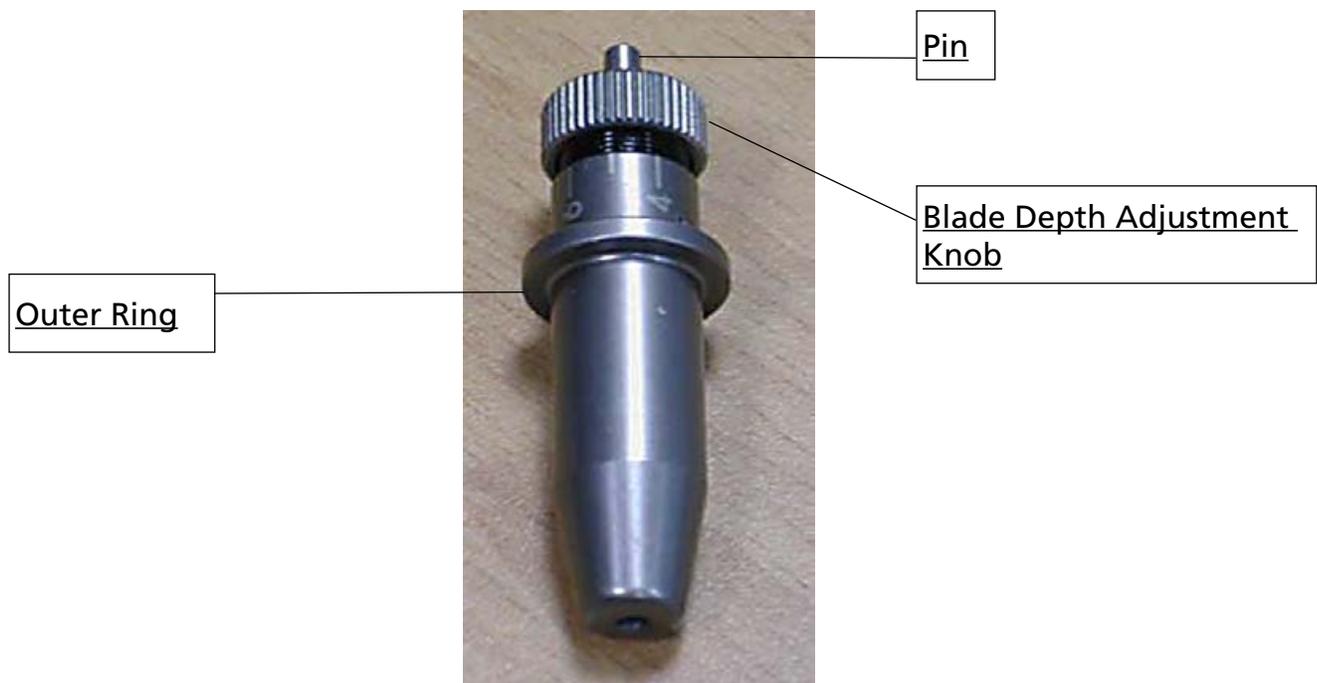


Figure 2-5

2.3 Blade Installation

1: Install Blade. (Figure 2-6)



Figure 2-6

2: Push the blade to the bottom of the blade holder. (Figure 2-7)



Figure 2-7

3. Adjust the blade tip to suitable length by rotating "Blade depth adjustment screw" clockwise or counterclockwise. (Figure 2-8)

Tips:

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



Figure 2-8

4. Insert the blade holder into tool carriage. Please note the outward ring of the holder must put into the groove of carriage firmly (Figure 2-9) and lock the grip. (Figure 2-10)



Figure 2-9



Figure 2-10

5. Reverse steps mentioned above to remove the blade holder.

6. Press the push-pin to remove the blade from the blade holder when replacing blade. (Figure 2-11)



Figure 2-11

2.4 Cable Connections

The EnduraCUT 2 communicates with a computer through USB (Universal Serial Bus) or Serial port (RS-232C). This chapter shows you how to connect the cutting plotter to a host computer and how to set up the computer/cutting plotter interconnection.

NOTE! When the USB connection is enabled, the serial port is automatically disabled.



Figure 2-12

2.5.1 USB Driver Installation

EnduraCUT 2 built-in USB interface is based on the Universal Serial Bus Specifications Revision 1.1 (Not compatible with Windows 95 Windows NT Operating Systems).

NOTE!

If you are using Windows 2000 ,Vista, 7 or 8 as your operating system, make sure you log in as an "Administrator"when installing the USB driver. **Administrative privileges are required.** If you have difficulty installing the USB driver, you may need to temporarily disable or uninstall anti-virus software. Once the USB driver installation is complete, reactivate or reinstall your anti-virus software. and make sure it recognize the new driver as an approved device

Use the USB One-click Installation for quick driver installation. Follow the simple steps below for driver setup.

USB Driver Installation Cont'd

Connecting the plotter

1. Turn on the machine.
2. Connect the USB connector to the machine and then USB driver will installed automatically. It will take a few minutes to find the device. Please DO NOT disconnect the USB cable until the installation has completed.
3. You can double click the USB icon on the taskbar to make sure the USB device is detected (Fig 2-13).



Figure 2-13

2.6 LXI Cloud Software Installation

Before you can proceed using your cutter, you need to install LXi software that you purchased with the EnduraCUT 2. You'll find complete step-by-step instructions on our Tech support Blog. [Please click here](#) to access the setup tutorial (Fig 2-13a) or surf to <http://www.signwarehouse.com/blog-support/getting-started-with-cloud-2/>

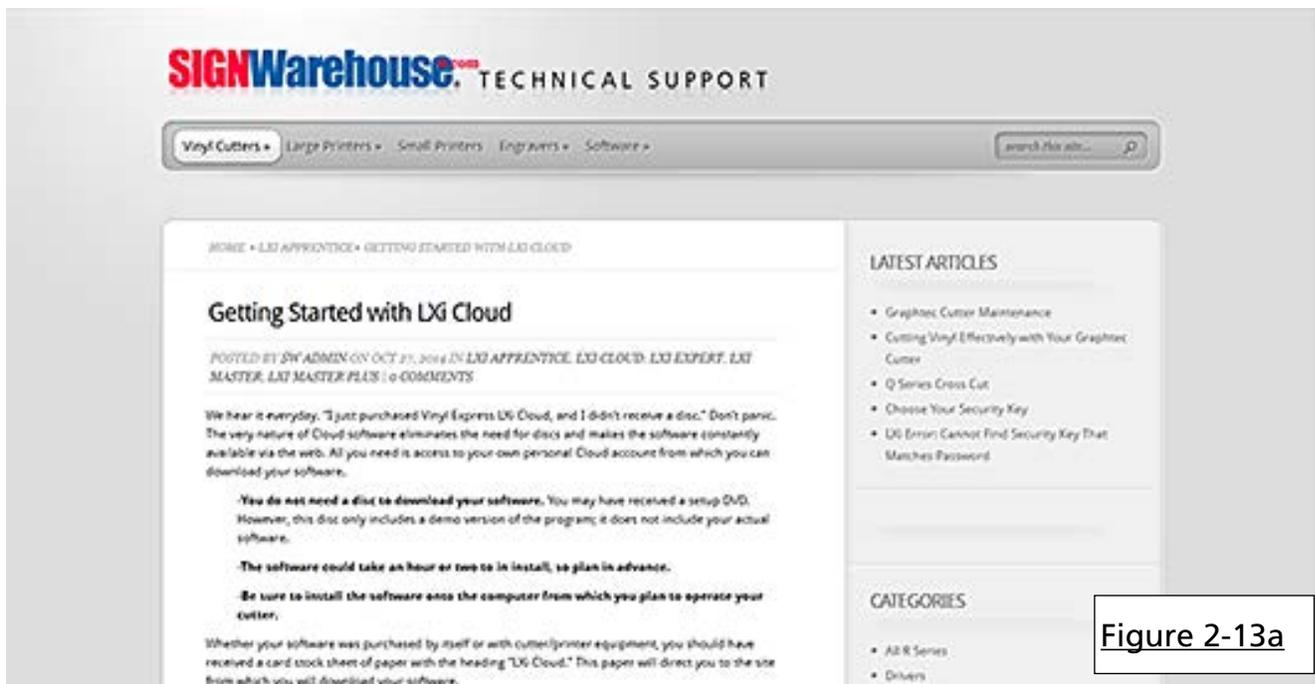


Figure 2-13a

2.6 Setting up Your EnduraCUT 2 In LXI

- 1: Turn plotter on and connect USB port to your PC.
- 2: Then Open LXI software, draw a box or add text to the screen and click the Cut/Plot Icon, or click File/Cut-Plot to open the LXI Cut/Plot Window. When Production Manager opens, click Setup. Then from the drop-down menu, click Add Setup (Fig 2-14)

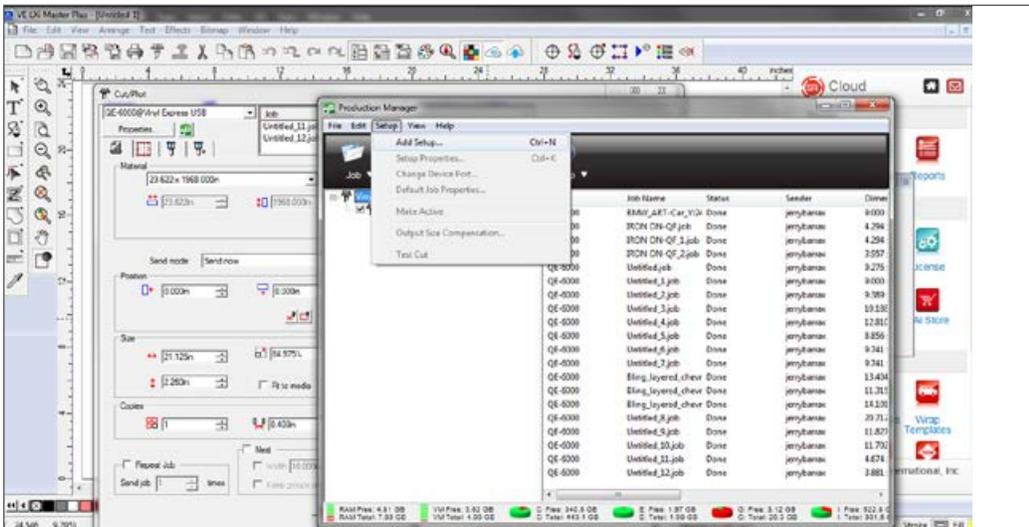


Figure 2-14

- 3: In the Add Setup window, you will be prompted to “choose a device” (Fig 2-15). First you must choose a brand, then choose the model of your plotter. Click the top bar to open the Brand drop-down menu. If you are going to use the USB connection, click to select Vinyl Express as the brand. From the model drop-down list, click to select EnduraCUT 2S (Fig 2-16).

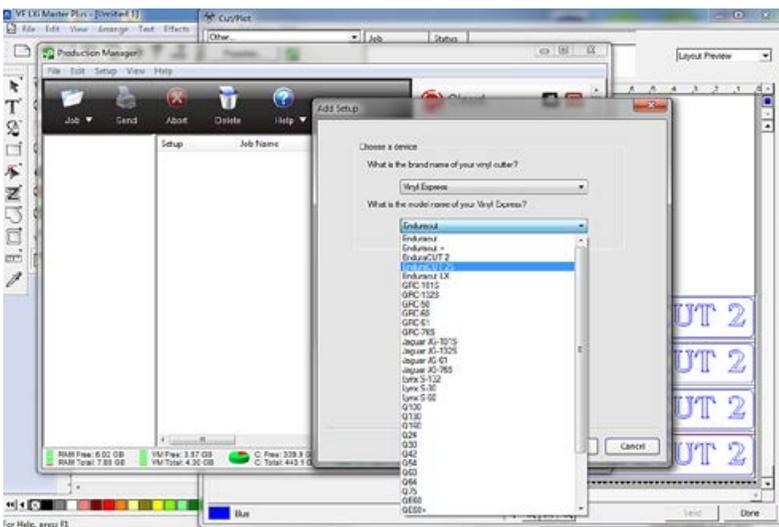


Figure 2-15



Figure 2-16

4: After you have selected the make and model of the cutter, click Next at the bottom of the Add Setup window. The next screen in the Add Setup window will prompt you to choose a port by asking “How is your enduraCUT 2S connected to your computer?”. Click the arrow to show the drop-down menu (Fig 2-18) and, from the list of ports, choose USB_Printer_1 .

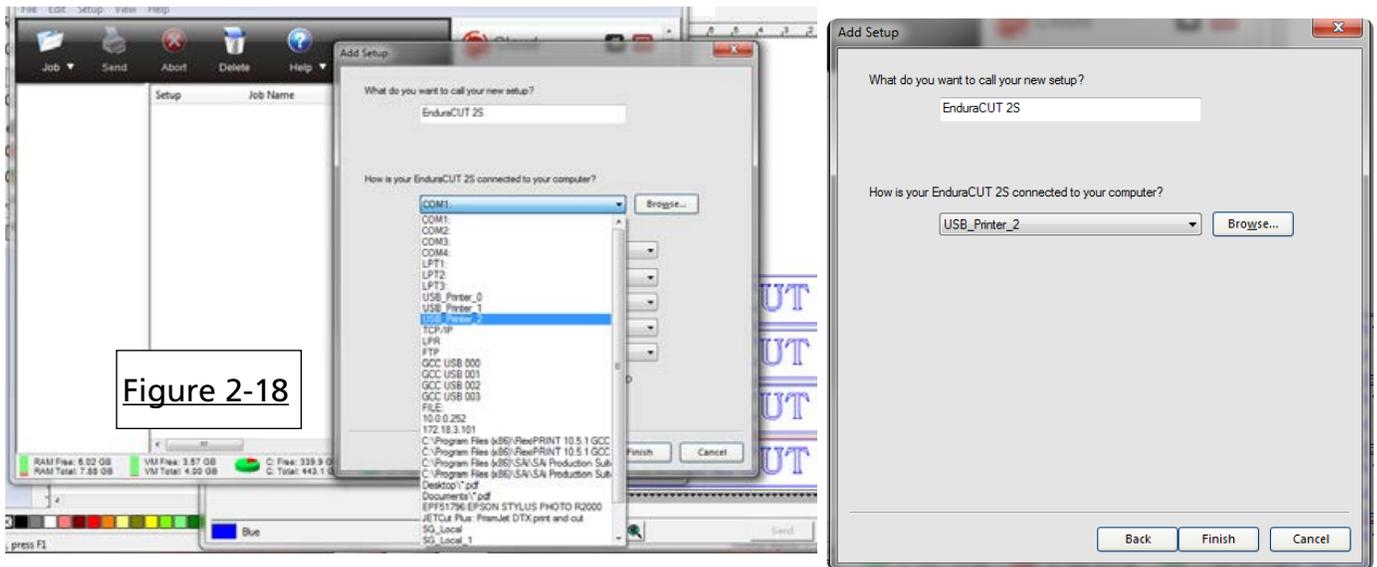


Figure 2-18

5: Now that you’ve added the plotter to your LXI Production Manager, you need to perform a test cut to make sure the printer port you’ve selected is the one to which the plotter is actually connected to your PC. Most PCs have more than one USB port, so you may have selected a port other than the one to which you’ve connected the plotter.

To test this, right click on “EnduraCUT 2S” in Production Manager. From the drop-down menu, click Test Cut (Fig 2-19). This will send a cut command to the plotter. If it responds and cuts a square pattern, you have completed the setup and are ready to use the plotter.

NOTE: Make sure the cutter is turned on, online, and has vinyl loaded before proceeding.

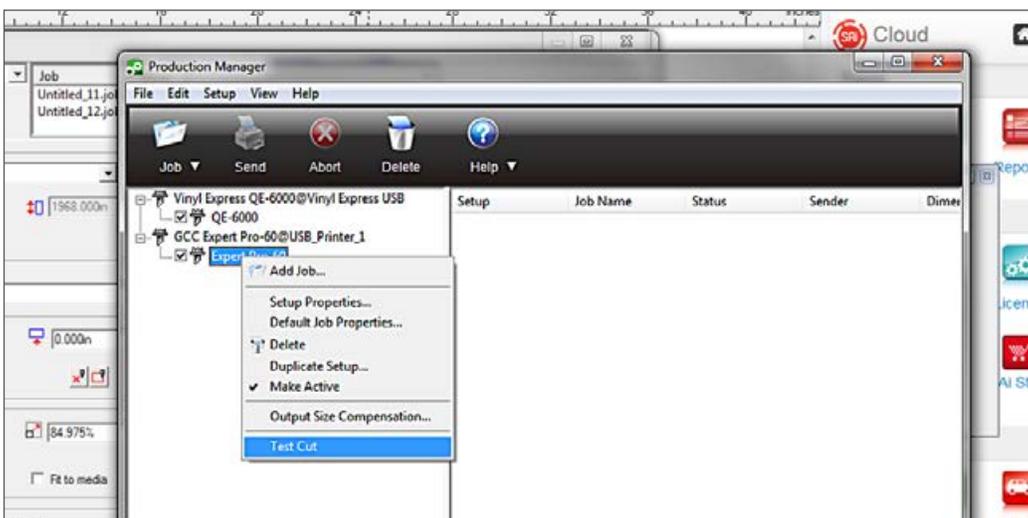


Figure 2-19

6: If the plotter did not respond to the test cut (or if some other device was activated, you must change the port setting to the correct one for the plotter (or connect the plotter to a different USB port).

To change the USB port setting, right-click on “enduraCUT2S_USB_Printer_1” (just above “EnduraCUT2S”). From the pop-up menu, select Change Port (Fig 2-20). Then, from the menu of available ports, select a different USB printer port (Fig 2-21). Repeat the Test Cut process, making sure that the cutter is turned on and online. Once you have successfully performed a Test Cut, you are ready to use your cutter to create vinyl graphics.



Figure 2-20

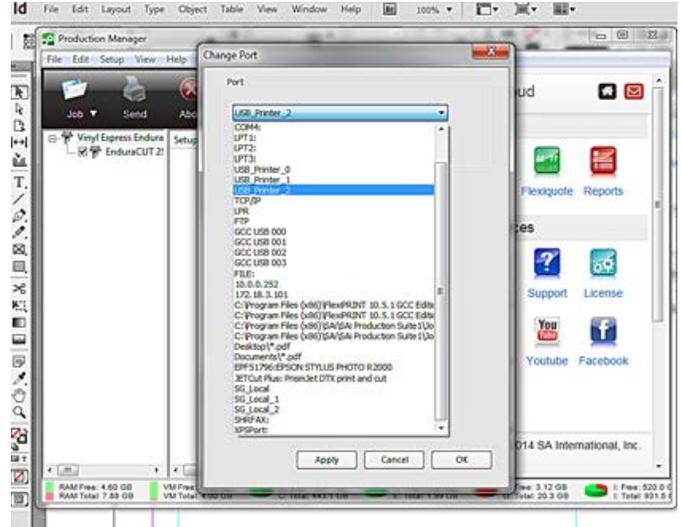


Figure 2-21

2.7.1 USB Driver Un-Installation

If you have to un-install the USB driver after it has been installed on your PC, or if you need to install a newer version, the existing driver must be removed completely before you can re-nstall the current driver or install a newer version. Please refer to below steps

1: Click the Windows Start button and open the Devices and Printers folder. Right-click on the printer (EnduraCUT 2 or Expert-Pro 60) and, from the drop-down menu, click Delete. You will be promoted to confirm that you actually want to delete the printer. (Fig 2-22) Click yes.

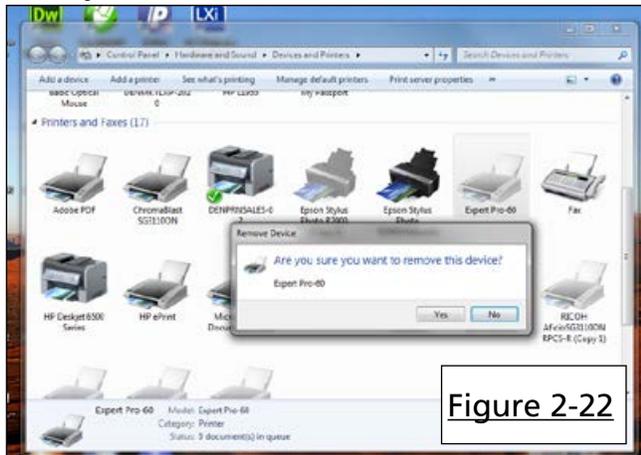


Figure 2-22

2: After removing the unit, right click on any empty space on the page and select "Server Property" (Fig 2-23).

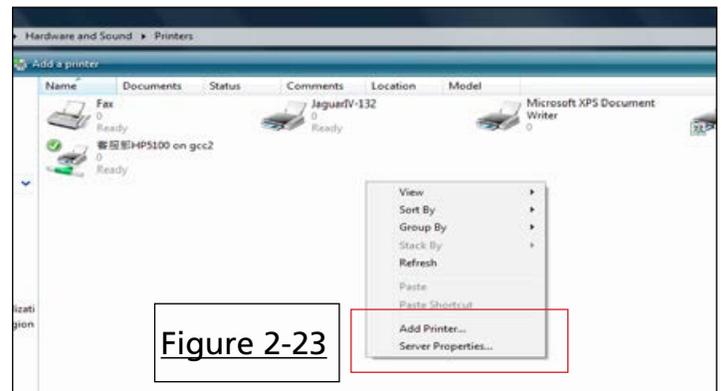


Figure 2-23

2a: If you don't see the Server Properties on the pop-up menu, select an installed printer to highlight it and look at the top menu bar (Fig 2-24).



Figure 2-24

3: From the Print Server Properties window, click on the Drivers tab. (Fig 2-25).

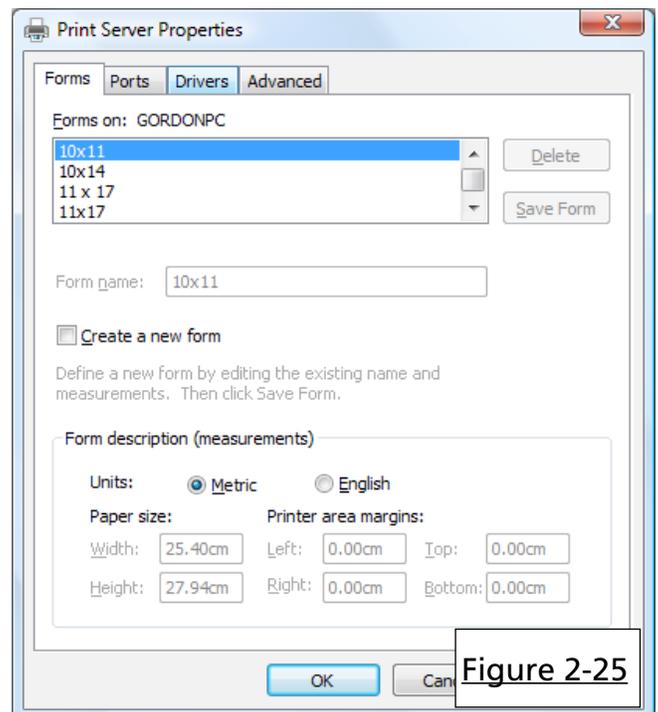
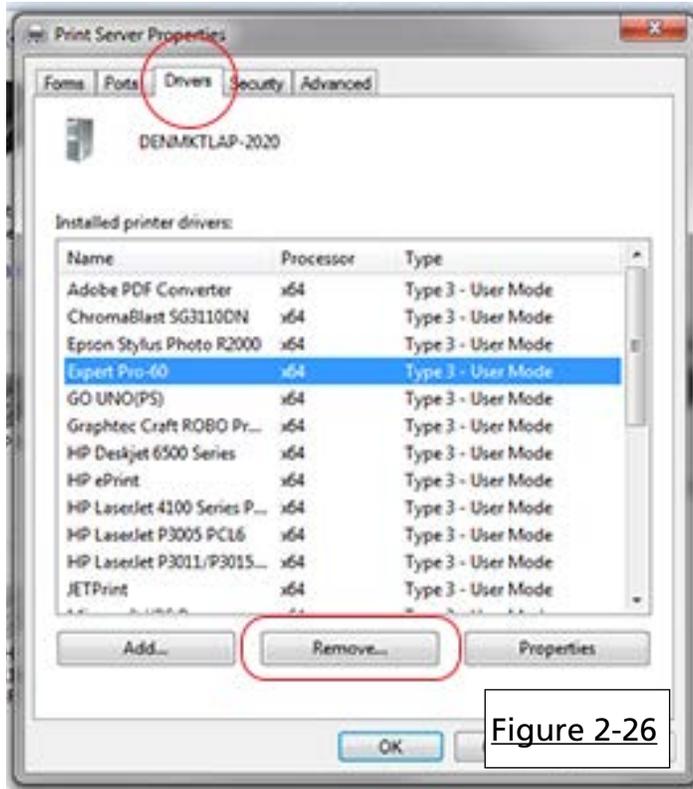
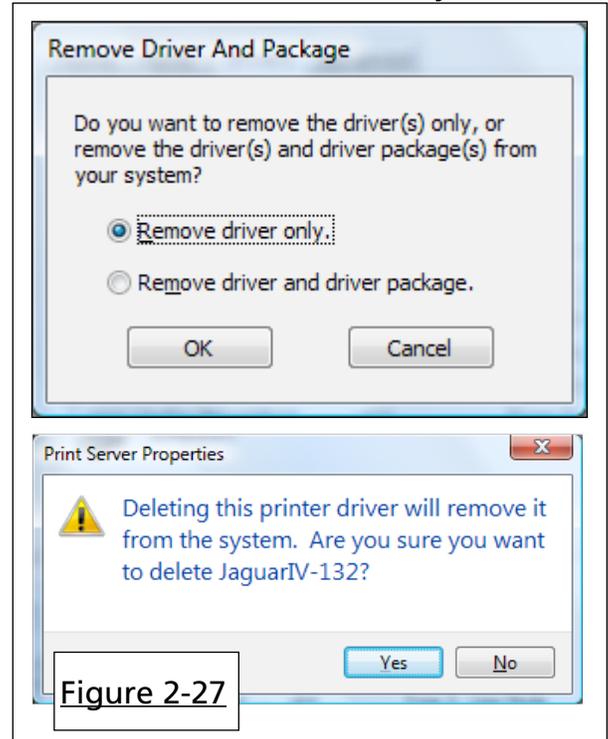


Figure 2-25

4: Find the Expert Pro 60 in the list of print devices, click to highlight it, then click Remove and OK (Fig 2-26).



5: You will be asked to remove the driver only or the driver and package. Select Remove Driver Only, then click Yes to confirm (Fig 2-27). This will completely remove the USB driver from your PC.



2.8.1 Serial RS-232 Communication

- 1) For Personal Computer users, connect the RS-232C cable to the serial connector of the assigned serial port (COM1 or COM2) on your host computer.
- 2) Set up the communication parameters (Baud Rate and Data Bits/Parity) to match the setting of software package, refer to chapter 3 – “MISC” key description

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

2.8.2 Data Transmitting

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

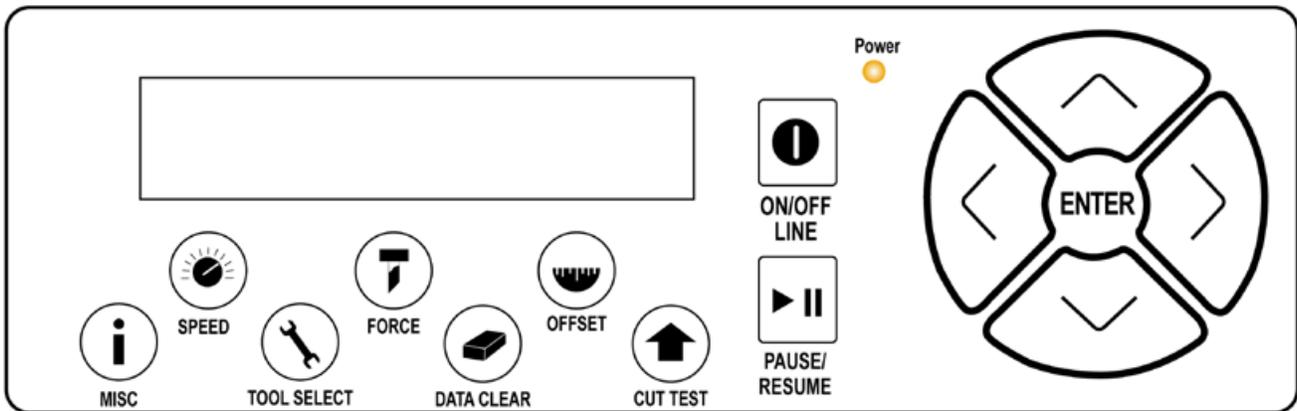
Option 1: With proper interface settings, the data can be transmitted from your application software package to the cutting plotters directly.

Option 2: Most cutting software packages are able to emulate HP-GL or HP-GL/2 commands, Therefore, you can send graphic files directly from applications like CorelDRAW or Adobe Illustrator by using the File/PRINT command. As long as the file is HP-GL or HP-GL/2 format, the cutting plotter can output the data precisely

Chapter 3: The Control Panel

This chapter describes the operation of the EnduraCUT 2 control panel and the navigation of the menu. When the cutting plotter is ready for use as described in Chapter 1 & 2, all functions are under default parameters.

3.1 The Control Panel

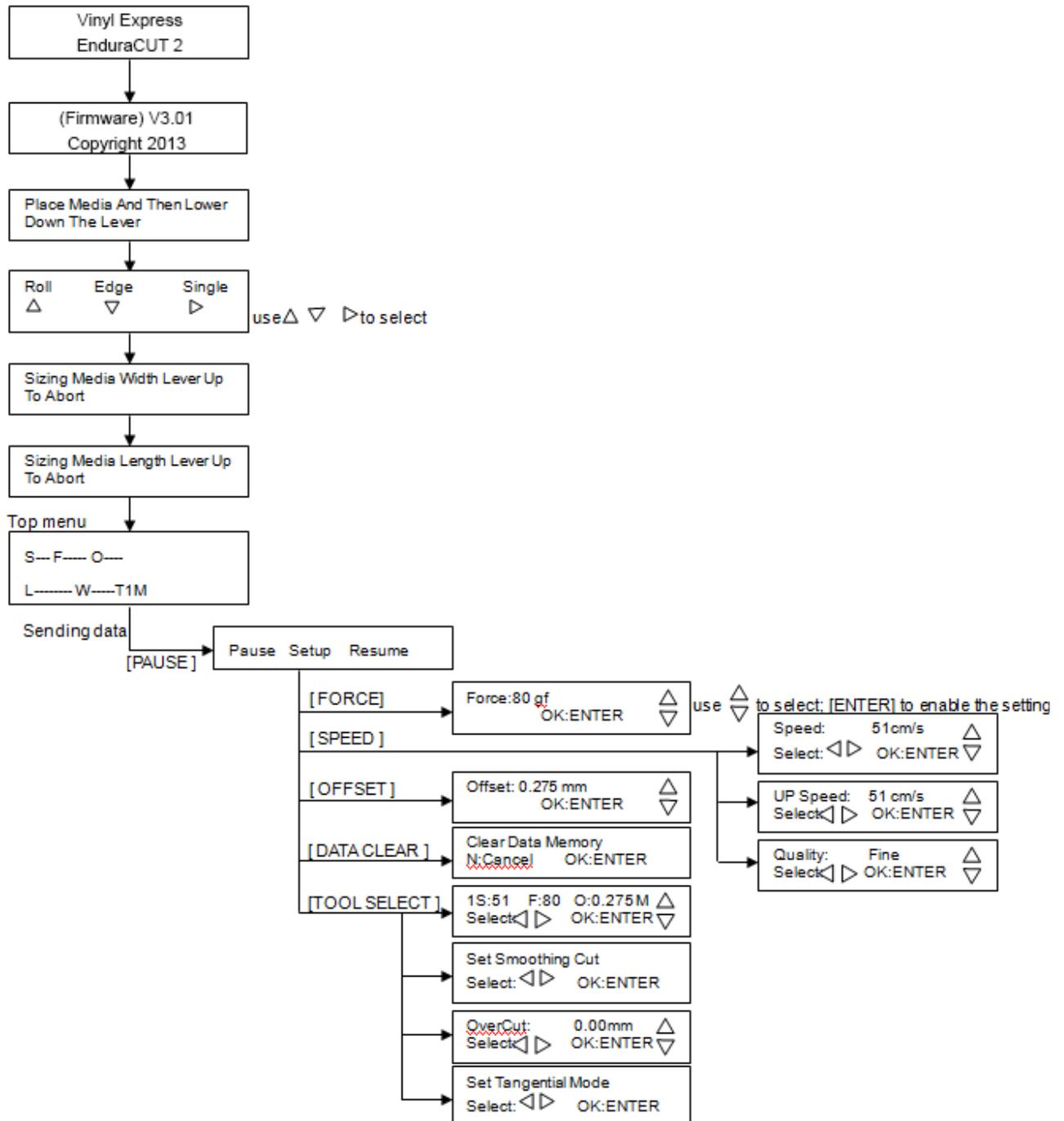


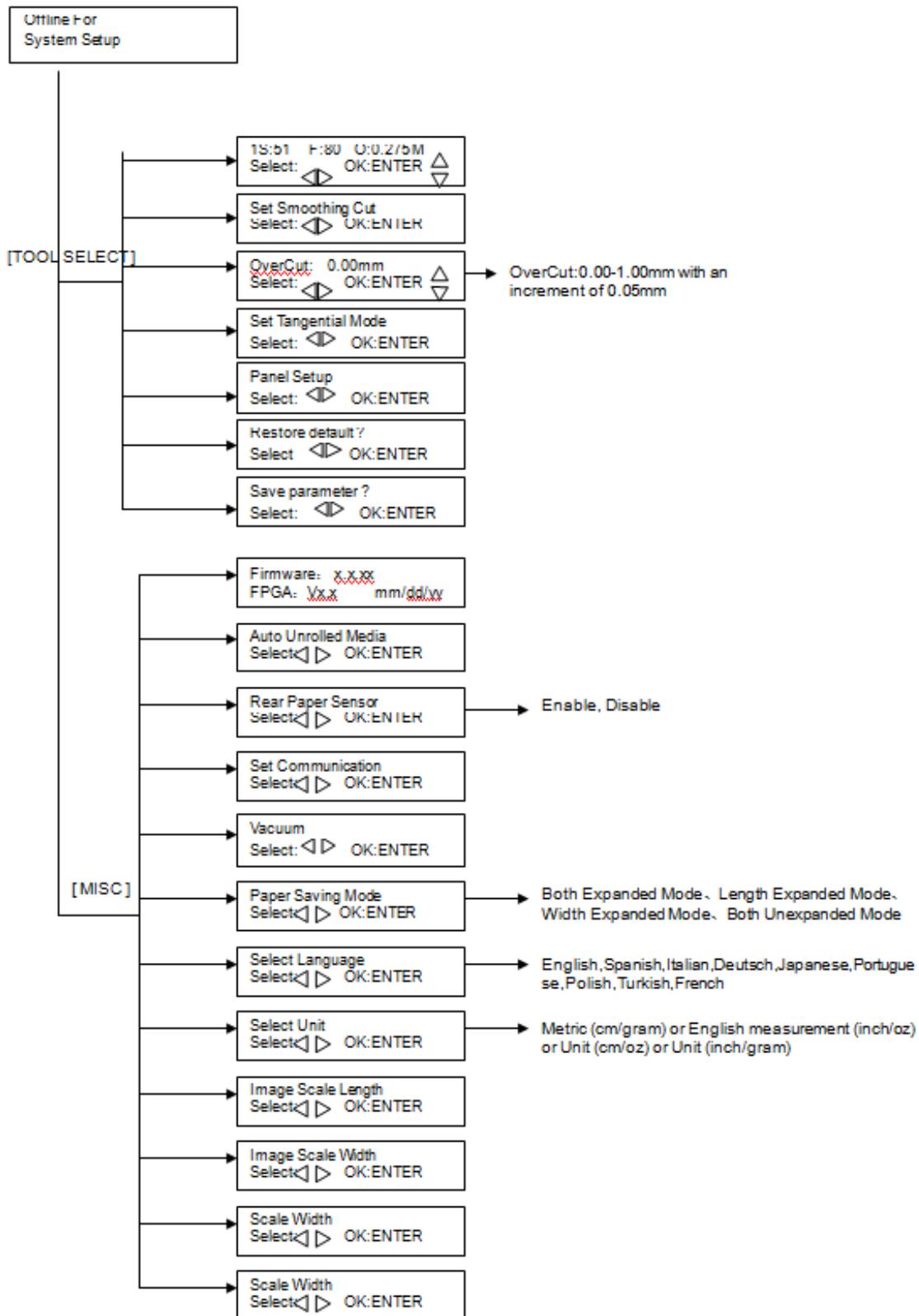
EnduraCUT 2 LCD Control Panel Functions

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

3.2 Menu in On-Line Mode

Power On EnduraCUT 2 in processing





3.4 Menu Items

The Table below describes the functions of EnduraCUT 2 Menu Commands

Menu or Key	Function	Setting	Default
--- MEDIA SIZING ---			
Roll	To measure media width.	Maximum Tracking 150 meters	
Edge	To measure media width and pull the media back until the front paper sensor is uncovered.	Maximum Tracking 150 meters	
Single	To measure media width and length.	Maximum Tracking 10 meters	
--- POWER ---			
	To indicate the power status.		
[ARROW KEYS]			
	1. To move the tool carriage position on X or Y axis. 2. To select functions or change values of settings.		
[ENTER]			
	1. The displayed parameters will be saved automatically. 2. To set a new origin at the present tool carriage position. In "offline" mode, moving the tool carriage to desired position by [Arrow Keys], then press [ENTER] key to set a new origin. While moving with the parameters of XY-axes displayed, pressing [MISC] key will enable fine-tune movement; pressing [MISC] key again will disable the function.		
[Pause/Resume]			
	To temporarily halt the cutting process. To resume the process, press [Pause/Resume] key again.		
[ONLINE / OFFLINE]			
	1. To switch between online mode and offline mode. 2. To stop the cutting job or abort the change of setting. Once this key is pressed, the cutting job will be halted immediately and cannot be resumed.		
[OFFSET]			
	To set or modify the distance between the blade tip and the center axis.	0.000~1.000mm	0.275mm
[FORCE]			
	To set or modify the amount of cutting force.	5~400gram; 5 gram/ per step	80 gram
Continued Next Page...			

3.4 Menu Items Cont'd

Menu or Key	Function	Setting	Default
[SPEED]			
Speed	To set or modify horizontal speed of the tool carriage .	3~60cm/sec; 3cm/sec per step	51cm/sec
Up Speed	To set or modify vertical speed of the tool carriage.	3~60cm/sec; 3cm/sec per step	51cm/sec
Single	To measure media width and length.	Maximum Tracking 10 meters	
Cutting Quality	To set or modify cutting quality. [Slower speeds / higher quality - Faster speeds / lower quality] The Set Cutting Quality Page allows you to adjust and balance vector mode's quality and speed settings based on your specific job. Draft Mode offers the highest output speed, sacrificing quality. Quality Mode offers the highest quality, sacrificing output speed. Keep in mind that speed and quality are usually a tradeoff.	Draft, Normal, Fair, Fine	Normal
[CUT TEST]			
Square Cut	To perform a cutting test at present blade position. For more information, please refer to "4.3 Adjusting the Cutting Force and Offset" to adjust blade force and cutting speed.		
Redo Last Plot	Recut: To repeat the last job without re-sending the data.	1~99; 1 per step	
	Copy: To copy the last job without re-sending the data. * 1mm gap will be auto-generated between 2 copies). * If the media length is not enough to continue, it will show the LCM will display the message below: <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 5px auto;">O u t O f S p a c e ; # o f C o p i e s f i n i s h e d</div> If both functions are enabled at the same time, the cutter will perform the last setting only	1~99; 1 per step	
Pattern Setting	To provide two patterns for cut test Note: It is recommended to select "Cross" if you are working on thick pieces of materials.	"Arrow" and "Cross" patterns	"Arrow"
Ratio Setting	To adjust the size of the pattern	100%, 200%, 300%, 400%	100%
Continued Next Page...			

3.4 Menu Items Cont'd

Menu or Key	Function	Setting	Default
Blade Length Adjust	To adjust the length of the blade Note: 1. Keep your blade length as 0 before you start adjusting. 2. Test the blade holder first and then test the blade length by pressing ENTER. 3. Keep the blade holder at the same position when you perform blade holder and blade length tests. 4. When blade holder and blade length tests are finished, the screen will show you to what degree (the unit of the value following "CW" or "CCW" is "circle") and in which direction [CW (clockwise) or CCW (counterclockwise)] you should turn the adjustment knob. I.E. "Turn CW 0.5" means you should turn the knob clockwise one half turn. 5. The value on the screen will be 0.0 when the blade length is perfect and no more adjustment needs to be made. You may start cutting at this point.	0.00mm-5.00mm	0.00mm
[DATA CLEAR]			
	To clear buffer memory.		
[TOOL SELECT]			
Set Smoothing Cut	To enable smooth-cutting function.		Enable
Over Cut	To generate an overcut to facilitate weeding.	0.00mm-1.00mm 0.05mm/per step	0.00mm
Set Tangential Mode	To enable the emulated tangential-cutting mode for thicker media types and small letter cuts. Note: If the Offset value is set at 0.000 mm, "Set Tangential Mode" will automatically be disabled.		Disable
Panel Setup	Accept setup command: To accept commands of the Force, Speed, Cutting Quality, and Offset only from software.		
	Control panel only: To accept commands of the Force, Speed, Cutting Quality, and Offset only from the control panel of the cutter.		
Restore Default	To return all parameters of the menu items to factory-default settings.		
Continued Next Page...			

3.4 Menu Items Cont'd

Menu or Key	Function	Setting	Default
Save Parameter	To save pattern(s) of cutting parameters for later use. There are 4 sets of parameters saved in the panel. Use Page Up and Page Down keys to select the set of parameters you wish to adjust, press "Enter" to confirm (the number shown on the upper left corner will change accordingly). Each set of parameters includes Speed, Force, Offset, Up Speed, Quality and Scaling, although the latter three will not be displayed in this section. To adjust or check individual parameters, go back to the responding keys on the panel and press "Enter" to confirm.		
[MISC]			
Auto Unrolled Media	To avoid paper jam and motor crash by automatically unroll media (50cm and up) before cutting while enabled. * Auto-unroll is only active on roll or edge media settings. * Using Single mode to size media will disable this function automatically. * If the length of the rolled media is less than 2 meters or the roll weight is light, it is recommended to disable this feature.		Disable
Rear Paper Sensor	To detect if the rear paper sensor is covered to determine the following process; when it is enabled, the cutter will detect if the material has covered the rear paper sensor under the Roll and Edge mode; when disabled, the rear paper sensor will not function. Note: Rear paper sensor only functions under "Roll" and "Edge" media settings.	Enable Disable	Enable
Vacuum	To help improve tracking and cutting accuracy by turning on the fans. If you turn off the vacuum system, the fans will remain inactive during cutting or plotting.		Enable
Paper Saving Mode	To save media by four different modes: 1. Length expanded mode 2. Width expanded mode 3. Both expanded mode 4. Both unexpanded mode		Both unexpanded mode
Set Communication	To speed up the communication between host computer and cutter. Baud Rate determines the speed of data transmission. Data Bits refers to the size of one block of data. Parity is used to check if data was received correctly or not. 9600, n, 7, 1, p 9600pbs, 7 Bits with NO Parity 9600, o, 7, 1, p 9600pbs, 7 Bits with ODD Parity 9600, e, 7, 1, p 9600pbs, 7 Bits with EVEN Parity 9600, n, 8, 1, p 9600pbs, 8 Bits with NO Parity 9600, o, 8, 1, p 9600pbs, 8 Bits with ODD Parity 9600, e, 8, 1, p 9600pbs, 8 Bits with EVEN Parity 19200, n, 7, 1, p 19200pbs, 7 Bits with NO Parity 19200, o, 7, 1, p 19200pbs, 7 Bits with ODD Parity..		
Continued Next Page...			

3.4 Menu Items Cont'd

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

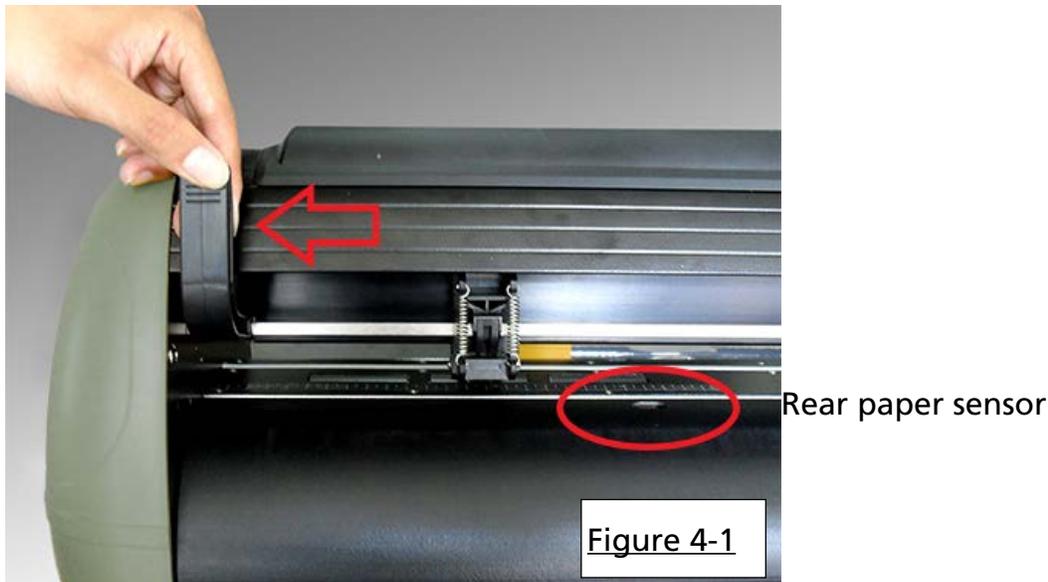
Chapter 4: Operation

4.1 Media Loading

4.1 Loading Sheet Media

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

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



Load your media on the platen and slide it under the pinch rollers from either the front side or the back. The alignment rulers on the platen extension will help you to adjust the media precisely so that it is loaded straight and will track correctly through the plotter.

Note:

Be sure that the paper sensors are covered by the media when loading the media. At least one of the two paper sensors should be covered. Once the media covers the sensor, the cutting plotter will size width and length of media automatically.

Then move the pinch rollers manually to the proper position. Be sure to position the pinch rollers above the grid drum. The white marks on top rail indicate the position of the grit rollers. Align the pinch rollers with these marks to ensure they are positioned above the grit rollers. This provides friction and pressure on the top and bottom of the media to ensure proper tracking (Figure 4-2, next page).

Position the pinch rollers in alignment with the white markers on the upper rail.



Figure 4-2

Push the lever downward to lower down the pinch rollers.

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

Note:

Move the pinch roller by applying force at the rear portion of the pinch roller support. Do not move it by holding its front rubber roller (Fig 4.3).



Figure 4-3

4.2 Loading Roll Media

4.2.1 The EnduraCUT 2 can be used as a desktop plotter or with an optional floor stand (part number PLTA-VE-ENDURACUT-2S-STD). The plotter comes with brackets for use to support roll media (Fig 4.4). An optional roller tray (Part number SE-ES-ENDURATRAY) is also available and is a better solution for controlling rolls of media in a desktop configuration (Fig 4.5).

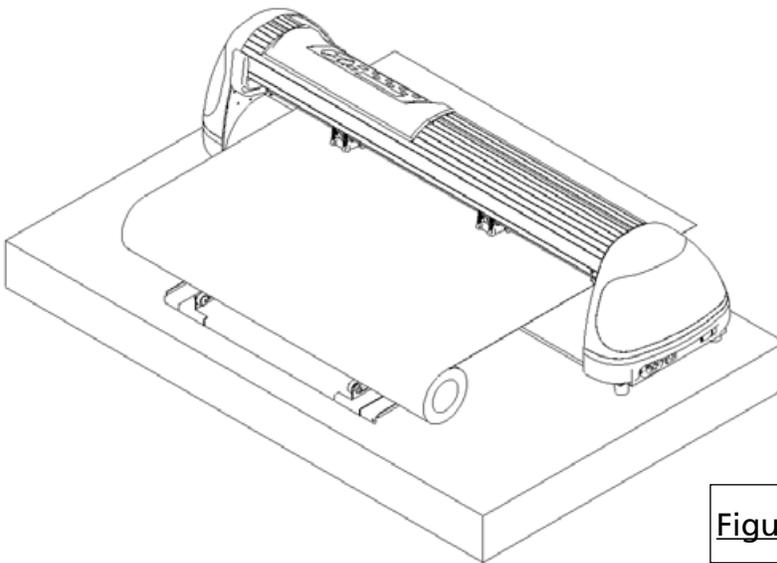
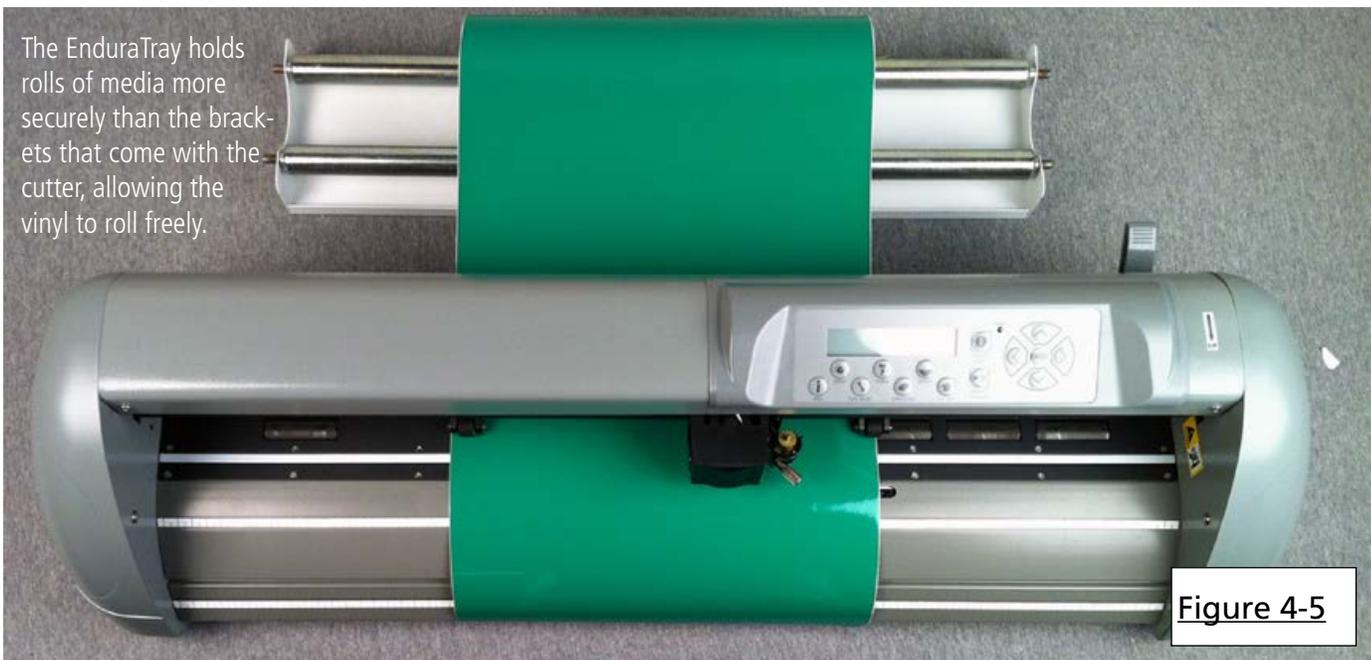


Figure 4-4



The EnduraTray holds rolls of media more securely than the brackets that come with the cutter, allowing the vinyl to roll freely.

Figure 4-5

4.2.2 After loading the media on the brackets, roller tray, or stand, pull the front edge forward under the pinch rollers.

1. Pull it toward the front edge of the platen and use the ruler to check alignment. The side edges of the media should be perpendicular to the front of the plotter.

2. After loading the roll media, flatten the media on the platen and hold the front edge of the roll media firmly to ensure that the roll is straight.

3. Move the pinch rollers to the precise location and be careful that the pinch rollers are positioned above the grit rollers (under the white marks).

6. Push the lever downward to lower the pinch rollers.

7. Turn on the power switch, and the tool carriage will size the media automatically. Then the cutting plotter is ready to work.

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

4.3 Optimizing Tracking

In order to achieve the best tracking performance for a long plot, please leave the margin of 0.5mm~25mm in the left and right edges of the media. (Figure 4-6)

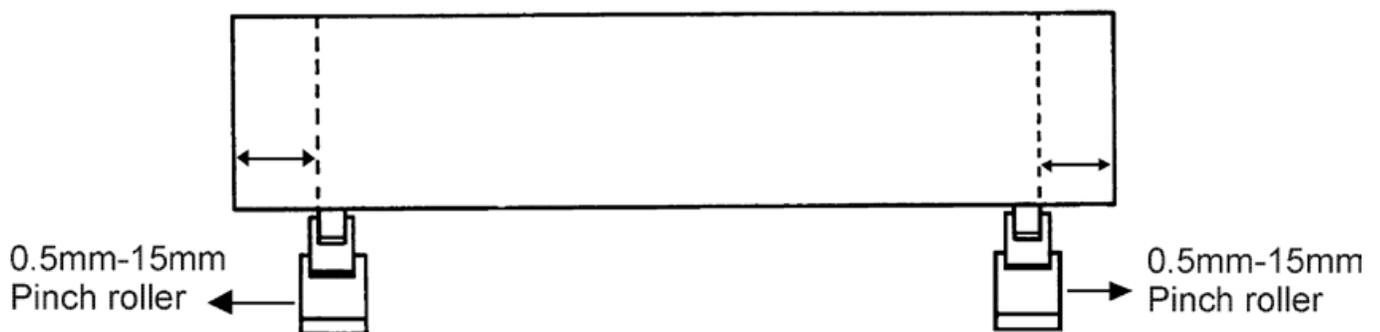


Figure 4-6

4.4 Cutting Force and Offset Adjustment

Before sending your designs from computer to EnduraCUT 2 for cutting, please make "Cut Test" to adjust cutting force and offset value.

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

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

Step1.

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

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

Step2.

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

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

Step3.

When the "Cut Test" is completed, a pattern appears (please refer to Figure 4-7). Peel off the pattern to see if it can be easily separated from the media base. If the output result is good, the cutting force is set appropriately. The desired result is a cut through the vinyl and adhesive and a very light scoring of the release liner. The vinyl should be easy to remove from the liner. If the cut vinyl cannot be easily removed from the liner, or if the release liner has also be cut, press [FORCE KEY] to adjust the tool force until an optimum force is obtained.

Cont'd next Page...

Step4.

If the pattern appears to be BB or CC layout (see Figure 4-7), press [OFFSET KEY] to adjust the offset value until AA pattern is shown.

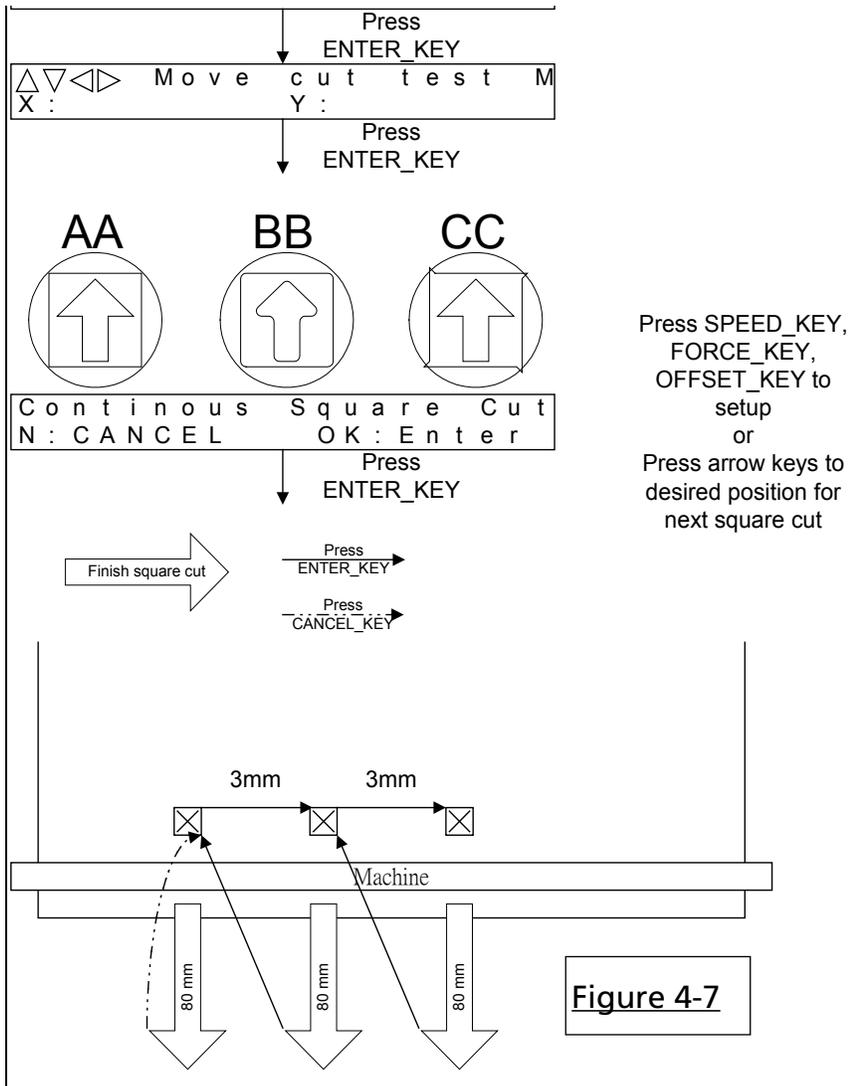


Figure 4-7

4.5 Completing the Cutting Job

After completing the cutting job, raise the sheet-loading lever, and then remove the material. You can also cut off the finished job by the Safe Blade (a standard accessory) along the knife guide. (Figure 4-8)



Figure 4-8

Chapter 5: Basic Maintenance

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

5.1: Cleaning the Cutting Plotter

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

Cleaning Precautions



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

Recommended Cleaning Methods

- Gently wipe the cutting plotter surface with a lint-free cloth. If necessary, clean with a damp cloth or an alcohol-immersed cloth. Wipe with water to rinse off any residue and dry with a soft, lint-free cloth.
- Wipe all dust and dirt from the tool carriage rails.
- Use a vacuum cleaner to empty any accumulated dirt and media residue beneath the pinch roller housing.
- Clean the platen, paper sensors and pinch rollers with a damp cloth or an alcohol-immersed cloth, and dry with a soft, lint-free cloth.
- Wipe dust and dirt from the stand.

5.2: Cleaning the Grit Rollers

- Turn off the cutting plotter, and move the tool carriage away from the area needed to be cleaned.
- Raise the pinch rollers and move them away from the grit rollers for cleaning.
- Use a bristle brush (a toothbrush is acceptable) to remove dust from the drum surface. Rotate the roller drum manually while cleaning (Figure 5-1).

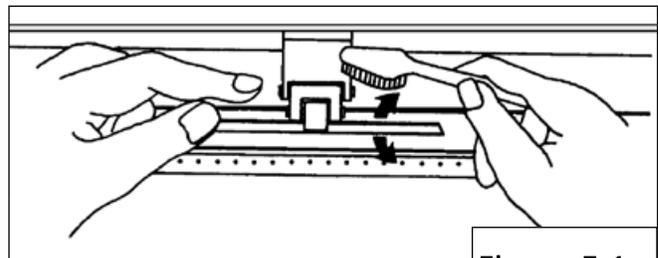


Figure 5-1

5.3: Cleaning the Pinch Rollers

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

To remove embedded contaminants or persistent dust, use a lint-free cloth or cotton swab moistened with rubbing alcohol.

Note:

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

Chapter 6: Troubleshooting

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

Note:

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



Why is the cutting plotter not functioning?

Possible Causes:**6.1 Non-Operational Problems**

Check the following first:

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

Solutions:

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

6.2 Operational Problems

Some problems are caused by mechanical failure or failure of a specific operation during plotting. In such cases, an error message will be displayed on the LCM stating the problem and suggesting a solution. If the problem still exists after you have performed the recommended solutions, have your cutting plotter serviced.

Error, Check Media Or Drum or X Motor

This message indicates that there might be a problem on the X axis. Check if the drum is working well and if the media is well loaded. Correct the problem and re-power on to reboot system.

Error, Check Media Or Y Motor

This message indicates that there might be an obstruction to carriage relating to a problem on the Y axis. Correct the problem and re-power on to reboot system.

Check Carriage Sensor or VC Motor

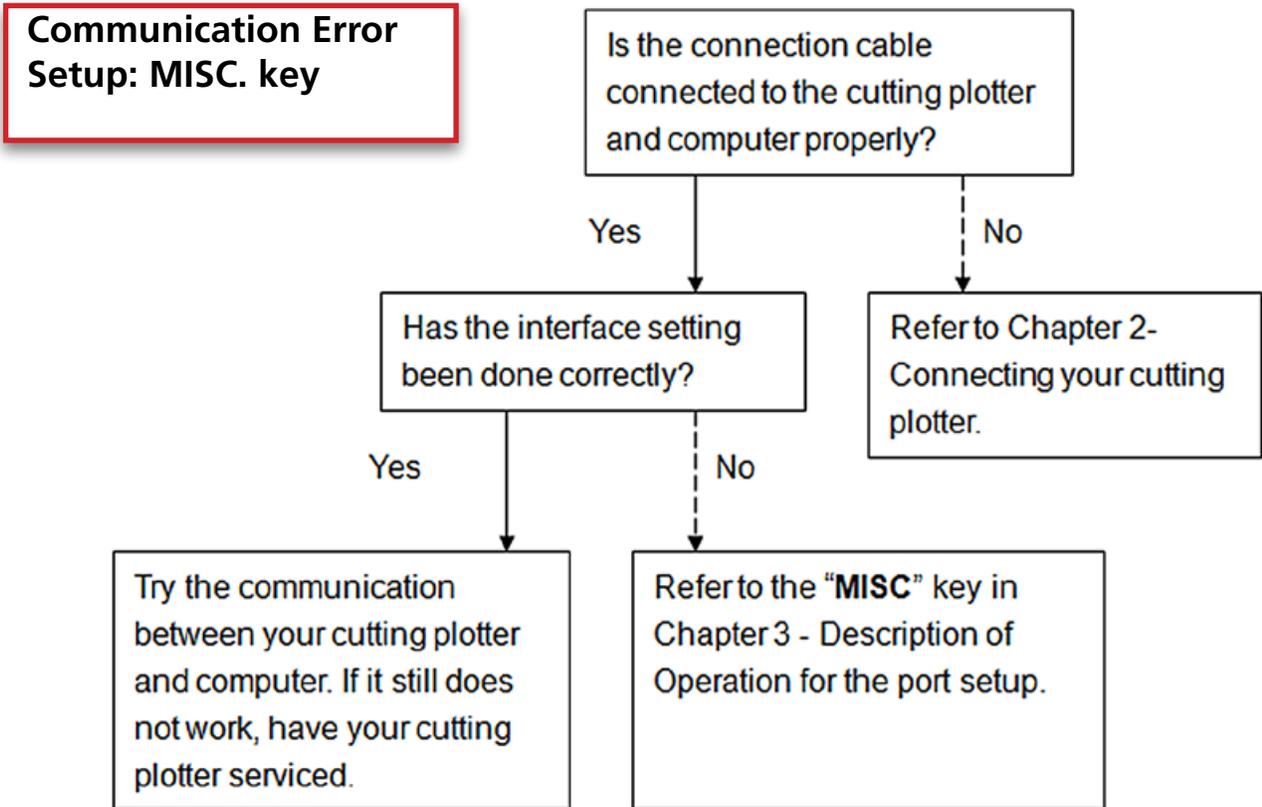
This message indicates that the blade up/down sensor malfunction. Re-power on to re-boot system. If the problem still exists, contact SignWarehouse Technical Support.

Graph Was Clipped. Data In Buffer

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

6.3 Cutting Plotter/Computer Communication Problems

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



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

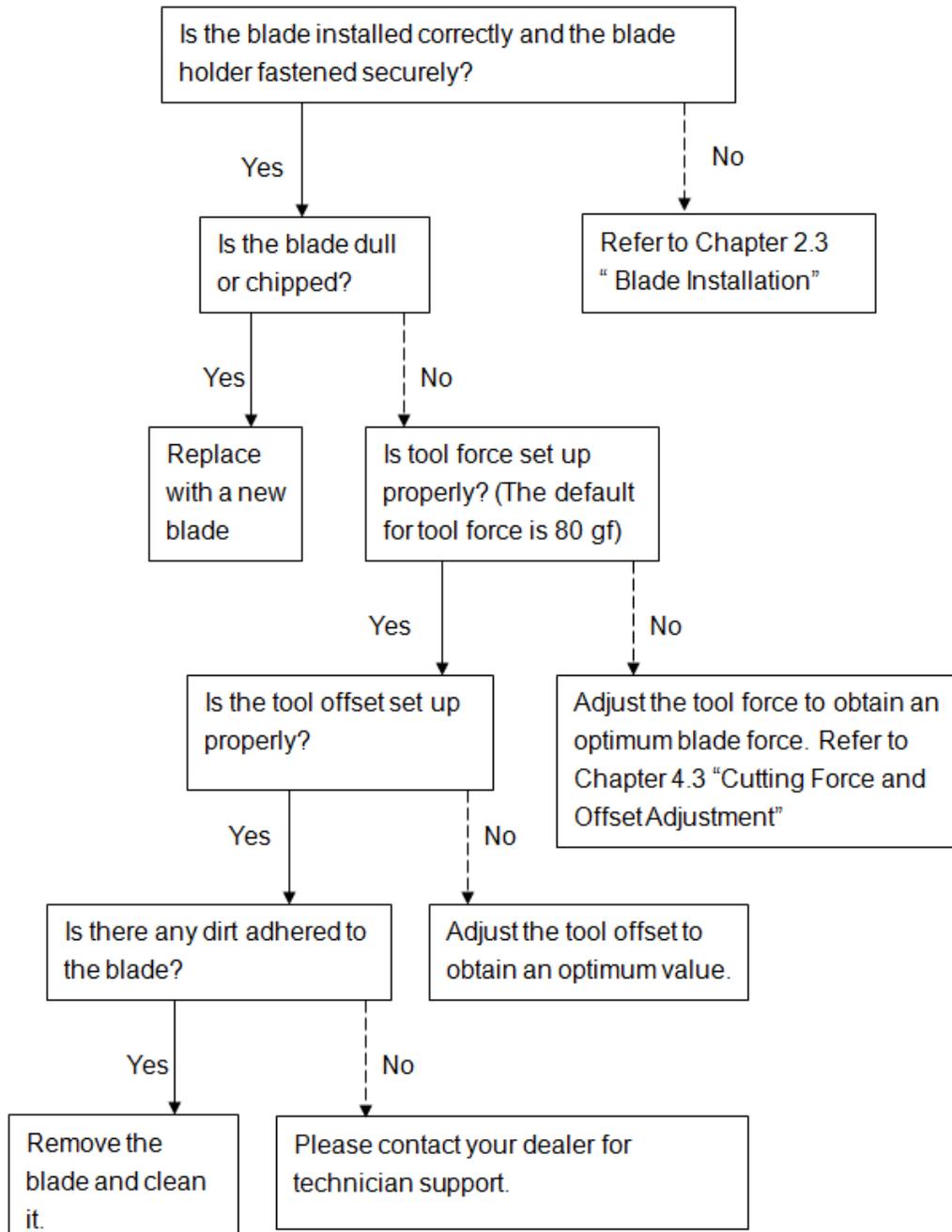
HP-GL/2 Cmd. Error

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

6.5 Cutting Quality Problems

Note:

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



7.1 EnduraCUT 2 Specifications

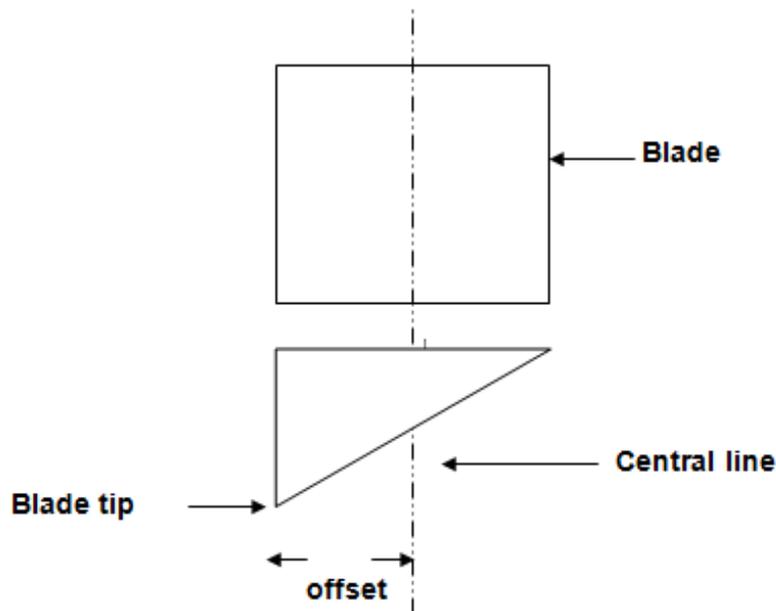
Operational Method	Roller-Type
Max. Cutting Width	23.6in (600mm)
Max. Cutting Length	164ft (50m)
Max. Tracking	10ft (3.05m)
Max. Media Loading Width	28.3in(719mm)
Min. Media Loading Width	2.76in (50mm)
Acceptable Material Thickness	30 mil (0.8mm)
Number of Pinch Rollers	2
Motor Drive	DC Servo Control
Cutting Force	400 g
Max. Cutting Speed	Up to 23.62 ips (600 mm /sec)
Offset	0~1.0 mm (with an increase of 0.025 mm)
Mechanical Resolution	0.009 mm (0.00035in)
Software Resolution	0.025 mm (0.00098in)
Distance Accuracy	±0.254 mm or ±0.1% of move, whichever is greater
Repeatability	±0.1mm up to 5 meters (* certified media)
Memory Buffer	4MB
Interfaces	USB 2.0 (Full Speed) and Serial (RS-232C)
Type of Command	HP-GL, HP-GL/2
Control Panel	LCD (20 digits x 2 lines), 14 Keys, 1 Power LED
Dimension (HxWxD) mm	8.67 x34.61x10.16in (220x 879x258mm)
Net Weight	28.6lb (13kg)
Stand	Optional
Power Supply	AC 100-240V, 50~60 Hz (auto switching)
Power Consumption	Max.110watts
Environment Temperature	15 ~30 / 60 ~86 (operating)
Environment Humidity	25%~ 75% relative humidity (operating)

- Compatible with Windows 2000/ XP/ Vista/ 7/ 8 and MAC OS X 10.4-10.7.
- The specification and data sheet may vary with different materials used. In order to obtain the best output quality, please maintain the machine regularly and properly.
- SignWarehouse Inc. reserves the right to change the specifications at any time without notice.
- The above listed specification values are effective only when operated with media certified by SignWarehouse or commonly used in the production of vinyl graphics and sign industry applications.

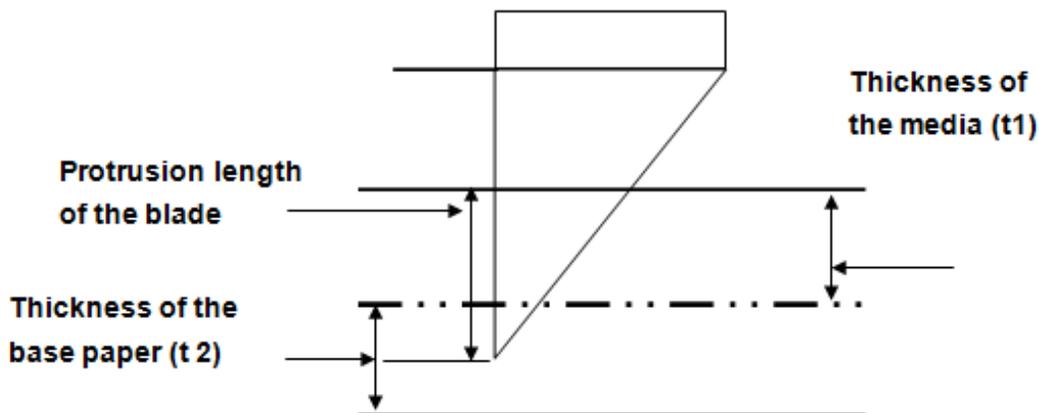
7.2 Plotter Blade Primer

Frequently used terms related to the cutting blade and the plotting pen.

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



Protrusion Length of the Blade



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