BENGAL
CUTTING PLOTTER
User Manual

`

<u>NOTICE</u>

Important Information

Thank you for purchasing the *SignPal Series – Bengal Cutting Plotter.*
Before you use the cutting plotter, please make sure that you have read the
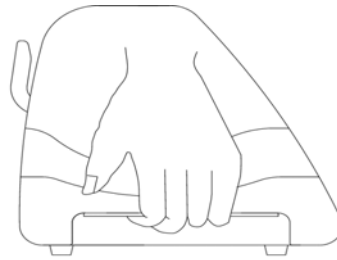safety precautions and instructions below.

⚠
Caution

SAFETY PRECAUTIONS!

➢ For safety concern, please always hold the cutter firmly **from the bottom** while moving
it. Do not move the cutter by clasping the depression area on both sides.
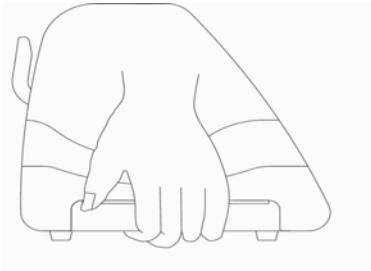
O (correct)   X (Incorrect)

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

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Important Information

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1. General Information

1.1 Package Items

The package of Bengal-60 contents the items listed below, please check carefully.

If you find any item missing, please consult your local dealer for further assistance.

Item	Quantity
Cutting Plotter	**1 Set**
Accessories	**1 Set**

1. Installation CD	2. AC Power Cord	3. Desktop Support Brackets
4. Cutting Pad	5. USB Cable	6. RS-232 Cable
7. Printer Cable	8. Tweezers	9. Paper Slicer

10. Error-Condition Label

1.2 Product Features

The followings are the main features of the Sable cutting plotters:

· Tri-port connectivity – USB & Serial interface.

· Up to 400-gram cutting force.

· Up to 600 mm/per second cutting speed.

1.3 The Appearance (BN-60)

1.3.1 The Front View
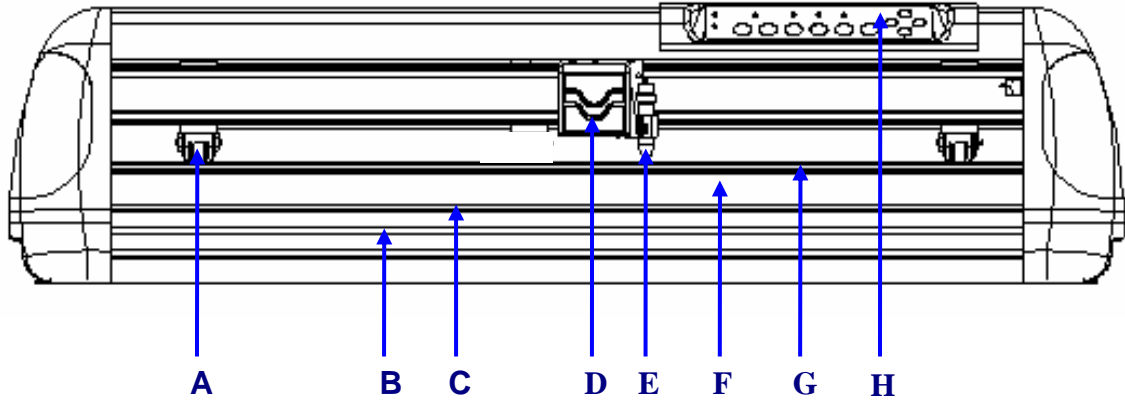
【Figure 1-1】

	Object	Description
A	Primary Pinch Roller	To help hold the media during cutting.
B	Slicing Groove	To help slice off media..
C	Alignment Ruler	To align media with clear guideline marks
D	Tool Carriage	To help perform cutting job with installed blade or pen.
E	Blade Holder	To hold the blade.
F	Platen	The surface for holding and supporting media in operation.
G	Cutting Pad	To protect blade and plate in operation.
H	Control Panel	To consist of 10 control keys and 4 LED lights.

1.3.2 The Back View
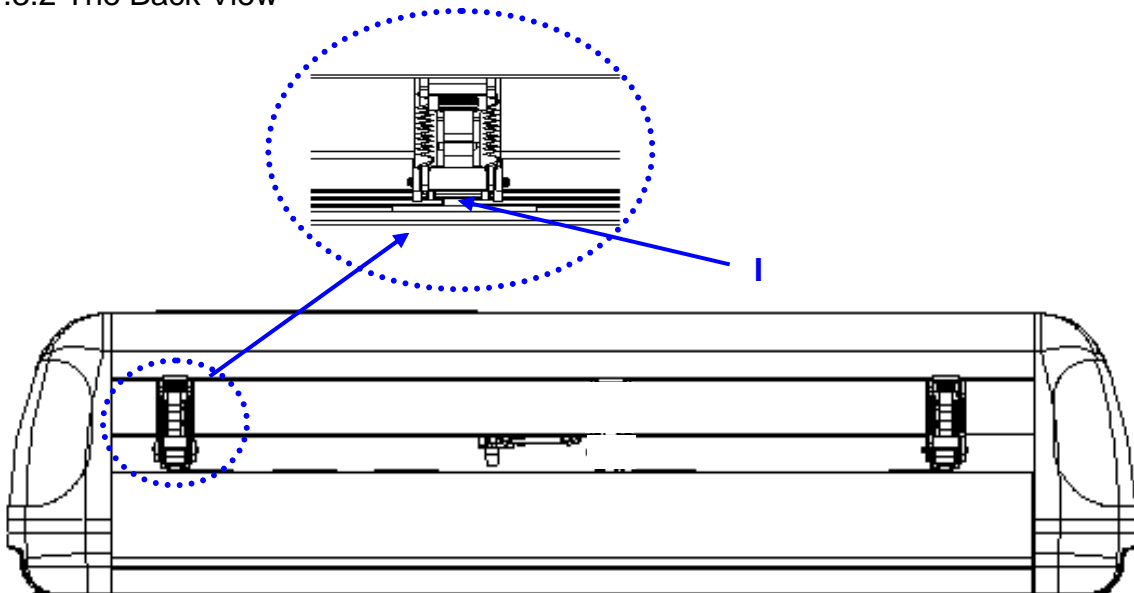
【Figure 1-2】

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

1.3.3 The Side Views

J   K   L

【Figure 1-3】

M   N   O
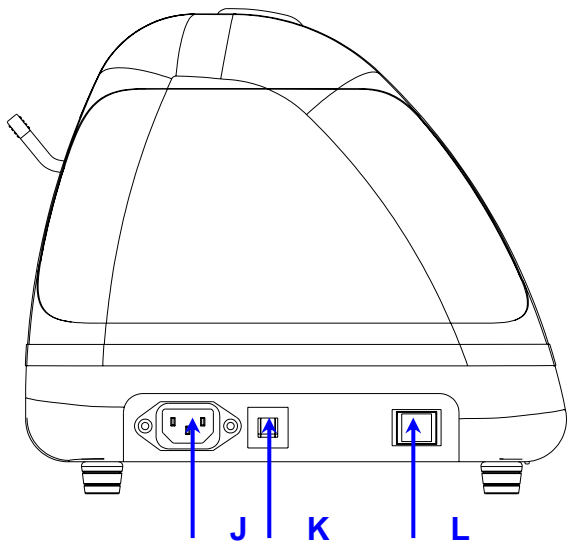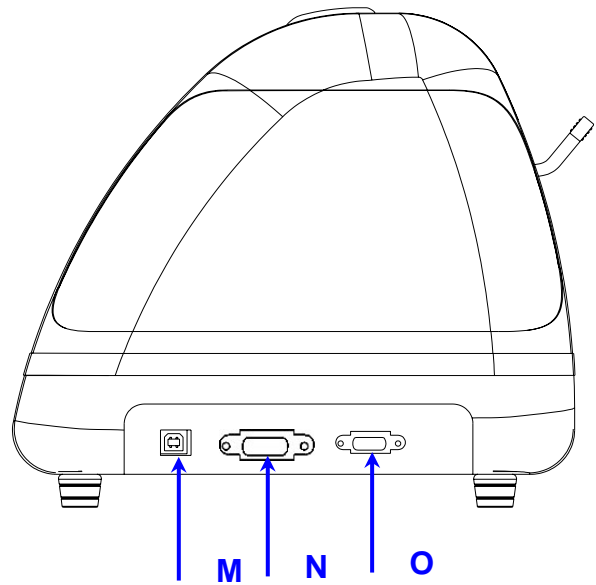
【Figure 1-4】

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

2. Installation

2.1 Precaution

Please read below information carefully before you start installation.

Notice 1

- Make sure the power switch is off before installing the cutting plotter.

- Carefully handle the cutter to prevent any injuries.

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

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

- The machine can be approached easily from any direction.

- Keep enough space for the machine, accessories and supplies.

- Keep the working area stable, avoiding sever vibration.

- Keep the temperature between *10 and 35*℃ *(50-95ºF)* in the workshop.

- Keep the relative humidity between **25% and 75%** in the workshop.

- Protecting the machine from dust and strong air current.

- Preventing the machine from direct sunlight or extremely bright lighting.

Notice 3 Connecting the Power Supply

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

- Insert the plug (male) into a grounded power outlet.

- Insert the other end (female) of power cord into the AC connector of cutting plotter.

2.2　Stand & Flexible Media Support System

2.2.1　Stand Installation

<mark>Step 1</mark>

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

■　Stand is an optional item.

■　Item List：

✓　**2** pieces of **Side stand**
✓　**1** piece of **Stand Beam**
✓　**18** pieces of **M6 screws**
✓　**1** piece of **M14 Wrench**
✓　**1** piece of **M5 L-shape Wrench**
✓　**1** piece of **M6 L-shape Wrench**
✓　**1** set of **Roll Holder** (**2** pieces)
✓　**1** set of **Roll Holder Support** (**2** pieces)
✓　**1** set of **Roll Media Flange** (**2** pieces)
✓　**1** set of **Roll Holder Guide Bushes** (**4** pieces)

<mark>Step 2</mark>

● Remove the plotter body and the accessories from the shipped carton.

● Assemble the side stands and stand beam by screws (Figure 2-1)..
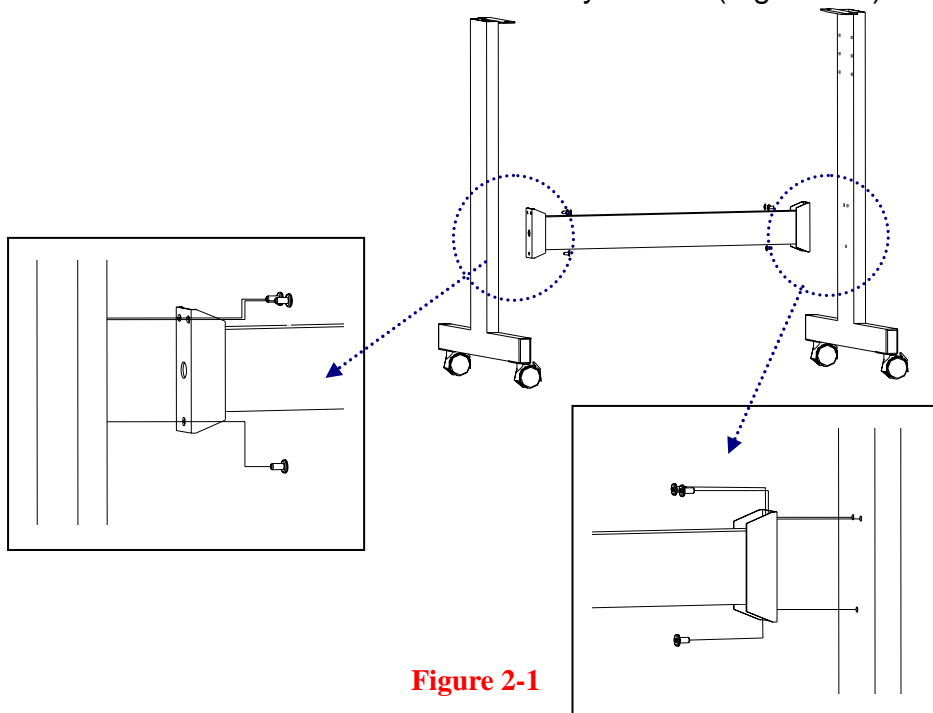
Figure 2-1

Step 3

Place the cutter firmly onto the stand assembling by screws.   .
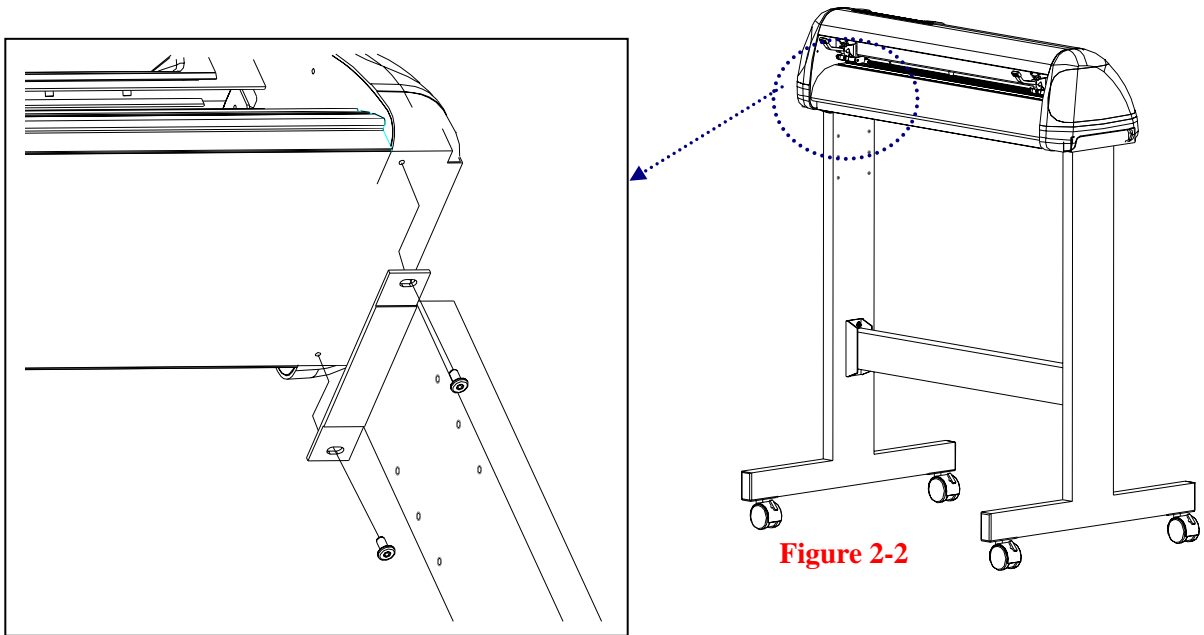
Figure 2-2

2.2.2   Flexible media support system Installation

Step 1

Insert the roll holder support with the screws into the holes of the stand, and tighten them up as shown in Figure 2-3. You could decide the position of the roll holder support by different hole selection.

4 screws

Roll holder support

6 screws holes
for positioning
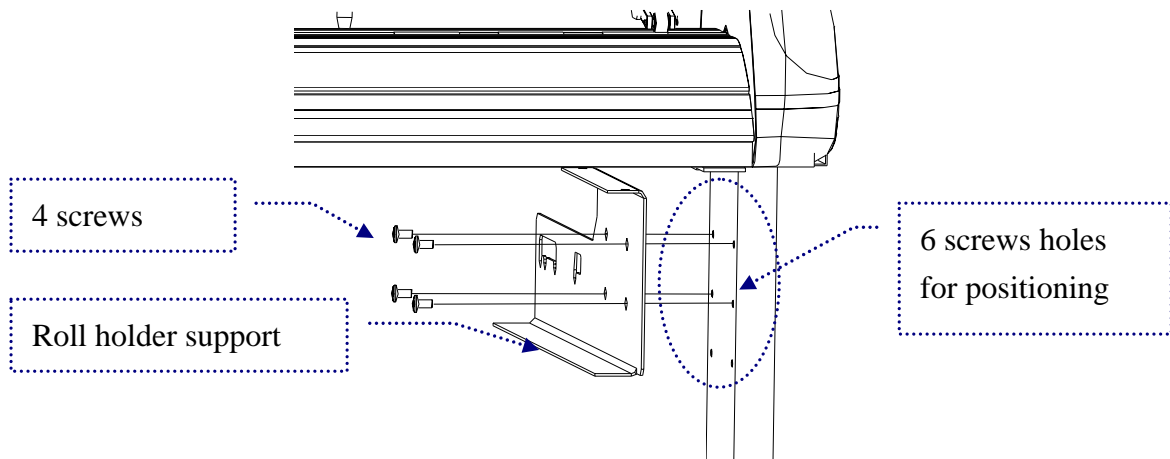
Figure 2-3

Step 2

Place two roll holders into the holes in the roll holder support (Figure 2-4)

Roll holder

Roll holder support
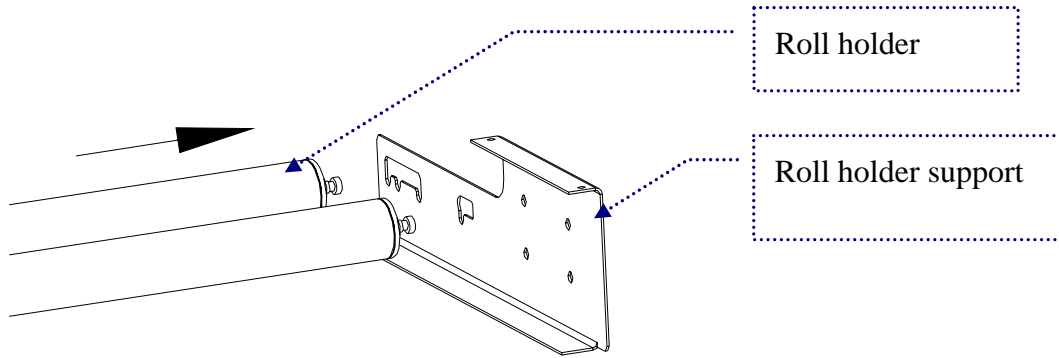
Figure 2-4

Step 3

The complete picture will be shown like below (Figure 2-5).
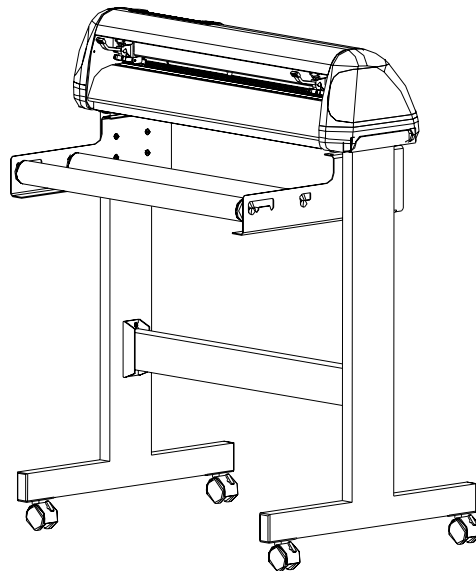
Figure 2-5

2.2.3   Roll Holder Flange Installation

Step 1

Insert the 4 guide bushes onto the both sides of the 2 roll holders (Figure 2-6).

Roll holder guide bushes
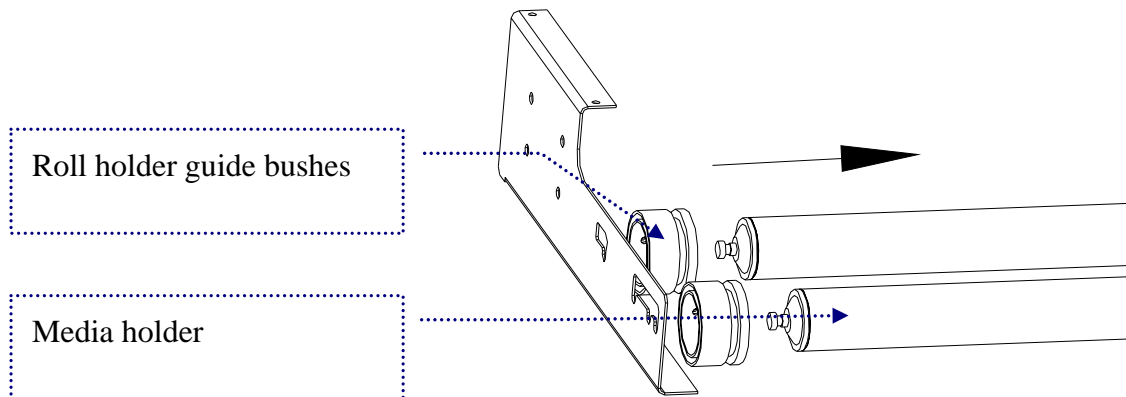
Media holder

Figure 2-6

Step 2

Insert the roll holder flange into the fillister between guide bushed and roll holder..

Roll holder flange

Roll holder guide bushes
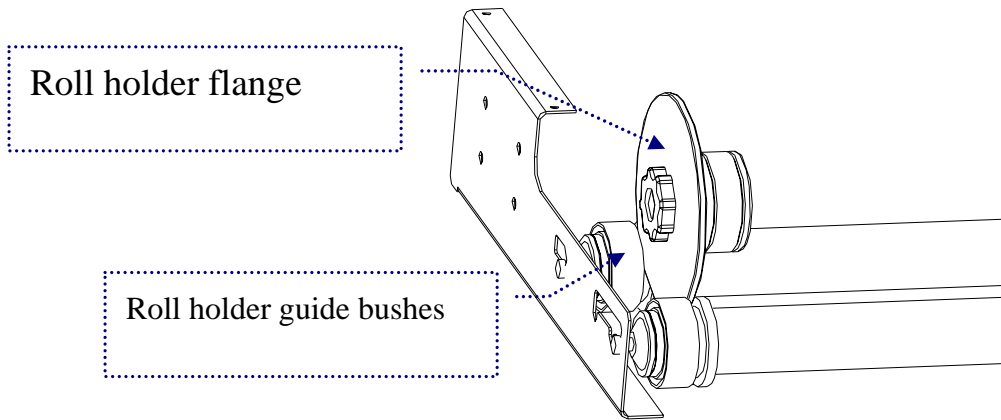
Figure 2-7

Step 3

The complete picture will be shown like below (Figure 2-8).
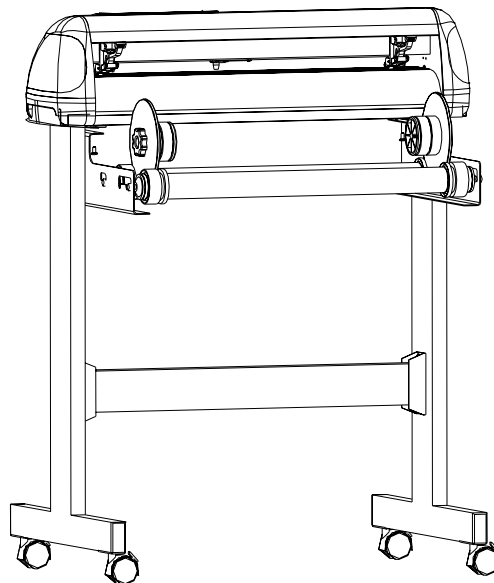
Figure 2-8

2.3 Desktop Flexible Media Support System

Step 1

Put the bottom of machine in lateral, place the Desktop Support Brackets beside, and then, use M6 screws to tighten them up (Figure 2-9).

Desktop Support Bracket

M6 screw
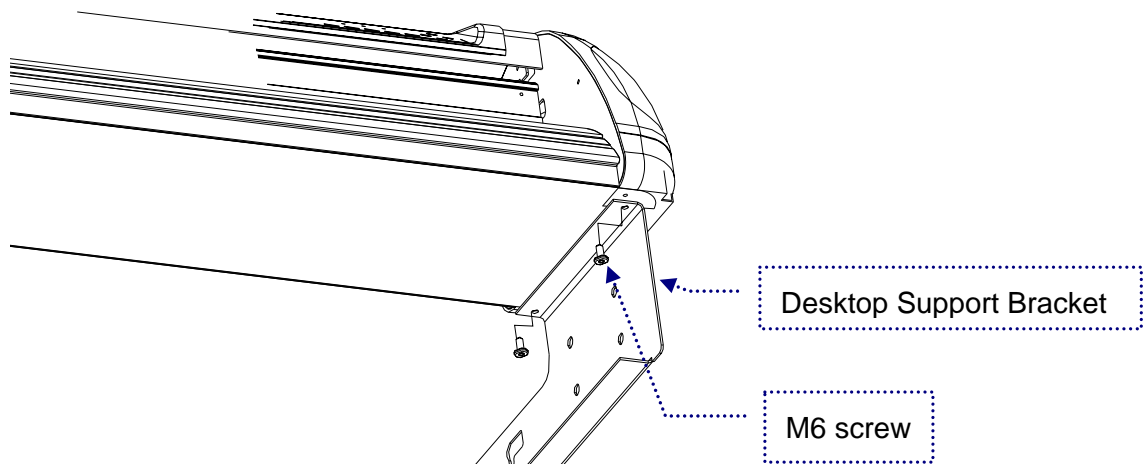
Figure 2-9

Step 2

Place the 2 roll holders into the holes of Roll Holder Support (Figure 2-10).
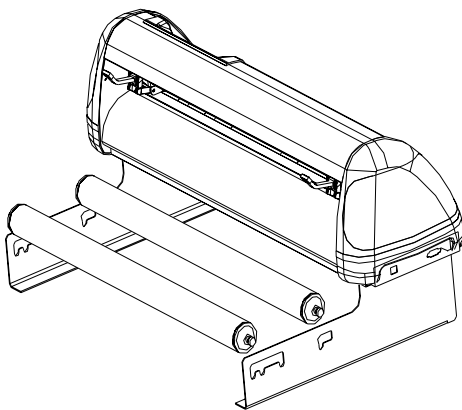
Figure 2-10
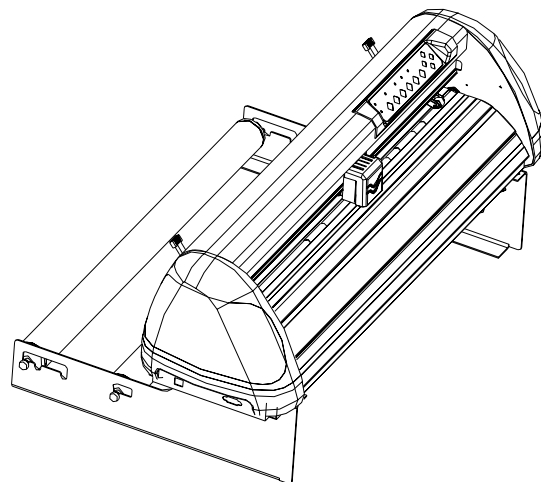
Figure 2-11

Step 3

The complete Desktop Media Support System will be shown as in Figure 2-11.

2.4 Blade Installation

Figure 2-12 is the illustrator of the blade holder.   Insert a blade into the bottom of the blade holder and remove the blade by pushing the pin. Make sure that your fingers are away from the blade tip.

Adjustment depth knob

Pin

Outward ring
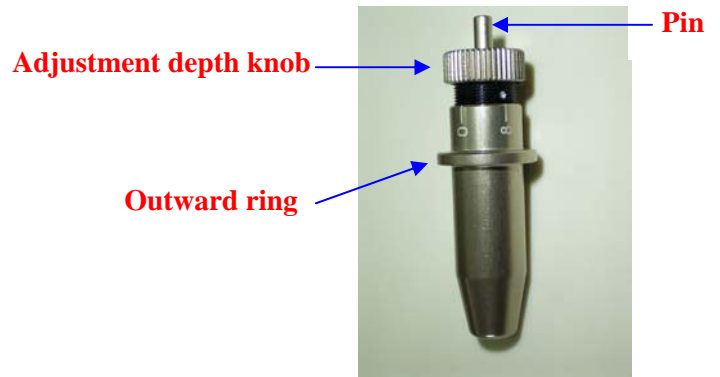
Figure 2-12

Step 1

Install blade (Figure 2-13).

Figure 2-13

Step 2

Push the blade to the bottom of the blade holder (Figure 2-14).

Figure 2-14

Step 3

Adjust the blade tip to suitable length by screwing "Blade tip adjustment screw" clockwise or count-clockwise. (Figure 2-15).

Figure 2-15

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

Step 4

Insert the blade holder into tool carriage. Please note the outward ring of the holder must put into the grooves of carriage firmly (see Figure 2-16), fasten the case (Figure 2-17).

Figure 2-16

Figure 2-17

Step 5

Use the reversing steps to remove the blade holder.

Step 6

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

Caution

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

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

2.5　Media Loading

Figure 2-18

2.5.1　Loading the Sheet Media

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

Step 1

Lift the 2 levers at the back side of cutter to raise pinch rollers (Figure 2-18).

Step 2

Load your media on the platen and slide it under the pinch rollers from either the front side or the backside. The **alignment rulers** on the platen extension will help you to adjust the media precisely (Figure 2-19).

Figure 2-19

Step 3

Then move the pinch rollers manually to the proper position. Be sure the pinch rollers must be positioned above the grid drum. The **white marks** on the main beam will remind you where the grid drums are (Figure 2-20).

White mark　　**Figure 2-20**

Figure 2-21

Step 4

Push the lever backward to lower down the pinch rollers (Figure 2-21).

Step 5

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

> **Note:**
> ✓ Always adjust the position with the pinch rollers raised.
> ✓ Move the pinch rollers by applying force at the rear portion of the pinch roller support.
> ✓ DO NOT move the pinch roller by holding its front rubber roller (Figure 2-22).

（X）

Incorrect

Figure 2-22

2.5.2 Loading the Roll Media

You can either use the stand with flexible media support system or desktop media support system for roll media. Please refer to Chapter 2.2.2~2.3 for hardware setup, and Chapter 2.5.1 for media loading.

2.6 Cable Connection

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

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

Parallel port

Serial port

USB port

Figure 2-23

2.6.1 USB Interface

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

■ USB driver installation

> **Caution!!**
> ✓ **DO NOT plug USB cable into ANY GCC Cutter when install USB driver.**
> ✓ **If you are using Windows 2000 or XP as your operating system, make sure you log in using the "Administrator" account.**
> ✓ **If there's an USB driver of previous version installed in your system, please remove it and restart computer before installation.**

    a. Put USB cable aside (don't plug it into Bengal).

    b. Insert the Bengal's Installation CD, and then click on "USB driver" from the pop-up menu to install.

■ Connection

After USB Driver installed, plug the USB cable into Bengal's USB interface connector, And the other end of the cable into PC's USB interface connector to complete installation.

2.6.2 Parallel Interface

■ Connecting to the Parallel (Centronics) Port

1. Connect a parallel cable to the cutting plotter and the host computer (Figure 4-1)
2. Set up the output port **LPT1** or **LPT2** from your software package

Send the data to your cutting plotter directly. Or, use DOS commands like **TYPE** or **PRINT**

2.6.3 RS-232 Interface

■ Connecting to the RS-232 (Serial) Port

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

3. Operation

3.1 The Control Panel

3.1.1   The Outline of control panel
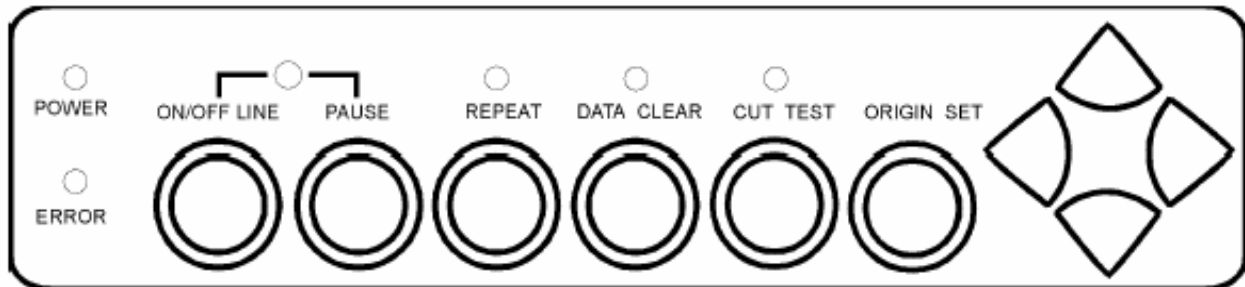
Figure 3-1

Key	Function
POWER LED	To indicate the power status (light up: power on; light off: power off)
ERROR LED	To indicate the error status (light up: error; light off: normal)
ON/OFF LINE	To switch modes or stop cutting job(light up: on-line; light off: off-line) While in on-line mode: only ON/OFF LINE and PAUSE keys activated While in off-line mode: the settings in VLCD can be adjusted.
PAUSE	To temporarily halt cutting process or to continue
REPEAT	To repeat last job.
DATA CLEAR	To clear up buffer memory.
CUT TEST	To perform cutting tests in different ways.
ORIGIN SET	1. To reset origin at a new position in off-line mode. **2. To perform Media Sizing in on-line mode.**
4 Arrow Keys	To move carriage position, select function, or change setting.

3.1.2 Reset Origin

Note:
✔   Make sure the machine is in off-line mode to enable this function.

Step 1 Move the carriage to a new position.

Step 2 Press the ORIGIN SET button to reset origin.

3.1.3 Media Sizing

> **Note:**
> ✔ Make sure the machine is in on-line mode to enable this function.

Step 1 Load media onto appropriate position.

Step 2 Press the ORIGIN SET button to perform Media Sizing.

3.1.3 Cut Test

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

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

Step 2 Move the carriage to a preferred position.

Step 3 Press CUT TEST button to perform.

3.1.4 Repeat

> **Note:**
> ✔ Make sure the machine is in off-line mode to enable this function.

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

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

3.2 VLCD

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

3.2.1 Installation

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

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

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

Step 3 choose the right port connected to your computer (Figure 3-2).
If you are using the USB cable, choose **USB0** from the pull down menu. If you are using a Serial cable, choose either **COM1** or **COM2**. Make sure no other devices are occupying the port that you are going to use.

> ✔ Make sure the USB driver in the installation CD has been installed before connect VLCD to the cutter by USB option.
> ✔ If the USB driver hasn't been installed, copy the usbapi.dll file along with VLCD.exe onto a same folder of your local drive to work out.

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

Figure 3-2

Figure 3-3

3.2.2 Functions of VLCD

Below are the functions adjustable in VLCD for Bengal.

- Poll Size
- Force
- Media Weight
- Offset
- Auto Unroll

- Quality
- Smooth
- Media Type
- Update setting
- Scaling

- **Poll Size**

Click on the **Poll Size** button will reveal the X/Y values.
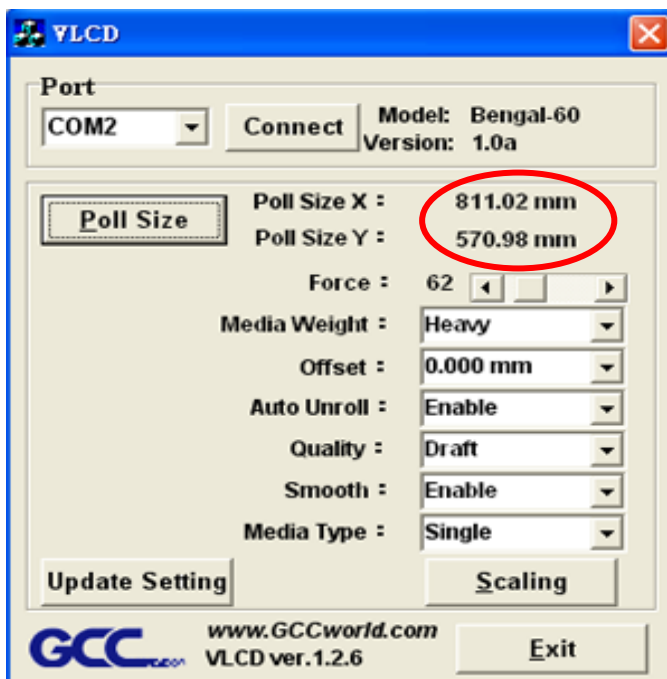
In the case, the maximum plotting length is 811.02mm, and the distance between the farthest two pinch rollers is 570.98mm (Figure 3-4).

Figure 3-4

- **Force**

To adjust the blade force between 0 and 400 (Default = 80g).

- **Media Weight**

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

- **Offset**

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

■ **Auto Unroll**

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

■ **Quality**

To choose the cutting quality to either Fine (default) or Draft mode.

■ **Smooth**

To enable or disable (Default) the smoothing cut function.

■ **Media Type**

To choose the media type of Roll media (Default) or single-sheet media.

■ **Update Setting**

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

■ **Scaling**

To adjust the scales of XY values to match the real size.
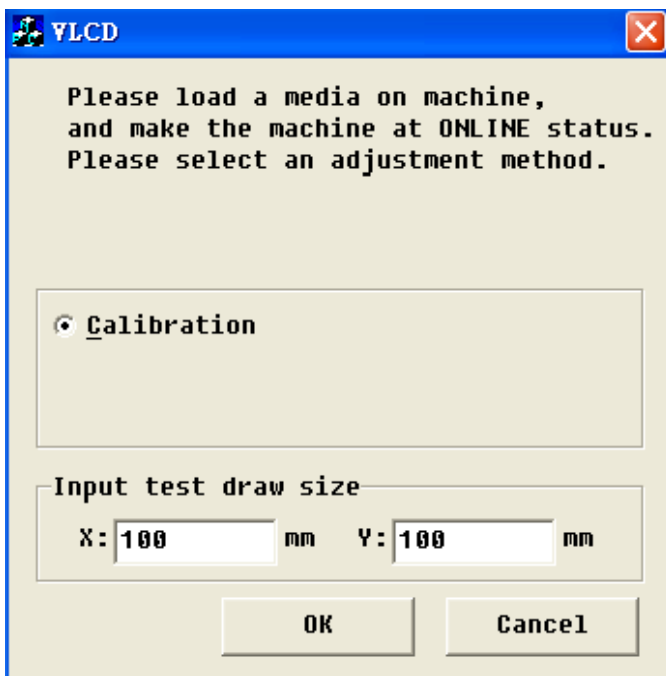
Figure 3-5

Step 1 After clicking on **Scaling** button, a dialog will pop up. Enter the width and length of the rectangle that you would like to cut (Figure 3-5).

Step 2 After the cutting job is set, an adjustment dialog window will pop up. Measure the real cutting width and length of the rectangle, and then, key in the values in the boxes (Figure 3-6). In this case, the actual cutting width of the rectangle is 98mm.

Step 3 After pressing **OK**, the cutting plotter will cut the 100mm² rectangle again and the following dialog will pop up(Figure 3-7). Measure the real cutting width and length. If it is a 100mm² rectangle, press **YES**. If not, press **NO**, and repeat the above steps until you get a 100mm² rectangle.

VLCD

Cutter is cutting a rectangle on the media now. Please measure the length and width and key in the values.

Length X: 98 mm
Width Y: 98 mm

OK

Figure 3-6

VLCD

Please measure the length and width again. If the length and width are exact, please click Yes. Otherwise, click No.

Yes   No

Figure 3-7

VLCD

Save data to flash rom ?

Save

Cancel

Figure 3-8

CAUTION

!!! Caution: Press OK will change machine hard scale. !!!

OK   Cancel
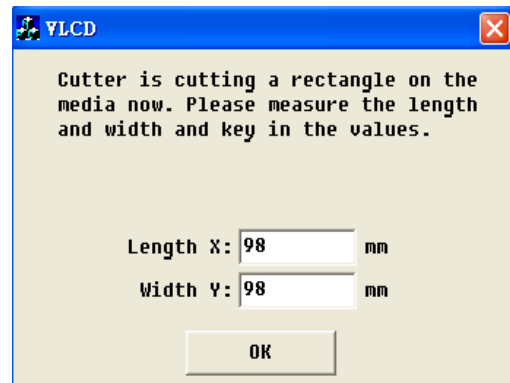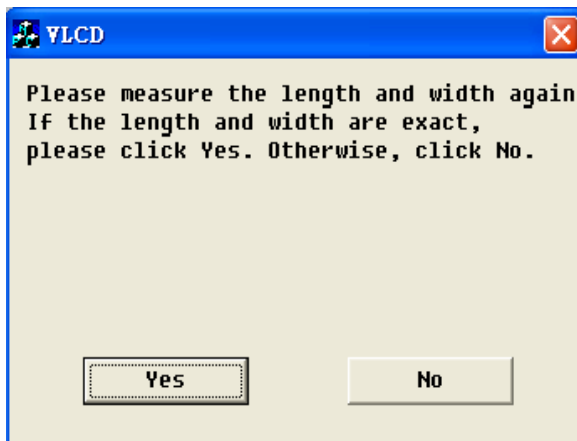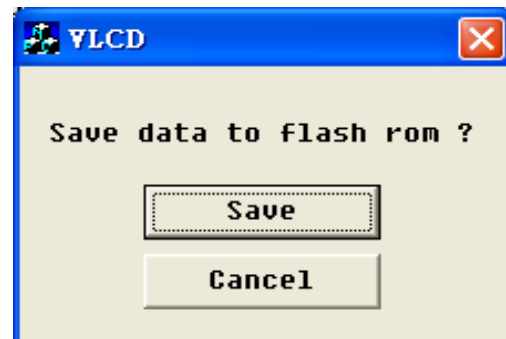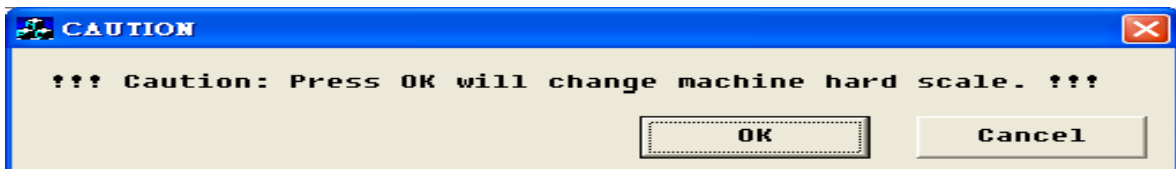
Figure 3-9

Step 4 To save the setting onto flash ROM by following Figure 3-7 3-8, 3-9, and 3-10.

VLCD

Save Complete !!

OK

Figure 3-10

✓ In case the XY values are typed in error, it's recommend to close the VLCD program, and re-launch it to keep operating with correct numbers and procedure. Otherwise, the wrong values may affect the accuracy and cause function failure.

3.3 File Uploader

3.3.1 Installation
- ✓ "File Uploader" is a tool to help loading files for direct output.
- ✓ The program **ONLY** supports HPGL format-files generated via GCC Cutter driver.
- ✓ Copy the GCC File Uploader.exe file in the Accessories folder of the Bengal's Installation CD onto your local drive to finish installation.
- ✓ Launch GCC File Uploader by double-click on the icon (Figure 3-11).
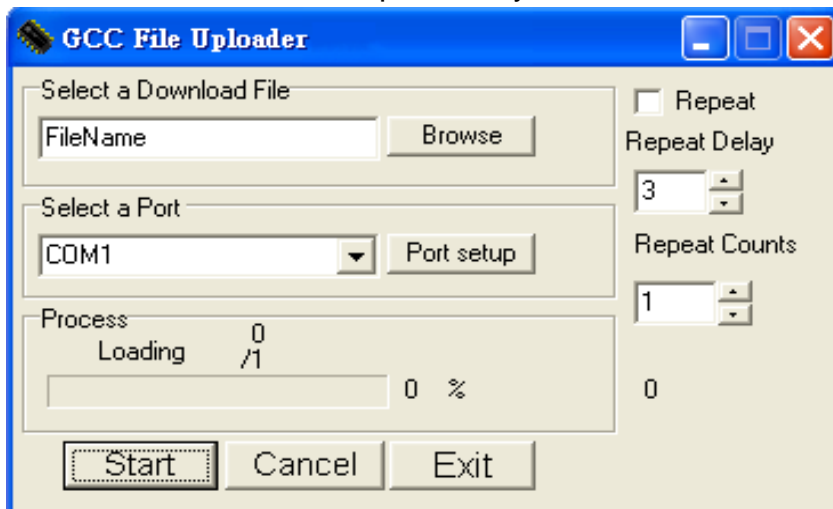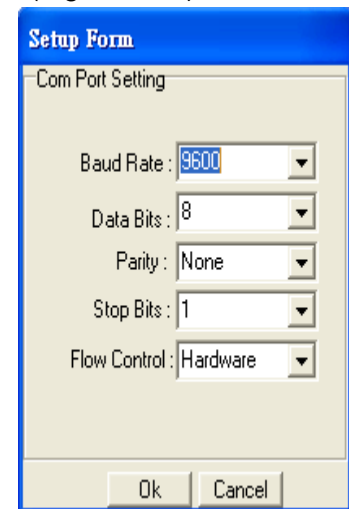
Figure 3-11   **Figure 3-12**

■ **Port setup**
- ✓ This function will be activated while choosing COM port for data transmission.
- ✓ Press the Port setup button to pop up the setup window for parameter change (Figure 3-12).

3.3.2 Functions of File Uploader

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

3.4   Data Transmission

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

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

Option 2: Most cutting software packages are able to emulate **HP-GL** or **HP-GL/2** commands, therefore, Use DOS commands like **TYPE** or **PRINT** to output your file. As long as the file is **HP-GL** or **HP-GL/2** format, the cutting plotter can output the data precisely.

For example, a file with **PLT** extension generated by **SignPal** can be transmitted directly to the plotter at the DOS prompt, and then be cut out.   Before outputting at the DOS prompt, set up a transmission protocol between your cutting plotter and computer by a DOS command, MODE. Make sure that your PC has the same communication protocol as the cutter.   For example:

<div align="center">

MODE COM2: 9600, N, 8, 1, P
</div>

Then, use **TYPE** command to output via **COM2** if **COM2** is the assigned output port.

<div align="center">

TYPE   *filename* **> COM2**
</div>

> **Tip:** Add the MODE command line to your system's AUTOEXEC.BAT to automatically execute MODE command every time you want to output your data at the DOS prompt via serial connection.   However, values in a MODE command should comply with the related requirements of your software. Refer to DOS manual for further information.

4. Basic Maintenance

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

4.1 Cleaning the cutting plotter

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

Precaution in Cleaning

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

Recommended Methods

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

4.2 Cleaning the Grid Drum

❖ Turn off the cutting plotter, and move the tool carriage away from the area needed to be cleaned.
❖ Raise the pinch rollers and move them away from the grid drum for cleaning.
❖ Use a bristle (a toothbrush is also acceptable) to remove dust from the drum surface. It needs to rotate the drum manually to clean the drum completely (Figure 5-1).
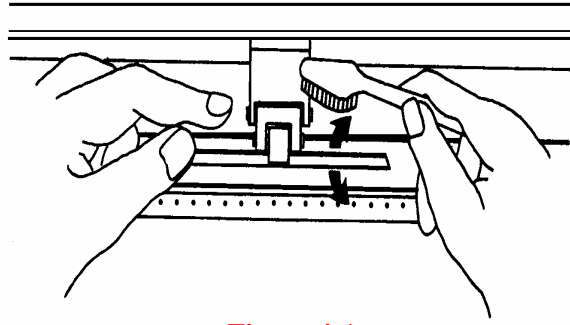
Figure 4-1

4.3 Cleaning the Pinch Rollers

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

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

5. Trouble Shooting

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

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

Why doesn't the cutting plotter operate?

5.1 What if Bengal cannot operate?

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

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

Solutions: If the POWER LED lights on, the cutting plotter should be in a normal condition.
Turn off the cutting plotter and turn it on again to see if the problem still exists.
If the POWER LED doesn't light, please call your local dealer to resolve this problem.

5.2 Light Indicators

Some of the operating problems can be identified by the lights on the control panel.
When your cutting plotter stops operating or the lights are on or flashing unexpectedly, see the following descriptions of the panel light patterns and the actions you should take.

5.2.1 Warning Indicators

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

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

☼ = flash   ● = on   ○ = off

Warning 1 The graph is clipped

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

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

Warning 2 HPGL/2 command error

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

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

Warning 3 Lever up or no media

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

Warning 4 Cannot repeat cutting

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

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

Warning 5 Communication error

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

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

Warning 6 Width sensor error

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

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

5.2.2 Error Indicators

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

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

☼ = flash   ● = on   ○ = off

Error 1 and 2

Please contact your local dealer to replace SRAM or DRAM.

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

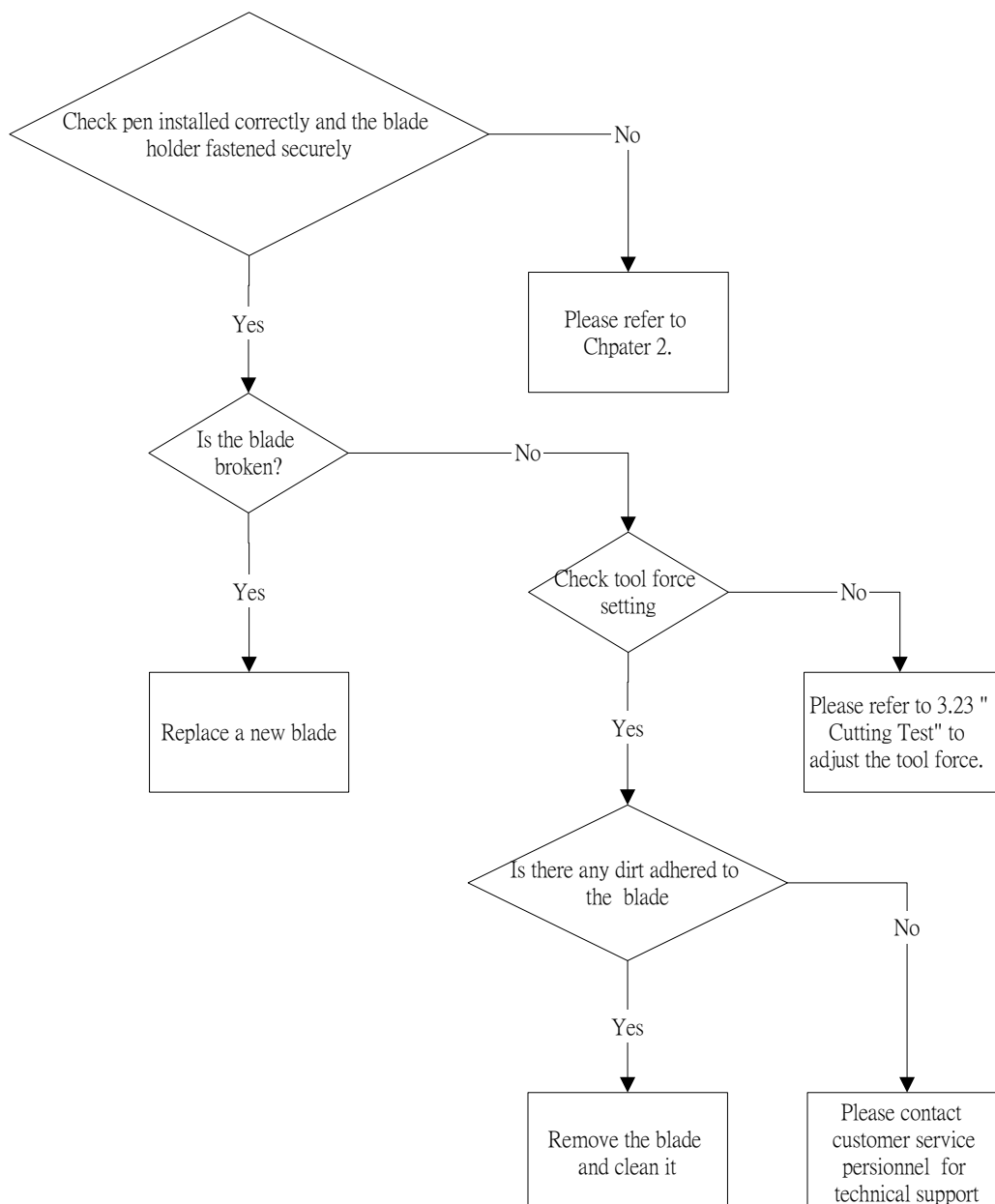This message indicates that there might be a problem on the **X-axis**.

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

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

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

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

5.3 Cutting Quality Problems

```
              ┌─────────────────────────────┐
              │ Check pen installed correctly│──No──→ ┌──────────────┐
              │ and the blade holder fastened│        │ Please refer │
              │         securely             │        │ to Chapter 2.│
              └─────────────┬───────────────┘         └──────────────┘
                          Yes
                            │
                    ┌───────────────┐
                    │ Is the blade  │──No──→ ┌──────────────┐
                    │   broken?     │        │ Check tool   │──No──→ ┌──────────────────┐
                    └───────┬───────┘        │ force setting│        │ Please refer to  │
                          Yes                └──────┬───────┘        │ 3.23 " Cutting   │
                            │                     Yes                │ Test" to adjust  │
                    ┌──────────────┐                │                │ the tool force.  │
                    │ Replace a    │        ┌───────────────────┐    └──────────────────┘
                    │ new blade    │        │ Is there any dirt │──No──→ ┌──────────────────┐
                    └──────────────┘        │ adhered to the    │        │ Please contact   │
                                            │     blade         │        │ customer service │
                                            └────────┬──────────┘        │ personnel for    │
                                                   Yes                   │ technical support│
                                            ┌──────────────┐             └──────────────────┘
                                            │ Remove the   │
                                            │ blade and    │
                                            │ clean it     │
                                            └──────────────┘
```

5.4 USB Connection Problems

5.4.1   USB Device not detected

If the cutter cannot be detected via USB cable, please follow the below procedure to solve the problem:

Step 1   check if the USB cable is firmly connected to the cutter and your computer.

Step 2   unplug and re-plug the USB interface connector of either side of the cable. The message of "new hardware found" or "Bengal found" should be showing in few seconds at the lower-right corner of your monitor screen to succeed the connection. If not, please go on next step.

Step 3   turn off the cutter and shut down your computer; unplug and re-plug the USB Interface connector; then turn on the cutter and restart your computer.
Now the USB connection should be succeeded. If it is still not working, please call your local dealer for further assistance.

If the message is asking to install USB driver after you have already done that, please follow the upper steps to solve the problem.

5.4.2   USB Port Setup

If the cutter and your computer is connected via USB cable, but data transmission fails, please check if the USB port is set to "USB0" from the port setup window of LVCD, File Uploader, or any cutting software.

If the port is not set to USB0, please change the setting, and then try data transmission again. If the port has set to USB0 but still not working, please call your local dealer for further assistance.

Appendix - Bengal Specification

Model		BN-60
Max. Cutting Width		600mm (23.6")
Max. Media Width		719mm (28.3")
Drive		DC Servo Control
Material Thickness		0.8mm
Max. Cutting Force		400g
Max. Cutting Speed(Diagonal)		600 mm/sec (23.6"/sec)
Software Resolution		0.025 mm
Repeatability		±0.1mm
Re-plot Memory		500 KByte
Interfaces		USB 1.1, Parallel,& Serial
Commands		HP-GL, HP-GL/2
Configurable Origin		Yes
Control Panel		6 LEDs/10 Keys
Stand		Optional
Operation Environment	Temperature	10°C~35°C / 50°F~95°F
	Humidity	25% ~ 75%

- The above specification is subject to change without prior notice.