BREN, Inc.

Users Manual
for the
Models 515 and 525
Stencil & Sign Cutter

Chapter 1

General Descriptions

1.1 Introduction

This manual briefly explains how to use the BREN Model 515 & 525 for cutting applications. Drawings, illustrations and tables are provided to enable you to effectively use the Pro-Series Cutting Plotter within a short period.

This chapter provides instructions on the installation, daily care and precautions to observe during use.

1.2 Installation

Notes on Installation
- Avoid use or storage of the cutter in places subject to direct sunlight or the direct draft from air-conditioning systems.
- Avoid locations that are extremely dusty or humid.
- Prior to cutting, ensure that no obstacles are placed in the vicinity of the carriage or material. Impeded movement of the carriage or material may prevent accurate cutting.
- To prevent malfunctions of the cutter's sensors, position the cutter at least one meter away from electric lights, and any other sources of indoor illumination.

➤**Caution**
- Lubrication of the mechanisms is not required and will result in cutter malfunctions.
- To avoid scratching the cutting pad, ensure that the Blade is properly extended.
- While the cutter is operating, do not touch the moving parts.
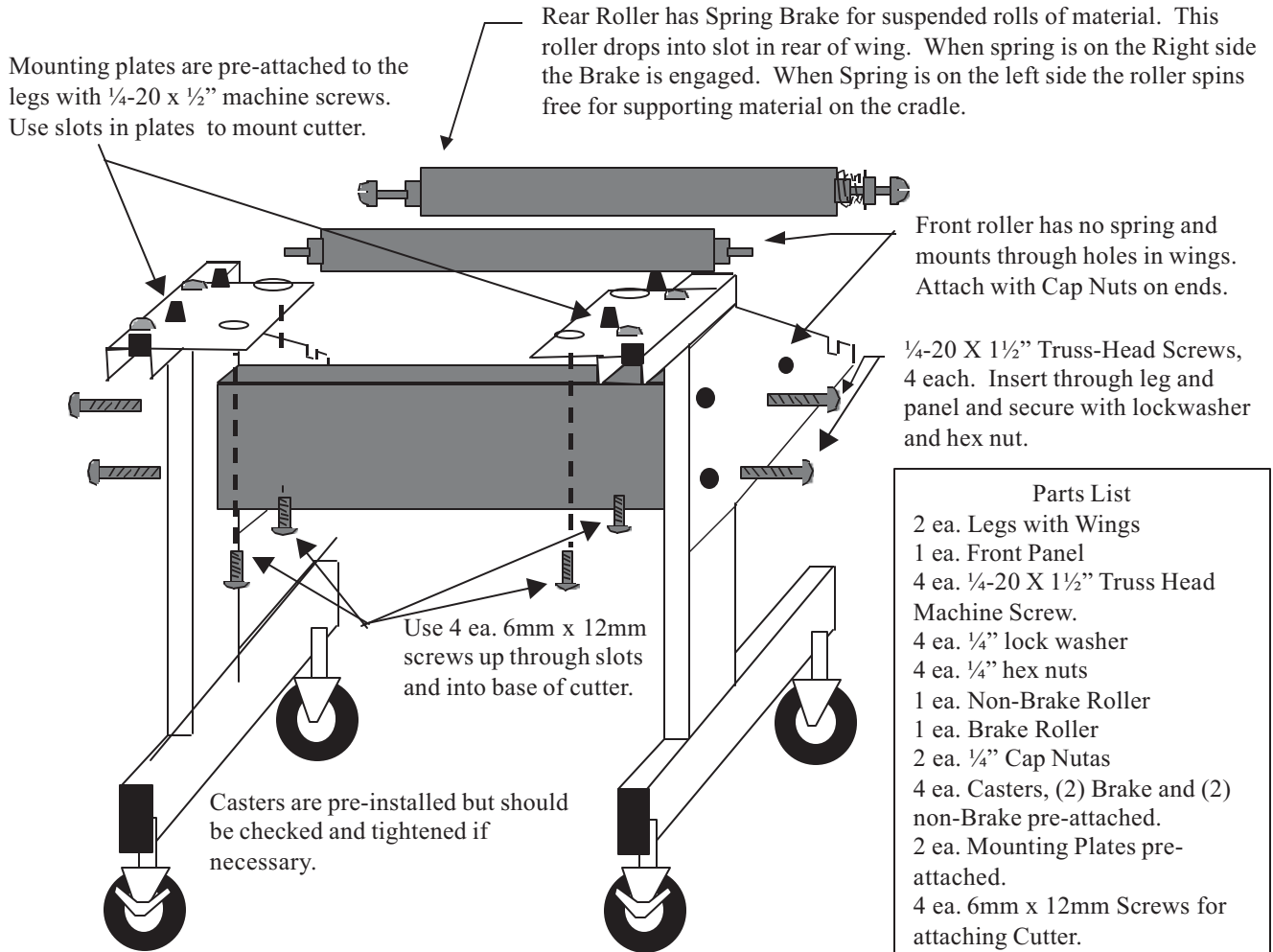- When manually moving the carriage to load material, be sure to do so slowly.

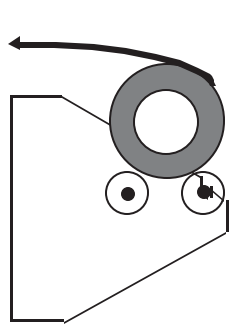## 1.3 Maintenance

Daily Maintenance

During the course of daily cutter operation, be sure to observe the following precautions
- Never lubricate the mechanisms of the cutter.
- If the cutter's casing becomes dirty, wipe the soiled areas using a dry cloth or a cloth that has been moistened in a neutral detergent diluted with water.
- Never use thinner, benzine, alcohol, or similar solvents; they can damage the finish.
- If the cutter becomes dirty, wipe soiled areas using a dry cloth or use a cloth that has been moistened in alcohol or in a neutral detergent diluted with water.
- Never use benzine, thinner, or similar solvents to clean the sensors.

1.4 Stand Assembly

Mounting plates are pre-attached to the legs with ¼-20 x ½" machine screws. Use slots in plates to mount cutter.

Rear Roller has Spring Brake for suspended rolls of material. This roller drops into slot in rear of wing. When spring is on the Right side the Brake is engaged. When Spring is on the left side the roller spins free for supporting material on the cradle.

Front roller has no spring and mounts through holes in wings. Attach with Cap Nuts on ends.

¼-20 X 1½" Truss-Head Screws, 4 each. Insert through leg and panel and secure with lockwasher and hex nut.

Parts List
2 ea. Legs with Wings
1 ea. Front Panel
4 ea. ¼-20 X 1½" Truss Head Machine Screw.
4 ea. ¼" lock washer
4 ea. ¼" hex nuts
1 ea. Non-Brake Roller
1 ea. Brake Roller
2 ea. ¼" Cap Nutas
4 ea. Casters, (2) Brake and (2) non-Brake pre-attached.
2 ea. Mounting Plates pre-attached.
4 ea. 6mm x 12mm Screws for attaching Cutter.

Use 4 ea. 6mm x 12mm screws up through slots and into base of cutter.

Casters are pre-installed but should be checked and tightened if necessary.

Cradle style supports material rolls on top of the two (2) Rollers. When using cradle support, put the spring on the rear roller on the Left side to disengage the brake for free roll movement.
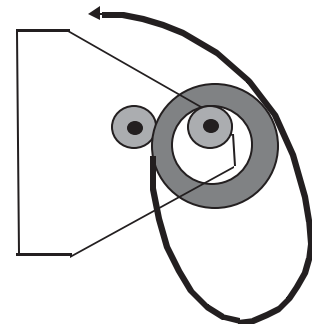
Suspended style supports material roll by inserting the rear roller through the material core. When suspending a roll use the Brake by locating the Spring side of the roller on the right (as you face the front of the stand).

Stand for Models 515 and 525
Tools Required: Slotted Screwdriver, 7/16" Hex Wrench or adjustable Wrench
Note: Shipped with top plates and Casters pre-mounted.

STAND ASSEMBLY for the Model 515/525 Pro-Series Stand

The Pro-Series Stand consists of two (2) Legs, a Front Panel, and two (2) Rollers to hold material rolls. Assembly is a simple matter of joining the two legs by putting screws (¼-20 x 1½" Truss Head Machine Screws) through pre-drilled holes in each leg and through matching holes in the front panel, then securing each screw with a lockwasher and a hex nut. One Roller is provided without a Brake System (no spring), this roller installs into pre-drilled holes in the rear "wings" which protrude from the rear of each leg. (See Diagram). The rear-most roller is provided with a Brake System (Tension Spring on one side) which can be engaged or dis-engaged by simply locating the spring on the left or right of the cart, (flipping the roller over and dropping it into the provided slot).

1. Select one of the legs and note the marking on the upper mounting plate (either LEFT or RIGHT). The marking indicates on which side of the stand to put the leg, (either Left Side or Right Side as you face the short bottom arm of the leg). NOTE: The "Wing" which protrudes toward the rear of each leg is always mounted on the "Outside" of the leg, (i.e. the left leg has the wing on the left side).

2. From the package of fasteners, select one of the ¼-20 x 1½" machine screws and insert it through one hole in the side of the leg and through the matching hole (top or bottom) in the front panel. The front panel mounts between the two legs and is attached by four long screws running through pre-drilled holes in the legs. (See Layout) The label on the inside of the panel faces the rear of the stand and is not visible from the front side of the cart after assembly. Flanges on the front panel face to the rear. Insert each of the four (4) long screws and install a lockwasher and hex nut on each (inside the front panel) DO NOT TIGHTEN THE SCREWS AT THIS TIME! It is necessary for the leg-to-panel joints to be loose so that you can insert the Front Roller through the pre-drilled holes in the wings, which protrude from the rear of each leg.

3. The Front Roller does not have a Tension Spring and is provided with a threaded shaft protruding from each end. (See Diagram). Each end of the Front Roller is inserted through one of the holes in the leg wings, one on each side, then the roller is secured by threading a "Cap Nut" (see parts diagram) onto each threaded shaft and snugging it against the side of the leg wing. Once the Front Roller is installed through the leg wings, you may place the legs in an upright position on a flat surface (either floor or table) and tighten the four (4) long screws which secure the front panel to the legs.

4. Check that the casters are snuggly threaded into the legs, note that the front casters have brakes to secure the stand in place. Install the Rear Roller (remaining roller with a spring) into the slots on the rear of each wing, simply lower the roller into the slots with the Spring located on the Right Side to engage the brake or the Spring located on the Left Side to release the break.

5. The Brake should be Engaged if you Suspend a material roll from the single rear roller, this will prevent the free unrolling of material due to the natural tendency of a roll of material to "unwind". BREN Stencil Material is commonly suspended from a single roll to prevent having to bend the material backward to achieve a "feed loop".

6. When running most thin Vinyl and Masking Materials, it is usually not necessary to suspend the rolls but rather to "Cradle" the rolls by placing them on top of the two rollers so that the roll is supported or cradled by both rollers. When material is cradled you will usually not require the Brake and will simply flip the rear roller over so that the Spring is located on the Left side of the stand. (Left side as you face the front of the Stand)

7. Mount the cutter on the stand by locating the cutter on the mounting plates so that the slotted holes in the mounting plates align with threaded holes in the bottom of the cutter. Using the four 6mm x 12mm pan head screws, attach the cutter to the plates by running a screw up through the slot in the plate and into a threaded hole in the cutter. Use all four screws as this will ensure that the cutter is properly aligned with the rollers and is secure to the stand.

8. USE CAUTION WHEN ROLLING THE STAND TO PREVENT IT FROM TIPPING OVER.

9. Load material rolls so that the material feeds from the top of the roll and directly into the back of the cutter, (see diagram). Material rolls can be loaded to ride on both rollers in a cradle or can be suspended from the single rear roller by inserting the rear roller through the core of the roll and allowing the material to hang on and be suspended by the single rear roller. The rear roller is designed to easily lift up and drop into the two slots located on the rear of the wings. This allows for easy removal and replacement of the rear roller.

Chapter 2

## Descriptions of parts and functions

2.1 Nomenclature

(1) Tool carriage :   Moves the Blade or Pen across the material during cutting or plotting
(2) Tool holder   :   Holds the Blade Holder or Plotter Pen on the carriage
(3) Pinch rollers :   Push the cutting or plotting material against the grit roll.
(4) Grit rollers   :   Feed the material forward or reverse during cutting or plotting.
(5) Cutting platen :   Position the material on the platen for cutting or plotting.
(6) Roller Knob: Raise or lower the pinch rollers to enable the material to be loaded.
(7) Control panel :   Use to set and use the machine's various functions.
(8) Stand   :   Holds the machine and material rolls while cutting.
(9) Cutting Pad: Teflon strip on which the Blade rides for back-up while cutting.
(10) Plotting Pad: Felt strip in front of Teflon strip for back-up to plotter pen.
(11) Align Guides: Vertical white marks to aid in material alignment.
(12) Labels: Mark the location for the Pinch Rollers to be correctly placed.
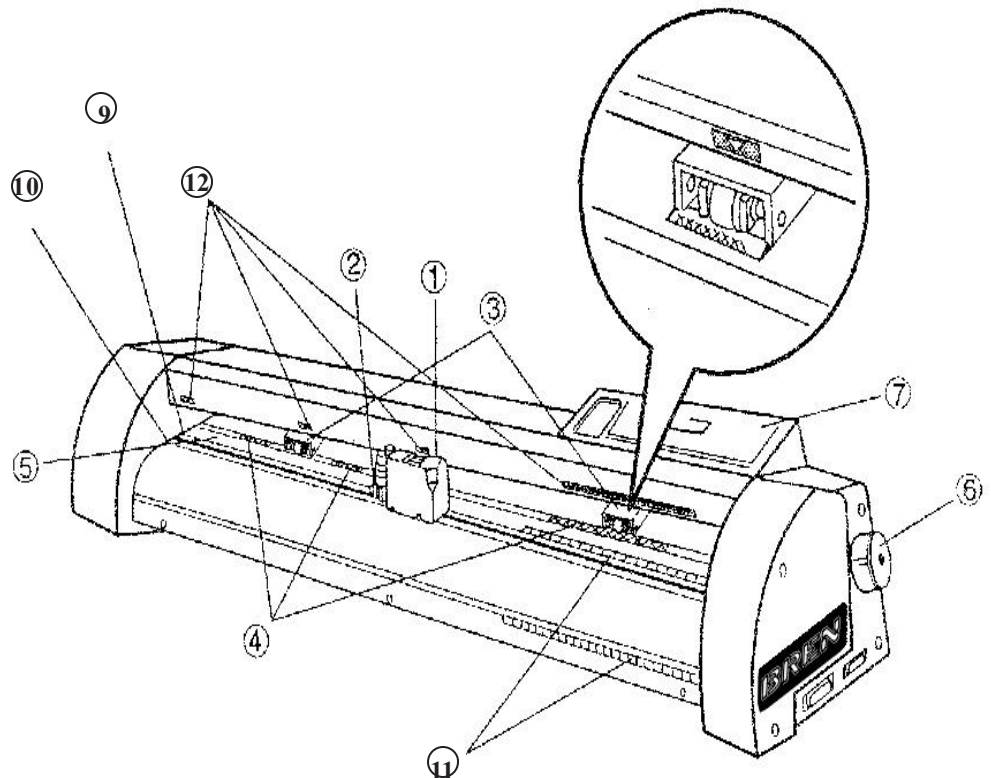
2.2 Control Panel
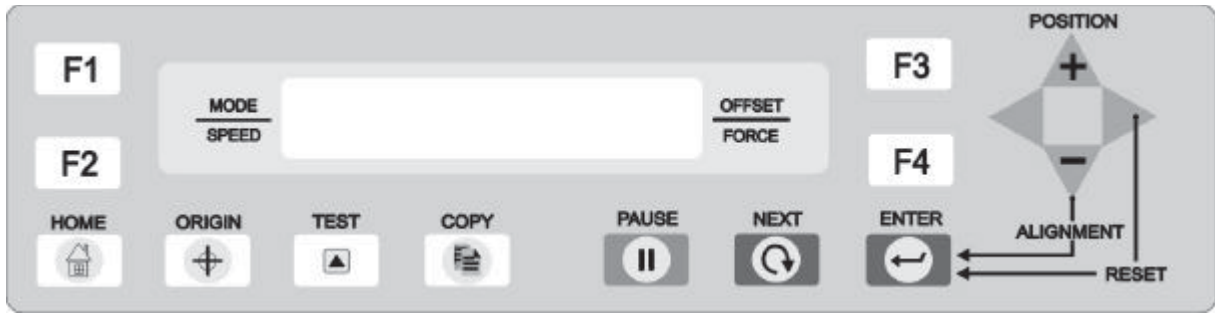
Selection keys

| F1 | Press the F1 key to select USER MODE |

| F2 | Press the F2 key to change the cutting speed |

| F3 | Press the F3 key to change the Offset Value |

| F4 | Press the F4 key to change the Pen Force |

When you press individual keys F2, F3, F4, the corresponding Values on the LCD will blink. By pressing the direction keys with + or – you can change the values up or down.

Direction keys

Position
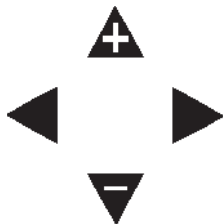
Use 4 keys ◄ ► ▲ ▼ to move the tool carriage to the desired location

☐ ▲▼ keys move the material forward or backward.

☐ ◄ ► keys move the carriage to the Left or to the Right.

☐ For quick movement of the carriage, press and hold a direction key.

☐ ▲▼ keys are used to increase or decrease default value on the menu.
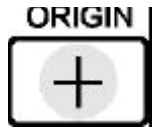
Function Keys

PAUSE
Press this key to stop the cutting or plotting operation temporarily.
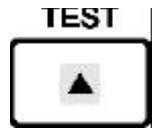When you press PAUSE again, the cutting or plotting operation will continue.

HOME
Press this key to return the display to the cut-mode menu.

ENTER
After setting a new value, press ENTER to register the same in memory.

6

Function Keys (cont.)

ORIGIN
Press this key to set a new origin for cutting to begin.

TEST
Press this key to perform a Test Cut using the presently set values.
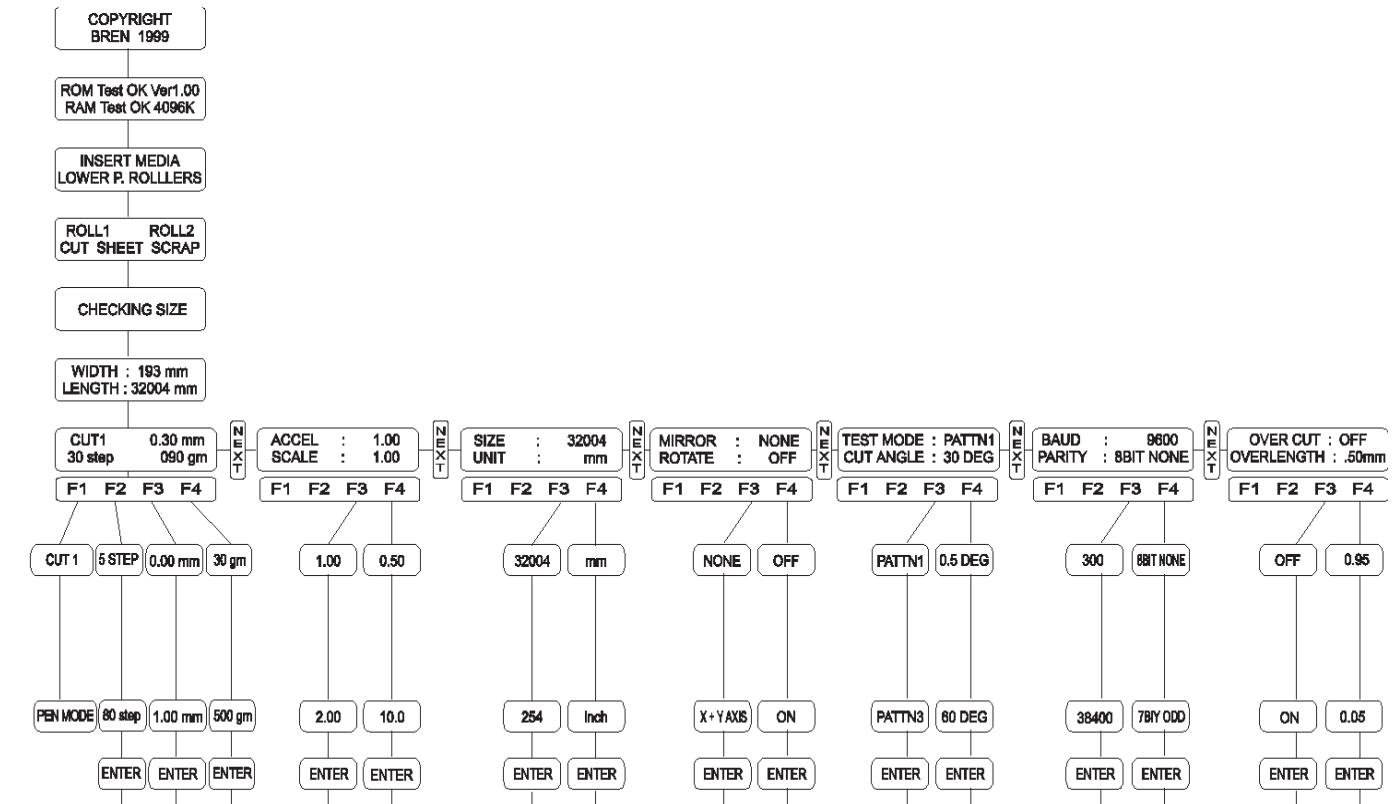
NEXT
Press this key until the desired menu appears on screen.

COPY
Press this key to repeat the last completed cut or plot.

2.3 Functional Menu of Keys

Chapter 3

CUTTER BLADES, HOLDERS AND PENS

3.1 The Cutter Blade Installing and Replacing
3.2 Adjusting the Blade Length
3.3 Attaching the Cutting Pen

3.1 Cutter Blade Replacing

Warning : To avoid injury, handle the cutter blades carefully.

☐   CUTTER BLADE TYPES

PURPOSE	BLADE NO	OFFSET	HOLDER NO	REMARKS
General Purpose	45DBN	0.25	Standard	For most Stencil and Decal materials
Thick Material	60DBN	0.50	Standard	For very Thick and some tough materials

Insert the Blade into the Blade Holder gently until it "snaps" into place with an audible "click".
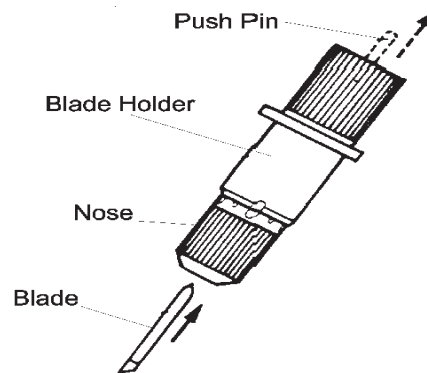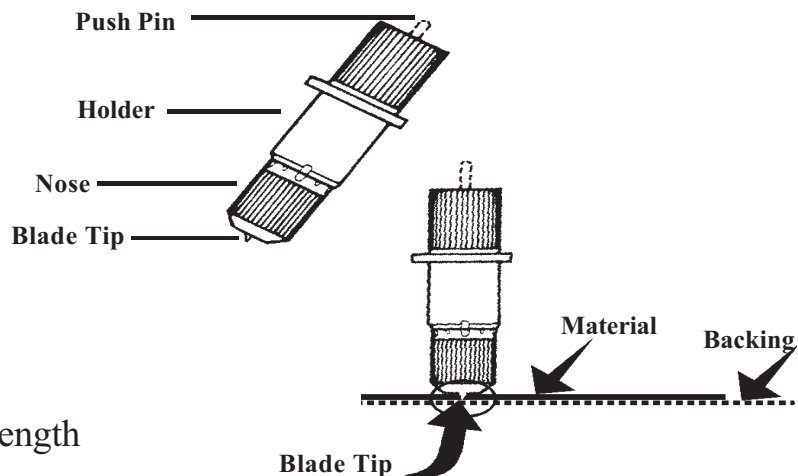

3.2 Adjusting the Blade Length

Caution : Make sure to adjust the blade length correctly. If the blade length is too long, you may cut through the backing sheet of vinyl and damage the cutting platen of the cutter.

(1) To REDUCE the blade extension, screw the Nose counter-clockwise (out away from the holder).
(2) To INCREASE the blade extension, screw the Nose clockwise (in toward the holder).


Obtaining the Correct Blade Length

If the material thickness cannot be accurately determined, adjust the blade length by gradually extending until only traces of the blade appear on the backing sheet when a cutting test is executed. For more information about the cutting test, see Section 4.5, "Running a Cutting Test."

3.3 Attaching the Tool Holder with Blade

Warning! The tip of the cutter blade is sharp. When handling the cutting tool be careful.

Rear Hole for Cutting Tool
Front Hole for Pen
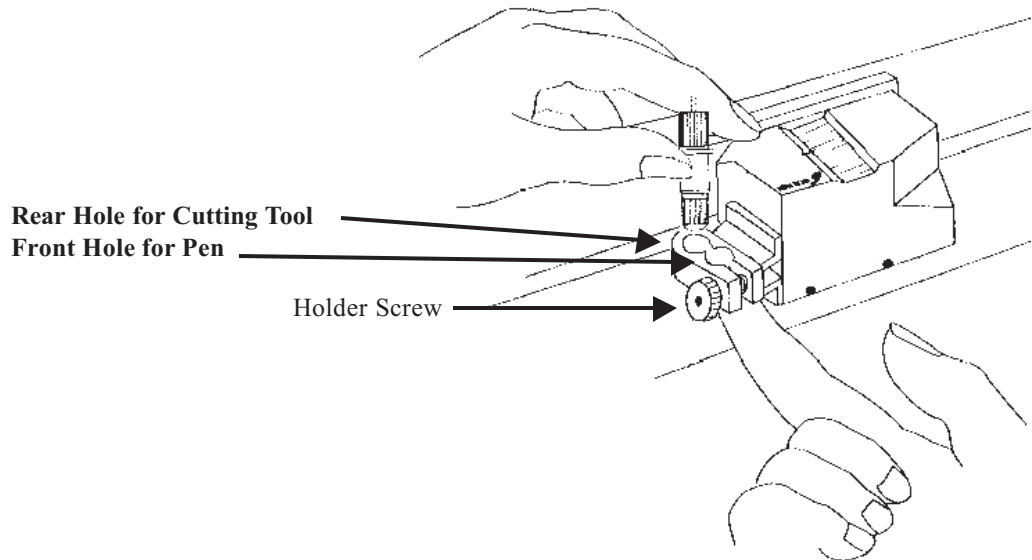
Holder Screw

(1) Loosen the Tool Holder screw. While supporting the tool holder upward by finger, push the cutting pen all the way into the holder until the flange hits the stop. **USE REAR HOLE for the CUTTING TOOL**, (the front hole is for the Plotter Pen Only).

Tool is fully seated when Flange on
Holder or on Pen contacts the carriage.
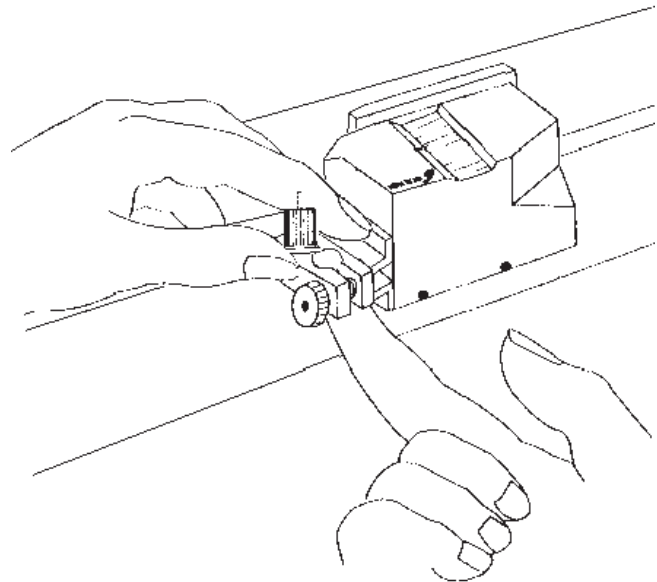
(2) When the tool is fully seated, tighten the holding screw. Snug the screw finger tight only.
Remember that the REAR hole is for the Knife and the FRONT hole is for the Pen.

Chapter 4

PREPARING TO USE THE CUTTER

4.1 Turning On the Cutter

Connecting the Cutter to a Power Supply

(1) Make sure that the cutter is turned off.
(2) Connect the cutter to a computer with connecting cable (either RS-232C serial cable or the provided parallel cable)
(3) Connect one end of the power cord provided to an electrical outlet of the rated supply voltage, connect the other end to the cutter's AC line inlet, (located on the left side).
(4) Turn on the cutter with the power switch located on the left side next to the AC inlet.
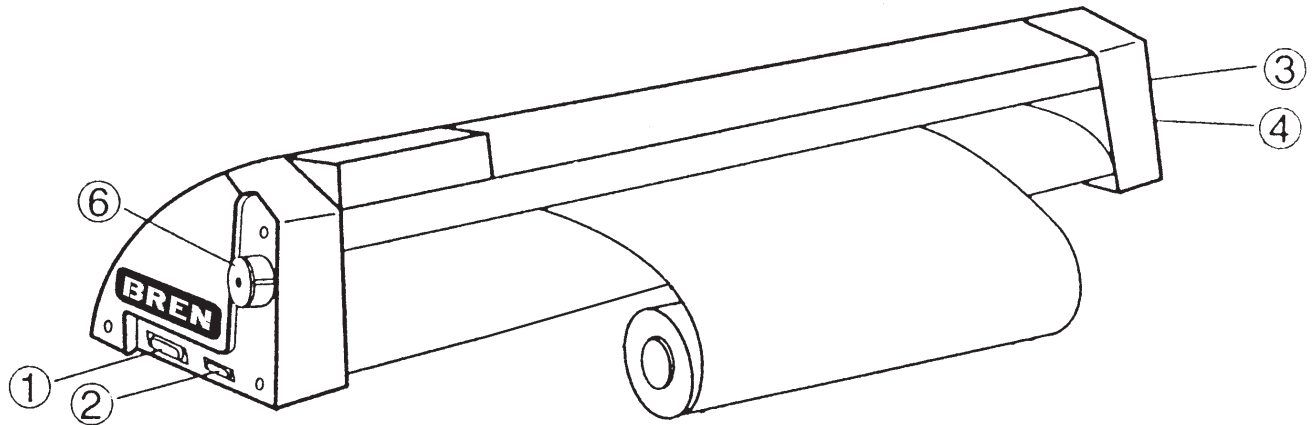
1   Parallel Interface Connector
2   Serial Interface Connector
3   Power Switch
4   AC Line Inlet
5   BREN Mobile Stand (see page 2 for stand assembly)
6   Pinch Lever Handle

(1) When power is applied, the cutter is initialized.
(2) With the material already loaded, the material selection menu appears. If no material is loaded, the user is prompted to do so. The material selection menu appears as soon as the pinch lever is lowered to secure the loaded material.
(3) Initializing is as follows

> COPYRIGHT   1999
> BREN INSTRUMENTS

> RROMTEST OK VER. 2.15
> RAMTEST OK 4096K

> ROLL 1   ROLL 2
> CUT SHEET   SCRAP
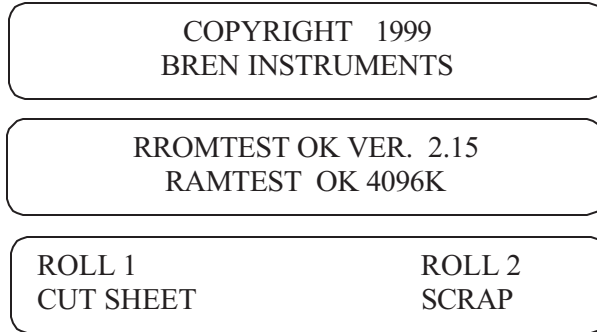
(4) At the media selection menu, select the media type as described below.

F1

ROLL 1 : The leading edge of roll material is detected and the coordinate origin is initialized with respect to the material's leading edge.

F3

ROLL 2 : The leading edge of roll material is not detected and the coordinate origin is initialized with respect to the material's leading edge.

F2

CUT SHEET : Select CUT SHEET for cut material, which detects both width and length of the material. The leading and trailing edges of cut material are detected to the maximum length 1,301mm, and the upward position on the right is the starting point

F4

SCRAP : Select SCRAP for the small sheet of material. It detects media width only.

(5) After selecting the material, an initialization routine determines the paper size and origin
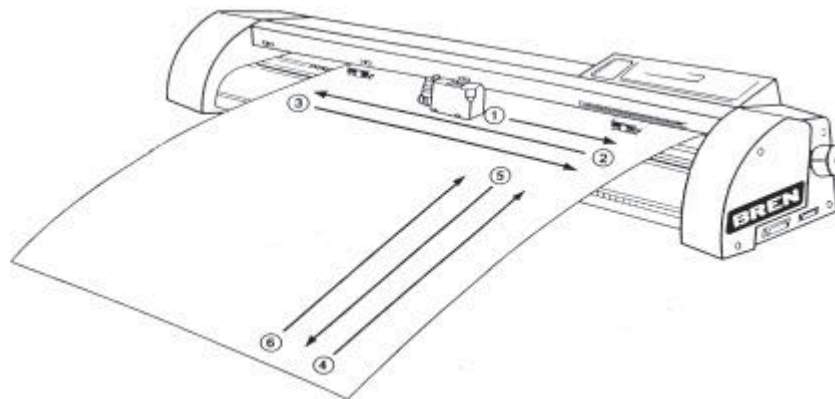
During initalizing (see the above figure), if ROLL1 is selected, the upward position of the material is start position. The material is fed in the directions indicated by the arrows and sequence 1, 2, 4, 3, 5, 6. If ROLL 2 is selected, the material is fed in the directions by the arrows and sequence 1, 2, 3, 5, 6 and the current carriage position is the start position. If CUT SHEET is selected, the material is fed to 1.3 meter in the directions of 6 indicated by the arrows and sequence 1, 2, 4, 5, 6, 3, and the upward position is the start position. If SCARP is selected, the material is detected with its width only in the direction of 1, 2 and the current carriage position is the start position.

4.2 Loading the Material

This section describes the steps for loading film or paper in the cutter. Note that the material can be loaded either before or after turning on the cutter.
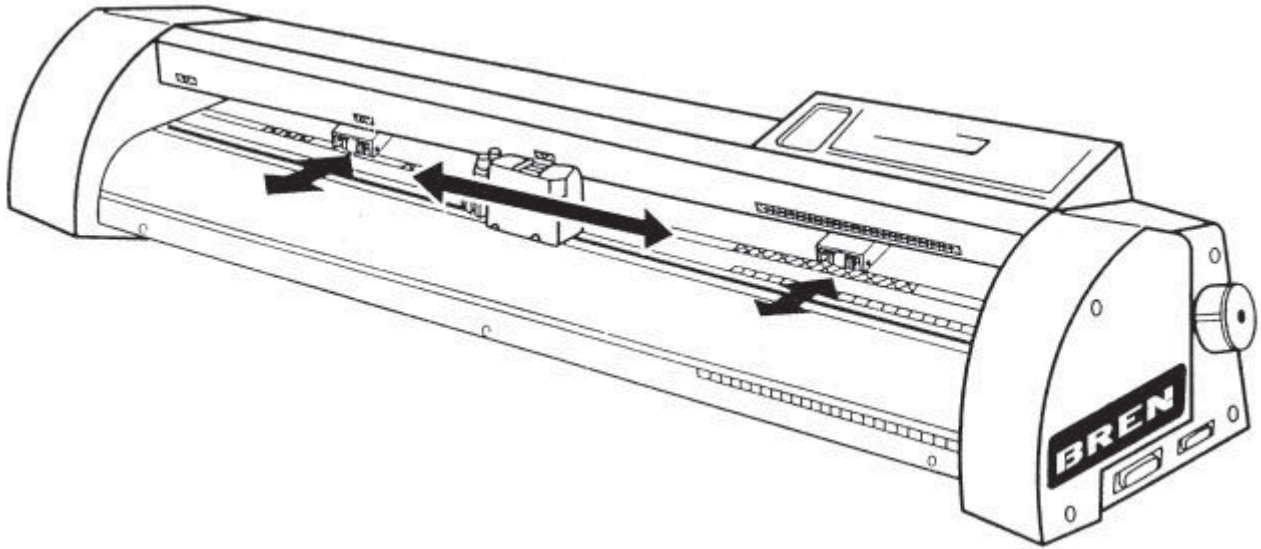
(1) Place the roll material onto Stand
(2) Turn backward the pinch lever handle to raise the pinch rollers. Push the roll of material forward through the opening at the back of the cutter until the material's leading edge is aligned with the scale. To prevent the material from being fed at an angle, secure it in place.

Note : At this time, ensure that the material passes over the paper sensors and that its leading edge is parallel with the front edge of the cutter.
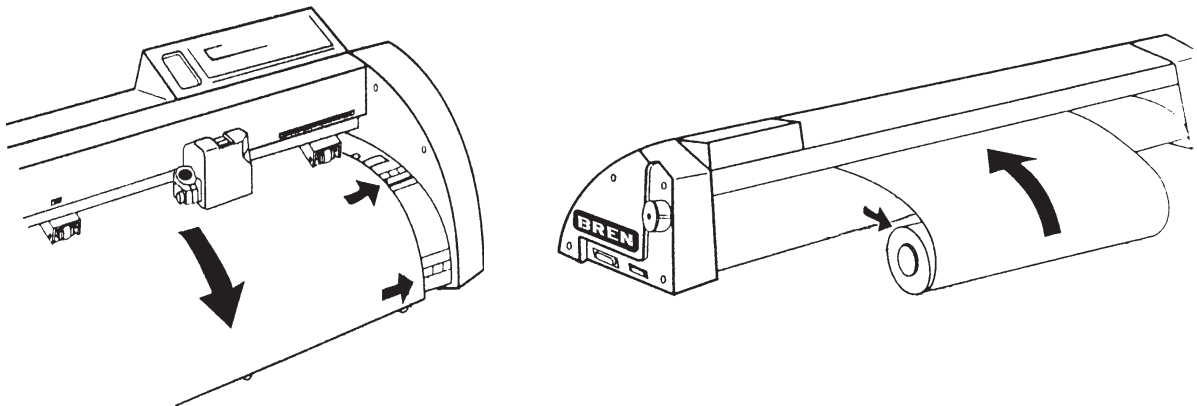
CAUTION : When using roll material or roll paper, be sure to pull out the entire amount of material required for the operation before you begin cutting or plotting. This is not required if Acceleration is set to 1 and the cutting speed is set below 30.
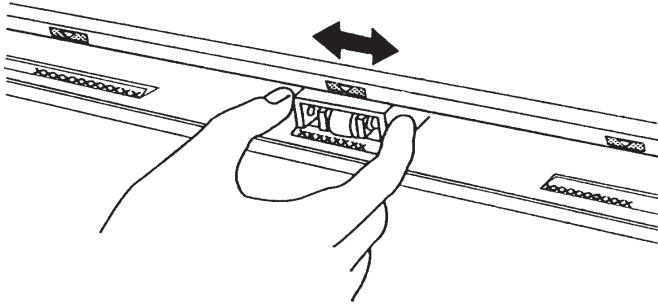
(4) Adjust the pinch roller to position on the upper part of grit roller. And position the pinch rollers about 2.5mm each from the left and right sides of the loaded material.

(5) Roller alignment seals with t mark are positioned on the posts of grit rollers. Line up the edge of the material paralled to the roll. Adjusting the pinch rollers on the left and right edges of the film by t mark, turn the pinch lever handle forward to lower the pinch roller in place.
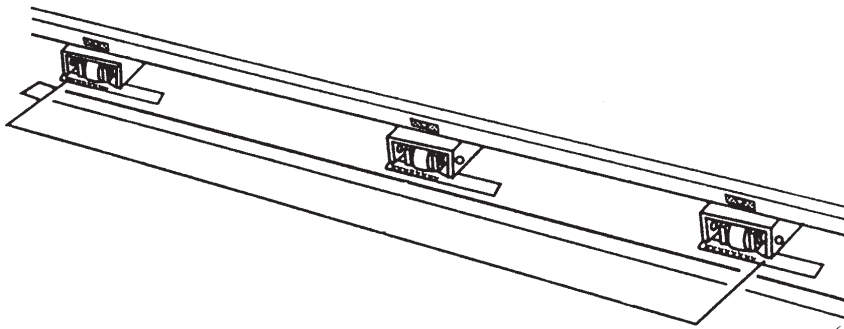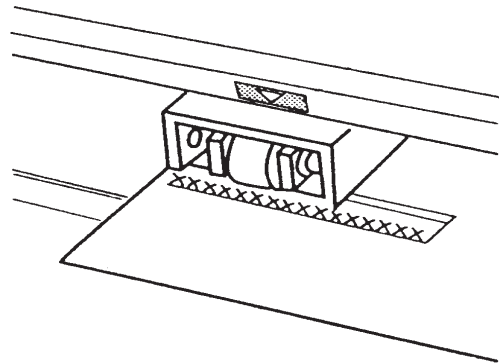
(6) Turn on the cutter by pressing the power switch on the left side. Initialization is then performed when loading the film is completed.

Warning : If the pinch roller is not in the correct position on grit roller, an error message reading "out of position, check pinch position" comes up on the LCD panel. Set the pinch roller correctly.

4.3 Setting the Cutting Mode

This function lets the user register four different groups of cutting conditions and pen mode in the cutter's memory, which is useful when using the cutter with multiple software applications. The desired group can be quickly loaded by simply pressing the function key F1 according to the media.

The quality of cutting operations is determined by the settings of the five variables below.

Blade length and type-Adjust the blade length according to the thickness of the material.

Cutting Offset ─────┐
Cutting Speed ──────┤   Set these conditions according to the combination
Cutting Force ──────┤   of material and cutter blade you are using (see the
Cutting Accel ──────┘   table below).

✶Default Value of Cutting Conditions

MODE	OFFSET	SPEED	FORCE	ACCEL	SHEET
CUT1	0.30mm	30 step	90gm	1.00	Cast Vinyl
CUT 2	0.30mm	80 step	110gm	1.00	Calendared Vinyl, Masks
CUT 3	0.55mm	20 step	120gm	1.00	Ultra-Cut II, Reflective
CUT 4	0.30 mm	40 step	50gm	1.00	Non-Cutting
PEN		30 step	45gm	1.00	Pen, Design Plotting

Note : These selected conditions greatly affect the finished quality of cutting or plotting.
   □ Raising the SPEED and ACCEL values results in lower precision but reduces the overall cutting time. This is useful when testing runs.
   □ Lowering the SPEED and ACCEL values results in higher precision but increases the overall cutting time.

Procedure

ROLL 1 : Press the F1 key to select ROLL 1 mode

| F1 | To change the settings of a group of cutting mode, CUT1, CUT2, CUT3, CUT4, and PEN MODE, press the function key F1 corresponding to the Type of material that is to be cut.

The upper row of the display changes as shown to the CUT1..CUT2.. to PEN MODE.

| F1 |

```
CUT 1              0.30 mm
30 step            90 gm
```

```
CUT 2              0.30 mm
80 step            110 gm
```

F1	↓	CUT 3 0.55 mm 20 step 120 gm

F1	↓	CUT 4 0.30 mm 40 step 0.50gm

F1		PEN MODE 30 step 0.45 gm
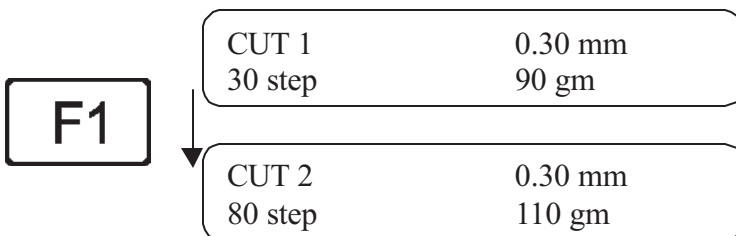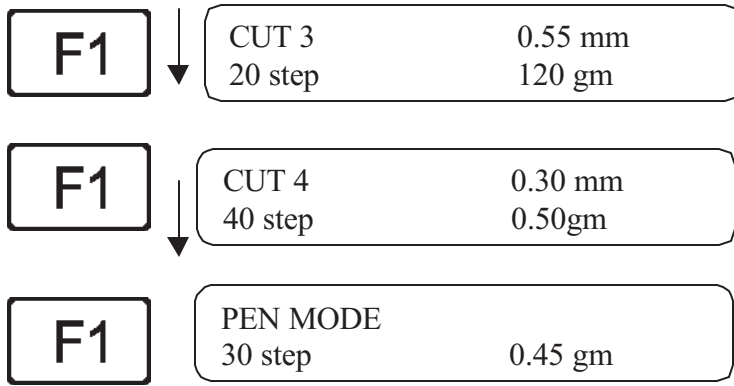
Press the function key F1 until selection you want is displayed.

Warning : When performing a Cutting Test or data is being transmitted from the computer, the mode cannot be changed, and the submenu below appears.

UNABLE TO CHANGE
WHILE PLOTTING

4.4 Setting the SPEED, OFFSET and FORCE

Each item described below is displayed for CUT1-CUT4 and can be changed as shown.

☐ **SPEED F2**

Set the travelling SPEED during testing (cutting speed from the computer is dominant).

☐ **OFFSET F3**

Set the offset of the cutter blade's tip from the center of the cutter pen.
The cutter comes with a preset OFFSET adjustment value for each type. To set the blade OFFSET adjustment, select the type of cutter blade to be used. If the OFFSET valuse is set to 0, the cutter goes into plotting mode.

☐ **FORCE F4**

Set the pressure to be applied by the cutter blade or pen tip against the material after testing.

☐ **ACCEL**

Set the acceleration rate of the pen during cutting or plotting.

The table below describes the specifiable range of each condition.

CONDITION	RANGE	REMARKS
SPEED(step)	5 to 80	5, 10, 15, …, 80
OFFSET(mm)	0.00 to 1.00	0.00, 0.05, 0.10, …, 1.00
FORCE(gm)	30 to 500	30, 35, …, 160, 170, …, 500
ACCEL	1.00 to 2.00	1.00, 2.00

Procedure : To change the value of SPEED, OFFSET, FORCE, press the corresponding **F** key

| F2 | Press the F2 key to select SPEED. |

```
CUT 1              0.30 mm
30 step            90 gm
```

Press s t keys to change and get your desired value.

ENTER
Press the ENTER Key to set blinking value.

```
CUT 1              0.30 mm
30 step            90 gm
```

| F3 | Press the F3 key to select OFFSET. |

Press s t keys to change and get your desired value.

ENTER
Press the ENTER key to set blinking value.

```
CUT 1              0.30 mm
30 step            90 gm
```

| F4 | Press the F4 key to select FORCE. |

Press these keys to change and select the desired value

ENTER
Press the ENTER key to set the blinking value.

The selected value blinks until the changed value is recorded in the memory.

When all of the displayed settings are correct, press the **ENTER** key to register the group of conditions in the cutter's internal-memory.

Note :

☐ Before beginning actual cutting, be sure to check that the cutting conditions are suitably set as described in Section 4.5, "Running the Cutting Test." The FORCE and SPEED values should be gradually raised while running cutting test.

☐ Depending on the type and thickness of the sheet, fine adjustment of the OFFSET may be required.

4.5 The Cutting Test

The [TEST ▲] function allows the user to check the suitability of the condition settings. If the test results are not satisfactory, adjust the settings as described in Section 4.3.

Warning : The cutter carriage starts moving as soon as a cutting test is selected. To avoid injury to yourself and damage to the cutter, load the material before pressing the TEST mode and then keep your hands, and other obstacles out of the vicinity of the cutting mat and material.

Procedure

ROLL 1 : Press the [F1] key to select ROLL 1 mode.

TEST   : Press the [TEST ▲] key.

If the test results are satisfactory, press the [HOME] key to return to the preceding menu. If not, proceed to the previous step.

HOME : By pressing the corresponding key, adjust the each value of 0.30mm(OFFSET) 30step(SPEED), 90gm(FORCE), in CUT1 MODE for example.

Referring to the figures of Section 4.3, gradually adjust the corresponding values while checking the results by running a cutting test.

OFFSET too Low   OFFSET Correct   OFFSET too High
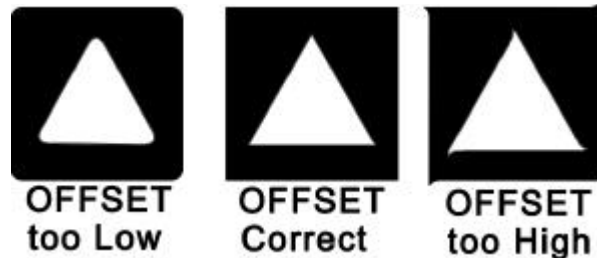
4.6 Setting the Acceleration

This function allows the user to set the speed at which the material movement starts.

Procedure

CUT 1   0.30 mm
30 step   90 gm

NEXT
Press the NEXT key

ACCEL :   1.00
SCALE :   1.00

17

F3　　Press the F3 key to set the ACCEL Value, display value will blink.

Press these keys and select a value from either 1.0 or 2.0 as desired.

ENTER　　To register the desired value, press the ENTER key
The range of value : 1.00, 2.00 refer to the Section 4.3 for the optimum
 value of ACCEL

HOME　　Press HOME key to return to the cutting mode.

4.7 Setting the Scale

This function allows the user to change the size of the design by scaling.

PROCEDURE

```
CUT 1              0.30  mm
30 step            90 gm
```

NEXT　Press the NEXT key

```
ACCEL  :          1.00
SCALE  :          1.00
```

F4　Press the F4 key for the desired SCALE value, then LCD will blink.

Press s t keys and select your desired value ranging
     from 0.50…… 10.0

ENTER　Press ENTER to set blinking value and register

HOME　Press HOME key to return to the cutting mode.

4.8 Setting the Measurement Unit

This function allows the user to set the size of material in mm or inch unit in cutting or pen plotting

PROCEDURE

```
CUT 1                 0.30 mm
30 step               90 gm
```

NEXT

Press the NEXT key

```
ACCEL  :              1.00
SCALE  :              1.00
```

NEXT

Press the NEXT key

```
SIZE  :               32004
UNIT  :               mm
```

F4

Press the F4 key to change the measurement unit, the display unit will blink

Press the these keys and select the desired unit. SIZE will change automatically when UNIT alters.

ENTER

To register the desired value, press the ENTER key.

HOME

Press the HOME key to return to the cutting Mode.

4.9 Axis Alignment

This function lets the user align the cutting axes to match the pre-printed axes on the material in order to correct any deviation in axes and origin position between the cutter and the material

PROCEDURE

```
CUT 1                    0.30 mm
30 step                  90 gm
```

ENTER

Press ENTER key and ▼ Key simultaneously

```
        ALIGN POSITION 1
X =      0   Y =              0
```
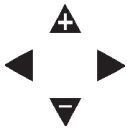
Press position direction key to get ALIGN POSITION 1 value

ENTER

Press ENTER key to memory ALIGN POSITION 2 value

```
        ALIGN POSITION 2
X =      0   Y =              0
```

Press position direction key to get ALIGN POSITION 2 value

ENTER

Press ENTER key to memory ALIGN POSITION 2 value, then return to cut mode.
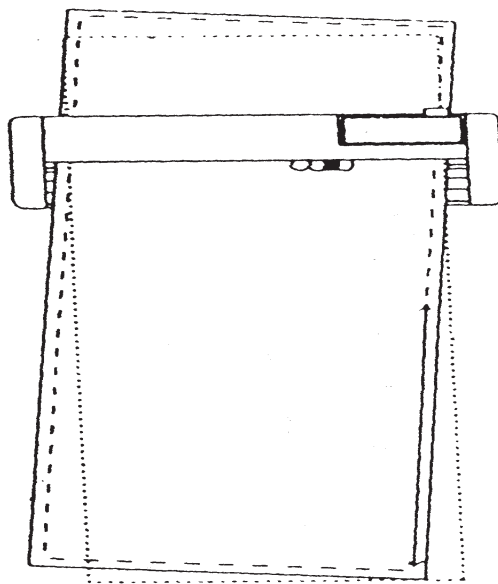
4.10 Setting the Cut-angle

This function allows the user to set the cut angle of cutter blade OFFSET.

NEXT

> CUT 1   0.30 mm
> 30 step   90 gm

NEXT

> SIZE :   32004
> UNIT :   mm

NEXT

> MIRROR :   NONE
> ROTATE :   OFF

> TEST-MODE :   PATTN 1
> CUT-ANGLE :   30 DEG

F4   : Press the F4 key, then the 30 DEG on the LCD will blink

▲▼   : Press the these keys and select the desired angle from 5 to 60 degrees to match the cutting blade in use.

ENTER   : Press ENTER to register your selected pattern in memory

HOME   : Press the HOME key to return to the cutting mode.

4.11 Using the Reset Function

This function allows you to stop plotting while in operation

ENTER + ► : Press two keys (ENTER+►) on the keyboard simultaneously.

> RESET CUTTER
> YES   NO

F2   : Pressing the F2 key will stop work that is currently in process.

4.12 Manual Material Alignment

This function lets the user correct any deviation in the plotting axes and origin position manually while the cutter is in use.

PROCEDURE

```
CUT 1                0.03 mm
30 step              90 gm
```

PAUSE   Press PAUSE key, then plotting/cutting stop temporarily

```
         PRESS PAUSE TO
        RESUME PLOTTING
```

Turn backward the pinch lever handle to lift the pinch lever, then correct any deviation of material being used.

PAUSE   : Turn frontward the pinch roller knob to lower the pinch rollers, then press the PAUSE key again

```
CUT 1                0.03 mm
30 step              90 gm
```

Operation will continue

Notice   : Wait 2-3 seconds after pressing pause key
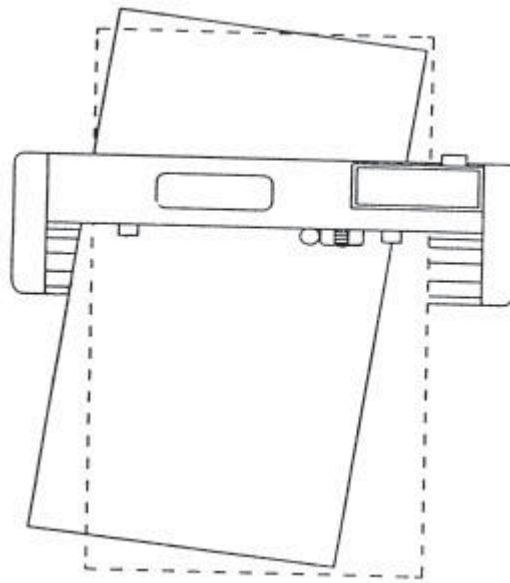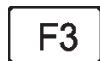
4.13 Over Cutting

This function allows the user to cut very thick material.

PROCEDURE

| CUT 1 | 0.3 mm |
| 30 step | 90 gm |

NEXT

| ACCEL : | 1.00 |
| SCALE : | 1.00 |

NEXT

| SIZE : | 32004 |
| UNIT : | mm |

NEXT

| MIRROR : | NONE |
| ROTATE : | OFF |

NEXT

| TEST-MODE : | PATTN 1 |
| CUT-ANGLE : | 30 DEG |

NEXT

| BAUD : | 9600 |
| PARITY : | 8 BIT NONE |

NEXT

| OVER CUT : | OFF |
| OVER LENGTH | .50mm |

F3 : Press the F3 key, then the LCD will blink

: Press these keys and select ON, the for OVER CUT mode

ENTER : Press ENTER to register the selected mode

F4 : Press F4 to select OVER LENGTH value

: Press s t keys and select the optimum value from .05mm to 0.95mm.

ENTER : Press the ENTER to register the selected value

HOME : Press the HOME key to return to the cutting mode

Note : The start overcut amount is set up by OFFSET value
The end overcut amount is set up by OVER LENGTH value

Chapter 5

MOVING THE ORIGIN

5.1 Setting the Size

This function is used to specify the length of individual pages when using Rolls.

PROCEDURE

```
CUT 1            0.30 mm
30 stop            90gm
```

NEXT

```
ACCEL :          1.00
SCALE :          1.00
```

NEXT

```
SIZE            32004
UNIT              mm
```

F3 : Press the F3 key to select the SIZE Mode
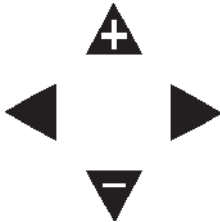
To increase or decrease the size by 254mm(10inch), press ◄or ►keys respectively and to do the same by 100inch, press (up) or (down) keys respectively.

ENTER : Press ENTER to register the blinking value chosen.

Lift up and then down the Pinch Rollers by turning the pinch roller knob.

Note : The individual page(frame) length is saved in the cutter's memory if it is turned off.
    By specifying a maximum length(32004mm), the cutter can perform long
    axis plotting to produce banners up to 32 meters (105 feet) in length.

Caution : For optimum precision, specify the LENGTH to 2 meters or less.
When the page LENGTH is set to over 2 meters, be especially careful to load the material properly to prevent it from running off during cutting or plotting. When using roll material, be sure to unroll enough so that you have provided free access to the material before cutting or plotting.

5.2 Rotating the Coordinate Axis

This function is used to move the origin and rotate the coordinate axis by 270 degrees as shown in the figure.
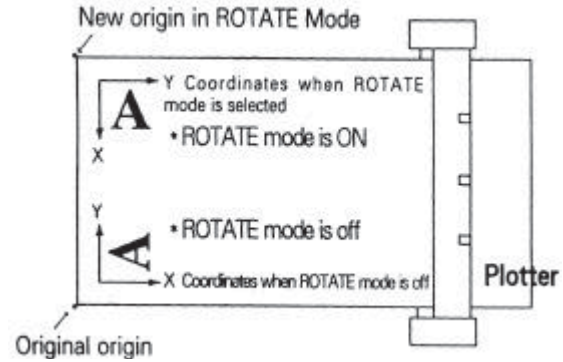
PROCEDURE

```
CUT 1               0.3 mm
30 step              90 gm
```

NEXT

```
ACCEL  :             1.00
SCALE  :             1.00
```

NEXT

```
SIZE  :             32004
UNIT  :                mm
```

NEXT

```
MIRROR  :            NONE
ROTATE  :             OFF
```

F4   : Press the F4 key to select ROTATE mode, then the ROTATE value will blink.

s t   : Press **s t** keys and select the desired value from ON and OFF.

ENTER : Press ENTER to register the blinking value. When ON has been selected, the carriage is moved to New origin.

HOME : Press the HOME key to return to the cutting Mode

Note : Your ROTATE setting is retained in the plotter's internal memory even while the plotter is turned off.

5.3 The Copy Function

This function allows the user to automatically cut duplicates of the data sent from the computer. Once the data has been stored in the cutter's buffer, it can be repeatedly cut until power turns off. The last plotted data is automatically stored and remains in the cutter's buffer.

The duplicates are obtained each time just by pressing the "COPY" key on the key board.

Note : It is possible to make the same copy 10 seconds after data is plotted out.
        The data that can be stored in the buffer is up to 4MB.

5.4 Setting the Origin

This function allows the user to move the starting point of cutting to the desired position.

PROCEDURE
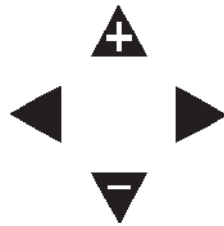
Using the direction keys, you can move the carriage to your desired position

ORIGIN   : Press the ORIGIN key to set the new origin.

```
ORIGIN X  :            XXXXX
ORIGIN Y  :            XXXXX
```

HOME   : Press the HOME key to return to the cutting mode.

5.5 Setting the Mirror

This function allows the user to cut or plot the data symmetrically on the coordinates of X, Y, X+Y axes.

PROCEDURE

```
CUT 1                    0.30 mm
30 step                   90 gm
```

NEXT

```
ACCEL :                   1.00
SCALE :                   1.00
```

NEXT

```
SIZE :                   32004
UNIT :                      mm
```

NEXT

```
MIRROR :                 NONE
ROTATE :                  OFF
```

F3   :   Press the F3 key, then LCD will blink

s t   : Select your desired coordinates from NONE, X-AXIS,
              Y-AXIS, X+Y AXIS by using the s t keys

ENTER   : Press ENTER to register the blinking character.

HOME   : Press the HOME key to return to the cutting Mode.

If the setting SIZE is less than 1,778mm, it is available to coordinate the new origin X-axis, Y-axis, and X+Y AXIS at the desired position. If the setting SIZE is more than 1,778mm, It's available to coordinate only Y-axis.

Coordinating the Mirror Axis

1) Coordinating the X Mirror Axis
   Before selecting the Mirroe Mode   After selecting the Mirror Mode

2) Coordinating the Y Mirror Axis
   Before selecting the Mirror Mode   After selecting the Mirror Mode

3) Coordinating the X+Y Axis (In case Setting SIZE is less than 1,788mm)
   Before selecting the Mirror Mode   After selecting the Mirror Mode

Chapter 6

SERIAL INTERFACE UTILITIES

6.1 Setting the Baud Rate
6.2 Setting the Parity

6.1 Setting the Baud Rate

To enable prompt compatibility with multiple software applications, it is possible to register three different groups of interface settings in the plotter's non-volatile RAM. The desired group of RS-232 interface settings can later be easily loaded from the control panel. Incorrectly set interface conditions can cause the cutter to malfunction or not operate at all. Be sure to set the cutter's interface conditions to match those of the computer and target the software application.

PROCEDURE

CUT 1	0.3 mm
30 step	90 gm

NEXT

ACCEL :	1.00
SCALE :	1.00

NEXT

SIZE :	32004
UNIT :	mm

NEXT

MIRROR :	NONE
ROTATE :	OFF

NEXT

TEST-MODE :	PATTN
CUT-ANGLE :	30 DEG

NEXT

BAUD :	9600
PARITY :	8 BIT NONE

F3   : Press the F3 key, then BAUD rate will blink.

⬆⬇   : Selecte your desired rate from 300….38,400 by using these keys.

ENTER   : Press ENTER to register the blinking value.

HOME   : Press the HOME key to return to the cutting Mode

6.2 Setting the PARITY

PROCEDURE

```
┌─────────────────────────────┐
│  CUT 1                0.3 mm │
│  30 step               90 gm │
└─────────────────────────────┘
```

NEXT

```
┌─────────────────────────────┐
│  ACCEL :              1.00   │
│  SCALE :              1.00   │
└─────────────────────────────┘
```

NEXT

```
┌─────────────────────────────┐
│  SIZE :             32004    │
│  UNIT :                mm    │
└─────────────────────────────┘
```

NEXT

```
┌─────────────────────────────┐
│  MIRROR :           NONE     │
│  ROTATE :            OFF     │
└─────────────────────────────┘
```

NEXT

```
┌─────────────────────────────┐
│  TEST- MODE :    PATTN  1    │
│  CUT- ANGLE :     30 DEG     │
└─────────────────────────────┘
```

NEXT

```
┌─────────────────────────────┐
│  BAUD :              9600    │
│  PARITY :     8 BIT NONE     │
└─────────────────────────────┘
```

F4   : Press the F4 key, then PARITY value will blink

▲
±   : Select your desired value for PARITY change from 8BIT EVEN,
▼   8BIT ODD, 8BIT NONE, 7BIT EVEN, 7BIT ODD, 7BIT NONE by
            using these keys

ENTER   : Press ENTER to register the blinking value.

HOME   : Press the HOME key to return to the cutting Mode.

Chapter 7

THE INTERFACE SPECIFICATIONS

7.1 Centronics-Compatible Parallel Interface (preferred)

This eight-bit Centronics-compatible parallel interface is generally used for interfacing printers. The input data signals are grouped into the eight bits of the DATA signals(DB0 to DB7), and each group of eight DATA signals is followed by the input of an active-LOW STROBE signal. Upon receipt of the STROBE signal, the cutter activates its BUSY signal, outputs an ACK signal, then reads the input DATA signals to begin a cutting or plotting operation.

When the specified operation is completed, the cutter awaits the input of subsequent DATA signals.

Caution : **The interface cable should be no longer than 2 meters (12 feet).**

Specifications

☐ While the parallel interface is used, data cannot be output from the cutter.
☐ Synchronization method: Asynchronous transmission by handshaking based on STROBE and BUSY signals.

Electrical Characteristics

Based on TTL-level compatibility with the logic states below.

Positive logic   "1" +2.2V or more   DATA ,BUSY
"0" +0.8V or less

Negative logic   "1" +0.8V or less   ERROR
"0" +2.2V or more   ACK, STROBE

.

Input / Output Circuitry
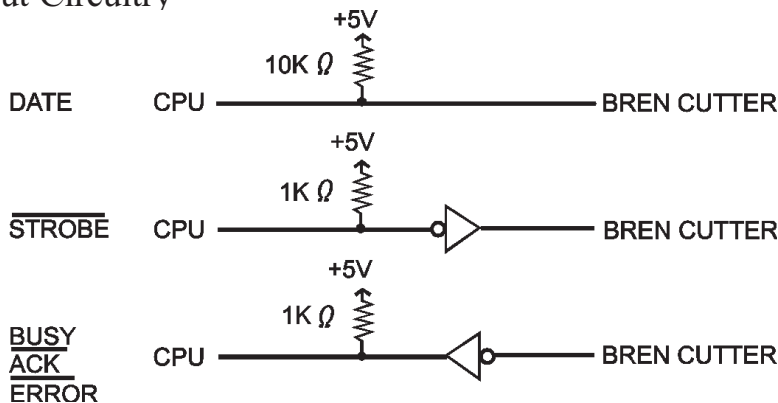
Input / Output Timing Chart
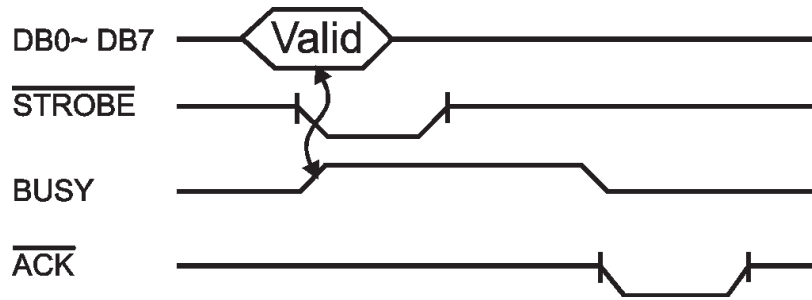
Compatible Connector

Plotter end : FCN685J036-L/Y
Cable end : 57-30360 (DDK)

Pin Assignment of the Parallel Connector

The pin assignment of the Centronics-compatible parallel interface connector is described below.

Pin No.	Signal Name	Pin No.	Signal No.
1	STROBE	19	GND
2	DB 0	20	GND
3	DB 1	21	GND
4	DB 2	22	GND
5	DB 3	23	GND
6	DB 4	24	GND
7	DB 5	25	GND
8	DB 6	26	GND
9	DB 7	27	GND
10	ACK	28	GND
11	BUSY	29	GND
12	GND	30	GND
13	SLCT	31	Not Used
14	Not Used	32	ERROR
15	Not Used	33	GND
16	GND	34	Not Used
17	Not Used	35	GND
18	+5V	36	GND

7.2 RS-232C Serial Interface

The RS-232C serial interface of your plotter conforms to the RS-232C Standard of the Electronic Industries Association (EIA).
This serial interface performs the serial transfer of digital binary data, control signals, and SYNC signals.

Specifications

Standard	CCITT V.24, EIA RS-232C
Synchronization	Asynchronous start-stop
Transfer rate	300, 600, 1200, 2400, 4800, 9600, 19200 bits/s
Stop bit	1 stop bit
Parity	Even, odd, none
Character length	7 or 8 bits

7bits

```
     ___          _____          _____
        |        |   |   |   |   |   |   |   |////|        |
        |_____| 1 | 2 | 3 | 4 | 5 | 6 | 7 |////|_____|
```

Stop bit   Data bits   stop bit
                                                      Parity bit

8bit

```
     ___          _____          _____
        |        |   |   |   |   |   |   |   |   |////|        |
        |_____| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |////|_____|
```

Stop bit   stop bit
            Data bits   Parity bit
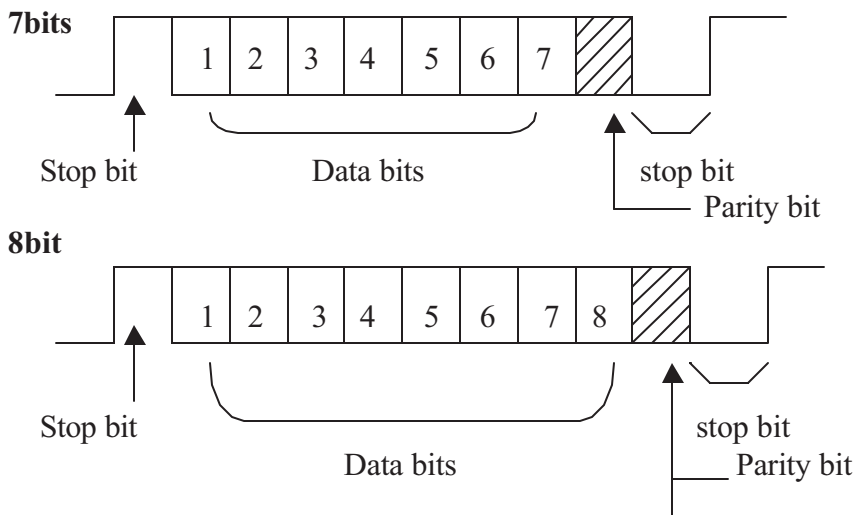
Electrical Characteristics

	RD, SD (Negative Logic)	RS, CS, DR, ER (Positive Logic)
Input voltage level	+5V to +12V -5V to –12V	Logical "0" "ON" Logical "1" "OFF"
Output voltage level	+5V to +8V -5V to –8V	Logical "0" "ON" Logical "1" "OFF"

Compatible Connectors

Cutter end ; DB-25S
Cable end   : DB-25P
        (ISO 2.6mm nuts(M2.6x0.45)should be used as the locking nuts.)

Pin Assignment of the Serial Connector

The RS-232-C connector is a DTE connector. The table that follows identifies the pin configurations.

SIGNAL NAME	PIN #	RS-232C	CCITT V.24
Frame Ground	1	A-A	101
Transmit Data	2	B-A	103
Receive Data	3	BB	104
Request to Send	4	CA	105
Clear to Send	5	CB	106
Data Set Ready	6	CC	107
Signal Ground	7	AB	102
Data Carrier Detect	8	CF	109
Secondary TX	14	SBA	118
Secondary RX	16	SBB	119
Data Terminal Ready	20	CD	108.2

The cable available for the BREN Cutting Plotters is a 10 feet, 9 to 25 pin serial cable with a 9 to 25 pin adapter. This cable will interface with all standard serial ports.
The following figure illustrates the cable's internal wiring connections.
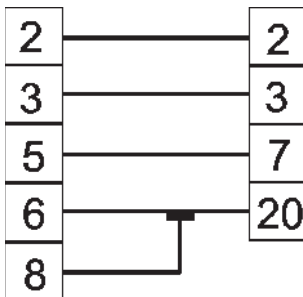
To connect CP-1230/CP-900 Series CAD Cutters in Eavesdrop to a 9 pin serial port,
Configure the cable above and use the 25 to 9 pin adapter supplied.
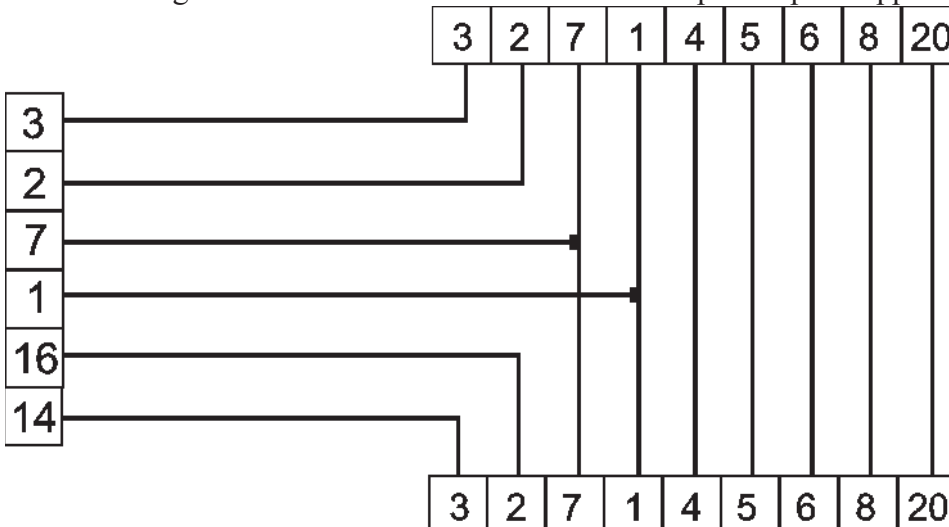
7.3 Other Interface Options

About Interfacing your BREN cutter.....

Consideration should be given to the best method for interfacing your cutter to the computer for your particular application. In general, the Parallel cable is the "BEST" first choice. If this port is in use or not available you can consider the RS232C interface (Serial) or using one of the USB ports on the computer. If using the Serial (RS232C) cable/interface you MUST set the parameters (baud, parity, stop bits, etc.) to match between the cutter and the computer. If using the USB-to-Parallel cable/interface you MUST select the correct USB port in the proper sequence.

Currently BREN cutters do NOT make use of the USB interface directly. However, this can be accomplished by using a standard USB-to-Parallel Interface Cable and connecting one of the USB ports on the computer with the Parallel interface port on the cutter.

If you have problems with the interface of your cutter/computer, first check the following:

1. Do you have the correct interface/cable selected and attached at both ends?

2. Do you have more than one interface cable attached to the cutter?

3. Do you have the correct port assignment in the Control Panel/Printers Folder selected?

4. Is the cutter on and at the Ready to Receive Data state?

5. Do you have a computer network what may be attempting to control the command? If so, it may ne necessary to modify your network software to "isolate" the port for the cutter.

If you continue to have interface problems please contact BREN Technical Support via email at support@breninc.com or bren308@msn.com or by telephone at (800) 826-3991 U.S.A. and Canada or (615) 794-6825 Worldwide.

Chapter 8

TROUBLE SHOOTING

8.1 The Cutter is Turned on But Doesn't Work
8.2 The Cutting Results Are Unsatisfactory

8.1 The Cutter is Turned On But Does Not Work

PROBLEM   The power switch turns on, but nothing works.
Nothing appears on the display panel.

➲ Cause 1 : The cutter is not being supplied with power..
➲ Solution : Check that the power cord is securely connected to the cutter's AC
line inlet and the electrical output.

➲ Cause 2 : The cutter has a potential defect
➲ Solution : Contact Bren for help determining the best course of action

➲ Cause 3 : The ROM or RAM has a potential defect.
➲ Solution :   Contact Bren for help determining the source of the problem

8.2 The Cutting Results are Unsatisfactory

PROBLEM   The corners, after they have been cut, are either too rounded or too pointed

➲ Cause : The OFFSET is incompatible with the blade type being used.
➲ Solution : Adjust the OFFSET value:
* If too low, corners become rounded
* If too high, the corners are too pointed

PROBLEM   The cut line starts out crooked.

➲ Cause 1 : The blade mounted in the holder does not rotate smoothly.
➲ Solution :   Remove any foreign matter inside the pen holder.

➲ Cause 2 : The Offset Cut Pressure is too low.
➲ Solution : Raise the Offset Cut Pressure setting (the Offset Cut Pressure is separate
from the cutting FORCE).

PROBLEM   1. The blade skips and does not completely cut lines that should be solid.
2. Solid lines are not at a constant depth

- ➲ Cause 1 : The blade is extended too far.
- ➲ Solution : Adjust the blade length.

- ➲ Cause 2 : The cutting SPEED is too high.
- ➲ Solution :   Lower the SPEED setting.

PROBLEM   Coarse resolution of curved lines

- ➲ Cause : The blade offset angle is too low.
- ➲ Solution: Raise the blade offset angle.

PROBLEM   1. The film curls up at the corners.
2. The film curls up when cutting small characters.

- ➲Cause 1 : The blade is extended too far.
- ➲Solution : Adjust the blade length.

- ➲Cause 2 : The OFFSET is incompatible with the blade type being used.
- ➲Solution : Adjust the OFFSET value:
  * If too low, corners become rounded.
  * If too high, corners are too pointed.

- ➲Cause 3 : The cutting SPEED is too high.
- ➲Solution : Lower the SPEED setting…

- ➲Cause 4 : The blade is dull.
- ➲Solution : Replace the blade.

- ➲Cause 5 : The ACCEL setting is too high.
- ➲Solution : Lower the ACCEL setting.

PROBLEM   The blade is cutting into the backing sheet.

- ➲Cause 1 : The blade is extended too far.
- ➲Solution : Adjust the blade length.

- ➲Cause 2 : The cutting FORCE is too high.
- ➲Solution : Lower the FORCE setting.

PROBLEM   Film can be cut, but it is difficult to weed afterwards

➲Cause 1 : Flim gets entangled during cutting.
➲Solution : Reduce the blade length and/or lower the cutting FORCE.

PROBLEM   1. Abnormal noise generated by the cutting tool during cutting.
2. The film is discolored where the blade has passed.

➲Cause   :   Film is stuck in the tip of the cutter plunger.
➲Solution: Adjust the blade length and cutting FORCE setting.

PROBLEM   Some parts of the film cannot be cut.

➲Cause 1 : The computer sent coordinate data that exceeds the *specified*
effective cutting area.
➲Solution : Set the effective cutting area to a larger area.
➲Cause 2 : The computer sent coordinate data that exceeds the *maximum*
effective cutting area.
➲Solution : Switch to larger film or change the coordinate data.

PROBLEM   Material is feeding at an angle.

➲Cause 1 :   Film has been loaded at an angle.
➲Solution :   Correctly reload the film.
➲Cause 2 :   The total amount of roll film to be cut was not pulled out in
advance.
➲Solution :   Pull out the required amount of film in advance.
➲Cause 3 :   Pinch roller is incorrectly positioned.
➲Solution :   Position pinch roller on the grit roller.

PROBLEM   The length of cutting results differ from the program, (a slight distance error)

➲Cause 1 :   The film is slipping.
➲Solution :   Lower the cutting SPEED.
➲Cause 2 :   The distance correction requires adjustment.
➲Solution :   Adjust the distance correction.

PROBLEM   Film is loaded but will not initialize

➲Cause 1 : Film that is nearly transparent cannot be detected by the papersensors.
➲Solution : Set the effective cutting area at the control panel.

➲Cause 2 : Strong light is preventing the paper sensors from detecting the film.
➲Solution : Change the position of the light source.

➲Cause 3 : The loaded film has not been positioned over the paper sensors.
➲Solution :   Properly reload the film.

PROBLEM   Cut characters are deformed.

➲Cause   :   The offset is too high.
➲Solution :   Adjust the Offset of Accel value.

PROBLEM   The starting and end points of cutting do not match.

➲Cause : 1. Coordinate points are incorrectly specified
              2. The Offset Cut Pressure is too low.
              3. The film is too flimsy.
              4. Blade rotation is not smooth.
➲Solution: 1. Check the coordinate data by plotting it with a pen.
              2. Raise the Offset Cut Pressure
              3. Switch to a stronger film.

Chapter 9

SPECIFICATIONS

Models 515 and 525

Mechanism	Dual Servo with Adjustable Pressure Rollers using Swivel Knife cutting with Depth adjustment
Media Types	**BREN** Stencil, Sign and Masking + Vinyl, Polyethylene, Polyester, PVC, stencilboard and Fabric
Media Width	Model **515**=3" to 20"(76-512mm) Model **525**= 5" to 29" (127-726mm)
Max. Cut Area	Model **515**= 15"W x 984"L (381 x 32m) Model **525**= 23"W x 984"L (595 x 32m)
Tools	Cutter: Carbide Swivel 35°, 45° & 60° Blades. Pens: HP style Roller Ball and Felt Markers
Speed (cutting)	Maximum 44"/sec (113 cm/sec) Adjustable from 5 to 80 steps via Software or keyboard
Blade Force	Adjustable from 30g to 500g via LCD display from keyboard or from software
Resolution	Mechanical=0.0002"(0.005mm)/step. Programmable=0.001-0.0005"(0.25-0.0125mm)/20step
Accuracy	Error<± 0.2% of travel or 0.1mm. Repeatability £ 0.1mm under 63" (1600mm)
Interface(s)	Parallel (Centronics compatible) cable provided and Serial (RS-232C) auto sensing
Buffer	4Megabyte
Instruction Set	32 bit CPU accepting **BREN** Pro-GL mode 1 and 2, HPGL™
Programmable	Four Pre-Settable User Conditions plus Pen Plotter Mode
Control Keys	HOME, ORIGIN, TEST, COPY, PAUSE, ENTER, RESET, MODE, FORCE, SPEED, ⇐ ⇑ ⇒ ⇓
LCD Display	20 characters by 2 lines
Power Required	1A @ 117V, 0.5A @ 220-240V (90 to 260 VAC, 50/60Hz autosensing with 110 V U.S. cord set)
Acoustic Noise	Cutting = less than 30 dB (A), Standby = less than 10 dB (A) (tested to ISO 7779)
Operating Env.	Temperature: 41 to 104° F (5 to 40° C), humidity: 35% to 80% non-condensing
Dimensions	Model **515**= 27"W x 11"D x 9"H Model **525**= 36"W x 11"D x 9"H
Dimensions M	686mm (W) x 275mm(D) x 237mm(H) 900mm(W) x 275mm(D) x 237mm(H)
Weight	Model **515**= 21Lb. (9.5Kg) Model **525**= 29Lb. (13Kg)
Boxed with Stand	Model **515** + Stand 27Lb. (12Kg) Model **525** + Stand 45 Lb (20.5Kg)
Accessories	Mobile Stand, Power Cord, Interface Cable, Blade Holder, 2-Blades, Plotter Pen, Manuals Software with Manuals, Cut-off Tool, Tweezers, Squeegee and starter materials kit.

WARRANTY

1. STANDARD WARRANTY

All BREN products carry a standard one (1) year Warranty that covers Manufacturing defects in Material, Circuitry and/or workmanship. The warranty begins upon date of purchase and requires that the Products covered be purchased direct from and registered with BREN Instruments, Inc. Registration filing is required on the part of the purchaser if products purchased include a Warranty Registration Card. Some products purchased direct from BREN are automatically registered and recorded upon shipment. Warranty includes all Parts, Labor and Supplies necessary to repair or replace (at BREN's option) any Materials, Circuitry and/or Parts which prove to be defective under normal use and application. Product must be returned to BREN in original or equal packing at shipper's expense. No freight collect shipments are allowed. Customer should contact BREN Service department between 8:00 a.m. and 5:00 p.m. Monday thru Friday Central Standard Time at 1-800-826-3991 for Return Authorization Number. Shipments received without prior authorization will be refused.

This warranty does not cover shipping damage or defects caused from abuse, misuse or mishandling. In addition, this warranty is void if the product has been opened or serviced in any way by other than BREN service technicians or a BREN Authoirized Service Location. No other warranty, either expressed or implied, is valid.

2. PRODUCT INSURANCE PROGRAM (PIP)

The Product Insurance Program or (PIP) is an optional program that supplements the standard warranty for the first year of ownership. Designed for the customer that requires the maximum amount of protection and the minimum amount of downtime. The PIP assures the user a same or equal replacement of a BREN product within two (2) business days of notification to BREN's Customer Service Department, at any time during the first year of ownership. Failed product must be packed in the replacement product box or original box and returned to BREN. Bren will pay all shipping costs for both replacement to user and failed product from user. Return shipping labels and documents will be provided by BREN with replacement. The Product Insurance Program can only be purchased within the first thirty (30) days from the time of original product shipment from BREN to the user and becomes effective when payment is received by BREN. Prices are as follows;

Product Insurance Program Charges

Product or Model#	1st year.
Model 912B, 912C, 515	$250.00
Model 924B, 924C, 525	$300.00
Model 1024, 1032, 535 Power-Pro	$400.00
Model 1036, 1042, 545 Power-Pro	$450.00
Model 1048, 1050, 555 Power-Pro	$500.00
Model CP918, CP624 Color-Pro	$450.00

Prices shown are subject to change without notice. Consult with BREN Factory for current pricing.

3. EXTENDED STANDARD WARRANTY

Extended warranties are available to increase the warranty period on your BREN system for the second and third year from the date of purchase. They may be purchased seperatly or jointly, at your selection. Extended warranty coverage may be purchased any time during the warranty period. The Extended Standard Warranty provides the same coverage as the Standard Warranty for year 2 and/or year 3. The customer is responsible only for shipping costs to and from the repair facility. Shipping boxes and packing can be provided by BREN prior to shipment of equipment. Contact BREN Customer Service for Return Authorization and to request packing materials. Shipping damage due to improper packing is not covered as a warranty repair and the shipper will be liable for damage to a system caused by improper or inadequate packing. Shipping boxes are available from BREN.

Extended Standard Warranty Charges

Product or Model#	2nd Year	3rd Year
912B, 912C, 515	$200.00	$200.00
924B, 924C, 525	$250.00	$250.00
PP-1024, 1032, 535	$250.00	$250.00
PP-1036, 1042, 545	$300.00	$300.00
PP-1048, 1050, 555	$350.00	$350.00
CP918, CP624	$300.00	$300.00

4. EXTENDED PRODUCT INSURANCE PROGRAM (EPIP)

The Product Insurance Program (PIP) may be extended to provide the same two business day replacement of a BREN product to the 2nd and 3rd years of ownership. Upon notification from customer to BREN of a problem which can not be remedied over the phone to the customers satisfaction, BREN will provide to the customer a replacement of same or like equipment complete with return shipment packing, box, return shipping documents and labels. Customer will only be required to remove replacement machine from packing and put malfunctioning machine in provided packaging. BREN will be responsible for having return unit picked-up by freight agency and returned to the nearest BREN repair facility. The Extended Product Insurance Program is in addition to the Extended Standard Warranty. You must purchase both the Extended Standard Warranty and the Extended PIP in order to have PIP coverage for year 2 and/or year 3. The following prices are added to the Extended Standard Warranty prices.

Product Insurance Program Charges

Product or Model#	2nd Year	3rd Year
912B, 912C, 515	$200.00	$200.00
924B, 924C, 525	$225.00	$225.00
1024, 1032, 535	$275.00	$275.00
1036, 1042, 545	$325.00	$325.00
1048, 1050, 555	$375.00	$375.00
CP918, CP624	$350.00	$350.00

Prices shown are subject to change without notice. Consult with BREN Factory for current pricing.