



Table of Contents

1.0	GENERAL INFORMATION	4
1.1	Precautions.....	4
1.2	What is in the box.....	4
2.0	FLOOR STAND INSTALLATION	5
2.1	Floor stand hardware.....	5
2.2	Floor stand parts	5
2.3	Attach stand feet to stand legs.....	6
2.4	Attach stand cross rail to legs.....	6
2.5	Attach roller bar bracket to stand legs.....	6
2.6	Alignment system install	7
2.7	Attach the floor stand to the machine	7
2.8	Plotter head & alignment system assembly	8
2.9	Vinyl alignment scale for setting up guide rings.....	9
3.0	BLADE INSTALLATION	11
3.1	Installing the blade	11
3.2	Adjusting the blade.....	11
3.3	Removing the blade	11
3.4	When to replace blades	11
3.4.1	Correct blade depth	12
3.5	Install the blade holder rubber O-ring	12
4.0	APPERANCE	13
4.1	Standard alignment system (front and back)	13
4.2	Standard alignment system (Angled Back and Angled Front).....	14
4.3	Standard alignment system (Right and Left)	15
4.3	Right cap.....	15
4.4	Operating panel & functions	15
5.0	INSTLLATION & TESTING	17
5.1	Plotter setup	17
5.2	USB connection between the cutter and computer	17
5.2.1	Compatible computer operating systems	17
5.2.2	Installing the USB cutter/printer driver.....	17
5.3	Setting the zero point	17
5.4	Setting the mode.....	18
5.4.1	Force.....	18
5.4.2	Speed	18
5.4.3	Baud Rate.....	18
5.4.4	XP/YP	18

5.4.5	On / Off (pause the plot).....	19
5.5	Test Cut	19
5.6	Calibration	19
5.6.1	Cut a known dimension.....	19
5.6.2	Test case	20
6.0	BLADES.....	21
7.0	TROUBLESHOOTING	22
7.1	Static dissipation	22
7.2	Plotting quality settings	22
7.3	Potter tracking quality parameters	23
8.0	RECOMMENDATIONS.....	24
9.0	MAINTENANCE	25
9.1	Cleaning.....	25
9.1.1	Recommended Methods.....	25
9.1.2	Cleaning the grit roller	25
9.1.3	Cleaning the pinch rollers	25
10.	CONTACT.....	26

1.0 GENERAL INFORMATION

1.1 Precautions

Please read these instructions and precautionary notes carefully before using the machine for the first time.

- Do not place magnetic objects near the cutting head as it will affect cutting pressure and possibly damage the carriage mechanism.
- Release the pressure contact rollers when not in use by flipping the pressure levers up on the back side of the plotter.
- Keep your hands or other parts of the body far from the carriage when using the plotter.
- Never open the plotter case and do not attempt to modify the plotter without instructed to do so by a technician.
- Avoid liquid spills and metal objects from entering the interior of the plotter.
- Ensure the power supply is grounded. Do not bypass the ground lead for the plotter. Grounding is important for proper plotter function. Your stand should be electrically connected to the plotter.
- Ensure that the main power supply (220V/110V) does not fluctuate by more than $\pm 10\%$. In case of extreme main power fluctuations, use a voltage stabilizer.
- Unplug the power lead during long periods of inactivity.
- Keep your hands away from the blade holder while the carriage is running!
- Cancel the active job or preferably, power down the cutter before adjusting the blade holder.
- Keep the plotter away from children and never leave it or its parts unattended when plugged in.
- To avoid injury, do not touch the tips of the cutting blade. Blade tips are delicate.
- Set up the plotter on a stable base to avoid danger of falling.
- Never run the plotter during a thunderstorm as lightning could damage or destroy the plotter. During severe weather, unplug the plotter.
- Do not use your hands to manually move the carriage, use the control buttons in off-line mode instead. Manually moving the carriage can induce currents from the motor into the motherboard, overloading the electronics and damaging the plotter.
- Do not unplug the connection to the computer lead line (USB cable) when the plotter is running as this may cause damage.

1.2 What is in the box

NOTE: Please check immediately to ensure that you have received the following items:

- | | |
|-------------------------------------|----------------------------|
| • Plotter | • Blade holder |
| • Plotter stand (dismantled) | • Pen holder and pen |
| • Power cord | • Safety fuse (spare) |
| • Lead line (USB cable) | • 2x 60° Drag knife blades |
| • Stand hardware | • 2x Static String |
| ○ 9 Plastic inserts | • 2 Rubber O-Rings |
| ○ 17 Socket cap head machine screws | • 1 Spanner |
| ○ 13 Flat head fasteners | • 1 hex key |

2.0 FLOOR STAND INSTALLATION

2.1 Floor stand hardware

- 8 Plastic inserts (+ 1 spare) used to connect crossbar to legs.
- 16 Socket Head Cap Machine Screws (+ 1 spare) used to connect feet to legs and crossbar to legs.
- 12 Flat Head Fasteners (+ 1 spare) used to connect basket rails and roller bar brackets to legs.
- Collar 1
- Collar 2
- Roller bar adapter
- Bolts, washers, fasteners
- Deep well sockets (11mm and 14mm)
- Thin bladed Philips's head screwdriver



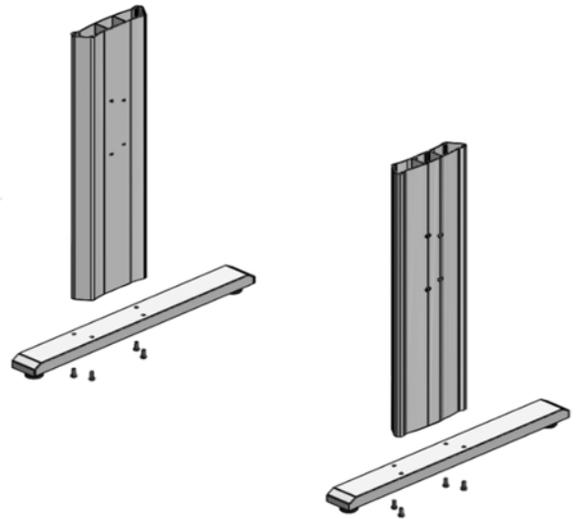
2.2 Floor stand parts

- Plotter head
- Support stand
- 2 Stand feet
- 2 Stand legs
- 1 Cross rail
- 2 Basket support brackets
- 2 Roller bar brackets (left and right)
- 1 Basket with bars across both ends



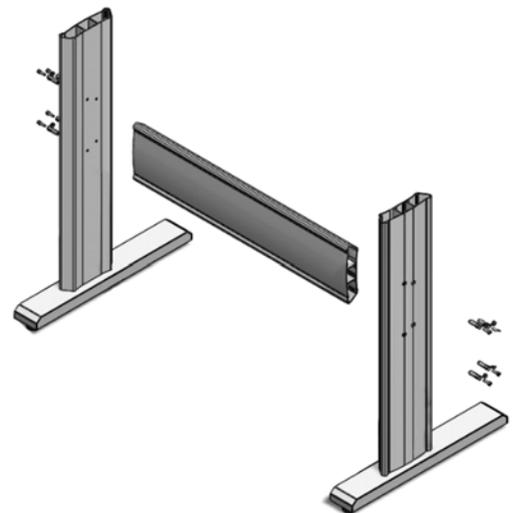
2.3 Attach stand feet to stand legs

1. Position the support for the left side perpendicularly to the bottom stand and place the socket head machine cap screws into the holes.
2. Tighten them to form a left T-stand.
3. Repeat the same steps with the support for the right side.
4. Pay attention to the orientation of the feet with respect to the legs and the hole pattern on the sides of the legs. The feet will protrude farther to the rear of the plotter after assembly.



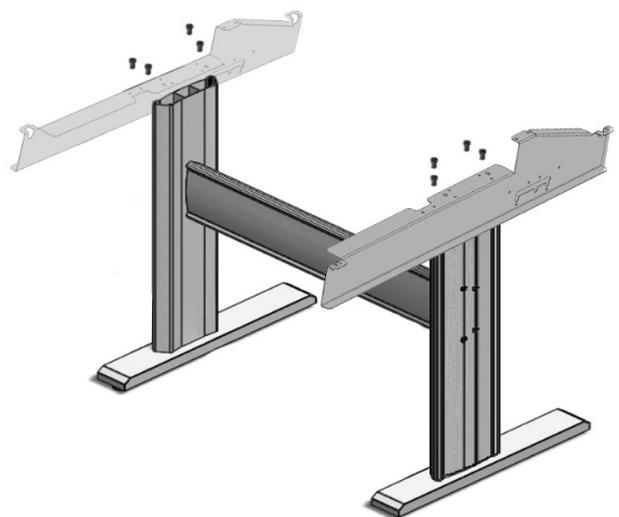
2.4 Attach stand cross rail to legs

1. Place the remaining socket head machine cap screws into the plastic inserts.
2. Place the legs upright on the T-stand and put the screws into the holes, but DO NOT fully tighten them yet.
3. Repeat the same steps for both sides until the center crossbar is connected to the stand legs.
4. After all fasteners are engaged with the cross rail, tighten all 8 of them.



2.5 Attach roller bar bracket to stand legs

1. Position the roller bar brackets to the floor stand as shown and tighten screws.
2. Use the flat head fasteners (4 for each bracket).



2.6 Alignment system install

1. Use U-bolts (4) to attach precision roller bars to vinyl alignment support brackets.
2. Repeat for all 4 U-bolts.



2.7 Attach the floor stand to the machine

1. Remove the four nuts from the bottom of the plotter head.
2. Mount the plotter to the top of floor stand by placing the plotter on the stand and aligning the four bolts with the slots in the stand mounting flanges.
 - a. It is recommended that two people place the plotter head on the stand.
3. Secure the plotter to the stand using the nuts that were removed from the mounting bolts and washers.
4. Use the 14mm deep well socket to snug all 4 bolts.



2.8 Plotter head & alignment system assembly

1. Place 1 vinyl roller support rods on the inner support pocket on the stand.
2. Slide the guide rings on the second support rod and place on the outer support pocket on the stand.
3. Insert the spacer ring in the support pocket on the right side.
4. Gently slide the support rod onto the support pocket and aligning it with the spacer ring.



5. Install both static cords by attaching them using a knot to the left and right U-bolts of the vinyl alignment bars.



6. Place the basket bars on the basket support rails.
7. The ends of the basket bars go into the holes in the support rails. The basket should go under the stand cross rail.

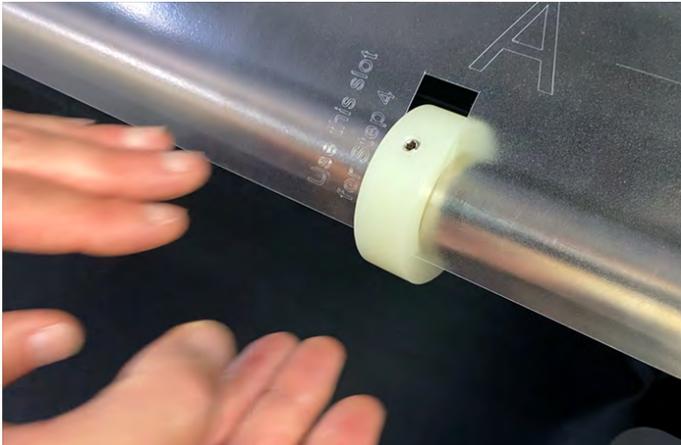


2.9 Vinyl alignment scale for setting up guide rings

1. Open the pinch roller handle located at on the back right of the plotter by pulling it towards the front.
2. Slide the vinyl alignment scale under the pinch rollers keeping the right edge flush against the inside edge of the plotter head and that the front edge of the guide is in line with the front guide roller.



3. Close the pinch roller handle that was opened in step 1 to lock the vinyl in place.
4. Slide the guide wheel so that it sits in the cutout gap of the alignment scale with the set screw facing upwards and tighten the set screw.



5. Open the pinch roller and slide the alignment scale to the left so that its right edge is flush with the left edge of the guide ring that was tightened in step 4.
6. Align the scaled line on the vinyl (1 below) with the center line on the plotter ruler (2 below) and close the pinch roller handle to keep the vinyl in place. Be sure that the line is centered on the left and right of the ruler.



7. Follow the printed instructions carefully on the alignment scale. They show how to place all 6 guide rings in a specific order.
8. Slide the guide rings on the back of the plotter into position so that they are flush with the edges of the vinyl.
9. Use an Allen wrench to tighten each of the set screws of all 6 guide rings until snug.

3.0 BLADE INSTALLATION

CAUTION: DO NOT touch the tip of the blade with your fingers.

NOTE: The blade is a consumable item. You will always get the best quality cut with a newer blade.

3.1 Installing the blade

1. Push the blade to the bottom of the blade holder.
2. Make sure the shoulder side with the blade tip is pointed outward.

3.2 Adjusting the blade

1. Adjust the blade tip to suitable length by unlocking (rotate counterclockwise) the lock nut.
2. Rotating the blade holder shield.
3. Relock the lock nut (rotate clockwise).

3.3 Removing the blade

1. Press the push-pin to remove the blade from the blade holder when replacing blade.

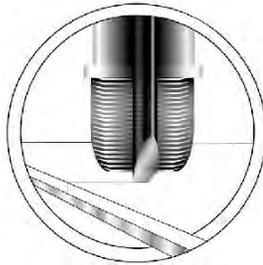
3.4 When to replace blades

- The tip of blade is broken.
- The cutting traces are not as good as they were when the blade was new.
- The blade does not cut cleanly even though the blade force has been raised significantly.

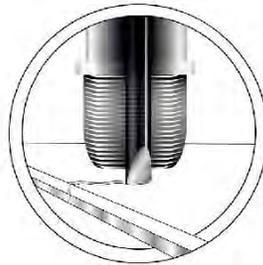


3.4.1 Correct blade depth

Correct blade depth is important to achieve good quality plotting. The blade does not need to be exposed from the blade holder shield much. It is recommended to start with an exposure distance of about 1/32" (approximately the thickness of a credit card). Plotters cut by force and the blade should not cut through the vinyl as it will damage your Teflon cutting strip. The goal is to cut approximately 80% deep into the vinyl. Enough to allow you to tear the vinyl cleanly after plotting. **Do not cut all the way through the vinyl.**



Correct depth



too long



Too short

3.5 Install the blade holder rubber O-ring

When plotting thick vinyls such as vinyl, the blade holder needs to be biased up in the blade holder clamp. To accomplish this, add a rubber O-ring under the flange of the blade holder. See pictures (right and below) for proper installation of the rubber O-ring and proper loading of the blade holder into the blade holder clamp.



4.0 APPERANCE

4.1 Standard alignment system (front and back)



4.2 Standard alignment system (Angled Back and Angled Front)



4.3 Standard alignment system (Right and Left)



4.3 Right cap

From left to right

- RS-232 port
- USB connection port
- On-off power switch
- Fuse panel
- Power plug receptacle

NOTE: Between the on/off power switch and the power plug receptacle is a sliding compartment that holds the fuse.

NOTE: The RS-232 port is for firmware programming only. It cannot be used to send files to the plotter. The USB port is the only port used for sending files to the plotter.



4.4 Operating panel & functions

- **LCD screen:** Display function and error messages
- **Reset:** Restart
- **Option:** Function keys
- **Set:** Set up function, can change XP/YP, Tool offset, and sensitivity
- **Test:** Perform cutting test. This button will send a 1" triangle in a square test pattern to the plotter. It is recommended to perform a test cut each time new vinyl is loaded into the plotter. This test pattern does not have blade compensation or overtravel.



- **Laser:** On/Off laser
- **Enter:** Set item or register the immediately preceding input value.
- ▲ **Speed:** Increase the value of cutting speed and quality
- ▼ **Speed:** Decrease the value of cutting speed and quality
- ◀ **Force:** Increase the value of cutting force
- ▶ **Force:** Decrease the value of cutting force

5.0 INSTLLATION & TESTING

5.1 Plotter setup

- Ensure that the plotter is on a flat solid surface and keep the surrounding environment clean and dry.
- The plotter is compatible with 110V/220V voltage. Be sure to use the corresponding voltage matching what your plotter is set for. If the plotter needs to be converted from 110V to 220V or vice versa, contact technical support.
- When turning on the power switch, the carriage will automatically move to the right and left and then stop. If the carriage needs to be adjusted, press the On/Off Line button and use the arrow button to move the carriage and vinyl. Do not manually move the carriage as doing so will cause a reverse current to flow into the motherboard which can potentially damage the internal electronics of the plotter.

5.2 USB connection between the cutter and computer

5.2.1 Compatible computer operating systems

- Windows 10, Windows 8, Windows 7, Windows XP, and Windows 2000
- Windows ME, Windows 98, Windows 95 and lower are not supported

5.2.2 Installing the USB cutter/printer driver

NOTE: Install the USB cutter/printer driver prior to connector the plotter to the PC.

NOTE: For most Windows systems, the plotter will use the USB printer drivers embedded in the Windows operating computer. Normally, no drivers will need to be installed. In the event your plotter does not connect automatically to your computer, you may install drivers as follows if directed by technical support.

1. Download the applicable files as directed by technical support, the computer will automatically install the USB driver as a new COM port.
2. Connect the USB cable to the plotter and the computer USB port.
3. Windows will detect the plotter and install the USB printer driver automatically, be patient and give Windows sufficient time for recognition and driver installation.
4. If you have a 32-bit computer the driver can be installed directly, if you have a 64-bit computer you will need to right click on the file and select run as administrator. The installation file needs administrative privileges to install correctly. Also, the files should not be in a ZIP folder. If you have downloaded the files from the internet and they are compressed in a ZIP folder extract them into a normal folder before installing them.
5. Check for the driver in Device Manager under Universal Serial Bus Controllers / USB Printing Support. If the USB printer support driver does not appear, re-check the power and the USB connections to ensure the plotter is recognized.

5.3 Setting the zero point

The zero point is the point on the loaded media where the plot job will start. The zero point is usually needed to be set when sending a job to the plotter because it does not know where the media is located. It also does not know where the left and right ends of travel are. The travel is electronically limited by optical limit switches embedded in the top rail. If a job is sent to the plotter that is too wide for the available cutting area, the

carriage will trip the optical limit switch and your image on the left or right side will be truncated or compressed. Avoid running into the left or right side of the cutter by properly calculating the width of the job and the width to the left of the zero point of vinyl on the plotter.

1. Switch the plotter on.
2. When the display reads Speed and Force, the plotter is in online mode and waiting for instructions from the computer. In this mode, the speed and force can be adjusted, even during a job.
3. Press the On / Off Line button.
4. Move the carriage and the vinyl using the arrow buttons
5. If the carriage and vinyl are moved, pressing the On / Off Line button again, returns the carriage back to its original position. This is because the cutter remembers its origin position.
6. If the carriage and vinyl are moved, pressing the Enter button, the carriage origin is reset. This will be the new point that your plotter will begin at when the next job is sent. Since the plotter cuts from right to left, it is recommended to set the zero point at the closest front right corner that is available.
7. Always place the blade tip inside the perimeter of the vinyl. The plotter will start cutting from the exact point it begins at. It is recommended to start ½" (13 mm) from the side edges and at least one inch (26 mm) from the front edge. When the margin is too small, the front edge of the vinyl can catch on the support plates and cause the job to be ruined.

5.4 Setting the mode

Pressing the Mode button multiple times in offline mode to toggle through the following menus:

5.4.1 Force

Use the Force ◀ and ▶ buttons to set the force in units of approximately one gram; the valid range of values is between 0g and 750g (servo) or 0g and 510g (stepper), 2g or 3g per step.

When setting the force, note that the correct setting mainly depends on the blade holder, the position of the blade, and the vinyl. These settings are subject to variation. **It is highly recommended to press the test button and send a test job to the plotter to verify force after changing every roll of vinyl.**

5.4.2 Speed

Use the Speed ▲ and ▼ buttons on the operating panel to set the speed while in online mode.

X-Scale/Y-Scale: DO NOT change the X-Scale or Y-Scale values as they are used to compensate for wear and tear of the transport belts. Only change these settings if jobs come out distorted and instructed to by a technician.

5.4.3 Baud Rate

The Baud Rate is the communication speed for the cutter and the serial port on your computer. This setting must reflect the baud rate set in the properties for your COM port and in the cutting software you are using. A default value of 38400 is typically set and rarely should be changed.

5.4.4 XP/YP

DO NOT change.

5.4.5 On / Off (pause the plot)

Press this button to pause the current job. The display will show the force and speed which can be modified.

- To pause the job, press the Test button.
- To end the job, press the Reset button.

5.5 Test Cut

The plotting test helps you verify the blade holder setting and cutting pressure. It should provide clean and straight cuts in the loaded vinyl. It should cut approximately 80% through the vinyl. Press the Test button to perform a plotting test. The plotter will cut a square containing a triangle divided into four quadrants. If it cuts through the vinyl, either the force is too high, the blade is too sharp for the force, or blade holder setting is incorrect. Change the setting and repeat the test until satisfactory results are obtained.

5.6 Calibration

It is recommended to verify the length and width of finished jobs with a certified tape measure such as a Starrett. In the event the cutter needs calibrating please follow the steps below.

5.6.1 Cut a known dimension

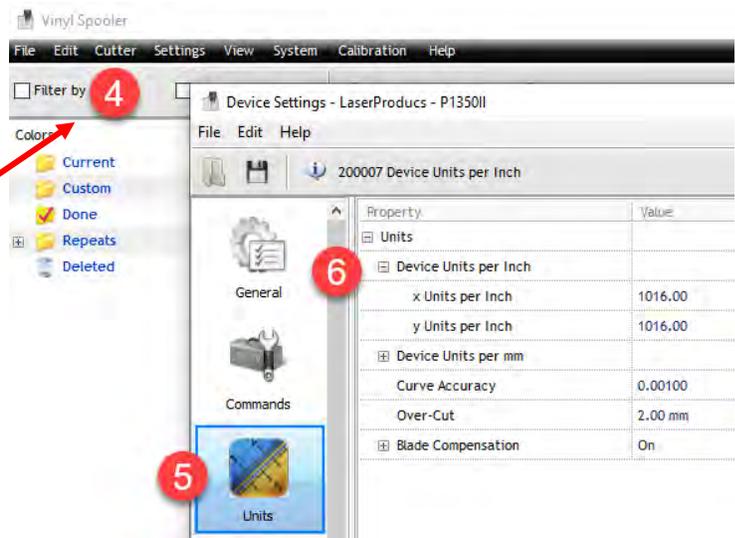
It is important to know the exact decimal equivalent of the length.

1. Create a 24" x 120" rectangle.
2. Send the 24" x 120" rectangle to the plotter three times.
3. Measure the x-direction edge (forward and back, not the carriage/blade) on each of the three jobs with a certified tape measure and average their length. You can use the same piece of vinyl and offset the three jobs by an inch to save vinyl.
4. Calculate the New Scale Factor using the following method

$$\text{Target Nominal} / \text{Actual Measured} \times \text{Current Scale Factor} = \text{New Scale Factor}$$

The New Scale Factor will be used to change the X-direction motor steps (scale). The current x-direction motor steps are found in the software settings:

1. Click **Tools**
2. Click **Plugins & Modules**
3. Select *Vinyl Spooler...*
4. Click **Cutter**
5. Select *Configure Cutter*
6. Select *Units*
7. Expand *Device Units per Inch*



Default value for *x Units per Inch* is 1016.00

Modifying this value changes the length scale of the plotter. Increasing the value will result in the plotter cutting longer. Decreasing the value will result in the plotter cutting shorter.

5.6.2 Test case

- You have created a 24" x 120" rectangle and plotted it three times.
- You have measured the 120" length and found it measured 119.8", 119.9" and 119.7" respectively.
- You have calculated the average length of each job: 119.8"
 - Target Nominal = 120"
 - Actual Measured = (119.8" + 119.9" + 119.7") / 3 (number of plots) = 119.8"
 - Current Scale Factor = 1016.00 (Use whatever value is currently in the *x Units per Inch* box. It may not be 1016.00 it has already been adjusted previously.)

$$\begin{array}{rcccccc} \text{Target Nominal} & / & \text{Actual Measured} & \times & \text{Current Scale} & = & \text{New Scale Factor} \\ 120'' & / & 119.8'' & \times & 1016.00 & = & 1017.696160267112 \\ & & & & & & \boxed{\text{rounded} = 1017.70} \end{array}$$

For *x Units per Inch*, replace 1016.00 with 1017.70 and click **Accept?**

Plot the 24" x 120" job a final time and verify the calibration.

6.0 BLADES

CAUTION: Blades are extremely sensitive, very sharp, and dangerous precision cutting tools.

- Always keep blades well out the reach of children.
- Handle blades with caution and always replace the protective cap when not in use. If the tip of the blade comes into contact with a hard vinyl such as stone, tiny fissures may form at the blade tip making it useless.
- Note the following to avoid unnecessary wear on the blade and to ensure maximum working life.
 - Always set the cutting depth of the blade to cut the vinyl precisely and cleanly without cutting deeper than needed. Extending the blades beyond the required cutting depth impacts the service life of the blades without achieving better cutting results.
 - Always use blades from the manufacturer to avoid blades of lower quality.
 - Store in a dry location to avoid moisture building up on the blade.
- Ragged edges on cutting the loaded media may indicate that the blade is dull or damaged and needs to be replaced.
- It is strongly recommended to examine the tip of the blade with a small magnifying glass or jeweler's loop prior to cutting. It can be difficult to determine if a blade is damaged without the use of a magnifying glass as only the very .002" - .004" of the tip gets utilized in cutting

7.0 TROUBLESHOOTING

7.1 Static dissipation

Static dissipation in cutters is a common and frustrating issue. Static dissipation can cause a variety of issues including:

1. Stopping while cutting.
2. Losing connection between the plotter and the computer.
3. Cutting lines where they should not be.
4. Missing cuts where they should be.
5. Uncontrolled motor movement.
6. Spilling vinyl onto the floor.
7. Carriage moving to the outer limits of the plotter range when the job is within the range of the plotter.

Vinyl can hold and build up a significant amount of static charge coming off the roll. In addition, the vinyl generates additional charge when it rubs against the center portion of the plotter. This area is coated to provide insulation to dissipate the charge. When the charge reaches a certain level, the charge will dissipate to ground. Usually, the path that the charge dissipates through is the USB port / cable. When this occurs, the flow of this charge will disrupt the communication between the computer and plotter resulting in the above issues.

To mitigate these issues, it is recommended to use a static grounding string. Static issues get worse as the humidity gets lower. Plotting above 25% humidity usually does not result with the issues above. Below 25% start to see the above issues. Low-humidity environments are generally created during the winter when furnaces are running without a humidifier.

Always make sure the plotter does not bypass the ground prong of the three-prong electrical outlet. Grounding your cutter is extremely important to dissipate static charge. If using the ground string and bypassing the ground outlet, the charge will have no place to go and will still result in the same issues. Make sure the outlet the plotter is plugged into is correctly earth grounded.

7.2 Plotting quality settings

Jagged edges on jobs can be the result of improper settings or calibrations of:

- **Blade quality** - The blade quality may be difficult to determine as the blade tips are small. A magnifying glass or jeweler's loop may be used to see the blade tip easier. Blades in general can be used for a long time before they become dull. If experiencing poor quality, try replacing the blade.
- **Speed and force settings:**
 - 10 mil vinyl
 1. Speed: 264
 2. Force: 135 – 142
 - 8 mil vinyl:
 1. Speed: 264
 2. Force: 84 – 102

Speed should be set Plotting a job with intricate details, set the speed lower. Plotters cut by force. The blade tip should extend about the width of a credit card from the blade holder. This distance is not the

cut depth but rather is the distance that the blade holder will protect your blade from cutting too deep in the event you run off of the vinyl or penetrate through it.

- **Cutting mat quality** - The cutting mat is a white Teflon strip that runs underneath the blade tip. If the blade runs off of the vinyl or goes through the vinyl, the cutting mat will protect the blade. However, if the cutting mat gets damaged it may need to repair it by rubbing out the grooves with a spoon or taping over the top of it. If it is damaged beyond repair, then the mat may need to be repaired. Damaged cutting mats result in the vinyl will not be supported properly directly underneath the tip of the blade resulting in inconsistent results.
- **Carriage** - Over time, the carriage solenoid can lose strength and become inconsistent in its actuation. In addition, a carriage can become loose and have too much play between the blade holder clamp and the guide rails. When this occurs, a new carriage may be needed. To determine if the carriage is loose, gently wiggle the blade holder clamp. It should only wiggle a little.
- **Blade Holder** - The blade holder is the tube that holds the blade. The blade holder is magnetic with a quick release button at the top. Blade holders have roller bearings inside them to allow the blade to rotate and follow the cutting path. If the blade holder bearings get damaged, then the blade will not freely rotate which will cause jagged cuts. If this happens, replace the blade.
- **Software Settings** - It is important to have the correct blade offset and overcut entered and turned on. Overcut should be set to about 2 mm and blade offset should be set to approximately 0.25 - .30 mm.

7.3 Potter tracking quality parameters

Tracking is the ability of a plotter to be able to return to the correct point after cutting a job. Tracking over small distances is usually not a problem however, if the job is larger (10' or more) tracking settings may need to be adjusted.

- Dirt and dust that get deposited on both the rubber wheels on the top rollers and on the grit rollers on the bottom will reduce the friction between the wheels and the vinyl. The plotter depends on a high friction factor between the roller wheels and the vinyl to maintain quality tracking. When a large job is plotted and the vinyl touches the floor, it can pick up substantial debris (lint, dust, etc.) due to the buildup of static charges. This debris deposits itself on the rollers and makes them slippery. For this reason, it is recommended using a basket to catch the vinyl. In addition, clean the rollers if dirty. The top rollers can be cleaned with a cotton cloth with some ammonia based cleaner (such as glass cleaner). The bottom rollers can be cleaned with a dry toothbrush. Be careful not to deposit cloth fibers on the bottom roller.
- Increase the friction force between the vinyl and the rollers and the top rollers. This can be done with the adjustment nuts on the back of the rollers.
- When plotting at high speed, the rollers will impart more kinetic energy into the vinyl. When the plotter has to stop the vinyl from a high-speed condition, some of that kinetic energy may result in slippage between the vinyl and the rollers. To reduce the vinyl inertia and reduce slippage between the roller wheels and the vinyl it is advisable to reduce the speed. Using a lower speed will result in better tracking.
- Using a sharp blade reduces the needed force against the roller bar and thus reduce any slippage that would occur. Carbide blades which are standard on the plotter are inherently sharper than standard steel blades resulting in less downward force needed. It also imparts less resistance to the rollers.

8.0 RECOMMENDATIONS

The following are important recommendations to keep in mind. If it was previously mentioned in this manual, pay especially close attention to it.

- **Grounding** the plotter should be electrically connected to the stand. Two static ground wires are included for this purpose. Make sure this wire is connected under the head of one of the stand fasteners. Connecting the stand to the cutter and then using conductive string on your vinyl is important for the dissipation of static charge, especially in dry environments less than 20% humidity.
- **Blades** should be placed in the blade holder to protrude from the blade holder no more than the width of a credit card. Only the blade portion of the blade needs to be exposed.
- **Cutting Mats** are a white strip of Teflon running the length of the plotter under the tip of the blade. This strip must remain in good condition to produce high quality jobs. If this strip gets damaged flip it over and use the bottom side or replace it.
- **Roller bars** under the pinch rollers are non-continuous. The pinch rollers should be lined up with the white pinch roller marks on the front of the plotter directly over the rollers. The rollers are knurled and have micro-spikes on them to produce traction with the vinyl.
- **Pinch rollers** should be lowered onto the vinyl with the lever on the back-right side of the plotter. Do not rotate the lever beyond the point of where the rollers are lower onto the vinyl as it will cause the rollers to raise up again.
- **Pinch rollers** are all individually force adjustable by rotating the adjustment nuts. Without vinyl in place and with the rollers lowered onto the grit rollers, the rubber wheels on the roller should not spin. If a wheel spins when it is in the down position, adjust the roller to lower the wheel. Conversely, do not overtighten the rollers.
- **Optical limit switches** on the left and right sides prevent plotting a job larger than the width of the plotter. If the plotter tries to go beyond these optical limits, then the carriage will be hard limited on either side and will nudge back into the cutting area. This will likely render your job non-usable so please be careful not to send jobs to the plotter that are larger than the cutting width. Alternatively, the plotter may detect a job too large for cuttable vinyl. If this occurs, move your carriage head to the right as far as it will go, make sure to have adequate cuttable width of vinyl and resend the job.
- **Test button** creates a triangle inside a square which is 1"x1" in size. Always test your vinyl with the Test button. Weed the square and if the scrap vinyl is removed easily the force settings are acceptable. If not, adjust the force setting until the blade is cutting approximately 80% through the vinyl.
- **'Knife sticking'** or **'bunching'** is a phenomenon where too much force on the blade or a dull blade causes the vinyl to not slide under the blade and 'bunches' between the blade and rollers. If the force is too high reduce the force. If the blade is dull, replace it.
- **Speed and Force settings** on the LCD screen indicates that the cutter is in online mode and ready for a job to be sent to it. In online mode, the speed and force can be changed using their respective buttons. By pressing the On / Off Line button, the cutter switches to offline mode. The speed and force can be used to manually move the carriage left and right and roll the vinyl forward to back.
- **Alignment of the vinyl is important.** Feed out a substantial distance of vinyl to ensure alignment within the margins over the length of the expected job. If it moves more than this, adjust the angle of the

vinyl on the cutter slightly and roll out the vinyl again. This step is not needed if you are using an alignment system.

9.0 MAINTENANCE

9.1 Cleaning

In order to keep the cutter in good condition and provide the best performance, clean the machine properly and regularly.

9.1.1 Recommended Methods

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

9.1.2 Cleaning the grit roller

1. Turn off the plotter and move the blade carriage away from the area needed to be cleaned slowly.
2. Raise the pinch rollers and move them away from the grit roller for cleaning.
3. Use a dry bristle brush (toothbrush) to remove dust from the grit roller surface. Rotate the grit roller manually while cleaning.

9.1.3 Cleaning the pinch rollers

- 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 a finger to hold them in place.
- In the case of embedded or persistent dust, use the lint-free cloth or cotton swab moistened with rubbing alcohol.

NOTE: Daily maintenance of plotter is important. Be sure to clean the grit rollers and pinch rollers regularly for better cutting accuracy and output quality.

NOTE: If for some reason the plotter does not function properly or for errors that are not covered in the scope of this manual, please contact support found in Section 10.

10. CONTACT

Laser Products Industries
1344 Enterprise Dr.
Romeoville, IL 60446 USA

630-679-1300

<http://laserproductsus.com>

info@laserproductsus.com