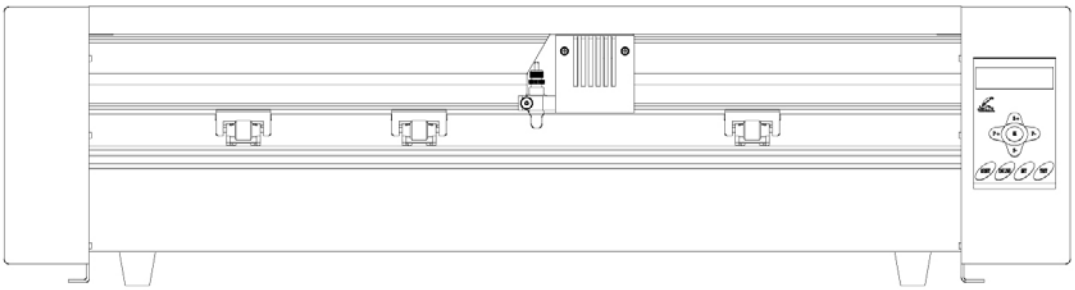
version number: 1.1.1.140508_PRO

REDSAIL

CUTTING PLOTTERS

C series

RS360C, RS450C, RS500C, RS720C, RS800C,
RS1120C, RS1360C, RS1600C, RS1780C, RS2000C



Redsail Tech Co., Ltd
www.hflaser.com

Contents

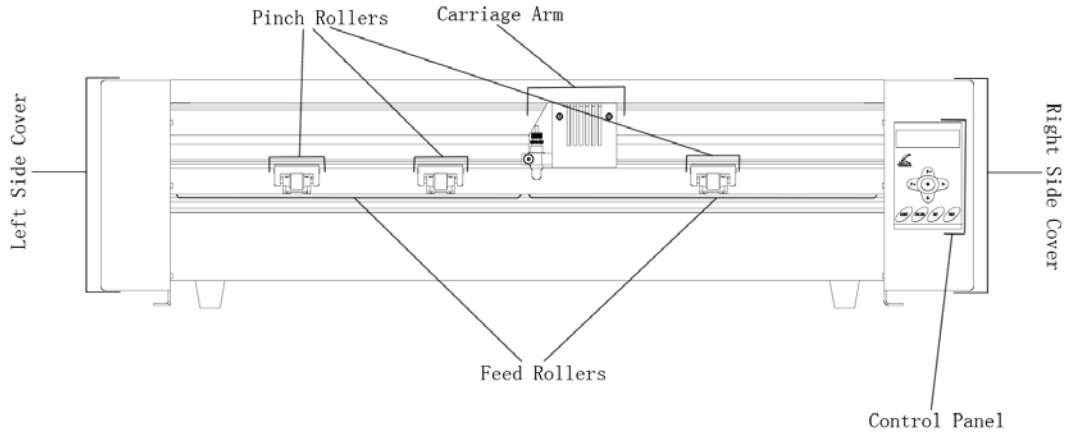
WELCOME

Thank you for choosing a RS series cutter from RESASIL. The RESASIL cutters give users the ability to afford a quality entry level cutter while still receiving the durability and dependability needed to move you through all stages of your cutting experience, from beginner to expert alike. This manual is here to help provide a starting point in the learning process of the RESASIL cutters or to vinyl cutting in general. Please read it thoroughly and follow the steps carefully to help insure a trouble free experience with your new machine. If you have any questions along the way, we have provided a few locations to go to get those questions answered. You can post on the RESASIL Cutter forums at www.hflaser.com, submit a request for support on the support website at www.hflaser.com, or call customer service at 86-531-86516855. We hope you enjoy your experience with the RS series cutters and the REDSAIL Cutter family.

Cutter Parts

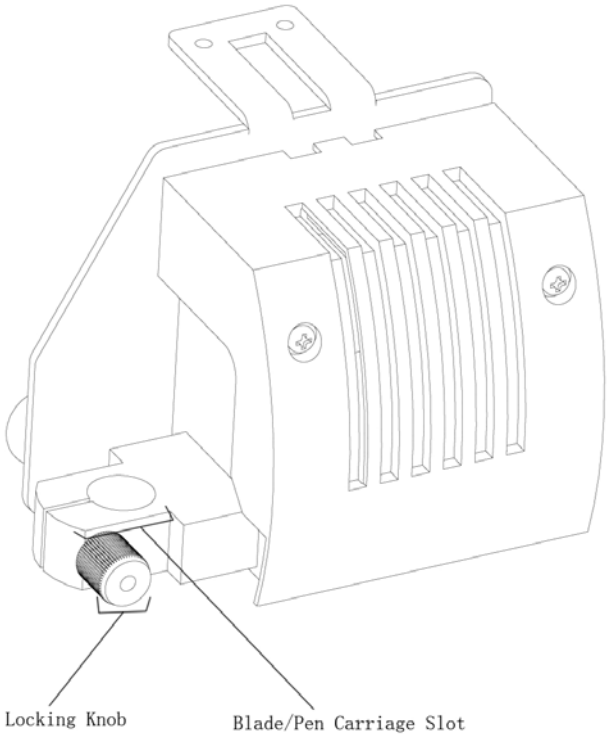
Before you start cutting, you should familiarize yourself with the cutter and its basic parts and functions:

Front View



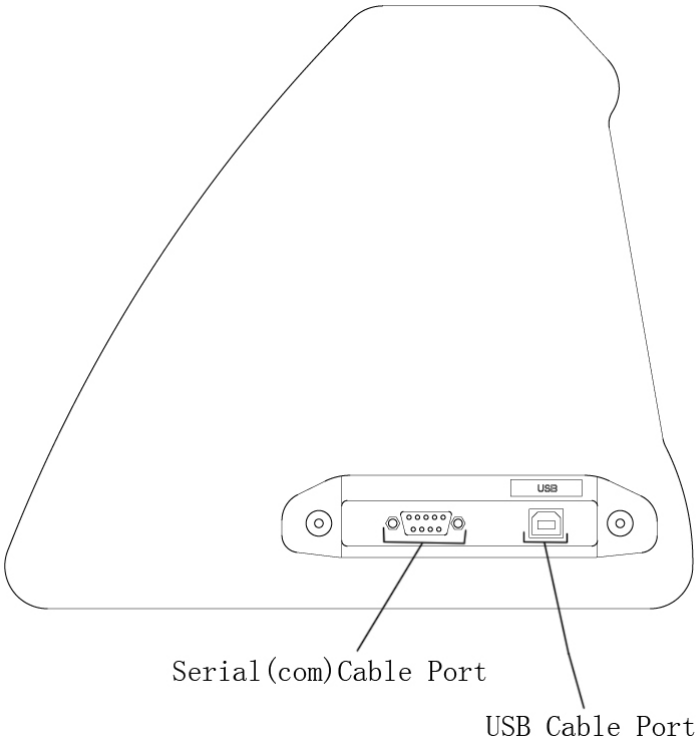
Control Panel	Used to provide input directly to the cutter. Covered in detail in the “Control Panel” (*page 10*) section of this manual.
Carriage Arm	Holds the Blade *(or Pen)* Carriage. *Shown in detail on page 5.*
Pinch Rollers	Holds the media tightly to the feed roller below. *Back view shown in detail on page 9.*
Feed Rollers	Positions the cutting material during operation.
Left Side Cover	Contains the Power Cable Port, Power Switch and Fuse Cartridge for the cutter. *Shown in detail on page 7.*
Right Side Cover	Contains the USB and Serial cable ports for the cutter. *Shown in detail on page 6.*

Detail of Carriage Arm



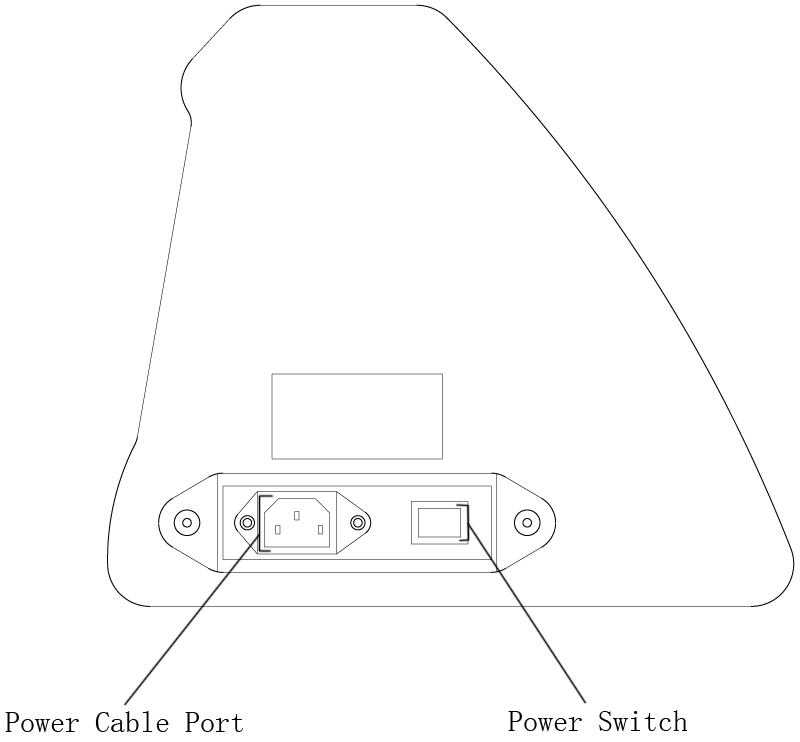
Blade/Pen Carriage Slot	Holds the Blade/Pen Carriage in place.
Locking Knob	Allows access to the Blade/Pen Carriage Slots for exchanging/replacing Carriages.

Right Side View



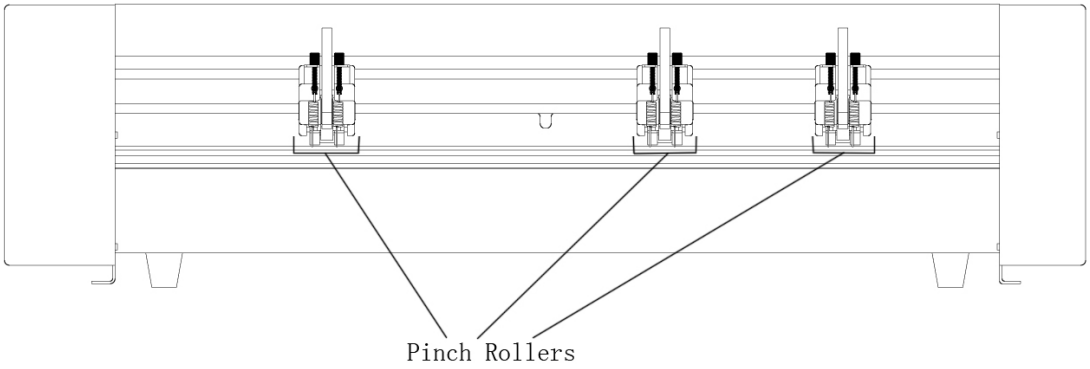
USB Cable Port	Used to connect a USB cable from the cutter to a computer.
Serial (COM) Cable Port	Used to connect a serial cable from the cutter to a computer.
Only one of the connection cables should be used to connect the cutter to a computer. Not both.	

Left Side View



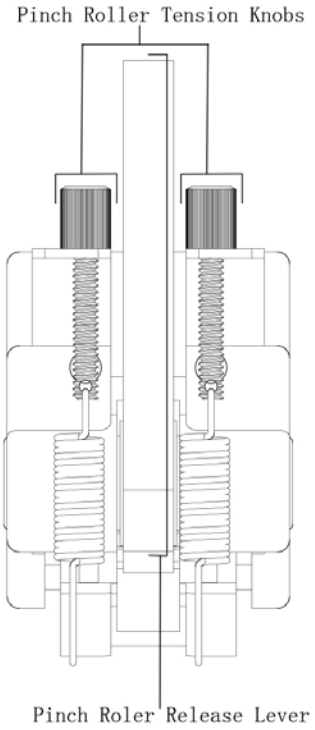
Power Cable Port	Used to connect a power cable from the cutter to a wall outlet or surge protector.
Power Switch	Main power switch for turning the power of the cutter on(*1*) or off(*0*).

Back View



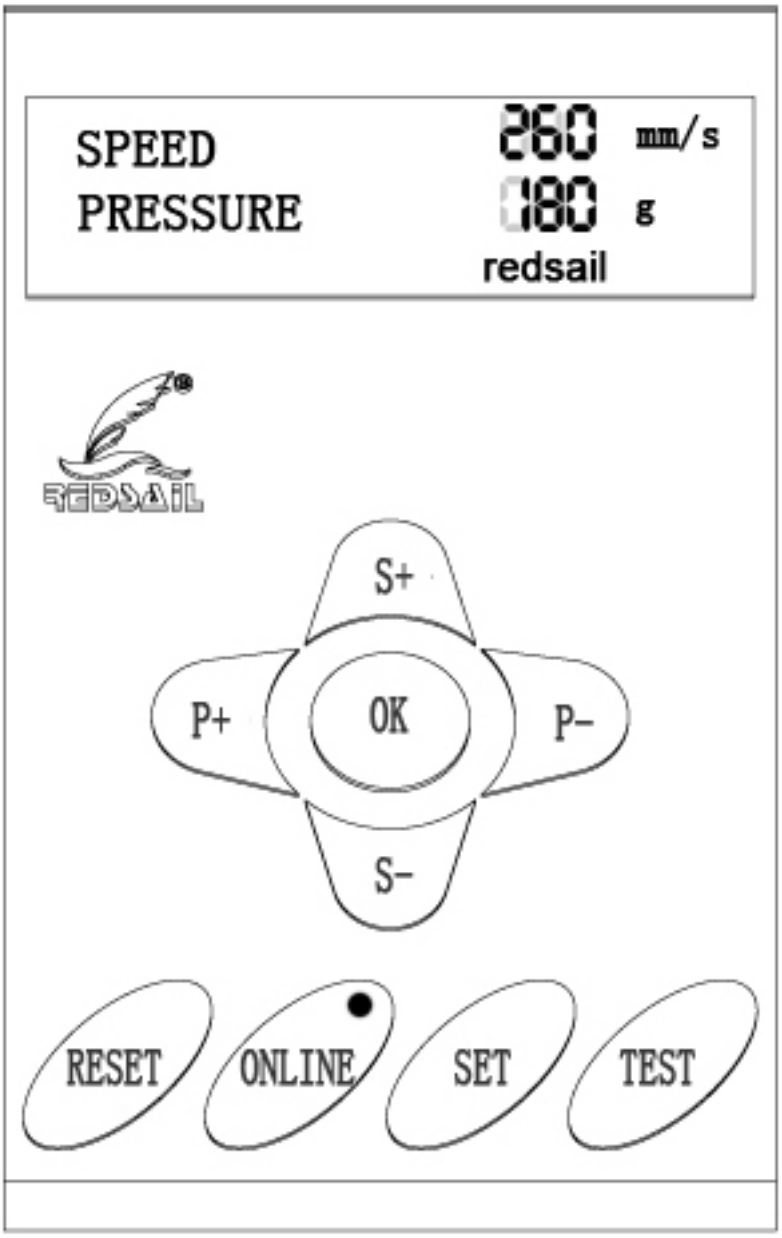
Pinch Rollers	Holds the media tightly to the feed roller below. *Back view shown in detail on next page.*

Detail of Pinch Roller (Back View)

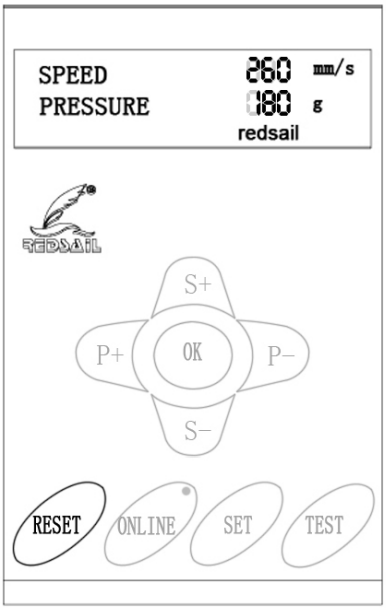
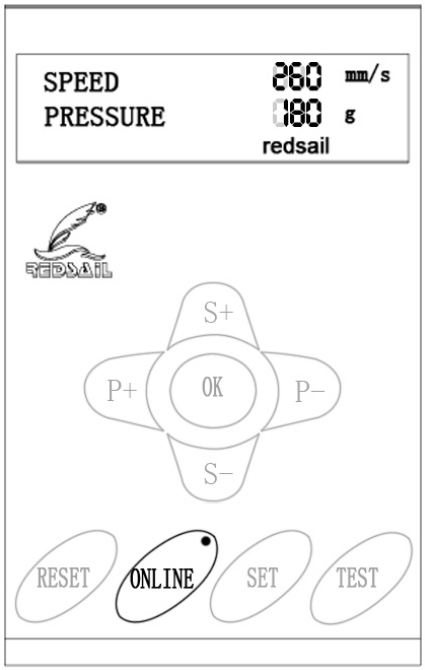


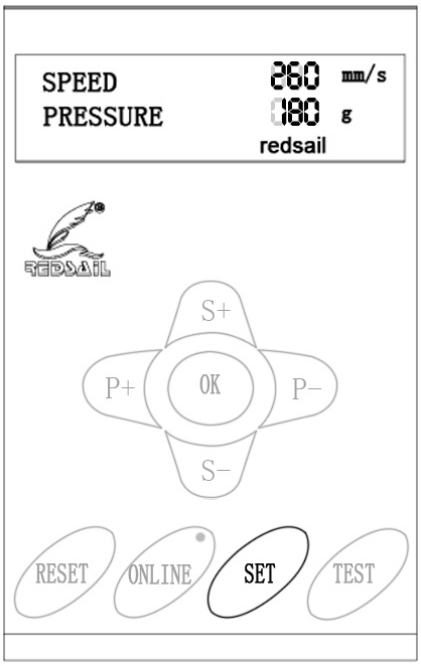
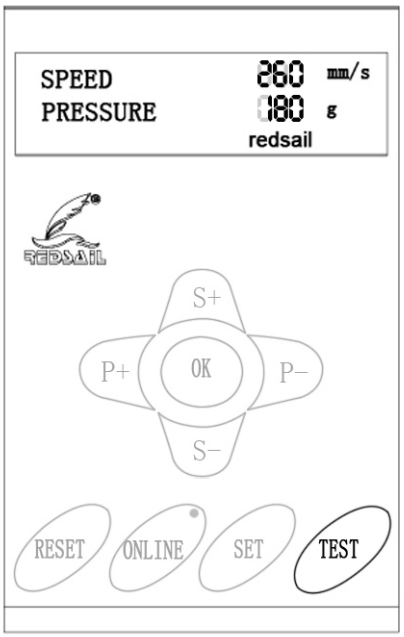
Pinch Roller Tension Knobs	Adjusts the tension of how tightly the pinch roller is held to the feed roller below.
Pinch Roller Release Lever	Allows you to release Pinch Rollers (*either so they can be moved from side to side or to allow media to be easily fed below them*) by pulling up on the Release Levers.

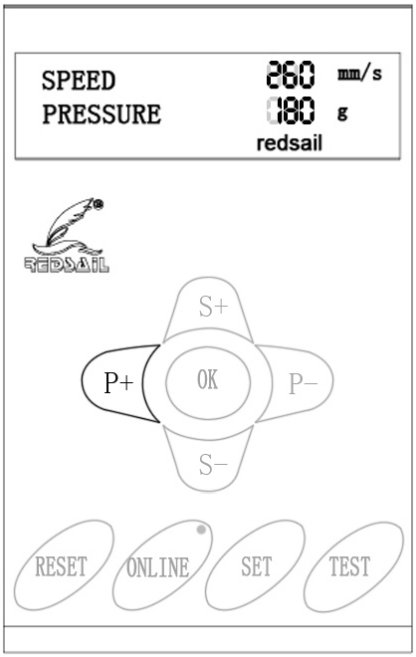
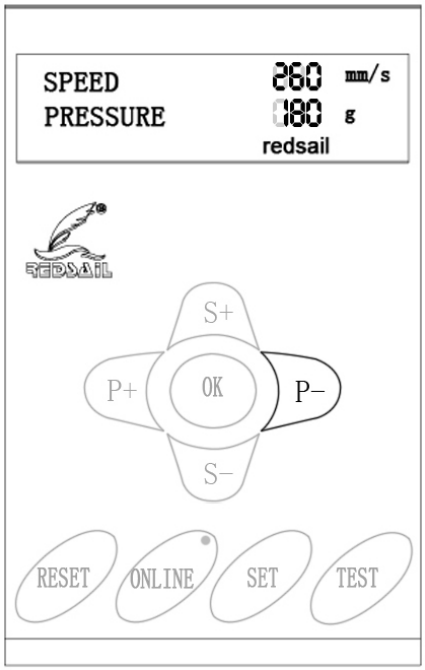
Control Panel

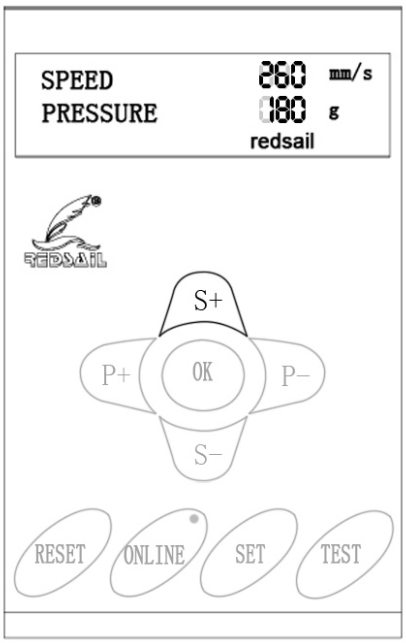
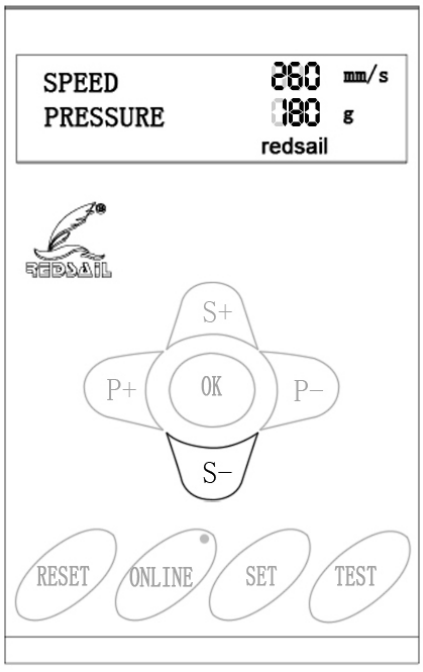


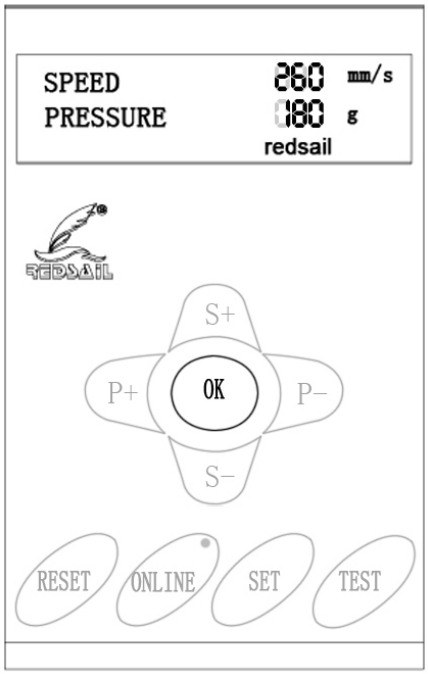
The main screen of the cutter allows you to set the main settings of the cutter including the cutting speed and cutting force options. It also allows you to cut a test pattern or check the amount of force that is currently set.

 **RESET**	**RESET Button** **Press "RESET" button when online or offline, clearing the memory of the machine, and setting the origin of carriage arm to its rightmost position.**
 **ONLINE**	**ONLINE Button** **Press "Online" button when online, then it will be Offline.** **Press "Online" button when offline, then it will be Online.** **Press "Online" button when the machine working, then the machine will stop working. Press "Online" button again, recover the last work.**

 **SET**	**SET Button** **Accesses the Setup mode** **Press “SET” button when online, the blade will be down.**
 **TEST**	**TEST Button** **Will cut a small test shape so that the current force and speed settings cutter will be tested. You can use this to determine the proper force and speed setting needed for different materials without wasting large amount materials from cutting full designs.** **Press “TEST” button when offline, the machine will make self-test.**

 **P+**	**P+ Button** **Adjust the cutting force** **For increasing the force when online, the highest force is 500g.** **A cutting force of 100g is a good general starting place to work from when trying to determine the force needed for a specific material. All cuttable materials will differ in the amount of force needed so proper testing should be always made to determine the amount of force to use. The amount of force used should be enough to fully penetrate the material to be cut while not enough to cut through the backing material.** **For moving the carriage arm to the left position when offline.**
 **P-**	**P- Button** **Adjust the cutting force** **For reducing the force when online, the lowest force is 50g.** **A cutting force of 100g is a good general starting place to work from when trying to determine the force needed for a specific material. All cuttable materials will differ in the amount of force needed so proper testing should be always made to determine the amount of force to use. The amount of force used should be enough to fully penetrate the material to be cut while not enough to cut through the backing material.** **For moving the carriage arm to the right position when offline.**

 **S+**	**S+ Button** **Adjusts the cutting speed** **For increasing the speed when online, the highest speed is 600mm/s** **A cutting speed of 16 inch/s is a reasonable default speed that can be used for most cuts. When working with smaller and more detailed images, a slower speed may be required. When working with larger and less detailed images, a higher speed can be used to shorten the operation time.** **For moving Y axis to the back position when offline.**
 **S-**	**S+ Button** **Adjusts the cutting speed** **For reducing the speed when online, the lowest speed is 25mm/s** **A cutting speed of 16 inch/s is a reasonable default speed that can be used for most cuts. When working with smaller and more detailed images, a slower speed may be required. When working with larger and less detailed images, a higher speed can be used to shorten the operation time.** **For moving Y axis to the front position when offline.**

 **OK**	**OK Button** **For confirming your operation.**

Setting up

If you are setting up for the first time please take a moment to refer to the Packaging Guide to take account off all the included components and accessories.
For help with Stand Assembly, please refer to the included instructions.

Selecting a Location for Your Cutter

The first step to setting up your cutter is finding a good location for the machine. Consider these factors when you are selecting a suitable place:
You will need to have access to both the front and rear of the machine for operations as well as for loading and unloading new vinyl rolls. Try to find a space with adequate access to both the front and back of the machine.
Since your cutter is a precision cutting device, you will want to find a location that will be stable to insure cutting accuracy. Whether placing the unit on the stand, a floor or a table top, the accuracy of the machine will be directly related to the stability of the platform it is placed on. Find a sturdy floor space or table top for the machine and consider a location that will be out of the way of people and other machines with moving parts while the cutter will be operating. Excessive moving of the machine can not only disrupt accuracy of cutting but may also cause electrical components inside the machine to dislodge and require otherwise unnecessary repairs and maintenance.
Fans located inside of the cutter can draw in outside dust from the area surrounding the cutter. Excessive buildup of dust can cause either mechanical or electronic malfunctions. Keeping the cutter as dust free as possible will help ensure trouble free operation. Try to find an area for the cutter that will be free of any excessive dust and use the supplied cover when not in use.
All cutters will produce a small amount of noise while operating. Please take this into consideration when selecting a location for your cutting purposes.
Do not remove the grounding plug from the power cord or attempt to use the cutter when it has not been properly grounded.

Connecting the Cutter to a Computer

Attach the power cord to the cutter and then plug in the unit and turn on the power.

If Using the a Serial Cable to connect your cutter to a Computer:
If you are using a Serial Cable to connect your cutter to a computer then no further setup is necessary. Simply connect one end of the cable to the cutter and the other end to a computer and setup is complete. *If you have more than one serial connection on your computer or you are experiencing communication issues between your cutter and computer then you may wish to verify that the correct COM port is being used in your software setup (see Finding Your COM Port on the page 18), but for most users the COM port will be COM1.*

If Using the USB Cable to connect your cutter to a Computer:

You will need to install drivers for the USB connection to work properly. These drivers can either be obtained from the supplied drivers disc or downloaded from the support website (*in the downloads section of www.hflaser.com*).

If you need download the drivers from our website, then please reading the following guidance:

There are two optional USB port for the cutting plotter. You can check it on " Device Manager" of your computer .

If the USB port shows: FT232R USB UART, then you can download the USB Driver-FTDI.

If the USB port shows: USB2.0-Serial, then you can download the USB Driver-CH341SER.

Windows XP Users:

1. Insert the driver disc or download (and unzip if necessary) drivers to your system.
2. Connect the USB Cable to your computer and your cutter. The Found New Hardware wizard will appear.
3. When asked, "Can Windows connect to Windows Update to search for software?" select "No, not this time" and click next.
4. When asked, "What do you want the wizard to do?" select "Install from a list or specific location (Advanced)" and click next.
5. Choose the "Search for the best driver in these locations" radio button and check the "Include this location in the search" checkbox. Now type (*or browse to find*) the location of the downloaded drivers/inserted drivers disc and click next.
6. When the wizard is complete, click the Finish button.
7. The Found New Hardware wizard should appear again. When it does, follow steps 3-6 again for the second driver.

Windows Vista Users:

If you want to use downloaded drivers, download them before starting the install process.

1. Connect the USB Cable to your computer and your cutter. Then Found New Hardware wizard will appear.
2. When told that "Windows needs to install driver software…" select "Locate and install driver software (recommended)".
3. If Windows finds and downloads your needed drivers then the process is complete. Repeat the previous steps again for the second needed driver. If Windows does not find and download the needed drivers proceed to the next step.

4. If you are going to install the drivers from the disc insert it when advised by Windows. If you are going to use downloaded drivers, select “I don’t have the disc. Show me other options.” 5. Browse to the folder where the drivers are stored and click next. 6. When the wizard is complete, click the close button. 7. The Found New Hardware wizard should appear again. When it does, follow steps 2-6 again for the second driver.

If you are using another version of Windows and require specific instructions for installing the drivers, just also according to the appeared wizard step by step after connecting the machine and computer with USB cable.

Once your drivers are installed you will need to make a note of the COM port that has been assigned to your USB Cable connection.

-Finding Your COM Port

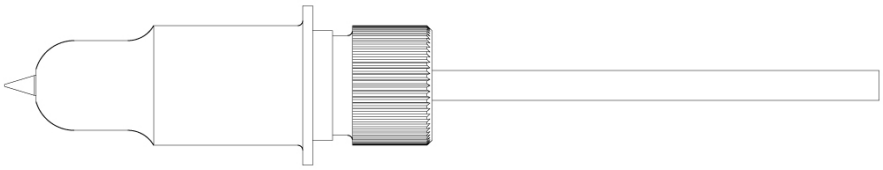
First navigate to the Device Manager by following the below instructions for your operating system.

Windows 95/98/Me Users: Click Start, then select Settings -> Control Panel. Select Device Manager.
Windows 2000/XP Users: Click Start, tRight-click “My Computer” then select Properties. Select the Hardware tab. Click the Device Manager.
Windows Vista/7 Users: Click Start, then in the "Start Search" box, Type "Dev" (without pressing enter); wait for a list to show up. Click Device Manager.
Windows 8 Users: Click Start, “Control Panel”---Click Device Manager

Expand the section labeled “Ports (COM & LPT)”.
Make a note of which number COM Port is associated with “USB Serial Port”.
You will need this information to properly install your software.

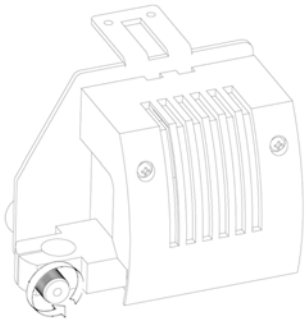
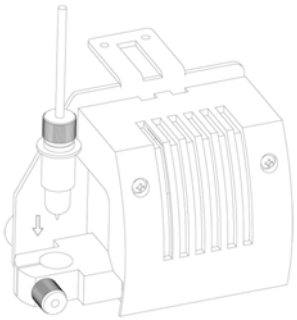
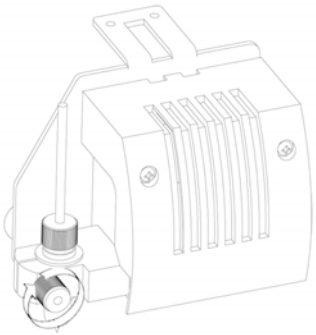
Installing the Pen Carriage

Most new users will benefit from practice "cutting" with the supplied pen carriage until they are comfortable with normal operations of the cutter and cutting software.

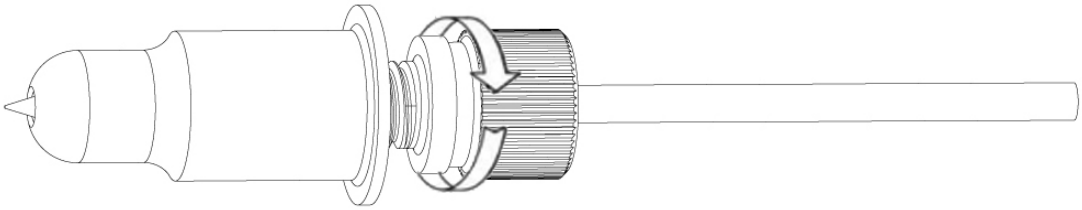


Your Pen Carriage should come assembled and appear as it does in this image. If it does not, please refer to the pen replacement section below for assembly instructions.

To install the pen carriage:

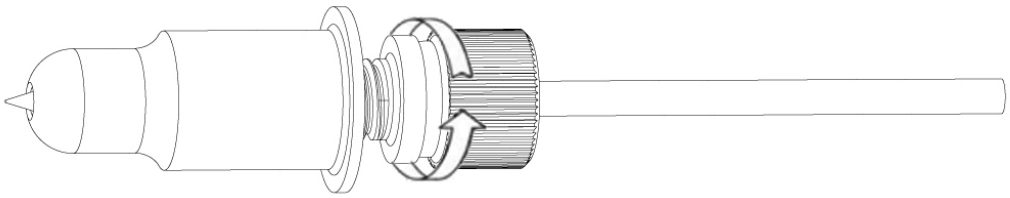
Loosen the locking knob on the carriage arm.	**Drop the pen attachment into place in the slot of the carriage arm.**	**Tighten the locking knob on the carriage arm**.
		

To Replace the pen or spring inside of the Pen Carriage:
Unscrew the top cap from the Pen carriage.



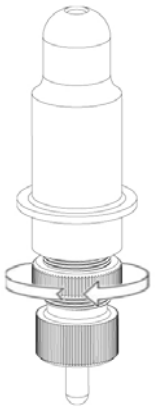
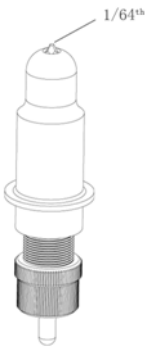
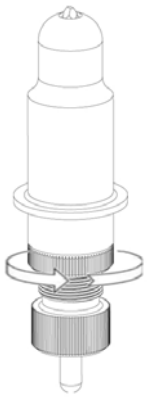
Remove the top cap, the pen and the spring. Replace the pen and/or spring as necessary. Slide the spring onto the pen from the top and insert it back into the pen carriage.

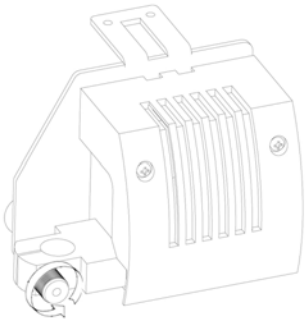
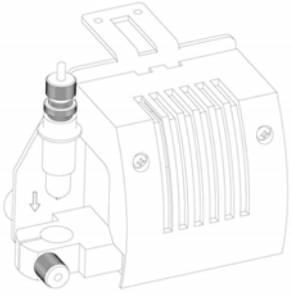
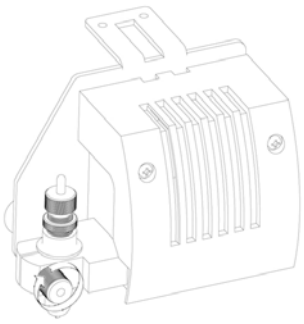
Replace the carriage cap and screw into place.



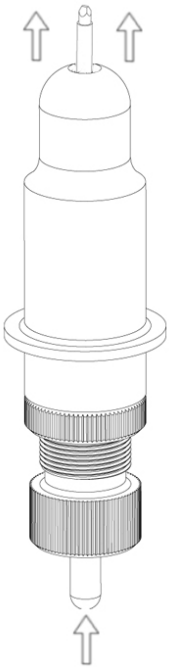
Once you are familiar with the cutter and its basic functions, install the blade carriage.

Installing a New Blade

Set Brass Ring on Blade Carriage to the fully down position	Remove the protective cover from a new blade.	Insert the blade into the top of the Blade carriage.	Adjust the carriage cap until the blade is protruding approximately 1/64th of an inch.	Adjust the Brass Ring until it fits snug against the Cap. This will help keep the cap in place during operation
				

Loosen the locking knob on the carriage arm.	Place Blade carriage into the carriage arm.	Tighten the locking knob on the carriage arm.
		

Replacing a Worn Blade

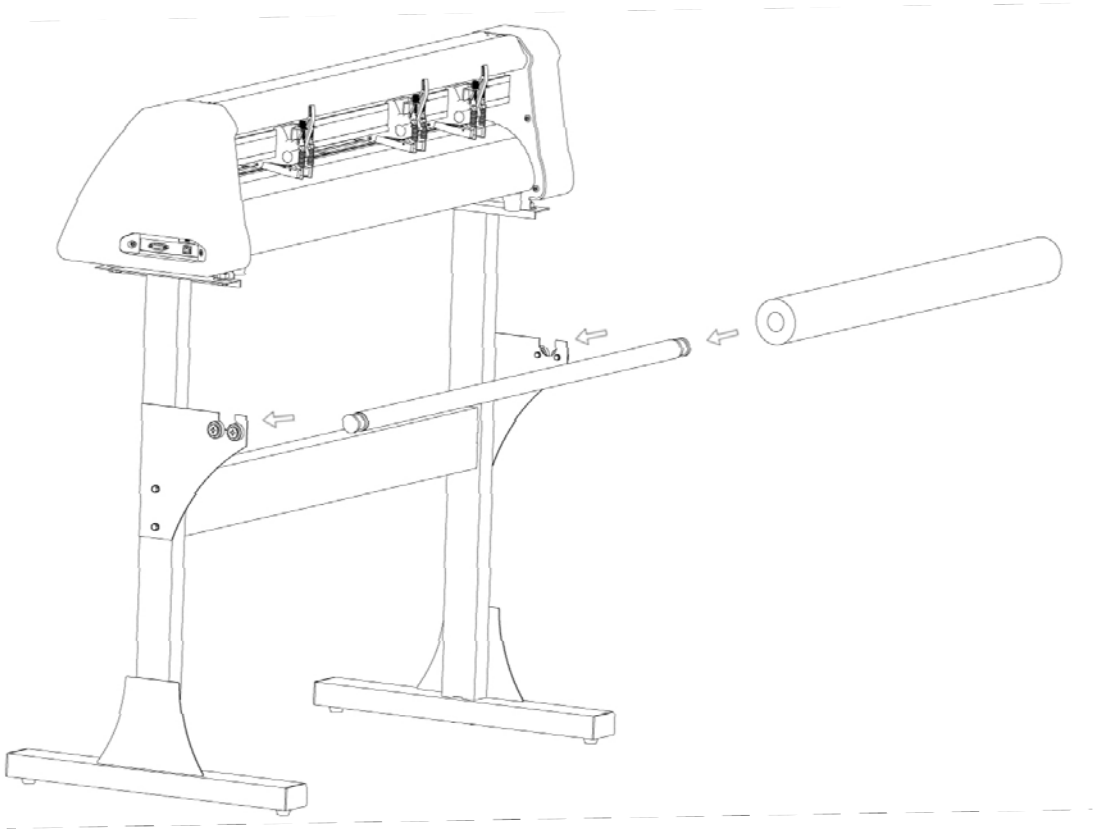
Press up on the release button (located on the bottom of the blade carriage) to raise the blade and remove it.


Follow the remaining steps from “Installing a New Blade” on the previous page.

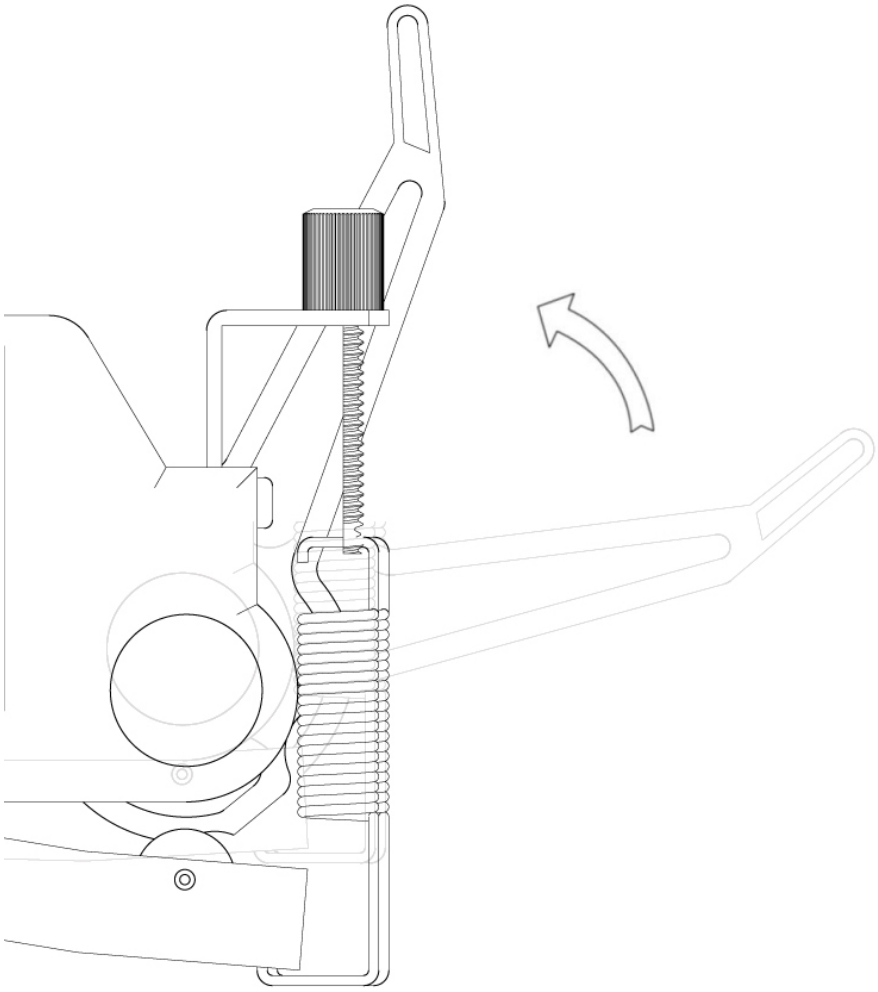
Preparing for Cutting

If you are going to cut from a scrap or single sheet instead of a roll, then skip the next step on placing a vinyl roll. All other steps will be the same.

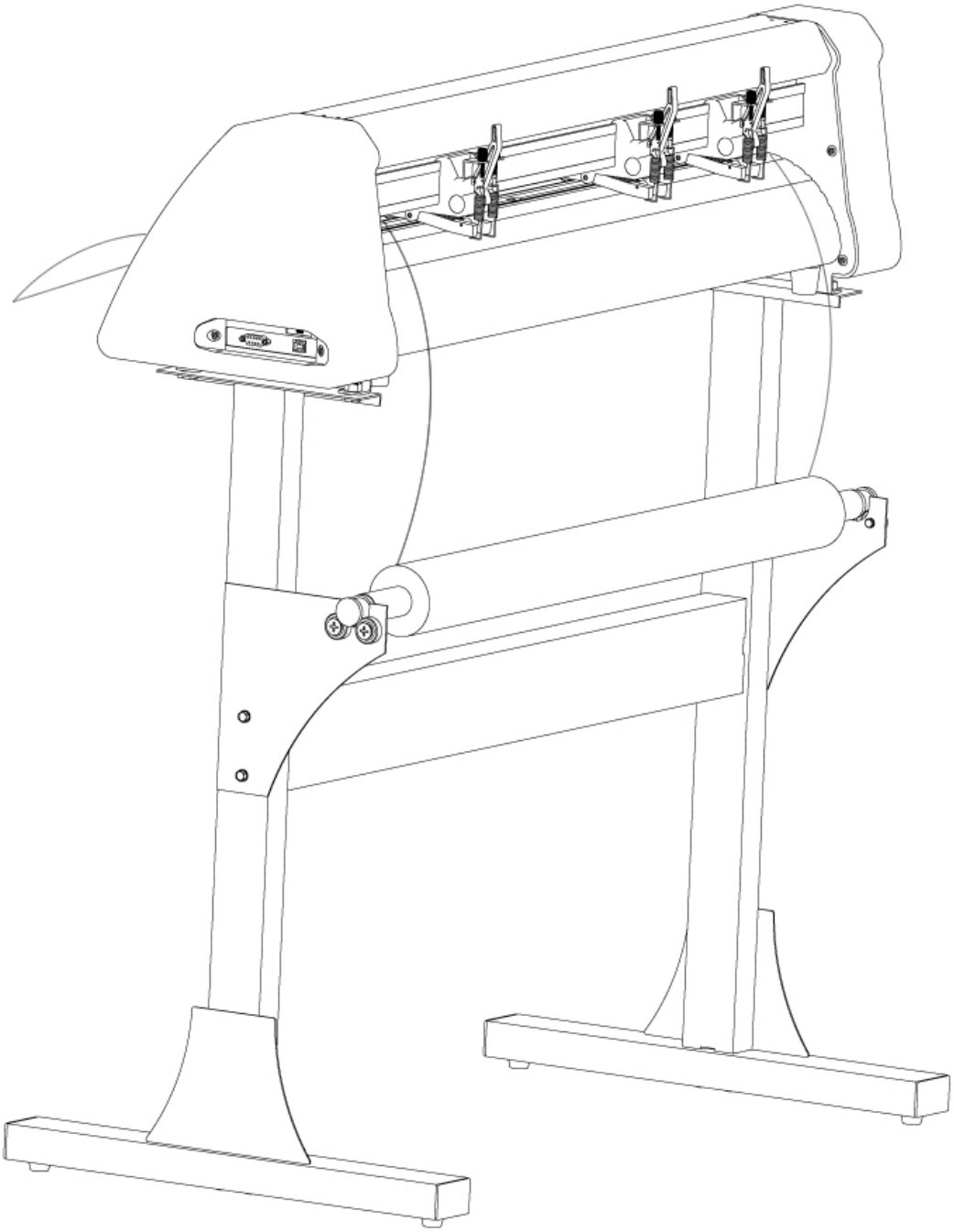
Place the roll on the top of the stand rollers



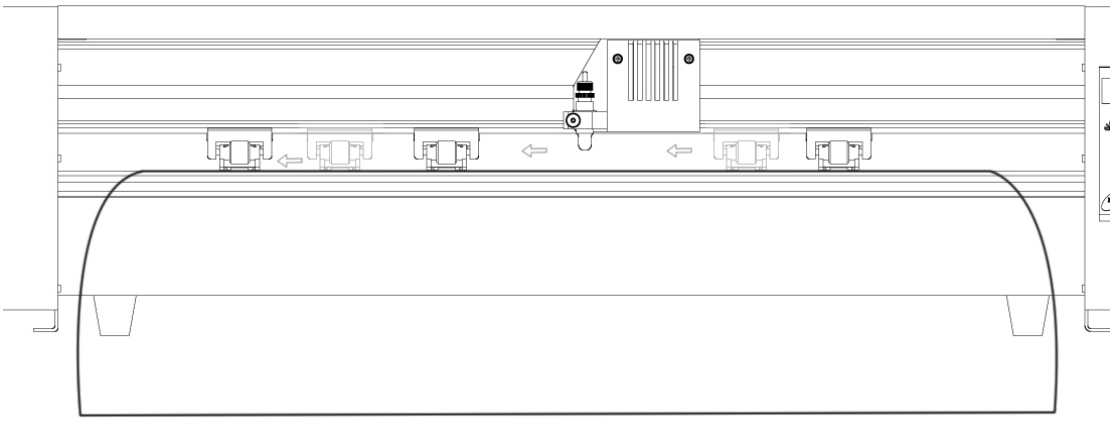
Release the Pinch Rollers by pulling up on the Pinch Roller Release Levers.



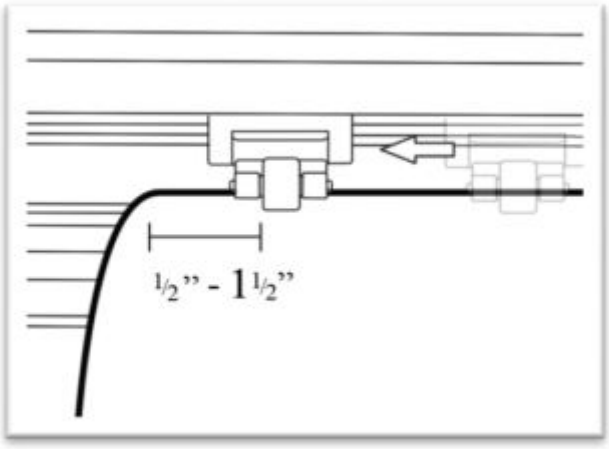
Feed the vinyl underneath the pinch rollers (*if working from a single sheet instead of a roll, the vinyl can also be feed from the front).*



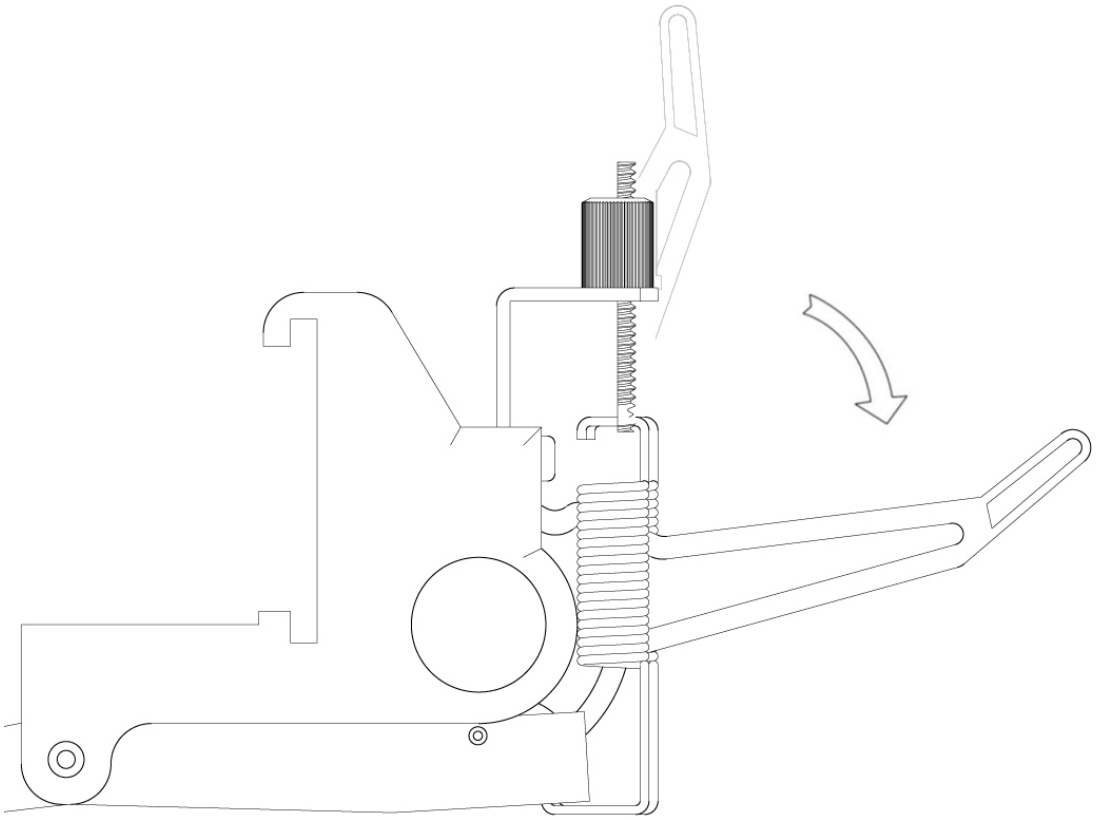
Adjust the pinch rollers so there is one roller located on each side of the vinyl (one cutter with 3 or more rollers, one roller near the center). Avoid lowering a pinch roller to the gap between the two feed rollers.



Leave a gap of between ½”-1 ½” from the edge of the roller and the edge of the vinyl on both sides.

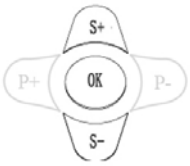


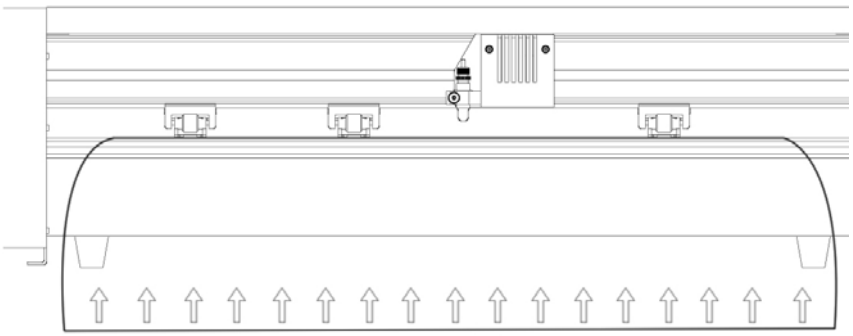
Engage the Pinch Rollers by pushing down on the Pinch Roller Release Levers.



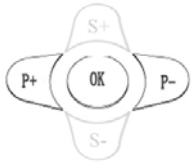
If the cutter is not already on, turn it on now

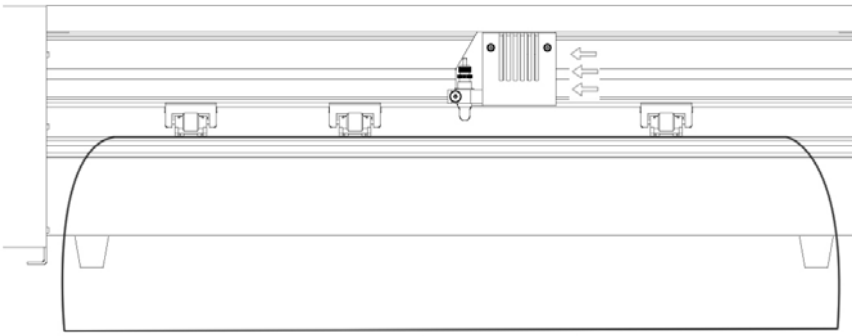
Adjust the vinyl to the position where you want to make your cutting start by using the Up and Down Arrow Keys on the Control Panel.



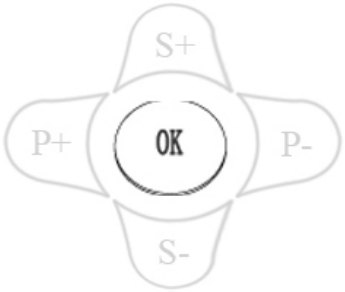


Adjust the carriage arm to the position where you want your cutting to start by using the Left and Right Arrow Keys.





Now press the OK button to tell the cutter that this is the location where you would like the cut to begin.



Then operating your cutting design in the software to output, then machine will start working.

When choosing a starting location for your design, remember that the process will start in the bottom right area of the design. Please leave enough room to the left of and behind the starting location to finish your cut.

If you would like to make other adjustments to the pressure, speed, or other settings you can do so now. If you are setting up for your first cut with the machine then the default values should be a good starting point.

If you make any adjustments to your cutter, make sure that you return to the main screen before you attempt to cut. If you are unsure how to do this, refer to the Control Panel section of the manual on page 10.

Specifications

Desktop Cutting Plotter

Model	RS360C	RS450C	RS500C
Control system	Risc micro-controller		
Drive type	Stepper motor		
Media Size (mm)	360	450	500
Cutting size (mm)	260	350	400
Cutting speed	600mm/s		
Cutting force	50-500 g		
Lcd display	English		
Resolution	1000 DPI		
Repeatability(mm)	0.01		
Command	HPGL		
Interface	232/USB		
Power	90~240V / 50~60Hz		
Warranty	12 Months		

Vinyl Cutter

Model	RS720C	RS800C	RS1120C	RS1360C
Control system	Risc micro-controller			
Drive type	Stepper motor			
Media Size (mm)	720	800	1120	1360
Cutting size (mm)	620	700	1000	1200
Cutting speed	600mm/s			
Cutting force	50-500 g			
Lcd display	English			
Resolution	1000 DPI			
Repeatability(mm)	0.01			
Command	HPGL			
Interface	232/USB			
Power	90~240V / 50~60Hz			
Warranty	12 Months			

Large Format Plotter

Model	RS1600C	RS1780C	RS2000C
Control system	Risc micro-controller		
Drive type	Stepper motor		
Media Size (mm)	1600	1780	2000
Cutting size (mm)	1500	1680	1900
Cutting speed	600mm/s		
Cutting force	50-500 g		
Lcd display	English		
Resolution	1000 DPI		
Repeatability(mm)	0.01		
Command	HPGL		
Interface	232/USB		
Power	90~240V / 50~60Hz		
Warranty	12 Months		

Troubleshooting

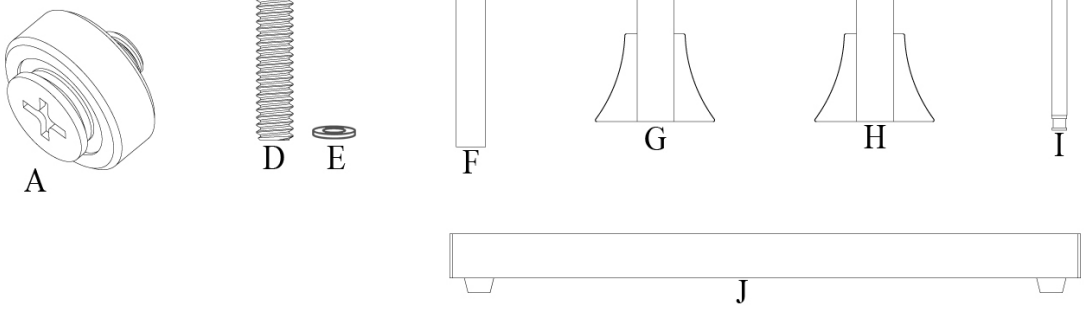
The cutter is unresponsive to communications from the computer and software.	Communication issues can arise if the cutter was powered on while the software is trying to send data to the cutter. Exiting the cutter screen of software and returning to the main software screen may resolve this issue. If not, save all work and try exiting the software and restarting with the cutter powered on. It is good practice to start software with the cutter powered on to avoid communication problems. _____ Make sure that your output device in software is set to the correct COM port. *Your COM port can be found by following the instructions in the "Finding Your COM Port" section of this manual on page 14*. You can change your COM Port by right-clicking on the COM Port in the device manager and going to the advanced section of the Port Settings tab. _____ Adjust your Flow Control settings to Hardware by first locating your COM Port in the device manager (*By following the instructions on page 14*), then right-click the COM Port and select Properties. On the Port Settings tab, change to Flow Control option to Hardware.
The cutter performs erratically during cuts, stops cutting before the cut is finished, or cuts lines that do not appear in the design.	Some computers do not work well when connected via the USB port of the cutters. If you are having problems while cutting and are using the USB cable to connect from your cutter to computer, you may wish to try the serial cable connection to avoid further problems. If a serial cable connection is not available on your computer, you can try a third party USB

	to serial connecter or a PCI card serial adapter for your computer.
Vinyl not feeding straight and the rightmost Pinch Roller will not move.	Sometimes, during shipping or movement of the machine, the right pinch roller will become stuck on a screw located on the back of the machine. If this occurs and is affecting your cutting, press forcefully against the pinch roller until it becomes dislodged from its position. If needed, remove the screw to reposition the pinch roller in the desired position.
Cuts are jagged or inconsistent.	The Blade may be dulled or damaged. Replace with a new blade and try again. Make sure that the blade can turn freely (*by attempting to turn it with your fingers while the release button of the Blade Carriage is pressed*). Adjust the blade depth of the Blade Carriage and Force setting on the cutter until you are getting solid, uniform cuts. Start with a blade depth of around 1/64th of an inch and a pressure setting of 100g and try an increased pressure setting before attempting to increase the blade depth.
Slashes are made across the vinyl from the blade movement during cutting.	If the blade is protruding too far from the Blade Carriage then it can score and cut material during normal operations. If this is occurring, the blade needs to be adjusted so that it is protruding a minimal distance from the carriage.

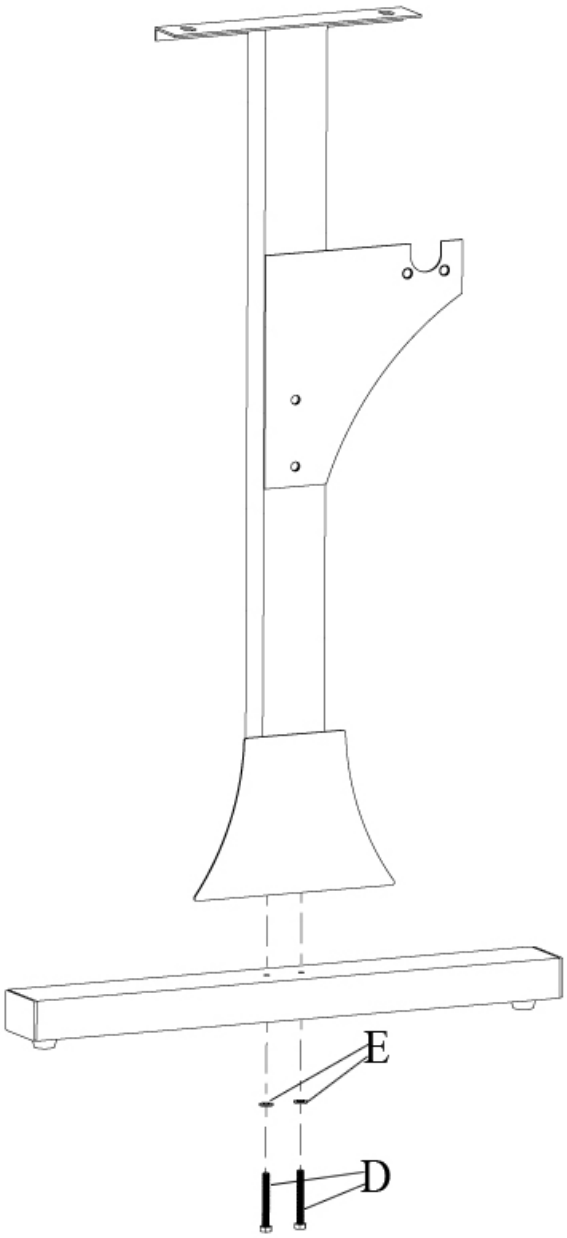
Other troubleshooting solutions may be found by visiting the Customer Forums or Technical Support Website, or by calling the Technical Support Line (Web page addresses and Phone number on the specifications page, 3).

Stand Installation (For the cutters with stand)

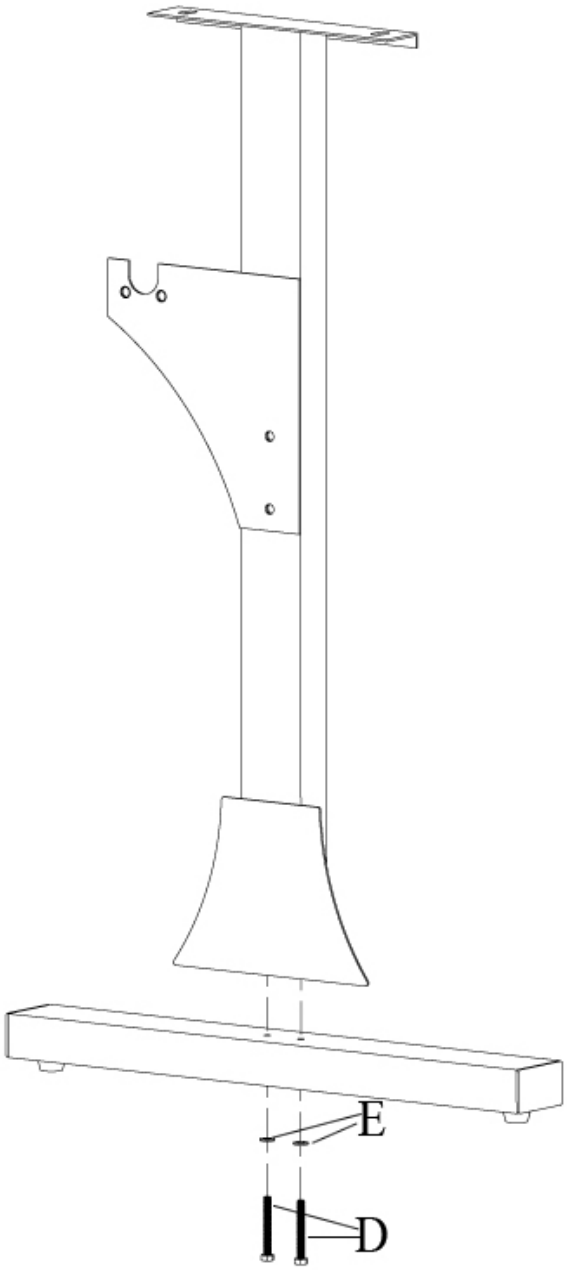
A	Bearing
B	Short Screw
C	Screw Cap
D	Long Screw
E	Long Screw Pad
F	Center Crossbeam
G	Right Column
H	Left Column
I	Roller
J	Foot



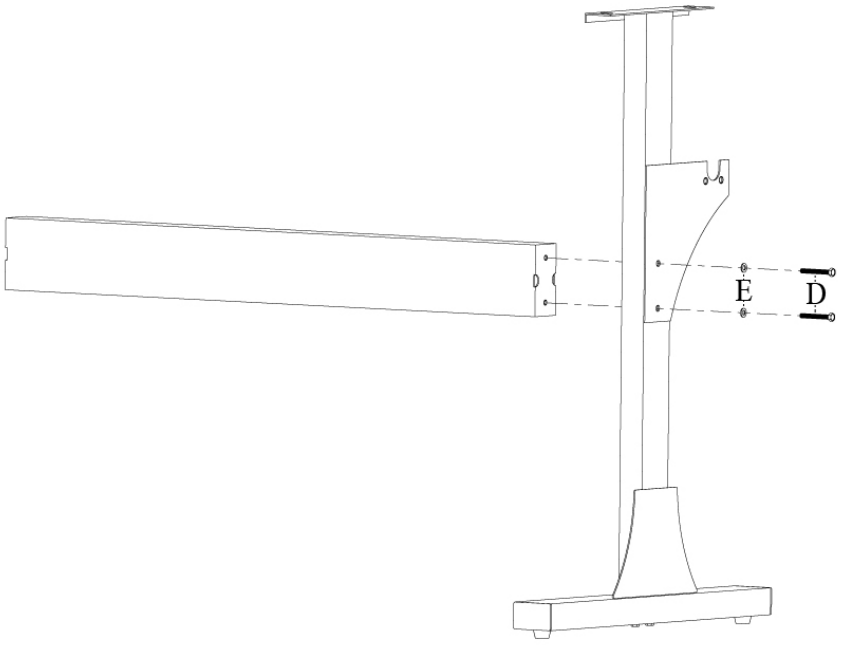
1	Needed For This Step	Assembled right side (roller arm, column) D(x2) - Long Screw E(x2) - Long Screw pad



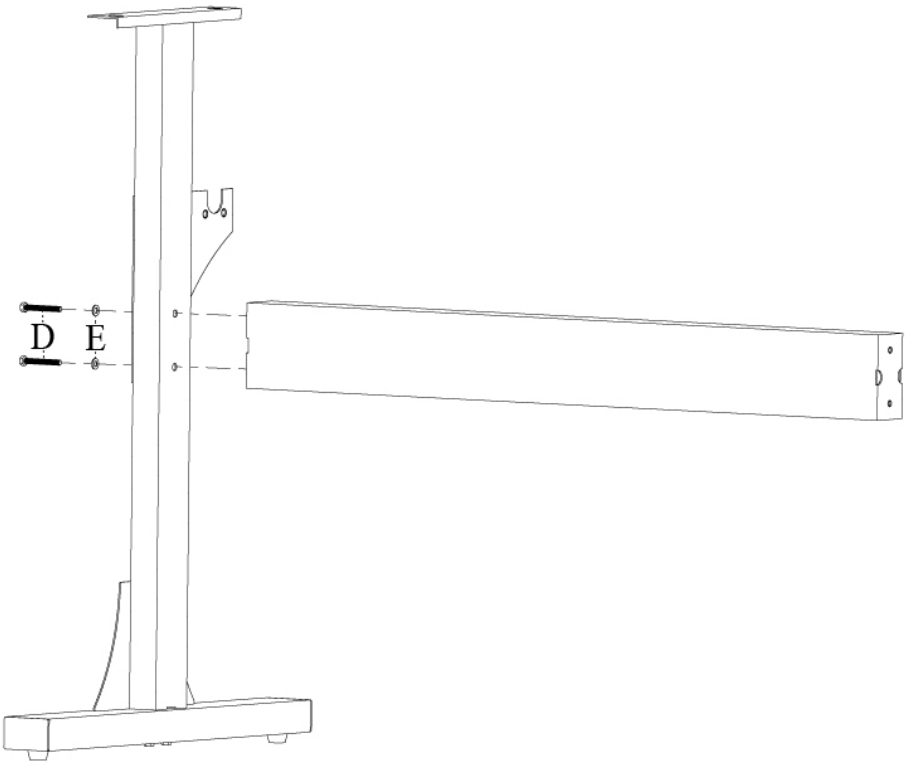
2	Needed For This Step	Assembled left side (roller arm, column) D(x2) - Long Screw E(x2) - Long Screw pad



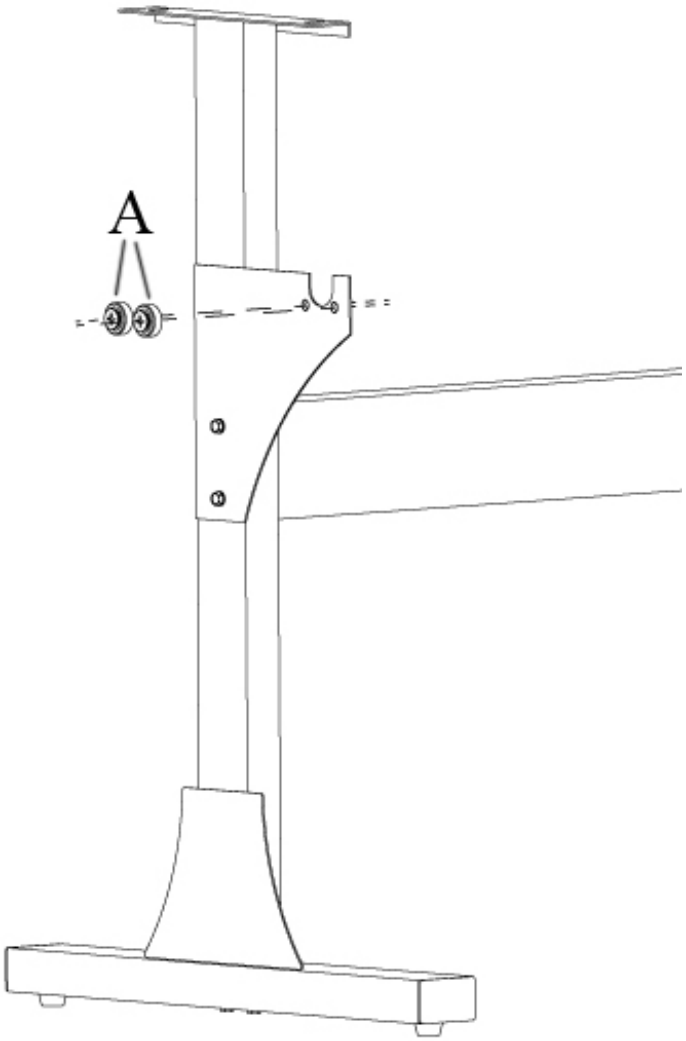
3	Needed For This Step	Assembled right side (Long Screw, Long Screw pad) with Center Crossbeam D(x2) - Long Screw E(x2) - Long Screw pad



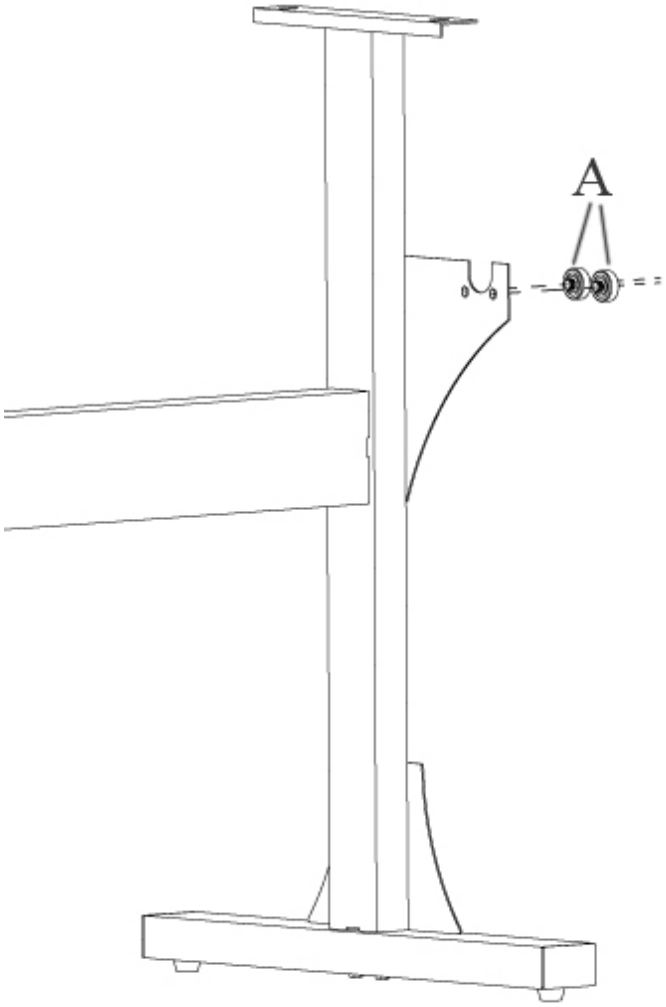
4	Needed For This Step	Assembled right side (roller arm, column, foot) with Center Crossbeam D(x2) - Long Screw E(x2) - Long Screw pad



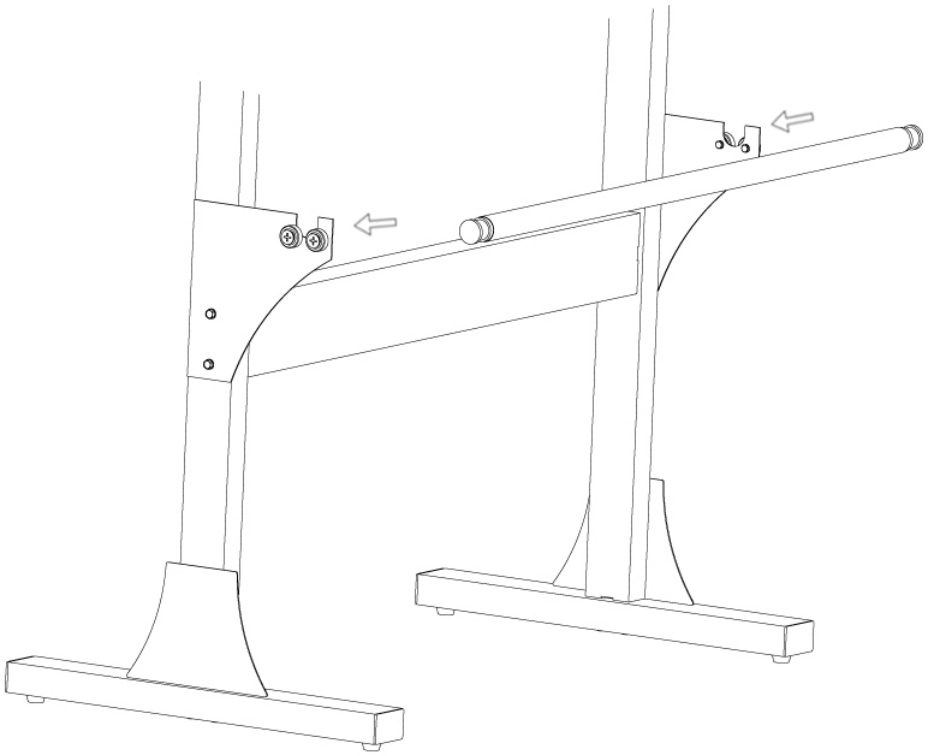
5	Needed For This Step	Assembled left bearing A(x1) - Rollers



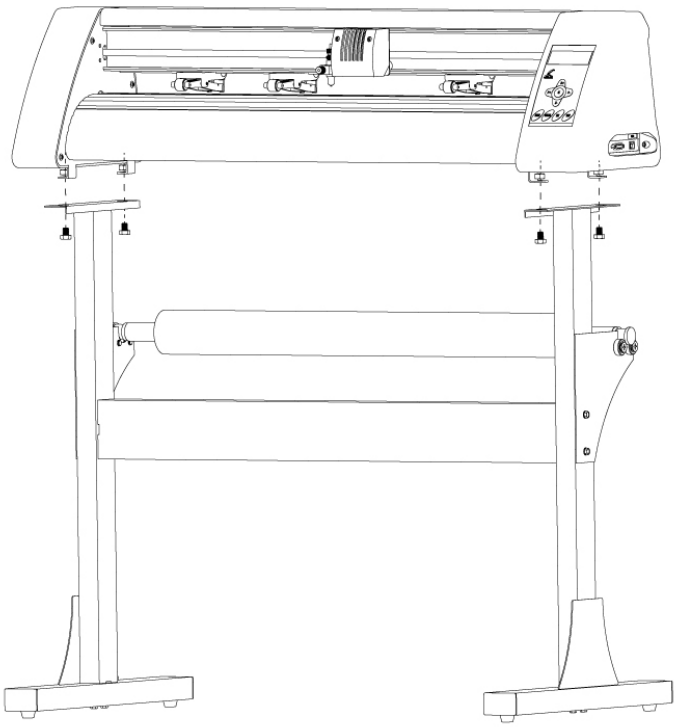
6	Needed For This Step	Assembled right bearing A(x1) - Rollers



7	Needed For This Step	Completed stand I(x1) - Roller



8	Needed For This Step	Completed stand with rollers C series Cutter



For your safety, proper use the product，be sure to read this manual carefully before operation, to be fully understood and save it for your later use. If you have any suggestions of our products or need our help, please call:0531-86516855/56/57

Special Note: The Company reserves the rights of changing the content and product specifications without prior notice. All the information to check carefully make sure accurate. Products are subject to change without notice.

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