

Bridge

Cutting Plotter

PRO365/720/870/1100/1350

Instruction Manual

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I. General Safety Rules

Please read the following before operating the plotter!

1. Do not connect or remove serial cable/parallel cable when the unit is powered up. Make all connections with the power off.
2. Keep your hands and hair away from the metal rollers at all times to prevent injury from moving parts and cutting blade.
3. Keep all magnetic sensitive and other magnetic material away from the unit. This may cause damage to the electrical components.
4. To ensure the machine work safely and reliably, please always connect the power cord to grounded power outlet.
5. Turn the power off when the machine is not in use.
6. If there is no media (vinyl, paper, etc.) in the machine do not lock down pinch rollers. Locking them without media may cause damage to the rubber traction material and damage the metal bottom roller.
7. Do not attempt to pull media manually through machine as this may damage the stepping motors and control unit.
8. This unit works from 110v power system. If you do not have 110v a voltage stabilizer should be used.
9. To prevent damage to the moving track do not attempt to move the unit by lifting from the top. Always move the unit by holding from the bottom.

II. Specifications

Model	PRO365	PRO720	PRO870	PRO1100	PRO1350
Max.Paper Width	365mm	720mm	870mm	1100mm	1350mm
Max. Cutting Width	275mm	630mm	780mm	1010mm	1260mm
Cutting Speed	60- 800mm/s				
Cutting Force	50-500g				
RAM	1M				
LCD Display	Backlit LCD Display				
Communication Port	Serial/Parallel/USB Port				
Power Requirements	AC110V±10% or AC220V ±10%				
Repeatability	0.0127mm				
Mechanical Resolution	0.0254mm/step				
Command Set	DMPL / HPGL				
Working Condition	Temperature	0-35			
	Humidity	5%-65% (without condensation)			
<p>Remark:</p> <p>Except for PRO365, all other models include Aluminum alloy floor stand.</p>					

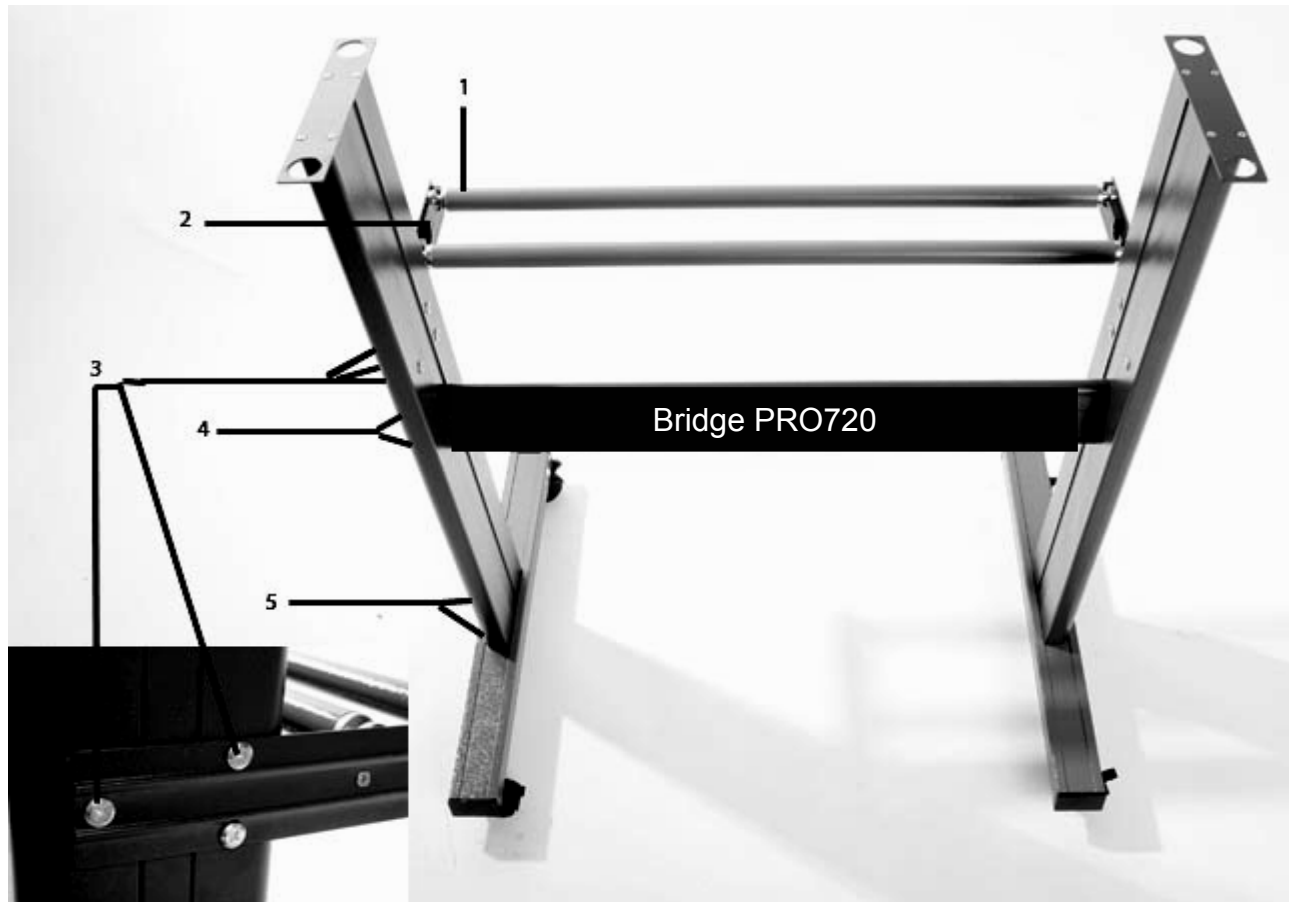
III. Plotter Components Diagram



List of Components

- 1.USB port
- 2.Serial port
- 3.Parallel port
- 4.Carriage
- 5.Cutter holder
- 6.Keyboard controls
- 7.Metal rollers
- 8.Front side of pinch rollers
- 9.Power switch, Fuse, and Power cord input
10. Plotter stand

IV. Assembly Diagram of Plotter stand



Assembly Description

1. Vinyl roll holders.
2. Vinyl roll holder side arms.
3. Three 1 ¼ inch flat tip screws with matching metal connecting grommets to screw on the ends will connect the vinyl roll holder side arms.
4. Two ¾ inch pointed screws placed inside of the black sleeve attach to the sides of the middle bar and covered on the ends with the black grommet cover. Note: on larger stands there will be two middle bars to attach.
5. Four 1 ½" pointed screws attach to bottom of stand.

V. Loading paper

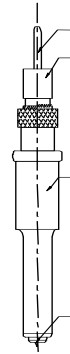
1. Adjust the place of pinch-roller according to paper-width. Cutting plotter has 2 to 4 pinch-roller assemblies (depending on machine size) and they can be moved on the guide rail. When moving, please ensure the handle of the pinch-roller is lifted up, then hold the back of the holder and push it to the left or the right. Do not pull the roller bar in the front, otherwise the machine precision will be affected.
2. Placement of the pinch rollers:
 - a. Pinch-roller is in the place out of the scope of the pattern.
 - b. Pinch-roller is 10-50mm away from the edges of paper.
 - c. Do not lock pinch roller over a joint on the metal roller.
3. Loading paper
 - a. Lift the pinch-roller handle and keep it away from the roller.
 - b. Insert the paper between metal roller and pinch-roller of the machine from behind to front.
 - c. Press down the pinch-rollers.
 - d. If vinyl film is not well placed, a serious deviation will occur. Please carefully check vinyl before sending a file for cutting. If vinyl stretches out longer on one side than the other, lift up pinch-roller on longer side and draw the vinyl back from this side till both sides of vinyl are on a horizontal line. Press pinch-roller and try running and adjusting the vinyl several times in this way. Some vinyl is not originally horizontal or upright, so it is necessary to run vinyl for enough times to ensure least deviation before working with it.

VI. Loading cutter and pen

1. Structure of cutter holder and items of components

Rotate the cutter holder to adjust the length of the blade past the bottom of the holder making sure that it is not extended too far, resulting in the blade cutting through the vinyl backing.

- a. Cutter (diameter is 2mm)
- b. Cutter holder shell
- c. Cutter holder body
- d. Cutter-exiting staff



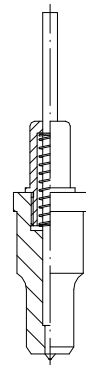
2. Installation and adjustment

- a. Before installing the cutter, you must carefully clean the cutter holder body, the cutter and your hands. Even very slight dirt can affect the rotating sensitivity. Insert the cutter into the cutter holder body with care, then push the cutter to the bottom with a flexible plastic or rubber, but don't damage the blade tip.
- b. Rotate the shell of the cutter holder and make the out-stretching length of the blade tip is not larger than the thickness of the vinyl and adhesive.

3. Plotter holder

You can use ball-pen to plot with the given plotter holder.

1. Loosen the screw on the holder with a screwdriver counter-clockwise.
2. Insert a ball-pen and adjust the tip out the proper length.
3. Clockwise fasten the screw.



4. Installation

1. Turn off the power.
2. Loosen the locking-screw of the cutter-bracket, then put the cutter holder or plotter holder in the "V" breach and ensure the blade tip or refill reaches to the plastic pressing-strip. Fasten the locking-screw clockwise.
3. After turning on the machine, the tip should be raised about 1 to 2mm away from pressing-strip.

VII. Running Plotter in Test Mode

1. Place the machine on a smooth table, and keep enough room around it.
2. Keep machine away from strong electromagnetic disturbance or thick dirt-powder.
3. Connect the machine to the computer by the serial or parallel cable, and then turn the power on. If the carriage can automatically move right and metal roller can rotate automatically, this means machine's automatic reset.
4. If it fails to reset, press the "RESET" key.
5. The cutter holder should then rise 2mm or so. If you press "origin" key, the holder will lower to its cutting depth; Release the key, the holder will rise again. It shows the carriage and cutter holder can work properly.
6. If you want the machine to cut from appointed location, press the "option" key, the yellow light will be on, press "←" or "→", the carriage move to left or right; press "↓" or "↑", the media will move forward or behind. Then press "ORIGIN" key, the machine will work at the point of blade's location.
7. Press "TEST" key, the machine can start its own testing program and a test-cut design will be automatically cut. This is a great way to adjust the blade depth and ensure you are not over or under cutting the vinyl. You want to just score the top layer of the vinyl preventing any cutting on the backing material. MAKE SURE the blade is deep enough to cut all corners and edges of your vinyl test.

NOTE:

- A. Turn off the power of computer and machine before connecting the cable.
- B. When you use the software, ensure to set controls such as: port, commands set, baud rate and device, etc. to coordinate with the cutting plotter. When you input data from computer to the machine, the machine will work.

VIII. Operating Instructions

The machine contains six working status: Reset, Online, Offline, Setup, Offline + Setup and Pause.

1.Reset status

When you turn the power on, the machine can automatically reset. When it is working, if you press the “reset” key, the machine will return to reset --- clear up all information, and get ready for new work. “Welcome to use” will appear on the LCD that means the machine intend to receive the data from the computer.

At the time, the default in the LCD is as follows:

- a. Baud rate = 9600
- b. Cutting speed: 200mm/s; Cutting force: 150g;
- c. Cutting origin is according with the default in the machine
- d. Clearing the buffer

The above information may be changed through operation.

2.Online status

After the machine resets, the red light (reset indicator) is on, when the machine receives data from the computer, the yellow light flash, machine entered into online status. You can operate as follows:

- a. Change the cutting speed: please press “V+” or “V-” key.
- b. Adjust the cutting force: please press the “F+” or “F-” key.
- c. Change the origin: please press “option”, and “F+” or “F-”, “V+” or “V-” to move the cutting blade to appropriate position, then repress “origin”, this position will be confirmed as the new work origin. After you press “Reset” key, machine will work at its default position.

3.Off-line status

Under online status, press “Offline” key, and you’ll enter offline status. The yellow light is on. Meanwhile, “motion” and “X=xxx, Y=yyy” will appear on LCD, which shows the coordinates location of the blade at the moment.If the cutting plotter is at work, it will stop working, and the blade will be lifted up. Then the cutting plotter can’t receive data transmitted from the computer, but you may operate as follows:

- a. Press the key “↑” or “↓”, and you may remove the vinyl film forward or backward;
- b. Press the key “→” or “←”, and you can move the carriage right or left;
- c. When you press the key “origin”, the current location of the blade will be defaulted as new work point;

4.Setup status

In online status, when you press the “Setup” key, the green light is on, and you may set the baud rate of serial port. If you press “Setup” key once more, it will restore to online status.

NOTE: unless you are a professional technician, it is not suggested to change this setting.

5. Copy status

Press "Offline", "Setup" and "Origin" key, the machine will re-cut all the data output at the time of latest resetting. But the machine will NOT re-cut anything, when the green "Reset" is light flashing, if the output data is more than the buffer capacity. In this condition, you may press "RESET" key to re-start cutter's work.

6. Pause status

- a. Check cutting effect: With the unit on: press "Offline/Pause" key, it will pause. You may move media by pressing "→", "←" or "↓" key (but do not press "↑" key) and check cutting effect. Repressing "Offline/Pause" key will make the machine back to work.
- b. Continue work at a new point: When the blade moves to a new point, if you press "Origin" key instead of "Offline/Pause" key, the cutter will continue work at this new point.

NOTE:

If something unusual happens, that you can't stop cutter's work, please turn power off.

IX. Test Cut and Force Adjustment

Test Cut

Once you have the blade installed and vinyl inserted you may test cut to check the force of the blade and verify that the plotter is operated correctly. Press the TEST key to set up the test cut.

Adjustment of blade's force

By pressing the right arrow or left arrow the force of the blade will be decreased or increased by one level. If the force is too low the cut will not be deep enough, if it is too high the logo or patterns could be compromised. Additionally the blade and cutting strip could be damaged. The blade should normally stick out about 0.5mm or less which is two-thirds the thickness of the vinyl. While drawing patterns by the plotter you should first try adjusting the force to be conservatively low.

NOTE:

Always test cut every time you use a new type of vinyl to verify the cutting force.

X. Frequently Asked Questions

Q: What languages can this machine process?

A: DMPL / HPGL (Roland Compatible)

Q: What programs have been tested on the machine?

A: Signcut, Artcut, WinPC Signs, Signlab and Flexi (plotter works fine with all versions of Flexi).

Q: Will this cutter work with other software?

A: This cutter will work with most sign-cutting software such as Flexi, Signcut, Artcut, Winpcsign. You can export files from current versions of Adobe Illustrator or Corel draw and import them into Artcut 2005.

Q: What colors of vinyl can you use with this plotter?

A: You can use multiple colors of vinyl. This does not print color. If you would like full color with gradients, you need a printer. If you want to block colors (more vibrant than printed colors), this is perfect.

Q: Will this cutter work fine for t-shirt transfers?

A: Yes

Q: What driver do I use?

A: Bridge PRO720 (DMPL) for Artcut 2005.

Most other software programs will work using the Roland PNC 1000 driver.

Q: Will this work with a MAC?

A: Yes! We have tested on a Macintosh computer and chipset but not yet on the newer Mac's running on the Intel chipset configuration.

Q: Does this plotter have an opo eye or registration mark reader?

A: No

Q: What voltages will this work at?

A: This will work fine at 110 or 220V.

Q: I need to know the cut radius, what's the resolution?

A: Mechanical resolution: 0.0254mm / step.

XI. Troubleshooting

Artcut software only installs in Chinese

If you are using Artcut 2005 there should be 2 CD's in the case. The blue CD that says Artcut 2005 is the one you should install which should be in English or at least have an option to install in English. At some point in the install it may ask you to insert the second disk which is the disk with the Chinese characters that says Artcut graphic disk. That disk is in Chinese but you only need to insert it briefly so that the install can continue and you normally will not need to use the Chinese disk again unless you reinstall the program. Sometimes you maybe encounter a tip saying that "insert graphic CD" that means that you should insert Graphic CD into CD Rom of your computer. So Graphic CD is also regarded as a key CD to Artcut.

Problems Cutting

1. Check to make sure the cables are connected properly
2. Are you using the correct driver in the cutting software?
3. Run a test cut
4. Be sure the pinch rollers are tight enough and placed correctly on the ends of the vinyl and somewhere in between.

Connectivity Problems

Windows XP Installation Instructions:

Artcut and most other vinyl / tint cutting software interfaces with the vinyl cutter directly without using Windows drivers. As such, the settings in Artcut are critical. Make sure you use setup "Bridge" as the plotter using the Bridge PRO720 DMPL driver and use LPT1 for parallel connections. In other software programs such as Flexi the Roland PNC 1000 driver will work.

Please note:

It is not necessary to install drivers unless you are using the USB connection. The USB connection is the same speed as a serial port, so parallel port is the fastest and easiest connection method to set up. It is recommended that you first set up using the parallel port (otherwise refer to as the printer port or LPT1).

Parallel Port

In most cases the parallel port will work by simply connecting the parallel cable and setting up the Artcut software to plot through the LTP1 port. If you do have problems you can try the following steps.

1. Verify all cables are connected properly and try rebooting the computer and/or plotter.
2. Make sure you have a parallel cable not longer than 12' (the shorter the better).

- 3.No other devices or switchboxes should be connected or daisy chained to the parallel port.
- 4.Try changing your parallel port mode to ECP if it is not already. This is done in your computer setup (BIOS) and is it recommended that only advanced users adjust this setting.
- 5.Remove any other devices that are listed in control panel>Faxes and printers. You will not actually see the plotter installed as a device here but since it uses a driver through the cutting software but any other installed parallel drivers could interfere with the plotter.

Serial

For Serial simply connects the serial cable to the PC and set the Artcut software to print through COM1, and if that does not work try COM2.

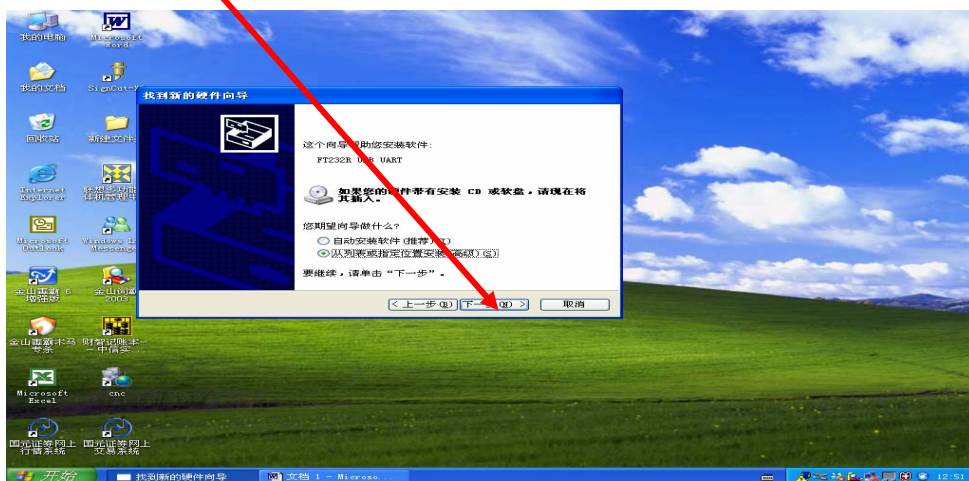
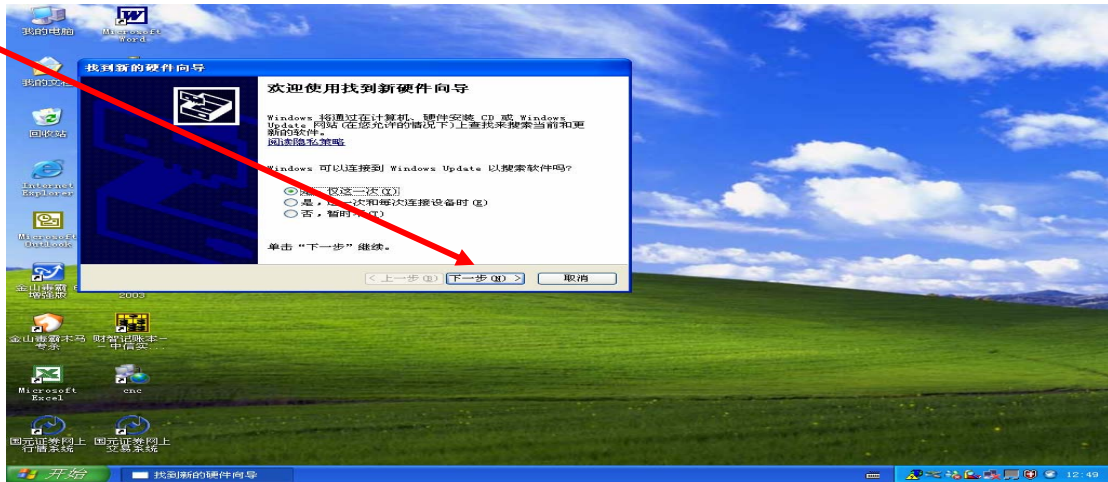
Built-in USB

Please check the appendix on Page.14 to install USB driver. This is a full USB version built-in FTDI chipset. Once the drivers are installed, you will need to go into device manager and change the USB port from COM4 (or default setting) to COM1 or COM2 so that it can be recognized in Artcut 2005. As mentioned before the USB connection is the same speed as a serial port. This is the most difficult connectivity method since it is the only method where it is necessary to install a driver. The driver is for the USB conversion cable and not the plotter itself.

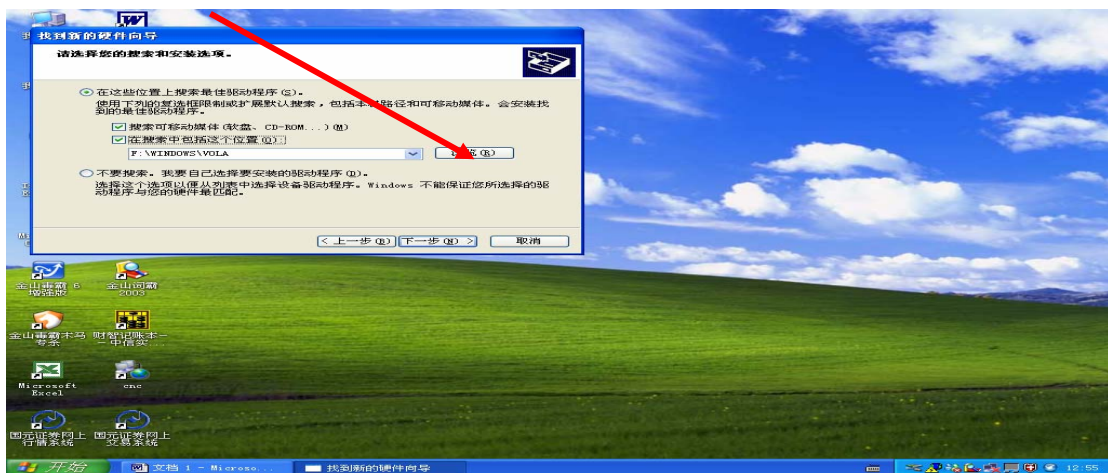
- 1.Before connecting the plotter install the driver from the mini driver disk included with the cable. If you have the plotter connected it will try to automatically install a driver, which could lock up your computer so leave it disconnected during the driver install.
- 2.You will need to install the USB driver into computer;
- 3.Once the driver is installed, please turn off the computer and plotter and connect the cable.
- 4.Start your computer and plotter and the plotter should be ready to use.
- 5.Be sure to change the port settings in Artcut.

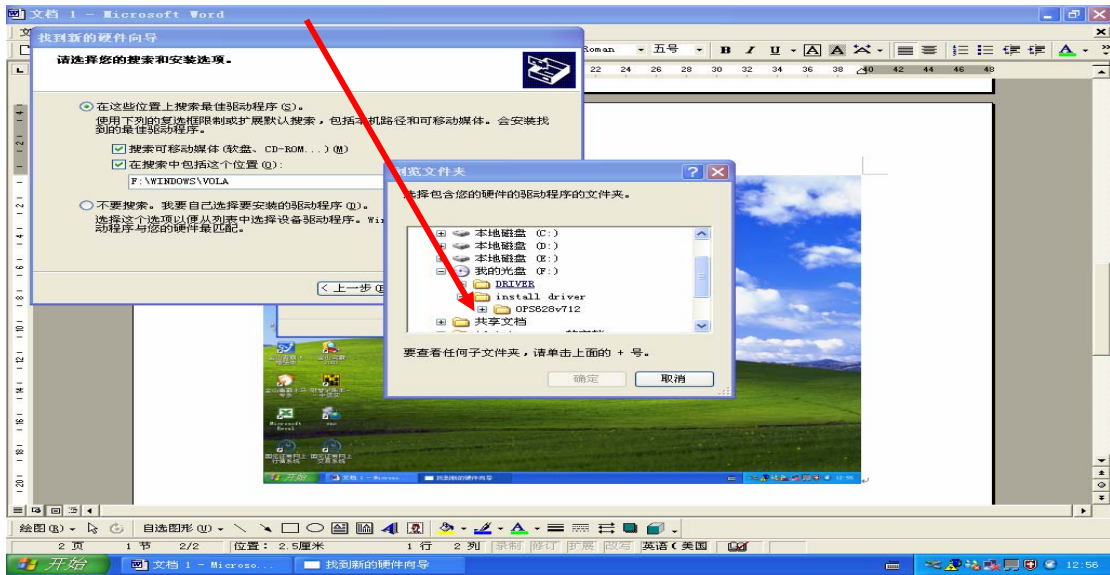
1) Install USB port:

Connect USB cable with USB port of your computer and insert Driver CD into your CD ROM of computer. You will find the following installation guide. Press “Next” and enter USB installation.

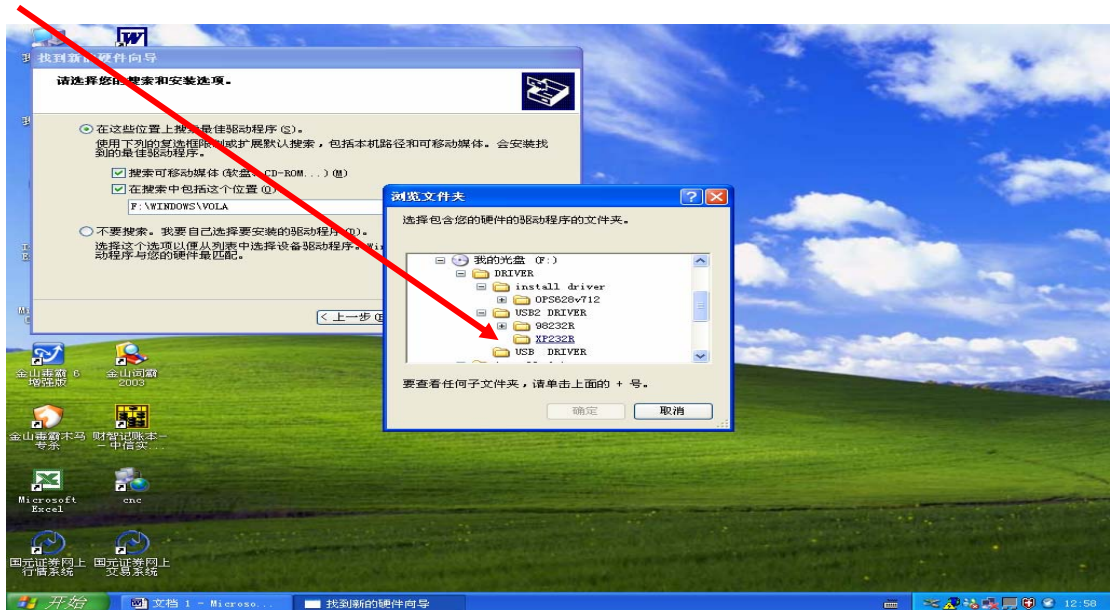
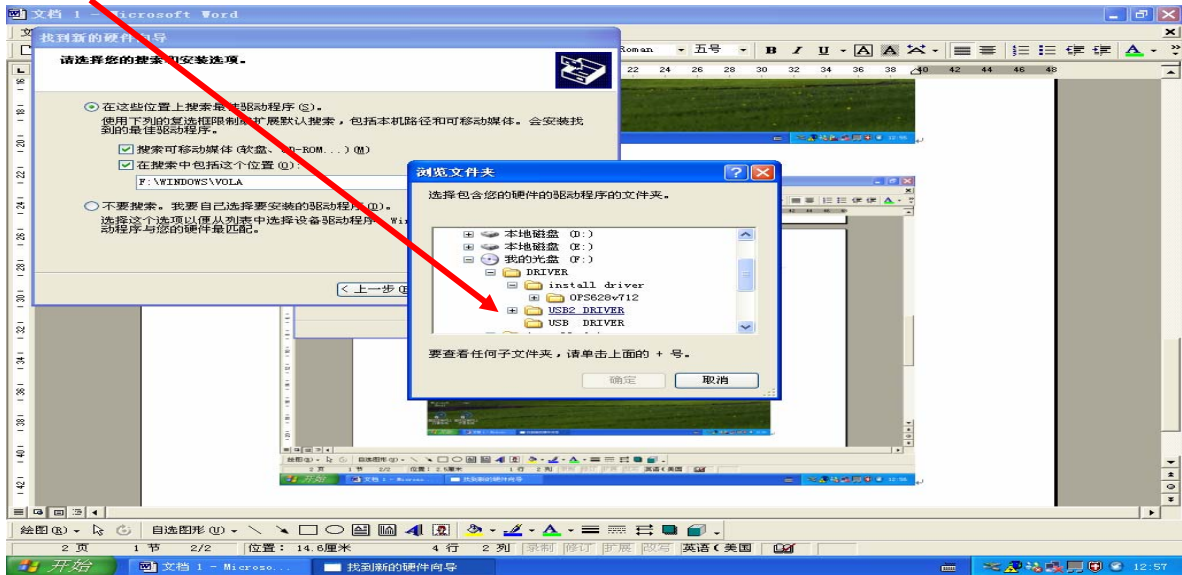


Click “Browse” and Select “Driver” file from Disk: F

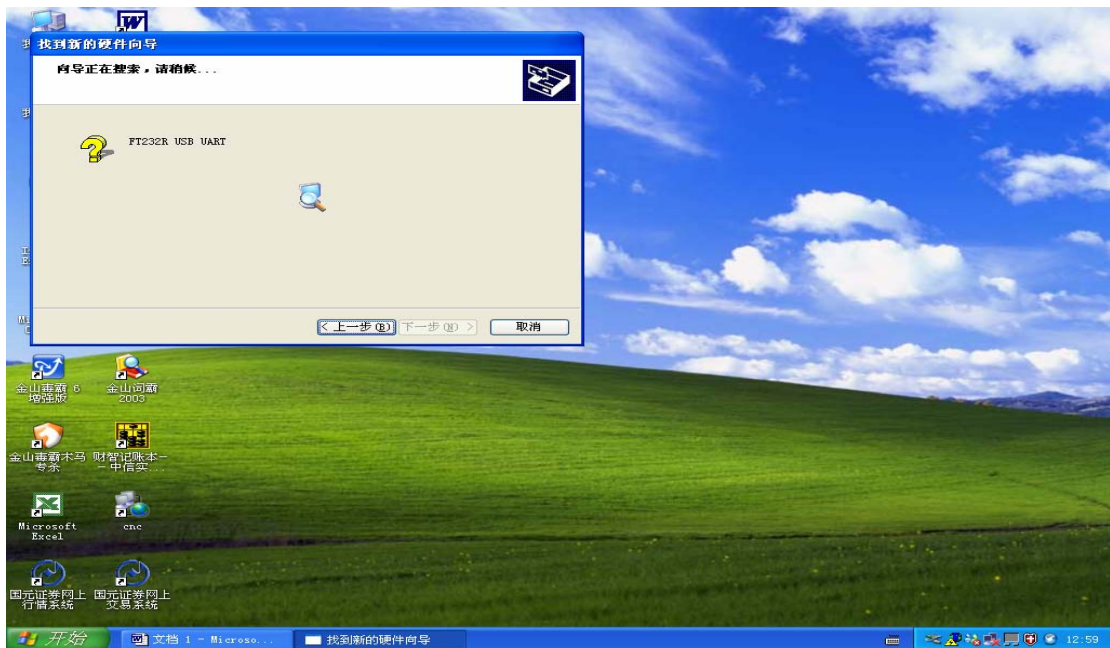
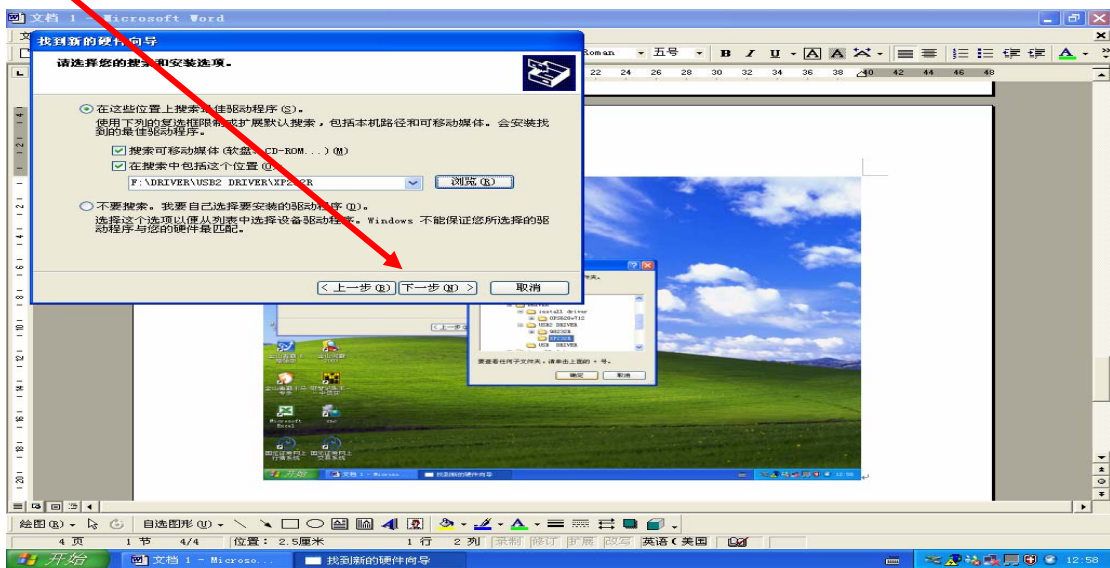
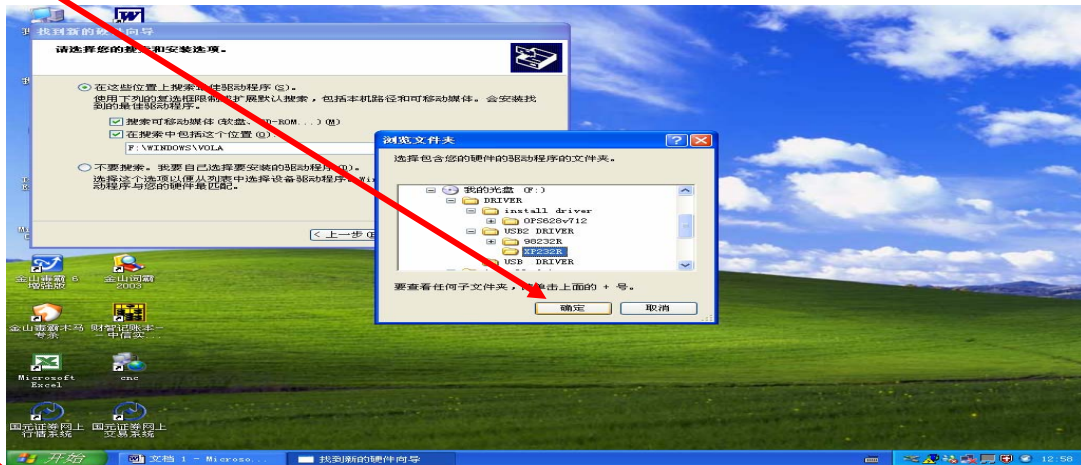


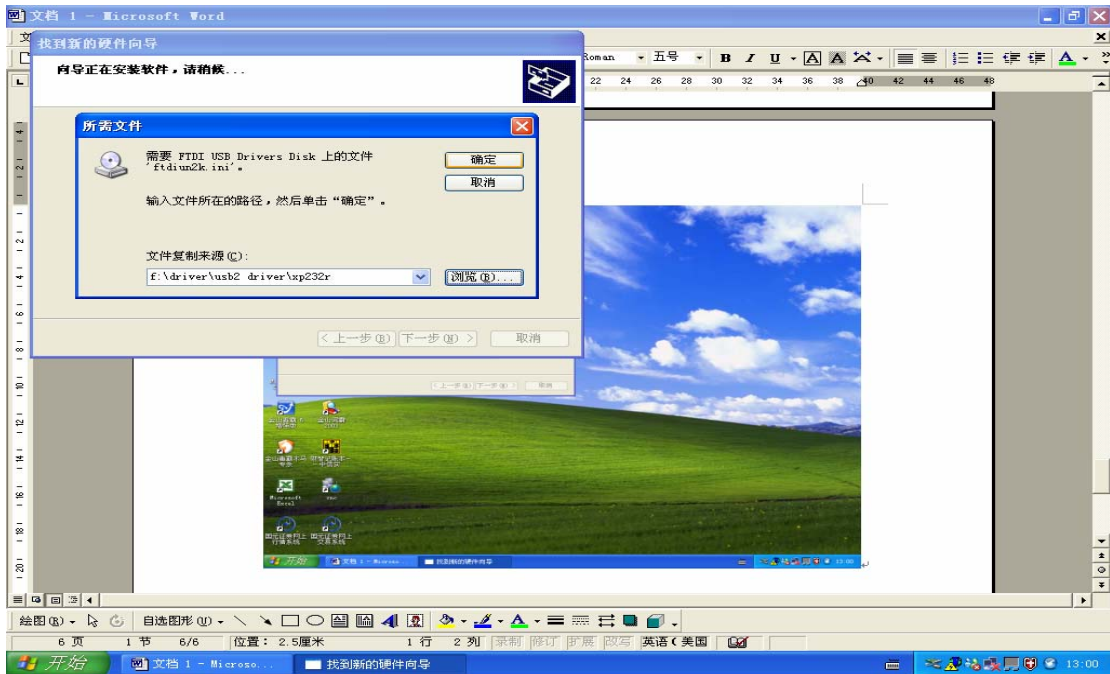
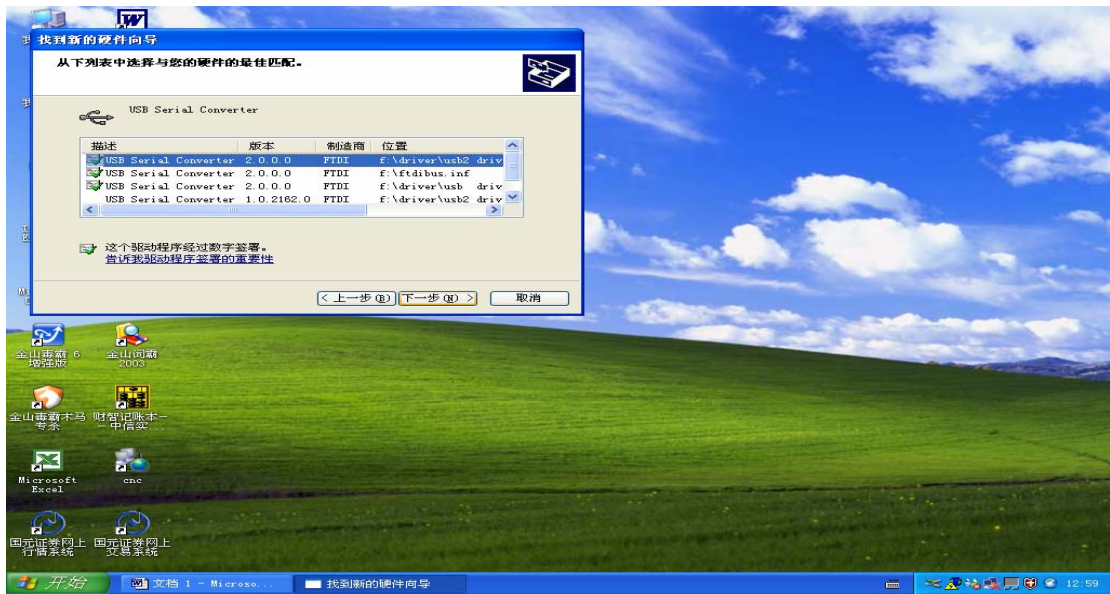


Make sure to select "XP 232E" under "USB2 Driver" file

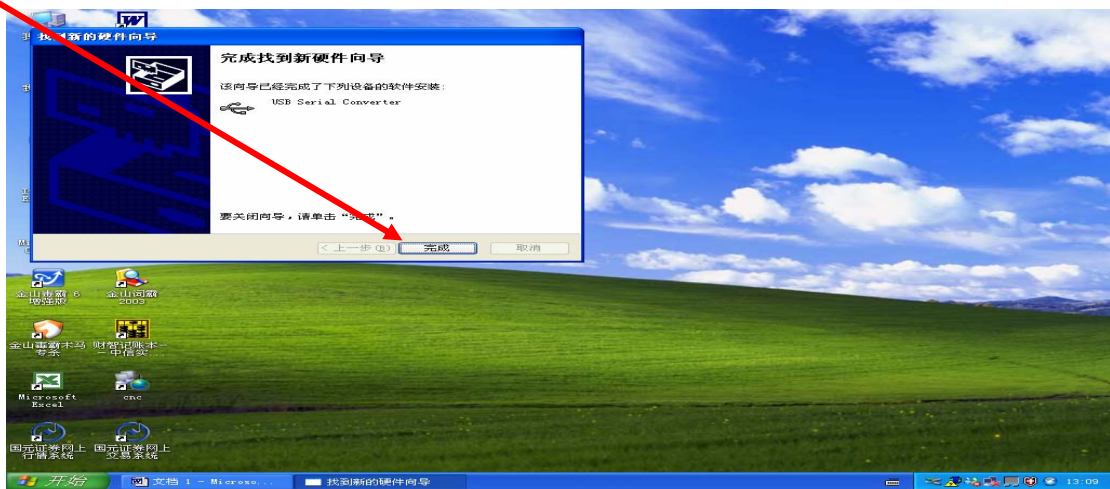


Press "OK" to and "Next" to install



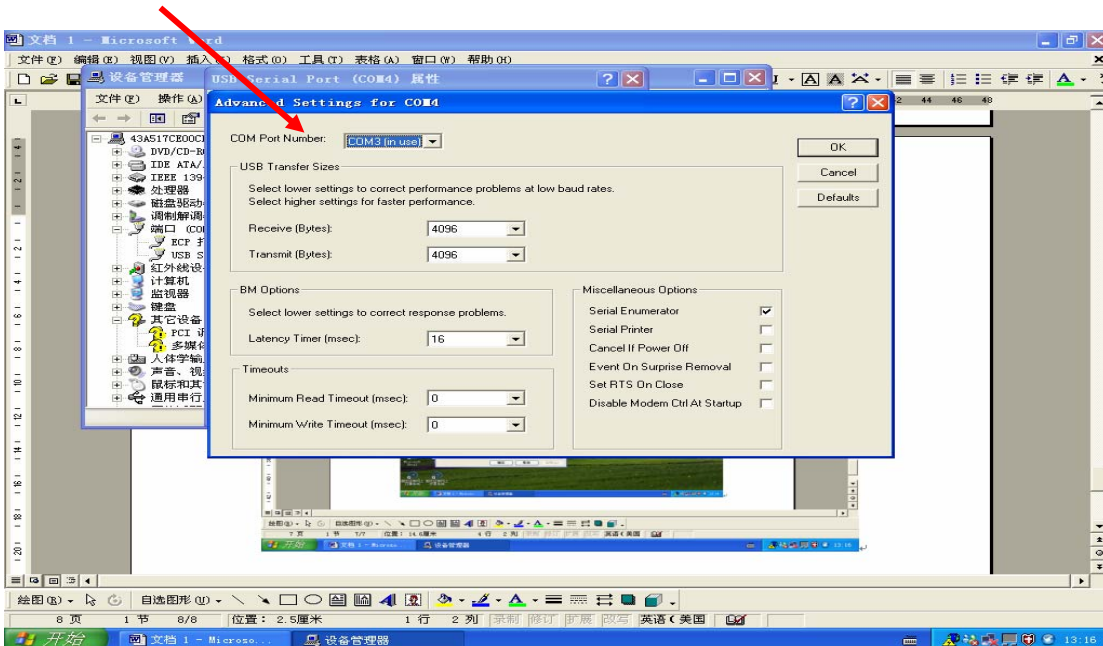
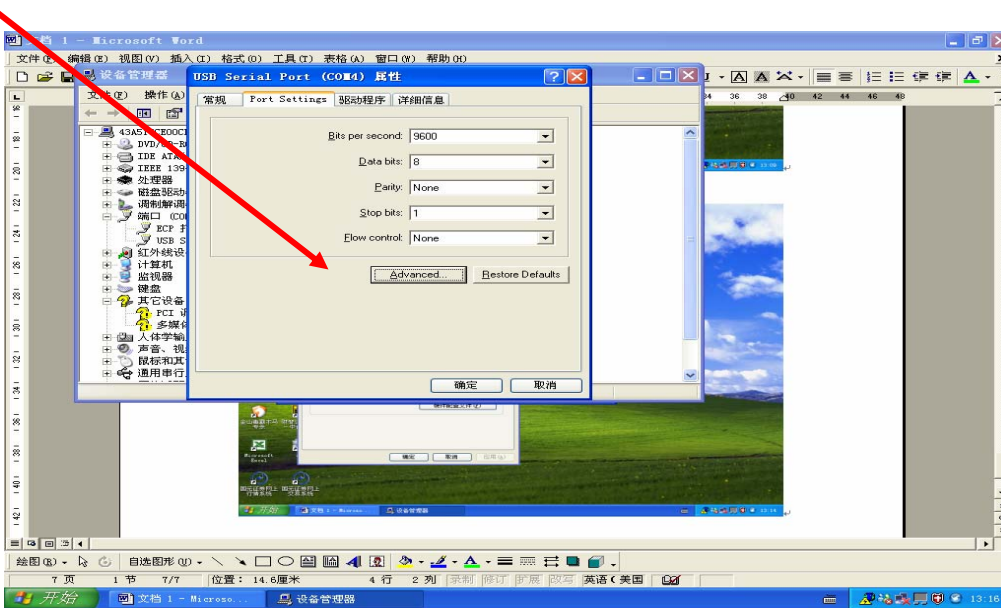
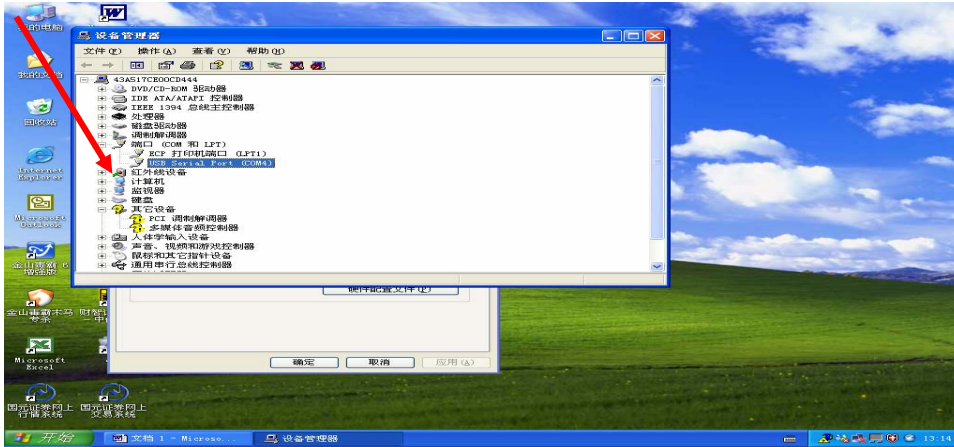


Finish

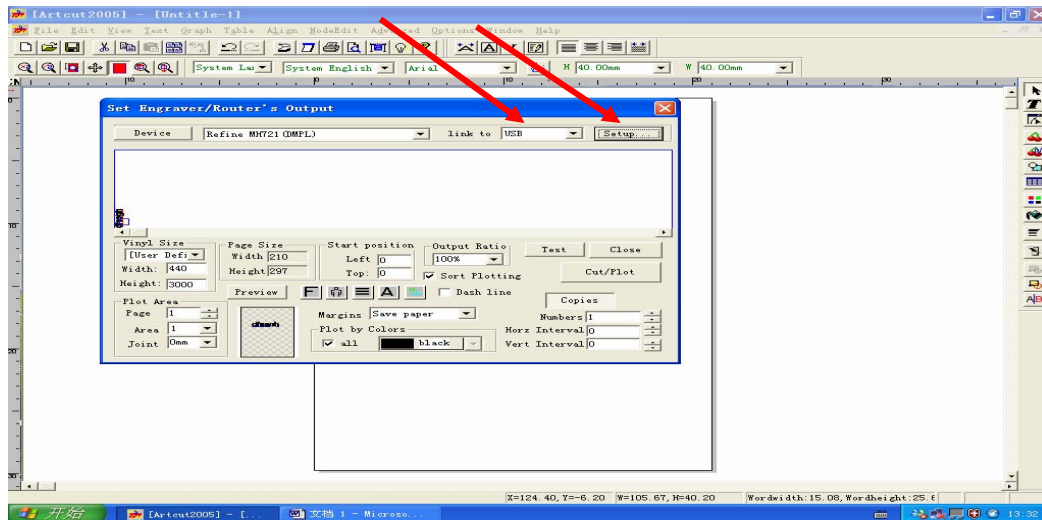
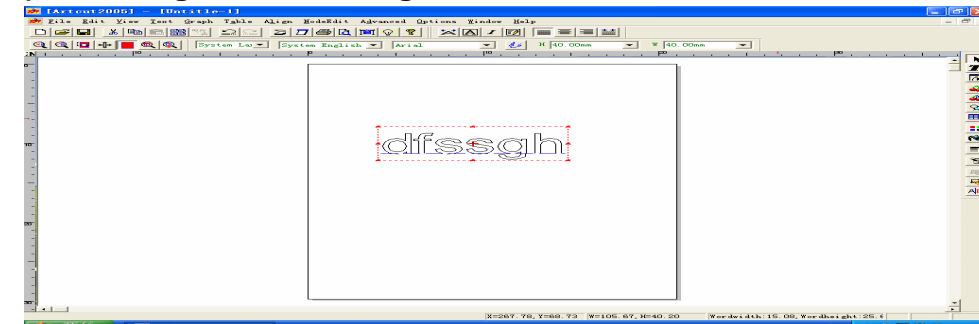


1) Port Setting:

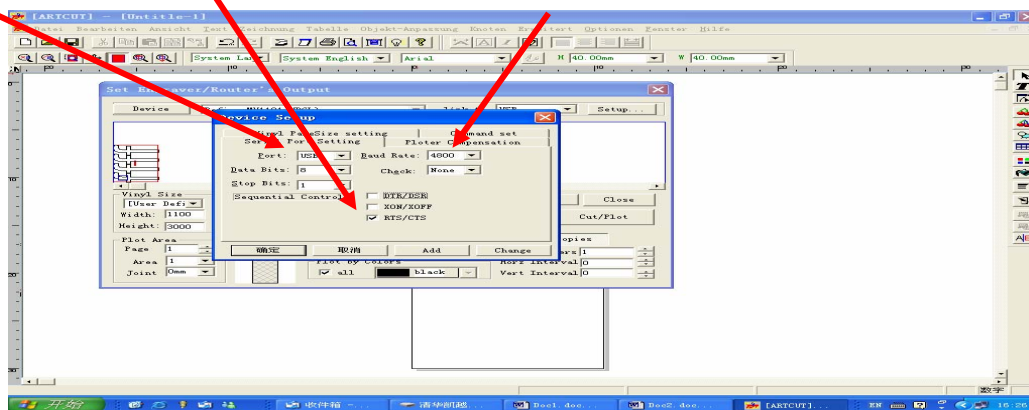
The USB device will be found as “COM 4” from “Device Manager”. To ensure stable work, please change the port to “COM 3”.



2) Change some setting in Artcut Software:



USB RTS/CTS Baud Rate: 4800



3) Turn on the power of cutter and press “Setup” on control panel. Adjust Baud Rate to “4800” by pressing “←” key on panel of cutter, and then press “Setup”. That means you have successfully change Baud Rate to 4800 on the cutter.

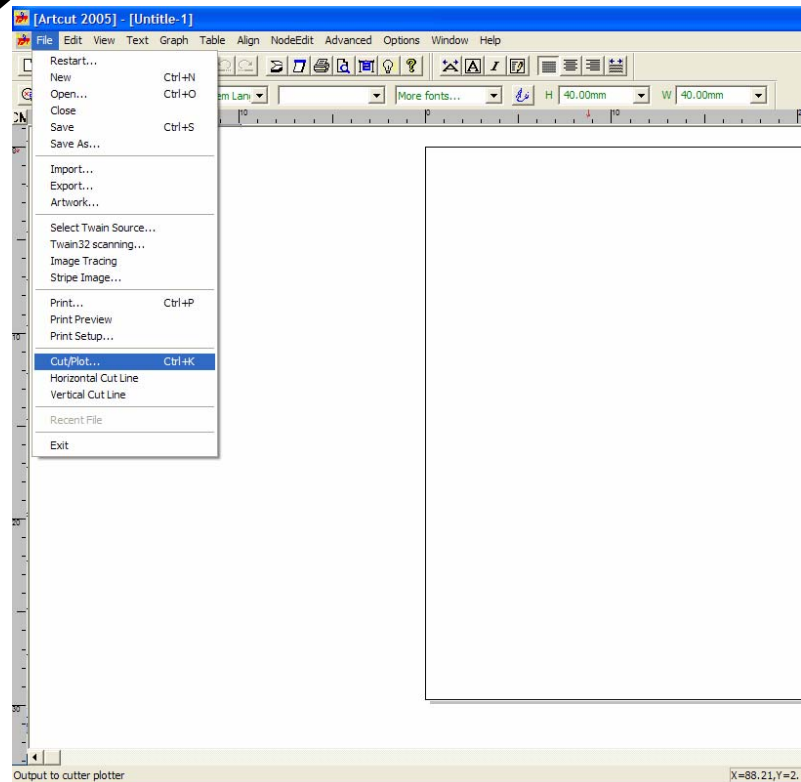
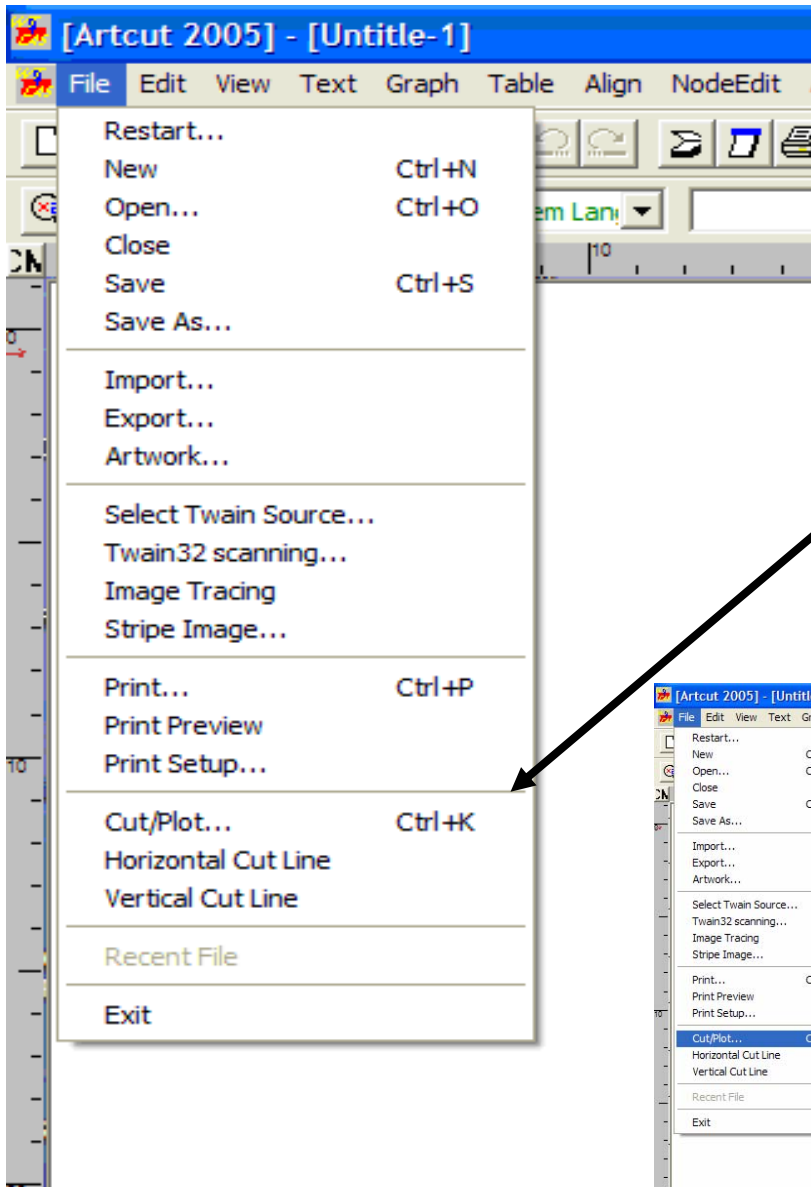
! Please note that the default Baud Rate of cutter is 9600, so you'll need to adjust the baud Rate every time you work through USB port.

! Of course, you need to change Baud Rate back to “9600” both in Artcut software and the cutter when you work the cutter through Serial or Parallel port.

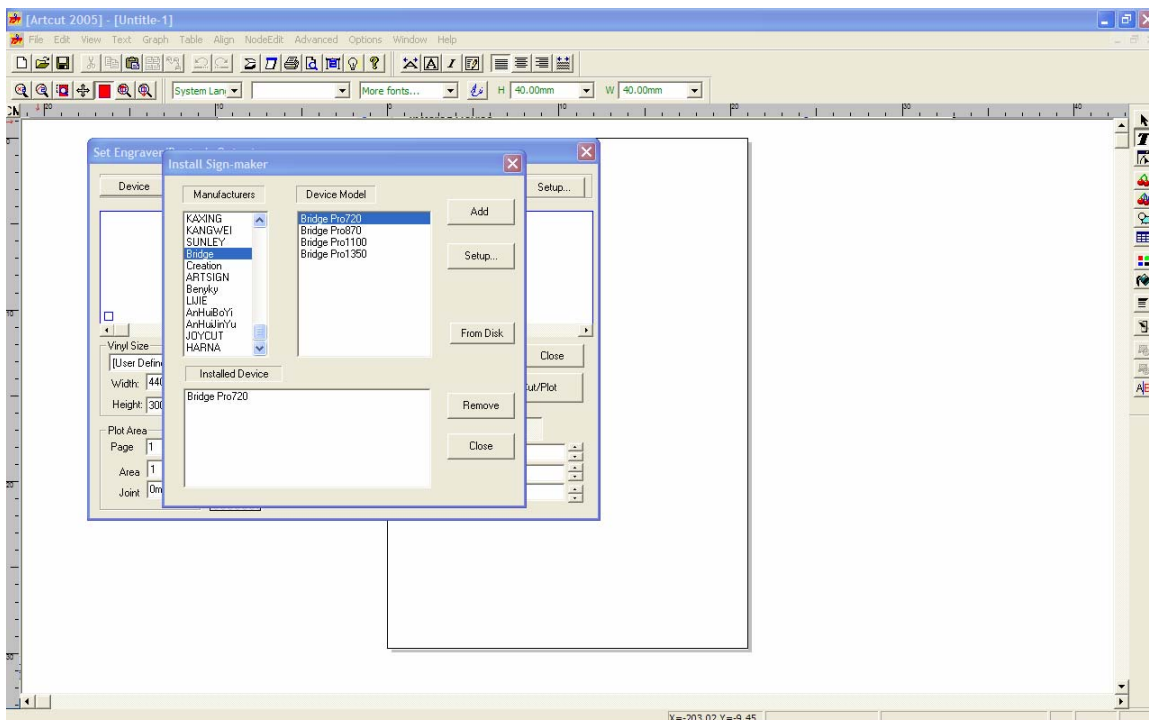
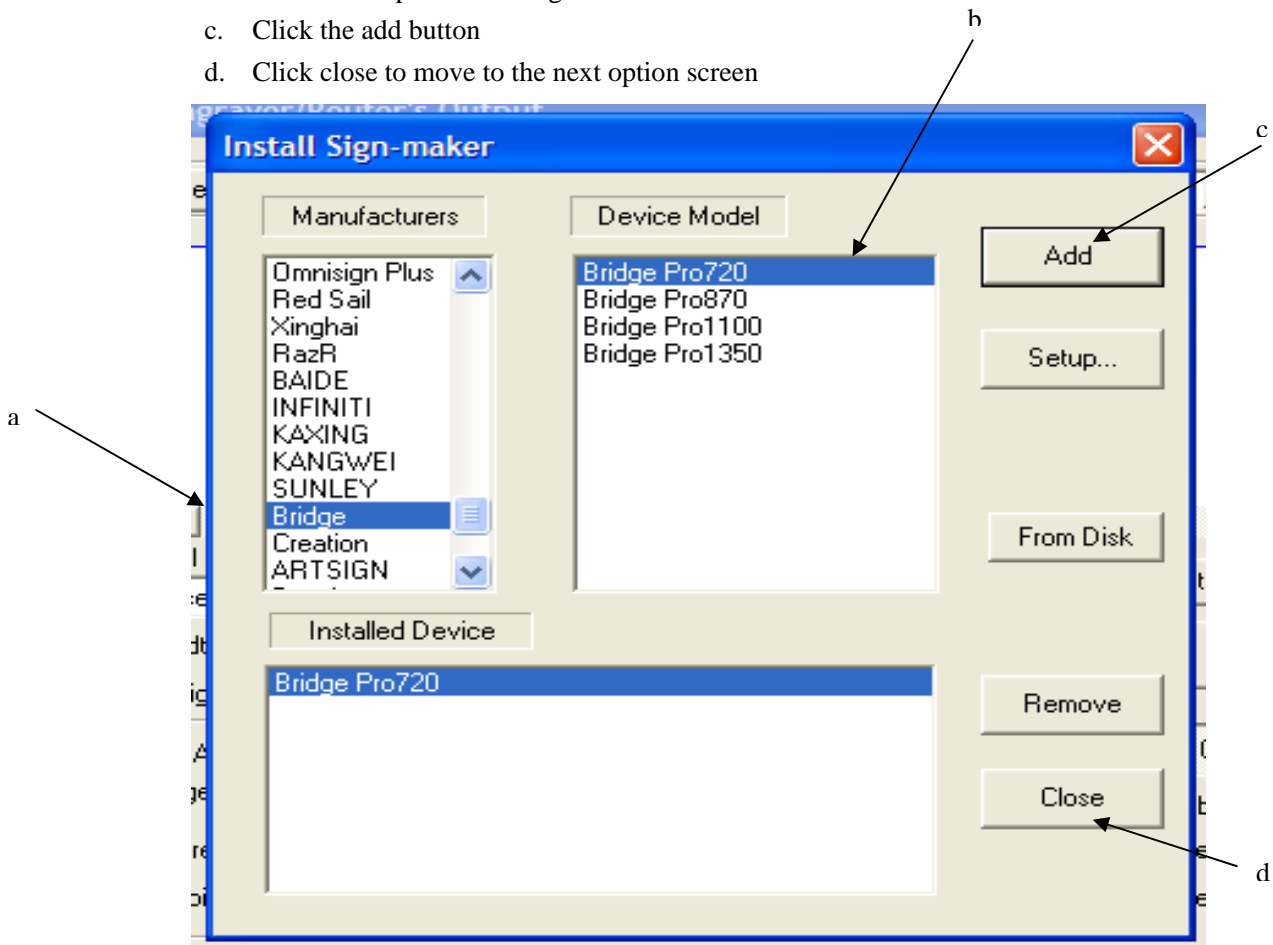
Using the Parallel Port

No drivers are necessary. Simply install the Artcut 2005 software then follow the instructions below.

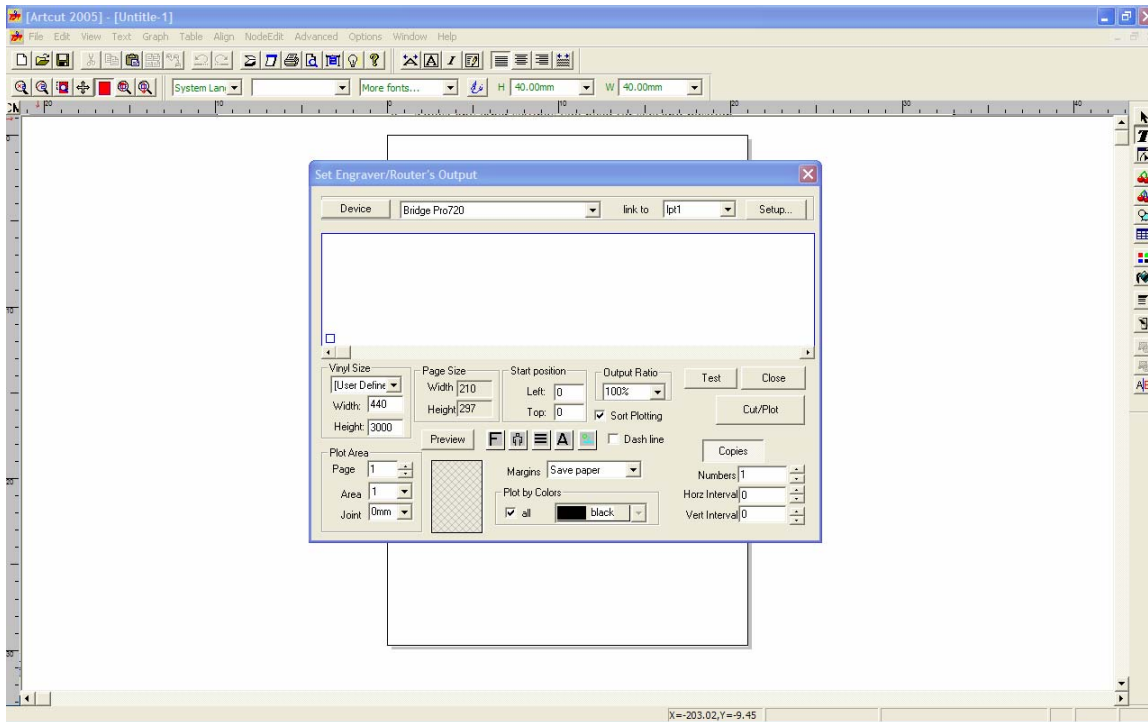
- 1) Once in Artcut and you are ready to plot or cut out your file press Ctrl K, or go to the file menu as shown below



- 2) The pop-up box asking to install your sign-maker will appear.
 - a. Scroll down the list of manufacturers and select Bridge.
 - b. Under device model select the model of plotter you have
 - i. 25" plotter = Bridge Pro720
 - ii. 50" plotter = Bridge Pro1350
 - c. Click the add button
 - d. Click close to move to the next option screen



- 3) Now ensure that the device is selected in the engraver/router option
 - a. Under device click on the drop down menu and select the newly added Bridge Model.
 - b. Check to ensure that the LINK TO box says lpt1 and click set.
 - c. Adjust any other settings you need for size and position.
 - d. Click cut and you are on your way.



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