CALCA® DIFFERENT & EASY

CE

FC6992 Flatbed Cutter

User Manual

CATALOG

Chapter1 Description

1.1 Model and specifications

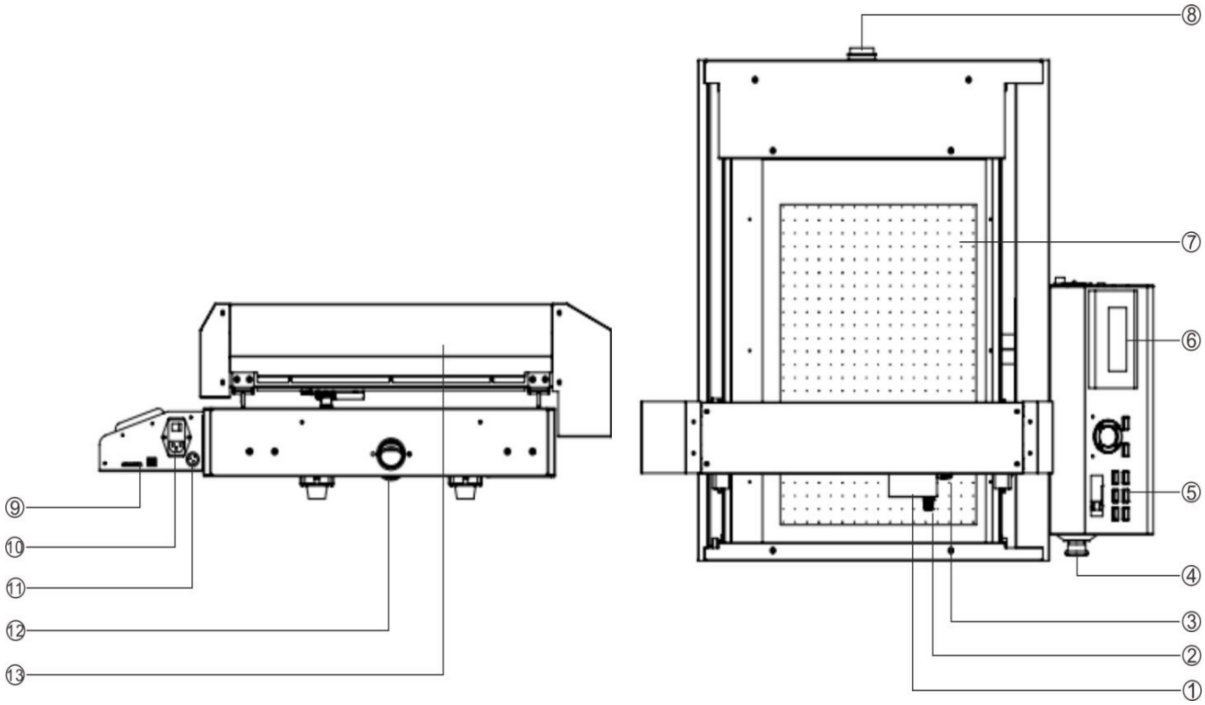
Model	Fixed way	Maximum arms cutting area	Type
FC-6992	Vacuum adsorption	700mm x 990mm	CCD
FC-6090	Vacuum adsorption	597mm x 887mm	Laser

1.2 Spare parts

Name	Description	Qty	Diagram
Power line	Machine power	1	
USB cable	Connect machine and computer	1	
Blade holder	Install blade holder	1	
Pen holder	To plot and calibration	1	
Creasing tool	To creasing	1	
Blade	Two boxes of circlip knife. A box of blades.	3	
Wrench	φ1.5 Allen wrench	1	
Software	Dragon Cut Pro	1	
Cutting mat	Green	1	
Felt	Grey	1	

Pump	/	1	
Pump connector	/	1	
Adsorption pipe	D40mm，H1.5m	1	
Silencer	Optional	1	

1.3 Appearence



1. **Carriage:** Drive blade holder/pen/creasing tool to plot and cut.
2. **Fixture:** Fix the creasing tool (outsider fixture), blade holder, pen holder.
3. **Laser:** Calibrate and scan.
4. **Emergency stop:** Stop working when breakdown occurs.
5. **Control panel:** To set parameters and use functions.
6. **Blade box:** To store blade/pen/creasing tool.
7. **Cutting panel:** To place the material.
8. **Adsorption connector:** Connect the adsorption pipe.
9. **USB interface connector:** Connect the cutter to computer by USB interface connector.

10. **Switch plug:** Turn on/off cutter.
11. **Pump line connector:** Power line connect the pump.
12. **Y motor:** Control the back and forth movement of beam.
13. **Beam:** Control the left and right movement of carriage.

1.4 Control panel

HP, Main interface.

1. Adsorbed fan switch (For manual mode)
2. Pause, Pause cutting, Click again to continue.
3. Max, The button to the farthest end
4. Ori, Back to origin point
5. Crease / Cut, Choose Cutting or Creasing to adjust the Force and Speed. The position of the tool is consistent with the position of the tool on the carriage.
6. Adjust the value by ' + ' and ' - ' , Click the Apply to save parameters.

Files

File management screen. Adjust the file by Previous page, Next page, Return, Click the Apply to save parameters.

Move

Change the carriage location by UP, Down, Left, Right.

1. Origin Point, set the current location as the carriage origin point.
2. Ori, Back to the carriage origin point that you set.

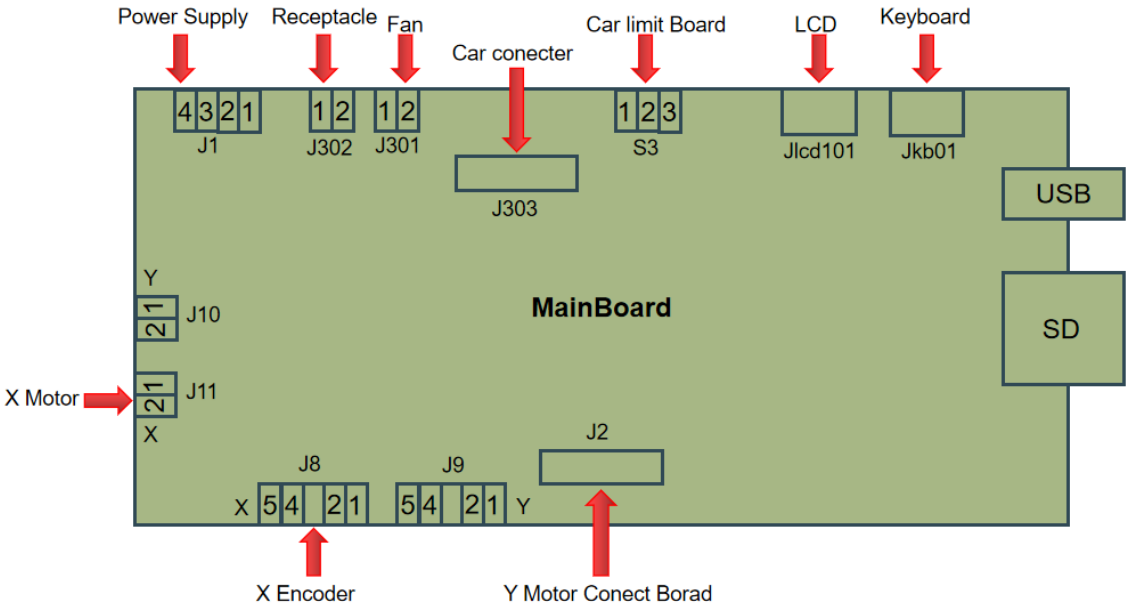
Set, check sub menus (force/speed/restore factory settings etc.)

Test, Test the cutting force

Apply in:

1. Move carriage (press Offline firstly).
2. Set pen speed/pen force (display on [pen speed / pen force] on this screen, ▲, ▼ to adjust the pen speed or ◀, ▶ adjust pen force.)
3. Set blade speed, blade force (on [blade speed/blade force] screen).
4. Use ▲, ▼ to adjust blade speed or ◀, ▶ adjust the blade force.

1.5 Mainboard wiring



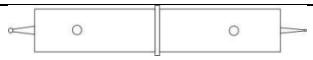
Notice:

1) All mainboards have been glued before they go out. You need to re-glue it after maintenance each time during using.
2) Do not expose the mainboard in air in daily life. Please contact our sales to assistant if it's necessary to open the cover and check mainboard.
3) Please give fully checking according to the wiring diagram above when you re-wiring in case other parts tear down causing by wrong operation.

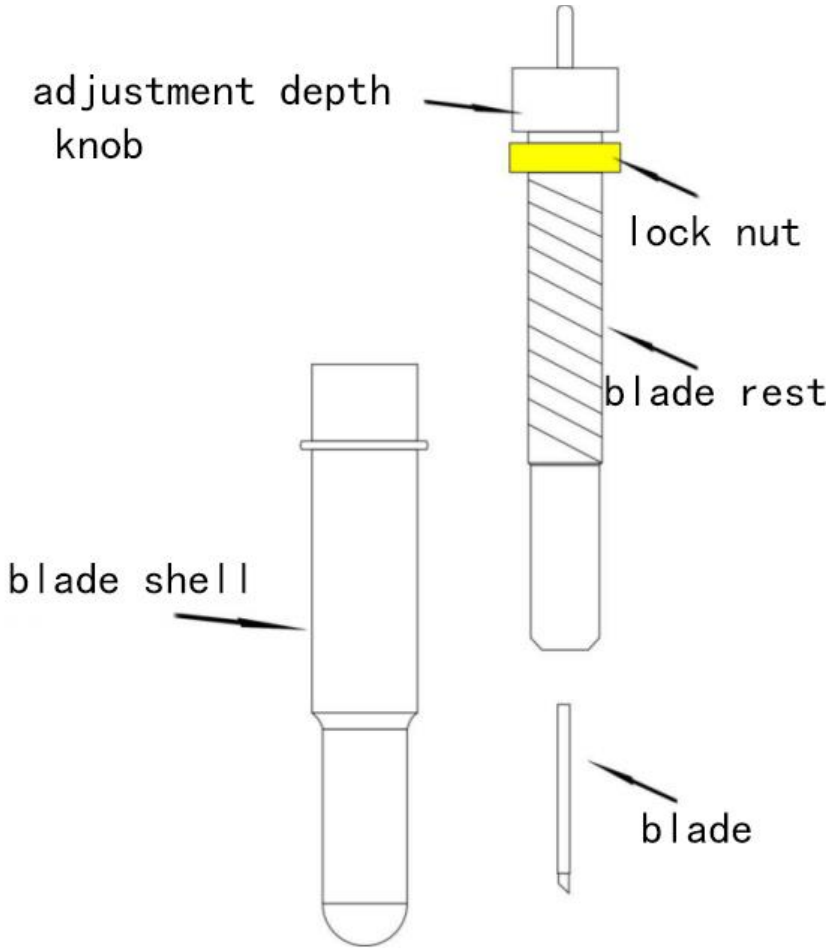
Chapter 2 Blades

2.1 Type and specification

Name	Diagram	Application
Blade		30°: For thick film, soft material and label 45°: label, adhesive sticker, and cardboard 60°: Suit for cutting the thickness between 0.5-1.5mm.
Circlip blade		45°: Suit for cutting the thickness between 0.25-0.5mm. 60°: Suit for cutting the thickness between 0.5-1.5mm

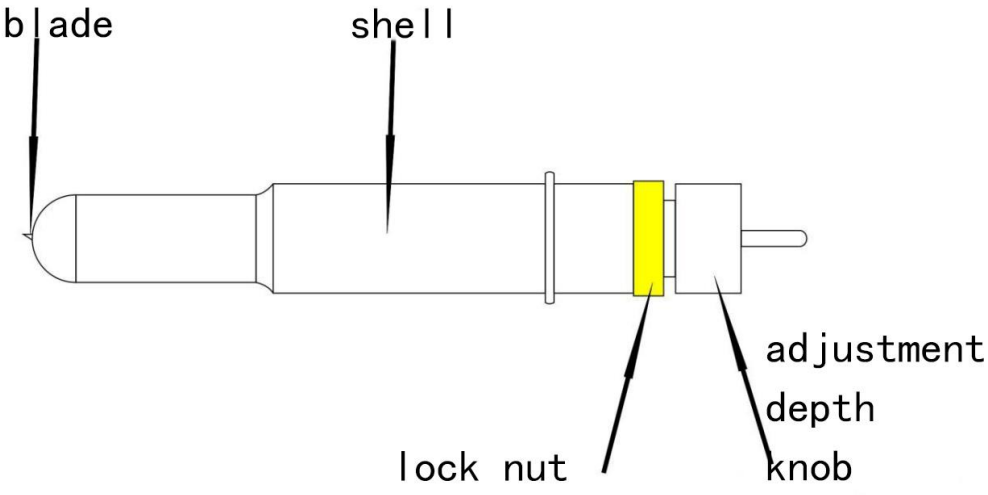
Creasing tool		Different diameters in each side.

2.2 Maintenance



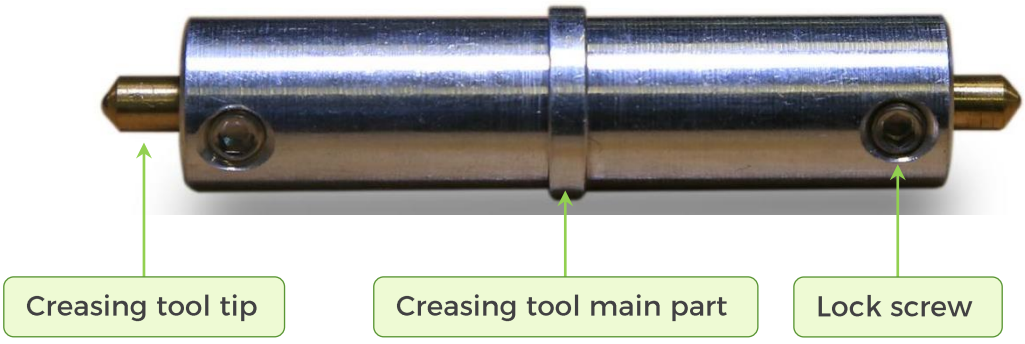
1. Twist adjustment knob counterclockwise until the rest of knife gets out.
2. Replace a new one after take out old blade.
3. Twist the adjustment knob clockwise until blade tip protrude to the length you need.
4. Lock the nut clockwise.

2.3 Blade tip adjustment



1. Loosen the lock counterclockwise, then adjust the blade by adjustment depth knob.
   Extend the blade tip by rotate adjustment depth knob clockwise.
   Retract the blade tip by rotate adjustment depth knob counterclockwise.
   Lock nut clockwise after blade tip extend properly
2. How long the blade should protrude is depend on the thick of material.
   Test: Protrude the blade tip thinner than material, while thicker than cutting layer (Too long or too short all go against the cutting job). After completion, cut on paper naturally by hand. Then peel off cutting layer to check the backing sheet which should be not damaged.
   If blade cut through the sheet, retrieved the blade.
   If the blade not cut through the material, extend the blade.

2.4 Creasing tool



Adjustment way:

Use matched Allen wrench to loose the lock screw, then modify the height of creasing tool. Fasten the lock screw last.

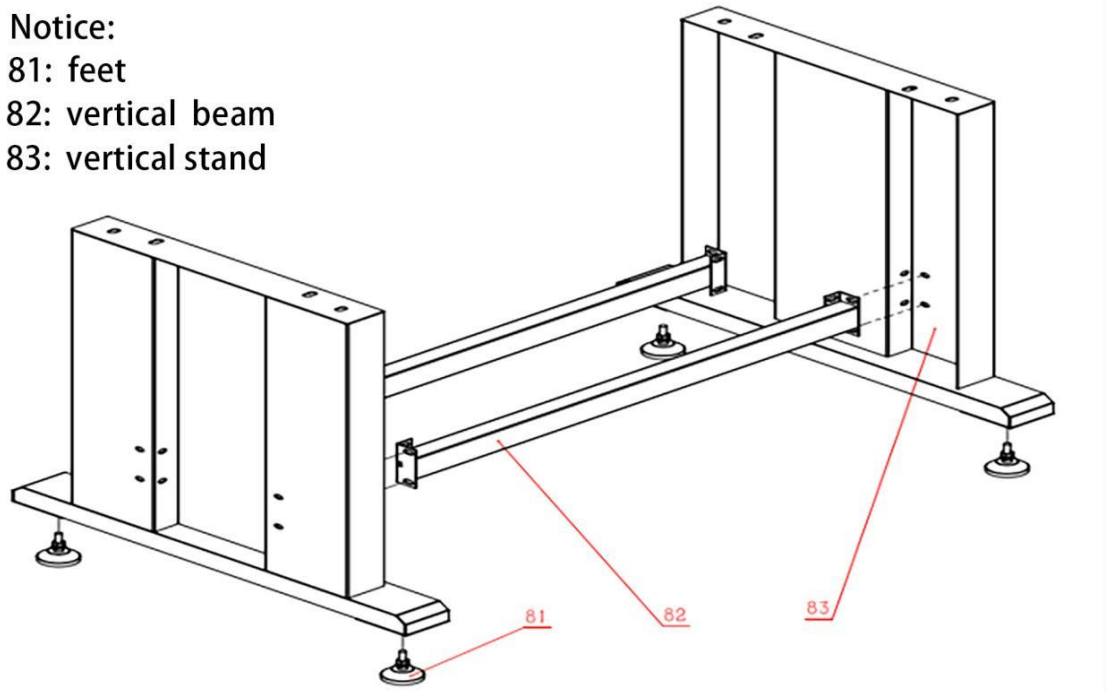
Attention:

Check tightness of socket head cap screws regularly. Tighten screws with Allen wrench appropriately in case creasing tool using be affected.

Chapter 3 Operation

3.1 Operational process

3.1.1 Install stand

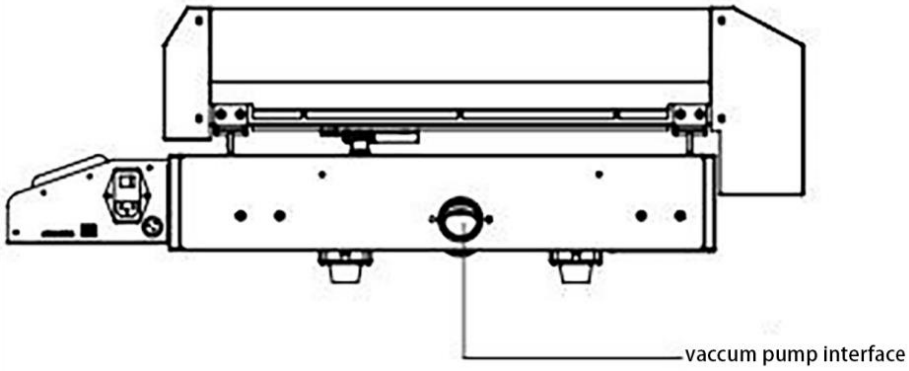


Installation:

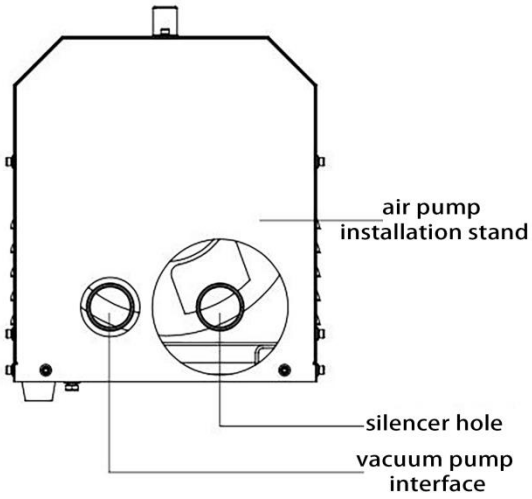
Install feet at the bottom of vertical stand. Each stand is matched with two installation feet. Then assemble vertical stand as the diagram above. Fasten screws last.

3.1.2 Install pump

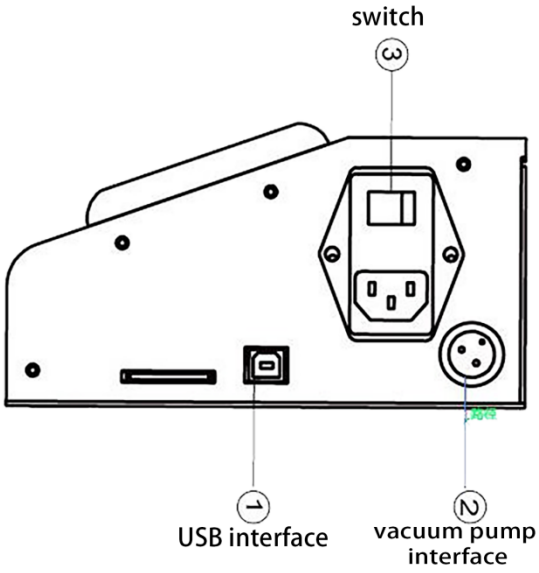
1. First insert adsorbed tube into adsorbed connector at the rear of machine. (As below)



2. Put pump on-flat ground or other flat platform, then insert tube into another side. (As below)



3. Put the outlet into socket at the rear of keyboard. (As below)

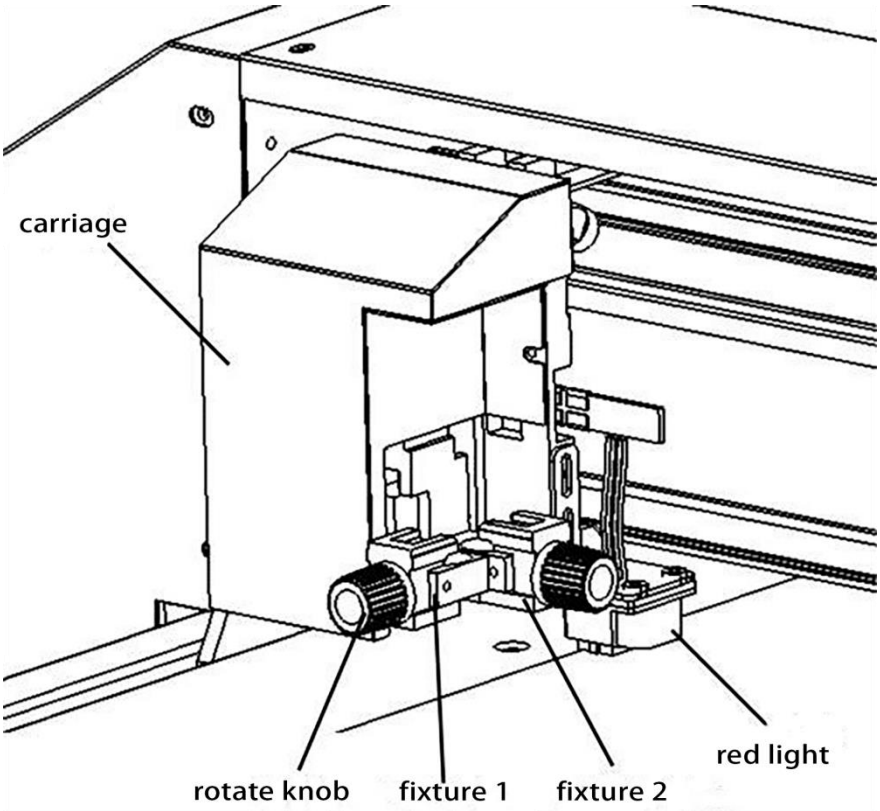


Notice:

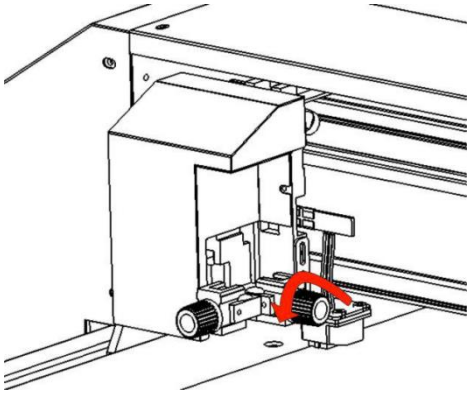
1) Clean the protection shell at pump mouth before install pump in case the fuse might be burned while turning on.
2) Check the soft tube connector after installed pump in case the pump can not be used normally due to wrong assembly.

3.1.3 Install tool

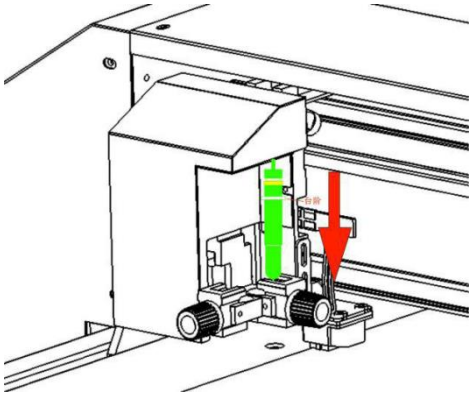
1. Loosen the rotary knob. Then put blade holder/pen holder/creasing holder down until it touches the upper part of the bracket on tool holder. Tighten knob lastly.

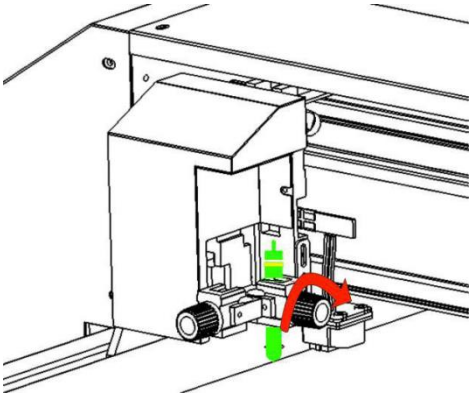
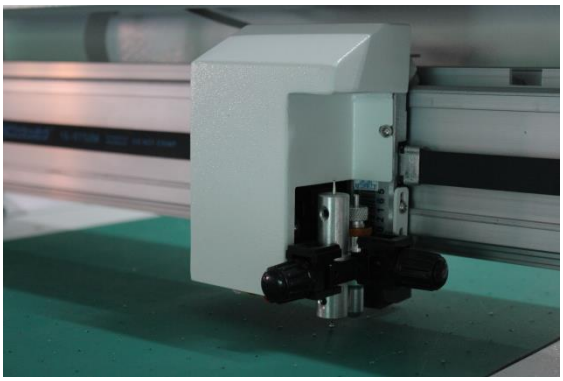


2. Loosen the rotary knob of fixture 2(inside), until tool can be put into tool holder completely. (As below)

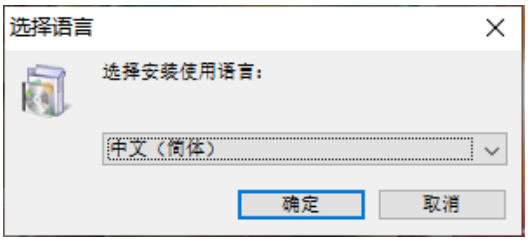
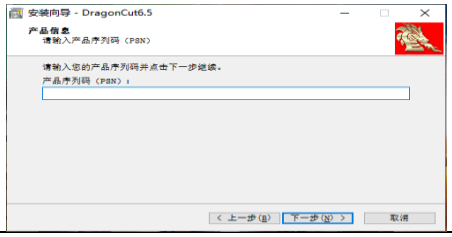
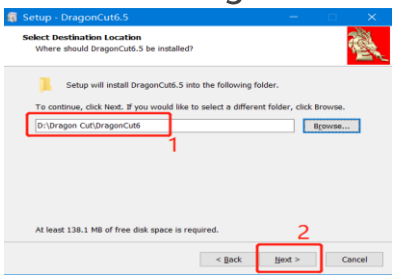


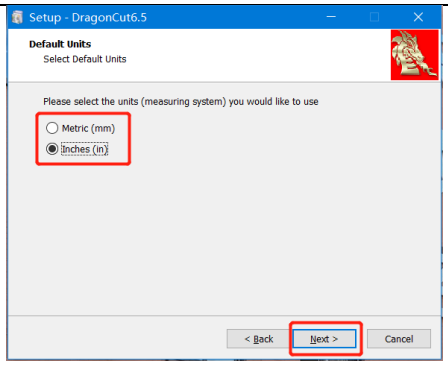
1. Put the blade holder into fixture 2, until the blade bracket touches the upper part of fixture. (As below)

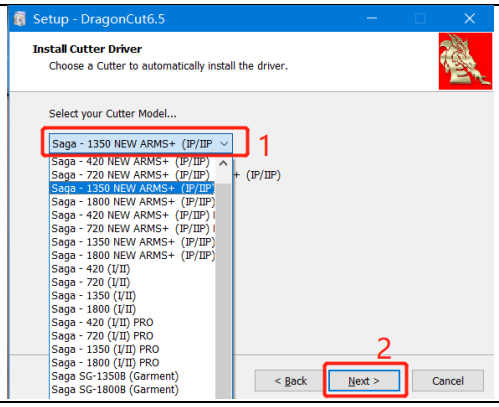


2. After blade holder contact the upper part of fixture 2, tighten knob. (As below) 	3. After completing. 

3.1.4 Install software

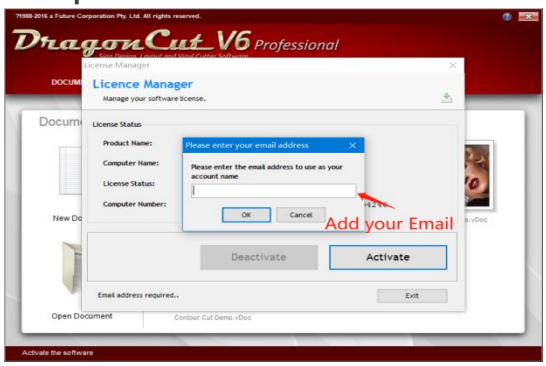
1. Open and choose install Dragon Cut. 	2. Choose the language you need. 
3. Imput PSN (Attached in box) 	4. Choose the saving location. 
5. Choose length unit “inch” or “centimeter”.	6. Choose model.





7. Activate software.

8. Imput email address and activate.



3.1.5 Operate machine

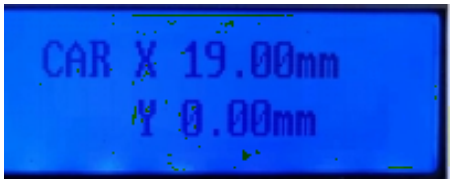
3.1.5.1 Operate the laser model

3.1.5.1.1 Operate the screen

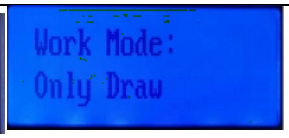
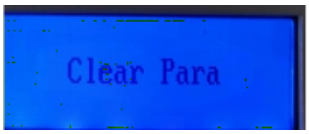
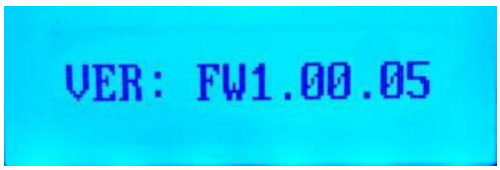
1. Main interface to set Force / Speed of pen / creasing. Back to main interface by pressing. Fun2功能2

2. Interface to set Force/Speed of blade. Back to this interface by pressing Set设置.

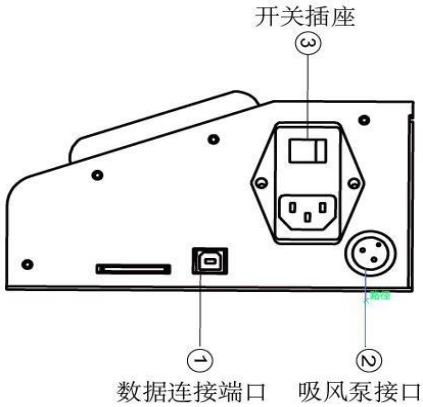
3. This interface used to set the Calibration. Back to this menu by pressing Set设置



4. Two work mode: Cutting plotter/Only draw. --Cutting plotter: Fixture 1and2 can work; --Only draw: Only fixture 1 can work. Origin setting is Cutting plotter, back to this menu by pressing Set设置.

	 
5. Baud rate is the transmission between machine and computer. Default value is 38400.Do not modify it. Back to this menu by pressing Set设置. 	6. XP/YP set as 1000/1000, do not modify it or it affects the right angle. Back to this menu by pressing Set设置. 
7. Back to origin setting (Save parameters in advance before reset) Back to this menu by pressing Set设置. 	8. Check version. 

3.1.5.1.2 Operate the carriage

1. Insert connector of power line into connector of power supply (As below) 	2. After starting up, the screen lights up and the carriage is reset to the origin. 
3. Screen will shows moving screen after initialization.	4. Moving carriage by pressing optional keys.

Notice:

1) Make sure machine in off-line status before moving carriage.
2) Press Enter key after moving carriage to appropriate position in case carriage back to initial position.

3.1.5.1.3 Place material

1. Place the cutting material on flatbed cutter and make sure without drape or swell. Affix the gap between cutting mat and cutting platform with beautiful grain/packaging tape to fix.
2. Turn on adsorption key. Place the material on cutting mat. If platform can not fix material well (Usually occur in thick/hard material), please reinforce it with packaging tape/beautiful grain.

Notice:

1) Do not need confirm cutting direction while placing materials because software have identify function.
2) Removal static before cutting that material exist static in case static affect the motor running.

3.1.5.2.4 Set parameters

1. Set blade force/speed.

Press [Set] to enter [Blade Speed/Force] screen. Modify the Speed/Force by pressing direction key, then save parameter by pressing [Enter].

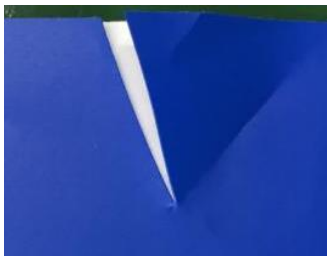
2. Set creasing force/speed.

Press [FUN2] to enter [Pen Speed/Force] screen. Modify the Speed/Force by pressing direction key, then save parameter by pressing [Enter]. (Better creasing effect with bigger force)

3.1.5.1.5 Test cutting force

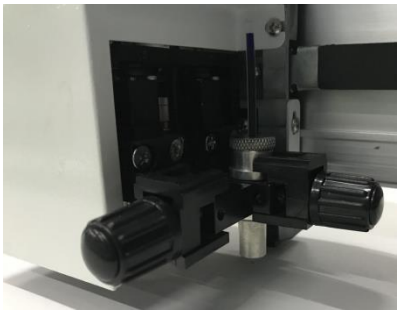
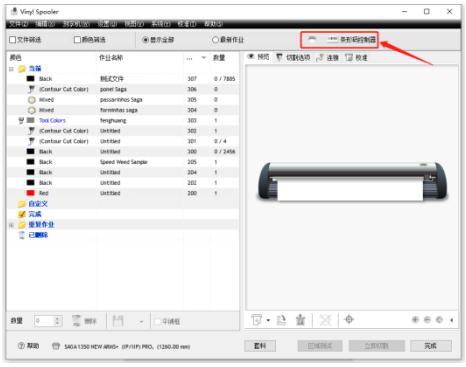
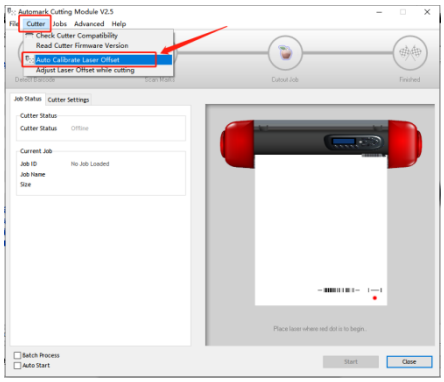
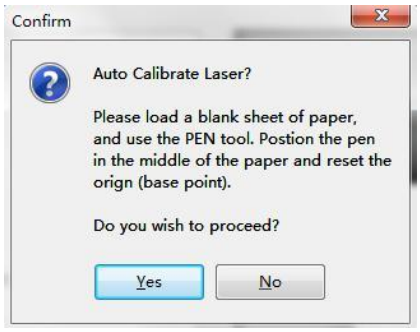
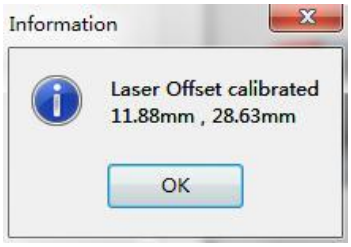
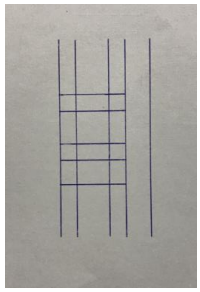
1. Place material on cutting mat. Move carriage to a proper location by direction key on control panel while on off-line screen.

2. Adjust the blade tip thinner than material while thicker than cutting layer. (Too long or short all go against cutting job).Cut on material naturally, then peel off it. Make sure cutting layer be cut through while the backing sheet with no damage.

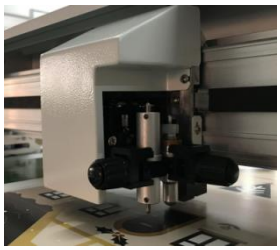
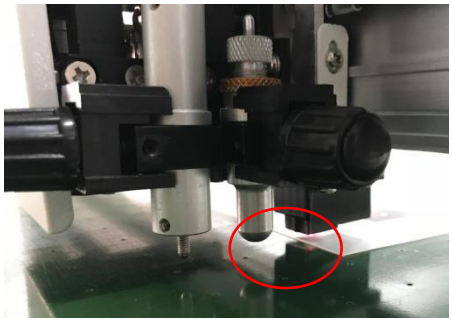
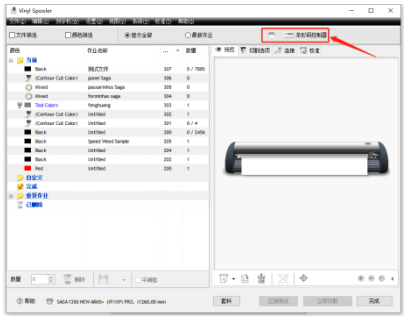
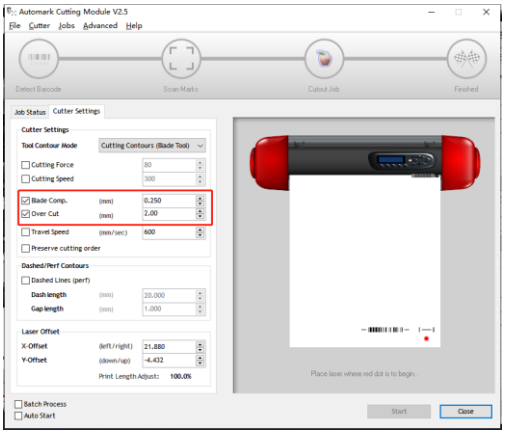


3. Press [Test]key to test. If the square and triangle could be peel off smoothly, cutting force is proper.	4. Qualified standard: Cutting layer is cut through while the sheet no wound. 

3.1.5.1.6 Calibration

1. Install pen on pen holder. 	2. Open Dragon Cut software to enter "barcode controller". 
3. Choose Auto Calibrate Laser Offset. 	4. Follow tips. 
5. Output calibration value after completion. 	6. Test result. 

3.1.5.1.7 Cutting

1. Install creasing tool and blade holder. 	2. Move laser to low right corner of mark code. 
3. Choose [FUN3] to turn on laser. 	4. Open Dragon Cut software to enter "Bardcode controller" 
5. Modify parameters. 	6. Start cutting job. 
7. After cutting.	8. Finished product.

3.1.5.2 Operate CCD model

3.1.5.2.1 Screen

1. Main interface.

Function: creasing tool, parameters, pause, back to origin etc are included.

2. File

Read files for cutting job after inserting U disk.

3. Moving screen.

Move carriage in offline status.

4. Setting screen.

Set parameters.

3.1.5.2.2 Carriage

1. Insert connector of power line into power supply of machine. (As below.)

2. Click move to enter offline status,

3. Move carriage by click direction key.

4. Click "Set origin" to remember carriage location after moving.

Notice:

1) Make sure machine in off-line state before moving carriage.
2) Click "Enter" in case carriage back to origin after carriage be moved.

3.1.5.2.3 Place material

1. Place the cutting material on flatbed cutter and make sure without drape or swell. Affix the gap between cutting mat and cutting platform with beautiful grain/packaging tape to fix.
2. Turn on adsorption key. Place the material on cutting mat. If platform can not fix material well (Usually occur in thick/hard material), please reinforce it with packaging tape/beautiful grain.

Notice:

1) Do not need confirm cutting direction while placing materials because software have identify function.
2) Removal static before cutting that material exist static in case static affect the motor running.

3.1.5.2.4 Set parameters

1. Modify the main interface.

Click creasing or blade screen, then  shows. Choose increase or decrease to change values. Click Enter lastly.

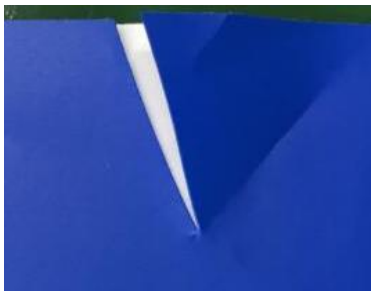
2. Default screen

Click default screen. Choose parameters need to be modified. Clicks enter to save values.

3.1.5.2.5 Test cutting force

1. Place a material on cutting mat. Move carriage on material by direction key on control panel in offline status. (any position)

2. Adjust the blade tip thinner than material while thicker than cutting layer. (Too long or short all go against cutting.) Cut on paper naturally, peel of the first layer while the backing sheet without damaged.



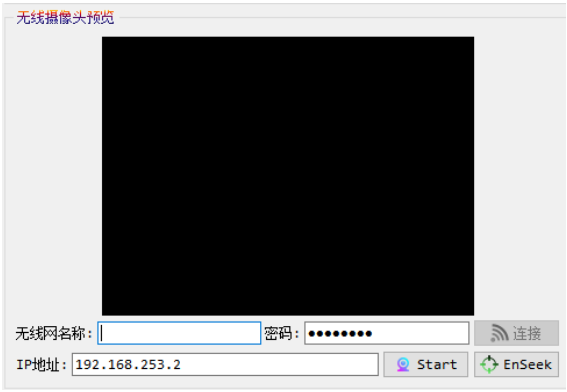
3. Enter default screen, click "Test".

4. Test standard is: Cutting layer has been cut through while the backing sheet no wound.

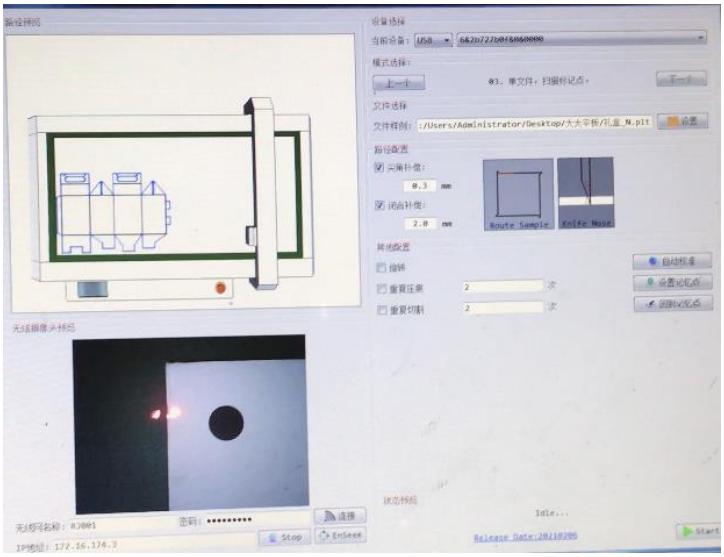
3.1.5.1.6 Connect camera

1. Download "Free WiFi" software in advance, build a hot spot. (Base on Win7 system)

2. Open Cam view. Import the account and password, then click connect.



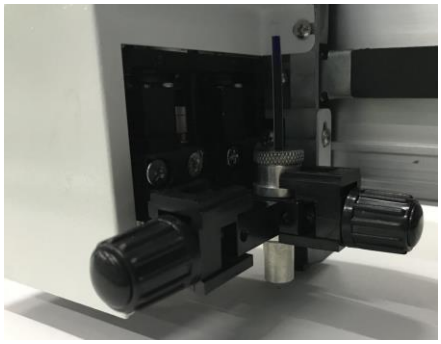
3. Figure shows on cam view. Need the view clearly, no shaking and no tilting.



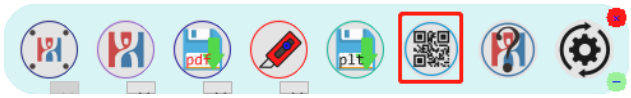
4. If it shows ERR or no display, searching IP by self-building WIFI on phone. Then input manually and click start.

3.1.5.2.7 Calibration

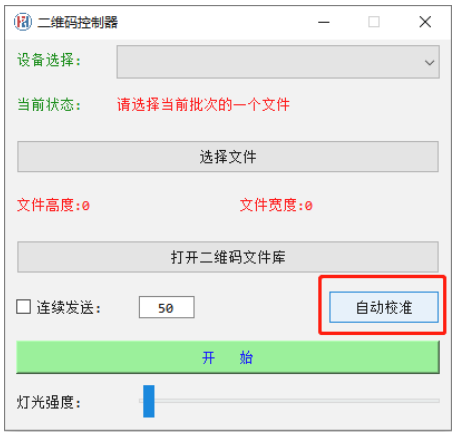
1. Install pen.



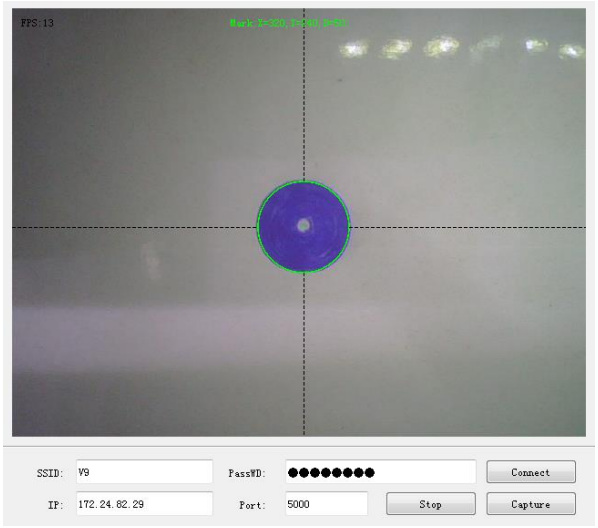
2. Open “Saga Common Plugin” in CDR.



3. Choose “QR code”, choose “Auto calibration laser offset”.

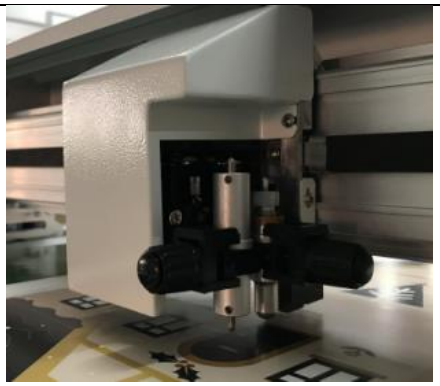


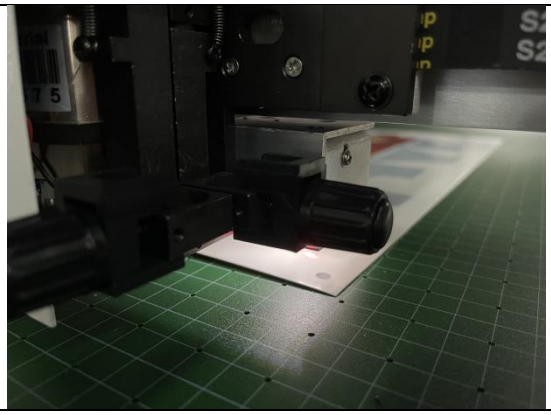
4. During calibration, carriage moves and circle clockwise. After completion, displays will show the graph like below.



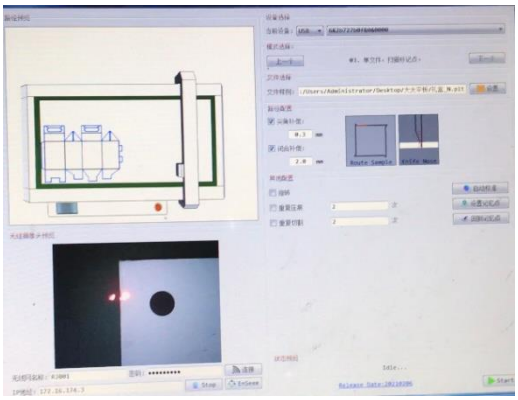
3.1.5.2.8 Cutting

1. Switch on. Install creasing tool and blade on tool holder. (Test force before installation.)	2. Move carriage according to red light spot to the beside of Mark code without connect camera.





3. Open the cam view to connect with machine and choose the matched file.



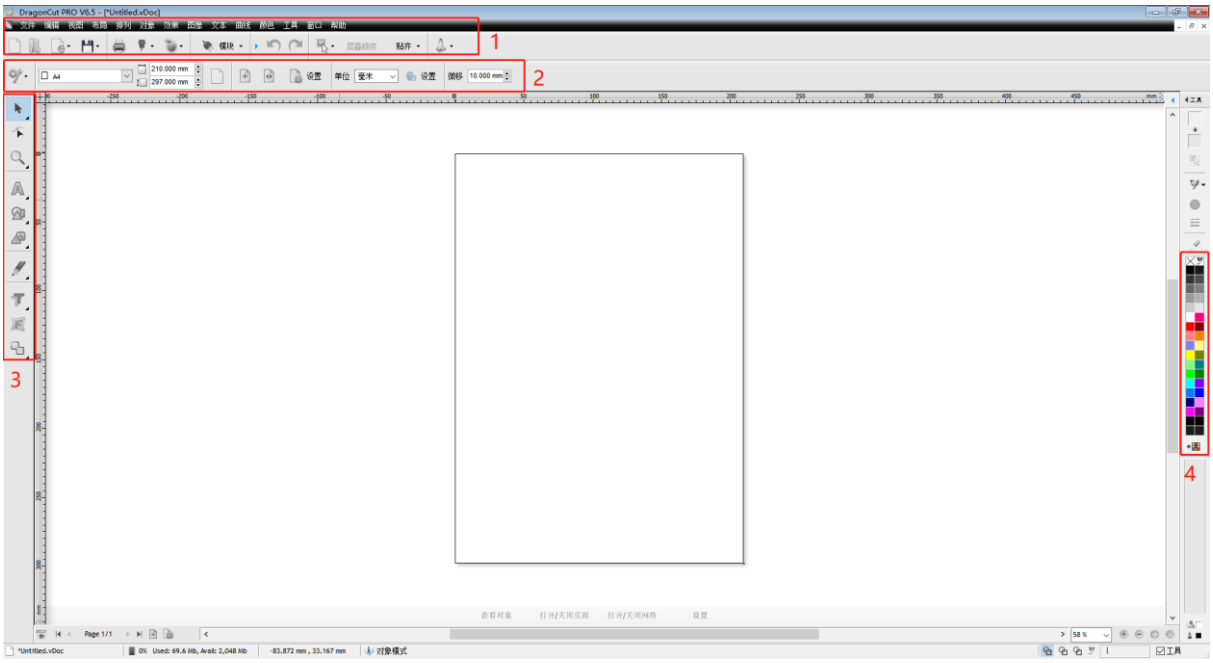
4. Modify the force and speed, then to cut.

5. Finished product.

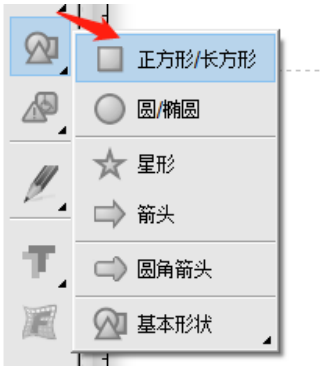
3.1.6 Software

3.1.6.1 Dragon Cut software (Laser model)

3.1.6.1.1 Screen



1. **Menu:**
   Including File, Edit, View, Layout, Arrange, Objects, Effects, Images, Text, Curves, Colors, Tools, Window, Help etc.
2. **Properties:** Display the tool or properties of object.
3. **Tool:** Including all tools you need. Click the tool, then use it. There is extending arrow in low right corner can be chosen.

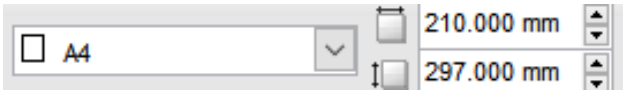
1) Text modes (Styles).	2) General Power Shapes.	3) Drawing Tools.
		

4. **Tools:** Draw and Contour files.

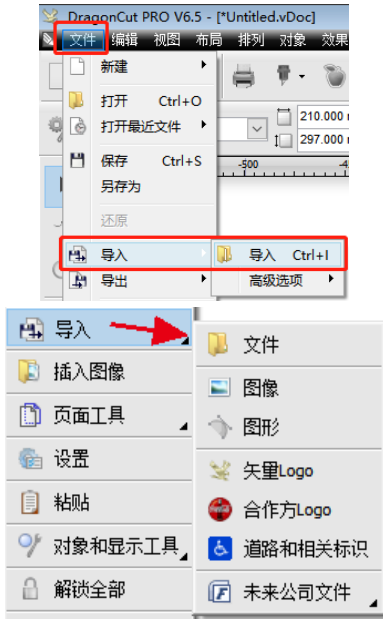
3.1.6.1.2 File

1) 【File|New Document】

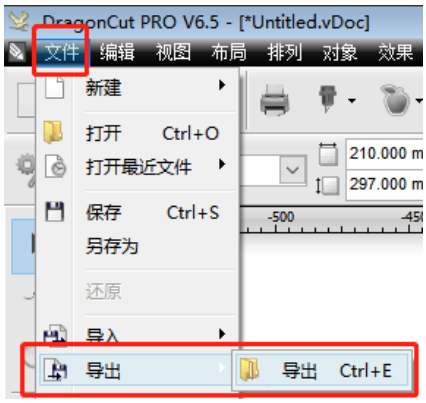
Change size.



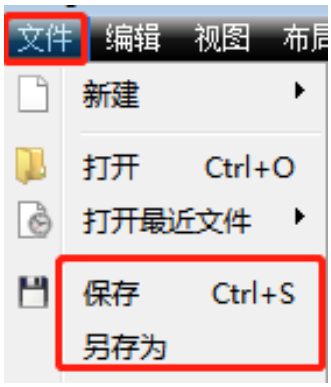
2) 【File|Import】



3) 【File|Export】

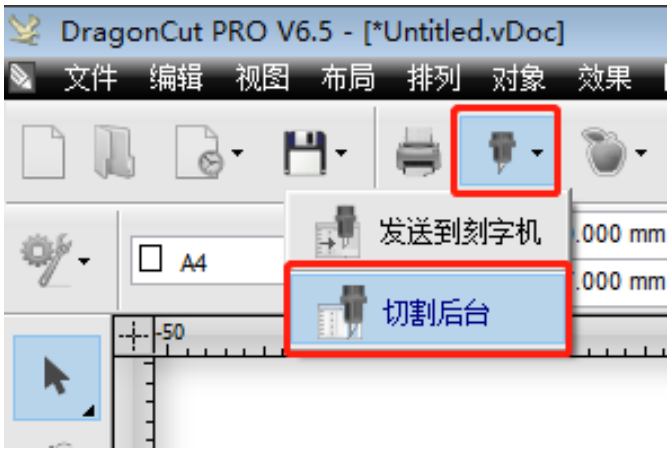


4) 【File|Save】

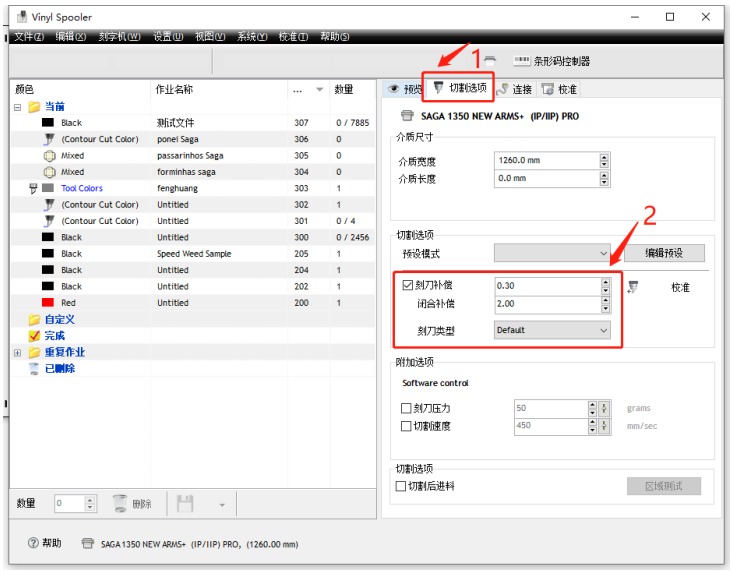


3.1.6.1.3 Set cutting parameter

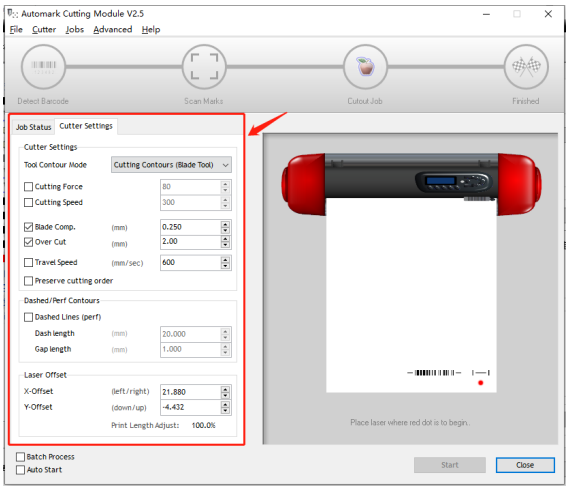
1) Enter vinyl spooler.



2) Modify Cut option.



3) Set parameters in “Barcode controller”.



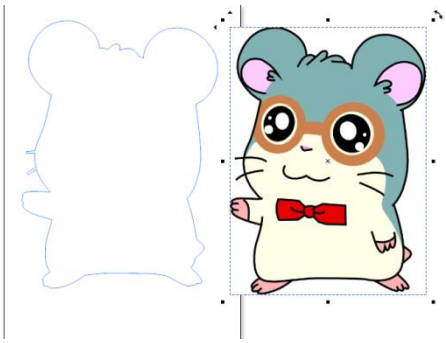
3.1.6.1.4 Graphing method

1) Import bitmap after build new file.

2) Choose file, then “Create contour”

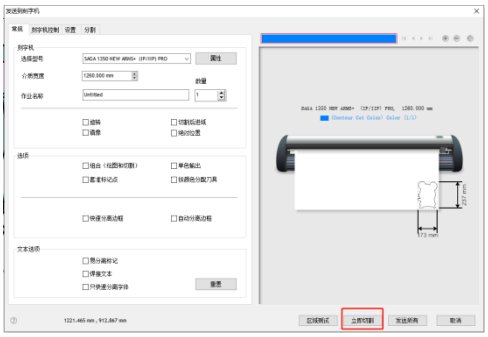
3) Create contour.

4) Create cut contour.

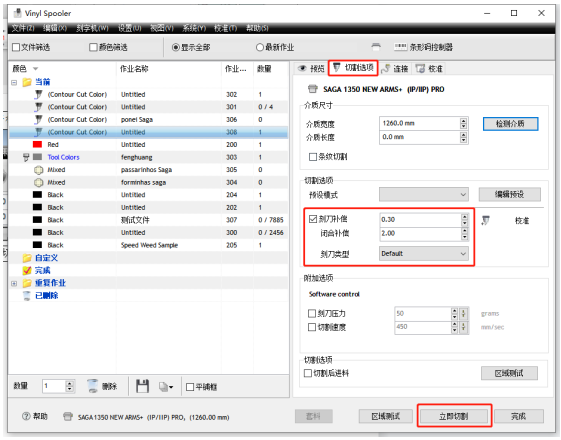


5) Choose “Send to cutter”

6) Choose “Cut now”



7) Check parameters in Cut options, then Start.



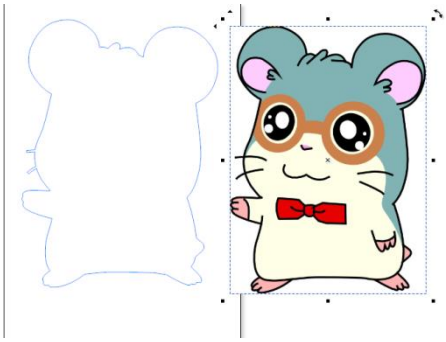
3.1.6.1.5 Graphing method with Arms

1) Import bitmap after build new file.

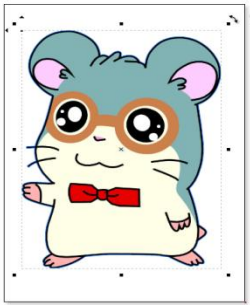
2) Choose file, then "Create contour"

3) Create contour.

4) Create cut contour.



5) Contour Cut Wizard.



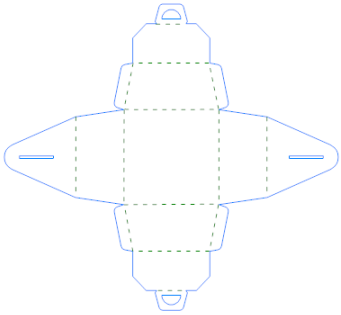
6) Print as PDF.

7) Print PDF.

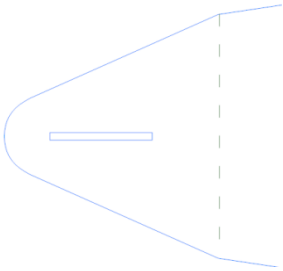
8) Add Cut job.

3.1.6.1.6 Graphing method in box

1) Build new document, make or import box file.



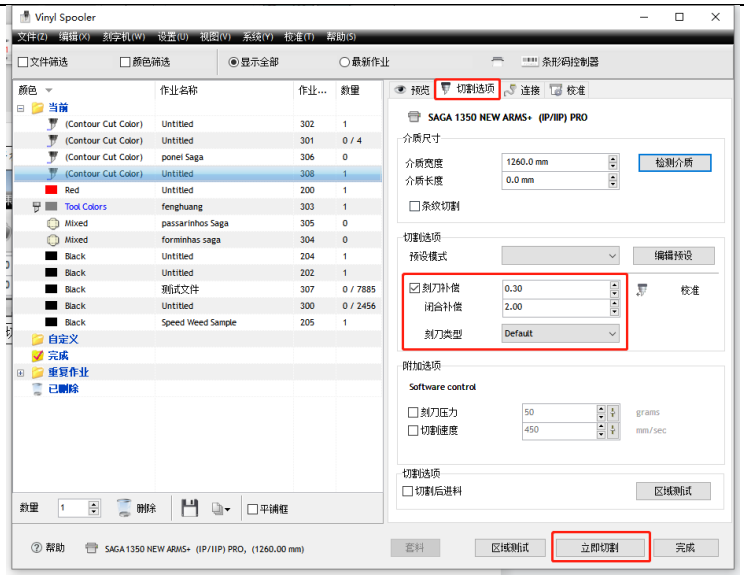
2) Set the cut contour and fold contour.



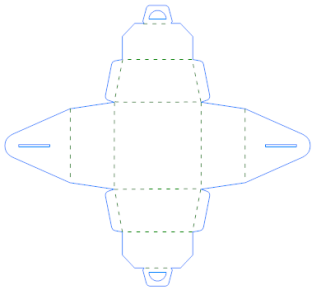
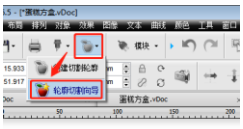
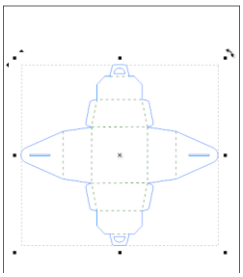
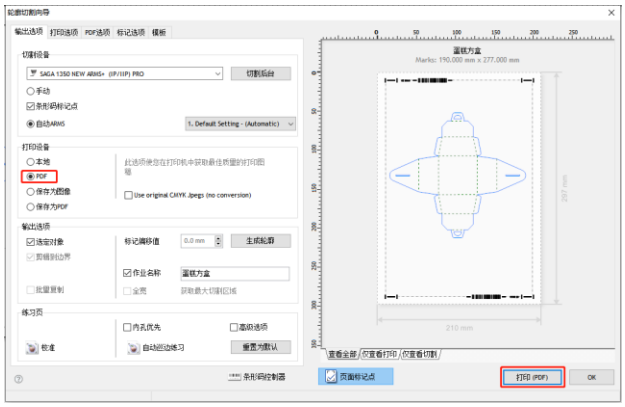
3) Choose "Send to cutter".

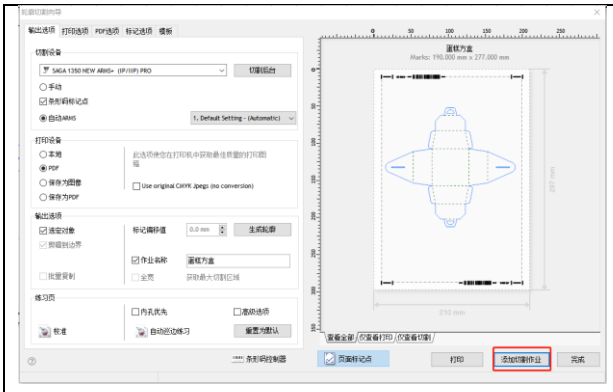
4) Choose Cut options.

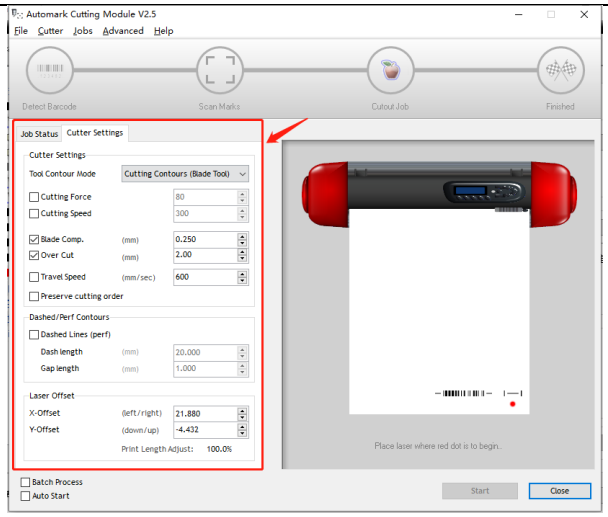
5) Check parameters, then send cut job.



3.1.6.1.7 Graphing method with box in arms

1) Build new document, make or import box file. 	2) Choose outside contour, then click  . Choose the line, click  ,then  with left mouse to build cut contour. (Blue as set), Choose the line, click  , then  with right mouse to build fold contour. (Red as set)
3) Contour Cut Wizard.  	4) Confirm options and Print PDF. 
5) Build cutting file, then start.	6) Enter "Barcode controller" to set parameters.



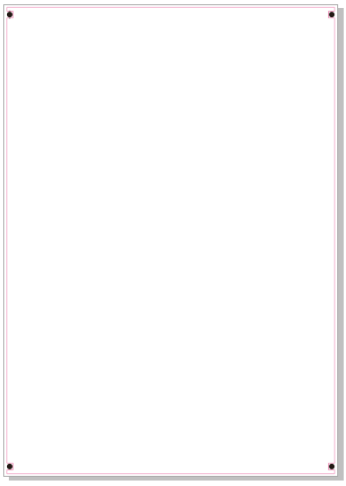


3.1.6.2 CorelDRAW software (CCD model)

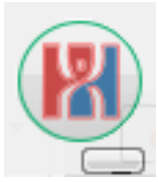
3.1.6.2.1 Plugin

1） Create Registration Mark.

Add mark automatically by this function.



2） Cutting contour.



Including 3 patterns: Create layer only, Create the boundary, Create contour.

Notice:

Difference: Create boundary which extract the outside contour, while the inside contour can not be extracted.

Create contour, which can extract whole contour.

3) Print.

Click "Adjust Printable Layer Only" to adjust the layer, it can print directly. Choose "Adjust Printable Layer & Save As PDF" can save the file as PDF.

4) Output.

Cutting out directly, send file to machine directly without add QR code.

Cutting by path, send the marked file to machine to do arms work.

Cutting blank path, cutting on blank paper without scan mark.

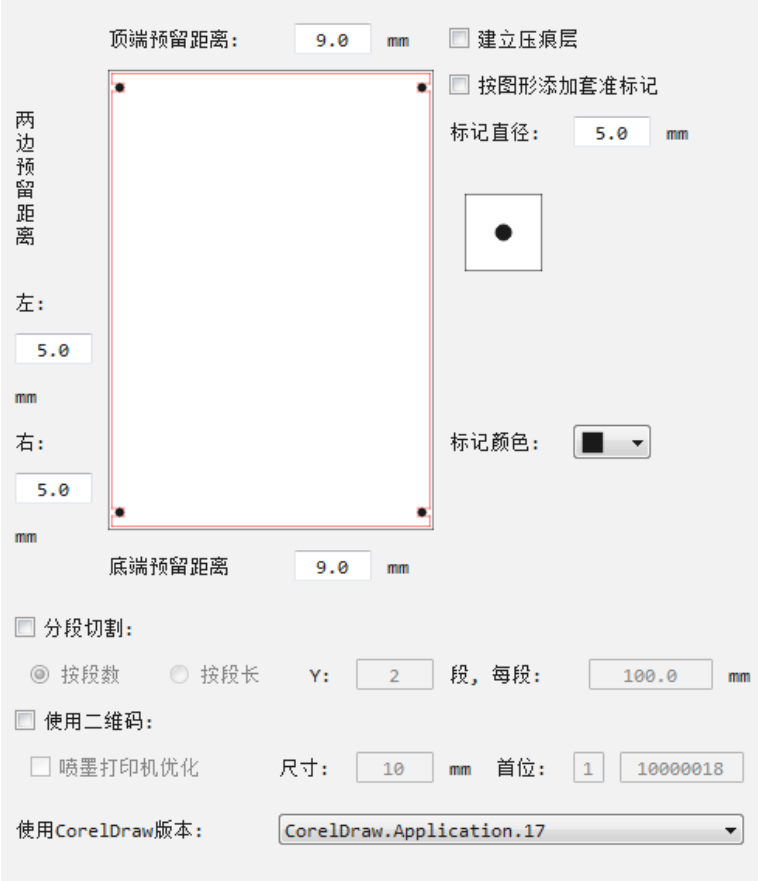
5) Save files.

Save files format as "PLT", in case file input to SD card.

6) Barcode controller

Including Select File, Open QR Code File Folder and Auto-Adj.

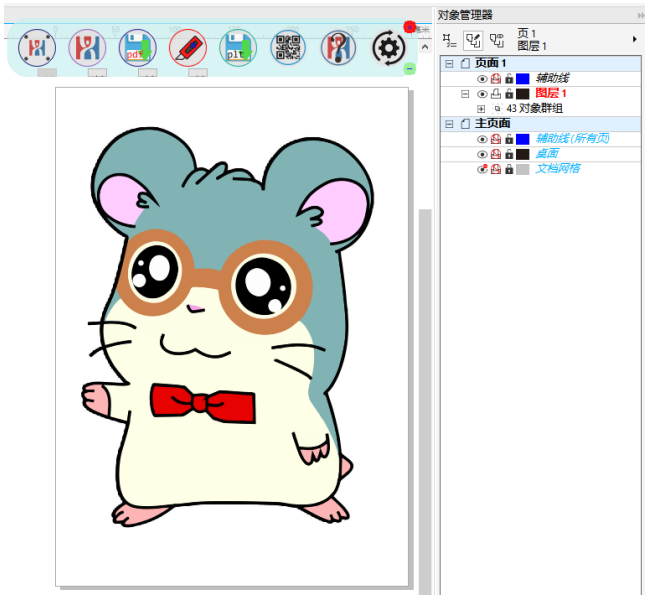
7) Set parameter.



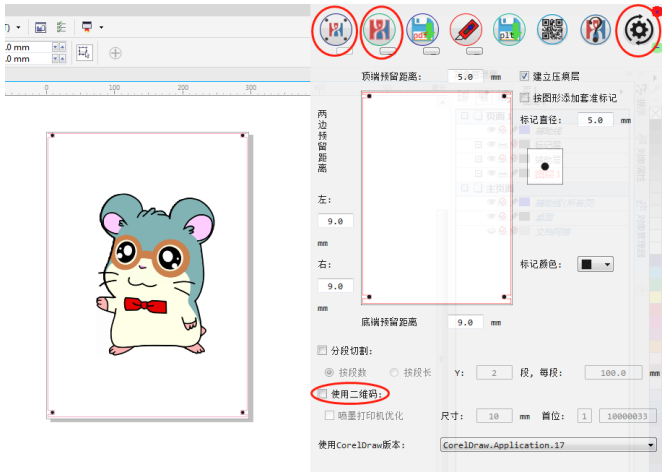
Example: Choose the matched version, Creasing layer, Set Mark position.

3.1.6.2.2 Use plugin to make cut diagram

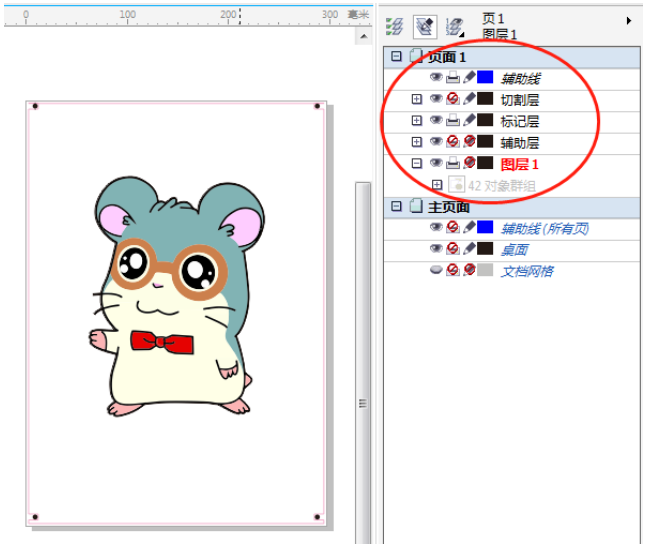
1) Create Registration Mark.



2) Build mark point and cutting contour.

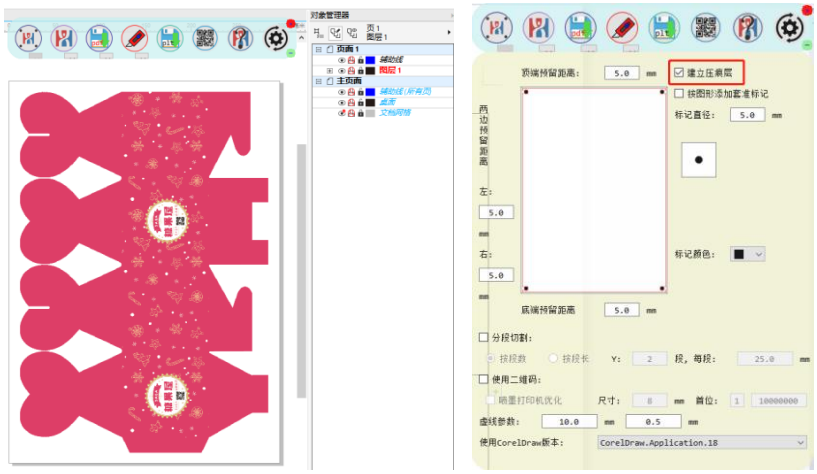


3) Adjust layer, save PDF file and PLT file in turn.

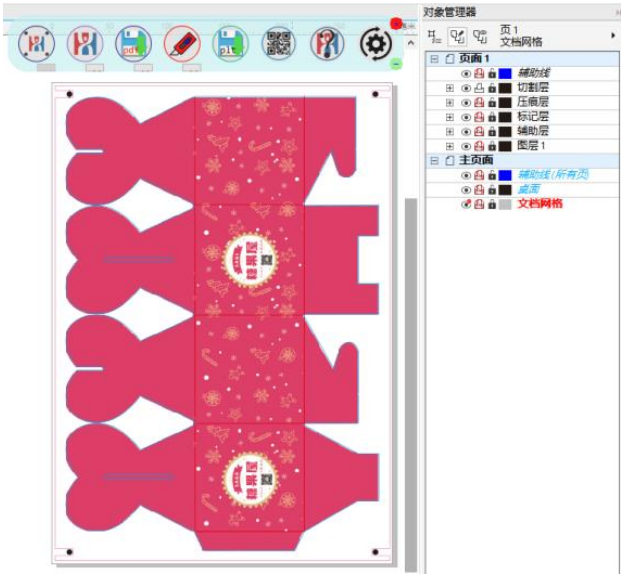


3.1.6.2.3 Use plugin to make cut and creasing diagram

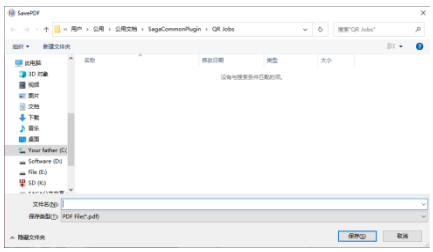
1) Imput file, Create Registration Mark. Check Creasing layer in default screen.



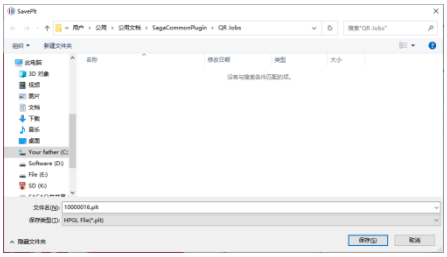
2) Move the cutting lines and creasing lines into matched layer.



3) Save PDF file and PLT file in turn.

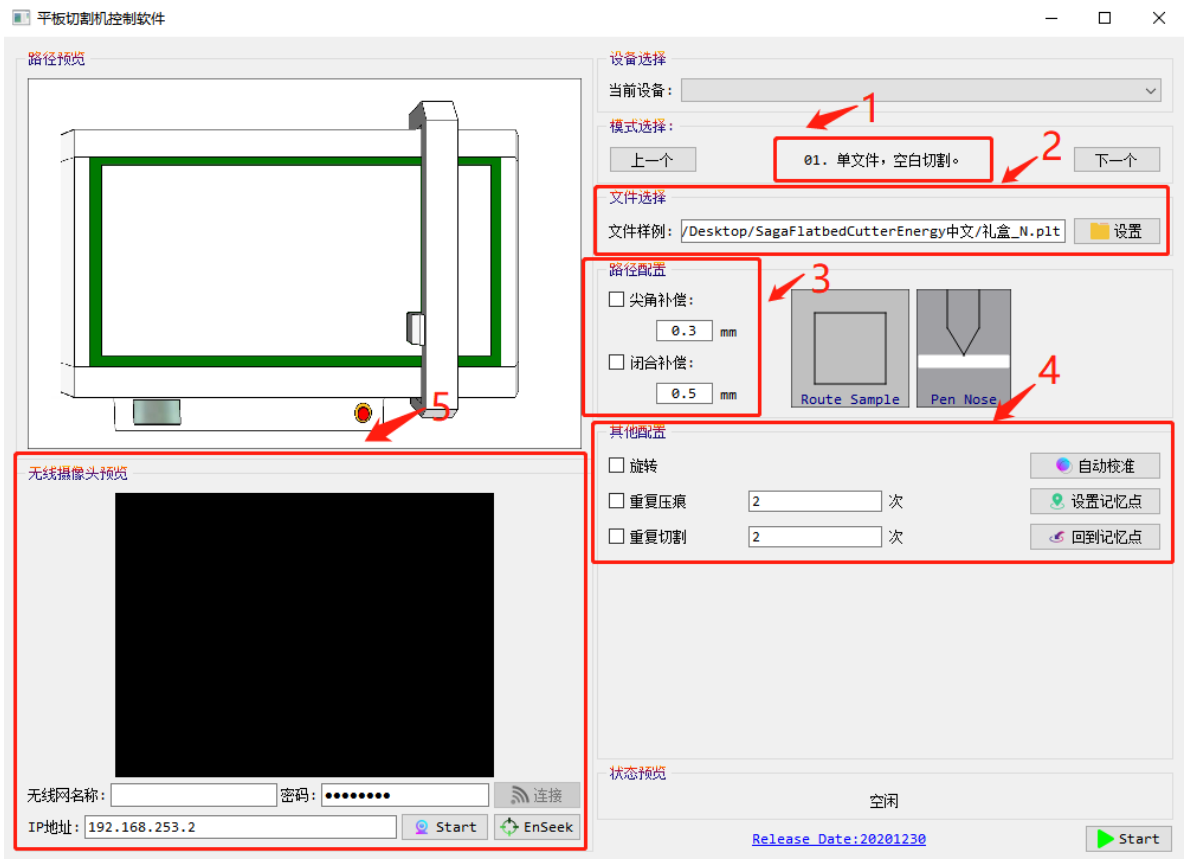


Save PDF files



Save PLT file

3.1.6.3 Use output controller



1. **Work pattern:**

   Including 6 patterns: Single File, Blank Cut

   Single File, Matrix Blank

   Single File, Scan Mark

   Single File, Matrix Scan

   QR File, Scan Mark

   QR File, Matrix Scan

2. **File select**

   Choose the cutting file.

3. **Route config**

4. **Set Knife Offset and Close Offset. It does not need to be chosen if you already set in plot.**

5. **Misc Config**

   Including Calibrate, Set Origin etc.

6. **Wireless Camera View**

   Visual feedback for observation.

Chapter 4 Notice

4.1 Notice

- Do not approach machine with magnetic items.
- Do not insert/pull USB cable or power line while machine running in case unnecessary damage.
- Do not put hand or body close to carriage while machine running.
- Do not open machine or change internal structure.
- Do not leak liquid or mental into machine.
- Ensure the main power supply (220V/110V) doesn't fluctuate by more than ±10%. In case of main power fluctuation, use a voltage stabilizer.
- Unplug the power lead during long periods of inactivity.
- Keep your hands well away from the blade holder while a carriage job is running
- Adjust the blade height before running machine.
- Put the machine away from baby in case injured to baby or machine.
- Keep in mind to avoid the injury of the body or finger caused by blade tips at any time.
- Please set up the machine on a stable base to avoid danger of falling.
- Never run the machine during a thunder storm, lighting could damage or destroy the machine.
- No matter when you don't use hand move the carriage, in order to avoid damage to the machine.

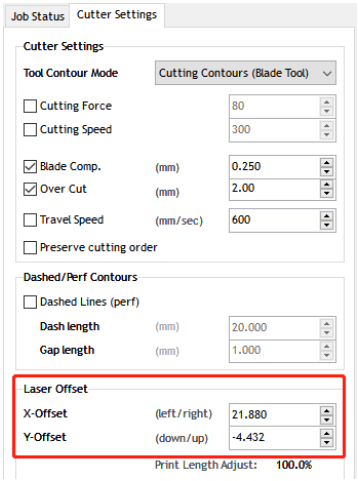
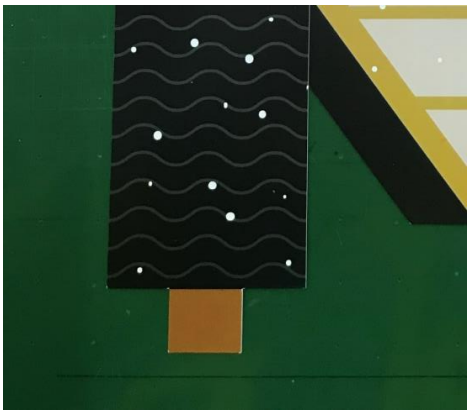
Chapter 5 Maintenance and false

5.1 Calibration error or scan barcode error

1. Please uses blue/black pen to calibrate instead of red one.
2. Adjust the laser height between 1-9 to find a proper value that can scan marks.
3. Beside of reasons above, please check these parts in turn: laser > sensor

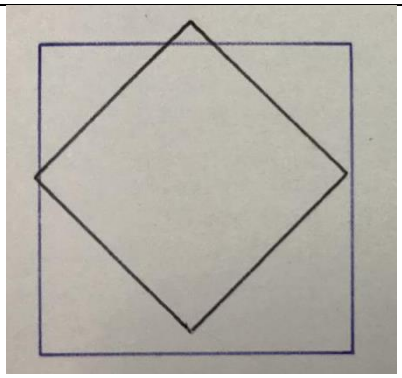
board > cable > mainboard. Please contact sales for professional help.

5.2 Deviation from finished product

1. Deviation occurred. 	2. Enter "Barcode controller" to set parameter. 
3. Modify values according to deviation. (X-Offset: Increase for up extending, decrease for down extending. Y-Offset: Increase for left extending, decrease for right extending)	4. Retry. 

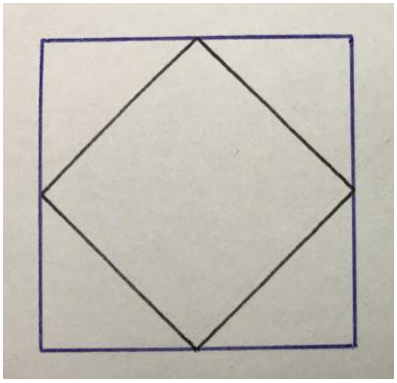
5.3 Deviation from creasing line and cutting line

1. Deviation in finished product	2. Place paper, install two pen holders on both tool holder. Press "Test".

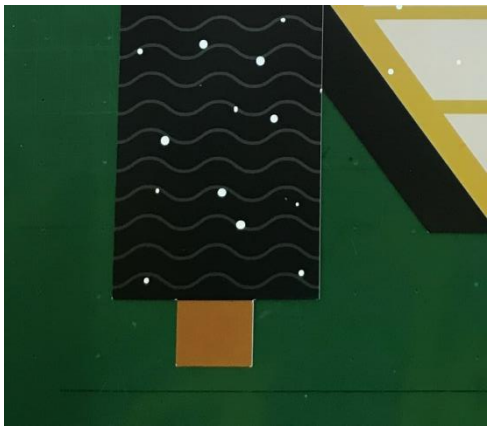


3. According to the effect, press "SET" to modify XP/YP value. (Increase X for up extending, decrease X for down extending. Increase Y for left extending, decrease Y for right extending.)

4. Retry.

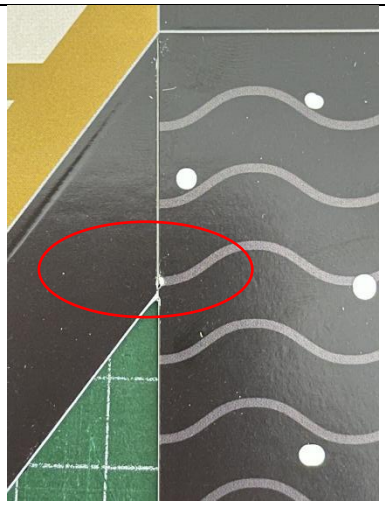


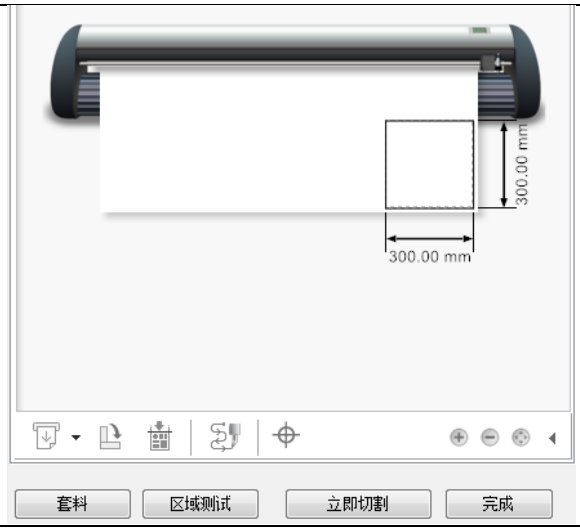
5. Cutting effect after modified.



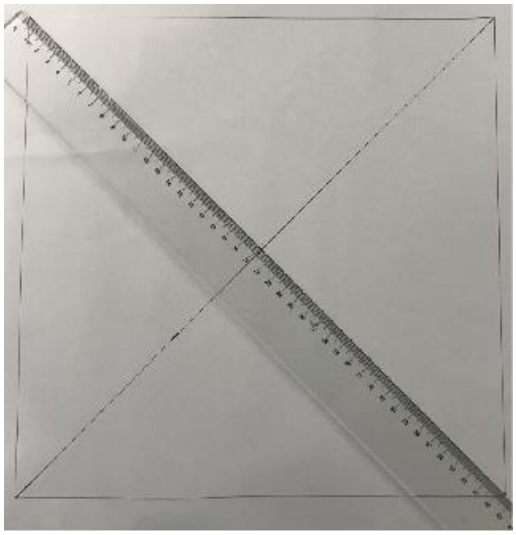
5.4 Output the line in X and Y direction not close

1. Cutting line in X direction and Y direction can not close.	2. Place a paper, output a 300*300mm square

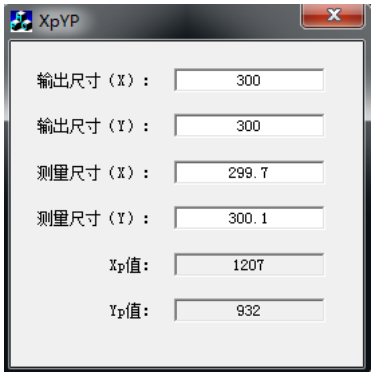




3. Measure four side lines and ensure the differences between two diagonal line not over 0.5mm.

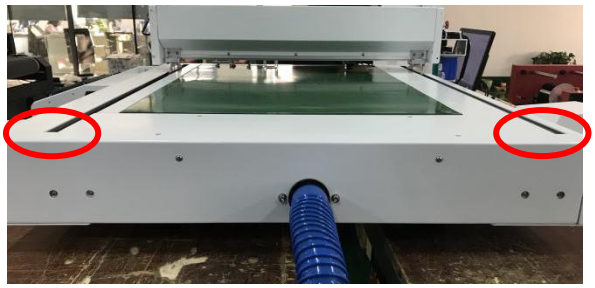


4. Use XpYp plugin, input the measured X/Y value to get XpYp result, then entry it to machine.

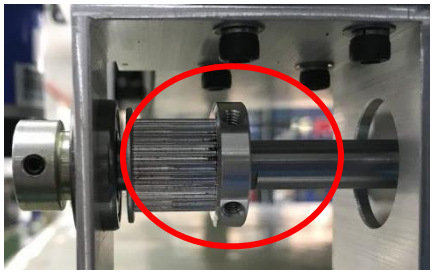


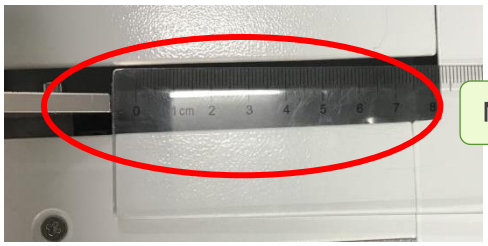
5.5 Diagonal values difference over 0.5mm

1. When deviation over than 0.5mm, less than 0.8mm, loosen belts at the bottom of platform. Loosen jack bolt on synchronizing wheel (Model: synchronizing whee-30 gear S2M). Observe the distance between columns and front, slide the beam slowly then tighten. (Be care of tightening jack bolt in case secondary deviation.)



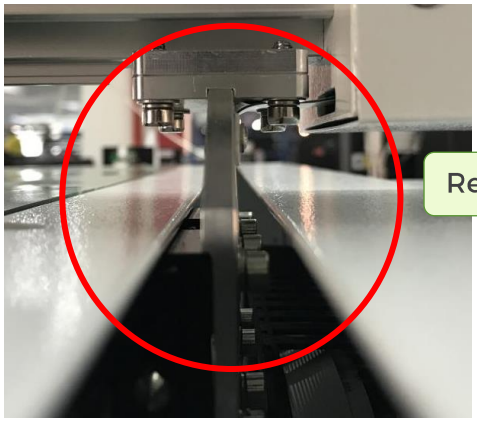
Loosen or tighten the screws on both sides at the same time





Measuring distance

2. When deviation over 0.5mm, remove two columns and connection plate between column and beam.. Reinstall and adjust screws.



Recalibrate after disassembly