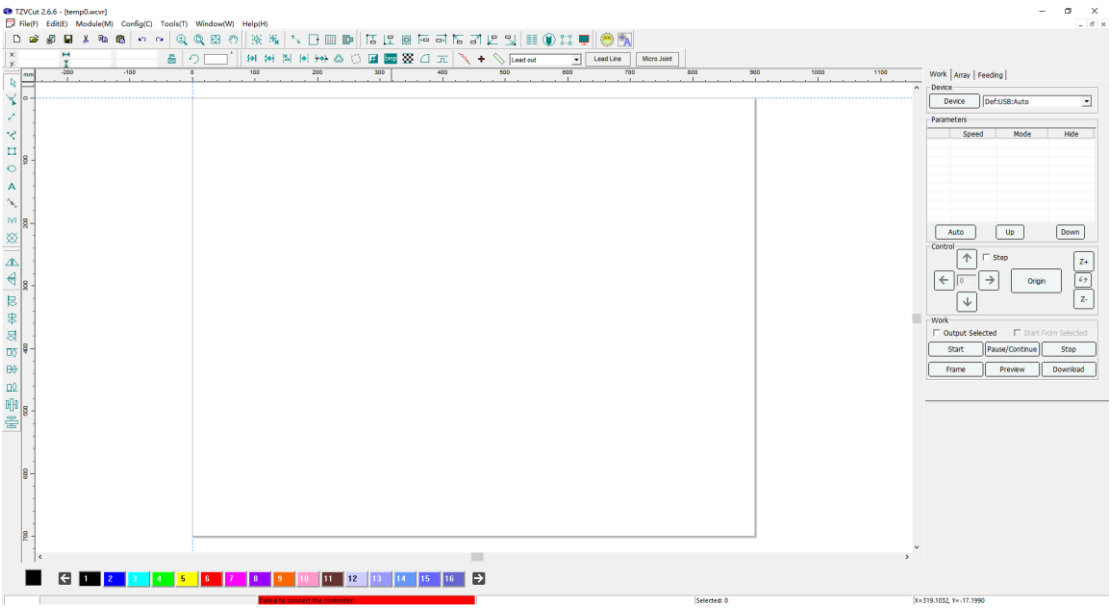
TZVCut User Manual
V1.0

Content

Part 1 TZVCut software

Installation requirements: All of the following software is installed in 32 bits Windows 10 system, while 64 bits system is also supported by our software. Installation method of 64 bits system is the same as that of 32 bits system. When using CorelDRAW and AutoCAD software, please use officially full edition to avoid any failure of plug-in installation due to software edition or any other reasons.

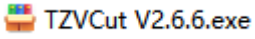
1.1 Software interface



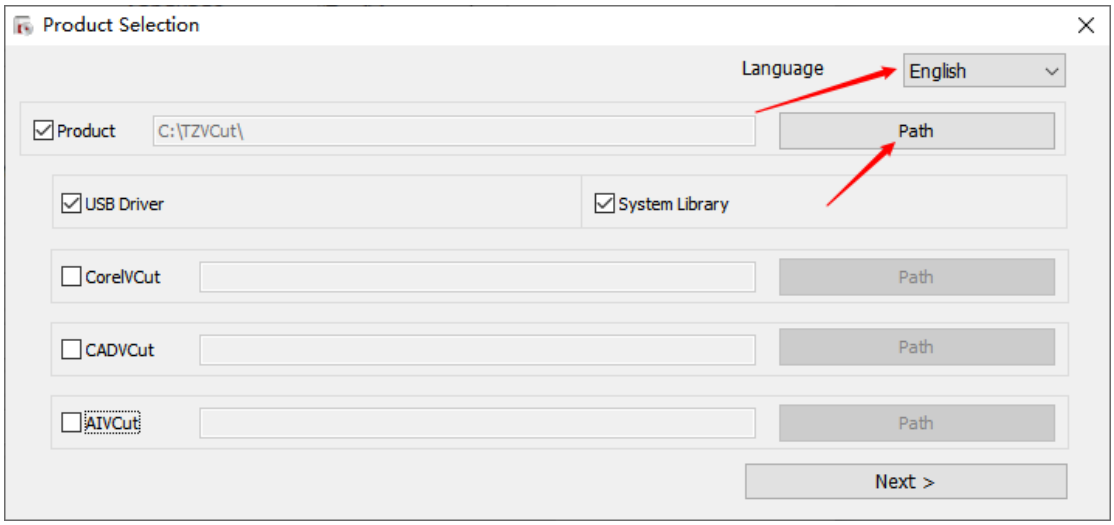
1.2 Installation

1.2.1 TZVCut installation

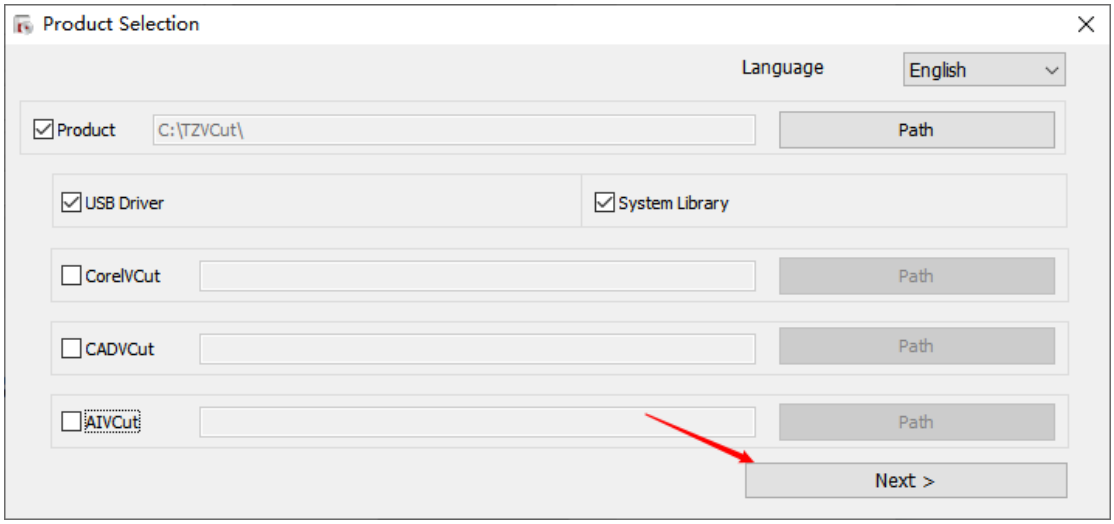
1) Double-click the installation package TZVCut VX.X.X to unzip and install. VX.X.X means the version number, such as V2.6.6



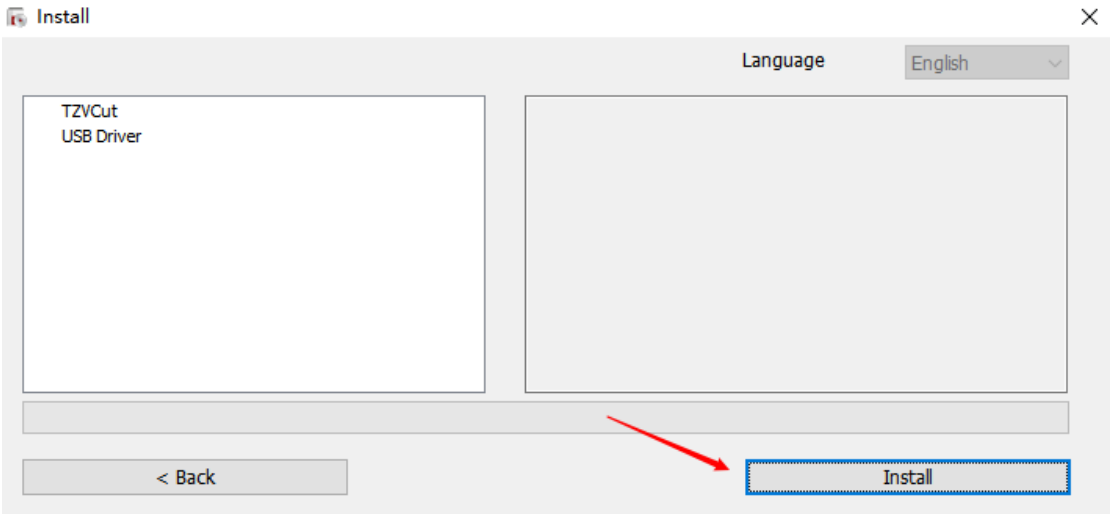
2) Files are decompressed automatically and started to be installed. Then select a language and the software will choose a default language such as Simplified Chinese, Chinese Traditional characters or English version according to the language of operation system.
3) Product installation path is installed by default in Disk C. If you want to install it into other disks, please click [Path] option in the option for the product catalogs, select the drive you want to install and then click confirm.



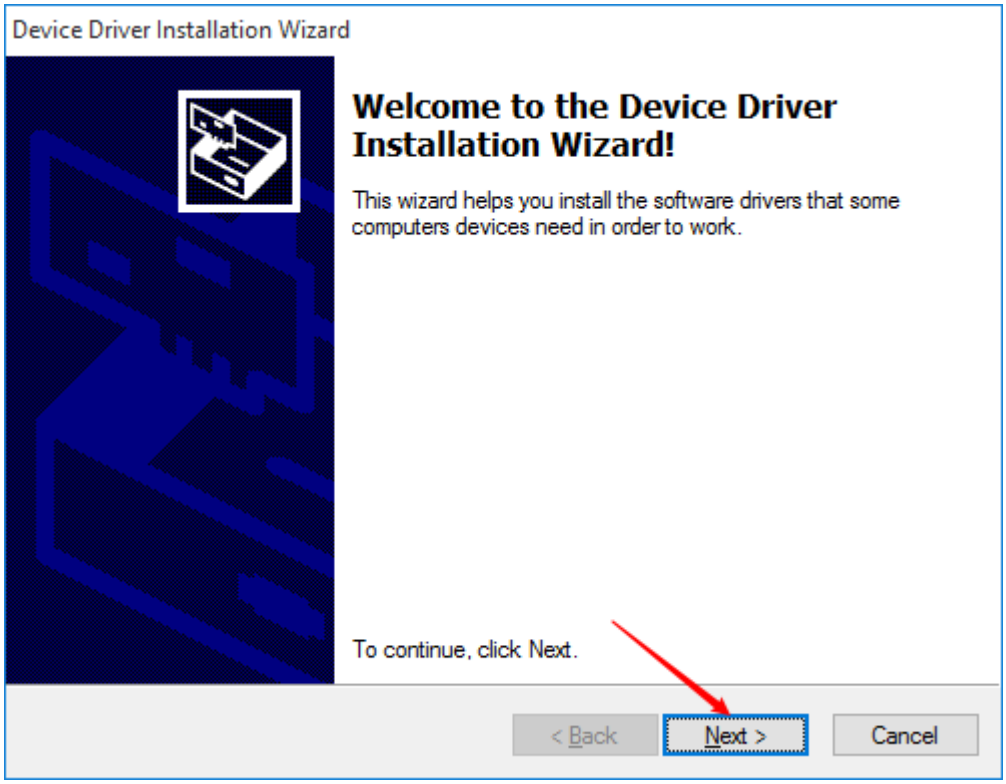
4) For the first time to install our software, it is checked by default which program is the user must install, TZVCut software, USB Driver and System Library.



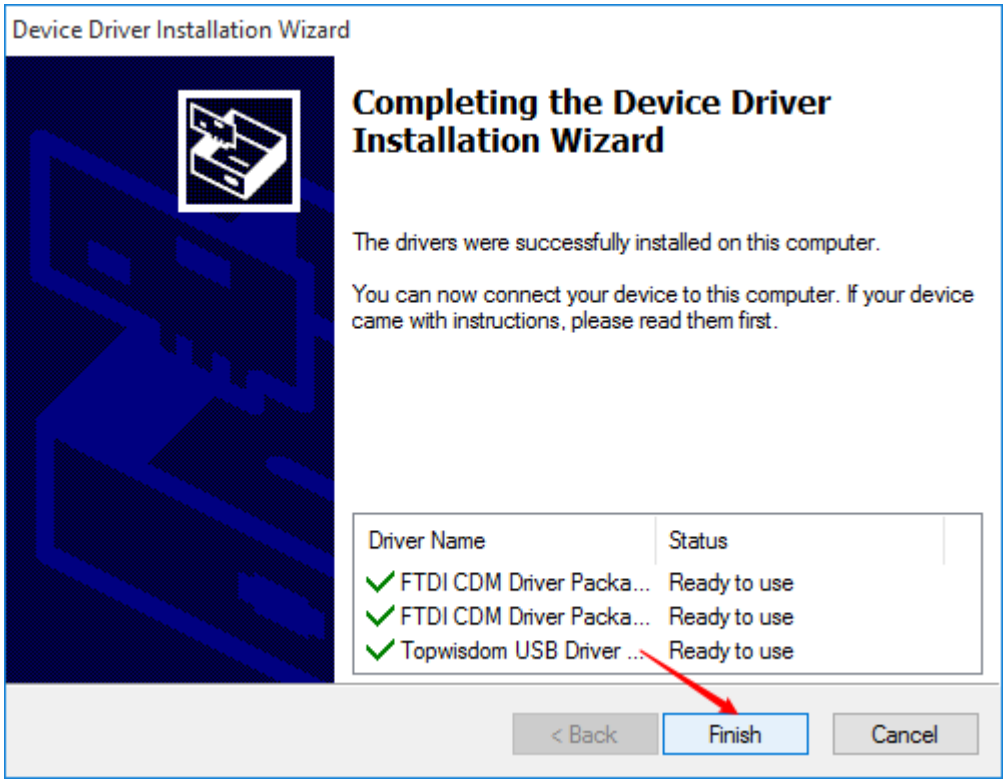
5) Click [Next] to continue.
6) Click [Install] to execute installation of TZVCut and USB driver.
7) Independent software supports software such as CorelDRAW, CAD, AI among others, if these products are required to be used with the TZVCut software, please click appropriate importing plugs-in to install.



Installing USB Drive…

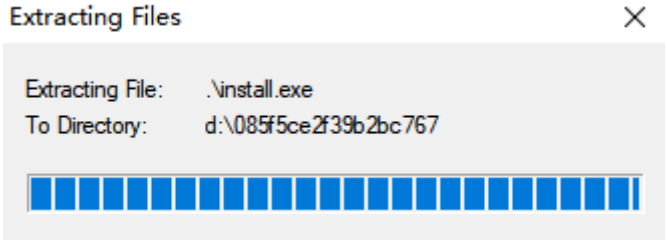


8) Click [Next].

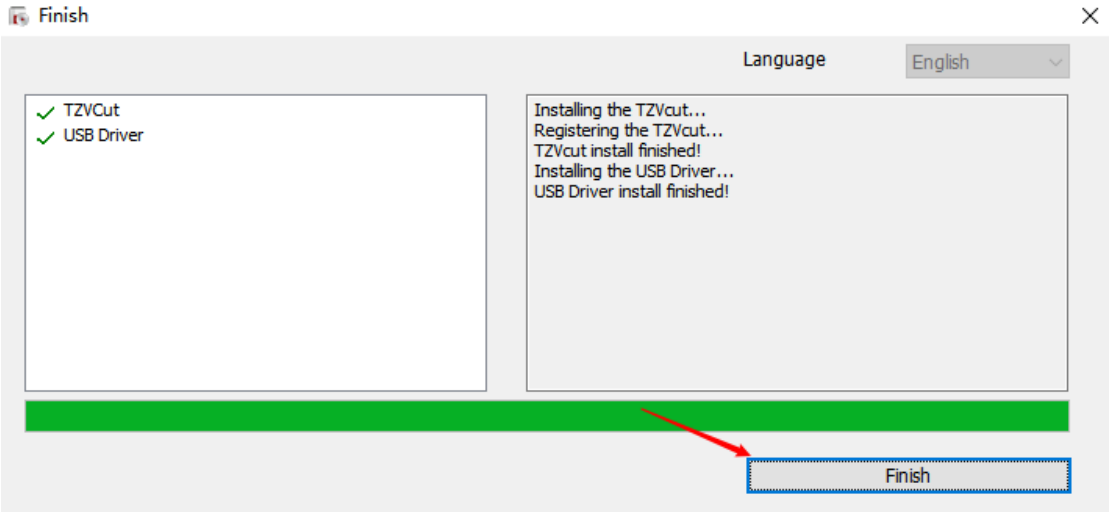


9) Click [Finish] and USB driver installation is completed.

10) Install the system library. The installation interface is as follows:



11) Click [Finish] button for installing completion.

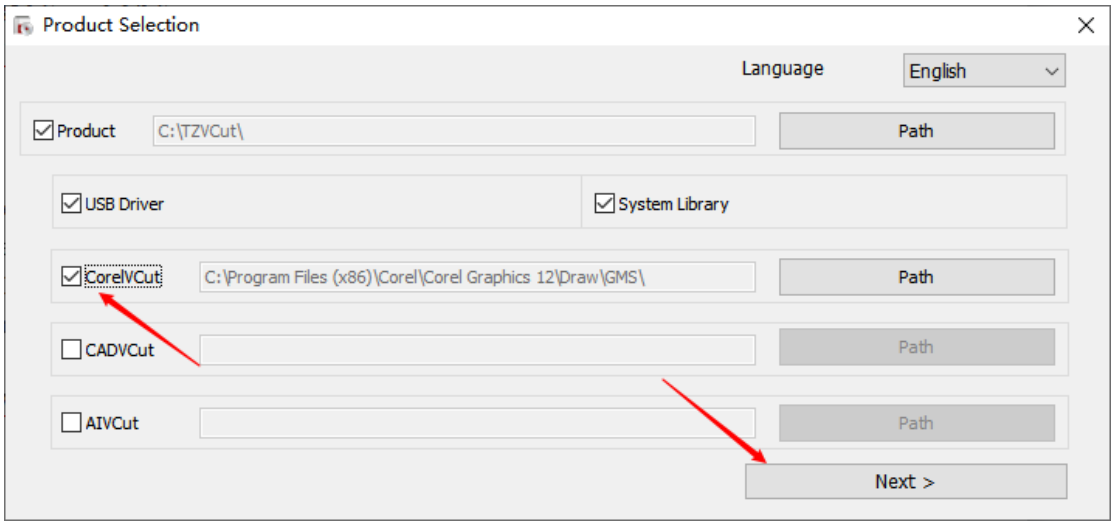


1.2.2 CorelDRAW importing menu installation

Note: Our present CorelDRAW importing menu supports versions of CorelDRAW 12 to CorelDRAW2020 of 32 bits and 64bits.

Take the CorelDRAW X12 as an example.

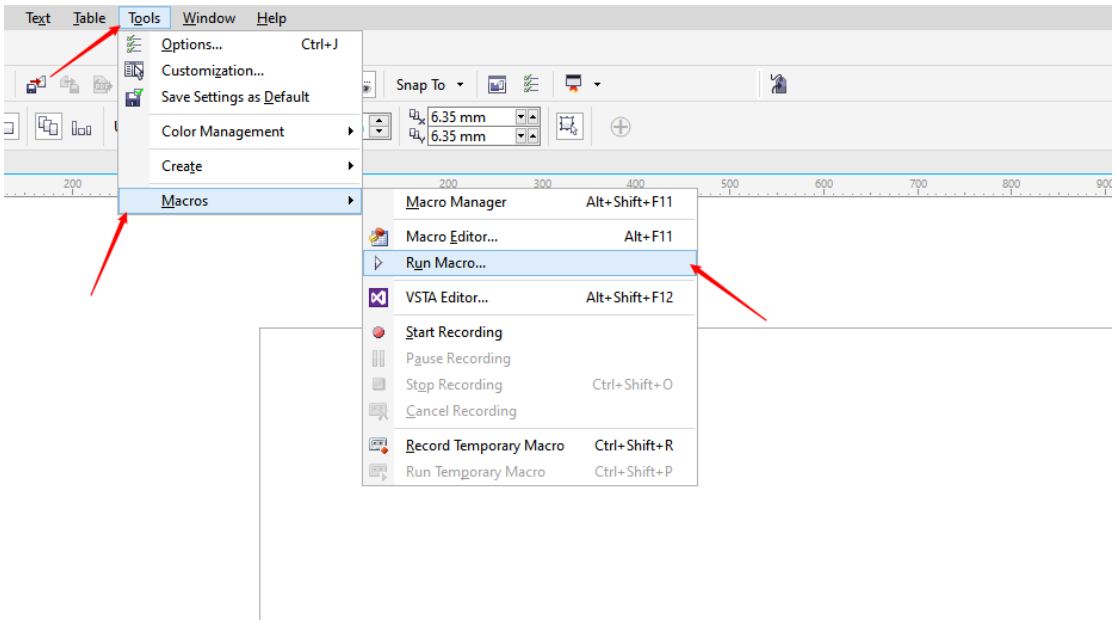
The method is similar to the first Installation of TZVCut.



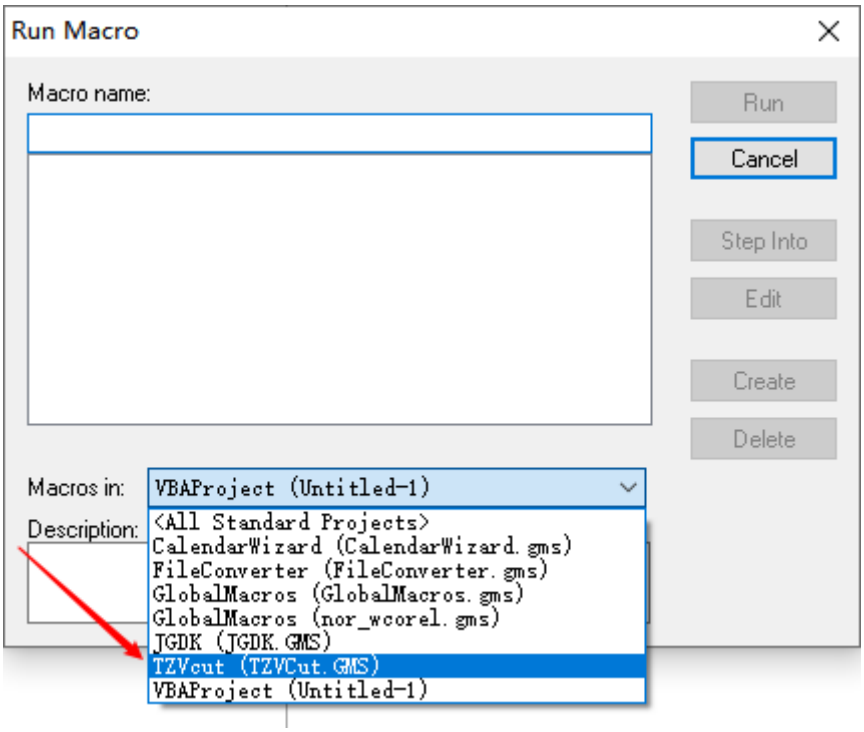
1) Click [Product].
2) Click [USB Driver].
3) Click [CorelVCut].
4) Click [Next] → [Install] → [Finish].

If CorelDRAW main menu won't display menu button after installation, the following procedures should be followed:

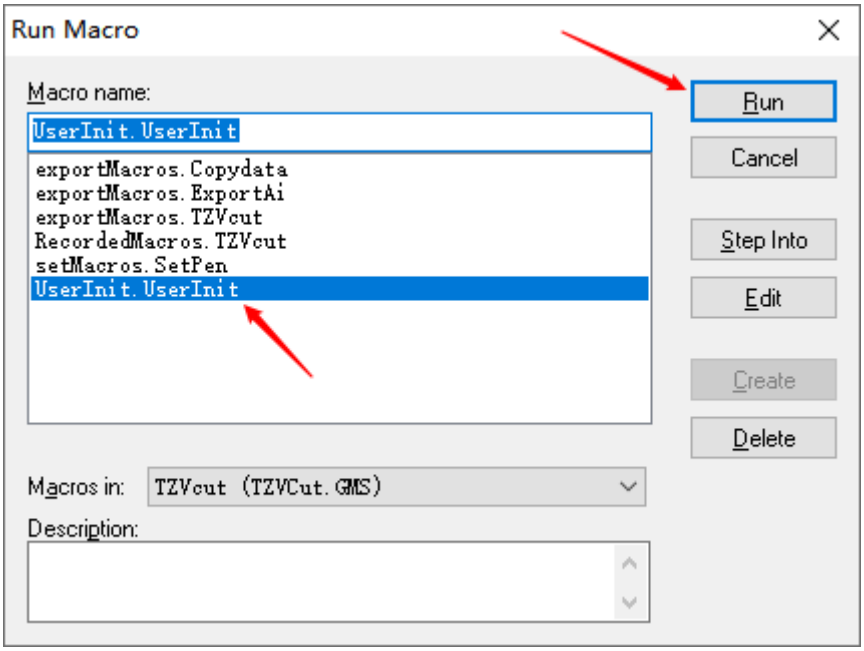
1) Start CorelDRAW.
2) Click menu list: [Tools] → [Macros] → [Run Macro…] and "Run Macro" dialogue would pop up.



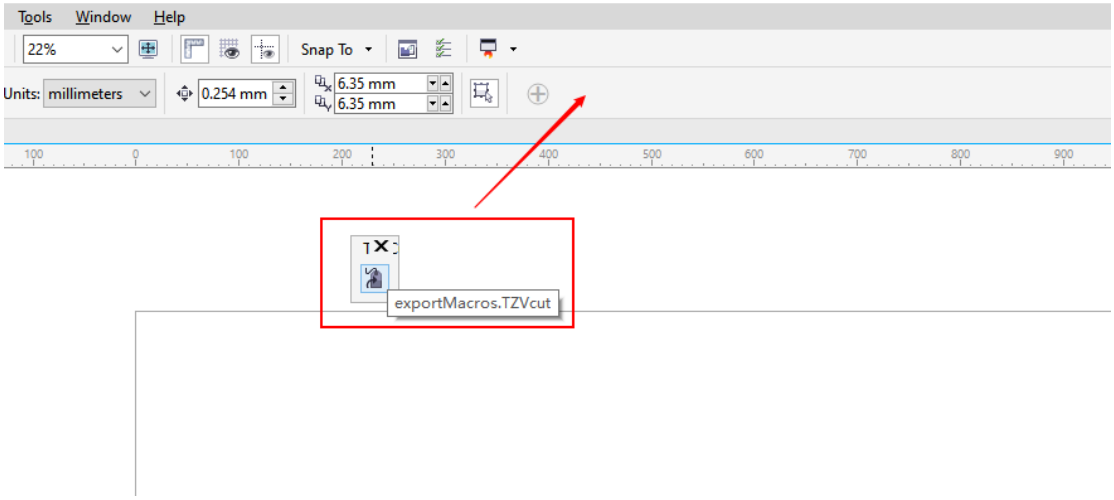
3) In the Run Macros dialog box, select TZVcut (TZVCut.gms) from the macros location drop-down list.



4) Choose “UserInit.UserInit” in macro name list box and click [Run].



5) The following icon button indicates that installation is successfully launched. Then drag and put the icon on the menu bar.



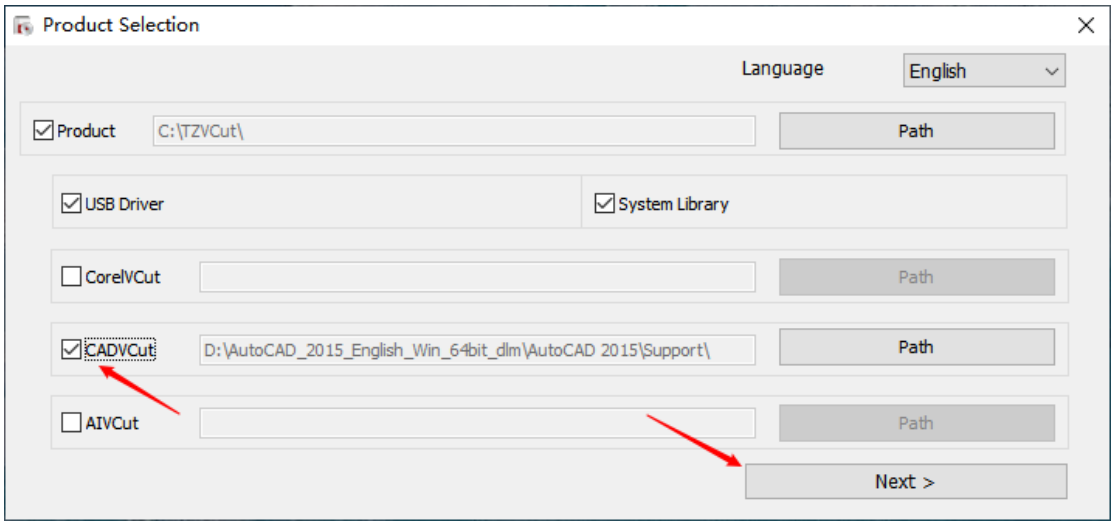
6)After drawing in CorelDRAW, you can directly click the import menu to import the drawing into TZVCut software, and you can import it multiple times in a row without closing the software.

1.2.3 Installation Auto CAD Import Menu

Note: At present, our CAD import menu supports 32-bit and 64-bit versions from CAD2004 to CAD2015!

a) First Installation (Take AutoCAD2015 as an example below)

The method is similar to that of "installing TZVCut for the first time".



1) Check "Product".

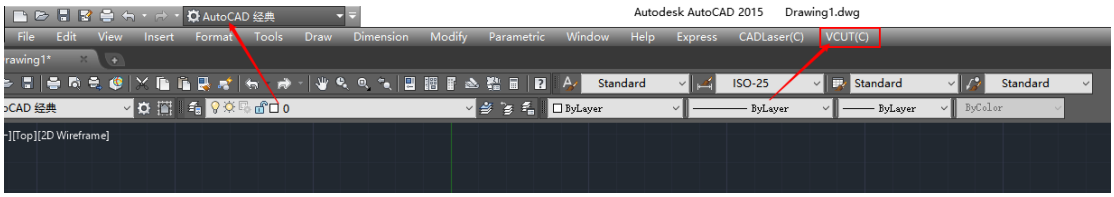
2) Check "USB Driver".

3) Check "CADVCut".

4) Click "Next", "Install" and "Finish".

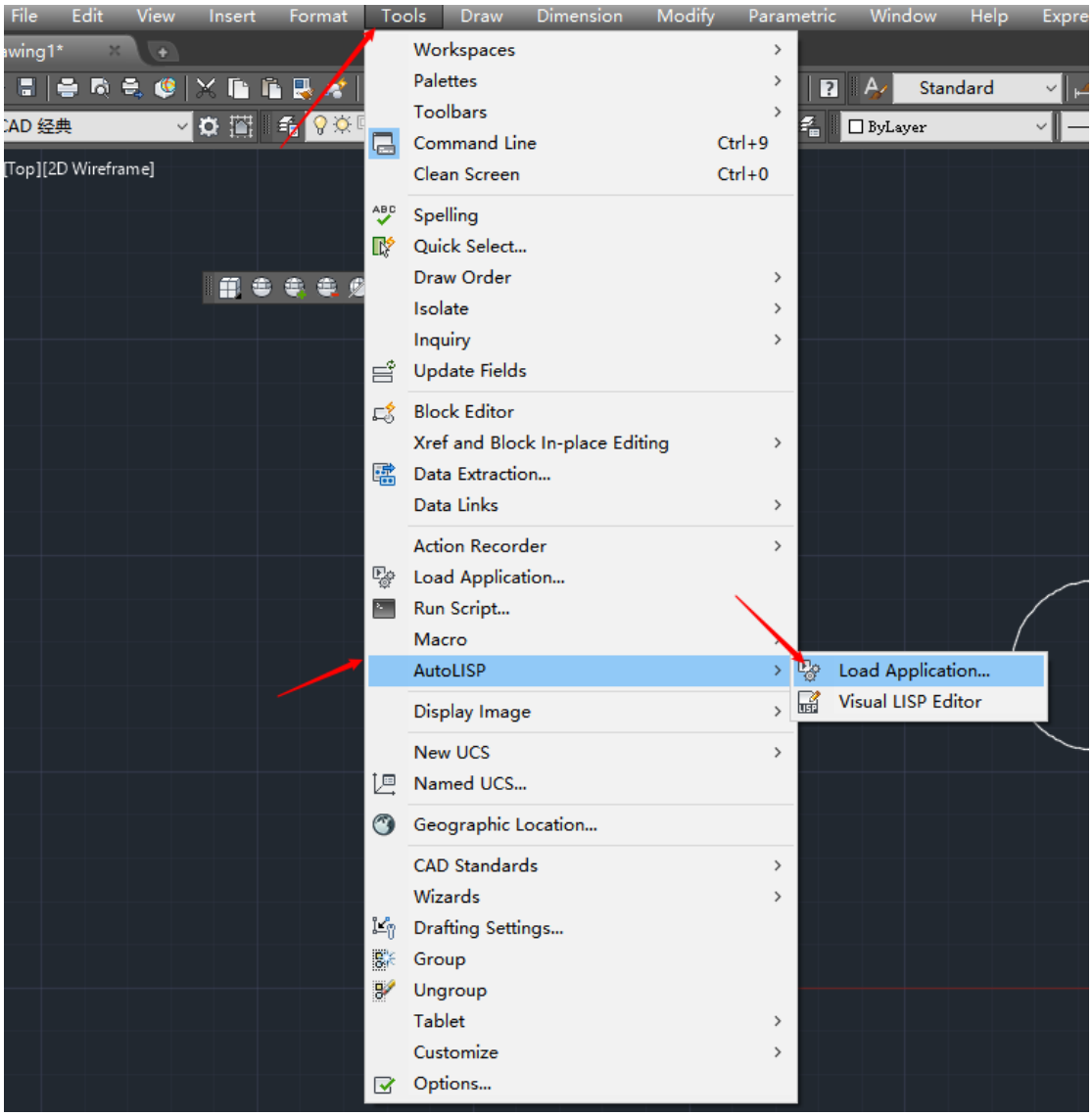
Note: If you need to specify the path manually, select to the AutoCAD 2015 directory.

After the installation is completed, open AutoCAD, switch to the classic mode of AutoCAD, and "VCUT(C)" appears behind the menu bar, which means the installation is successful! As shown in the following figure:

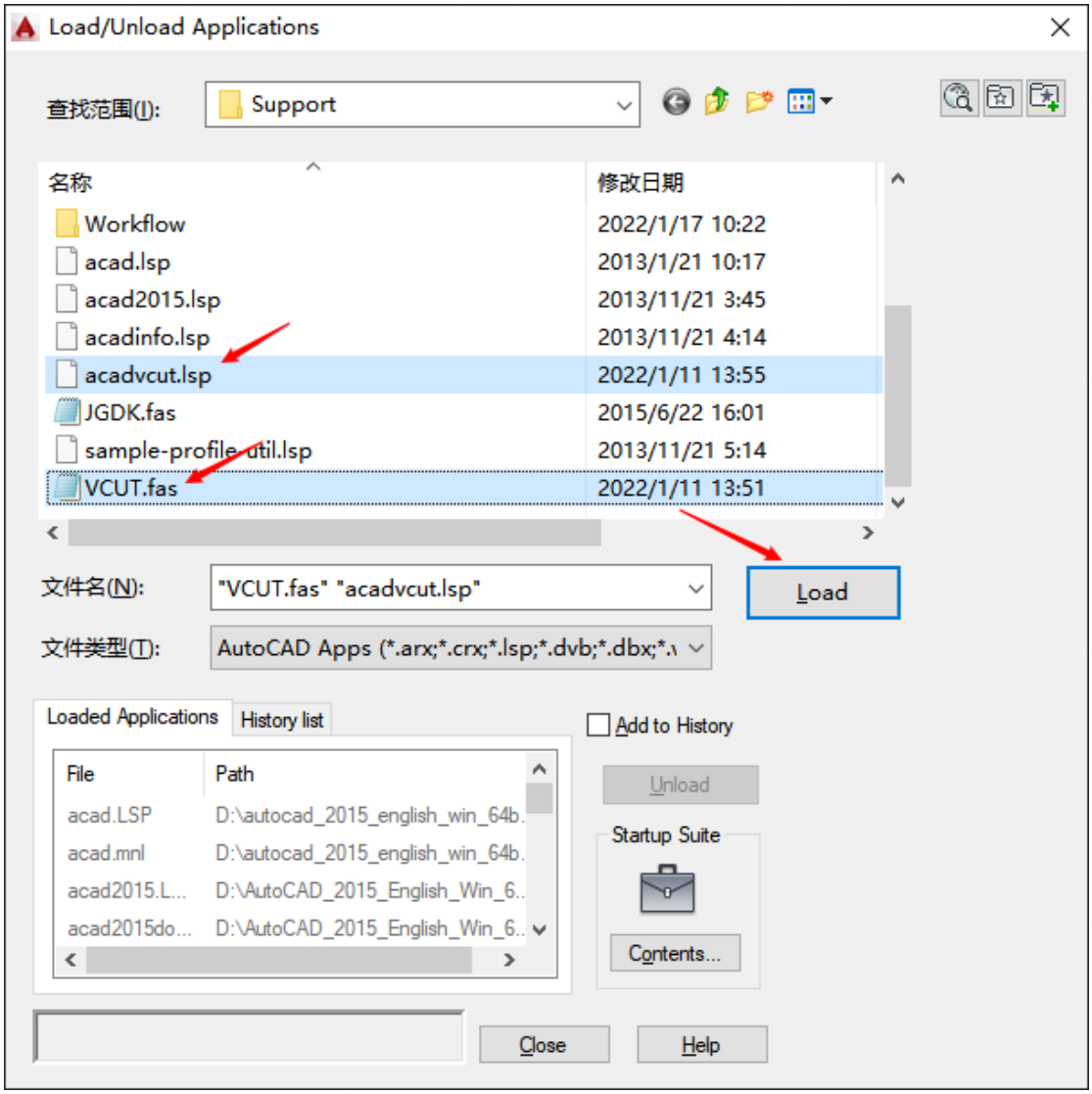


If you need to import graphics into the TZVCut software many times, you need to turn off the TZVCut software before you can continue importing.

6) If "VCUT(C)" is not displayed, you need to go to AutoLISP in the Tools to load the application. As shown in the figure:



6) In the pop-up window, select "VCUT.fas and acadvcut.lsp and load.

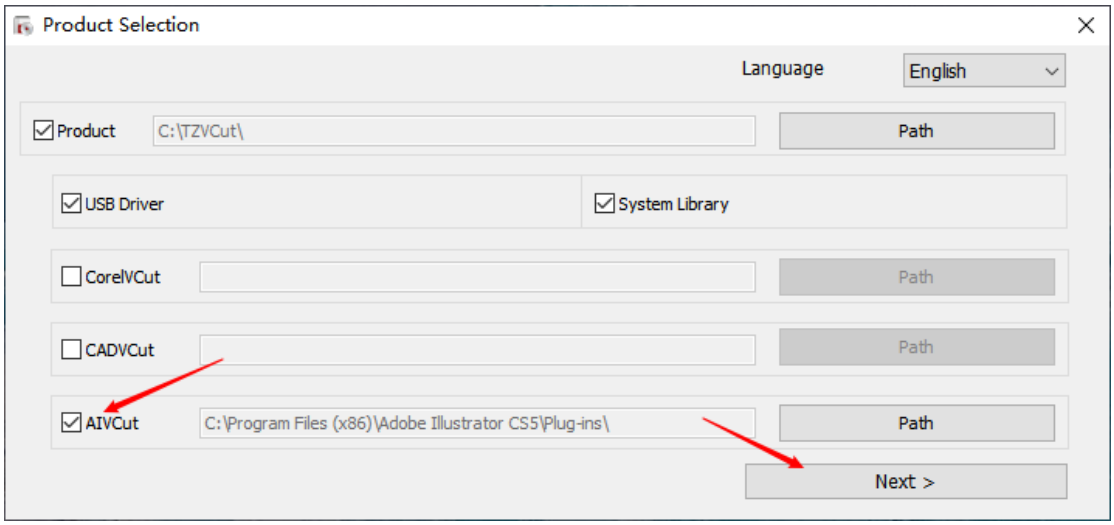


1.2.4 Illustrator importing menu installation

Note: At present our Illustrator importing menu supports versions from AI CS2 to AI 2017 of 32 bits and 64 bits! The CC version of AI includes 32-bit and 64-bit version, although only 32-bit version was provided before, our software actually supports both versions.

Take AI CS5 as an example.

The installation method of this importing menu is the same as that of TZVCut for the first time. Users only need to do the following steps:



1) Click [Product].
2) Click [USB Driver].
3) Click [AIVCut].
4) Click [Next] → [Install] → [Finish].

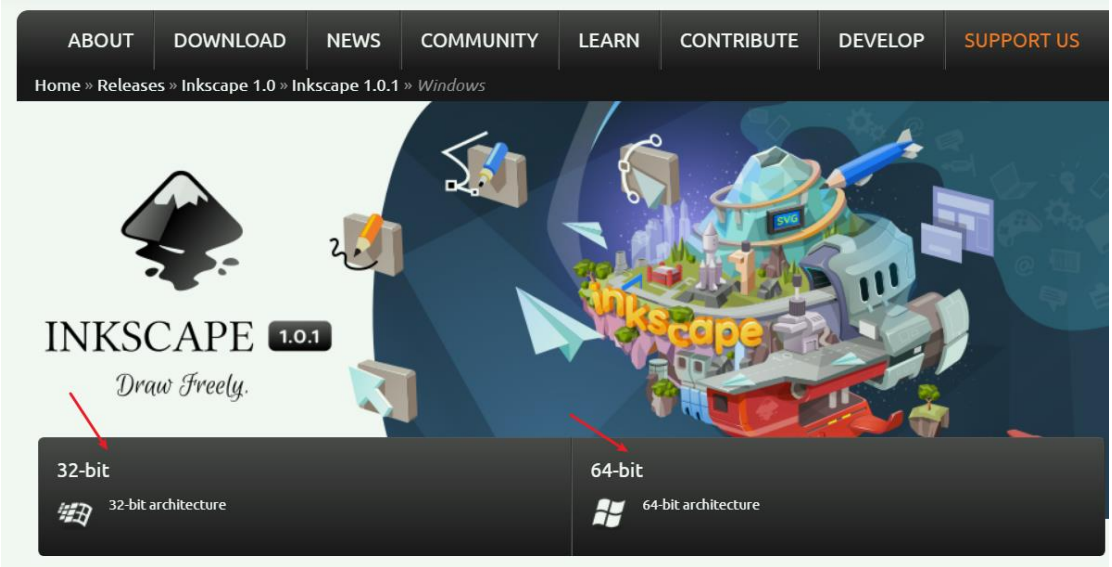
   Open AI and select “VCut Design → Export”, it would appear in the menu bar box. Such words indicate that installation is successfully completed as shown in the following figure.

Note: If it is the second time for all importing menu of the above-mentioned software to be installed, there is no need to click [Product] or [USB Driver] and [System Library].

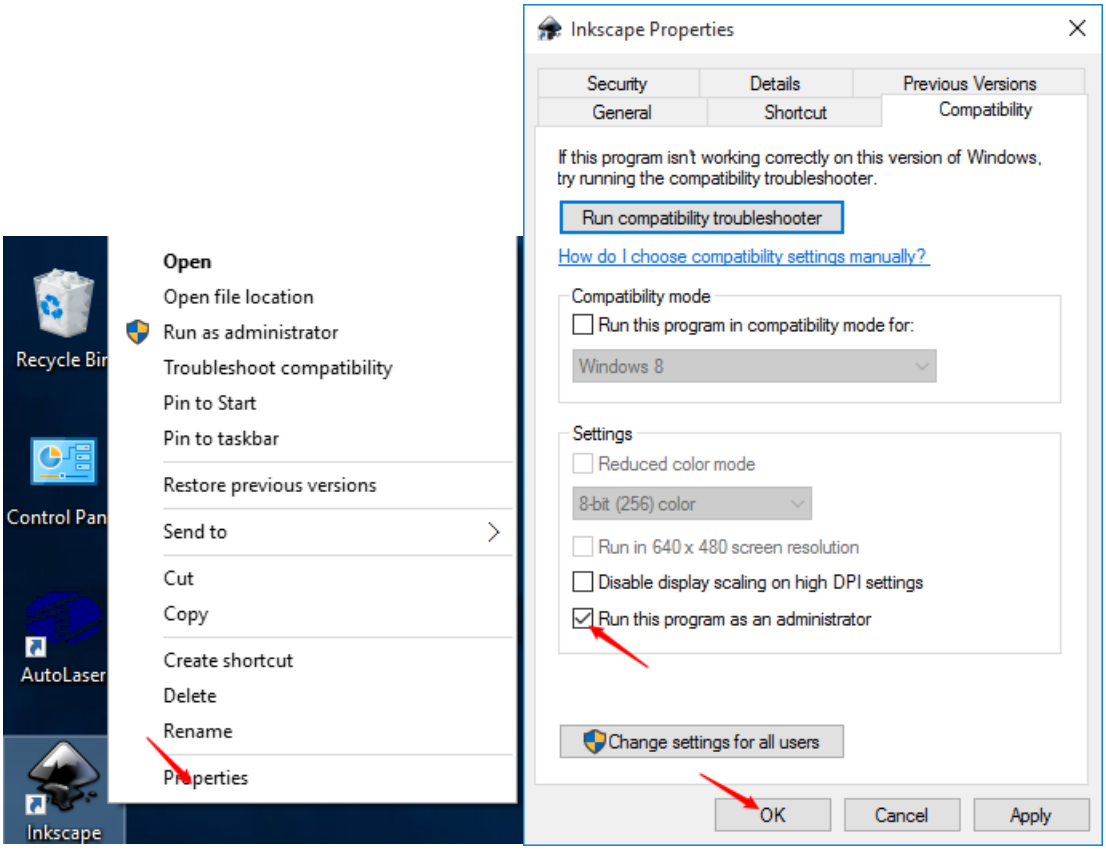
1.2.5 Inkscape importing menu

Note: Inkscape version needs to be 1.0 or above, and the operating system is Windows.

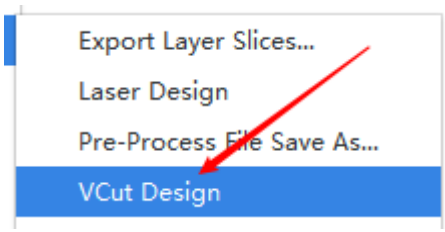
1. First download the installation package on the Inkscape official website.



2. Double-click installer to install TZVCut, the installer will automatically install the plug-in to Inkscape extensions.
3. On the desktop, select the Inkscape icon, right-click, properties, select compatibility, check Run the program as administrator, and click OK.



4. Open Inkscape, draw graphics, select Extensions/Export/VCut Design in the menu, and export all graphics on the page to TZVCut.

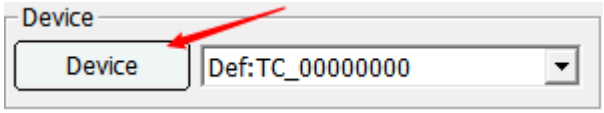


5. If you need to import graphics again, please close TZVCut first.

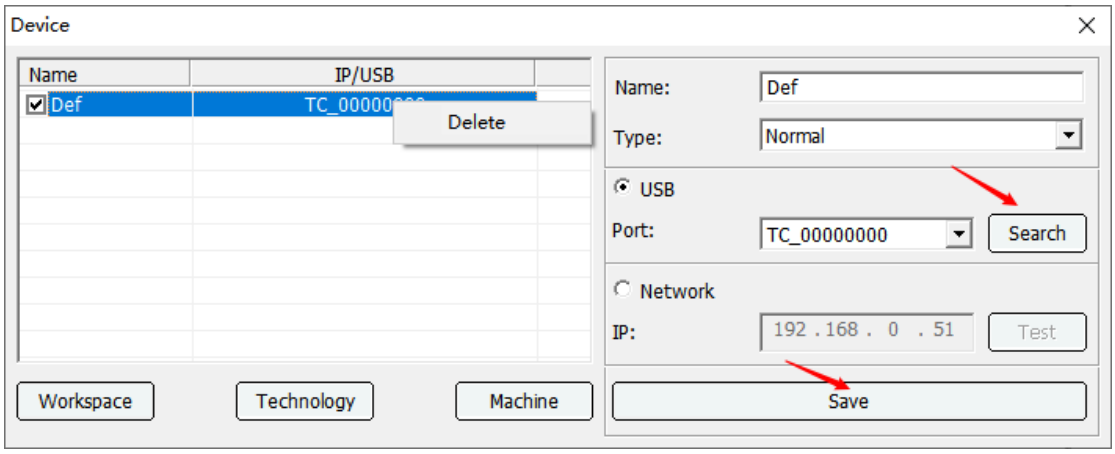
1.3 System settings

1.3.1 Device management

Open TZVCut software as shown in the following fig., and then click the [Device] button on the working area of the right side. Or click the  "Device" button in the tool bar.



The setting related to machine includes machine workspace, technological parameters and machine parameters.



【Name】: Different devices may have the same IP address, so devices are named for the convenience of identification. Each name is sole in one copy of device management table.

【Type】: Normal.

【USB】: Select USB communication, after connecting the control card with a USB cable, click search button to enumerate the device ports, click the drop-down box to select the port to be connected, and save. Such as: TC_00000000.

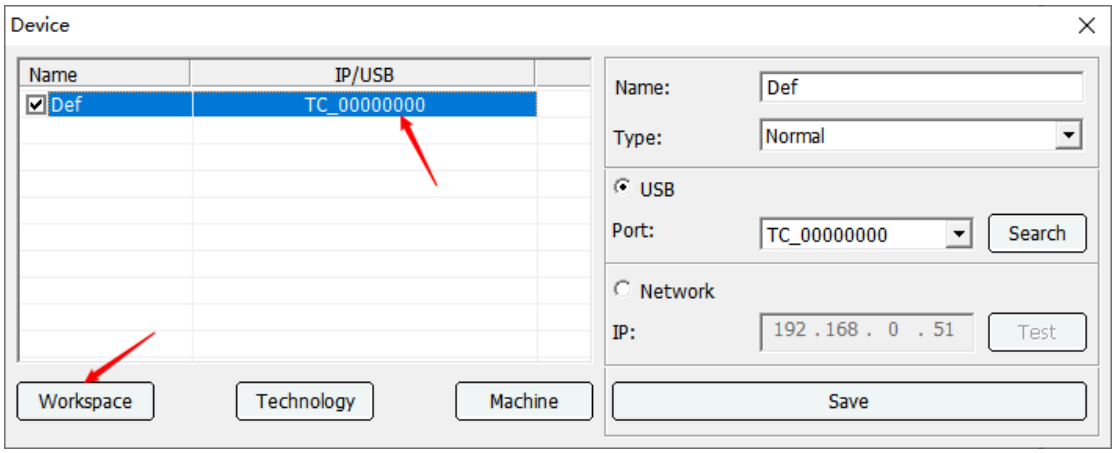
【Network】: IP address must agree with that shown on the device, otherwise TZVCut software can't be connected to the device (refer to IP settings). Click Test button to test.

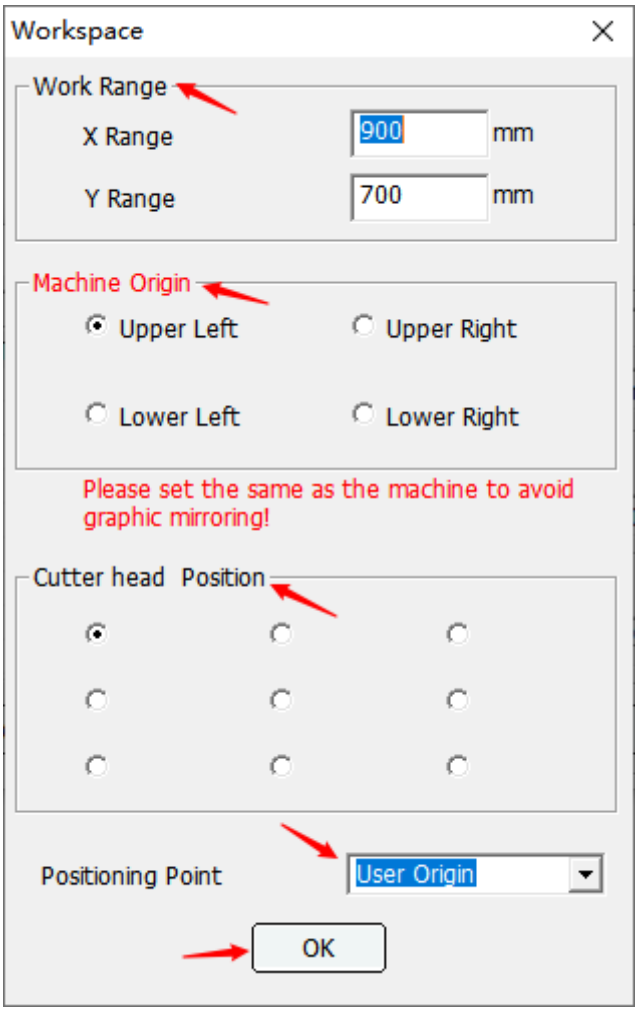
【Save】: Click records in the selection list and the selected record information will appear in the right side edit box. The [Name] from the list is the only mark for identification. If device name is the same as some record in the list, click [Save] button to modify the records in the list. If the device name does not exist in the list, click [Save] button to add a new record.

【Delete】: Device management table is a roster of all devices. If a device is no longer used, select it in the form and right click to open the menu, and then click [Delete] to delete. If a new machine is purchased, users can edit its name, IP address and device type in device information in edit column on the right side, and then click [Save] below to add it to the list.

1.3.1.1 Workspace parameters

Select the machine name whose breadth size needs to be modified, and click [Workspace] to open the workspace parameter dialogue box. As shown in the fig. below:



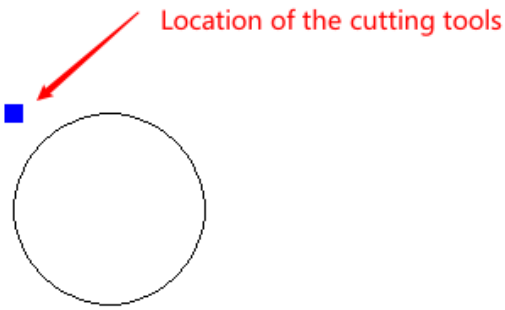


【X Range】: Refers to the maximum distance within which cut head can be moved in X axis direction starting from the machine reset point (namely machine original point). If the distance is bigger than the actual distance machine can be moved in X axis, cut head will crash.

【Y Range】: Refers to the maximum distance cut head can be moved in Y axis direction starting from the machine reset point (namely machine original point). If the distance is bigger than the actual distance machine can be moved in Y axis, cut head will crash.

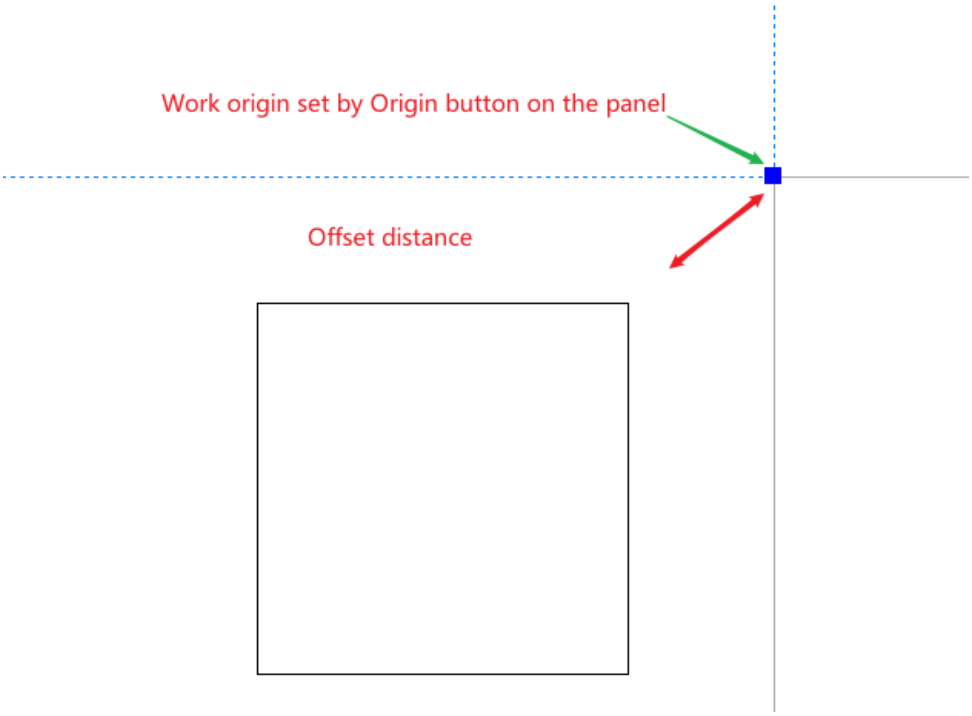
【Machine Origin】: Refers to the point where cut head returns after the machine is powered on or the "Reset" button of the panel is pressed. One of the points on Upper Left, Lower Left, Upper Right and Lower Right position could be set as machine reset point, and the parameters of such point should be in line with the installation of the machine.

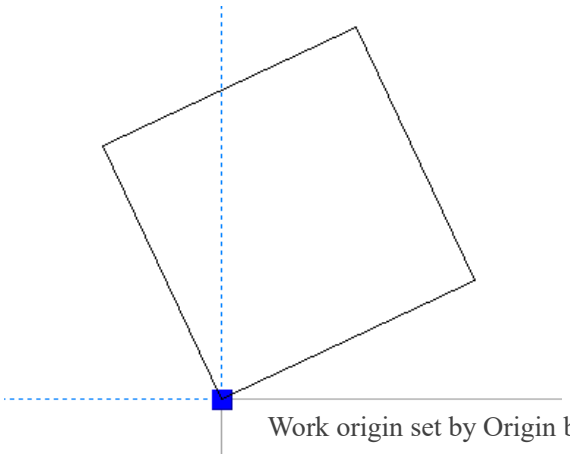
【Cutter Head Position】:It refers to the position of processing graph relative to the starting point of processing (anchor point). For example, if the upper left is selected in the figure above, the starting point of processing is in the upper left of the processing figure.



Positioning Point:

- 【Machine Origin】: Take the machine origin as the positioning point.
- 【User Origin】: The position recorded by the positioning button (Origin Button) is the processing positioning point.
- 【Current Position】: Take the current position of the cutting head as the positioning point.
- 【Absolute Coordinates】: The position of the graphic on the software canvas is the processing position.
- 【Page Origin】: Use the page zero coordinate as the origin of the cut head. (For 【example】: a. The distance between the origin of the software and the starting point of the graphics processing is 100mm, then the file is sent to the controller for processing, no matter where the cut head is positioned, it will move 100mm in the corresponding direction before the graphics processing, and the processing returns to the page origin. b. Take any point of the graph as the starting point). As shown:





Work origin set by Origin button on the panel

1.3.1.2 Technological parameters

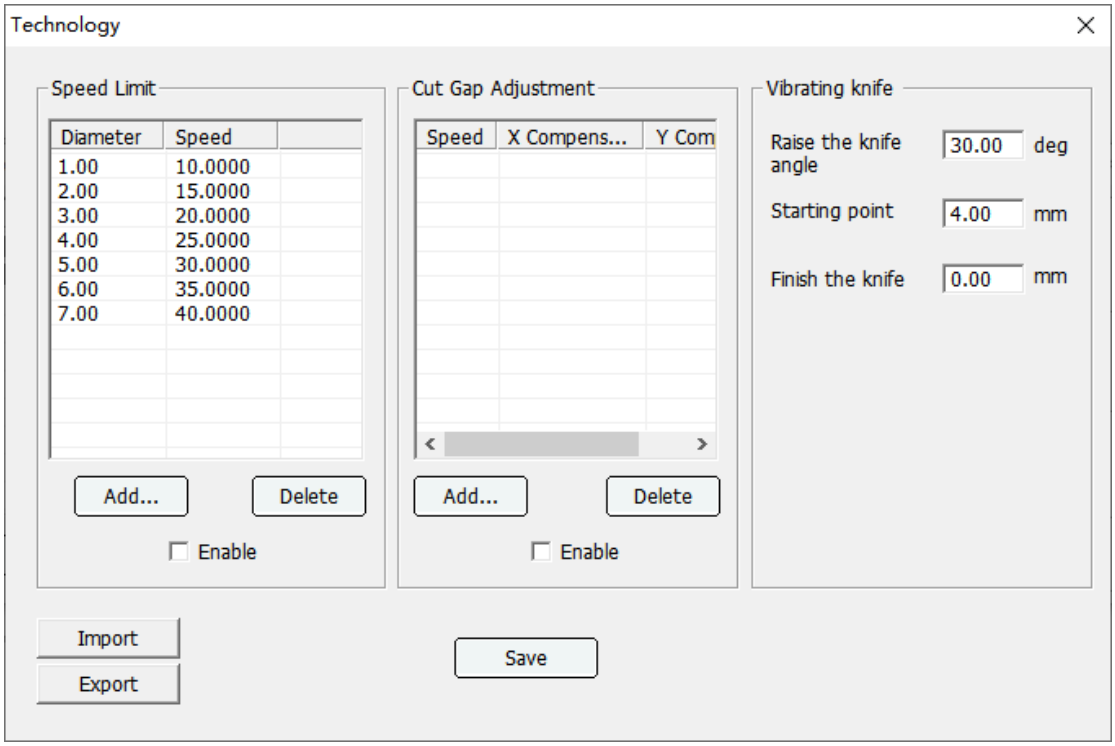
Select machine, click [Technology] and access into technological parameter settings, as shown in figure below.

【Enable】: The corresponding processing is launched.

【Add】: Add the corresponding processing parameters.

【Delete】: Delete the corresponding processing parameters.

【Save】: Save all processing parameters in the parameter list.



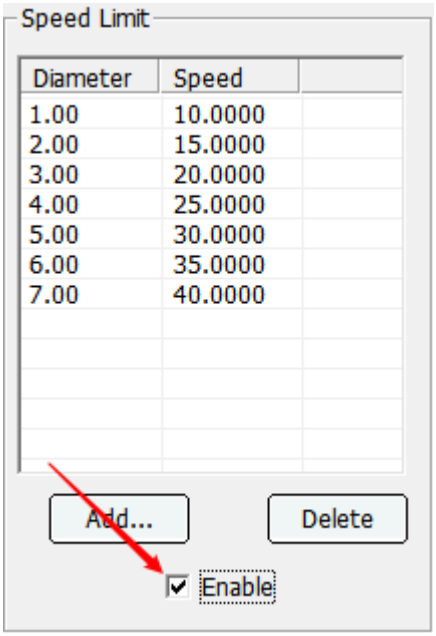
1.3.1.2.1 Speed limit

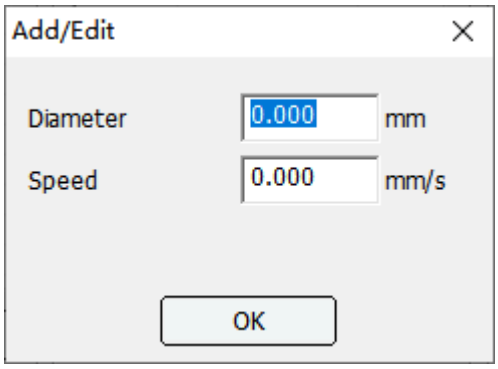
According to different models, and different types of belt and pulley, motor and also a graphics, at the same speed processing result may not be consistent, this is the objective reasons that exist in the process, so the software provides a list of speed limit for different models, when the diameter of the graphic external rectangular less than a specified, using the specified speed for processing, Reach the speed limit effect, avoid the speed too fast, resulting in the processing of the graph deformation. As shown in the figure.

【Enable】: Check the "Enable" option to use the speed limiting function.

【Add】:Click the "Add" button to pop up the new dialog box. After editing the parameters, click "OK" to add a new one.

【Delete】: Select the record in the list to delete, and then click the "Delete" button below.





1.3.1.2.2 Cut gap adjustment

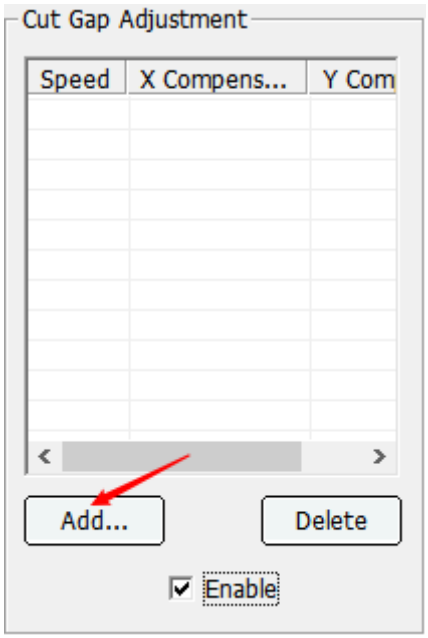
If the following processing effect appears, cutting clearance function could be launched.

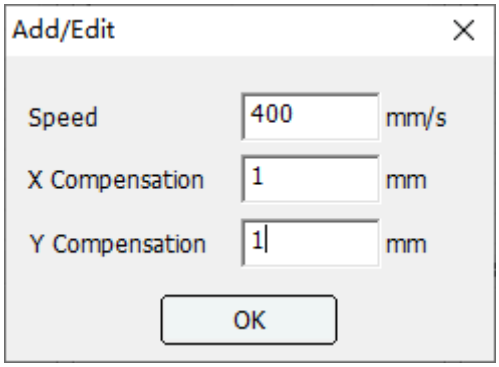
【Enable】: The [Enable] option of the list offer user's options for deciding whether to use function.

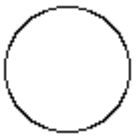
【Add】: Click [Add] button and parameter editing dialog box would pop up.

【Delete】: Select the record to be deleted in the list, and click [Delete] button below.

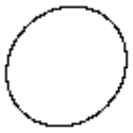
After editing parameters, click [OK] to add a new item.



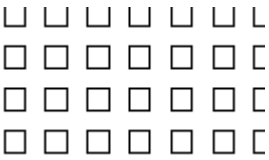




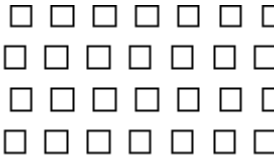
The original graphic



The processing result

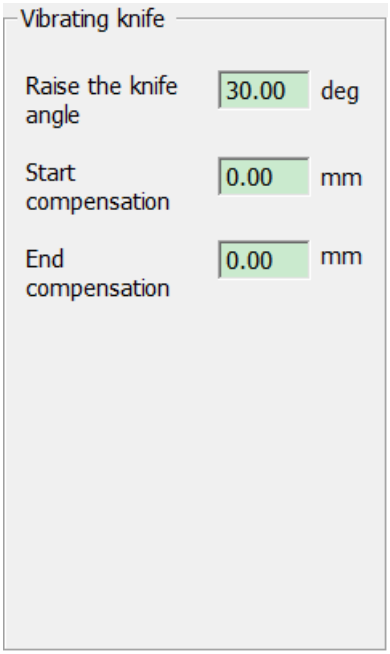


The original graphic



The processing result

1.3.1.2.3 Vibrating knife



【Raise the Knife angle】: The Angle at the corner of the graph is greater than or equal to the knife lifting Angle to avoid crosscutting, and the graph needs to be handled by the knife. The knife lifting Angle here is generally set as the same as the vibration knife lifting Angle parameter in the control card, and the unit is DEG (degree).

【Start compensation】: Let knife from the front end of the corner, the unit is mm.

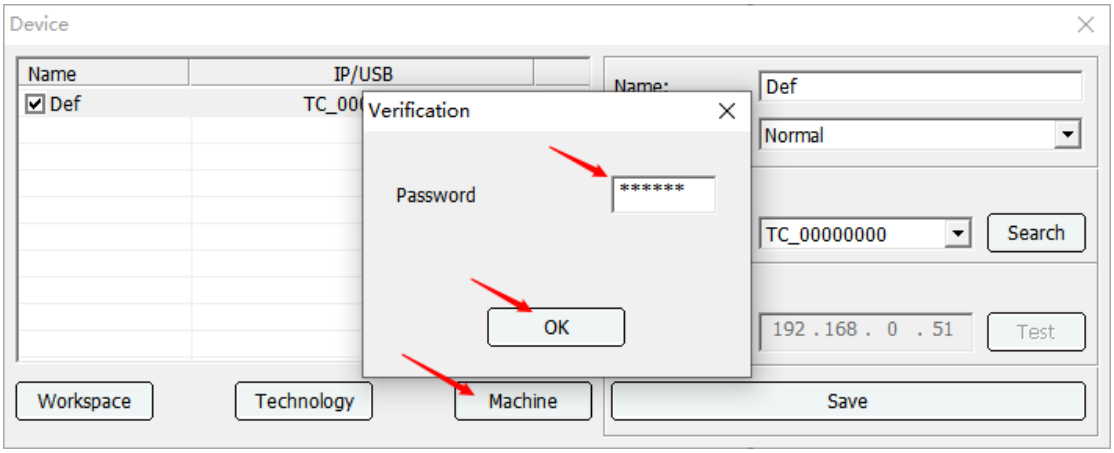
【End compensation】: Let knife from the back end of the corner, the unit is mm.

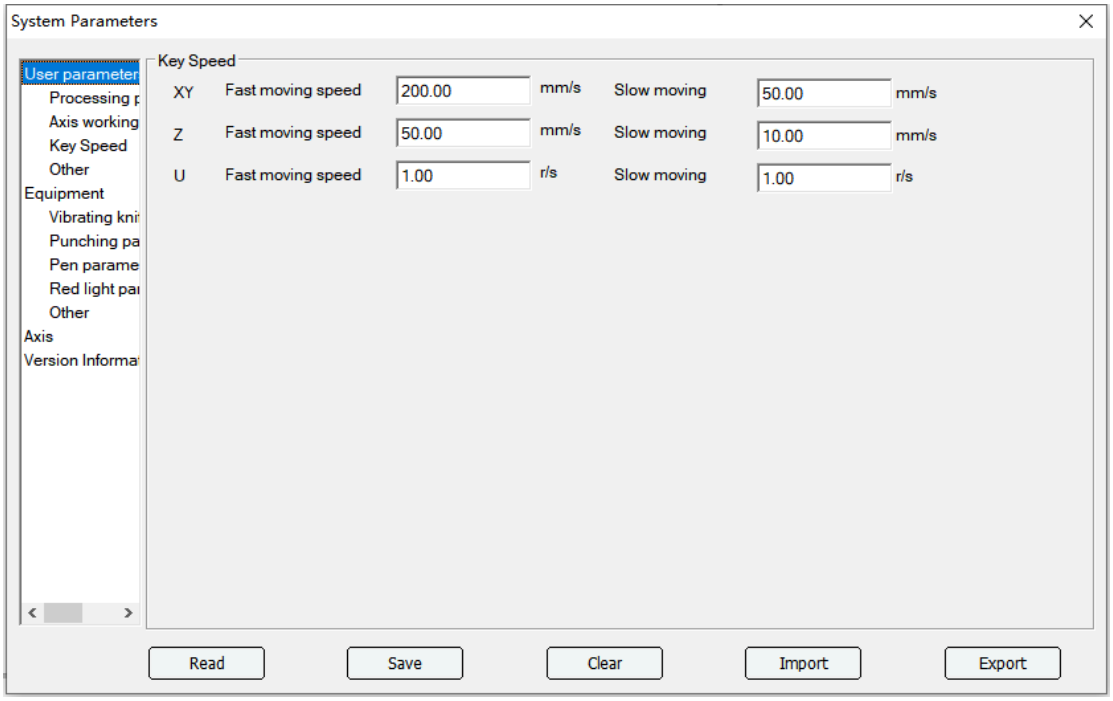
1.3.1.2.4 Import/Export parameters

When finish adding technological parameters, it is able to save the parameters file by [Export] button. And when installer the system, it is able to load the previous parameters file to the TZVCut software by [Import] button.

1.3.2 Machine parameters

Click the machine parameter and enter the password tz0001 to enter the parameter interface. As is shown in:





【Read】: Reads the parameters set by the control card, When the control card is disconnected, the read parameter timeout will be prompted, and the device parameter will be automatically read when the connection is successful.

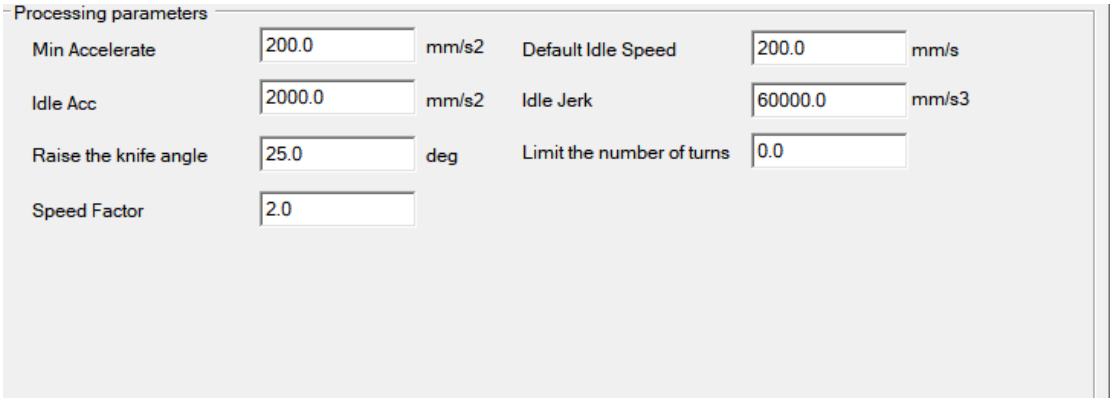
【Save】 Saves the modified parameters in each list of system parameters.

【Clear】: Clears out all parameters in the various lists of system parameters.

【Import/Export】: This function is to export the control card parameters used or set by the user to the computer for saving. If you need to use the directly imported software again in the future, click "Save". You don't have to reset again.

1.3.2.1 User parameters

1.3.2.1.1 Processing Parameters



【Minimum Accelerate】: the corresponding minimum acceleration when starting and stopping. The smaller the value is, the smaller the bitter is when starting and stopping, and the corresponding acceleration and deceleration time increases. The higher the value is, the greater the bitter of start and stop, and the faster the acceleration and deceleration. Generally, 400mm/ S2, if faster processing speed is needed, the minimum acceleration is set to 850mm/ S2 or more, if accurate processing is needed, set to 200mm/ S2 (based on the actual machine, here is the recommended value). Mm/s2

【Default idle Speed】: XY axis space movement speed without cutting when the default speed is selected for processing files. Mm/s.

【idle Acc】: XY axis space shift acceleration without cutting. Mm/s2. The greater the acceleration, the faster the acceleration, the greater the relative bitter. Conversely, the smoother acceleration and deceleration.

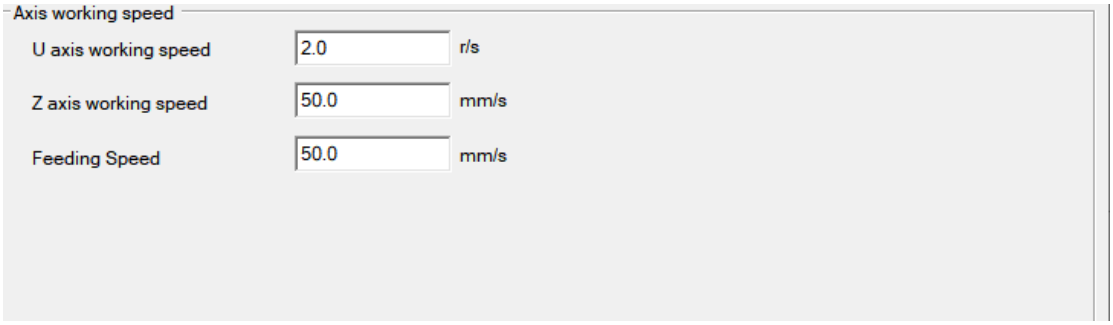
【ldle Jerk】: the acceleration of XY axis space shift without cutting. Units of mm/s3. The faster the acceleration, the greater the relative bitter. Conversely, the smoother acceleration and deceleration.

【Raise the Knife Angle】: When the trajectory turning Angle is greater than the Angle, the knife lifting first.

【Limit the number of turns】: When the controller finds that the number of turns of the rotation axis exceeds a certain value, it will reverse the rotation axis again, so as to avoid the cumulative error caused by the inaccurate setting of the cycle pulse of the rotation axis.

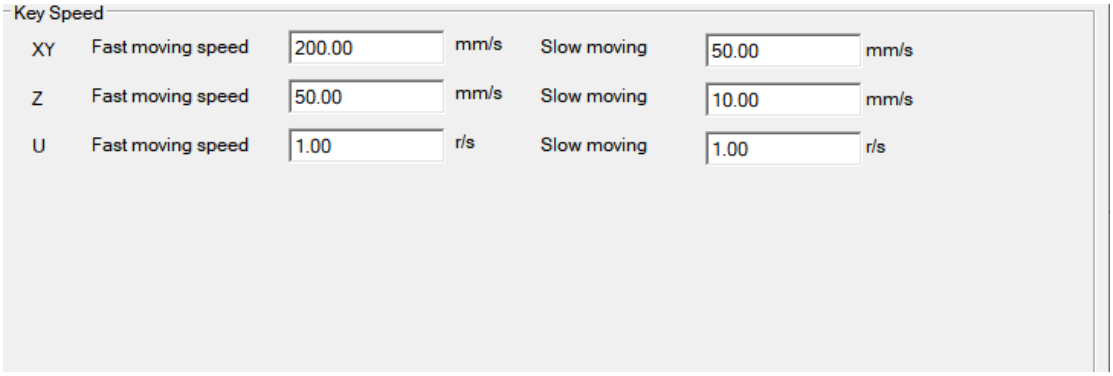
【Speed Factor】: used to adjust the stability of the machine when turning. The range is 0.00-3.00, the greater the value, the greater the turning speed, the shorter the processing time, the greater the impact and bitter. The smaller the value is, the smaller the turning speed is, the longer the processing time and the smaller the bitter is. Generally, it is 2. When the Y-axis acceleration is set very high (such as more than 2500mm/s), the speed coefficient can be set below 1.0, so that the bitter phenomenon is significantly reduced.

1.3.2.1.2 Axis working speed



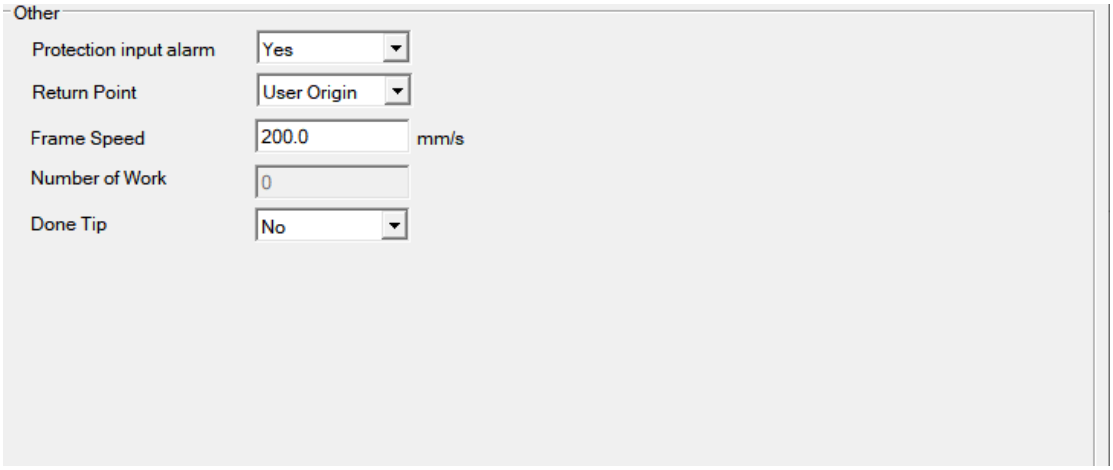
【U axis working speed】: U-axis rotating working speed, unit: R /s (revolution/second).
【Z axis working speed】: Z-axis lifting working speed, unit mm/s.
【Feeding speed】: feeding movement speed, unit: mm/s. When feeding, use Y axis clip material feeding, need to install clip, and set clip delay and blow back delay.

1.3.2.1.3 Key speed



【XY Fast moving speed】: the speed of XY axis button moving fast gear, in mm/s.
【XY Slow moving】: the speed of XY axis button moving slow speed, in mm/s.
【Z Fast moving speed】: the speed of z-axis button moving fast file, in mm/s.
【Z Slow moving】: the speed of z-axis button moving slow speed, in mm/s.
【U Fast moving speed】: the speed of U axis button moving fast gear, the unit is R /s.
【U Slow moving】: the speed of U axis button moving slow speed, in unit of R /s.

1.3.2.1.4 Other



【Protection input alarm】: In the open state, the system will detect the protection input signal, when the protection input is effective, suspend the work and movement

【Return Point】: the stopping position of the cutting head after the system is reset and the work is completed. There are three choices: mechanical origin, none and anchor point. If you select "none", the work will stop at the current position after completion.

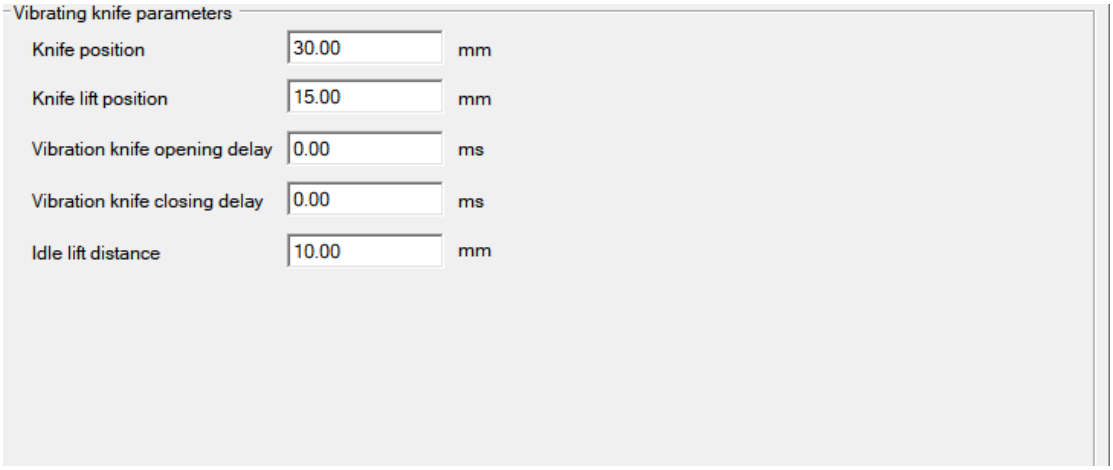
【Frame Speed】: border speed. Mm/s.

【Number of work】: After opening, set the processing times, when the specified number of times after the buzzer sounded 5 alarm.

【Done Tip】: After opening, set the prompt times of processing completion.

1.3.2.2 Equipment

1.3.2.2.1 Vibrating knife parameters



【Vibration knife opening delay】: the delay time of opening vibration knife, the unit is ms.

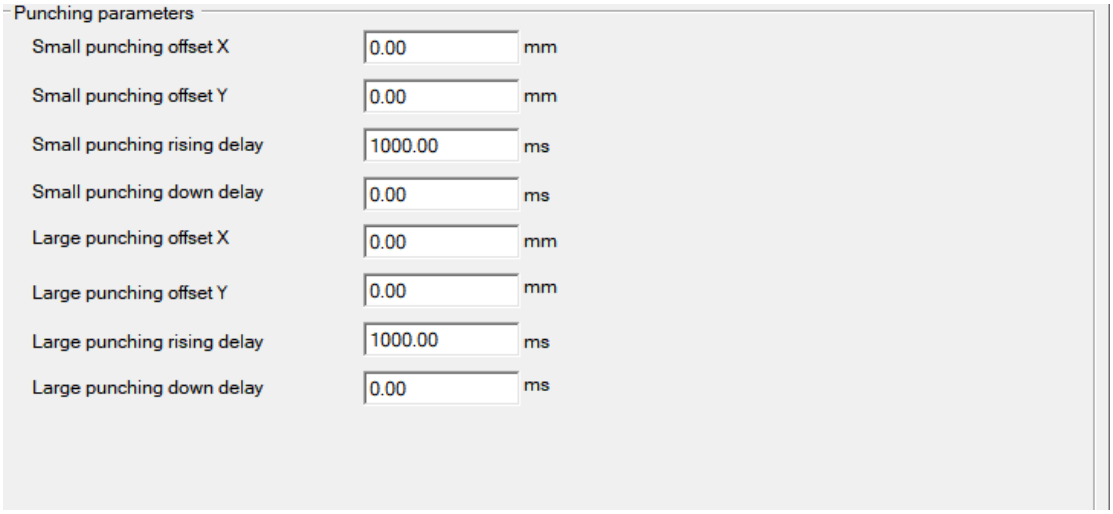
【Vibration knife closing delay】: the delay time of closing vibration knife, the unit is ms.

【Knife position】: in the vibration knife processing needs to drive the tool to the target coordinate, and then processing cutting.

【Knife lift position】: the target position of the tool lifting when the vibration knife does not cut and move. Setting suitable coordinate of lifting tool can save the time of lifting tool repeatedly and increase machining efficiency.

【Idle lift distance】: The target coordinates to which the cutter is driven when the machining is completed.

1.3.2.2.2 Punching Parameters



【Small punch offset X】: the lateral offset of small punch and vibration knife, the unit is mm.

【Small punch offset Y】: vertical offset of small punch and vibration knife, the unit is mm, which can be negative.

【Small punch down delay】: the descent delay time of the small-punch device, the unit is ms.

【Small punching rising delay】: The rise delay time of small punching device, the unit is ms.

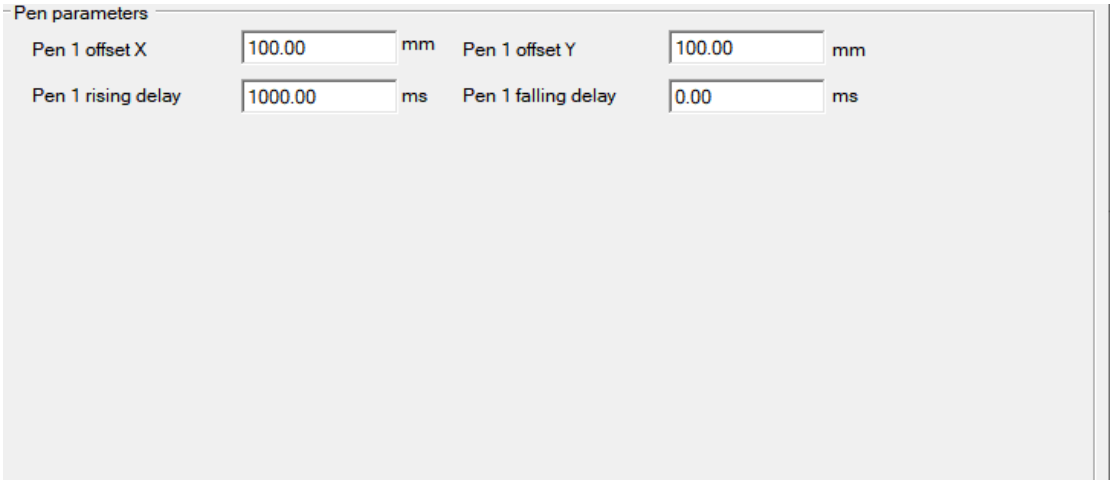
【Large punching offset X】: the lateral offset of large punching and vibration knife, the unit is mm.

【Large punching offset Y】: vertical offset of large punching and vibration knife, the unit is mm, which can be negative.

【Large punching down delay】: the descent delay time of large punching device, the unit is ms.

【Big punching rising delay】: The rise delay time of big punching device, the unit is ms.

1.3.2.2.3 Pen Parameters



The measurement method of brush offset: first cut a cross with a vibrating knife, and then draw a cross with a brush, measure the offset value of the center of the two crosses, which is the brush offset value. After filling in the offset, download a vibration knife and brush again and observe whether the center points of the two crosses completely coincide. If so, it means that the offset value set is correct. Brush offset calibration can be set in the calibration interface.

【Pen offset X】: the lateral offset between the brush and the vibrating knife, the unit is mm

【pen 1 offset Y】: the vertical offset between the brush and the vibrating knife, the unit is mm, which can be negative.

【Pen 1 rising delay】: the delay time of brush drive rise, the unit is ms.

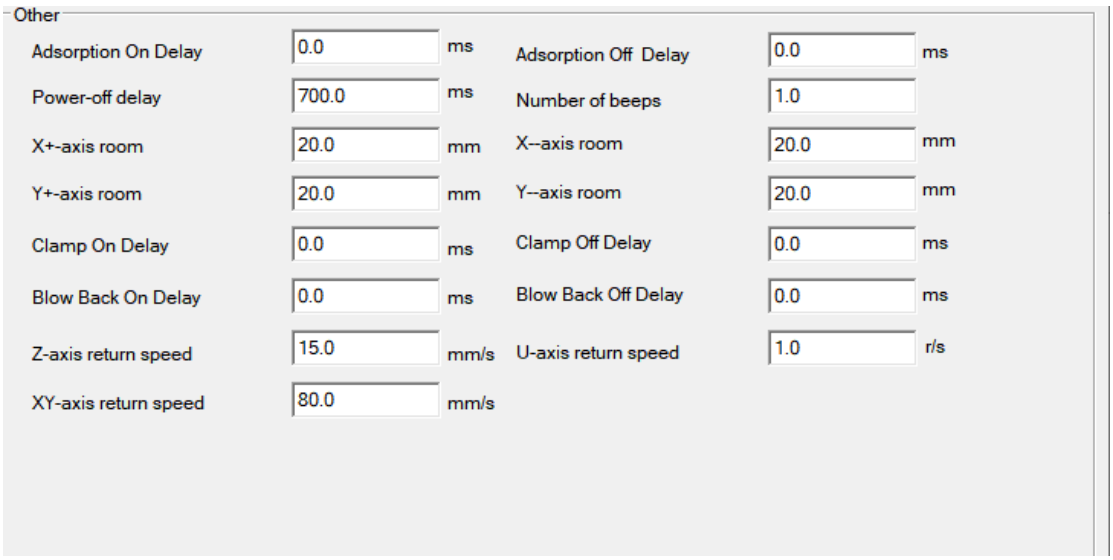
【Pen 1 falling delay】:The delay time of the brush drive drop, the unit is ms.

Note: we agree to install the vibration knife near the origin of the machine, and then install the brush or punch. As in the upper left coordinate system, the vibration knife is installed at the far left.

1.3.2.2.4 Red light parameters

【Red light shift XY】: horizontal and vertical offset of red light cross center and vibrating knife, unit is mm, can be negative.

1.3.2.2.5 Other



【Adsorption on delay】: start and close the delay of vacuum adsorption equipment, generally through the relay connected to the vacuum adsorption equipment, adsorption equipment is used to cut the material adsorption to the platform, to ensure that the material does not move when cutting. Unit: ms.

【Power-off delay】: When the power continues to cut, the cutting head does not roll back enough, resulting in the graphical interface not closing. This parameter can be used to make appropriate compensation adjustment. The unit is ms.

Buzzer times: set the buzzer times when the work is finished.

【X/ Y-axis room】: When the X/Y axis is reset, the reset will be completed after touching the origin limit (if the origin offset is set, the limit will be offset for a distance before stopping). The position at this time is the zero position of X/Y, but there may be a long distance near the X/Y axis. The corresponding machine table is steel plate, and cutting is not allowed in this area, so this distance is called X/Y- margin.

【X/Y+ axis room】: Move the X/Y axis to the maximum coordinate. Similarly, at this time, the machine table below the vibration cutter head may also be steel plate, and this area cannot be cut, so this distance is called X/Y+ leeway.

【Clamp On/off delay】: The clip is used to clamp the material when feeding, and complete the feeding action by dragging the Y axis. Unit: ms.

【Blow Back on/off delay】: In the process of feeding, it is necessary to open the back blowing switch first to separate the material from the platform to ensure the correct execution of feeding.

【Z-axis return speed】: the speed of z-axis reset back to the origin, in mm/s.

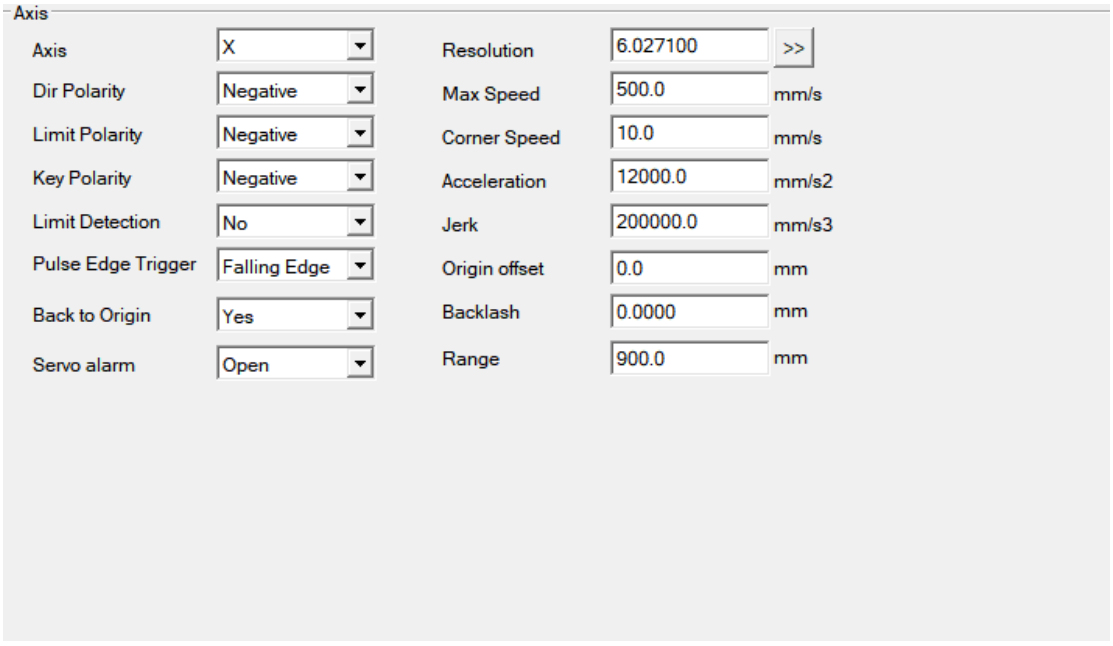
【U-axis return speed】: speed of U axis reset back to the origin, unit: R /s.

【XY-axis return speed]】: the speed of XY axis reset back to the origin, in mm/s.

Remark:

Feeding action flow: the Y axis of feeding moves to the back end, then the clamp is opened, the material is clamped, the adsorption function is closed, and the back blowing is opened. The Y axis drags the feeding, the back blowing is closed, and if it needs to work again, the adsorption is opened and the clamp is closed.

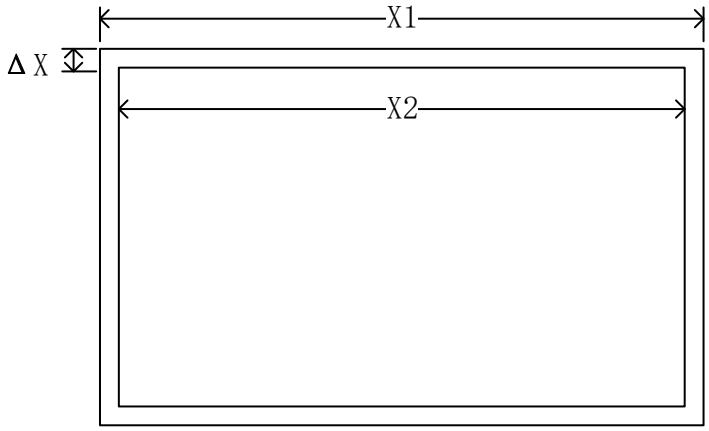
1.3.2.3 Axis



【Resolution】: resolution = motor rotation one week cutting head moving length (mm) ×1000/ motor rotation one circle drive required pulse number. Press ">>" to display the input boxes of theoretical length and actual length. The theoretical length is the designed length, and the actual length is the length measured by a ruler. Input the corresponding length value into the corresponding option, press "OK", and the system will automatically convert the correct resolution.

About the measurement of size:

Users can draw a rectangle so that they can measure the length of the sides of the rectangle to calculate the resolution, or they can measure the diagonal of the rectangle to check whether the beam is perpendicular to the car. When measuring, the width of the cutting line should be considered, that is, the machine actually draws two rectangles when drawing rectangles, and the user measures the length of two rectangles respectively when measuring, and takes the average value of the two lengths, which is the actual length. The diagonal length only needs to compare whether the diagonal of the same rectangle is equal or not. For example, measure the length of a rectangle. δ X in the figure represents the width of the cut line. Measure the lengths of X1 and X2 in the figure respectively and take their average values.



【Axis】: Axis is divided into X, Y, Z and U.

【Dir polarity】: Change this polarity when the direction of the axis back to the origin is opposite.

【Limit polarity】: it can be positive or negative. When the limit polarity is positive, the limit signal is effective at high level. When the limit polarity is negative, the limit signal is active at low level.

【Key polarity】: Change the polarity when the key direction is inconsistent with the axis moving direction.

【Range】: the maximum distance that the shaft can move.

【limit Detection】: Whether to detect the limit switch to prevent axle collision.

【Backlash】: clearance of shaft reverse movement. Used to compensate for cutting misalignment.

【Max Speed】: the fastest speed that can be achieved when the shaft is running.

【Corner speed】: the speed when the shaft starts and stops.

【 Acceleration 】:the maximum acceleration of the shaft during operation. The greater the acceleration, the shorter the acceleration time and the greater the bitter.

【Jerk】: the acceleration of the shaft from the minimum acceleration to the maximum acceleration (deceleration from the maximum acceleration to the minimum acceleration), the smaller the acceleration, the smaller the bitter, the slower the lifting speed, on the contrary, the greater the bitter, the faster the lifting speed.

【Back to origin】: Whether each axis returns to the origin of the machine when the machine is powered on.

【Pulse Edge Trigger】: rising edge or falling edge. According to the driver setting, it is generally triggered by rising edge. If the motion axis reciprocates and is misaligned in one direction, change the trigger mode of pulse edge.

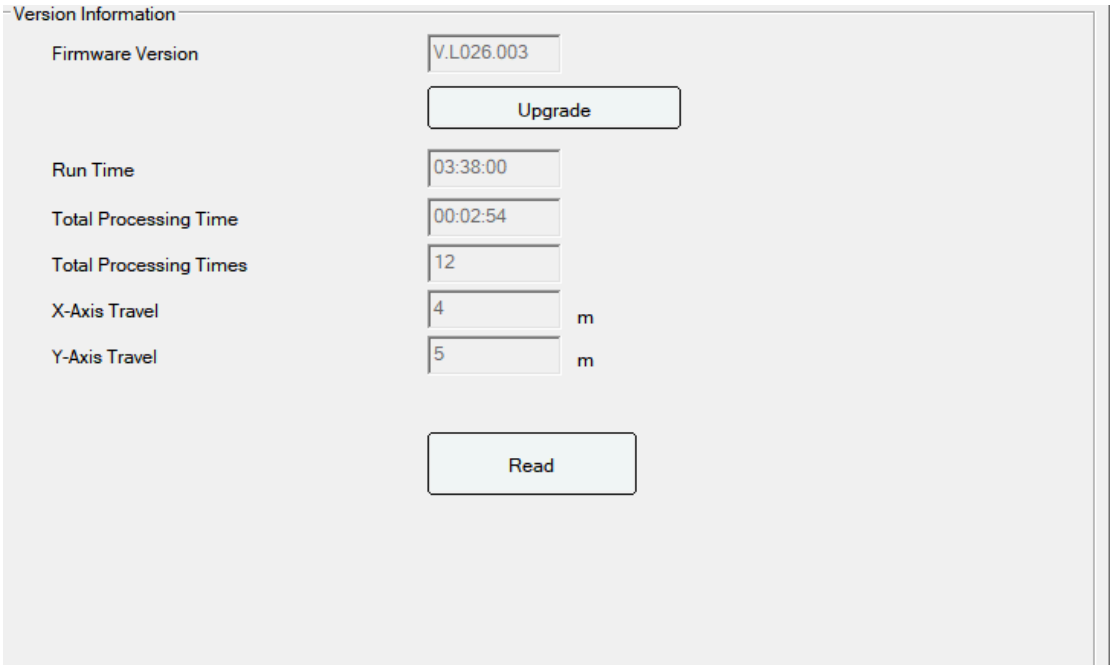
【Servo alarm】: After opening, the servo alarm protection signal will be detected. When the signal is effective, no movement will be allowed

【Origin offset (origin deviation Angle)】 : set the offset value, when the X axis back to the origin, at the origin of a distance to move to stop, so as to avoid the process of work or movement accidentally encountered limit switch, trigger limit alarm. For the rotation axis u-axis, the deviation Angle of the origin is, after the u-axis hits the origin limit, it rotates and moves the Angle to align with the positive X direction, which is the zero position of the U-axis. Refer to the deflection calibration instructions.

Note: steps for setting direction polarity, limit polarity and key polarity.

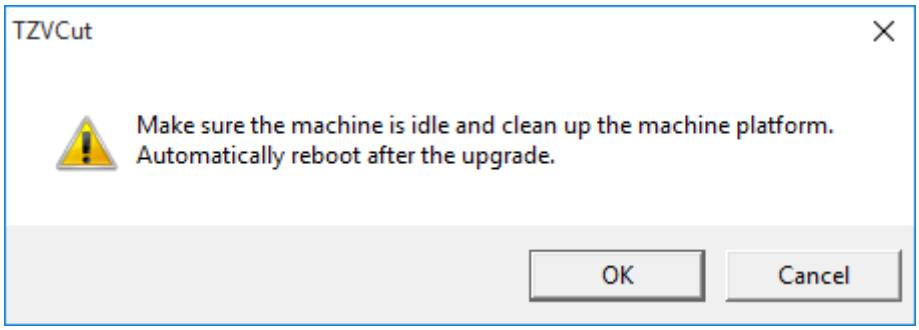
- Anyway, you set the limit polarity, which is typically negative.
- To check whether the machine moves in the direction of the origin when it resets, and if not, press the pause button to stop the motion, then change the (Dir) direction polarity.
- At the end of the process, you press the arrow keys to move in the opposite direction, checking to see if the motion is reversed, and, if so, changing the polarity of the key.

1.3.3.4 Version Information



Version information Displays the current firmware version, boot time, cumulative processing time, cumulative processing times, X axis cumulative stroke, Y axis cumulative stroke. Click on the Read Button to read statistics.

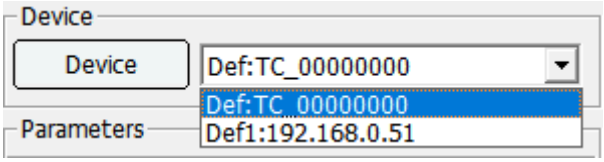
Click to upgrade firmware Upgrade Button to select the upgrade file (*.TFL, such as tzd_l026.TFL) and click to confirm as shown in the picture:



Do not operate the machine after confirmation. The machine will restart automatically later.

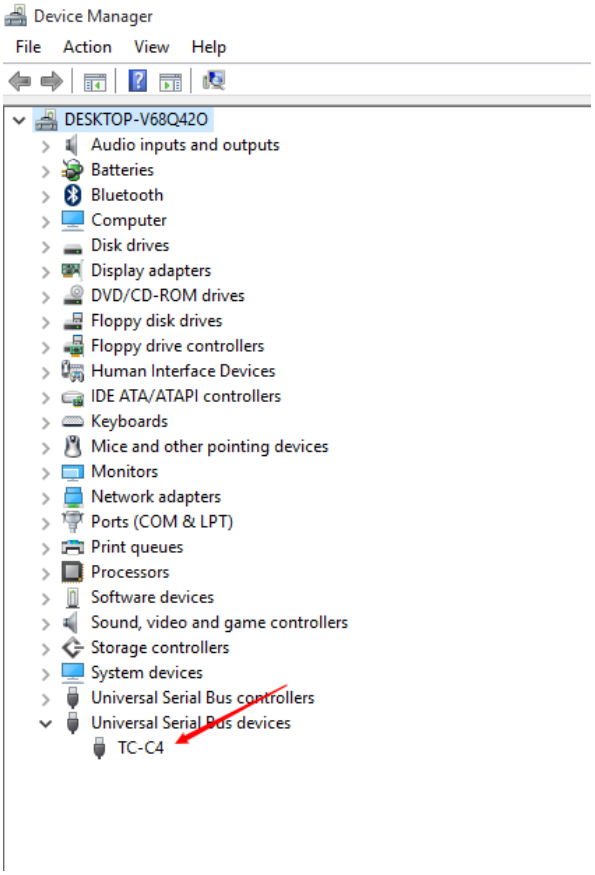
1.3.5 USB/IP settings

As shown in fig. below, on the upper right part of software interface device information is displayed. TZVCut software will communicate with machine through network or USB cable during the process of downloading graphics file, read-writing machine parameters, and executing online control. IP address is setting for network, and Com Port Number is setting for USB.

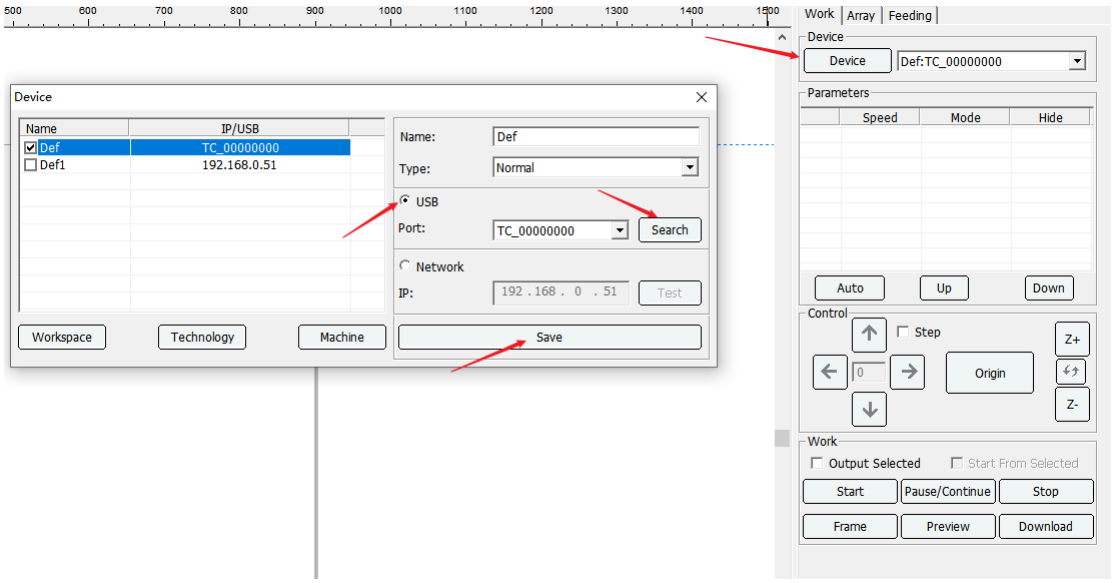


1.3.2.1 USB device settings

After the control card is powered on and reset, connect the computer with a USB cable, and the computer will automatically assign a USB device port for communication between them. As shown:

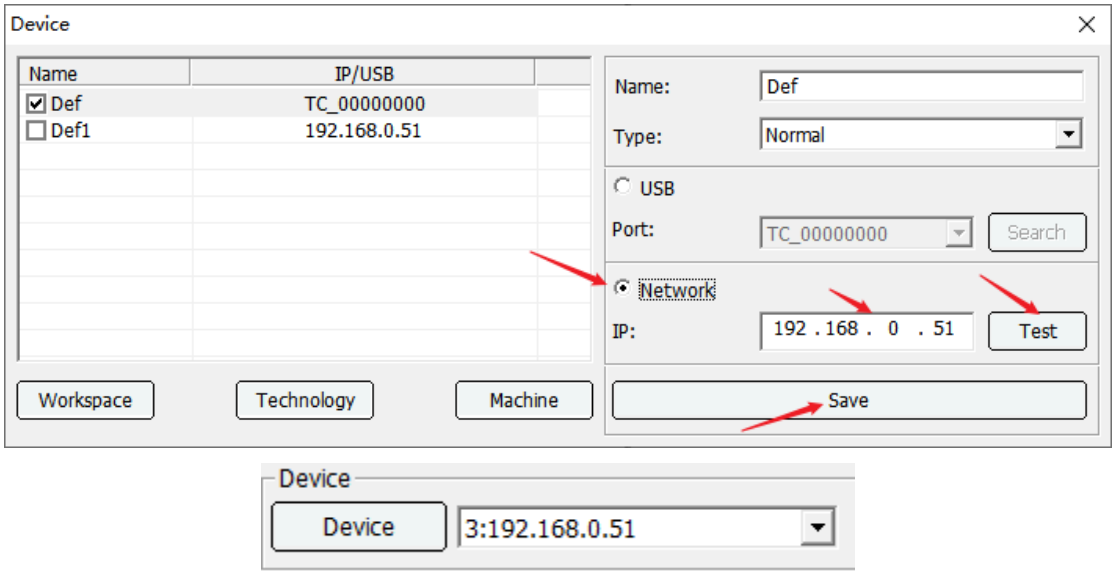


In the software, click the Device button, select the USB connection, click search, search for the port number or directly select the USB: Auto (automatic) mode. When the Auto mode is selected, the software will automatically match whether the device is a USB port number or a COM port number. Automatic mode is suitable when connecting a device. If there are multiple devices, please use the mode of manually assigning port numbers.

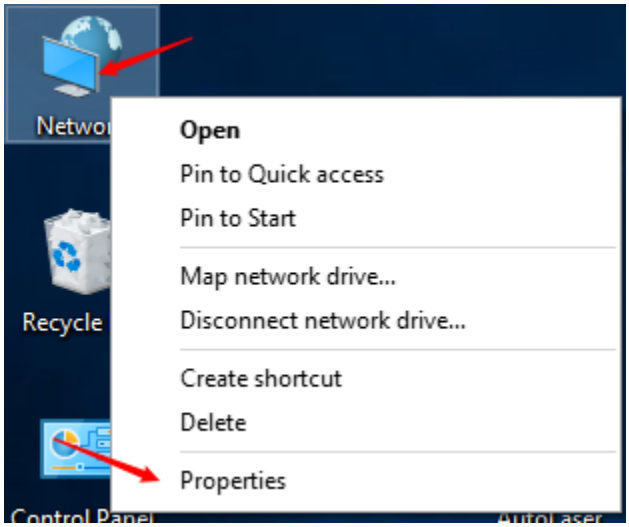


1.3.2.3 Network communication

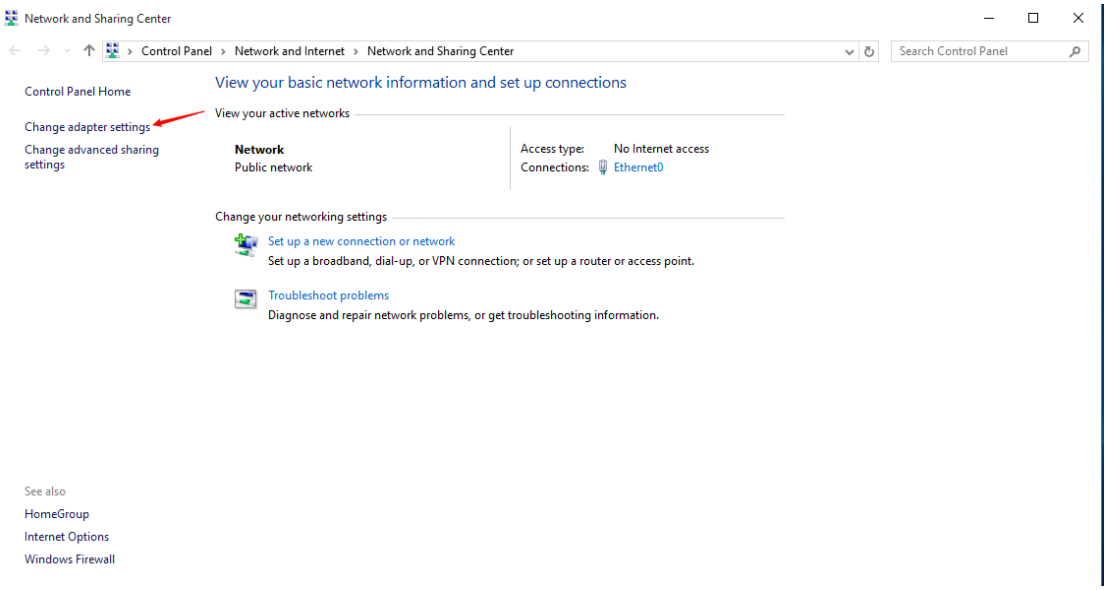
In the device setting dialog, set the IP the same as that in the machine. Then set the first three sections of IP in the computer to the same address value, and the last section to a different address. For instance, if the machine IP is 192.168.0.51, record the IP 192.168.0.51 for the selecting machine in TZVCut software. And set the computer IP to 192.168.0.100, thus network transmission can be conducted.



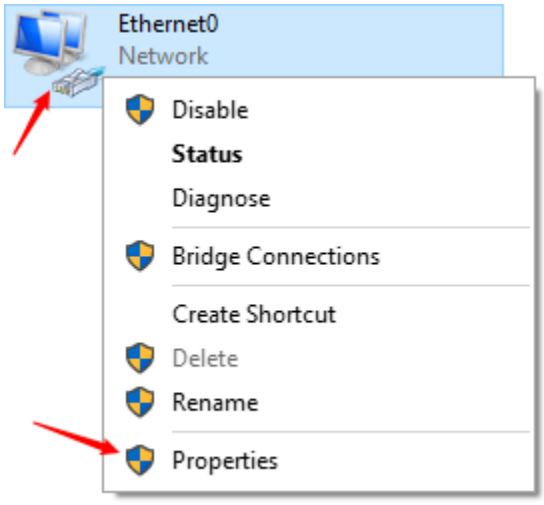
1) Network right-click properties.

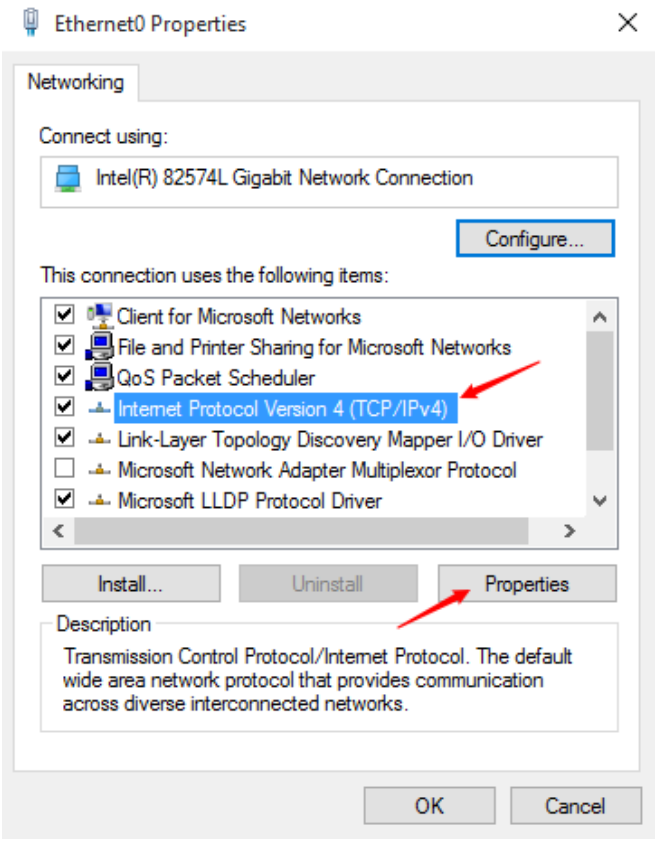


2) Click [Change adapter settings].

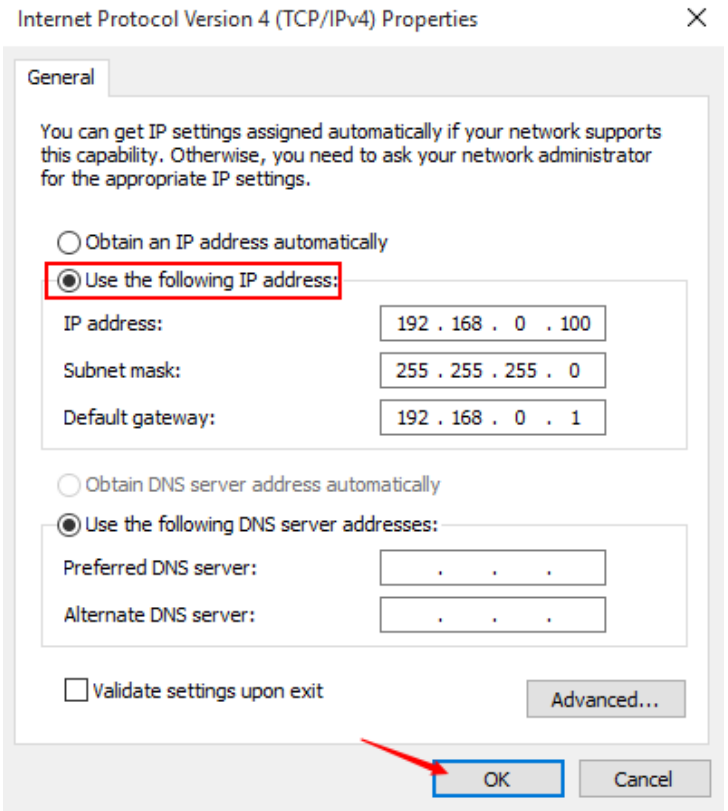


3) Select [Ethernet] and click right key to pop up [Properties] option. And then the [Ethernet properties] dialog box would appear. Double-click [Internet Protocol Version TCP/IPv4] and conduct setting parameters.





4) Select [Use the following IP address], input IP address, sub net mask code, and default gateway, as shown in fig. below.



After the above steps, click [OK] and the computer IP address setting is accomplished.

1.4 Basic operation

1.4.1 Graphics drawing

 : Draw a poly line. At the end, you can click the right mouse button to select end or close.

 : Draw a Bezier curve.

 : Draw a rectangle. Hold down the Ctrl key to draw a square.

 : Draw an ellipse. Hold down the Ctrl key to draw a circle.

 : Text input.

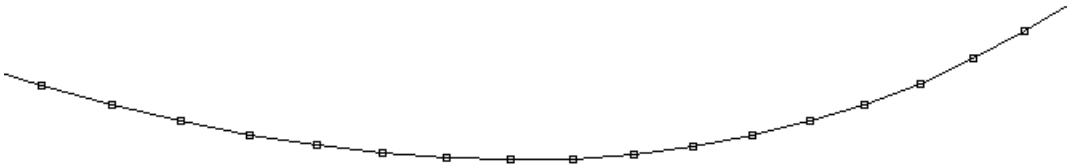
 : Delete line segment.

 : Draw points.

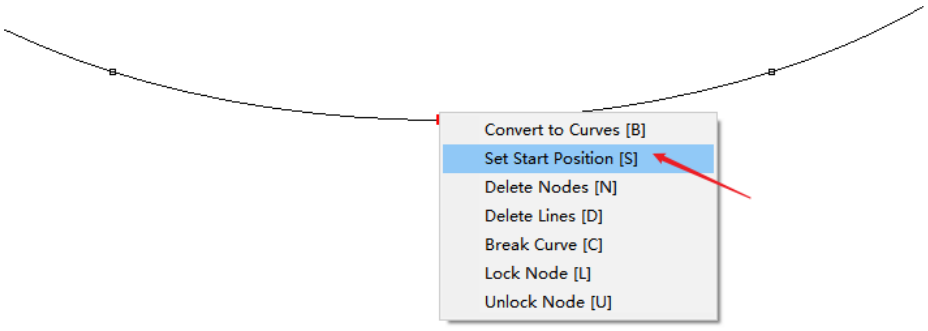
1.4.2 Node editing

Set start position [S]: Set the selected point as the processing starting point. At this time, it is necessary to set the confer point of path optimization as the original starting point.And the corner priority and dislocation processing check box are not enabled. The setting process is as follows:

Click the [Node Edit]  button, then frame or click part or all of the primitives, and zoom in appropriately to see the nodes of the primitives. As shown:



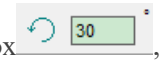
Select the node by frame, then click the right mouse button, a setting dialog box will pop up, and select [Set Start Position].



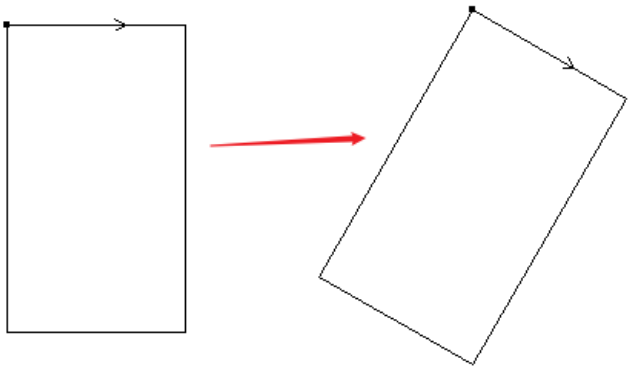
【Convert to curves [B]】: After selecting the graphics, you can convert the poly line to a Grazier curve.
【Delete node [N]】: Delete the selected node.
【Delete lines[D]】: Delete selected line segment.
【Break Node [C]】: Cut the graph from the selected node position.
【Lock Node [L]】: After locking the node, when adjusting the control point, the front and back control points will be changed at the same time.
【Unlock Node [U]】: After unlocking the node, only the current control point can be adjusted.
【Note】: After entering the node editing state, you can use keyboard commands to operate the node. The operation command is the letter after the option.

1.4.3 Tools

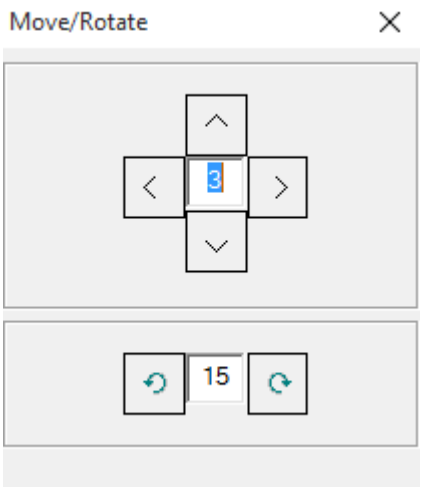
1.4.3.1 Rotation and displacement

After selecting the graph, enter the angle in the angle edit box 

, confirm, and you can rotate the graph. As shown:

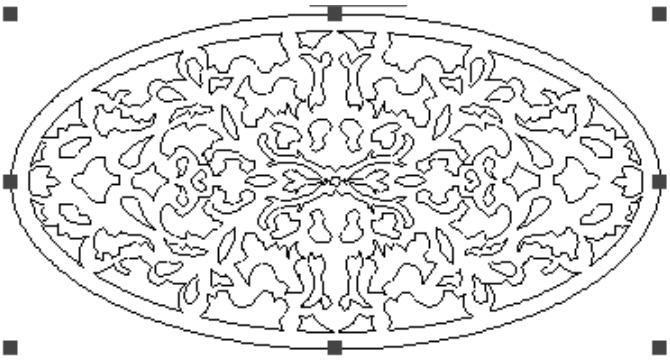


Click  to have more rotation and displacement settings.



1.4.3.2 Merge lines

The multi-line segment merging function is a preprocessing process that converts a curve with excessive precision into a curve that is more suitable for machining. The operation process is as follows

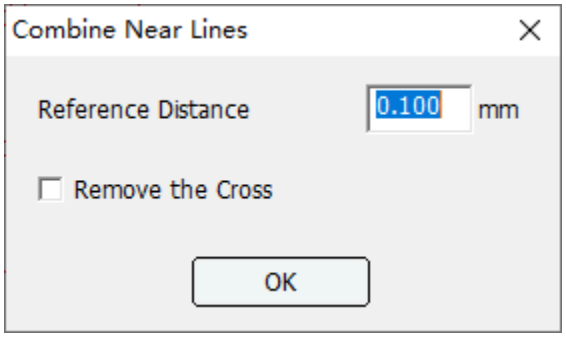


Select the graphics to be merged and click [Merge Lines]  .

1.4.3.3 Combine near lines

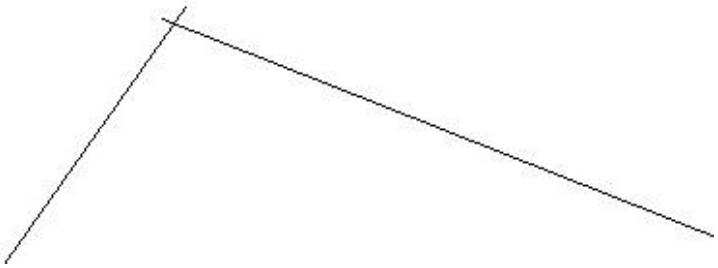
Adjacent merging function is the ore-treatment process for graphs failed to meet the standards. An entire graph but generated separately during drawing will make independent graphic element which should have one starting point and one final point separate into many independent segments. In such case, adjacent merging function could be used.

Click the  with the mouse and parameters settings are shown as below:

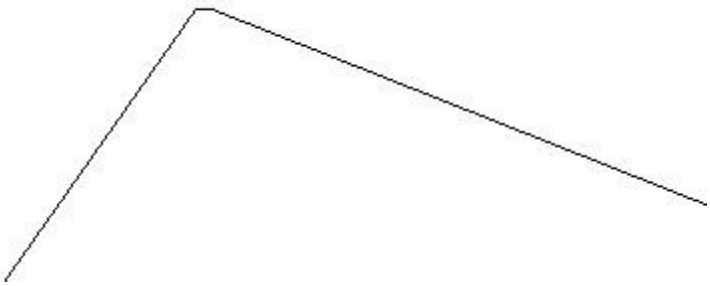


【Reference Distance】: Indicate the required maximum distance between the adjacent two lines of endpoints to be regarded as an entirety and to be merged.

【Remove the Cross】: If endpoints of two lines meet demands of merger and there is intersection between the two lines, intersecting part should be removed. As shown in the figure:



Changed to:

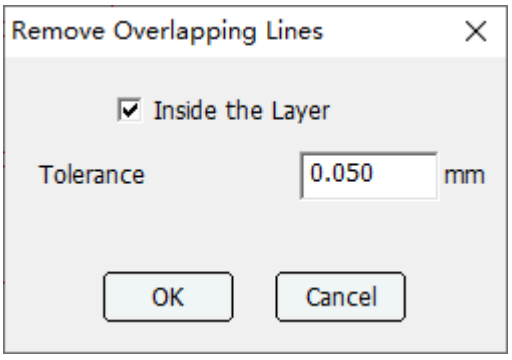


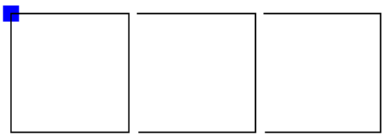
Two line segments are changed into a polygonal line.

1.4.3.4 Remove overlapping lines

If three squares are connected and there is an overlapped boundary line in the middle of each square, click [Remove Overlapping Lines]  button as shown in the following fig.

A dialogue box would appear:

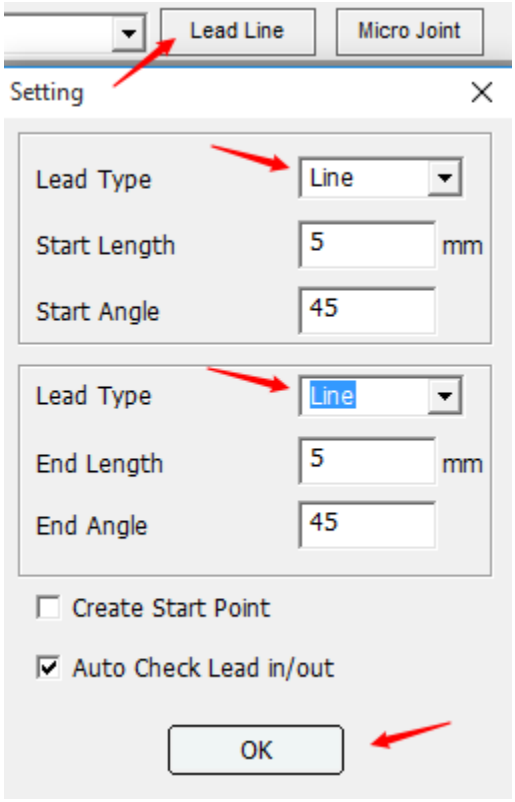




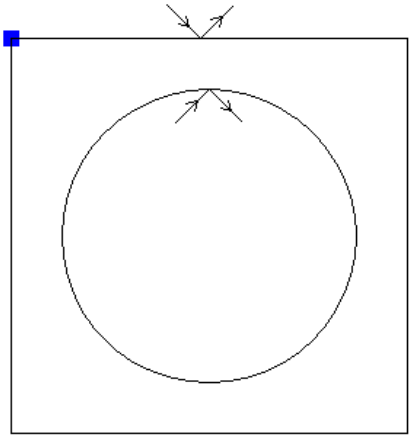
Select one rectangle and drag to move away and it can be seen after executing the above steps. For cutting, removal of redundant public side line can improve processing efficiency.

1.4.3.5 Lead line

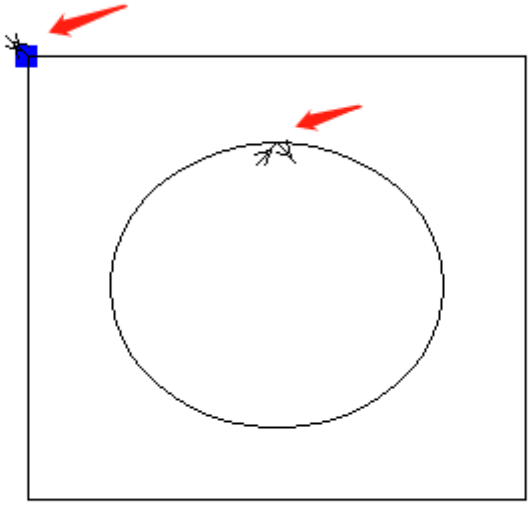
Select the graphic element and click [Lead Line] button; the following dialog box would appear. And there are two type of lead line [Line] and [Arc].



After click [OK], the interface turns to the following:

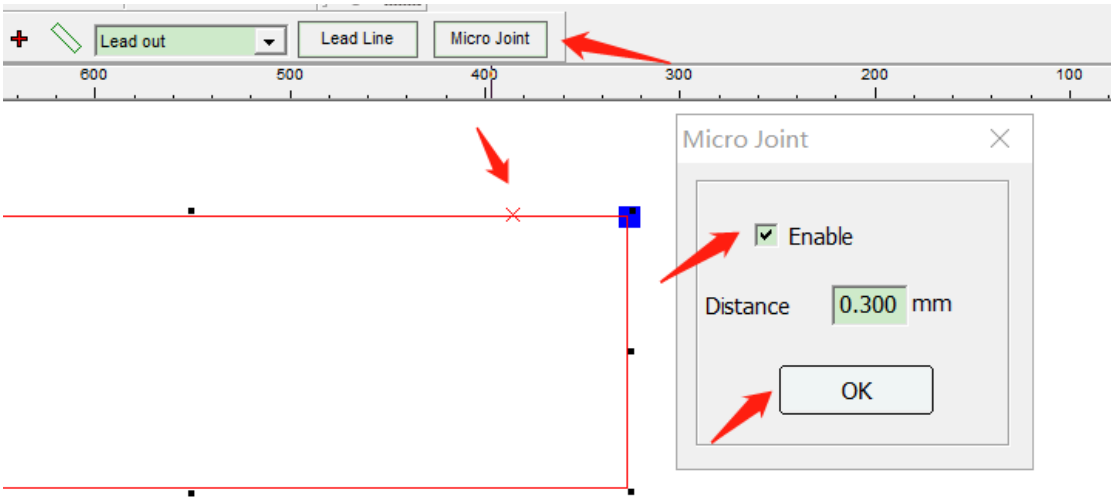


The direction angle and length of the lead line could be defined by the user. Check the Create Start Point check box. It will be generated at the starting point， As shown in the figure:



1.4.3.6 Micro joint

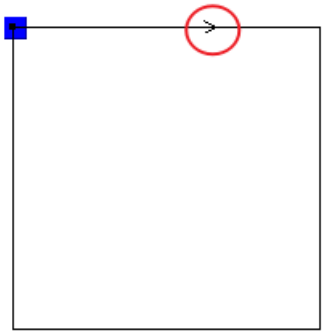
The micro joint is to leave an interface in the closed graph without cutting, so as to avoid the graph falling down after cutting, you can set the distance of the micro joint. After adding micro joints, the mark points will be displayed on the graph.



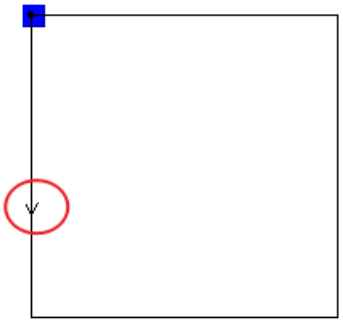
As shown in the figure, after the micro joint handling, in the work preview, after zooming in, the end position will remain 0.3mm without cutting:

1.4.3.7 Cutting direction

To edit the cutting direction of graphic, it has to click the  button to show the direction of the graphic.

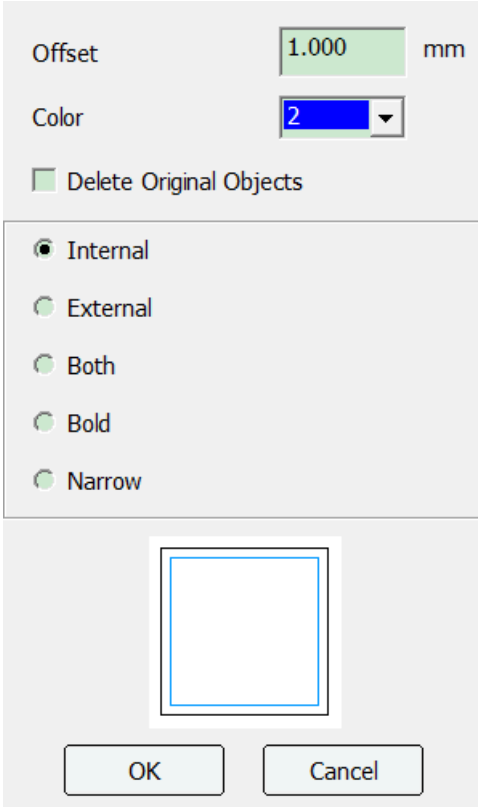


Click reverse direction  to change the direction.



1.4.3.8 Offset shapes

Select the graph, click  and the following picture would appear.

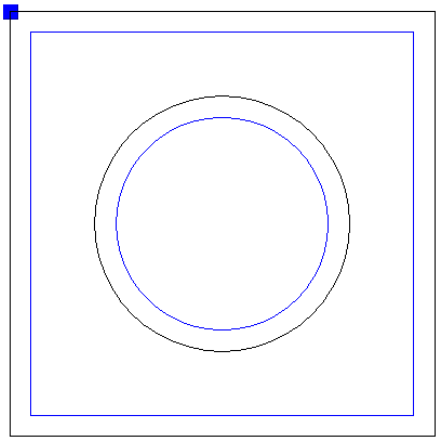


【Offset】: The length of the graphic needs to shrink and expand

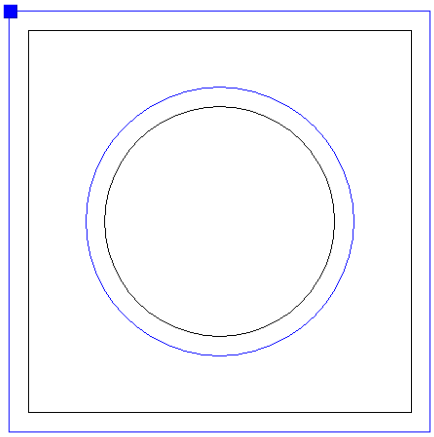
【Color】: The color generated after the graphics shrink and expand, customers can choose according to their needs.

【Delete Original Objects】: Whether to delete the original image after shrinking or expanding.

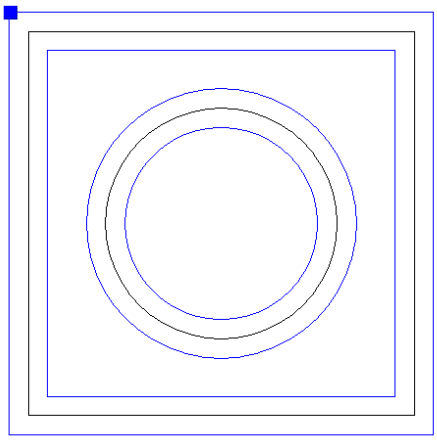
【Internal】: The graph will only shrink. As shown in figure:



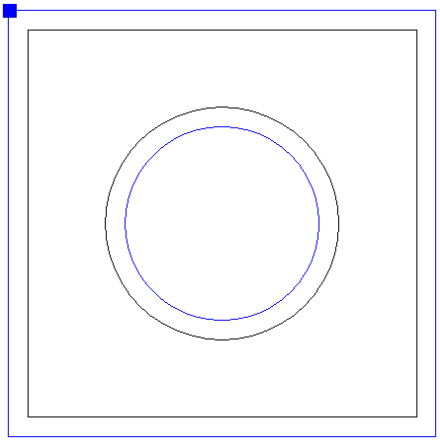
【External】: The graph only outward expansion action. As shown in figure:



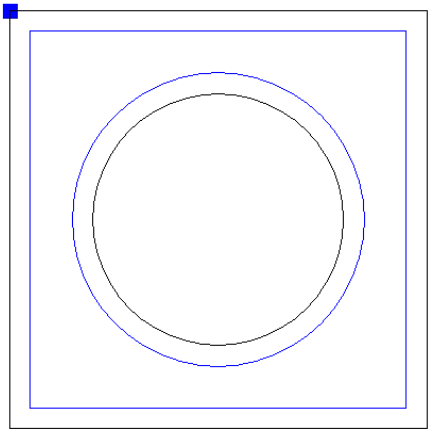
【Both】: In Both mode, the graphics will perform two actions of shrinking and expanding simultaneously. As shown:



【Bold】: This function is used when the graphics contain another graphics, the graphics inside only shrink, and the graphics outside only expand. As shown:



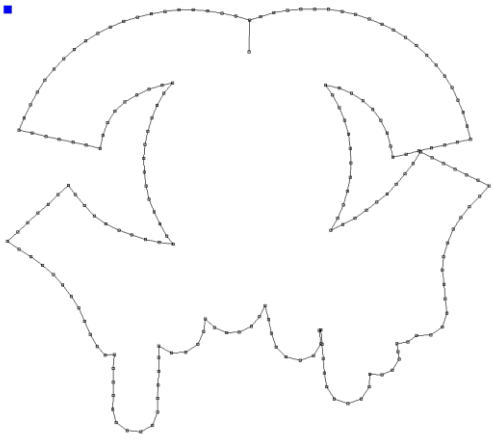
【Narrow】: This function is used when the graph contains another graph, the inner graph only expands, and the outer graph only shrinks. As shown:



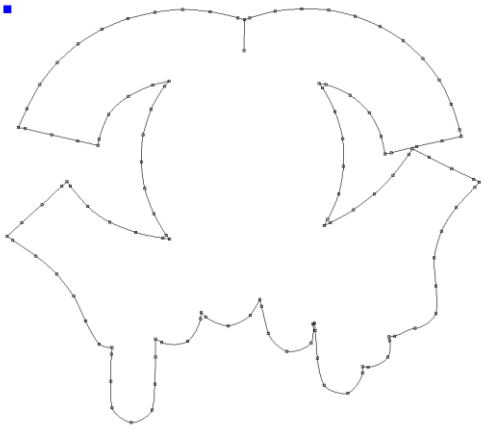
User can set parameters such as zoom mode and offset distance according to their needs, click [OK].

1.4.3.9 Fairing

As for *.DST、*.dsb、*plt type documents, if boundary lines are not smooth due to drawing, as shown in the fig. Below:

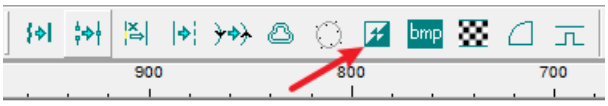


User can select the graphic and then click  tool to smooth the boundary line and thus processing effect turns more smooth.



1.4.3.10 Bitmap color reverse

Select bitmap and click  to reverse the color.

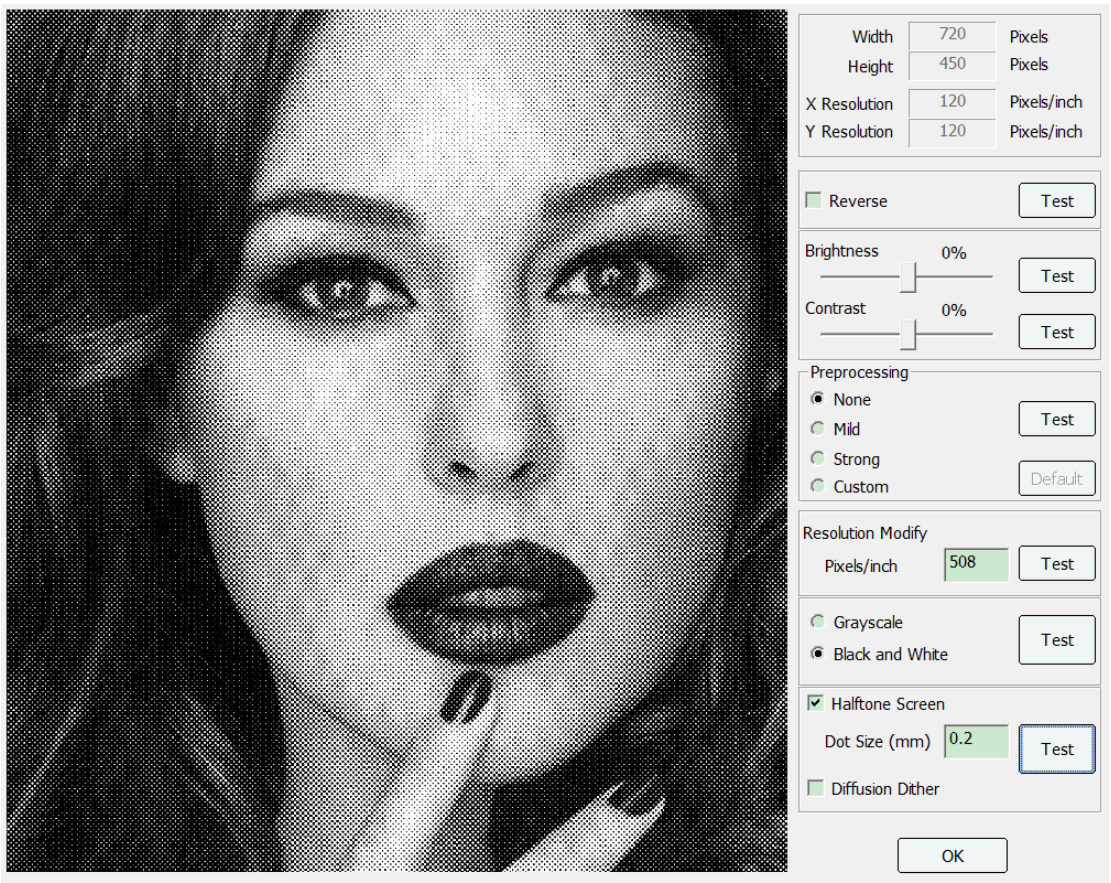


Before the change:

After the change:

1.4.3.11 Bmp Processing

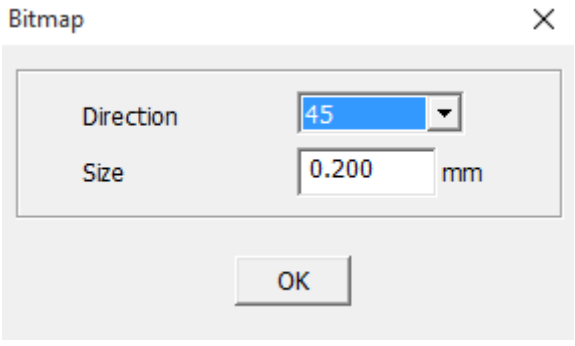
Select the one graphic, then click the  button to process the bmp graphic.



Here, you can reverse the color of the image and change the brightness and contrast of the image. In order to improve the engraving effect, an image p reprocessing function is provided to enhance the image contrast effect. If it is black-and-white engraving, we recommend checking the dot or scatter diagram processing. The recommended image resolution is 300 or above.

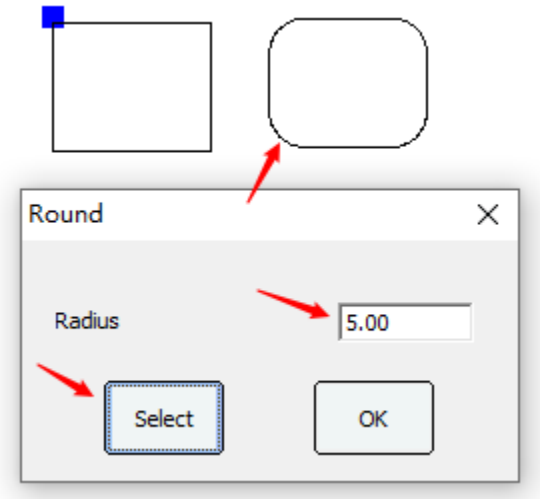
1.4.3.12 Halftone screen

After selecting the bitmap, select  to set the direction and size of the dots, and to produce the Dodoma, it is recommended to change the DPI of the bitmap to 300 or above.

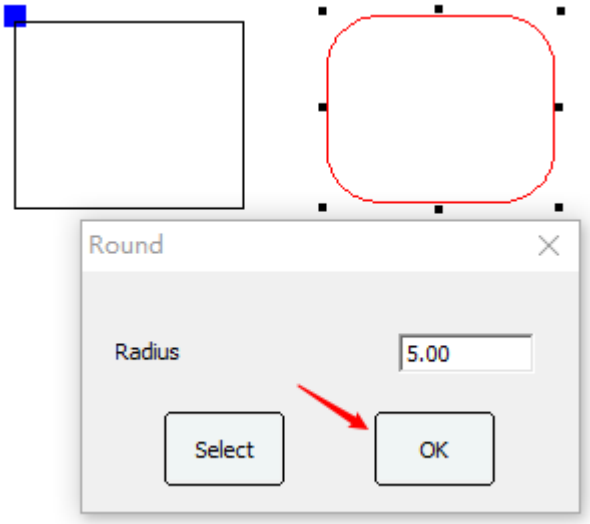


1.4.3.13 Round

Click the [Tools] option in the menu bar, and then select the [Round] function, or click the toolbar button  . The following dialog box pops up. As shown:



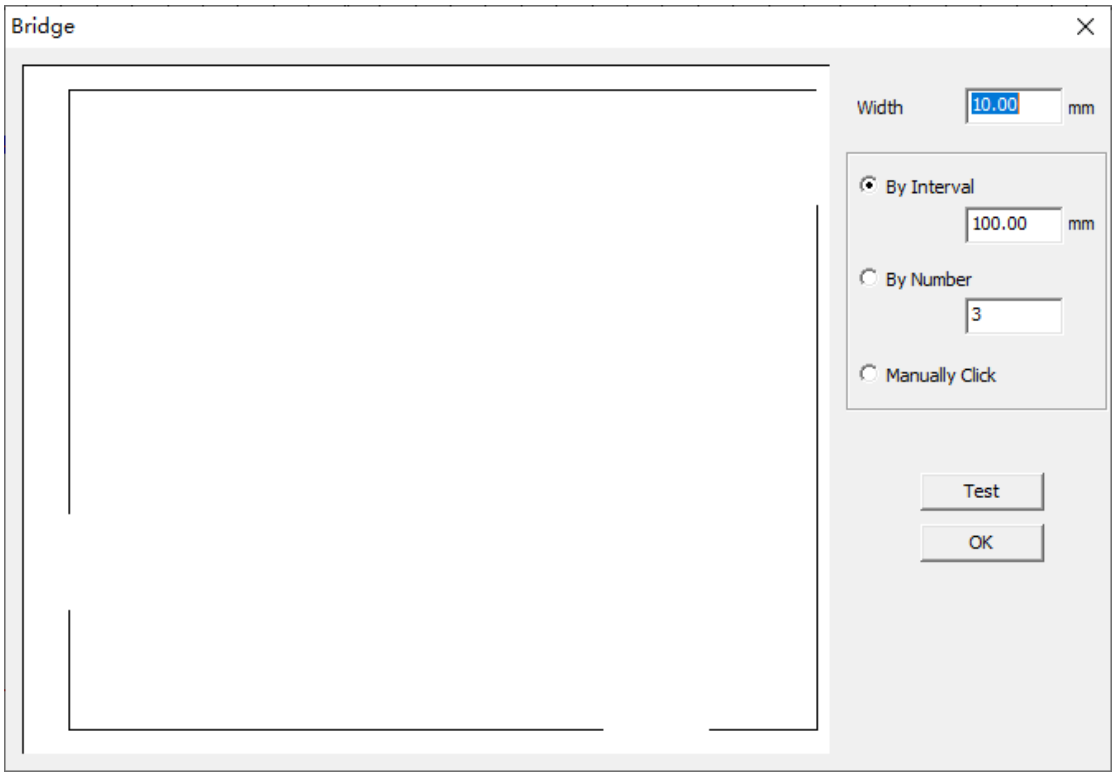
After setting the radius of the rounded corners, click the [Select] button, and then frame-select the graphics that need to set the rounded corners.



After setting the radius, select the graphics that need to be rounded, and then click the [OK] button to round the graphics.

1.4.3.14 Bridge

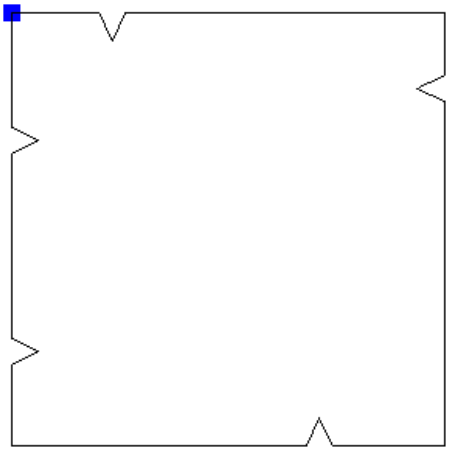
Click the [Tools] option in the menu bar, and then select the [Bridge] function, or click the toolbar button  . After setting the width of the bridge position, you can set the bridge position according to the needs.

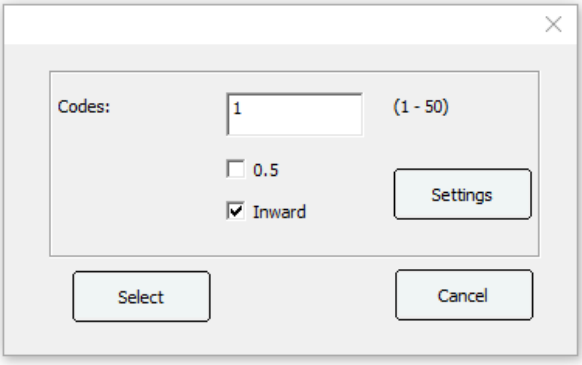


1. Set the bridge position according to the interval: just fill in the interval between the two bridge positions, the software will automatically increase the corresponding number of bridge positions according to the graphic size. Click [Test] to display the bridge position.
2. Set the bridge position by quantity: only need to fill in the number of bridge positions, you can increase the corresponding bridge position, click the test to display the bridge position.
3. Manually set the bridge position: After selection, the bridge position can be added at any position of the primitive. Click the line of the primitive with the left mouse button to increase the bridge position at the corresponding position of the primitive. After completion, click [OK].

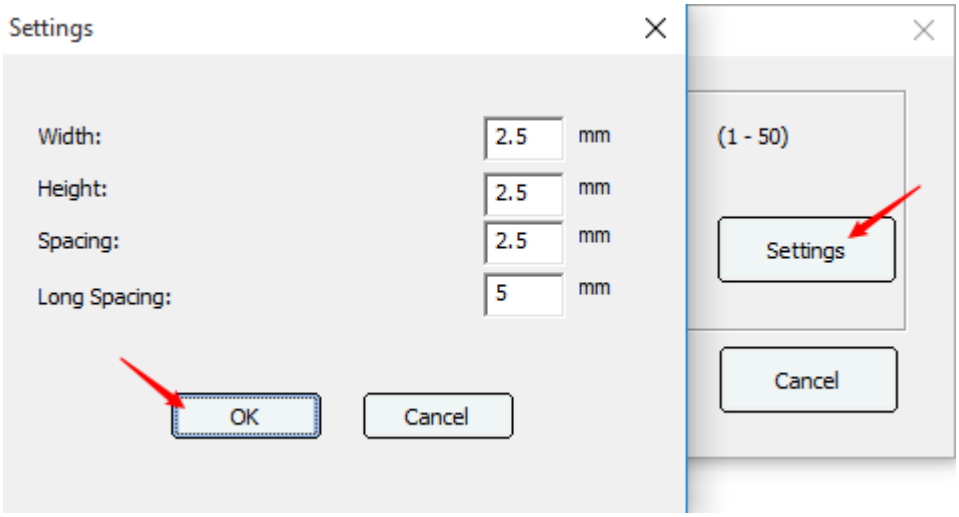
1.4.3.15 Add size mark

1. Click the [Tools] option in the menu bar, and then select the [Add Size Mark] function, or click the toolbar button  . Set the code number, and direction, click to select and then click the primitive line, you can add code teeth at the specified position of the primitive line.





2. Set the code attributes: If you want to change the size of the code teeth, click [Settings] to enter the code setting interface, set the code accordingly, and click OK after completion.

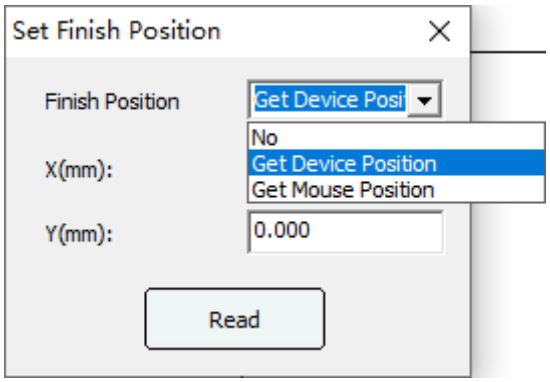


1.4.3.16 Set finish position

Click the [Tools] option in the menu bar, and then select the [Set Finish Position] function, or click the toolbar button  . Open the Set Finish Position dialog box.

There are currently three modes for setting stops: "No", "Get Device Position" and "Get Mouse Position".

As shown:

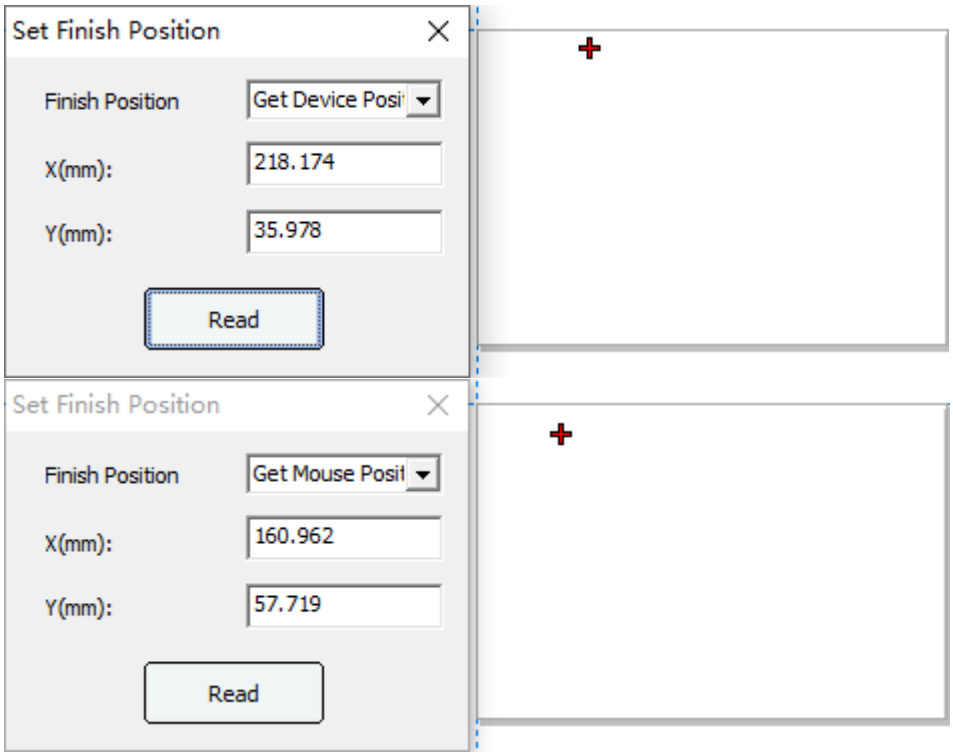


【No】: do not set stops.

【Get Device Position】: it is to obtain the current position coordinates of the cut head, and use this coordinate as a stop point after the cut head is cut. If the controller sets the homing point as the positioning point, the cut head will return to this position after processing, and then return to the positioning point. Generally, when using this function, the "Return Point" should be changed to "None".

After successfully obtaining the device coordinates, a cross mark will be displayed in the software drawing area, and it indicates the position of the current cut head stop. As shown:

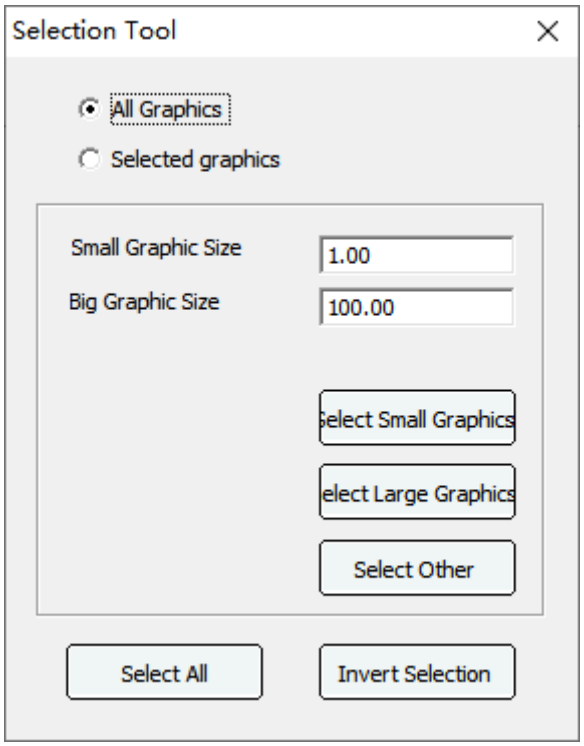
【Get Mouse Position】: click the [Read] button and click the left button in the drawing area to set the current position as the coordinates of the stop. As shown:



1.4.3.17 Extract contour

Image outline can be extracted, please see the example application in section 1.6 for details.

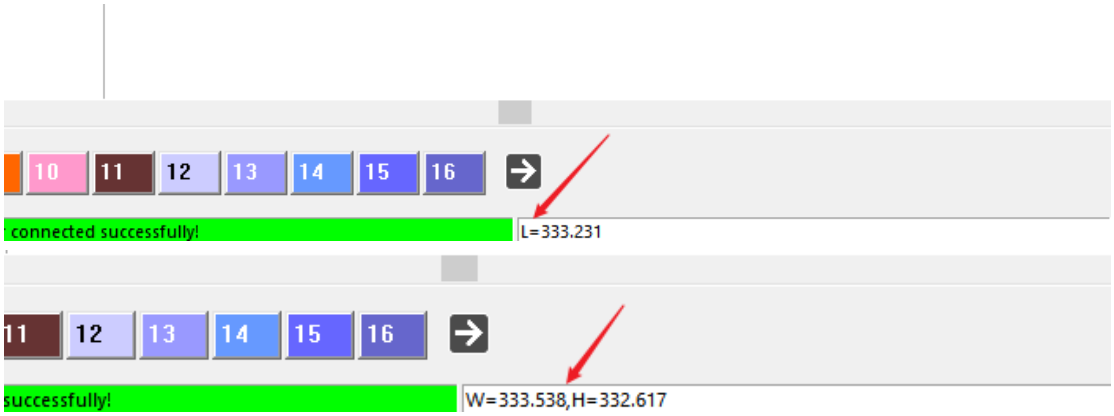
1.4.3.18 Selecting Tools



1.4.3.19 Measuring Tools

Click the measurement tool icon on the toolbar to enter the measurement status  , or select the measurement tool on the menu bar, or press the shortcut key F7. At this time, the mouse icon is

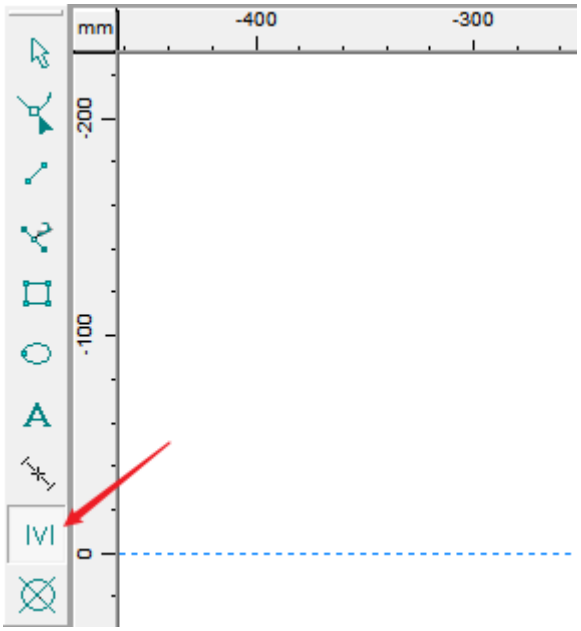
displayed as a cross. In the editing area, click the starting point and then select the end point to display the measurement distance L in the status bar below the software. If the box is selected, the width W and height H of the graph can be obtained.



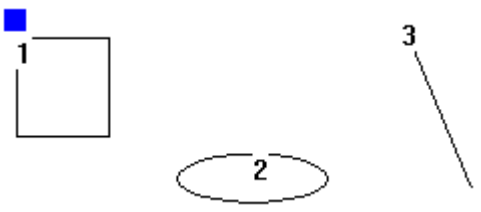
1.4.4 Display

1.4.4.1 Display and set the order of work

The processing order number display and manual sort tool is in the tool bar on the left side of the TZVCut software.



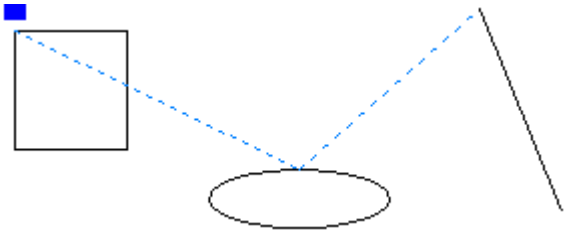
Click IVI button to display graphic element processing order Number. And it goes into the manual sort stat. Click the left mouse button to select graphics for sorting, if you need to cancel the selection, you can right click to select the wrong graphics.



1.4.4.2 Jumper lines display

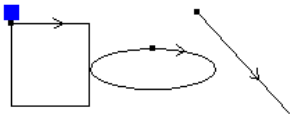
Graphics element display toolbar is at the upper part of the status bar, as shown in figure.

Click [Show Jumpers]  button to display jumper lines between graphic elements.



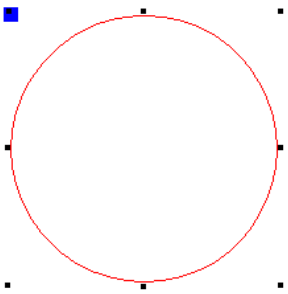
1.4.4.3 Processing direction and starting point display

Click [Show Direction]  button to display cutting direction and the start point of graphic elements. Cutting direction and starting point is shown as below.

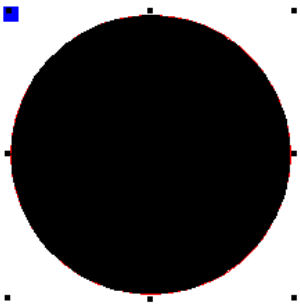


1.4.4.4 Carving effect display

Select the one graphic, and then click the  button to show the carving effect. Note the graphic in the layer is for carving.



Before



After

1.4.5.5 Alignment and distribution

1. Page Align:

In the software toolbar and menu bar, there is the function of graph alignment and distribution, users can choose to use according to their needs. As shown in figure:

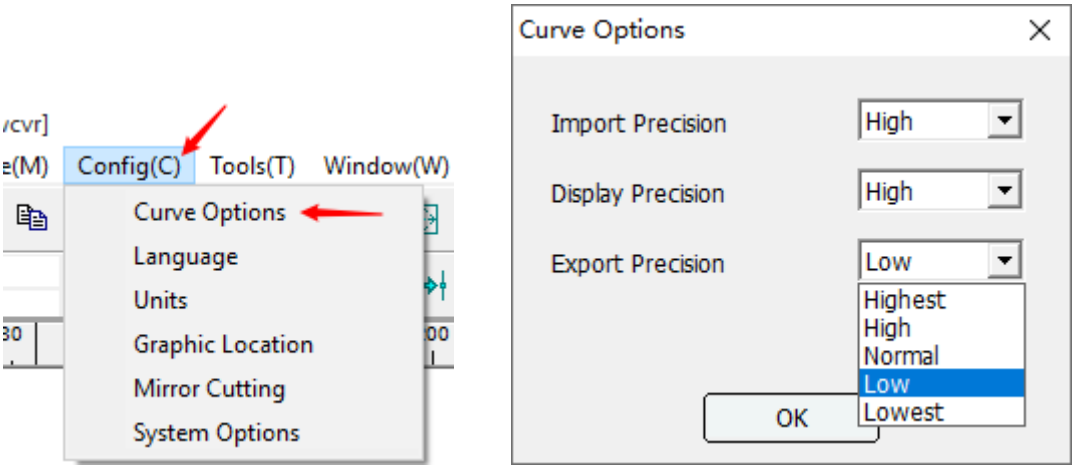
From left to right: Move to the Top (Carl+5), Move to the Bottom (Carl+6), Move to the Center (Carl+7), Move to the Left (Carl+8), Move to the Right (Carl+9), Move to the Upper Left (Carl+4), Move to the Upper Right (Carl+3), Move to the Bottom Left (Carl+1), Move to the Bottom Right (Carl+2).

2. Selection area align and distribution:

From top to bottom are: Mirror Horizontally, Mirror Vertically, Align Left (L), Align Center Horizontally (E), Align Right (R), Align Top (T), Align Center Vertically (C), Align Bottom (B), Distribute Space Horizontally (H), and Distribute Space Vertically (V).

1.4.5 Config

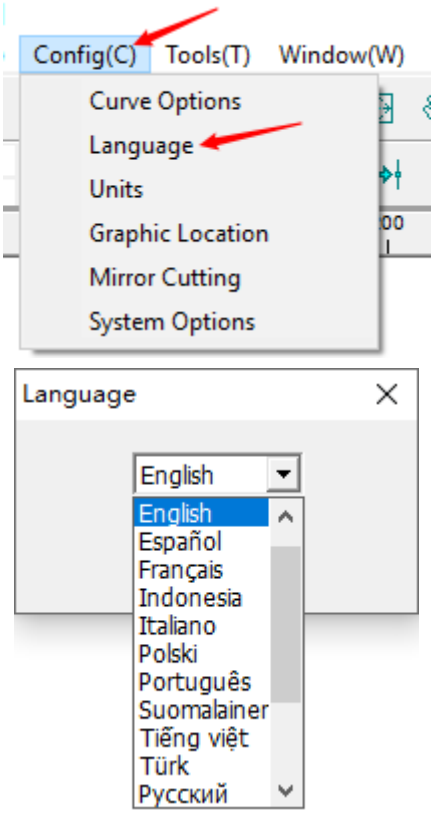
1.4.5.1 Curve options



In order to make the user cut more flexible and at faster speed, curve precision can be set up to improve the flexibility and speed of the working-piece. The software offers options of Lowest, low, normal, high, highest for users.

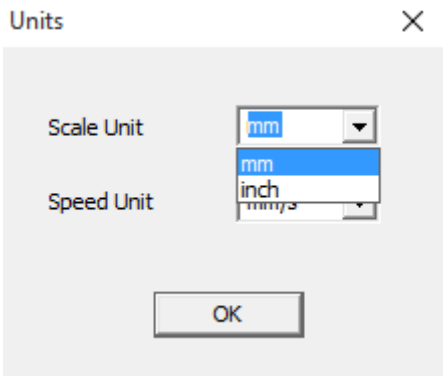
1.4.5.2 Language

The languages currently supported by the software are: German, English, Spanish, French, Indonesian, Italian, Polish, Portuguese, Finnish, Vietnamese, Turkish, Russian, Arabic, Chinese Simplified, Chinese Traditional, Japanese, Korean, which can be switched in [Config]-[Language].

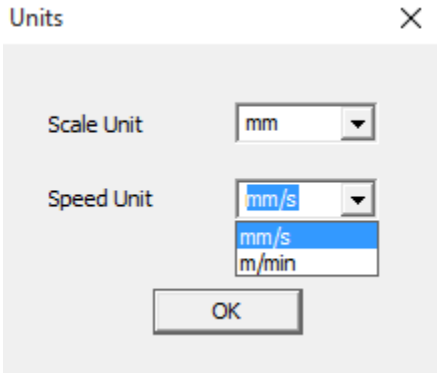


1.4.5.3 Units

All scale units and speed units of the software can be set. Open [Con fig] and select [Units].
Scale unit:

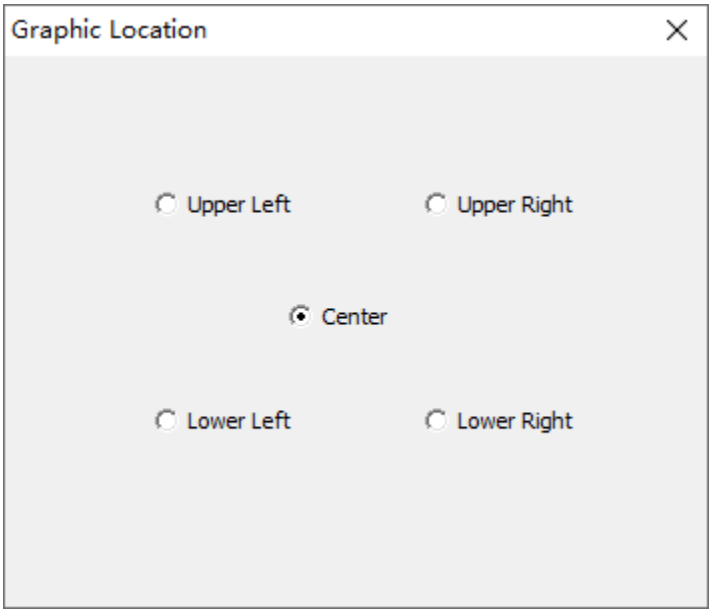


Speed unit:



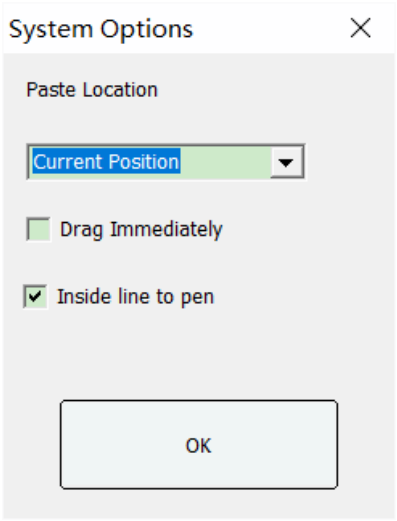
1.4.5.4 Graphic location

When importing and opening primitives with the software, the position of the primitives displayed within the effective format of the software. They are: upper left, upper right, lower left, lower right, center. Open [Congfig] and select [Graphic Location] to change.



1.4.5.5 System options

Click [Config] and select [System Options].

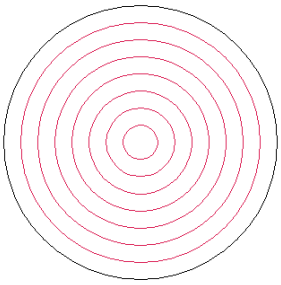


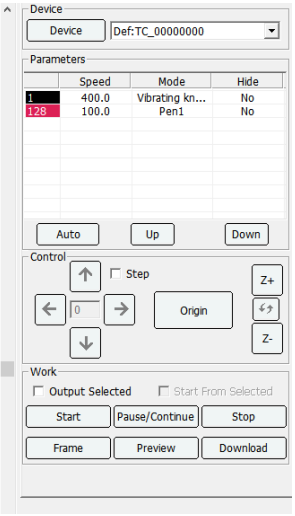
Paste Location: Indicates the position to paste after the current graph is copied.

- 【Current Position】: Indicates that the position of the currently copied graphic is the paste position.
- 【Mouse Position】: Indicates that the position of pasted graphics changes with the movement of the mouse.

【Drag immediately】: After checking, you can drag any current figure without selecting the figure.

【Inside to Pen】:After this check, the internal and external relationship will be automatically judged when importing the image, and the internal image will be converted to the brush layer.

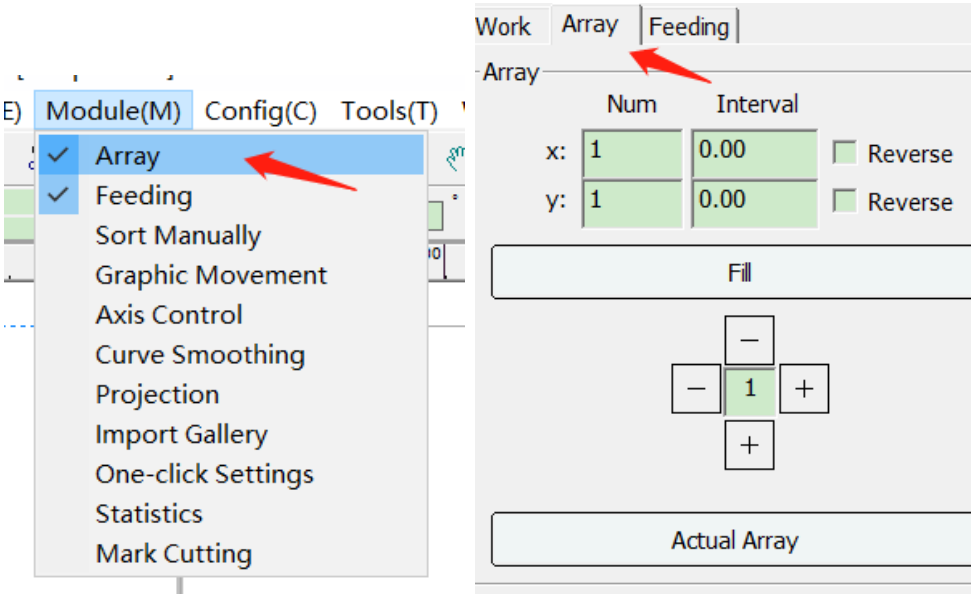




1.4.6 Module

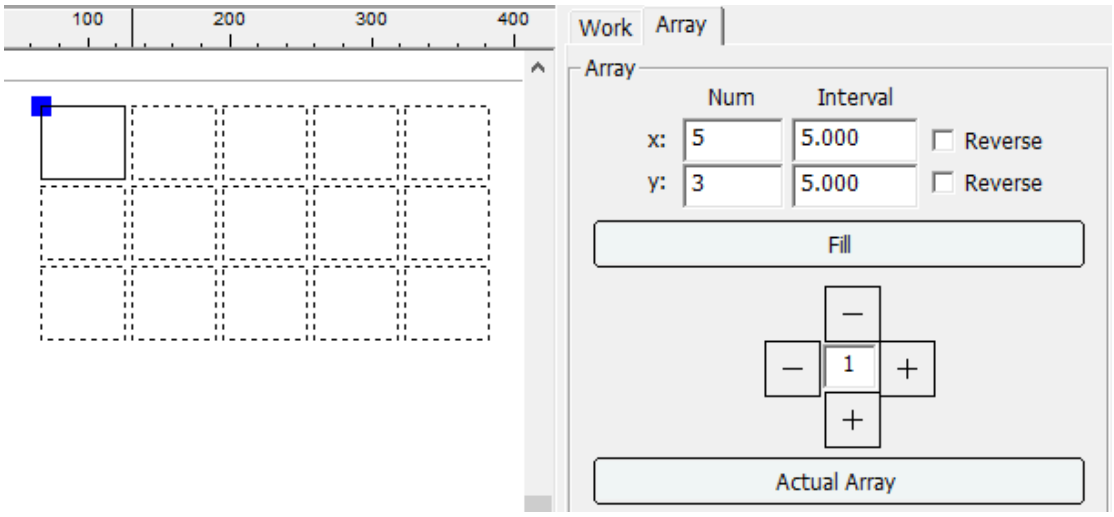
1.4.6.1 Graphics array

Open the array page to enable the [Array] function in the [Module] option in the software menu bar. After it is enabled, the [Array] function page will appear on the right toolbar of the software, as shown in the figure:

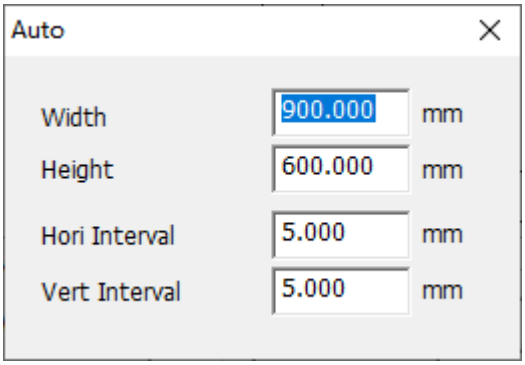


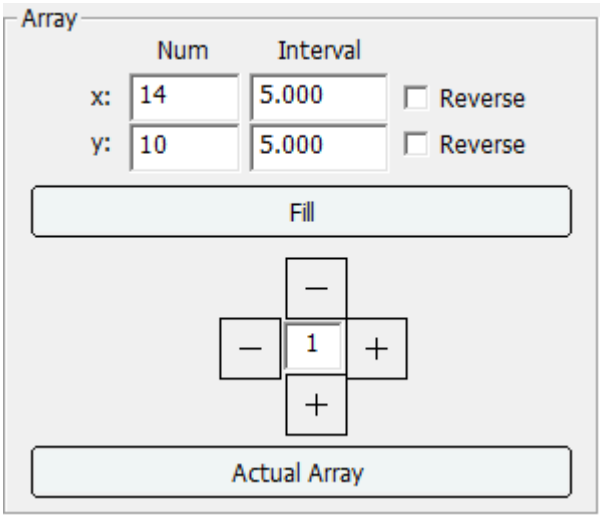
1.4.6.1.1 Virtual array

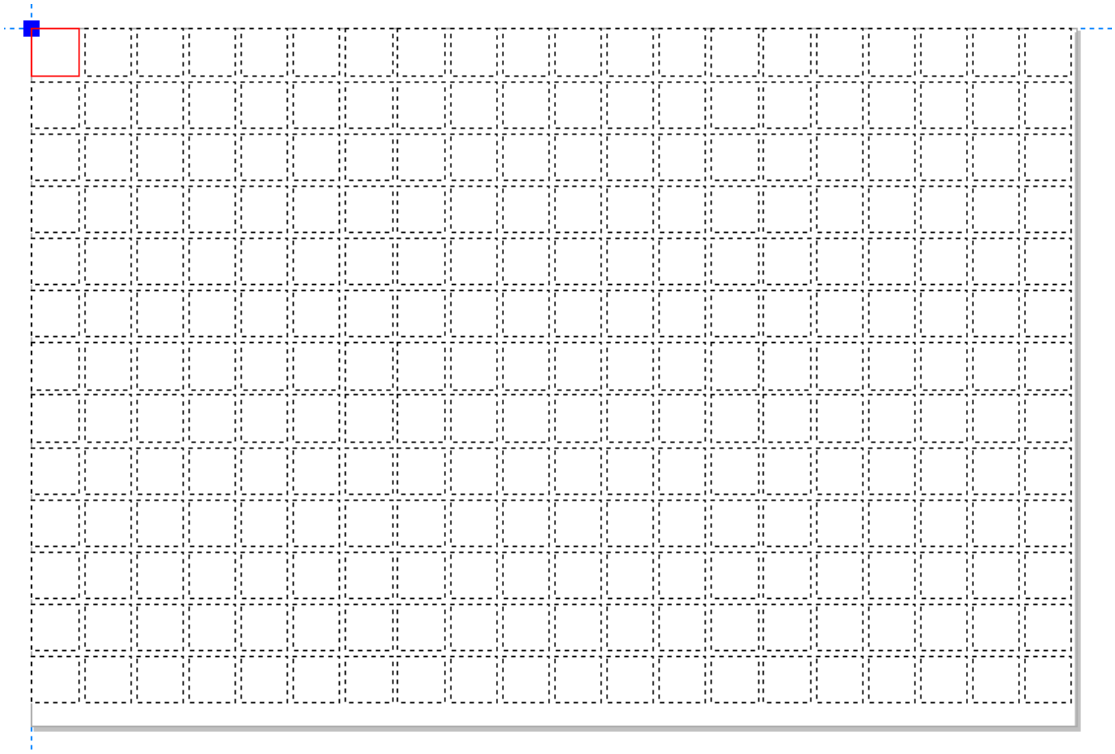
The [Array] page on the right side of dialog box toolbar is shown as the fig. below. If the Intelligence double cut heads machine is used, please select a virtual array to conduct type setting.



Click [Fill] button and automatic bestrewn setting dialog box would pop up. Input array scope value (width and height), the software will calculate columns, rows and remaining size of a specified breadth side based on the width, height and the interval value input by the user. Calculated parameters would be refreshed on the [Array] page, and generate a virtual graphic element.





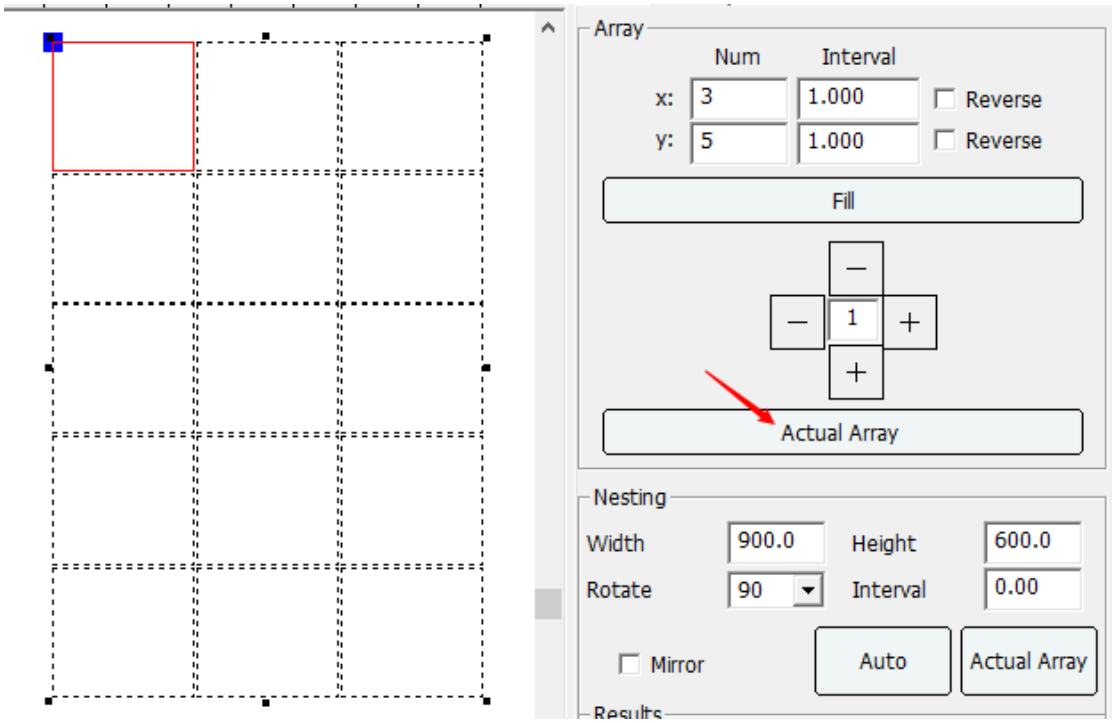


If bestrewn process isn’t required of, input the number of columns x and its interval, and the number of rows y and its interval after selecting graphic element, then graphic array is generated.

1.4.6.1.2 Actual array

Selected the graphic needs array.

1. Firstly, following the instruction of virtual array to generate the virtual array graphics.
2. Click the [Actual Array] button to convert the virtual array graphics to the real array graphics.

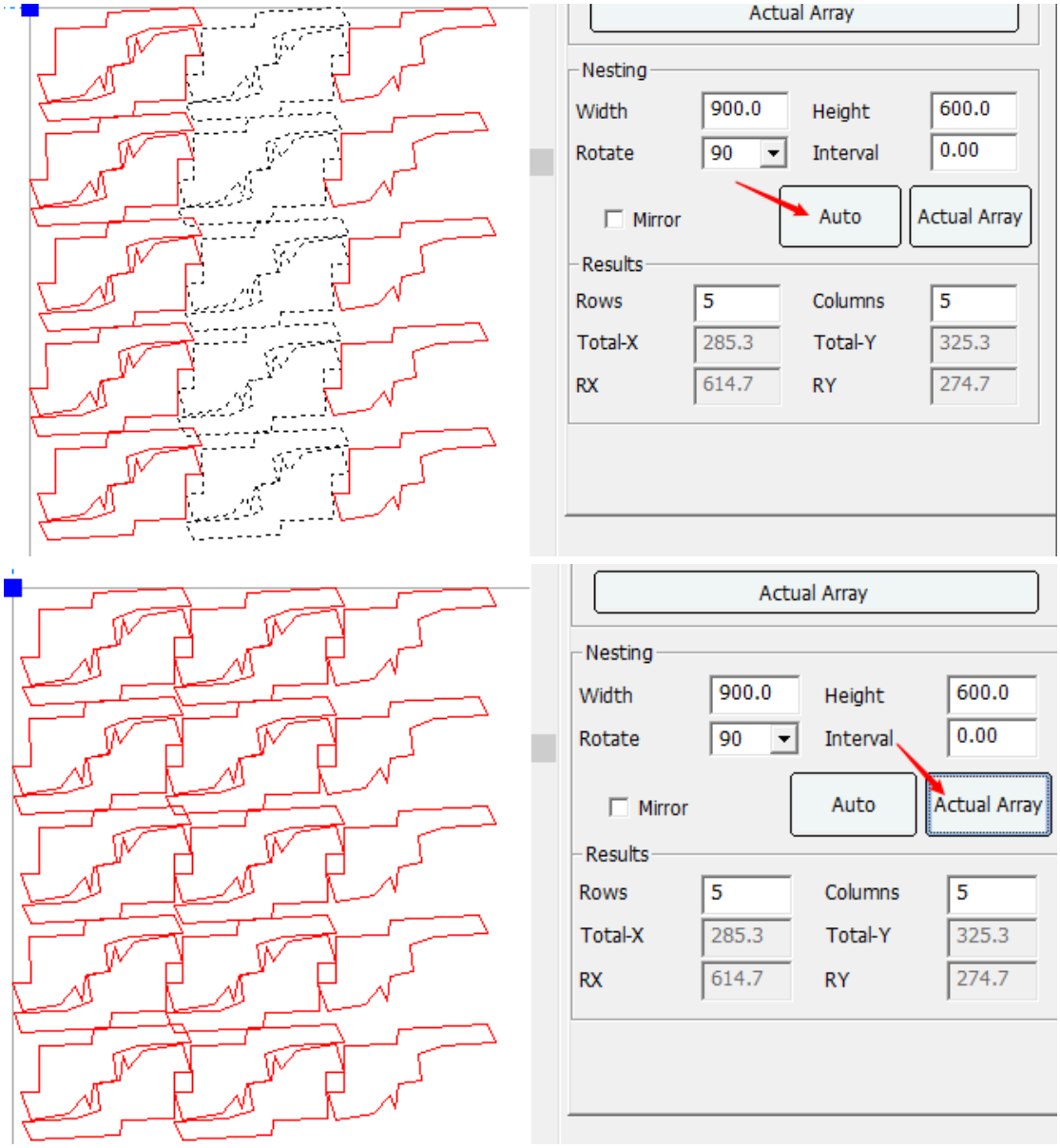


NOTE: The virtual array can be converted to actual array. But the actual array is unable to convert to virtual array.

1.4.6.2 Nesting

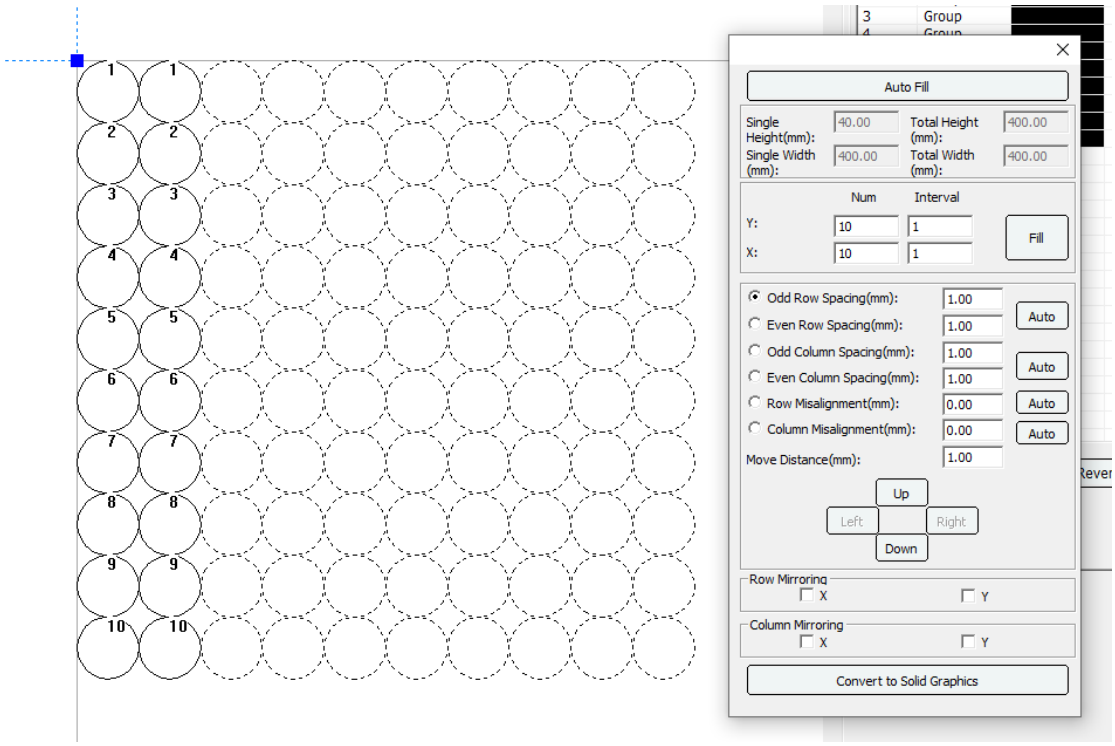
1.4.6.2.1 Auto nesting

Import the graph into TZVCut software. Then select it and open the Array page to find the nested functions. Enter width, height, rotation Angle, interval and mirror option parameters. Then click the "Auto" button to nest. By default, it generates virtual arrays that can be used with smart two-headed machines. Click "Actual array" button to convert to actual array graphics. When converted to a real array, the graphics can only be processed by a vibrating tool head. Therefore, you are advised to use a virtual array for an intelligent dual-headed computer.

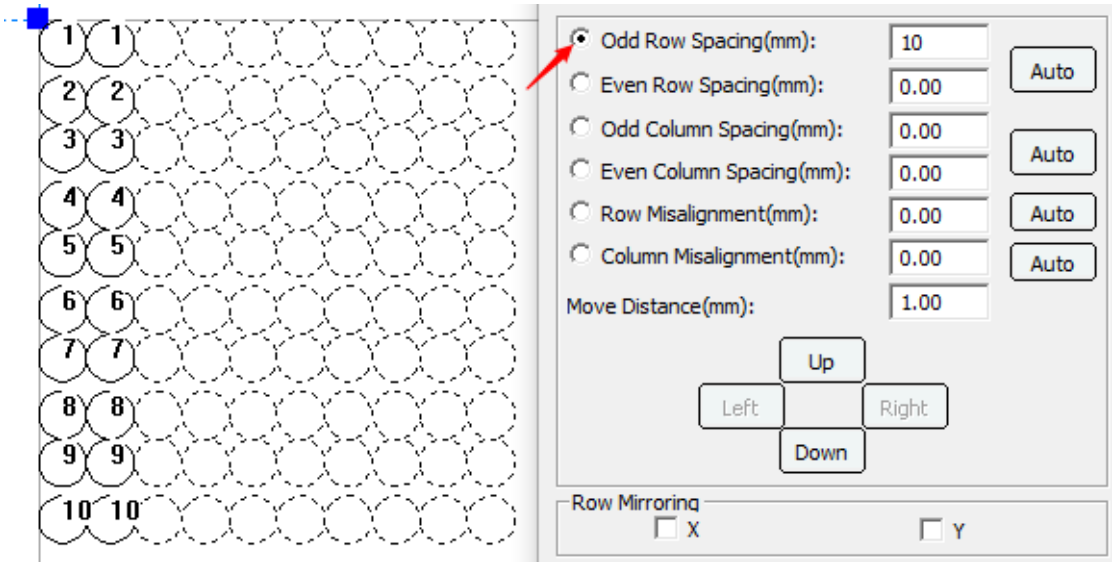


1.4.6.2.2 Manual nesting

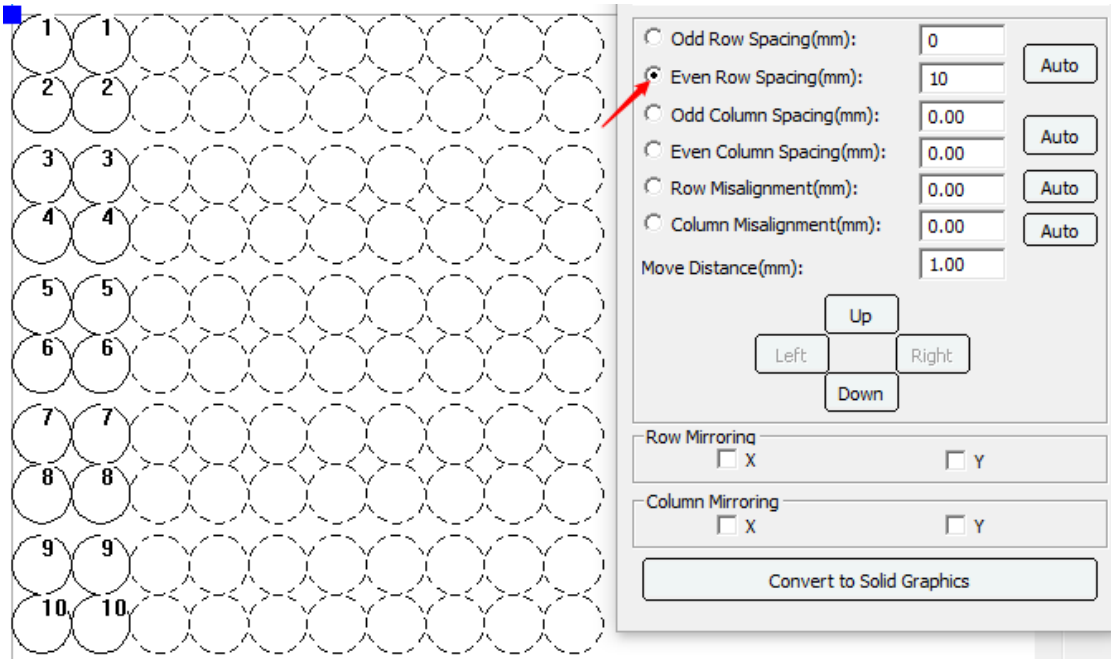
Import the graphic elements that need to be typed, and click the manual nesting button  on the tool bar to pop up the manual layout setting interface. As shown:



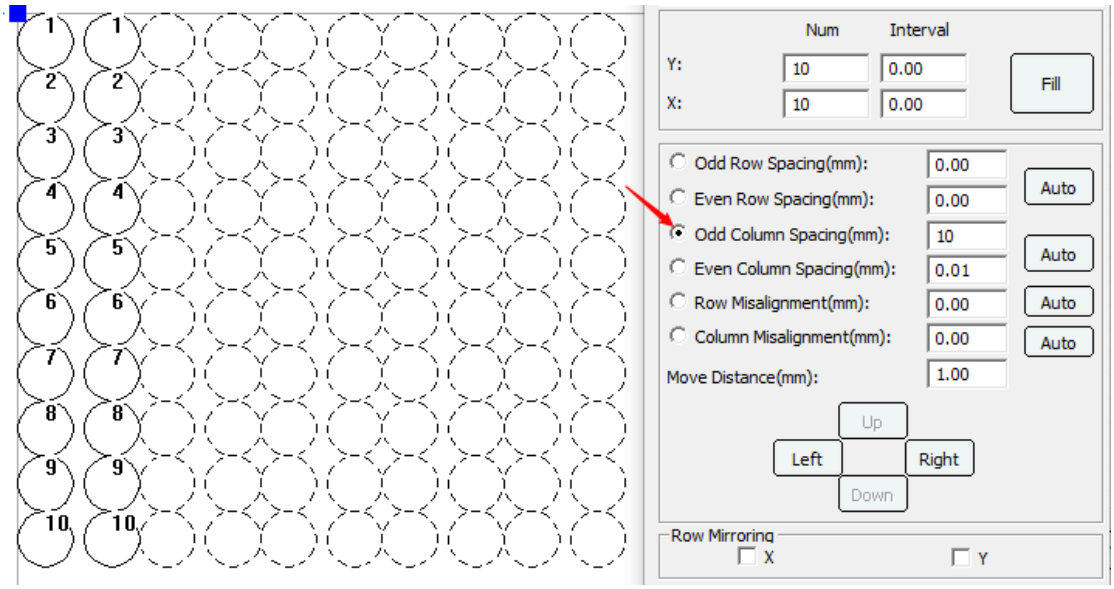
Odd Row Spacing (mm):



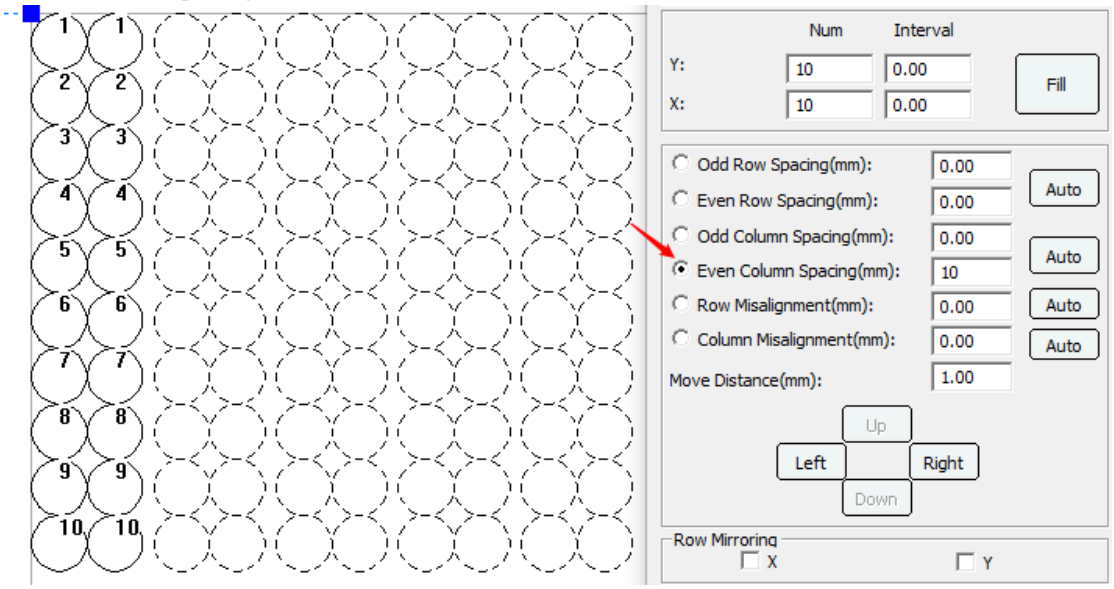
Even Row Spacing (mm):



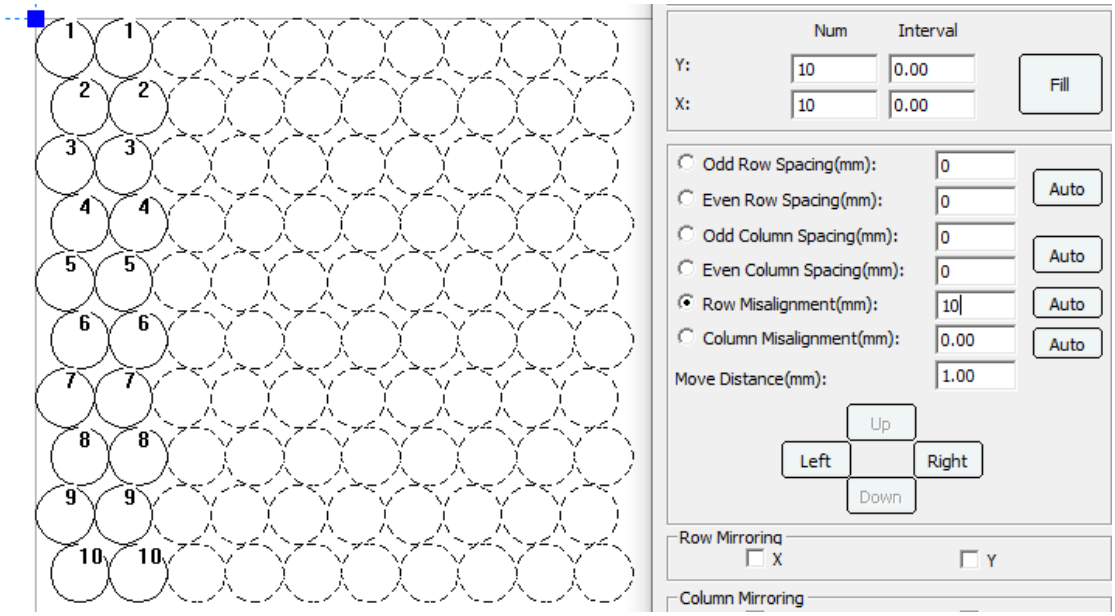
Odd Column Spacing (mm):



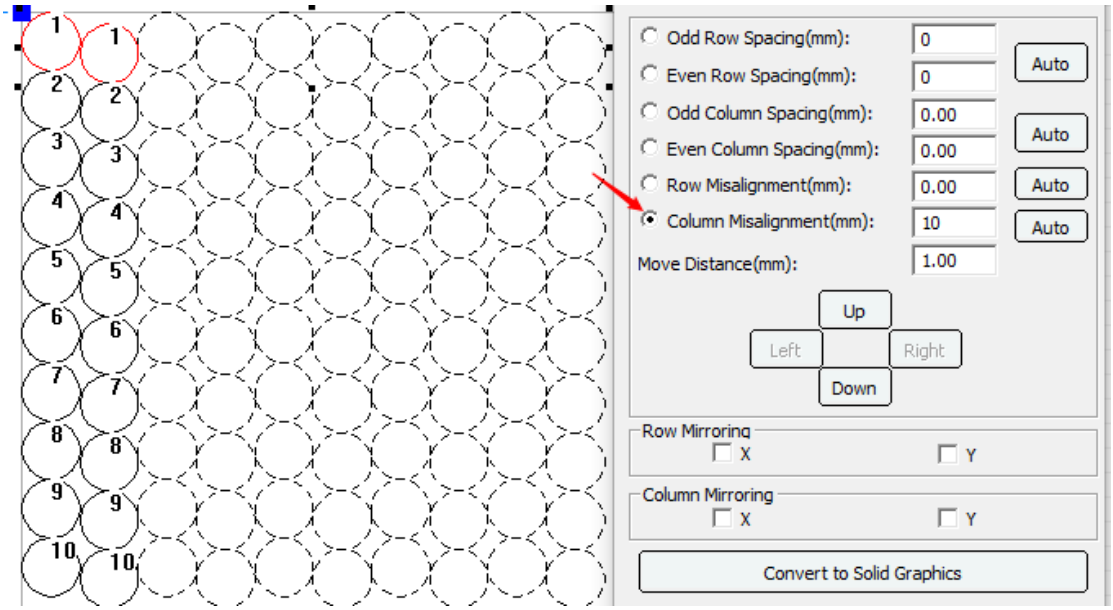
Even Column Spacing (mm):



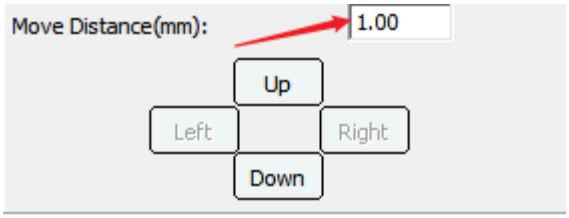
Row Misalignment (mm):



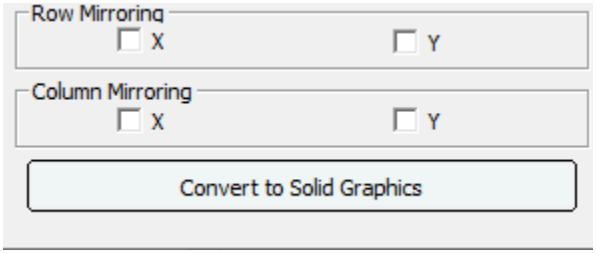
Column Misalignment (mm):



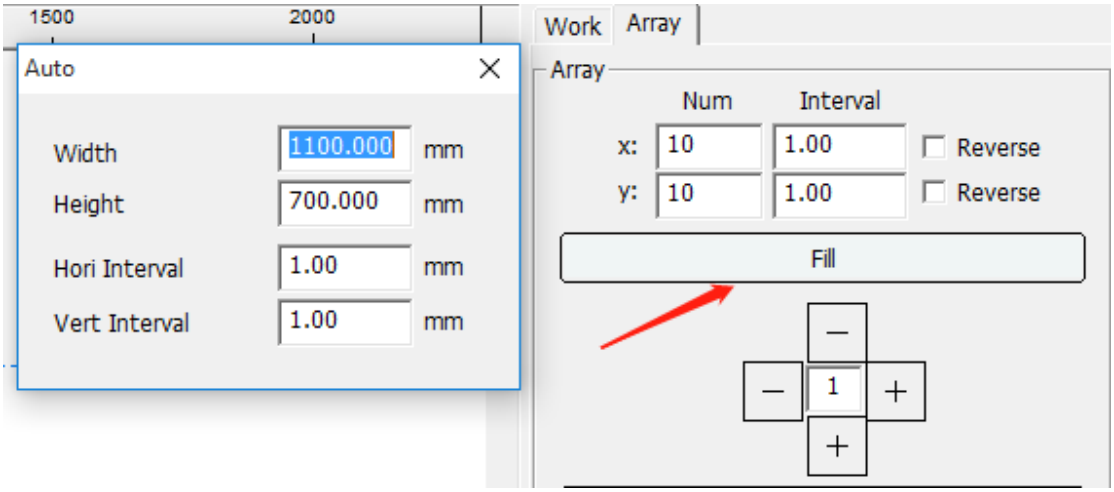
You can also use the "Move Distance" button to fine-tune the row and column misalignment. Just enter the distance you need to move.



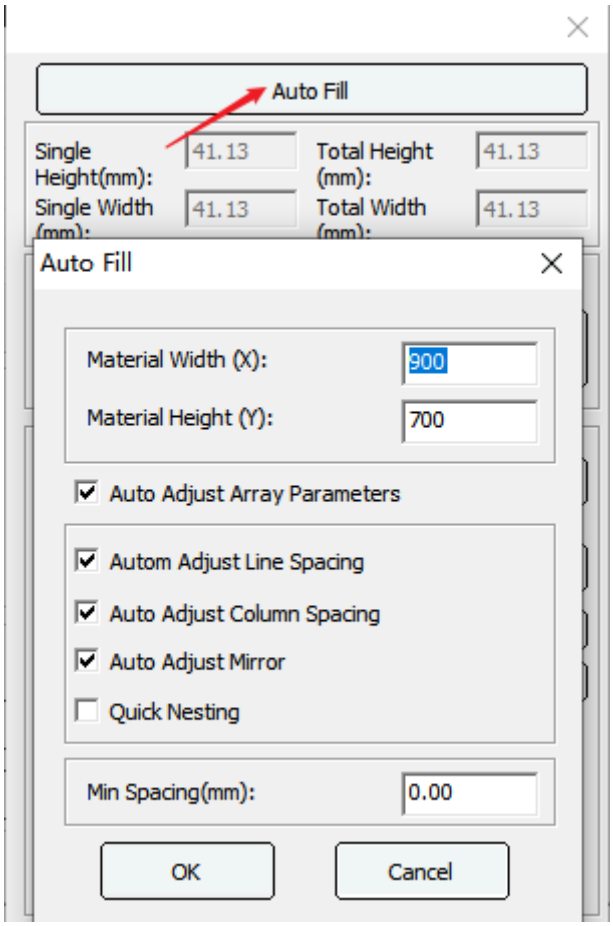
The row mirror and column mirror can be checked when necessary.



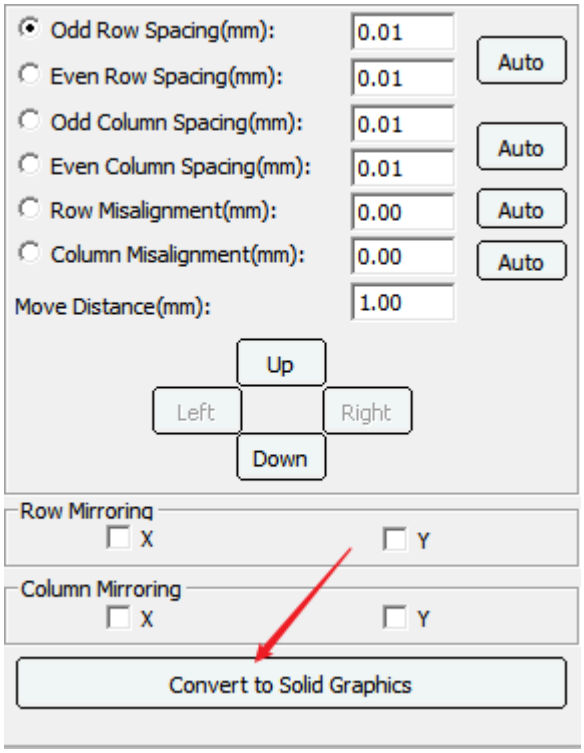
You can also use [Fill] to perform the array directly. As shown:



Automatically fill the format: Import the graphics and set the corresponding parameters, click OK!



The primitives arranged in the above nesting methods are all virtual arrays. The virtual array can support dual-head mutual shift processing, but the path optimization function is invalid. If you want to use the path optimization function, you only need to convert the virtual array primitives to real arrays. can. Click the [Convert to solid Graphics] button, and the double-head mutual movement function is invalid.

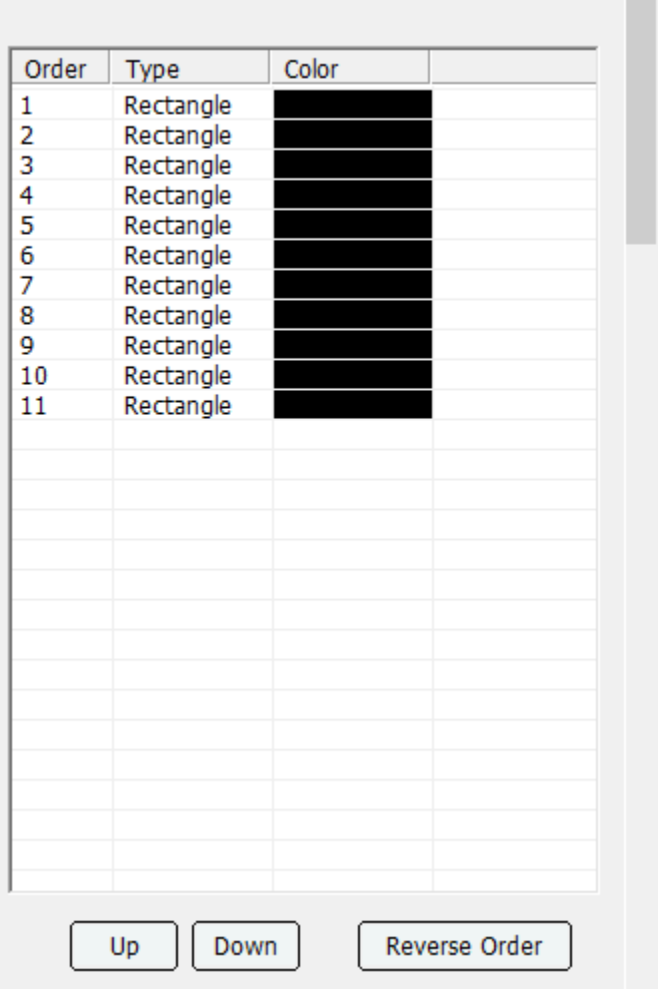


1.4.6.3 Feeding

Set the feeding times and feeding length of the file. For details, please refer to the feed processing and partition for over range of the example application.

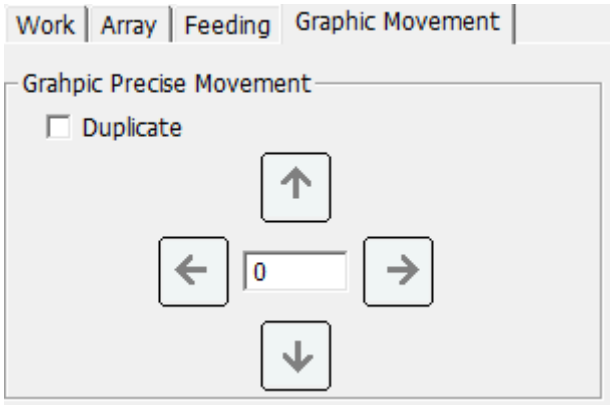
1.4.6.4 Manual sorting

Select the graph in the list and click Up or Down button to change the order. Click twice on the sequence number in the list to modify the sequence number. Click [Reverse Order] to reverse the order.

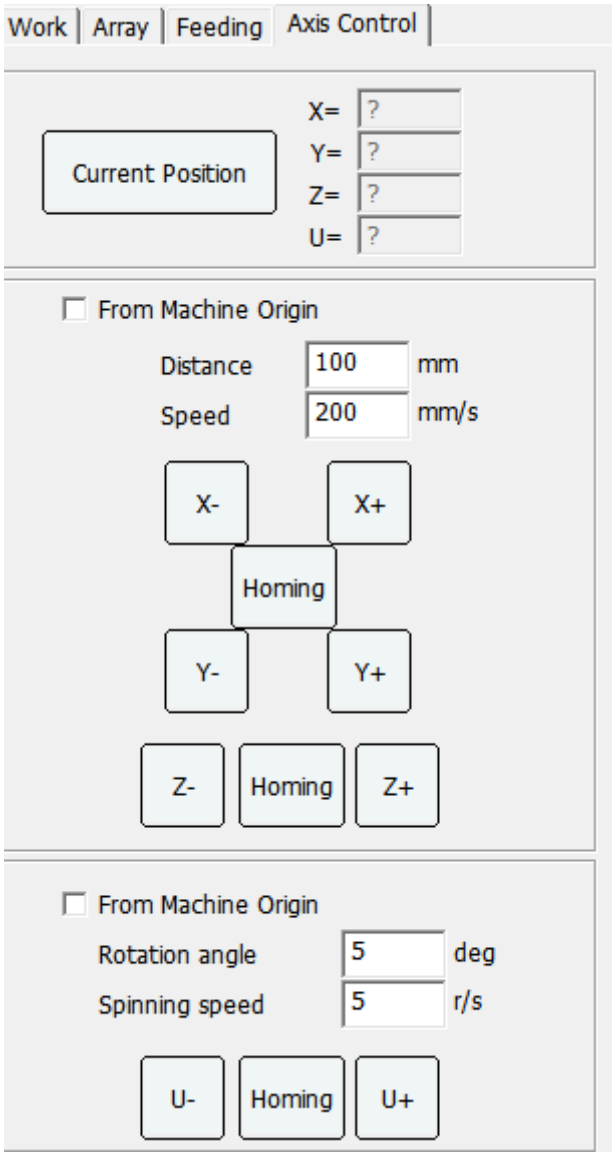


1.4.6.5 Graphic movement

Enter data and move graphics accurately. Check [Duplicate], and after moving, copy and generate selected graphics.



1.4.6.6 Axis control



【Current Position】: Obtain machine coordinates.

【From Machine Origin】: Starting from the origin, move the specified distance at the specified speed.

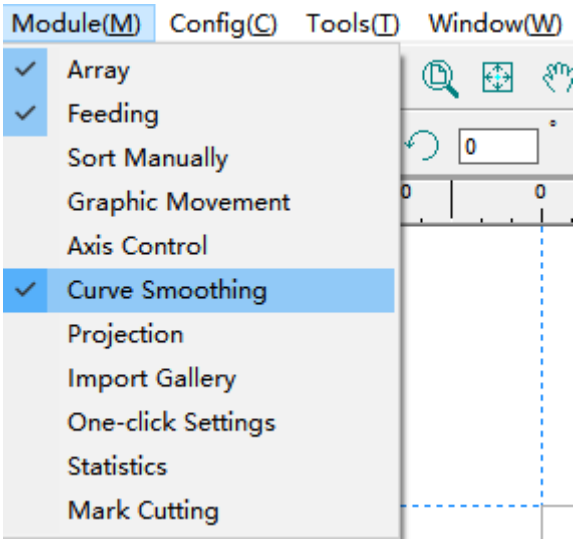
【Direction Keys】: Press the direction keys to move each axis.

【Homing】: Move to the origin coordinate.

1.4.6.7 Curve smoothing

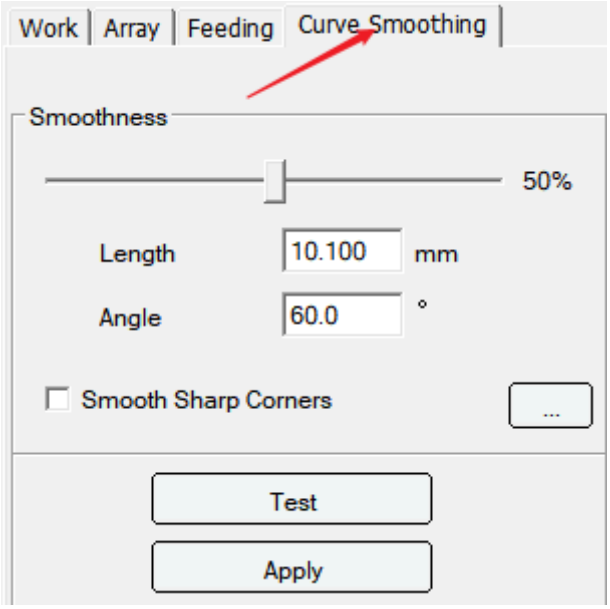
The curve smoothing function applies to those elements whose lines are not smooth or which caveman broken line nodes. Users can perform smoothing operations according to their own requirements.

1.Click the software [Functions] → [Curve Smoothing] as shown in the picture:

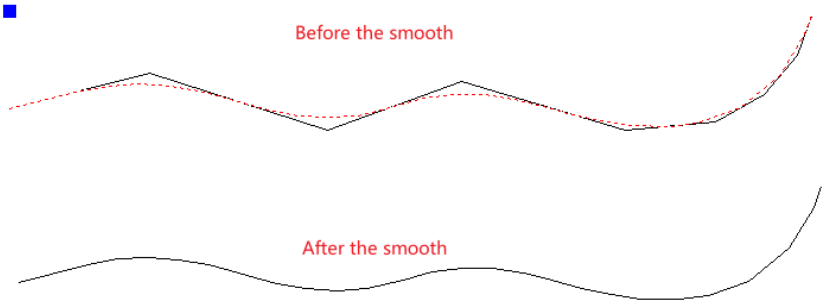


2. There is an extra "curve smoothing" option in the work menu bar of the software. Click to switch to this function.

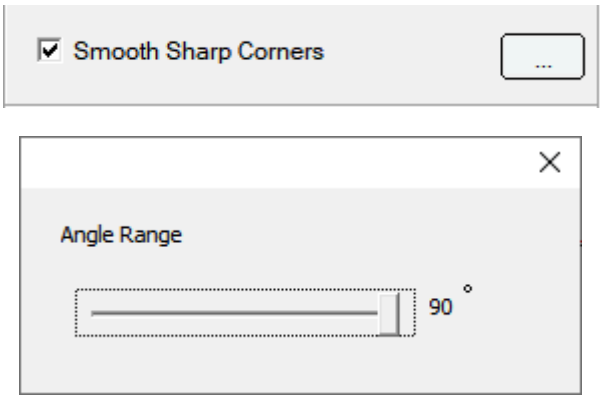
As shown in figure:



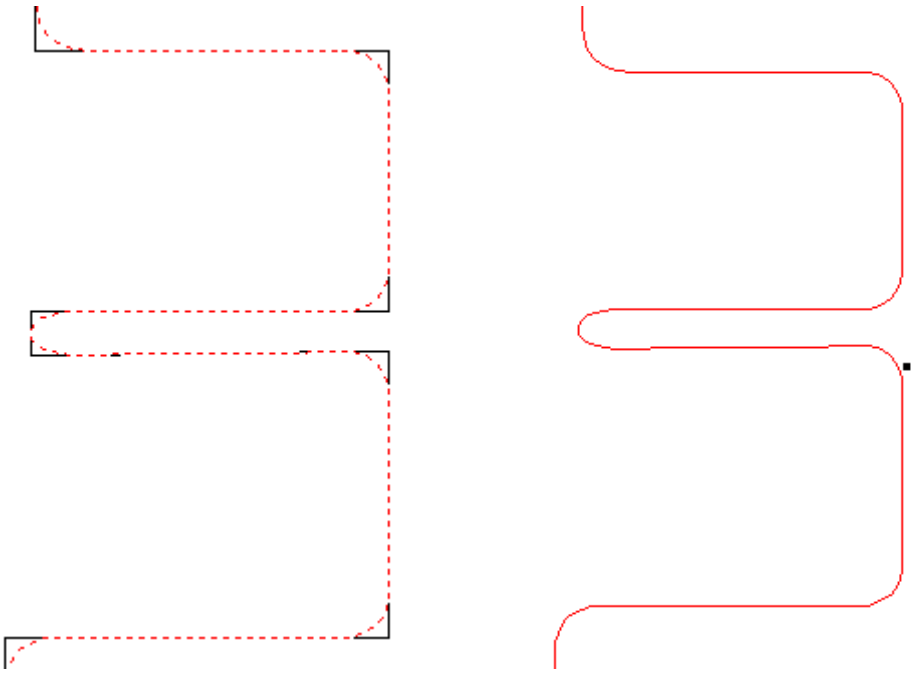
Users can drag the smooth bar to smooth, or input the maximum length of lines between curve nodes and the maximum Angle to smooth, click "Test" to check the smoothing effect, and click "Apply" to apply the effect to the original picture. As shown in figure:



【Smooth Sharp corners】: Rounded corners with many nodes in an Angle range.



Before the sleek: After the tact:

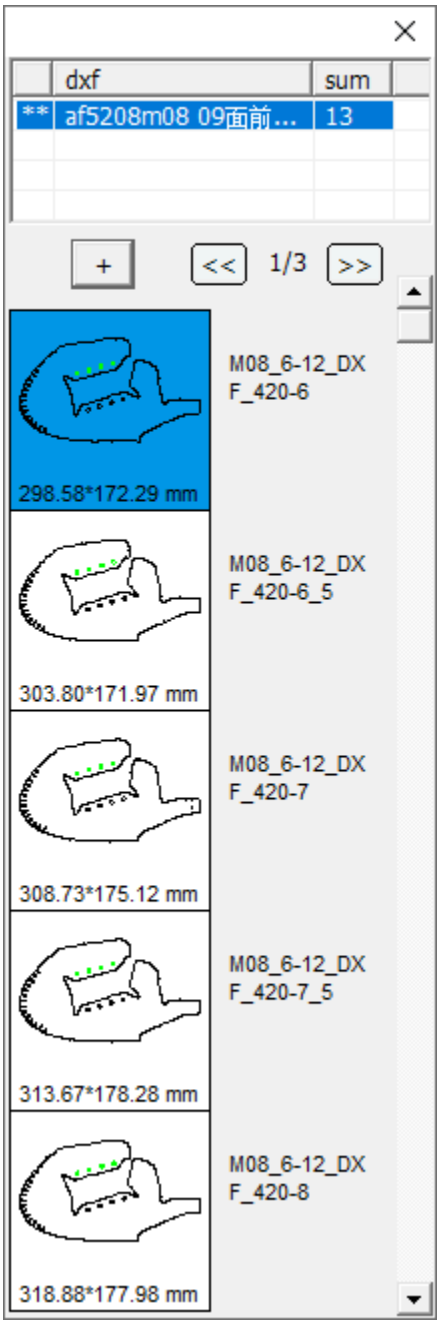


1.4.6.8 Projection

Use with a projector. For details, refer to the document projection manual.

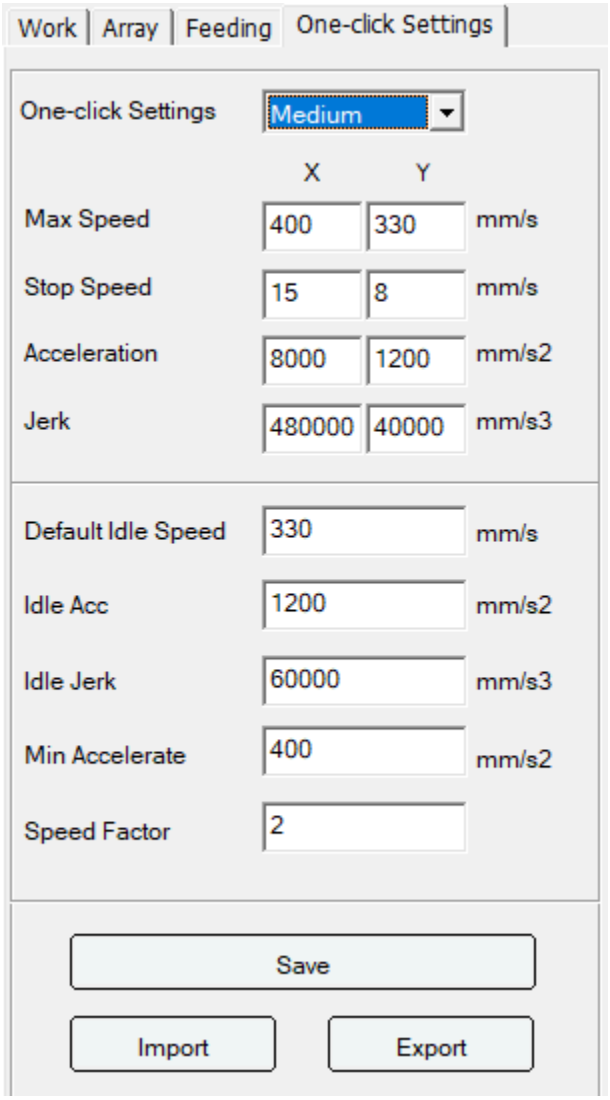
1.4.6.9 Import gallery

When the dxf file is in the form of a gallery, please use the import gallery function. Select [Module], [Import Gallery], open the dialog box, click + to open the file, click << and >> to turn pages. Select the graph in the graph list, double-click the right button to import the graph into the editing area.



1.4.6.10 One-click settings

Three groups of motion parameters can be set fast, medium and slow, corresponding to different processing materials and processes. Click [Save] to write the parameters into the control card. Back up parameters through [Import] and [Export].



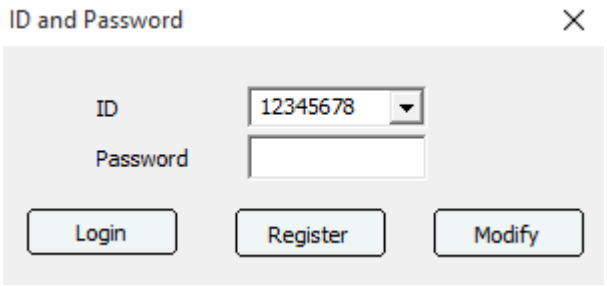
1.4.6.11 Mark point cut

Mark point positioning and cutting function. Please refer to Mark dot cutting instructions for details.

1.4.6.12 Statistics

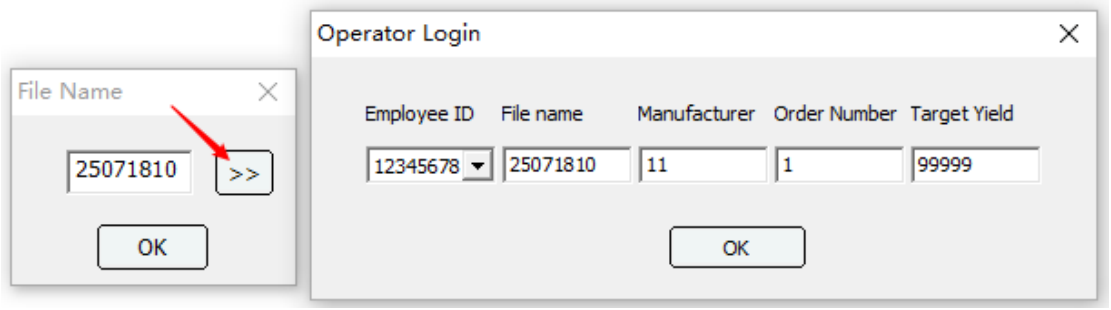
When downloading files and setting order information, in the statistical function, you can read the file processing information of the control card.

1. Click [Register] first, enter the verification code 00000000, and then create an administrator account and password.

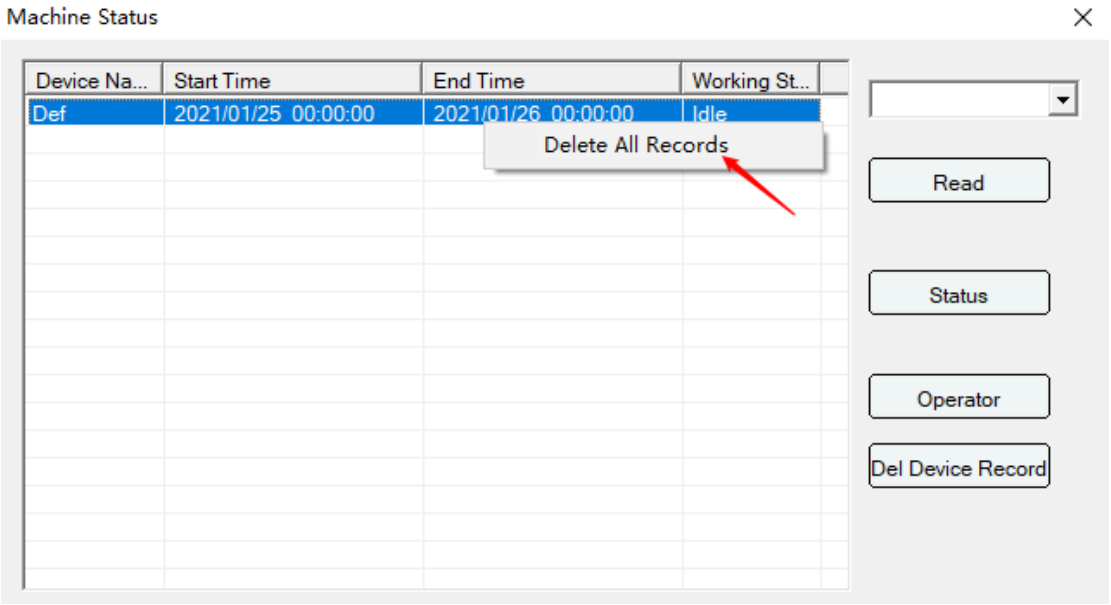


2. Click [Login], select the administrator account and enter the password to log in.
3. Click [Operator] to create an operator account and password.

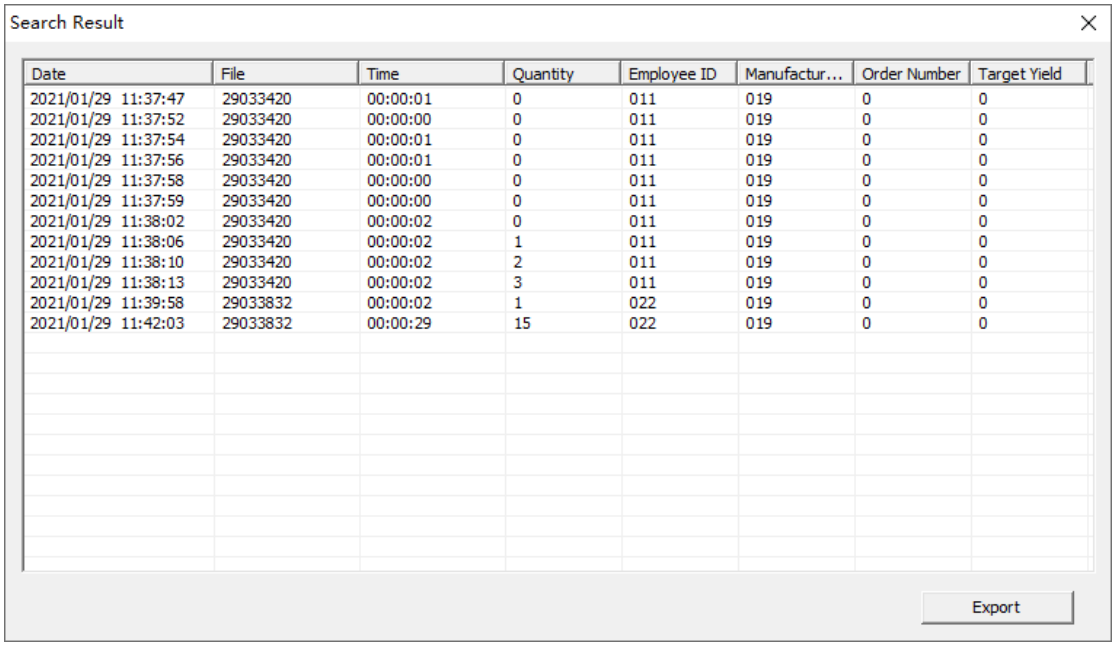
4. Click the extended button [>>] in the download dialog box and enter the operator and order information.



5. When the order has been processed. Enter the statistical function page again, set the start time and end time of the query, and in the upper right corner drop-down box, select the corresponding machine port, click the [Read] button to read the machine record.
6. If you need to clear machine records, click [Del Device Record].



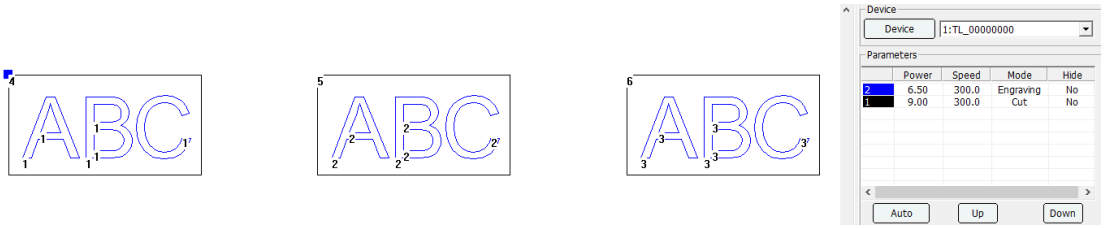
7. If you need to clear all the records that have been read and saved in the computer, right-click and select the list and select [Delete All Records].



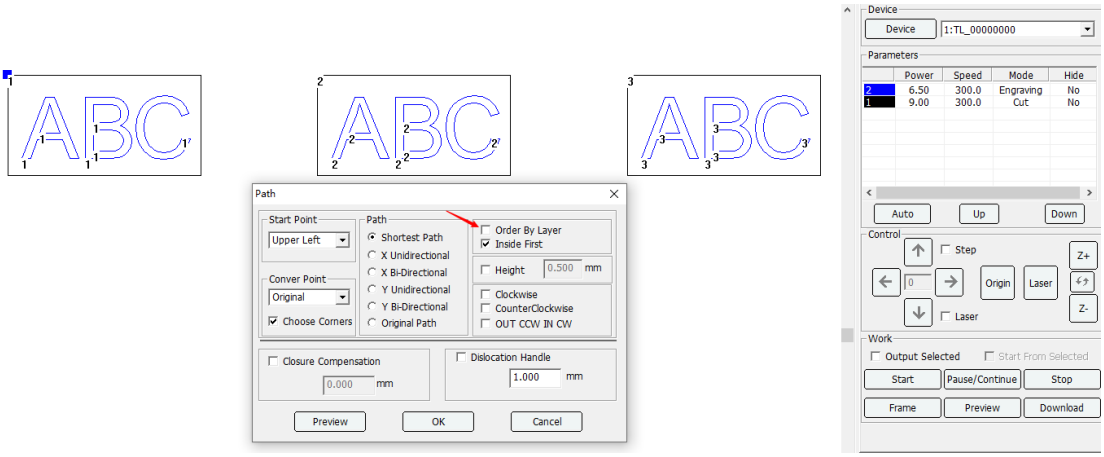
1.4.7 Group

It is able to group the graphics in the same layer or different layer. Select the graphics need to group.

Then Click “Group” button  .Before:



After:

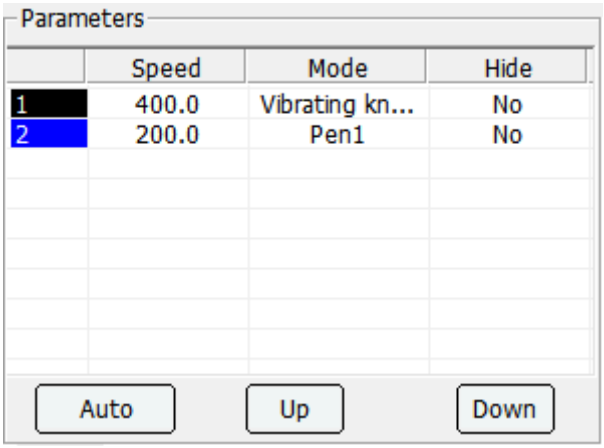


Note: The cutting path is changed when use the group function.

1.5 Output processing

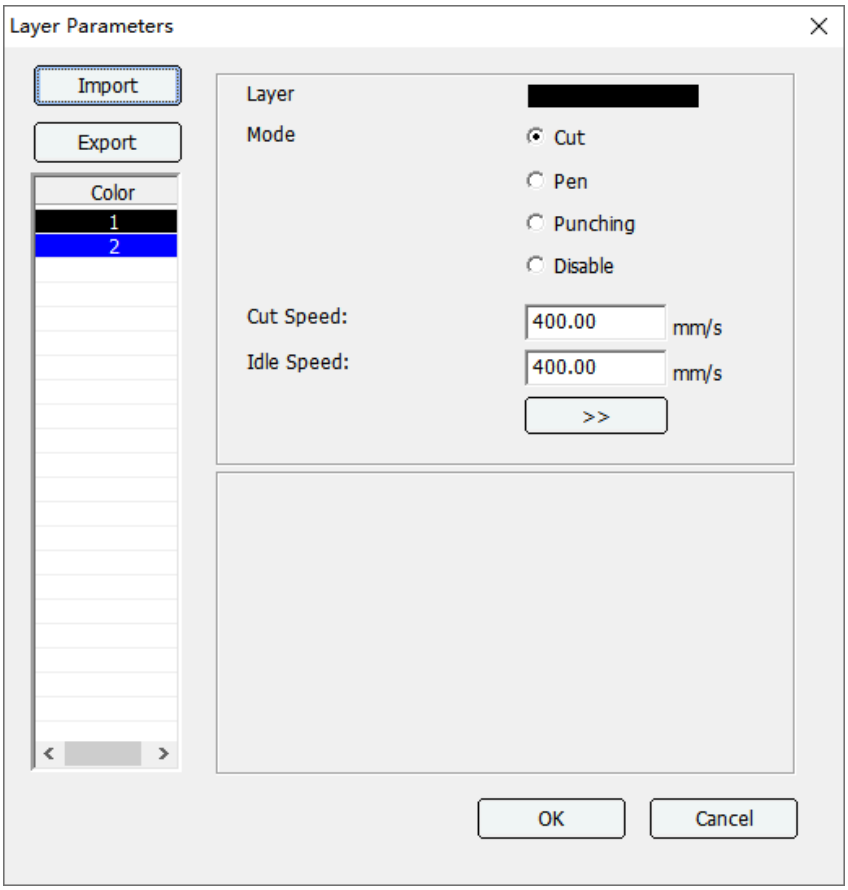
1.5.1 Layer parameter

Layer parameters are set for colors. The graphics in the same color are used the same layer parameters. There is a layer parameter list under the "work" interface of the right side of the dialog box toolbar of the main interface.



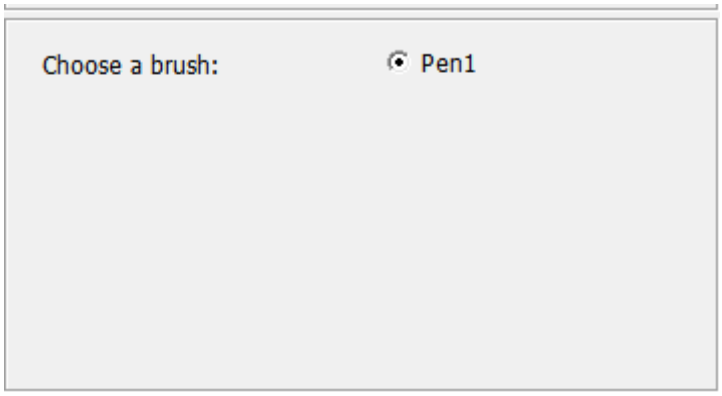
In the list, if the color order is topper, then the graphic in this color will priority to be processed. After a layer is selected, click the [Up] or [Down] button to change the processing order. Click the [Auto] button to automatically sort.

Select a layer and double click the mouse to open parameter setting dialogue box as the figure shown below.

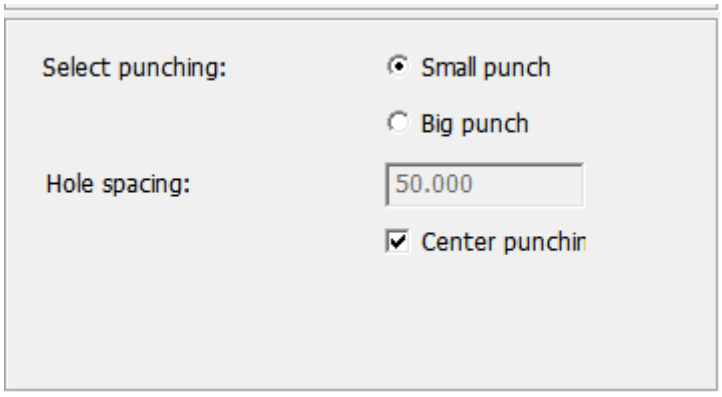


[Mode]:

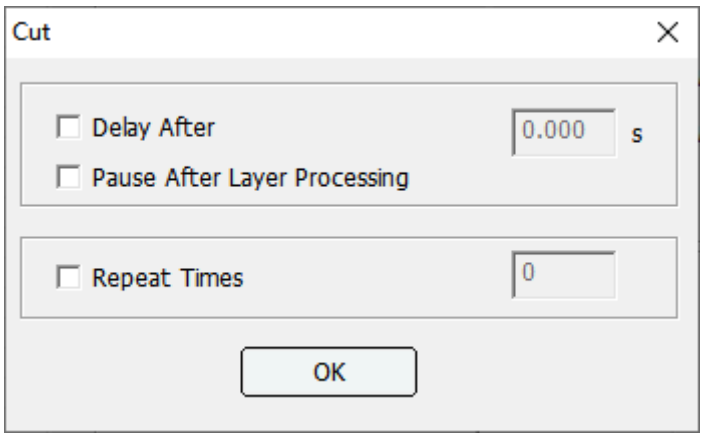
- 【Cut】: Vibrating knife cutting
- 【Pen】: Brush drawing, currently only supports 1 brush.



- 【Punching】:Select punching processing.
  - 【Select Punching】: Either a small punch or a big punch (depending on whether the machine supports multiple punches).
  - 【Hole spacing】: The spacing between holes.
  - 【Center punching】: If it is in the graph center, only punch holes once in each graph center.



: Click the extension button, and the dialog box for setting the cutting extension function pops up.



【Delay After】: Time to stay in place after finishing the layer.
【Pause After Layer Processing】: After the layer is finished, return to the machine origin and pause.
【Repeat Times】: Set the number of iterations of the current layer or a layer.

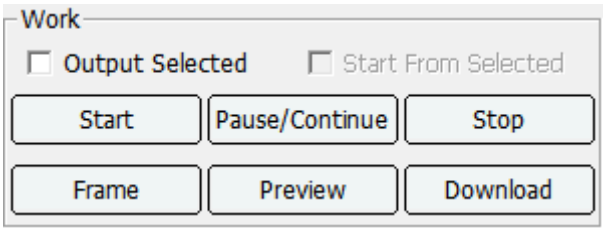
After you adjust the parameters, you can use the "Import" and "Export" functions.

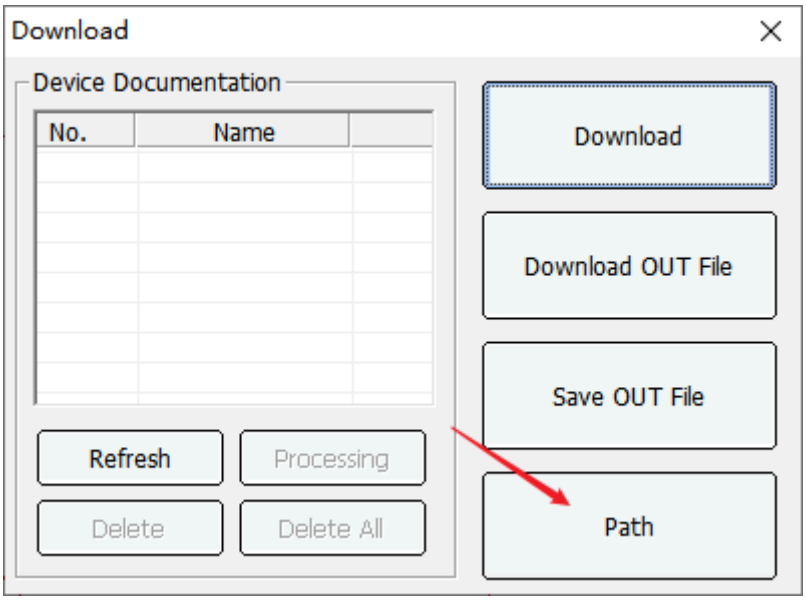
Import: Import the saved parameter values to avoid debugging again

Export: Export debugged parameter values for future use.

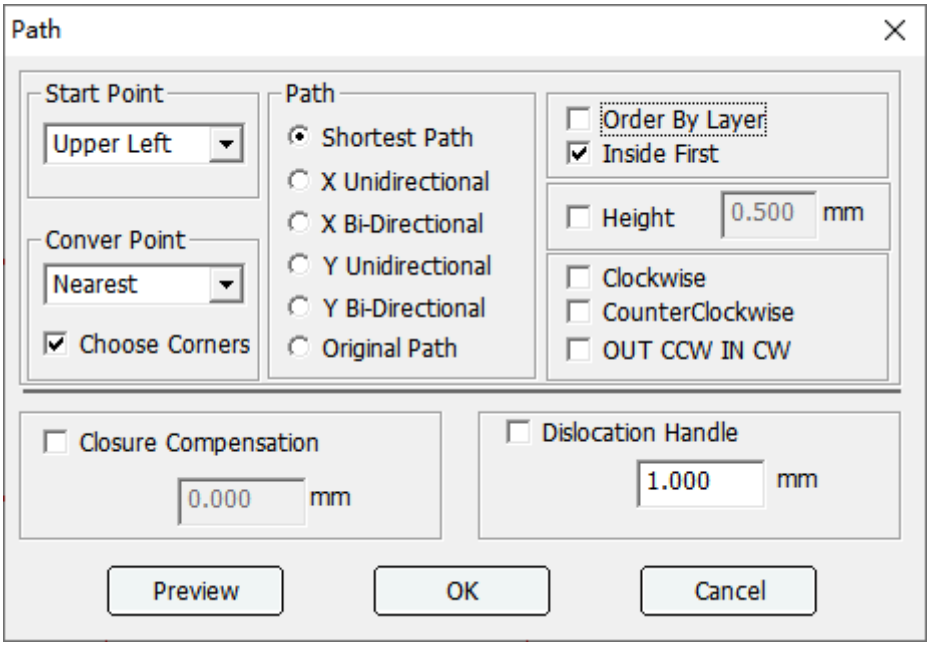
1.5.2 Route optimization

Before downloading graphics, in order to make it to process in specific route, and to improve the processing speed while optimizing its route, click [Download], and then click [Path] button. Or click the path button on the tool bar.





After clicking the "Path" button, the following interface appears:



1.5.2.1 Route optimization type

Route optimization includes: Shortest Path, X Unidirectional, X Bi-Directional, Y Unidirectional, Y Bi-Directional and Original Path.

【Shortest Path】: For non-arrayed graphics, take the shortest moving distance route of cut head as the processing route.

【X Unidirectional】: For arrayed graphics or graphics of regular arrangement, process from left to right by lines. The processing direction of closed curve in the same line should be the same, either anticlockwise or clockwise

【X Bi-Directional】: For arrayed graphics or graphics of regular arrangement, process from left to right in S shapes, either anticlockwise or clockwise. (e.g., some line is processed from left to right, and the following line will be processed from right to left.)

【Y Unidirectional】: For arrayed graphics or graphics of regular arrangement, process from top to bottom, closed curve of the same column should be processed at the same direction, either anticlockwise or clockwise.

【Y Bi-Directional】: For the array graphics or regular arrangement of graphics, processing from the top and bottom direction S column, counterclockwise or clockwise. (example: one column is processed from top to bottom, and the next column is processed from bottom to top.

【Original Path】: No optimization for any route. Without clicking the “Path Opt” check box to choose the original path.

1.5.2.2 Additional parameters

【Start Point】: Indicate the graph starting point from which work starts (upper left, upper right, lower left and lower right, etc.).

【Order by Layer】: Whether optimization can be conducted in the inside layer or is allowed to be optimized across layers.

【Inside First】: First process small graphs inside and then process outer bigger graphics.

Confer Point:

- 【Nearest】: Modify the original graph starting point to make traveling shifts distance became the shortest.
- 【Smooth】: Modify the original starting point and to make the speed change become gentlest.
- 【Original】: The starting point whose original graph is not modified (applicable to manually specified starting point or graphs added with lead).

【Choose Corners】: Modify the processing starting point to the corner position of the graph.

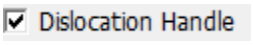
【Height】: Specify the area for path sorting, after processing one interval, continue processing the next one

【Clockwise】: After checking, the direction of the graphic element is invalid, and the cut head will cut clockwise when cutting.

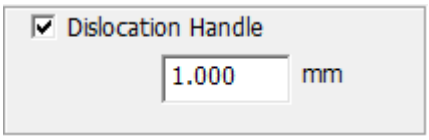
【Counterclockwise】: After checking, the direction of the graphic element is invalid, and the cut head will always cut counterclockwise when cutting.

【Out CCW in CW】: After checking, use a counterclockwise path when cutting external graphics, and a clockwise path when cutting internal graphics.

1.5.2.3 Dislocation handle

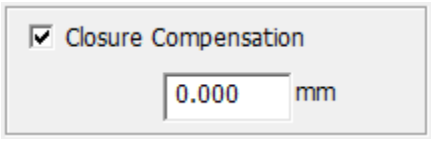
When processing parts size is inconsistent or sealing dislocation occurs and thus causing working piece failed to be cut, click the option and the problem is solved. Click check box of dislocation handle 

, no matter whether the route is optimized or not, dislocation treatment is conducted.



1.5.2.4 Closure compensation

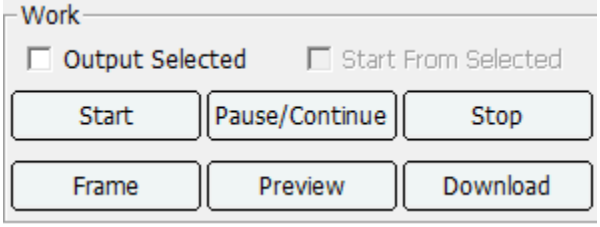
When materials are cut, the sealed part of closed graph may not be cut or carved. The software has a function of "closure compensation" to over cut a certain distance at the sealed openings to solve the problem. Set the distance value according to the actual need. Click the closure compensation check box, execute closed compensation no matter route is optimized or not.



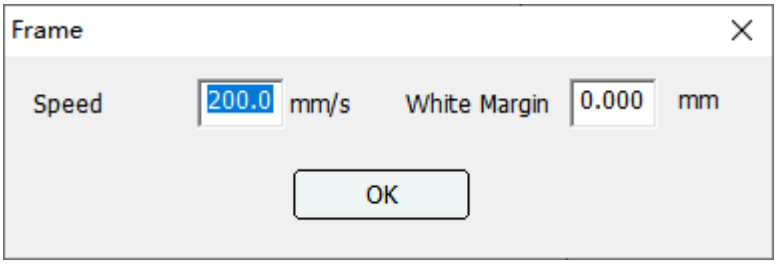
1.5.3 Work preprocessing

1.5.3.1 Frame preview

Before processing, frame preview can be selected to check the dimension side of the processing graphic. Software main interface on the right side of the dialog box toolbar "Work" page is as shown in the figure below



Click [Frame] button and the following interface is shown.



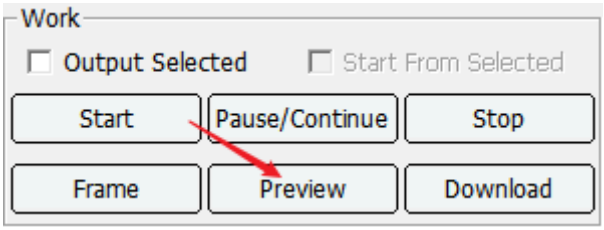
If there is currently a graphics file, let the machine take the current registration point as a reference point, according to the current file's outer rectangle to go through, according to the speed defined in the process of movement. The right side of the dialog box toolbar "Work" page is shown in the figure as below:

【Speed】:The speed at which the cutting head moves along the border.

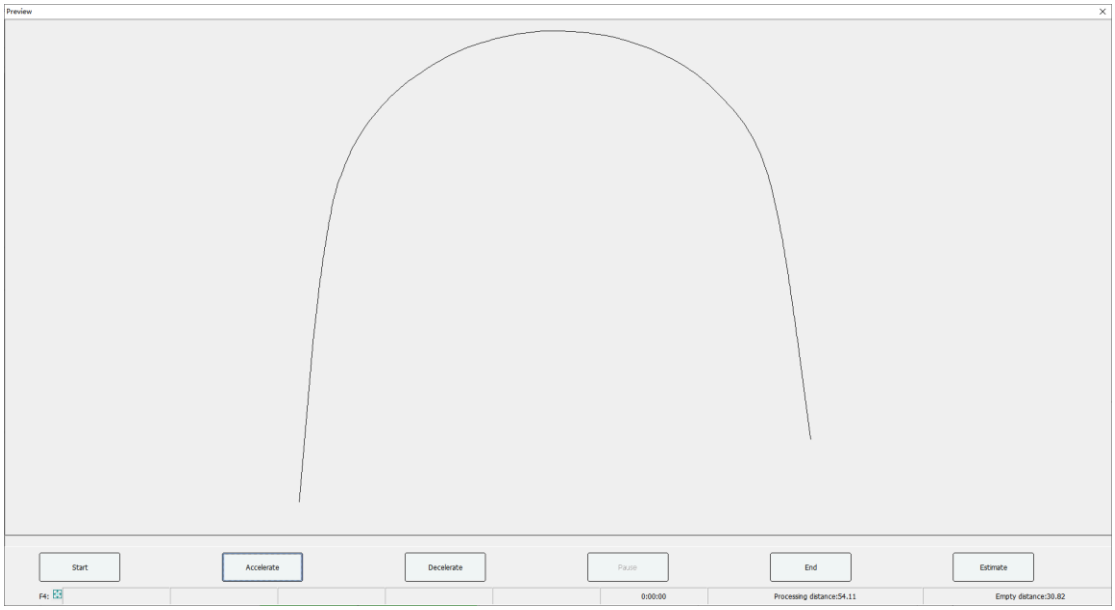
【White Margin】:Follow the reserved width of the distance to the border.

1.5.3.2 Preview

In the "Work" page of the dialog toolbar on the right side of the main interface of the software, as shown in the following figure:



The working file to be downloaded to the machine can be processed in simulation to check the processing route, etc.



【Start】: To start the processing of simulation.

【Accelerate】: To speed up the simulation process.

【Decelerate】: To reduce the simulation processing speed.

【Pause】**:** Pause the simulation process.

【End】: Stop simulation processing.

【Estimate】: To estimate the processing time of the file (need to read the parameters of the control card).

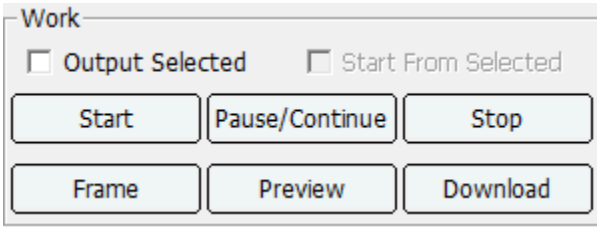
【Processing distance】: The total cutting distance.

【Empty distance】: The total distance moved when knife is up.

【F4】: Track preview can be zoomed and displayed by scroll wheel. Press the F4 key on the keyboard to zoom the track preview window to an adaptive size.

1.5.4 Output processing

After the processing parameters is set, output processing can be conducted, as shown in the fig. below



【Start】: Download the current file to controller and take the files as processing files to start work directly.

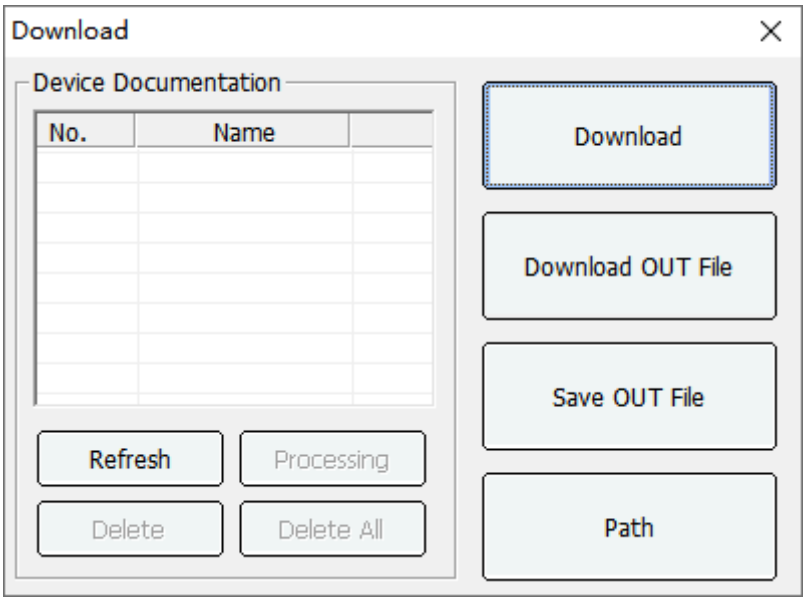
【Pause/Continue】: Ito continue or suspend processing.

【Stop】: Stop processing.

【Output Selected】: In the graphics editing area, only the selected graphics can be output for processing.

【Start From Selected】: The starting point of the selected graphic is used as the positioning point of the graphic.

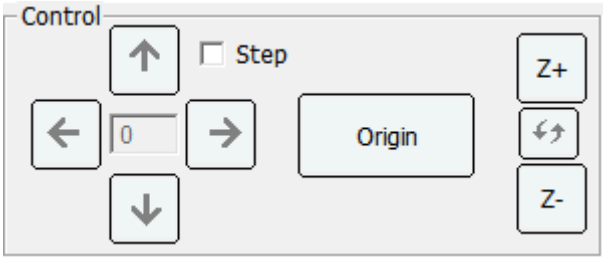
【Download】: Click [Download] button and the following dialogue box would pop up.



【Download】: Download the current file to controller (will not directly work).
【Download OUT File】: Download the out file saved before to controller (will not directly work).
【Save OUT File】: Save current file in processing format (*.out file type) to designate path of the computer.
【Path】: Set the work path.
【Device Documentation】: Click [Refresh] to read all the processing files on the control card. Select the file to be processed and click [Processing] to start the work. Click [Delete] to delete the selected files, and [Delete All] to delete all the processing files on the control card.

1.5.5 Manual control

Single - axis movement can be controlled by arrow keys. After "Step" is enabled, input the relative distance (mm) of the cutting head to move in the middle of the direction key to perform the step movement. [origin] Used to set the manual button location. Z axis and U axis move through the  to switch

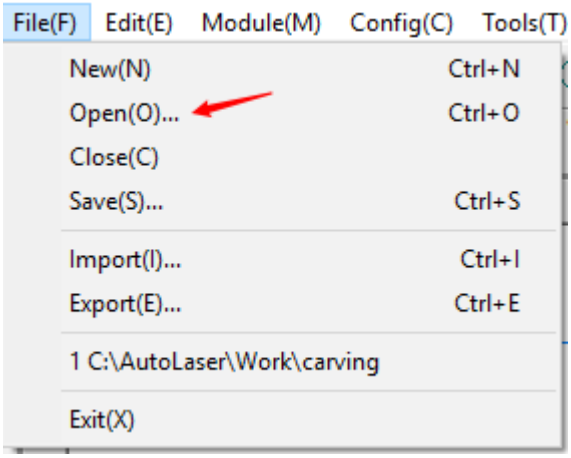


1.6 Case application

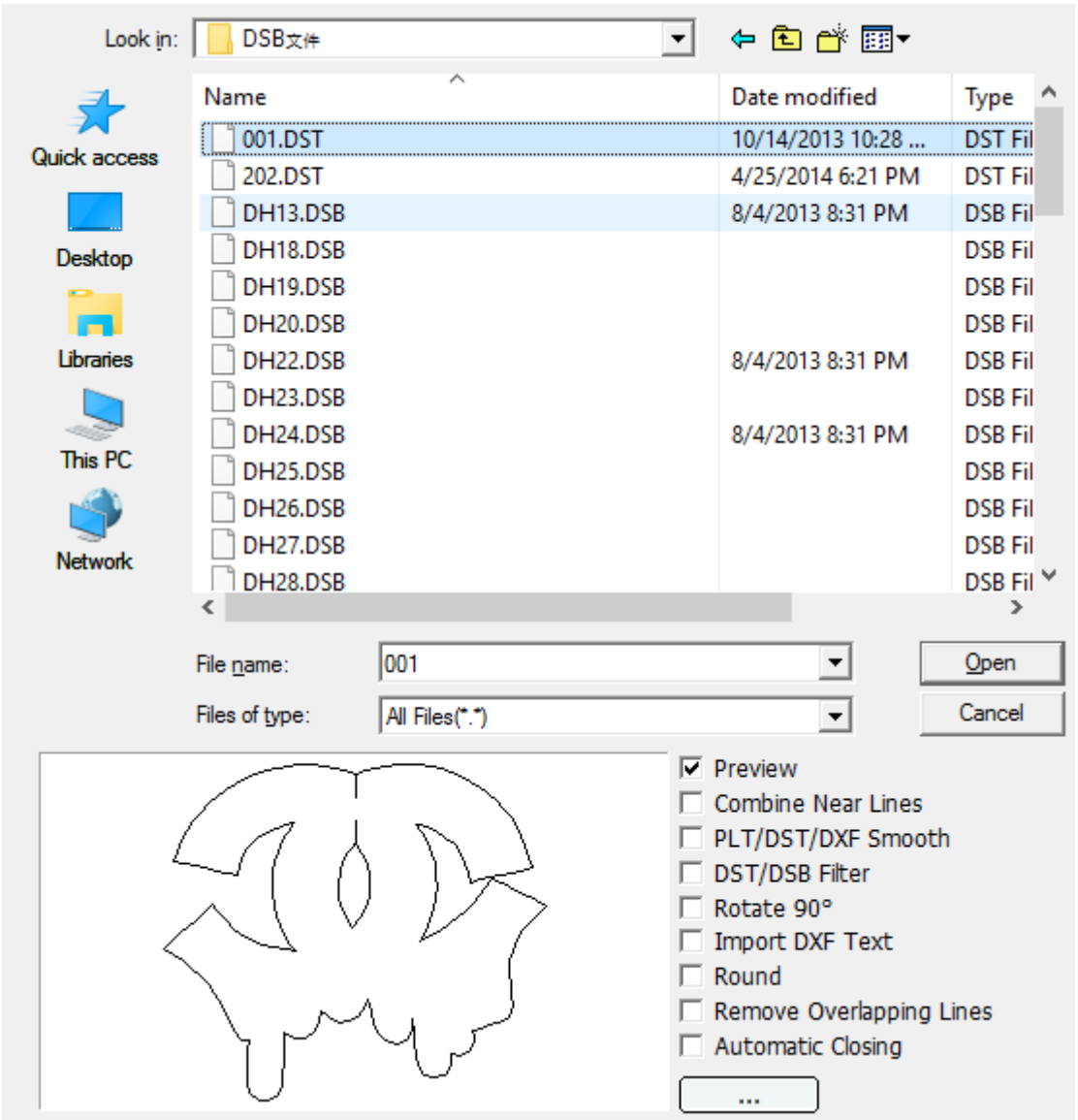
1.6.1 General output processing

This section offers an application example. To open a ready graphics for editing and fill layer parameters and then download to the processing program.

1) Open file

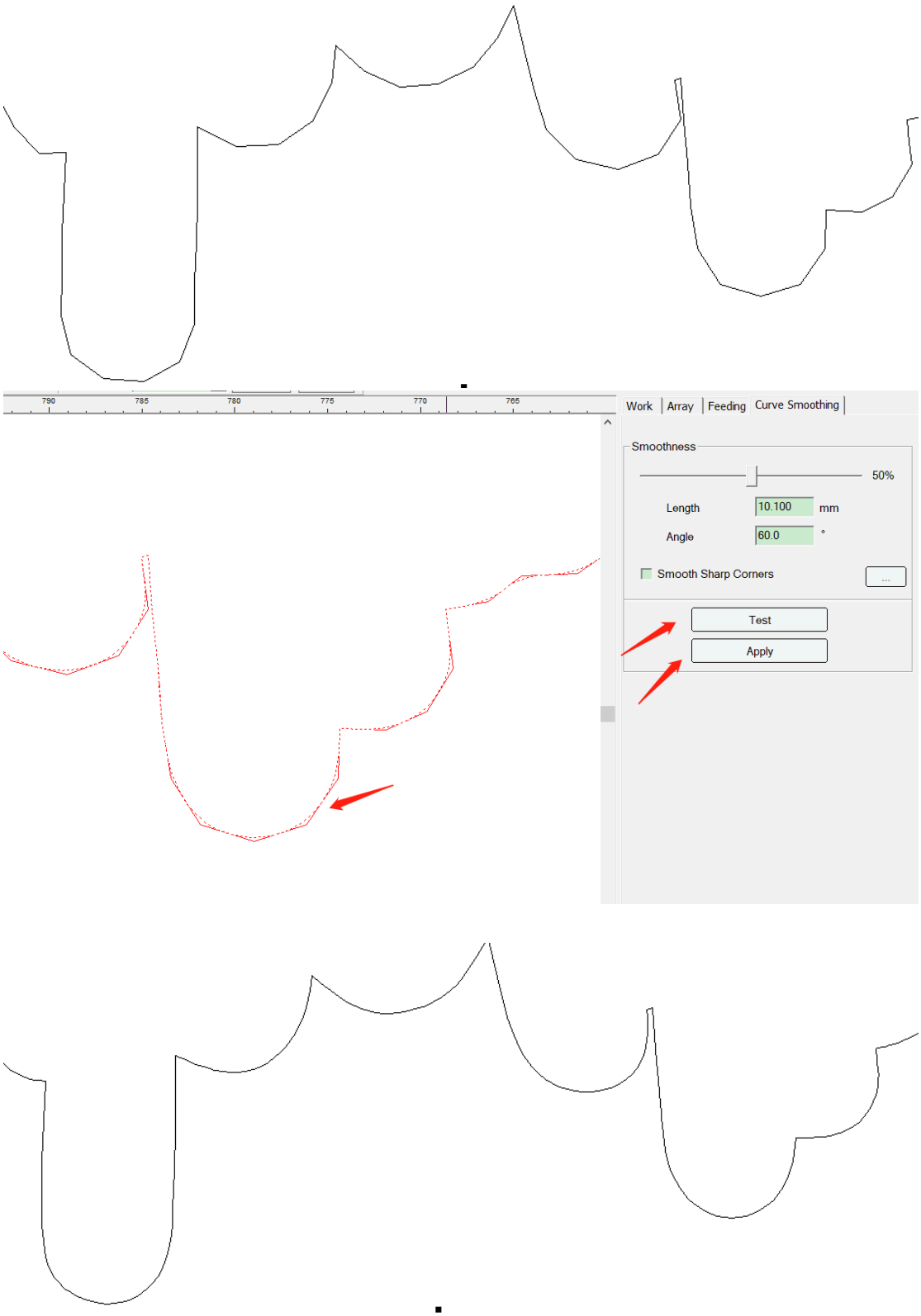


As shown in figure, click [File] → [Open] in the main menu and open dialog box would pop up. Find the saving route for "001.DST" and then Click [Preview] and the file preview could be seen, then click open to open the file.



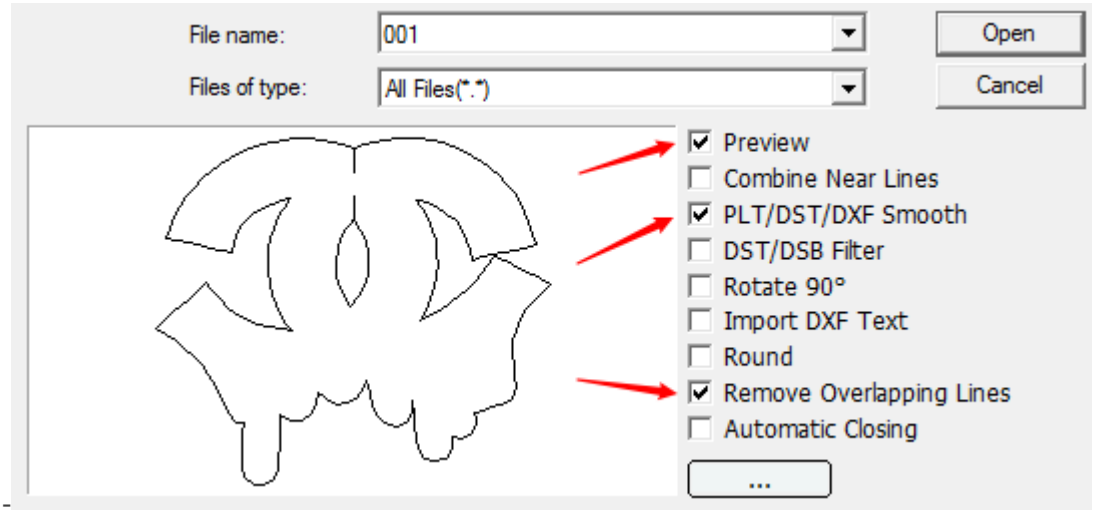
2) Edit

Once turned on, in the menu, turn on Curve Smoothing. Select all the graphics, click Test, apply it to smooth it, and the curve is rounded.



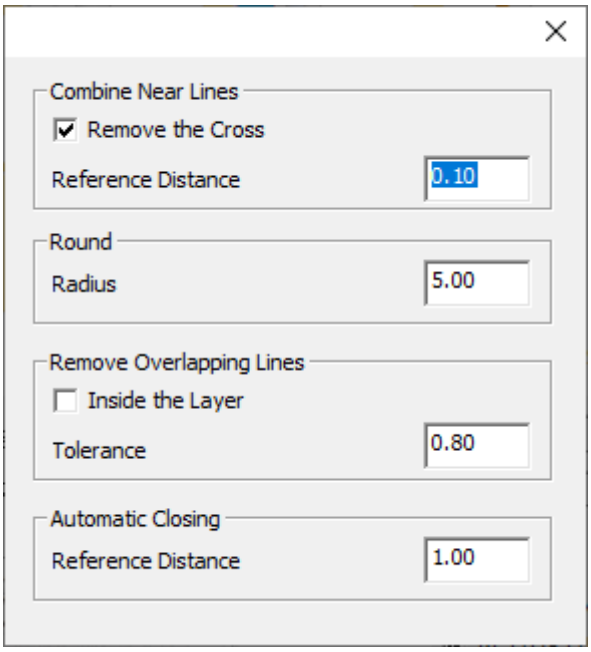
Of course, you can also smooth the graphics before opening or importing. There are many graphics processing options in the lower right corner of the open file dialog box for customers to use. Customers can check the corresponding graphics processing functions according to their needs. By

default, the software selects the three options of preview, PLT/DST/DXF smooth, and delete coincidence.



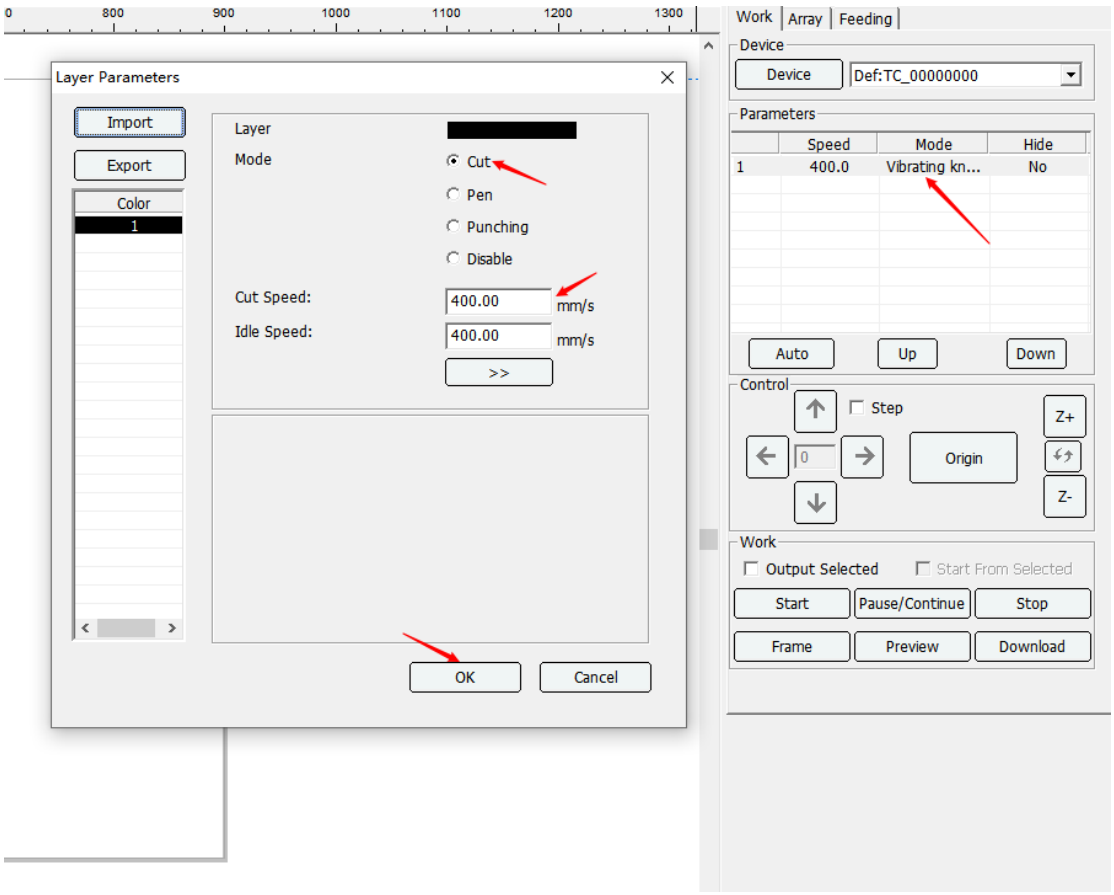
If you need to set the radius length of the round, the tolerance setting for deleting the coincidence line, the distance setting for automatic closing and adjacent merge, click the expand button 

in the lower right corner of the open file dialog box, check the corresponding parameter and set the parameter That's it. As shown:



3) Work parameters setting

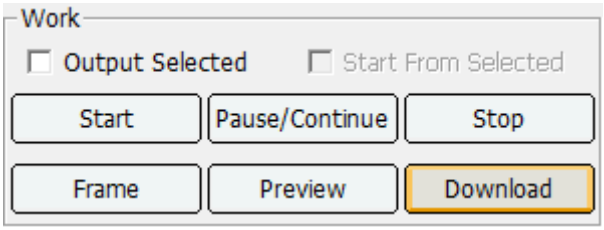
Double-click on the Layer list option to open the layer's parameter edit dialog. If the machining mode is vibration knife cutting, select "Cutting", fill in "speed" parameter, and click "OK" to finish editing the machining parameters.

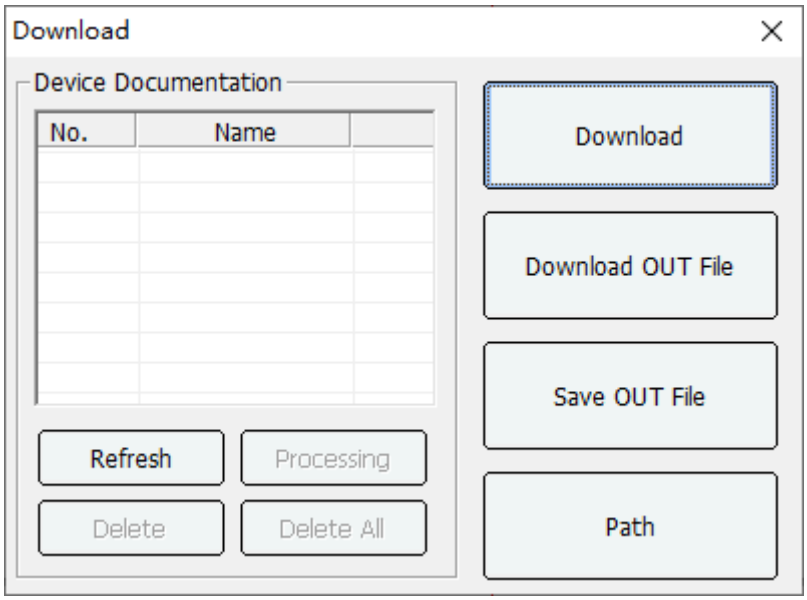


4) Download

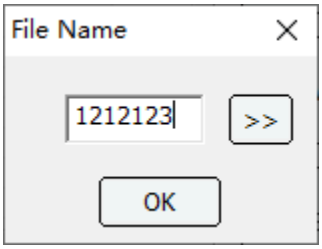
After editing the graphics and filling the processing parameters, downloading can be conducted. Select communication mode before downloading (Details could be referred to communication specification) and plug in corresponding communication cables.

Click [Download] button and dialog box would pop up.





If you need to optimize the path, please click [Path], select the corresponding processing path, and then click the [Download] button to pop up the file name input dialog box. The length of the file name cannot exceed 8 characters, otherwise the excess part will be discarded. Click [OK] to download and wait for the download progress bar to finish, and there will be a beep on the control card, indicating that the download is successful, otherwise the download fails. At this time, you need to check whether the communication line is connected, and then try again.



1.6.2 Intelligent double shift processing

Using virtual array functions with added extra leftover material graphics can realize the leftover material function. As shown in the fig. below.

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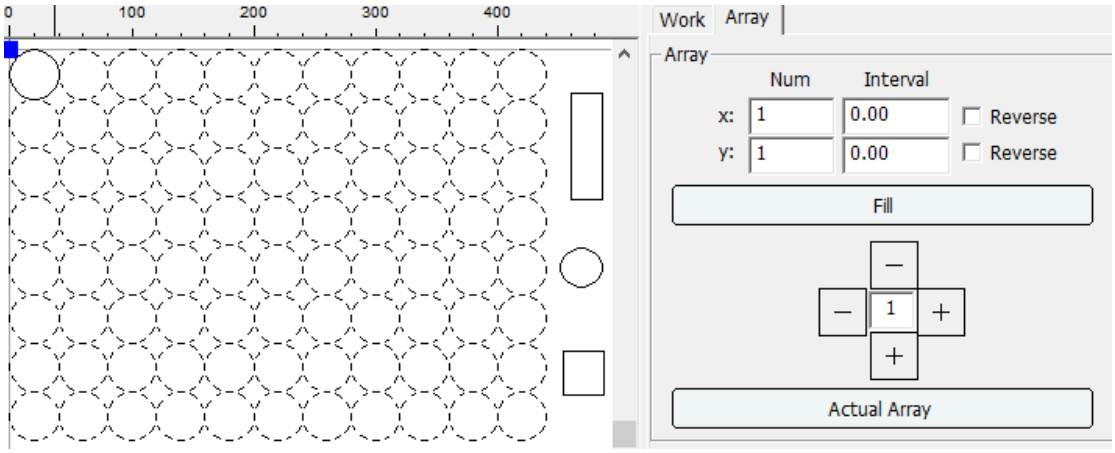


If the machine is an intelligent double head model, it will automatically work in separate mode when virtual array is being cut. When the end of the leftover material is cut, closest cut head will be selected automatically to work.

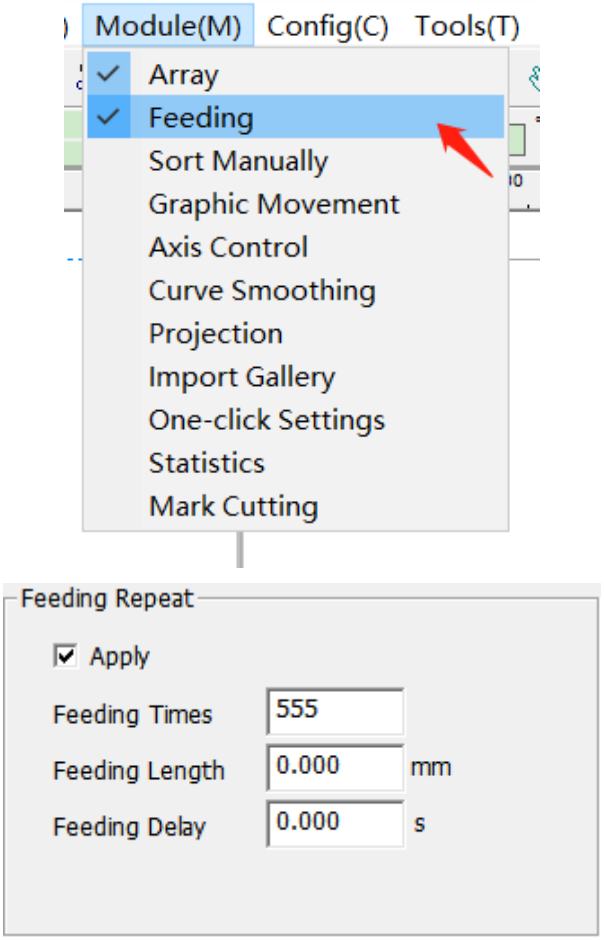
If dislocated material layout is required, two or more graphics could be arranged manually first, and then conduct grouping. After grouping, virtual array would be conducted.

Virtual array direction is controlled by machine coordinate system and the anchor point position. Choose "Reverse" to modify the corresponding direction of the array.

1.6.3 Feed processing

For machines with installation of the feeding device, working-feeding - working cycling mode can be realized.

First, open the feeding page to enable the [Feeding] function in the [Module] option in the software menu bar. After it is enabled, the [Feeding] function dialog box will appear on the right toolbar of the software, as shown in the figure:



To use the feeding function, first check the [Apply] button. If no feeding is required, do not check the [Apply] button or set the [Feeding Times] to 0.

【Feeding Times】: Refer to the times for working and feeding. If working process is conducted once, feeding is conducted once. And this working cycle would be continued as such.

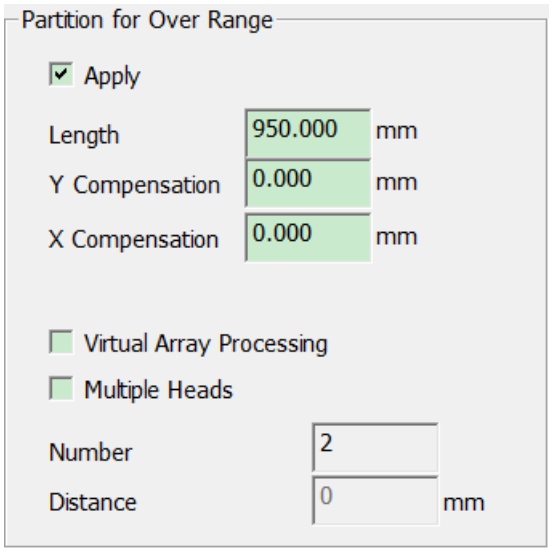
【Feeding Length】: Refer to the length of feeding.

【Feeding Delay】: Refer to the delay operation after feeding.

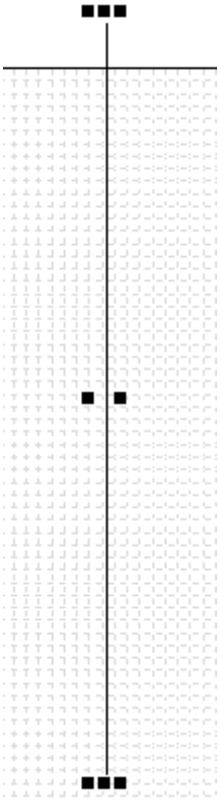
After the parameters is set, the [Apply] button need to be clicked. If feeding isn't needed, do not click the [Apply] button.

1.6.4 Partition for over range

If the processing file length is too long and exceeds the vertical dimension of machine, and if the machine has the feeding function, large file segmentation processing function could be started.
Parameter settings for large file segmentation



【Length】: The parameter should be no greater than the vertical dimension of the machine.
【Y Compensation】: When feeding movement deviates in the vertical direction, and cause dislocation of graphics, compensation coefficient should be set to compensate feeding deviation. This parameter test needs only to be done for once.
【X Compensation】: When feeding movement deviates in the horizontal direction, and cause dislocation of graphics, compensation coefficient should be set to compensate feeding deviation. This parameter test needs only to be done for once.
Test method:
If the height of the breadth side is 600 mm, draw vertical lines to 600 mm, set segmentation reference to 590 mm and compensation coefficient to 0, click [Apply] button. Machine processing process is as follows: Cut head move and cut from 0 to 590 of Y direction, then it feeds 590 mm distance. Then Cut head returns to position of coordinates Y 580mm, and cut to coordinates Y 590 mm.
Check the test result.



The long line below is 590 mm, the short line above is 10 mm, if the Top bottom direction offset is 0.2mm, then the top bottom repay is 0.2. If the left right direction offset is 0.3mm, then the left right repay is 0.3.

After the compensation coefficient is measured, every time a large file is segmented, modification of different segmentation reference doesn't require testing compensation efficient again. When the machine structure changes, or become aged after using for a long time, compensation coefficient could be tested again by using the same method.

【Virtual Array Processing】: Supports segmentation of virtual arrays and does not convert virtual arrays to solid graphics. This option is suitable for the situation where there are virtual array graphics and solid line graphics in the graphics.

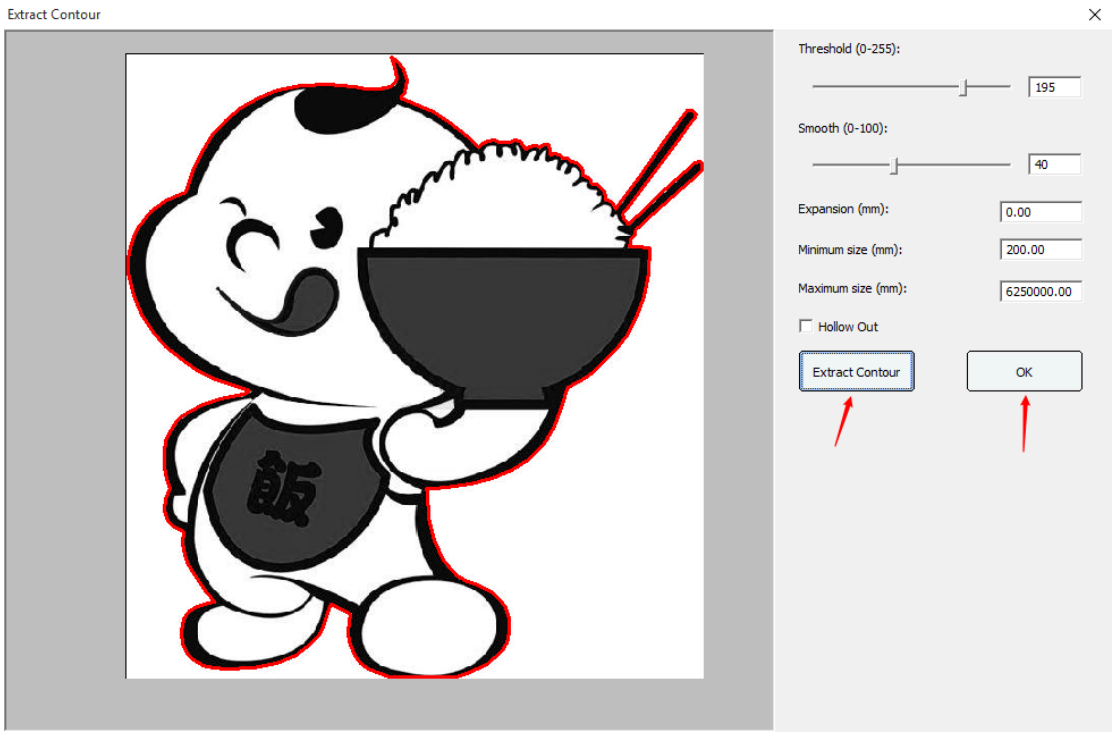
【Multiple Heads】: After enabling, you can make multiple heads process the same graphics, you need to set the interval between the two heads.

【Number】: The number of cut head.

【Distance】: The internal between the two heads.

1.6.5 To extract the contour

First open the picture and click the menu bar button  The "Extract Contour" function box will appear. After setting parameters, click extract contour to confirm. As shown in figure:



【Threshold (0-255)】: The higher the threshold is, the more contours are extracted, while the lower the relative threshold is, the fewer contours are extracted.

【Smooth (0-100)】: Smooth function on the graph line is not smooth, the user can drag the smooth bar to smooth.

【Expansion(mm)】: According to the user requirements of the outline of outward extension, a unit of 1mm.

【Minimum size(mm)/ Maximum size(mm)】: The maximum and minimum size area of the outline required by the user is 1mm per unit.

【Hollow Out】: After selecting the hollow out, the inner and outer contours are extracted together.