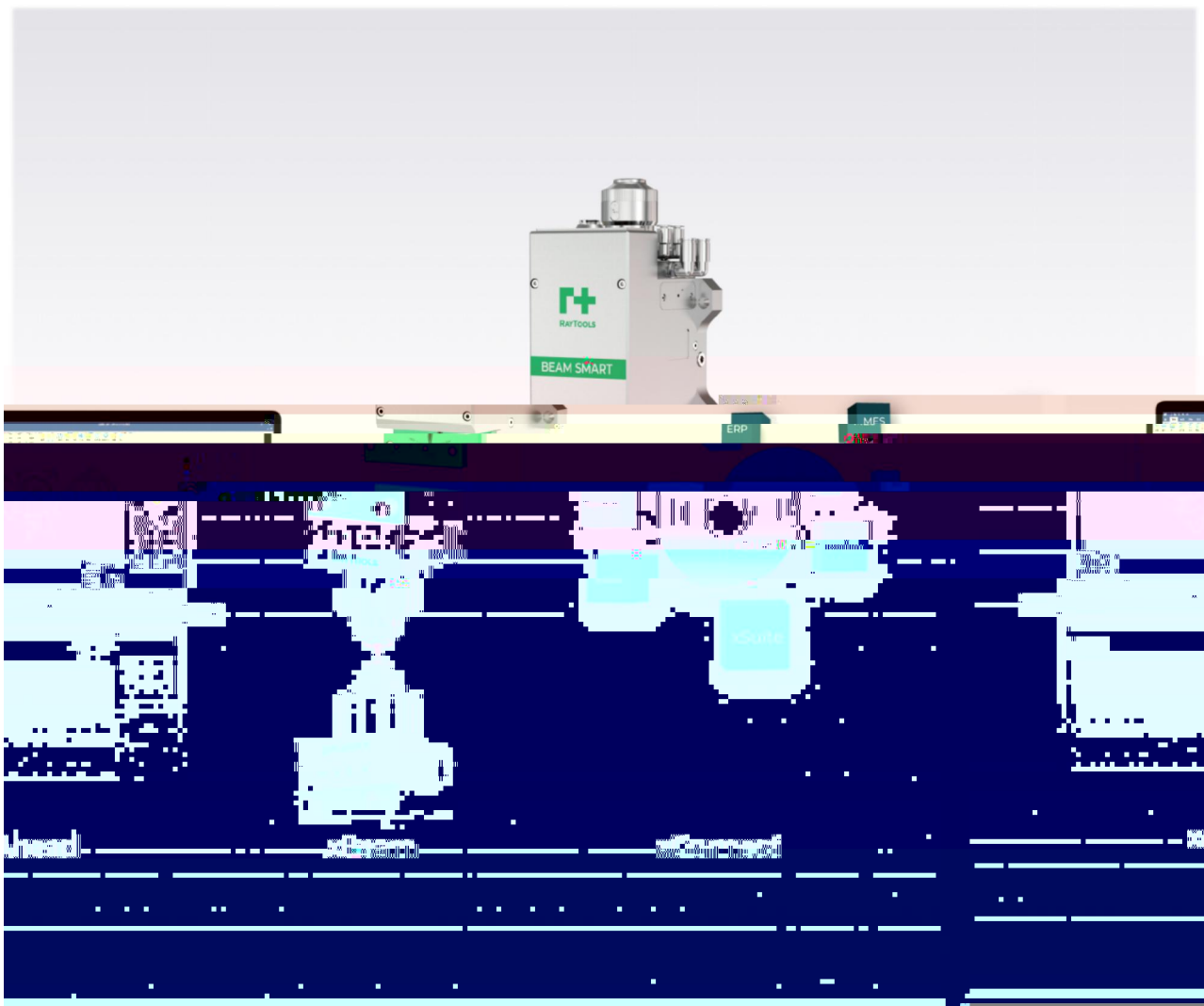




XC3000S Series

Laser Cutting System User Manual



Thank you for choosing this product from !

The manual provides a detailed introduction to the installation and use of the XC3000S Series professional laser cutting system, including a quick start, introductions to the function, notes and more. The software must be used with a dongle. If you do not have a dongle, you can use a simulator.

Please read the manual in detail before using the software and the associated equipment, as this will help you to use it better.

Due to the constant updating of functions, the product you receive may differ in some respects from instructions in the manual.

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If there is any error in the document, please inform us as soon as possible.

The data contained in this manual is only used to describe the product and shall not be regarded as a statement of security interest.

For the benefit of our customers, we will constantly try to ensure that the products we develop comply with the latest technology.

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Email: sales@raytools.com

Website: www.raytools.ch

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We will not bear any responsibility for losses and accidents caused by wrong operation or improper handling of our products.

Dismantling of the product will lose all warranty claims excluding the normal replacement of worn parts and components required for maintenance or commissioning operations.

Unauthorized modification of products or use of non-original spare parts will directly lead to the invalidation of warranty and liability exemption.

It is recommended to only use the spare parts provided by us or submit them to our designated professional team for installation.

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Ensure that the product is used in a dry environment.

Ensure that the product is used in the environment respectively EMC standards.

The product is only allowed to run within the parameters specified in the technical data.

Get t a n n k

Be familiar with the basic provisions of work safety and accident prevention, having received equipment operation guidance.

Read and understand basic safety instructions and operations.

Must have studied the relevant regulations and safety instructions and understand the possible hazards.

Comply with relevant regulations and implement

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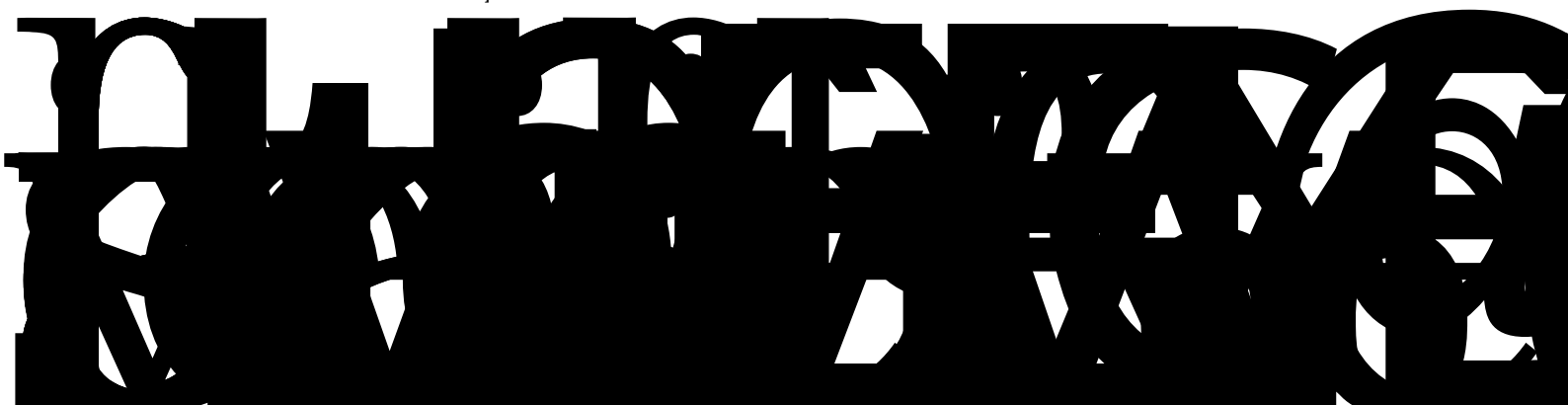
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Once the software has been installed, the icon will appear on the desktop, as shown on the right.

Double-click left mouse button on it to run

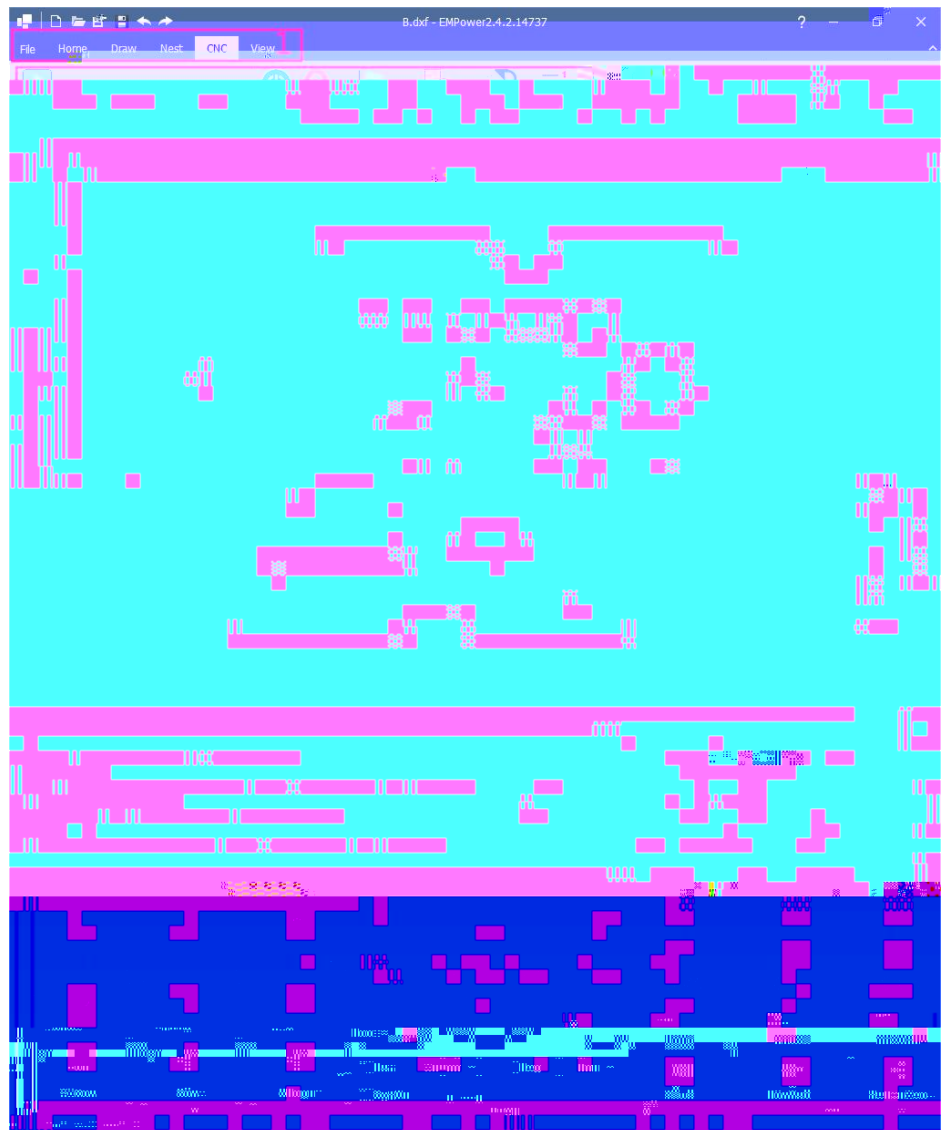


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The mainform is one of the most common used user interfaces. There are many operating areas,

as shown below:

- 1: Menu
- 2: Toolbar
- 3: Quick Drawing Toolbar
- 4: Drawing Area
- 5: Control Panel
- 6: Process Toolbar
- 7: Log
- 8: Status Bar



is shown in the following diagram. Our software has four sub-pages: "Home", "Draw", "Nest" and "CNC".


Select the sub-page to display its contents. When it is in processing, the "In processing" page appears and cannot be switched to another page until the process stops.

The toolbar on each sub-page has several "columns" according to functions such as "View", "Tool form", "Process Setting", etc. And each column contains various functions.

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In the top left corner of the toolbar there is a "File Menu", which contains some file-related options. Click on the  button to open the menu, as shown below.

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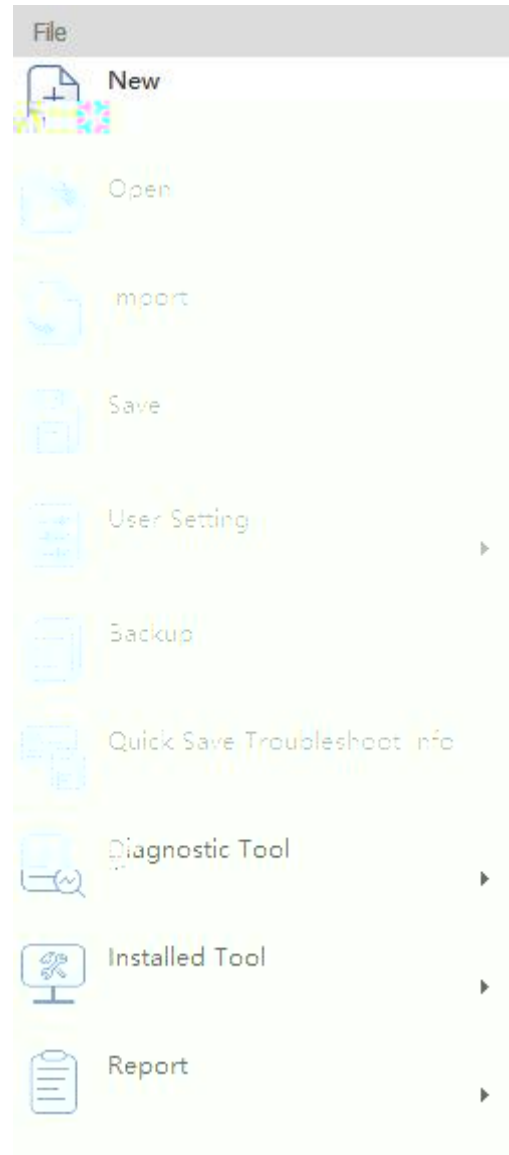
Create a new drawing and not save the current one.

\

Import graphics to be processed. Supported file formats include dxf, emw, nc, nsp, etc.

@

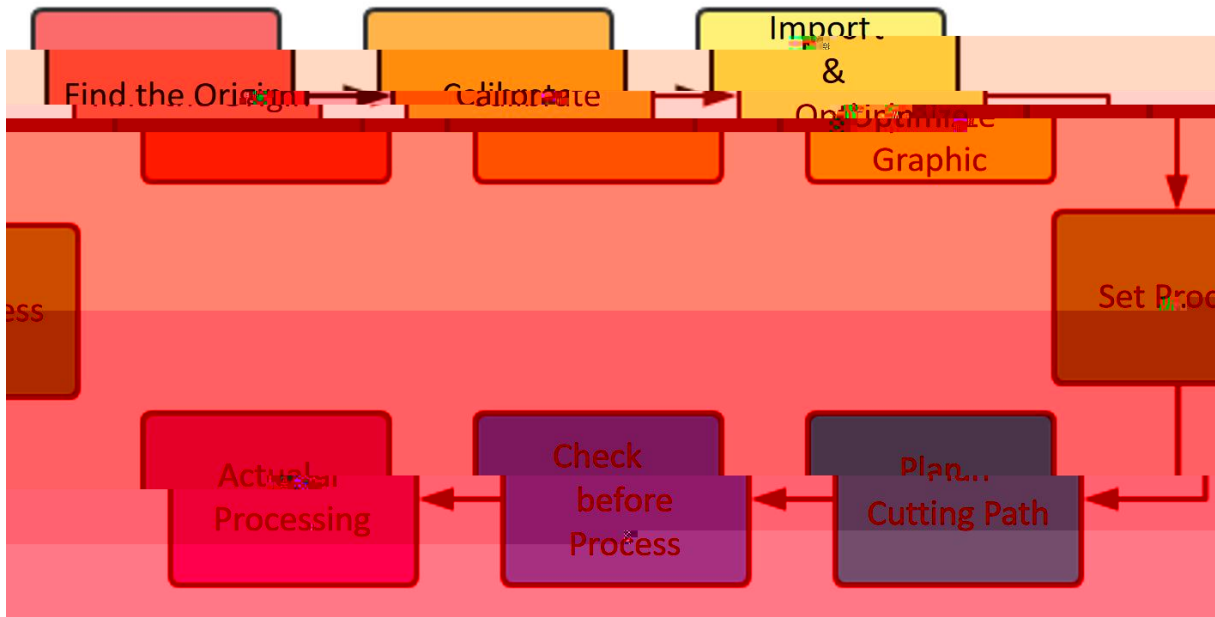
Import another file to the drawing board



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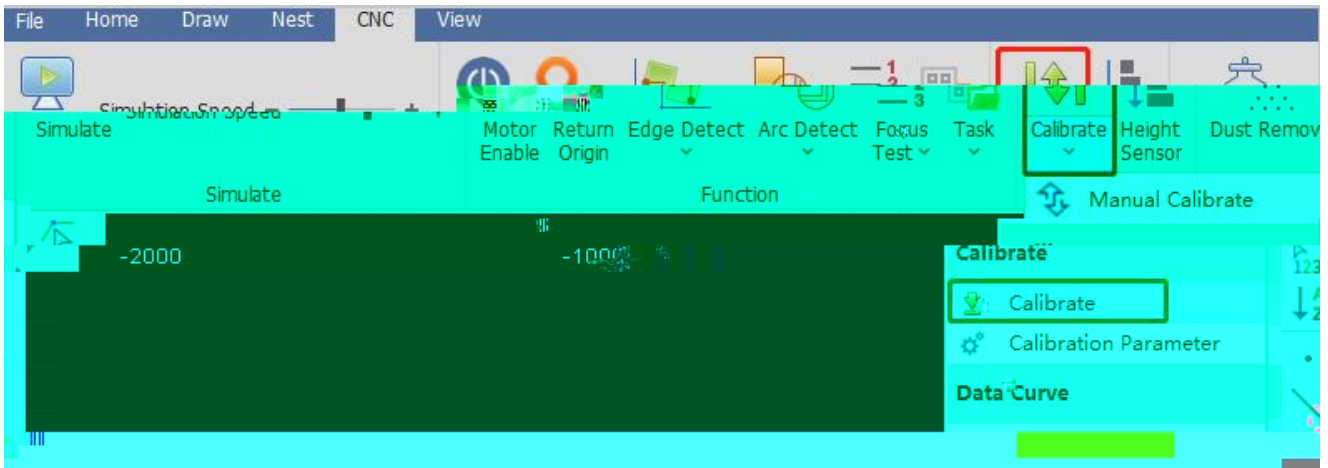
After opening the software, click on Return O

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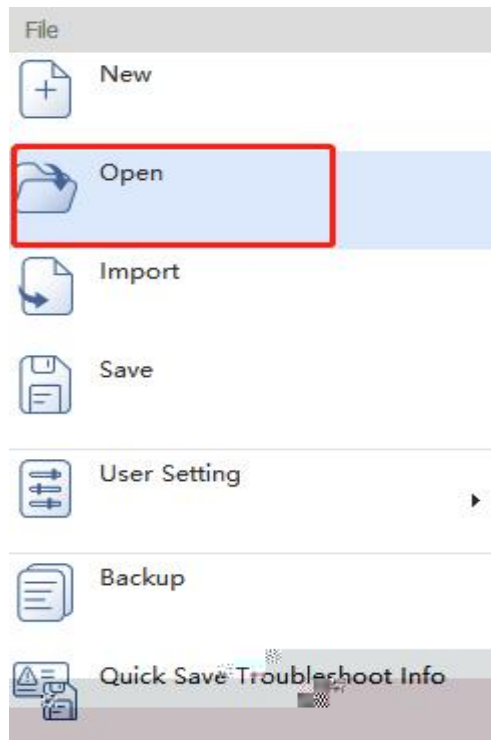
After the machine completed returning origin, place the cutting head above the clean flat sheet to be cut.

Click on the drop-down button of Calibrate in CNC sub-page, and then the drop-down bar will pop up. Click on Calibrate button in the bar, as shown below:



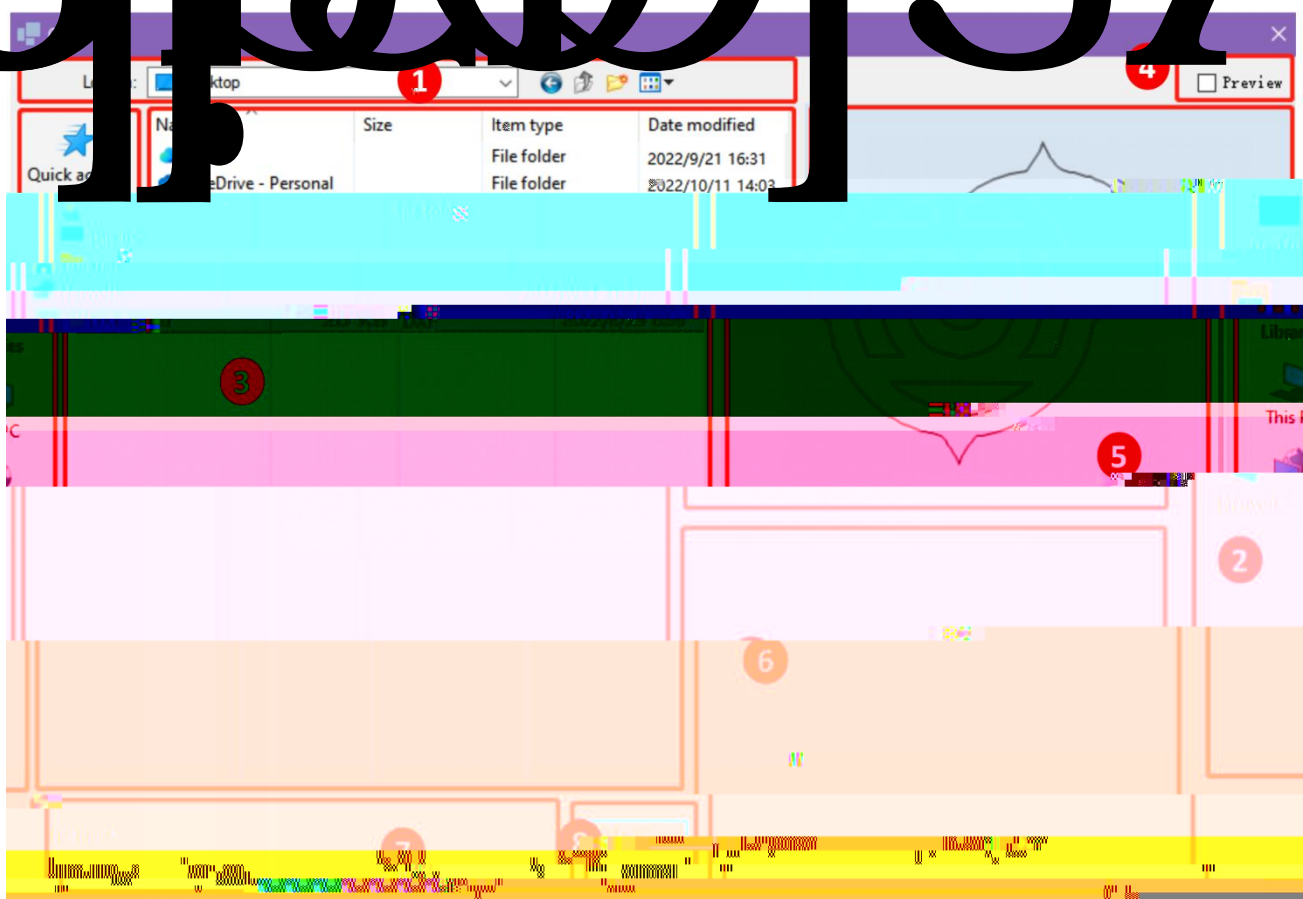
@ \ 8

After the cutting head has been calibrated, import the graphic to be processed by clicking on Open button in File Menu, as shown below:



An interface of graphic import will pop up. Select the graphic in the disc and click on Open button. Currently supported file formats include DXF, EMW, NC, and NSP, as shown below

OPERATIONS



#

Show the current file path.

)

Select the disc of needed file.

7

Files and folders are shown as complying with the filter criteria by current disc path.

h

Select to preview the graphic or not.

h

Click on Preview r




If you need to save process parameters of current layer, click on Export to save them as a file. Then, you only need to import the layer process parameters, select the material thickness, and click OK.

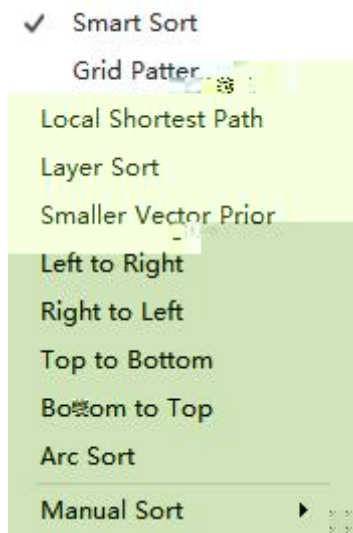
h # h



This step is to sort the graphics to be processed. Click on  button in Home or Draw sub-page to auto sort the



graphics. Click the drop-down button, , of Sort to see there are several ways. Select one according to your need. It is shown below:



You can also group the graphics by selecting the graphics to be grouped and clicking on  button in Home or Draw. Graphics in the selected group will be a whole and the processing sequence fixed. Later sorting will not affect the processing sequence in current group.

8 \

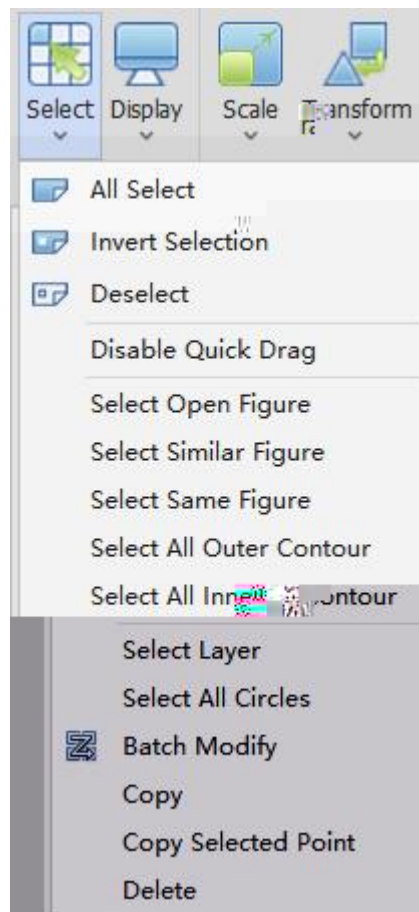
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o

There are various ways to select graphics. Basic operation is to click on the graphic contour. Another way is box selection. Left click and hold the mouse. Then, drag it to create a translucent box to select the graphic.

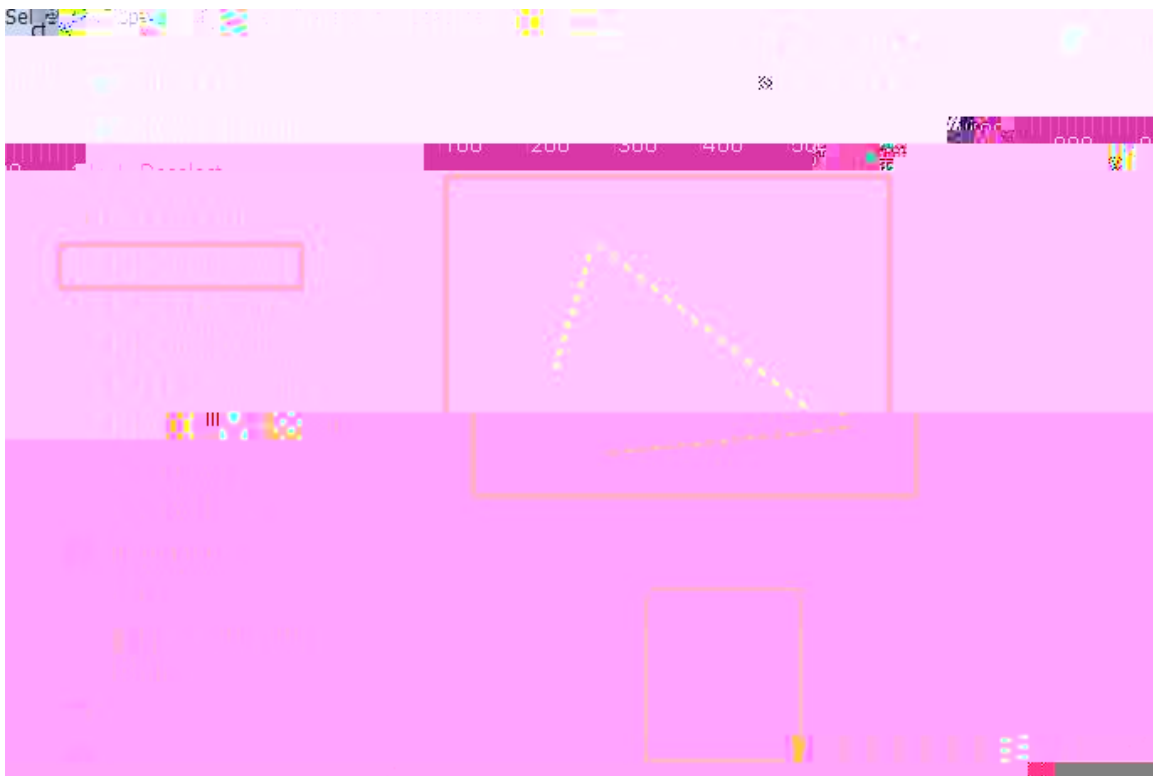
There are two types of box selection. When drag the mouse from left to right, only the graphic completely covered in the selection box will be selected. When drag the mouse from right to left, once part of the graphic is in the box, the graphic will be selected. You may use both types flexibly up to your need.

Click on Select in Home sub-page, and the drop-down bar will pop up. There are more advanced options, as shown below:



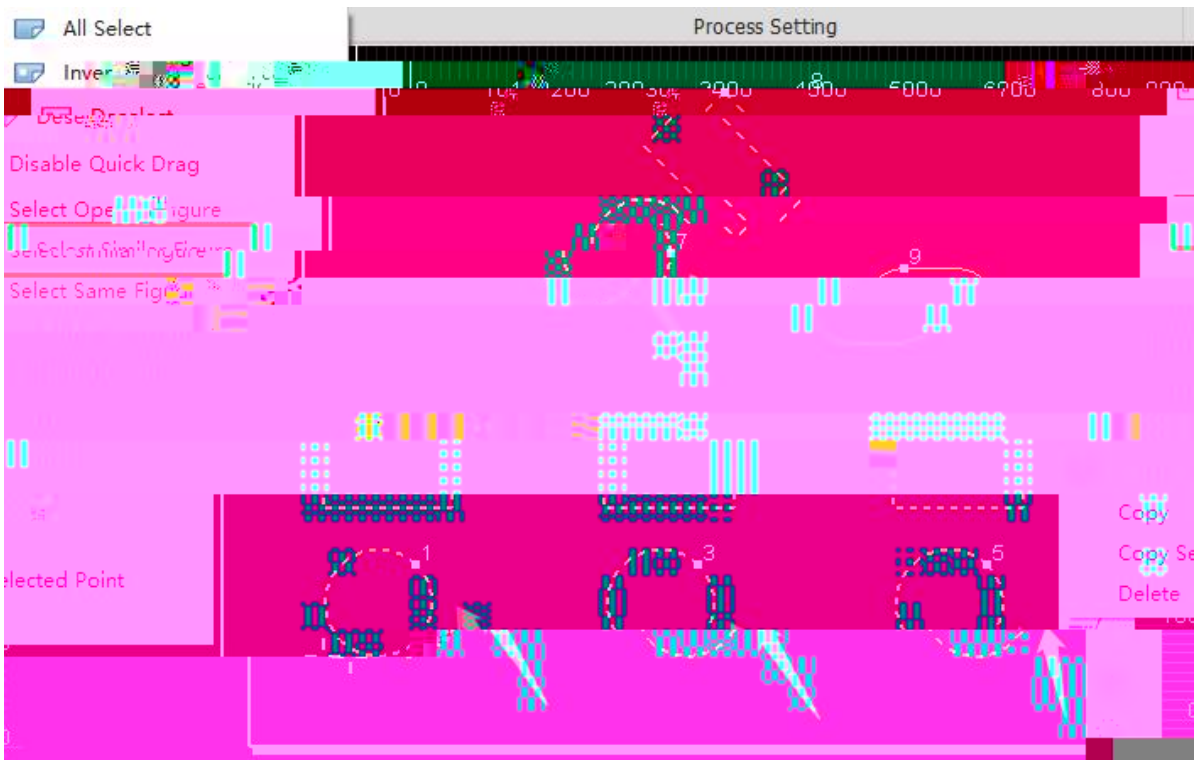
- ° o : select all the graphics in current drawing
- @ o : change current selected graphics into unselected.
-) : deselect the selected graphics.
-) j) : make the graphics in current drawing area can not be dragged.

o \ 7 : select all the open graphics in the drawing area, as shown below:



o o 7 : select all similar graphics in the current drawing as follows:

- a. Select a target graphic (squares and circles are shown in below figure as an example),
- b. Click on Select Similar Figure,
- c. All squares and circles of the same size in the drawing are selected.



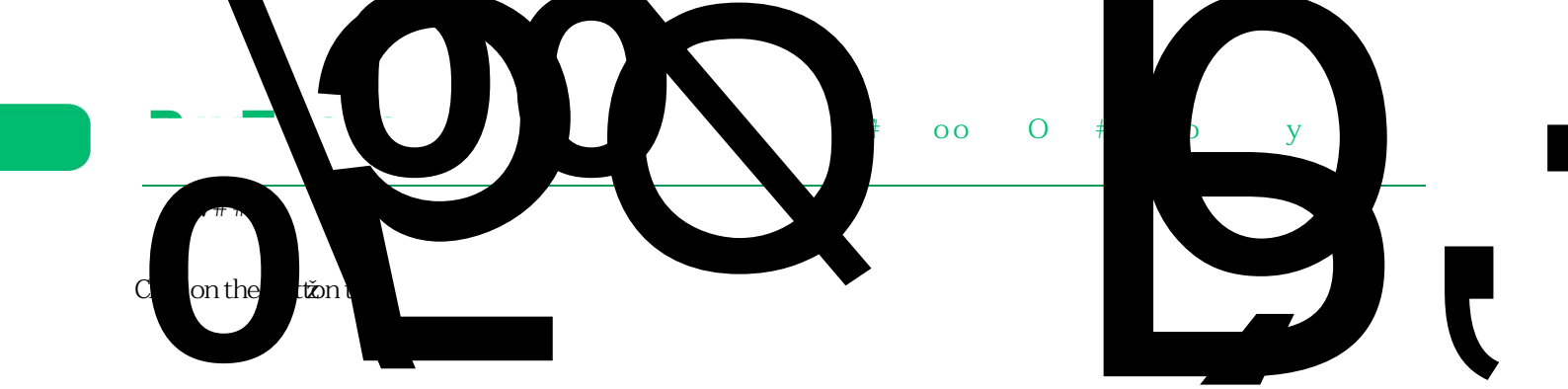
G

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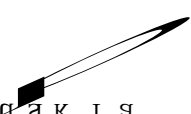
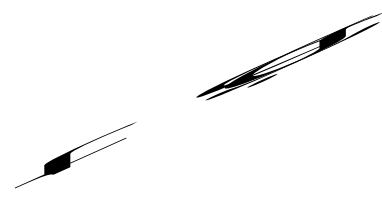
)

Click on Display button in t



on the tton

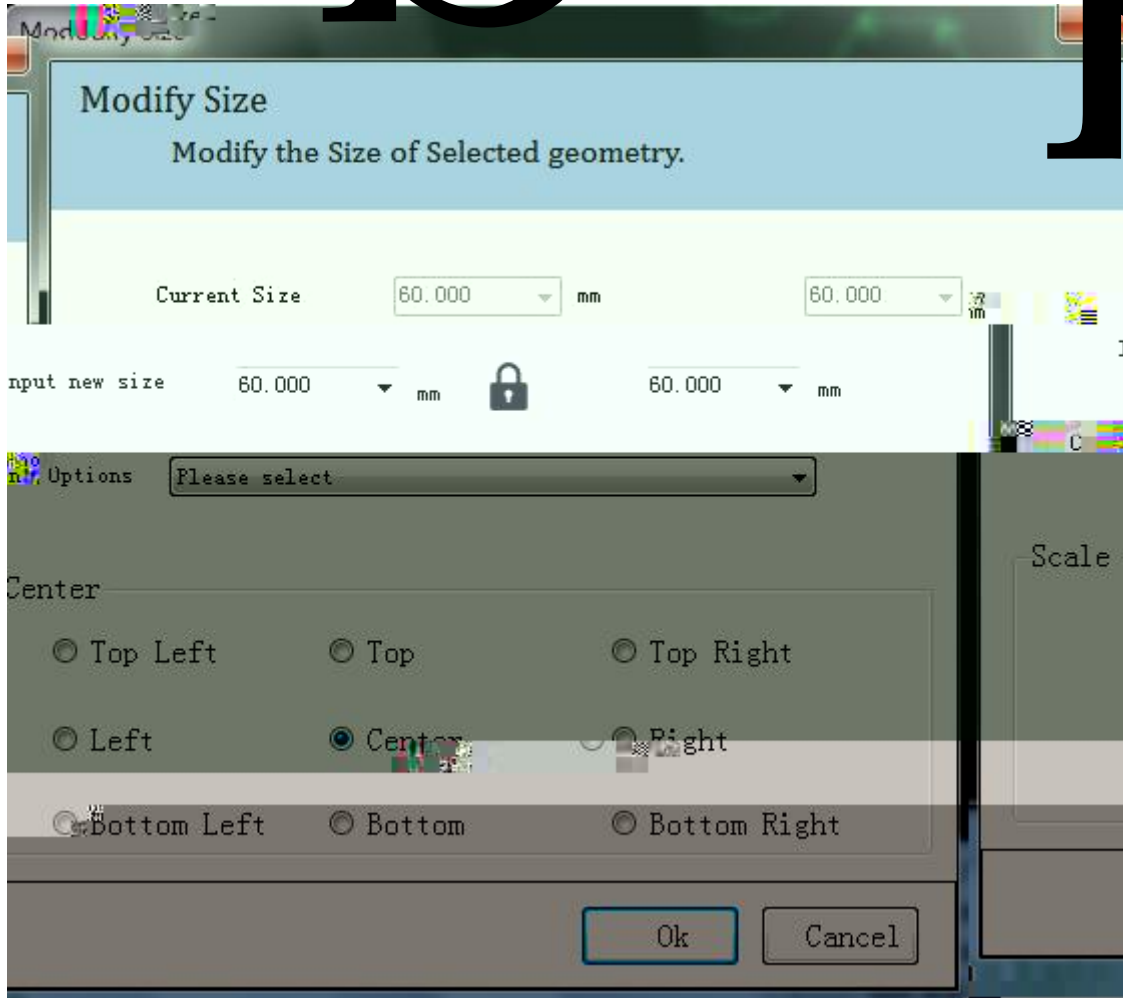
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To modify the size of a graphic, select the graphic and click on the scale button. You can input a new size and click on the OK button to complete the operation. The interface is shown below.

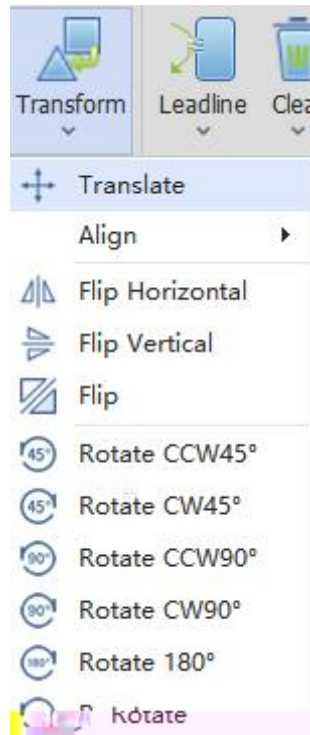


When the status of the lock in the interface is  , the length and width of the graphic scale according to its original size. To set length and width individually, click on the button as  to unlock it and enter the needed size.

Common Options: select the option according to needed

u

Click on Transform button in the Home sub-page, and the drop-down bar will pop up, as shown below:



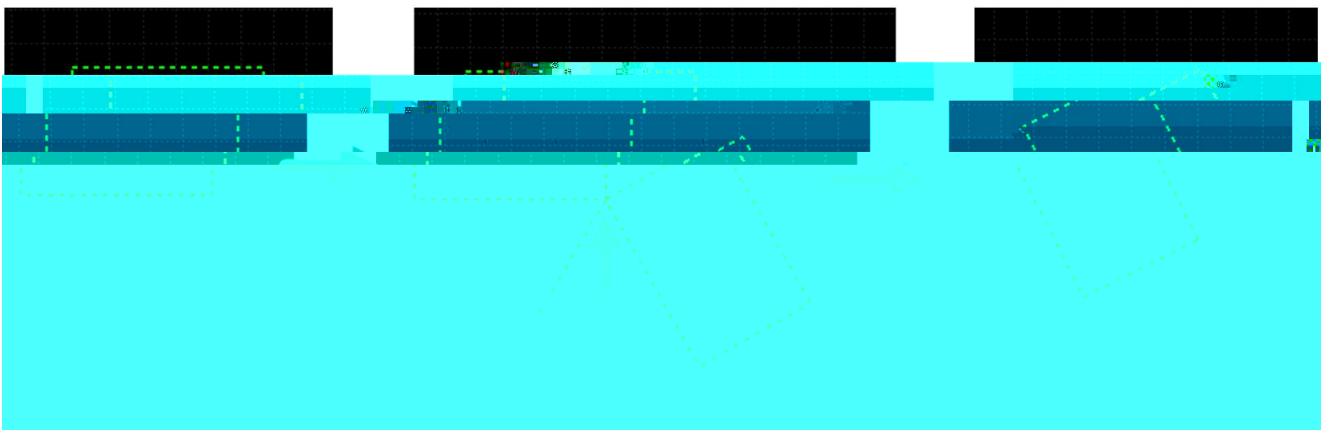
u : select the graphic to be translated and click on Translate. In the drawing area, click on one reference point and move the mouse to drag the graphic to any position. Click on anywhere in the drawing area to complete.

° : select the graphic to be aligned and click on Align to open the expansion bar. There are several types of alignment in the expansion bar. Click on the needed one to complete.

7 = : select the graphic to be flipped and click on Flip Horizontal to complete.

7 † : select the graphic to be flipped and click on Flip Vertical to complete.

7 : select the graphic to be flipped and click on Flip. Click on anywhere in the drawing area for a reference point. Move the mouse to drag the graphic to any position and click on anywhere to complete, as shown below:

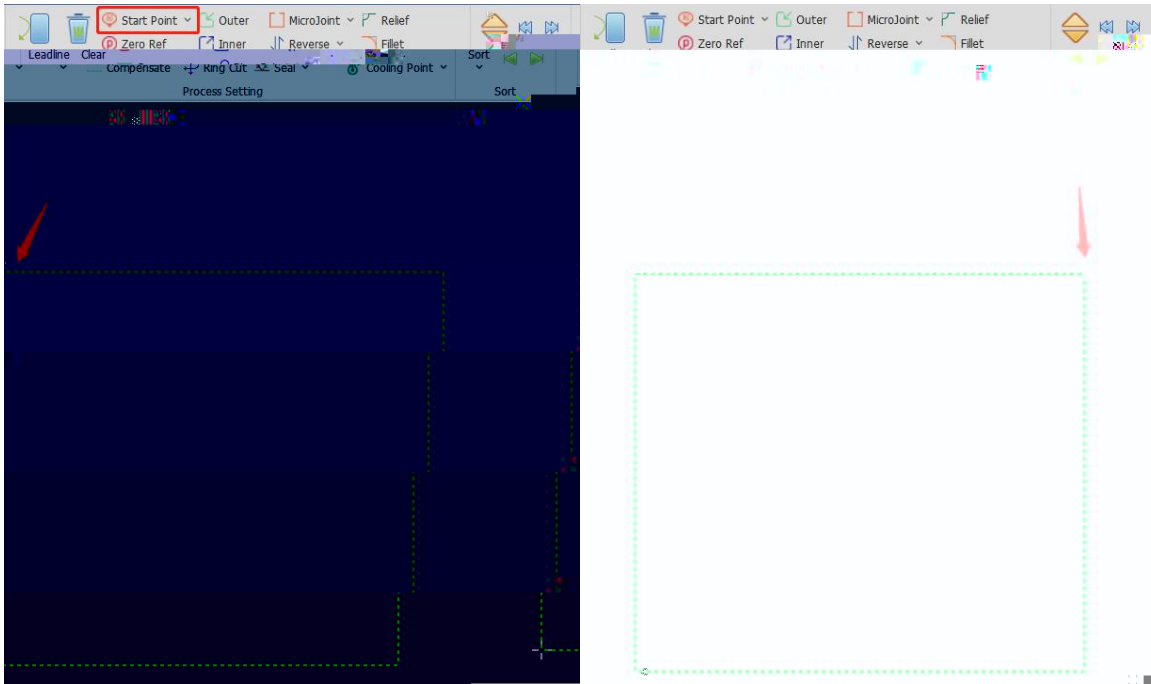


o h

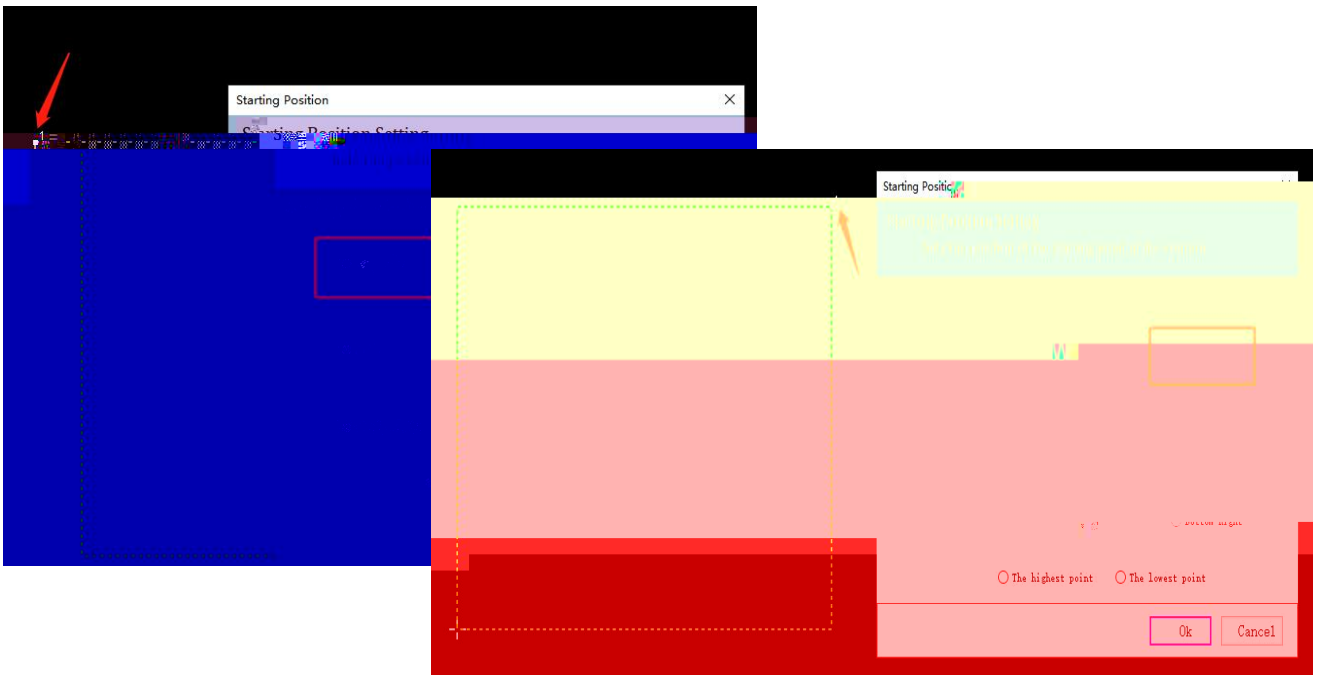
Set the start point of processing

Click on Start Point button in the Home sub-page. The drop-down bar contains Manual Start Point and Auto Start Point.

U o h : click on it and select the contour of the graphic to complete setting the start point, as shown below:



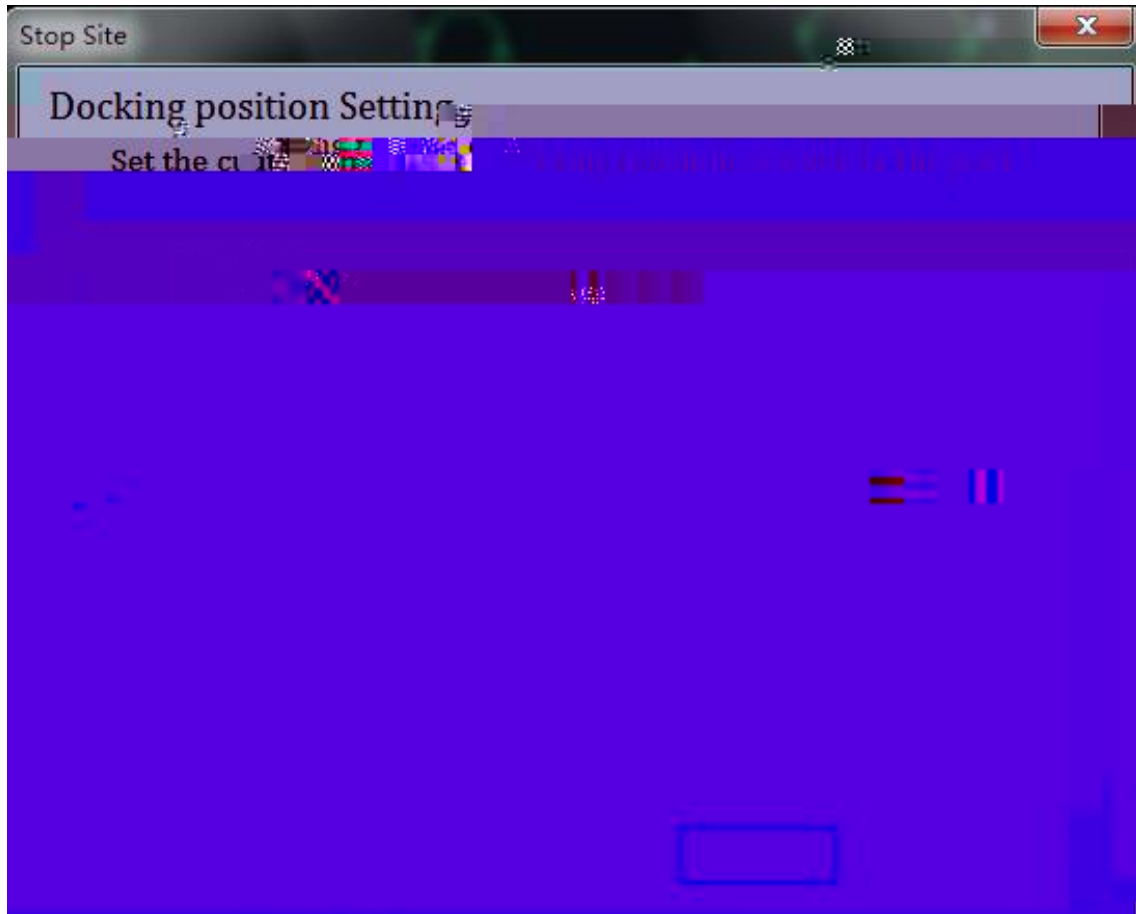
o h : select the graphic to be processed and click on Auto Start Point. Set the start point in the new interface and click on OK to complete, as shown below:



- k

Set the cutting head to a relative position to the graphic as the zero reference (docking position).
The bottom left is recommended.

Click on Zero Ref button in THE Home sub-page and set the parameters. After setting, click on OK to complete, as shown below:

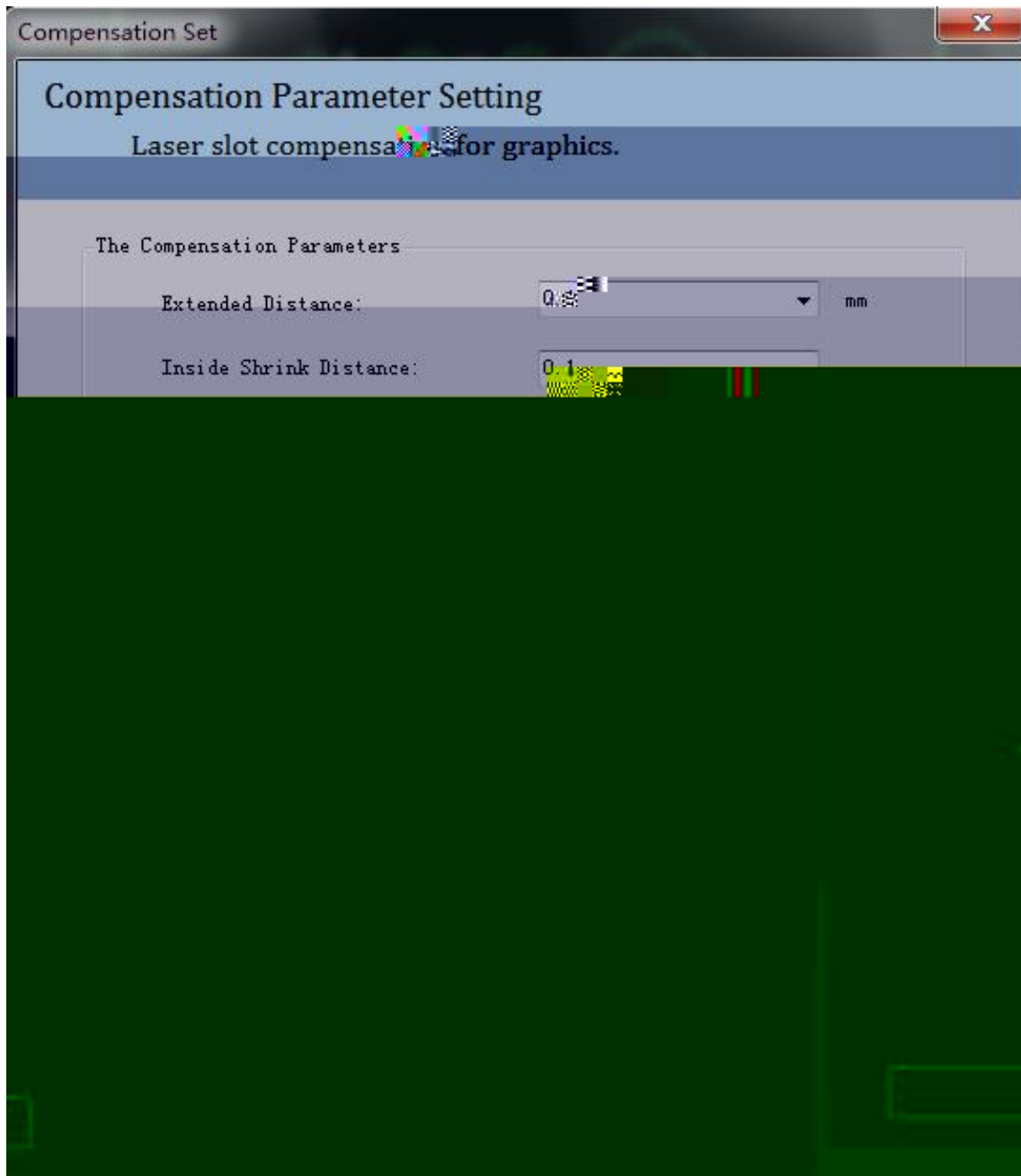


Note: "Select the zero reference by following the graphic" can be selected in the "Advanced Selection" in the Configuration Tool.

#

By scaling the graphic, compensate the impact of the cutting slots to the parts. Sharp and round corner can be chosen in sharp point processing. Way of compensation includes Expand and contract, All expand, and All contract.

Select the graphic to be compensated and click on Compensate in Home sub-page. Set the parameters and click on OK to compensate the selected graphic, as shown below:



u # h

Extended Distance: the value that increases in equal intervals outwards.

Inside Shrink Distance: the value that decreases in equal intervals inwards.

Sharp Point Processing: to use sharp or filleted corner.

#

Read the configuration in the compensation library by selecting materials and thickness to quickly apply.

Modify default parameters in the compensation library by selecting materials and thickness.

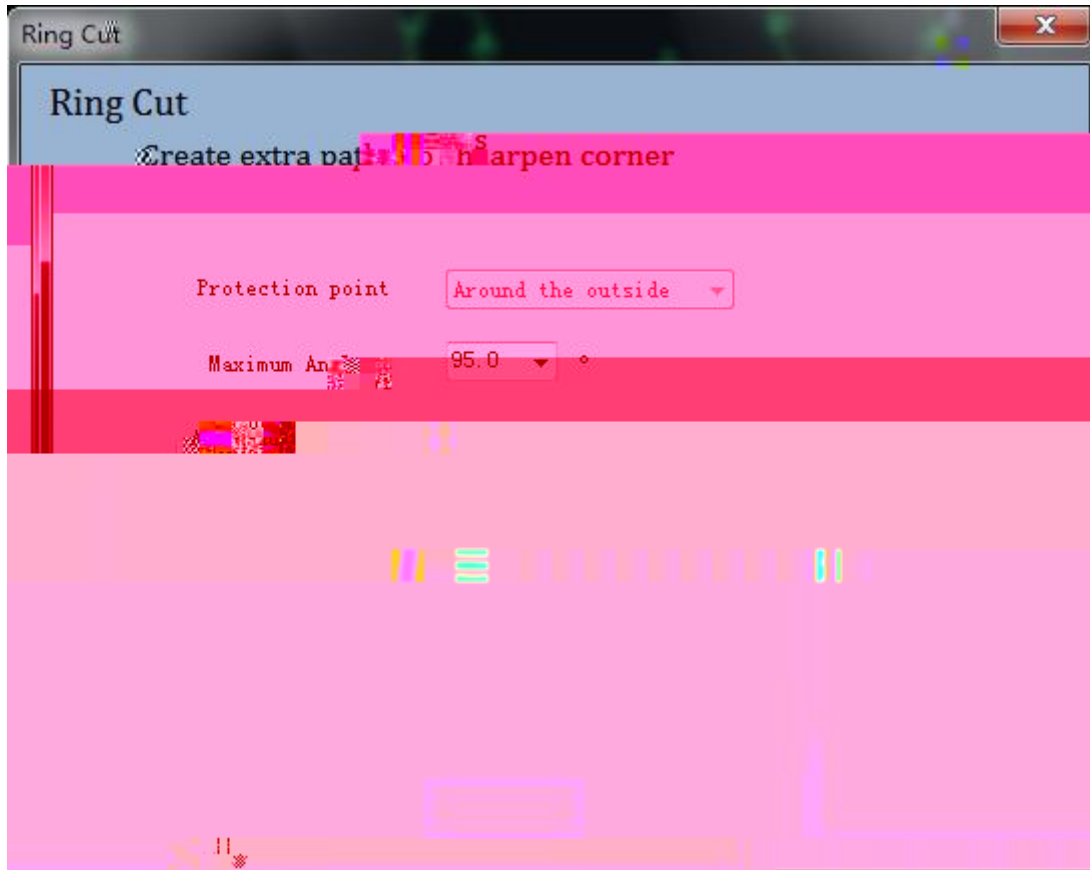
‡

Way of compensation includes Out Expand and In Shrink, All Out Expand, and All In Shrink.

k #

Add Ring Cut or cooling point to the graphic.

Select the graphic to be ring cut and click on Ring Cut in Home sub-page. Set the parameter for ring cut and click on OK to complete, as shown below:



Protection Point: select the type of ring cut., with the option of around the outside.

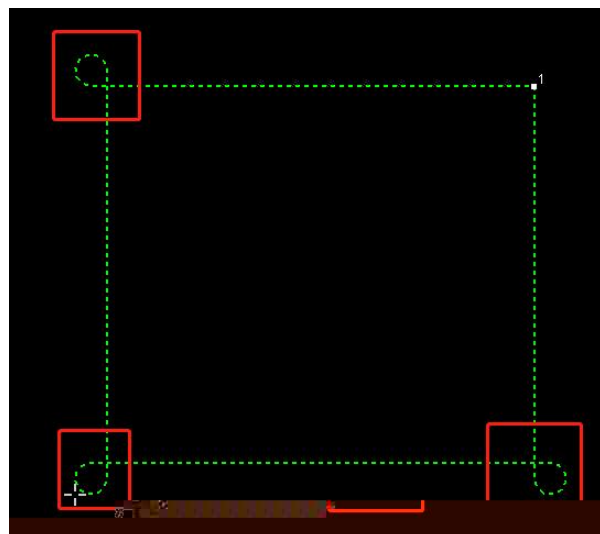
Maximum Angle: corner bigger than this angle will not use the outside cutting

OutsideCut Type: select the arc or triangle as the contour of outside cutting

OutsideCut Length: set the perimeter of the contour of outside cutting

ShortestSide Length: set the shortest edge length.

The graphic added with ring cut is shown on the left.



U K

The workpiece with micro connections can avoid falling off. Micro Joint includes manual and auto ones.

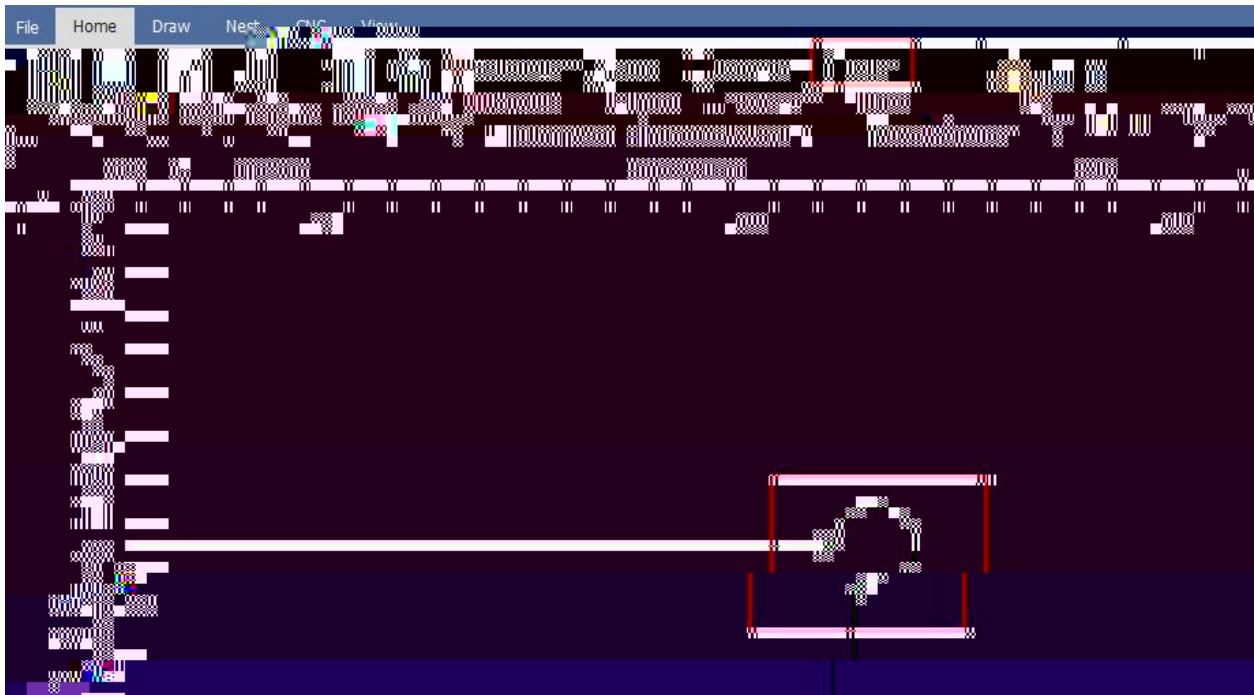
U U K

Select the graphic



k

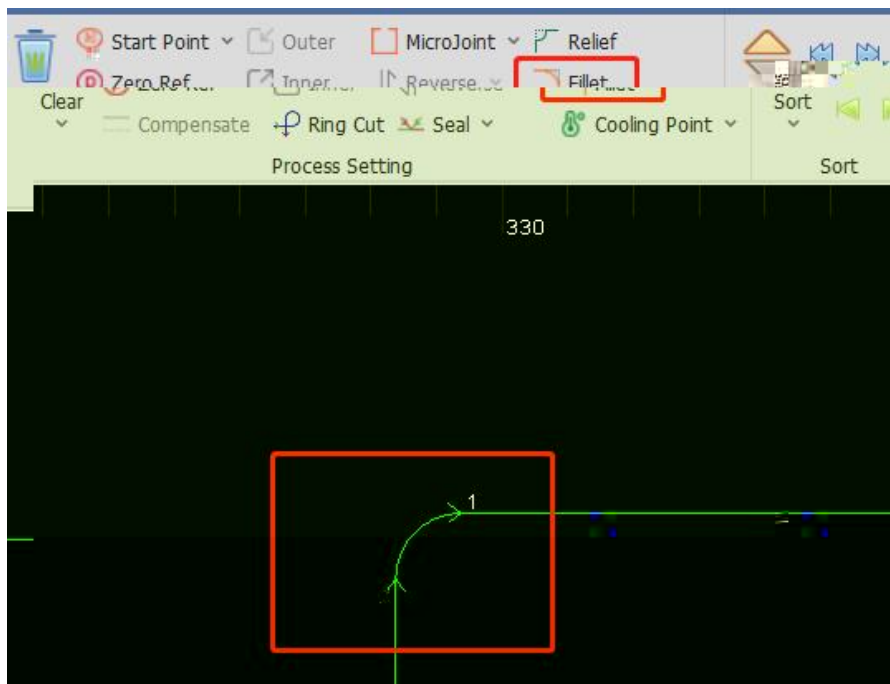
Click on  Relief button to generate release corners for the following bending process.

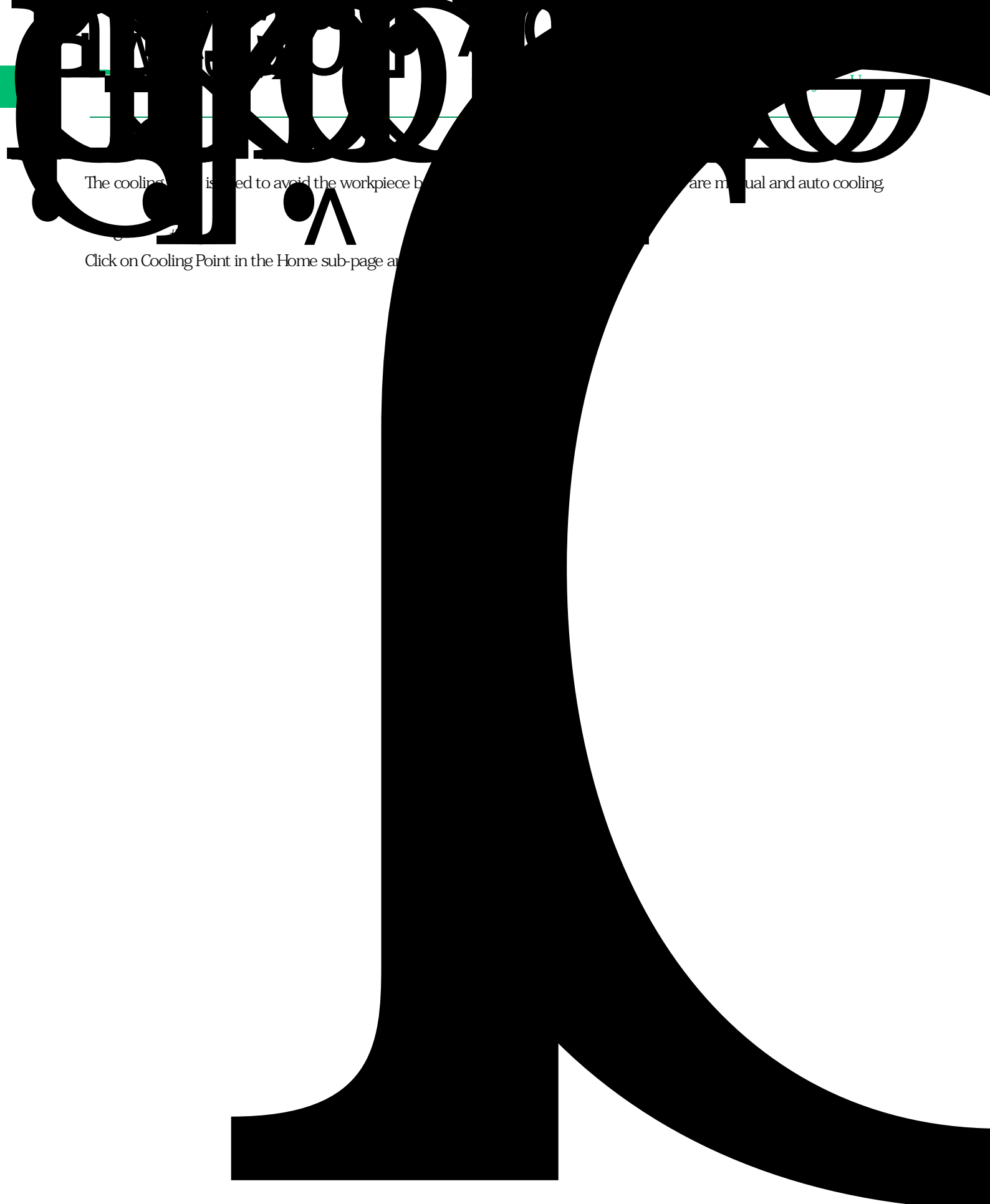


7

Switch the sharp corners into the filleted corner:

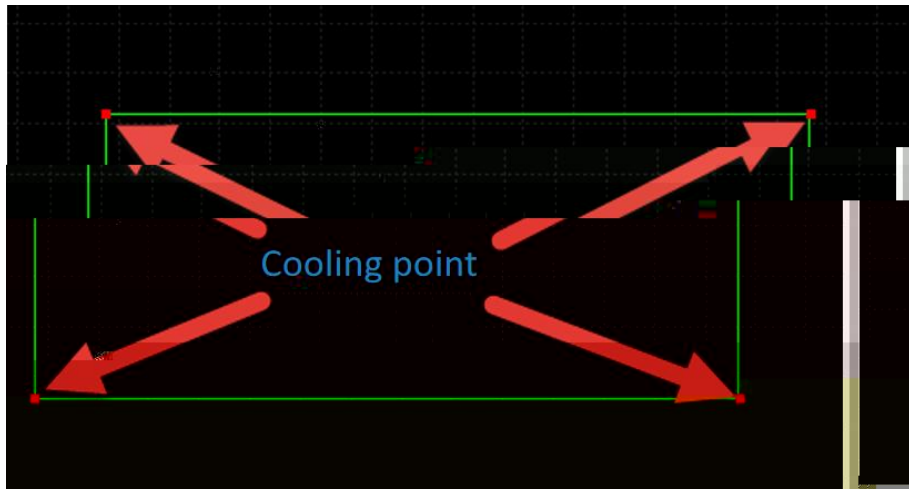
Select the graphic needs fillet and click on Fillet button in the Home sub-page. Set the fillet radius and click on OK. Then, click on the corner of the graphic to complete. The setting of fillet is shown as below:





The cooling... is used to avoid the workpiece b... are manual and auto cooling

Click on Cooling Point in the Home sub-page at



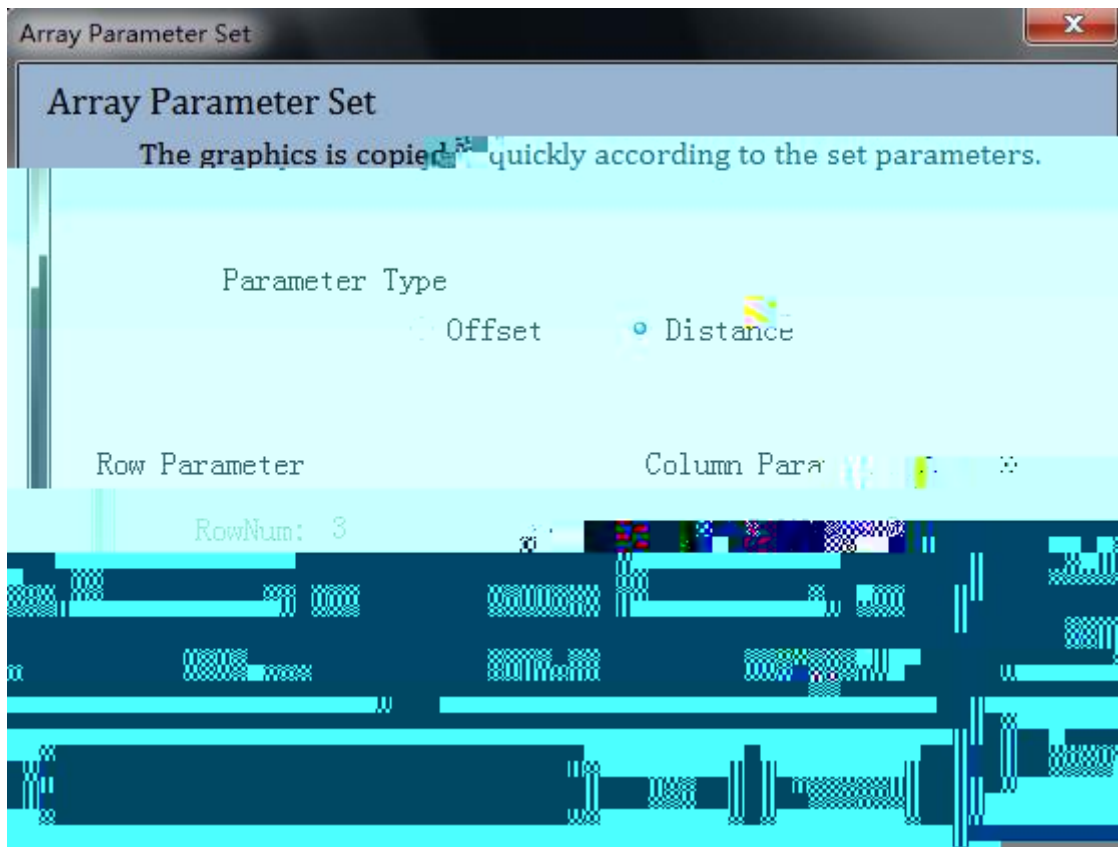
- U e: corners bigger than this angle will not use the cooling point.
- O : select to add the cooling point at the start point of the graphic.
- o : deselect the function and not to a es t



In the Sort column, four manual sorting buttons are available: **Left to Right**, **Right to Left**, **Top to Bottom**, and **Bottom to Top**. The **Manual Sort** button is also present.

Quickly copy the graphics. There are two kinds of an array: rectangular and circular:

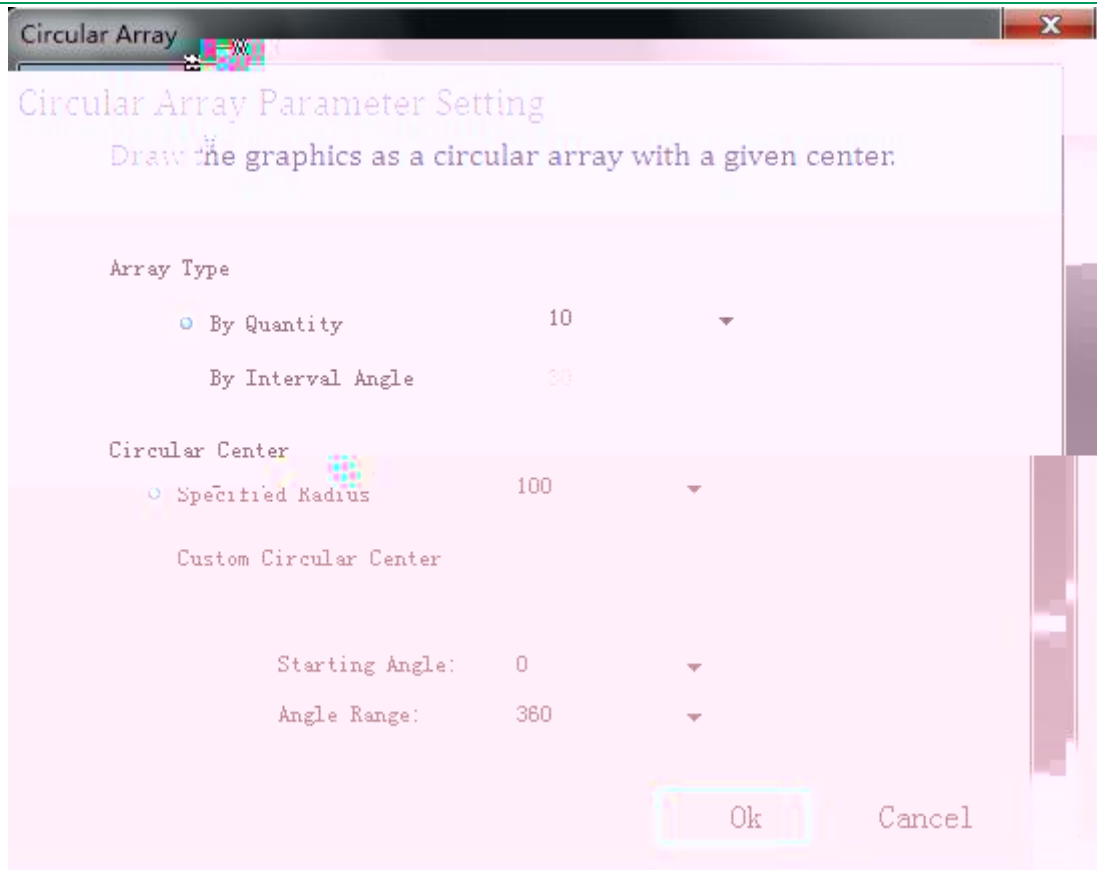
k



Select the graphic to be copied in an array and click on Array button in the Home sub-page.

Set parameters of the array and click on OK to complete. The parameter setting is shown as below:

- h : select to array according to offset or distance.
- k # V : the number of row and column in the array
- k #) \ : the distance and offset value
- y) O k : directions of the array
- #



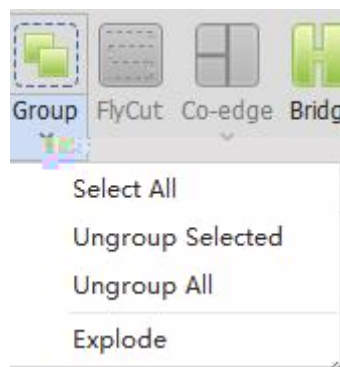
Select the graphic to be arrayed and click on the drop-down button under Array. Click on Polar in the drop-down bar. Set parameters of the array and click on OK to complete. The parameter setting is shown as below.

- ° u : array by quantity or interval angle.
- # # : set by specified radius or custom stretching in the drawing area.
- o : starting angle of the array.
- ° : array within the angle range.

8

Grouping multiple graphics into a whole to avoid shifts in the position of dragging graphics.

Select multiple graphics and click on Group button in Home sub-page. The selected graphics will be a whole. The sorting and position of graphics and the layers will be fixed after being grouped. Then, the graphics will not change if sort or drag them. Click on the drop-down button of Group to see the drop-down bar, as shown below:



Ungroup

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- o : select groups in the current drawing
- y o : select the group of graphics and click on Ungroup Selected button. The selected group will be canceled.
- y : click on Ungroup All button and all groups in the current drawing will be canceled.
- : select the graphic and click on Explode. The selected graphics will be broken up into the smallest segments of a line (arcs or lines).

7 #

Set the selected graphics as the path and layer. The parameter setting

TRACING

7 # U

Circle: select to cut

Linear: select to cut rectangular and polygon-shaped paths.

Radar: linear cutting path without smooth arcs. Other cutting modes include Contour and Leadline.

o U : select different sort modes to use different fly cutting paths.

o : select the start position of the graphic to be processed.

u : if the horizontal and vertical length of the graphic is smaller than the tolerance, the graphic will be in a line or an array; if larger, the graphic will be in multiple lines or arrays.

U o K : if the distance between two graphics is less than the max smooth joint length, an arc tangent will be auto-added to the cutting path to speed up processing and improve efficiency.

o * k : radius of the arc mentioned in Max Smooth Joint.

- O " 7 8 : select to lift the Z-axis in the travel between two groups in fly cutting.

O : laser on in advance for better cutting off the workpiece.

: as over-cutting distance, laser off delay is for better cutting off the workpiece.

#

Combine workpieces with common edges to use one edge for cost efficiency and improve processing efficiency.

Select graphics to be co-edged and click on Co-edge button in the Home sub- c e

Graphic 1 p6

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Open

After setting the maximum number of
selected objects.

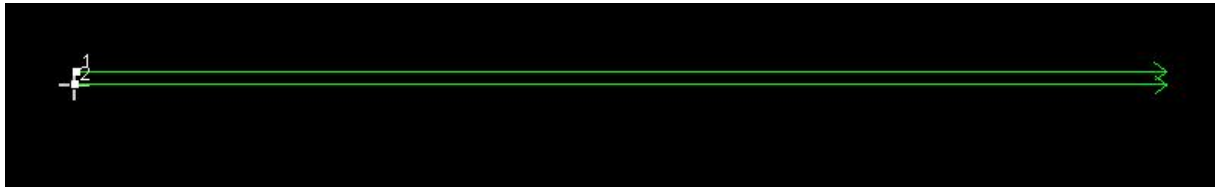
Select the object to be bridged and
double-click the drawing area to see the



\

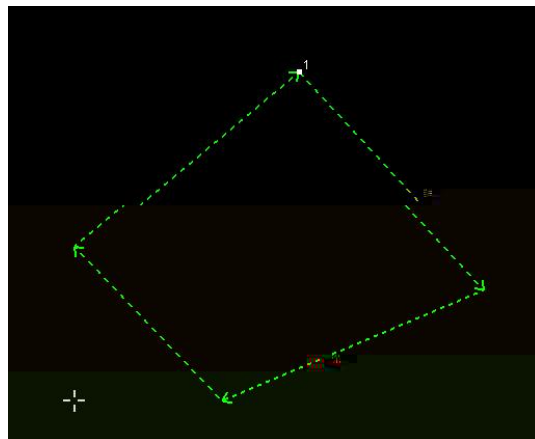
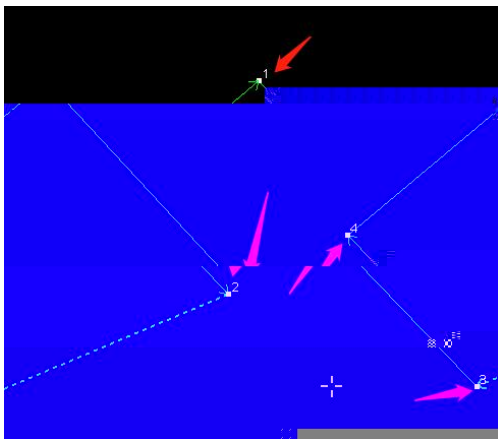
Optimi e

)) : some lines are duplicates though visually not. Select the graphic, click on Delete Duplicate, and set the deletion tolerance. If the max distance of two contours are less than the tolerance, they are duplicate. After parameter setting, click on OK to complete, as shown below:



) @ : In the imported graphics, there may be some graphics whose size is too tiny to recognize and the position may move in processing. You can click on Delete Invisible button to set the minimum contour size and click on OK to delete the tiny graphics whose size is smaller than the minimum one.

K o : in drawing area, there may be some graphics are connected visually but actually not. Click on Joint Segment button and set the MerTolerance, merging tolerance which refers to if the interval of the nearest breakpoints of two contours is within the tolerance, the contours will be jointed together. After tolerance setting, click on OK to complete, as shown below:



)

When drawing a graphic in the drawing area, there will be a prompt of next step in the log area.

User can complete the drawing with the prompt.

○

Click on Line button in the Draw sub-page and click on the star

f e s g

o o O # o y U

h Click on Polygon button and click in the drawing area to set the start point. Drag the mouse and click again, and then repeat to draw graphics with multiple lines.

The default is to draw a straight line. You can switch it to an arc by pressing A on the keyboard, switch back to a straight line by L, and make the contour closed according to the selected line type by pressing C. Press Enter to complete the drawing.

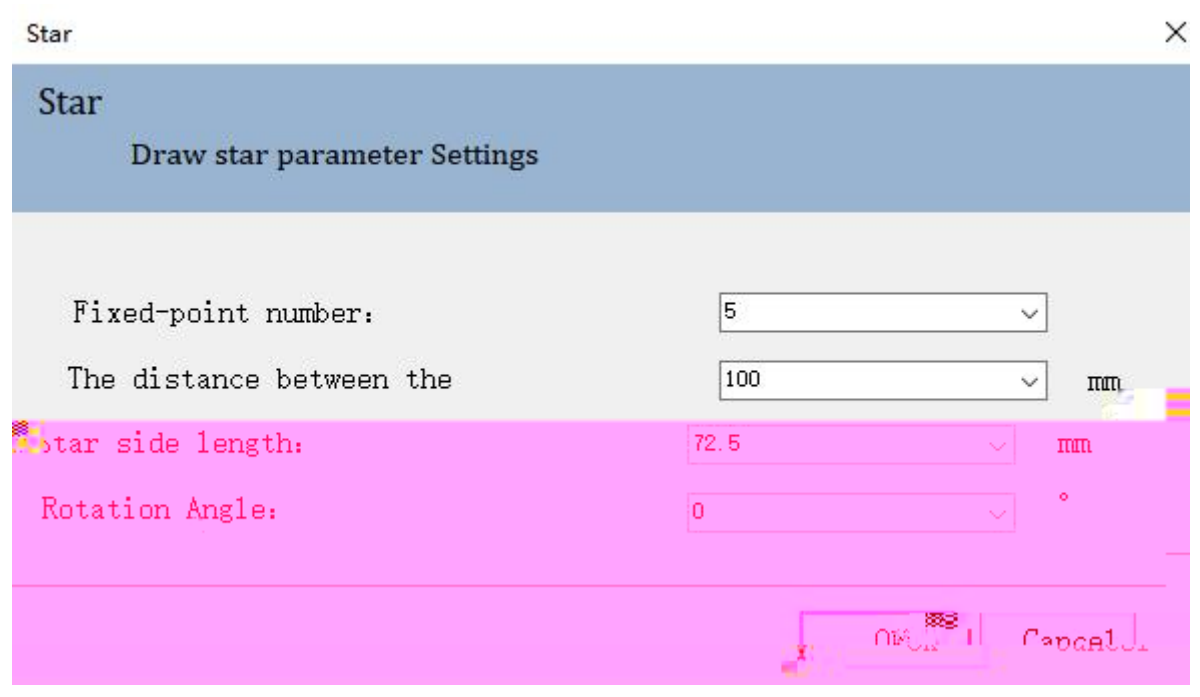
h : click on Polygon button to set the number of edges and choose to be inner or outer tangent to the circle. Click on OK in the setting interface. Click on one point in the drawing area to set the center and drag the mouse to click on another point for setting the radius of the polygon.

o : there are two ways to draw a star-shaped graphic.

(1) Input the number of fixed points, the distance between the vertex and center, the side length, and the rotation angle. The star-shaped graphic will be auto-drawn by clicking on a point in the drawing area to set the star center.

(2) Input the number of vertices (fixed-point) and no other information. Set the center, inner vertex, and outer vertex in the drawing area. Draw the star-shaped graphic by the three points. Its angle can be set randomly, as shown below.

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h

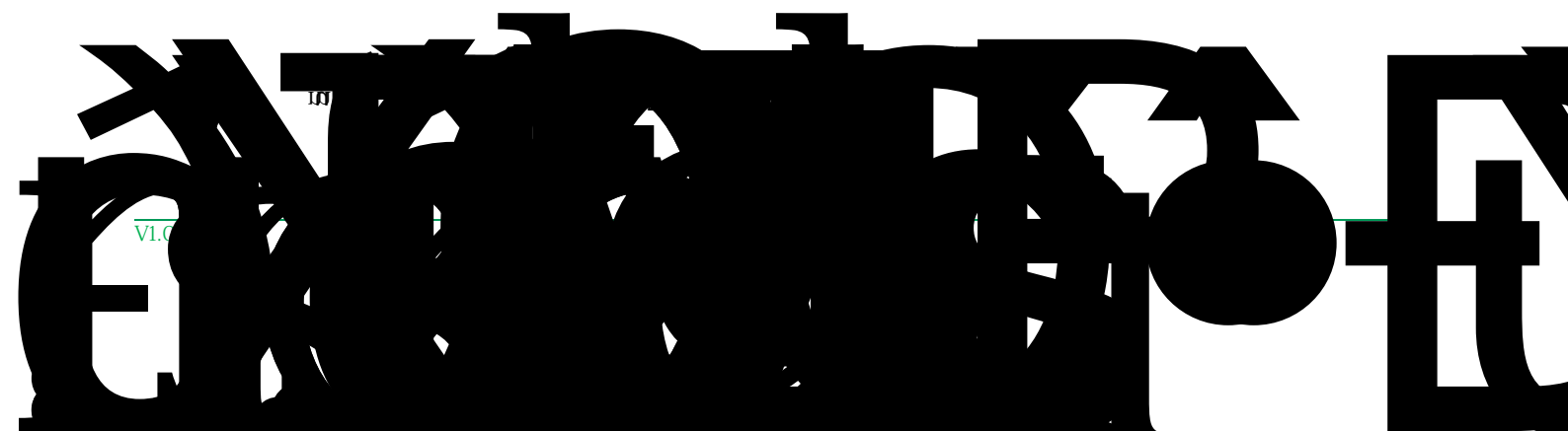
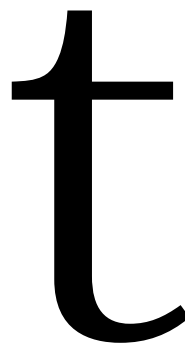
Click on Point button in the Draw sub-page and click in the drawing area to complete drawing a point.

u

Click on Text

h

Before nesting, turn the graphics into parts for cutting. A part consists of its inner and outer contours, and the outer contour is not a must. Add space by selecting the graphics and right-clicking to add



V

With parts in the drawing area, there will be a left sidebar for nesting. You can set parts and plates in the sidebar:

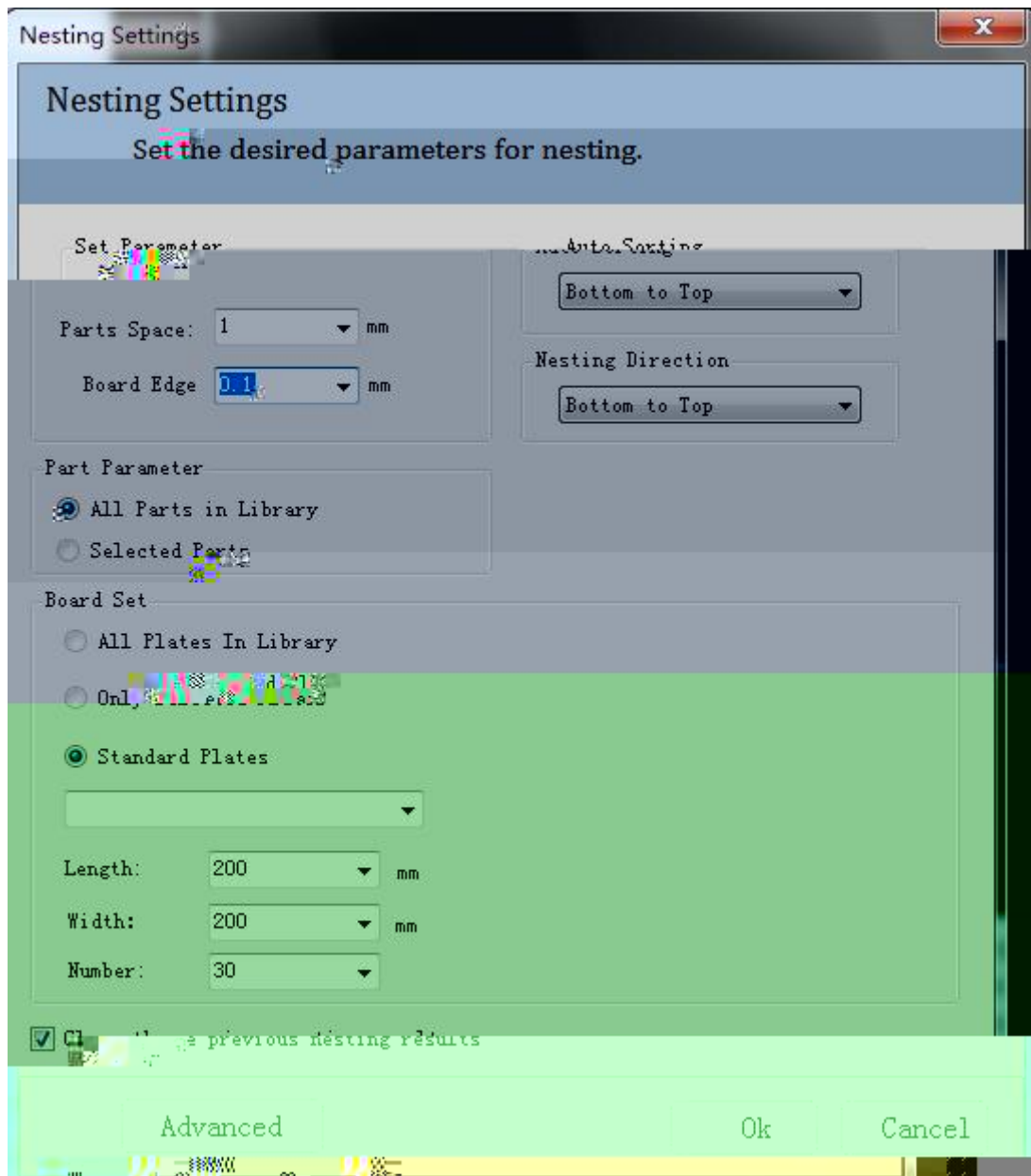
- j ° u : quickly select, delete and nest parts and plates.
- h " r: display all the added parts.



V h

Set the nesting parameters.

- " o : set the size and count of plates
- o h : set the space between parts and interval between the part and the sheet margin (board edge).
- ° o : set the sorting way and the nesting direction of the parts.
- h h : select the parts to nest.
- # : whether to continue the nesting on the former results.
- ° : click to set the advanced parameters.



° h

o : set the start point of nesting.

V) : set the priority of nesting direction.

k ° : refers to the angle of each placement when placing the part (the smaller the angle, the better the result and the slower the nesting speed).

V : refers to the precision of nesting. The smaller the the value, the better the effect and the slower the speed.

@ : decide whether to place the part in the hole of the waste area of another part. Select to improve the utilization of the plate with slower nesting speed.

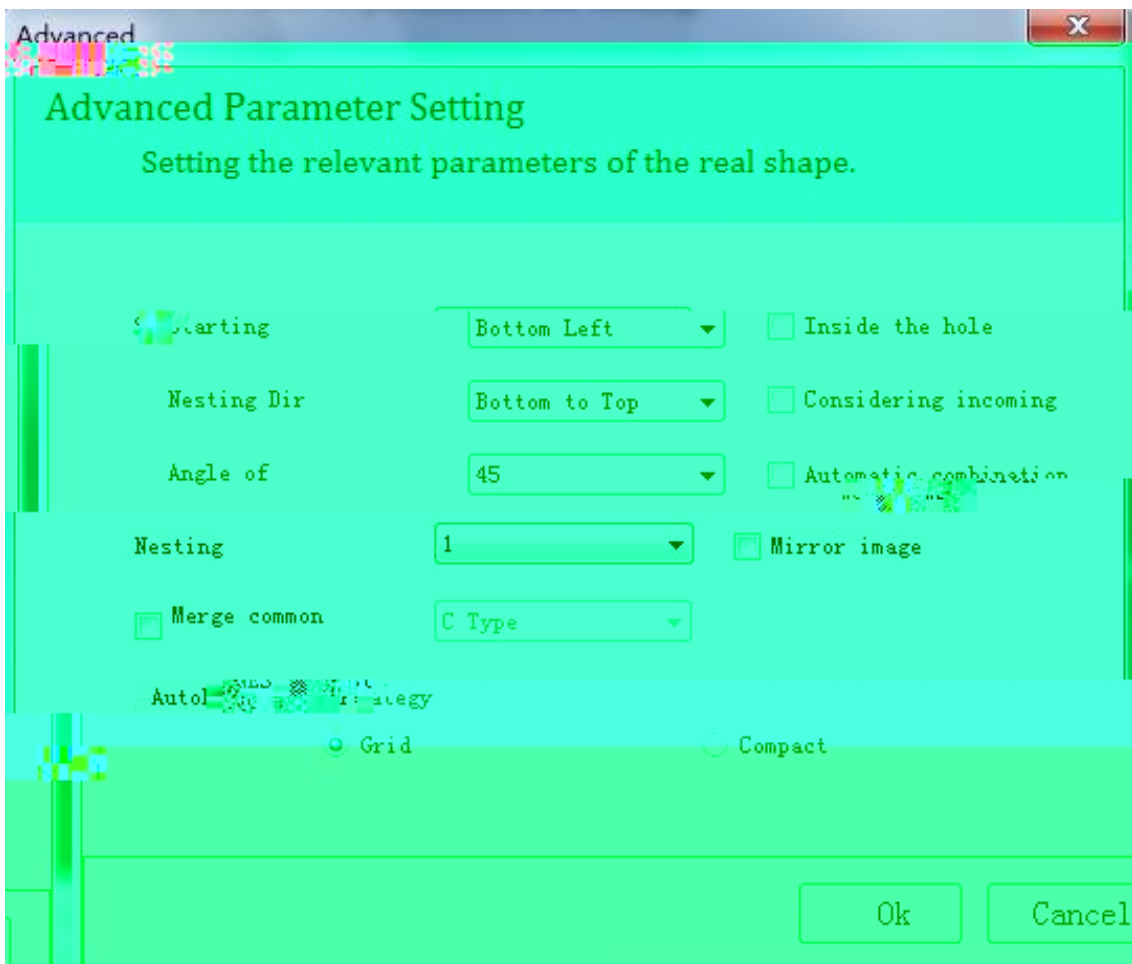
: decide whether the edges of the part have leadlines.

° : combine the placed nesting parts and copy the resulting nesting to speed up nesting.

U : allow the mirroring of the graphic to improve the utilization of the plate.

U : turn on the function and complete the nesting on co-edged parts.

° V-ou : select grid to sort the parts in rows and select compact to sort into any space.





There are two ways to structure the process. The cutting parameters can be added to the structure on the left for users to view and use.

Right-click on any material in the process structure to add a new material or thickness type. Users can add a new type of material or the thickness of material in the interface popped up.

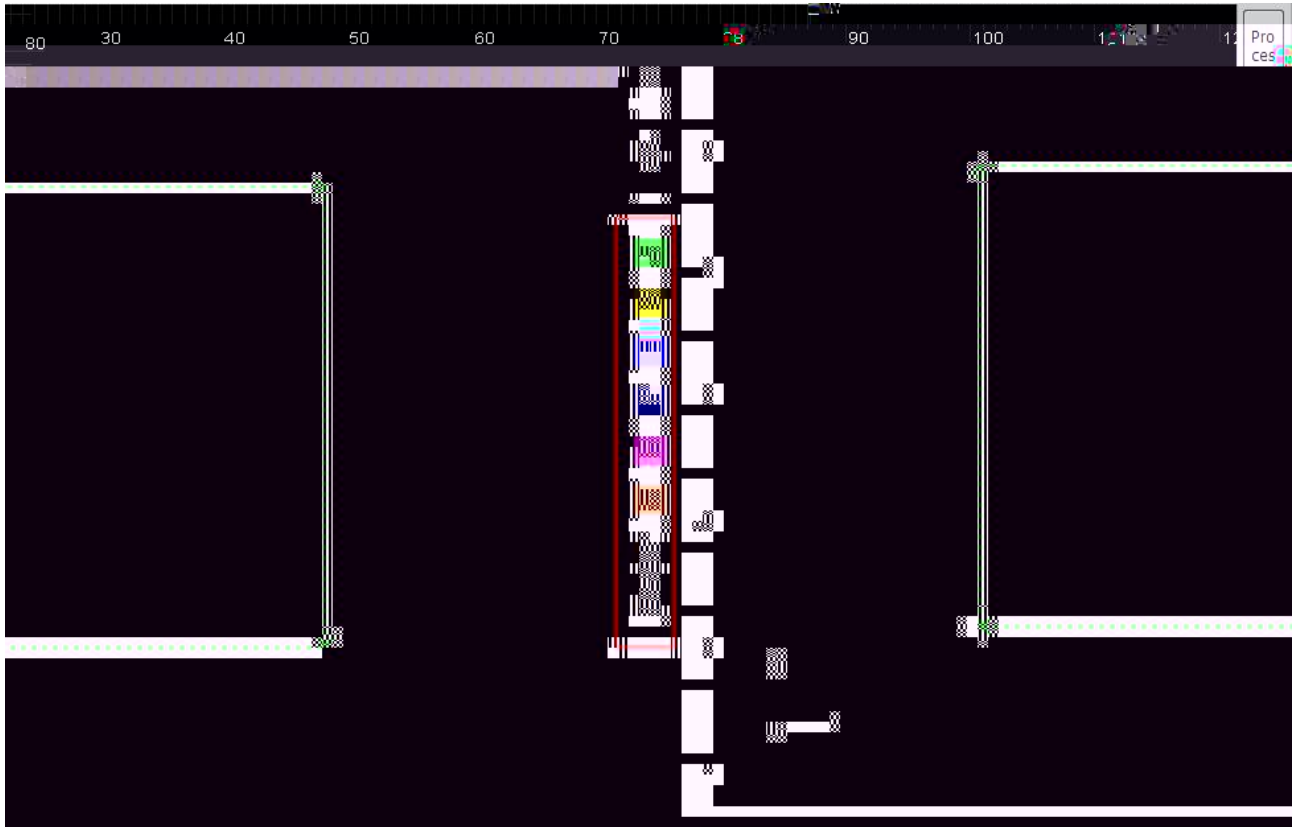
Take adding BR in the fol

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There are 7 process layers and every one of them can be set separately.

Select the graphic in the drawing area and click on the corresponding layer button on the right. And the graphic will be processed using the selected layer process, as shown below:



h U

	h U
)	After selecting the function, the process is first carried out along the cutting path using the film parameters to defilm, and then carried out the normal process according to the layer parameters. Select the function and you can set the defilm parameter in the FilmCut interface.
h	Selecting the function, prepierce at the start of the graphic or the start point of the leadline, before actual cutting. There is also a function of auto-group prepiercing which can be selected in the global parameter.
h	Select standard or fixed height cutting. Fixed height cutting refers to cutting at a fixed height.

h

h

V Set the cutting height from the nozzle to the plate.

o Set the command speed of cutting.

h Set the peak power of the laser in cutting.

Set the frequency of the laser in cutting. It refers to the time of beam out in 1 second. The higher the value, the more continuous the laser beam is. 5000Hz is a successive beam.

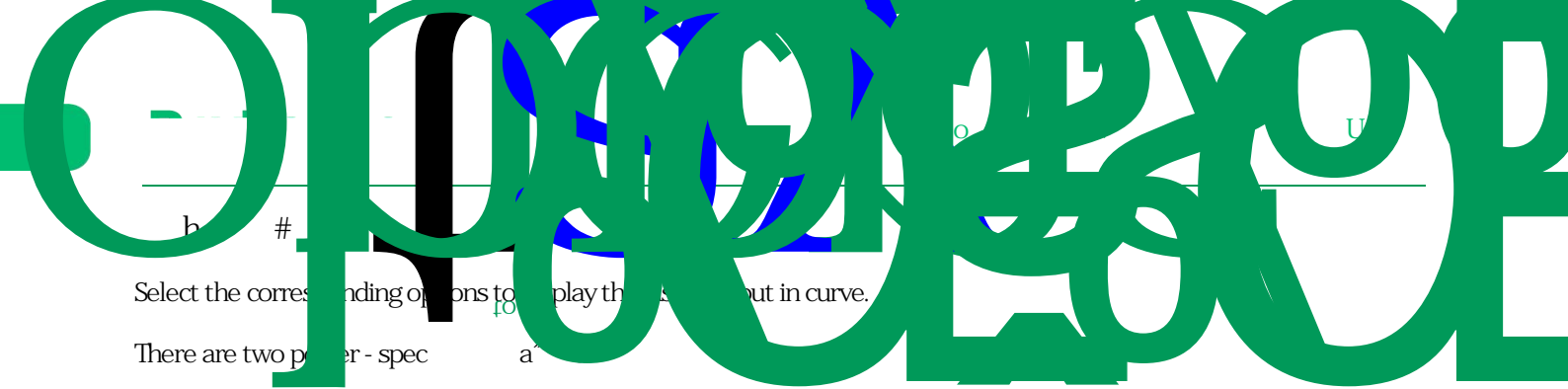
) Set the duty cycle of the laser in cutting. It refers to the ratio of beam-out duration in one beam-out cycle and the total time. The higher the ratio value, the higher the average power is when beam out. When it is 100%, it means the average power equals the peak power.

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h #

Select the corresponding options to play the sound out in curve.

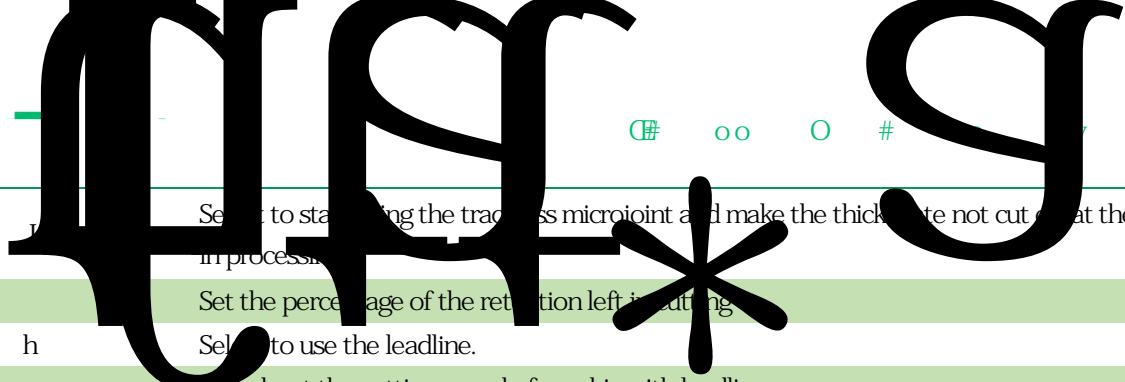
There are two power - spec a

RAYTOOLS

The profile curve illustrates a sine curve with the horizontal coordinate being the speed and the vertical coordinate being the laser duty cycle, which has good reproducibility. The parameter for setting can be chosen as shown above.

Take the figure above as an example: the duty cycle is 60%-70% when the speed is about 30%, and nearly 100% when the speed is 100%. As in the processing, the duty cycle is nearly 100% for a cutting speed of 10m/min, the duty cycle is 60%-70% for a cutting speed of about 3m/min.

The default parameter The



☼ ○ ○ ○ # U

u Select to start cutting the trackless microjoint and make the thick plate not cut at the joint in processing.

k k Set the percentage of the retention left in cutting.

O h Select to use the leadline.

h Speed: set the cutting speed of graphic with leadlines.

Duty: set the beam-out duty cycle when laser cutting with leadlines.

Frequency: set the beam-out frequency when laser cutting with leadlines.

o) select to descent slowly when cutting with leadlines.

Lead height: set the nozzle height when cutting with leadlines.

o) Stable dist: slowly descent the leadline height to the stable height of the plate in cutting. Set the stable distance of the leadline from the plate.

Focus Adjmt: select to use the focus adjustment of leadlines.

7 ° Focus point: set the focus position when cutting with leadlines.

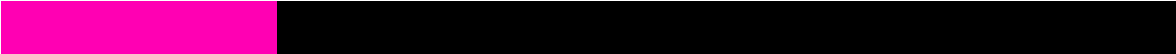
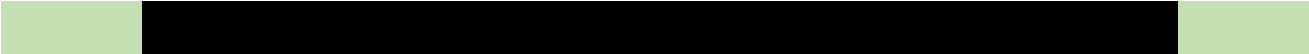
Initial leadline: set the initial length of leadline of focus-adjust cutting.

Lead circle: select to use the lead circle.

O Speed: set the processing speed of the lead circle.

Radius: set the radius of the lead circle.

o k h Select to use the process to remove slags.



↑ ↓ ↻ ↺

cutting

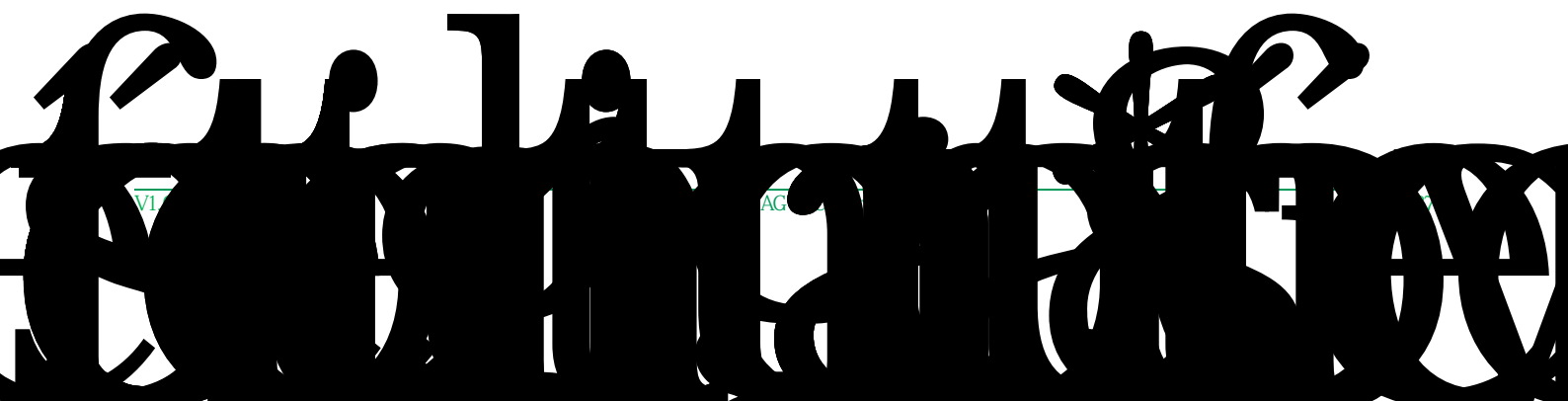
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with t s*

cutting φ

eddtt nt cc used (any) covers and with ε



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To import or export the processing parameters of the layer, users should note that the button will only use to import or export the parameters of the current layer. For example, if using both layers of large and medium contours, clicking on Export button in the layer of large contour will only export the parameters of it. The same applies to the import. Select the needed layer and then import or export.

8 h

Global parameter mainly includes Motion Control Parameter, Default Parameter, Unit Selection, Piercing and Defilm. Adjustment of these parameters will affect the stability of machine operation, processing effect and efficiency.

U	#	h
h)	k
u	6000	100

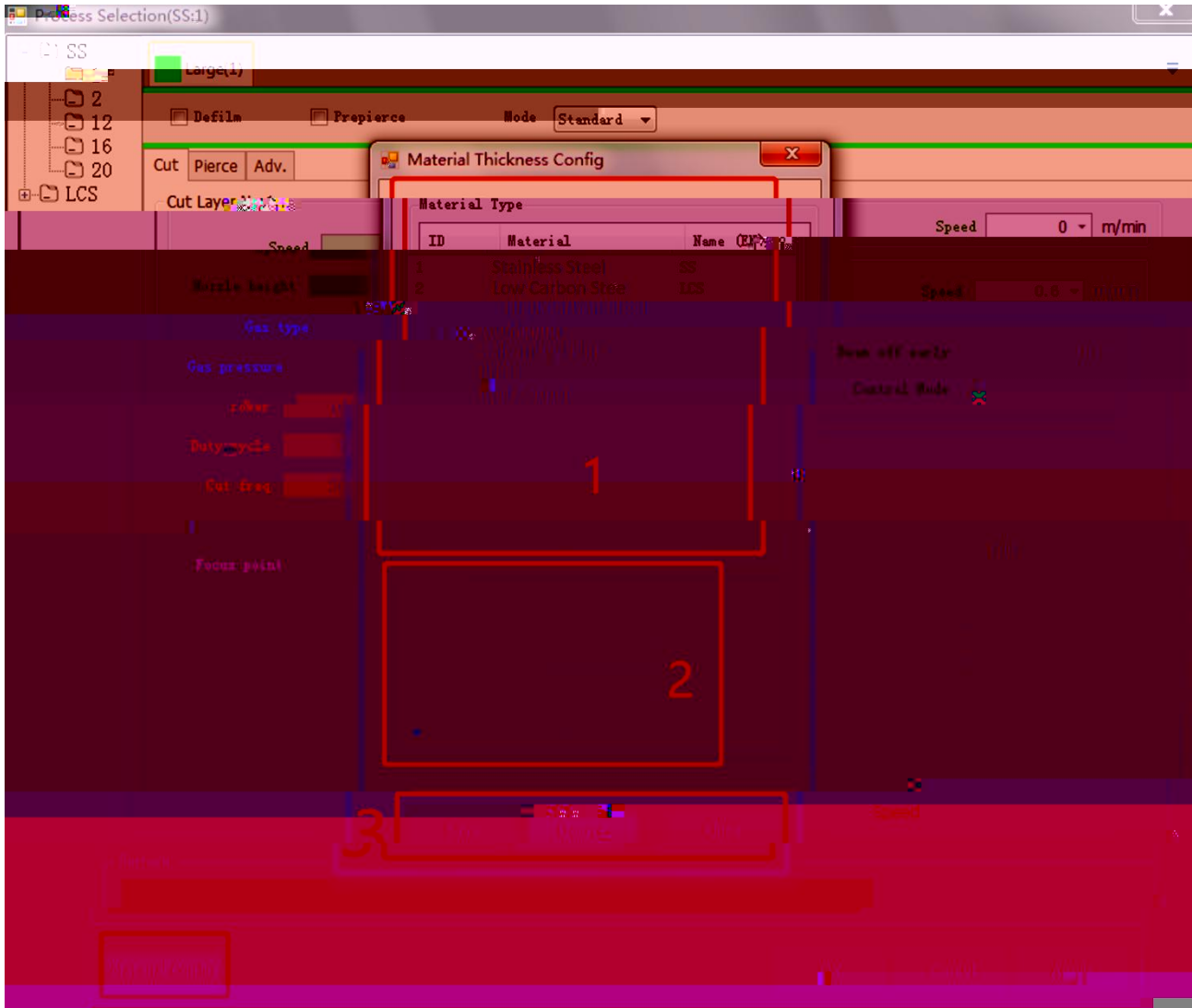
The travel speed of the XY axis from one contour to another in cutting (Set the X and Y axis to be the same or separate with different parameters at the bottom of Motion Control Parameter.)

The travel acceleration of the XY axis from one contour to another in cutting (Set the X and Y axis to be the same or separate with different parameters at the bottom of Motion Control Parameter.)

The travel acceleration time of the XY axis from one contour to another in cutting. The more the time, the slower the acceleration, which brings less impact to the machine. The less the

) h		
h)	k
8	200	Gas on and delay till the set time before laser on.
7	400	Before cutting there are air in the gas hose. S

Click on Material Config button in the process interface.
 The interface of material configuration will pop up as shown below:



There is a list of current materials. Users can add new materials.
 Add or modify the material.

There are buttons of Save, Delete, and Close the interface.

The following is an example of adding a new type of material: Input the ID, Material, and its Name (EN as abbreviation). Then select Add button. Note that the ID and name of Material must not be the same as the existing materials, as follows:

Material

ID:

Material:


Name (EN):

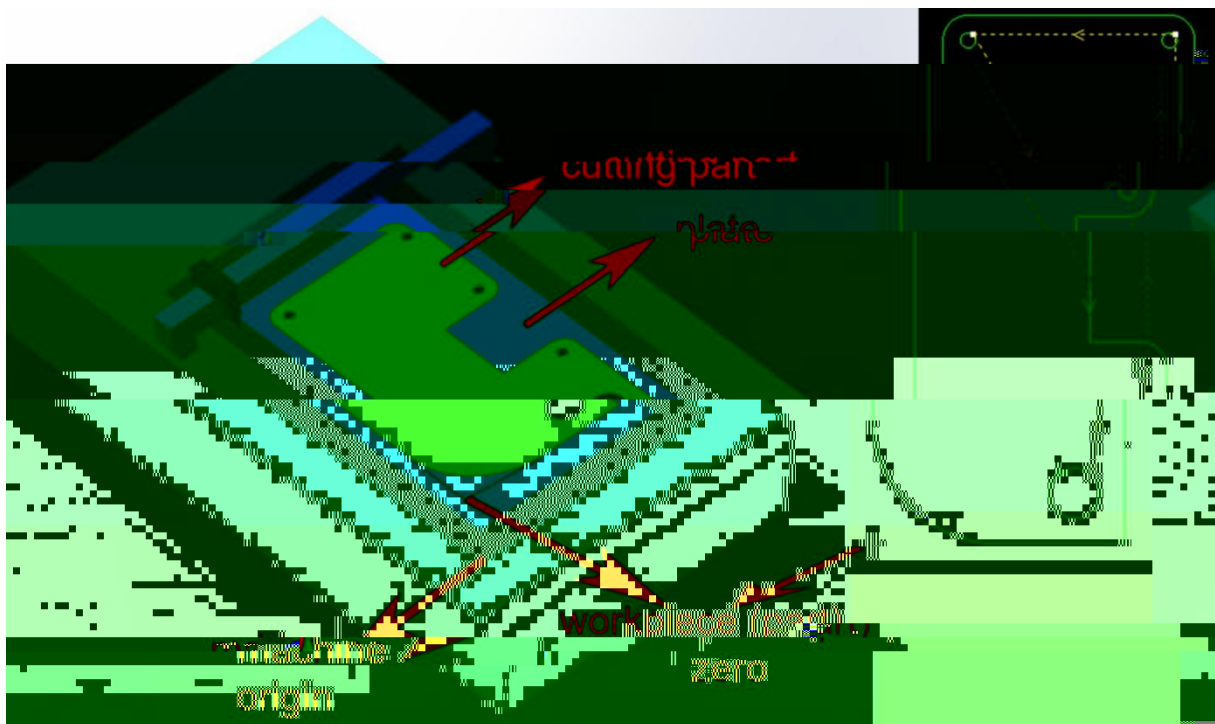
Add Modify

h

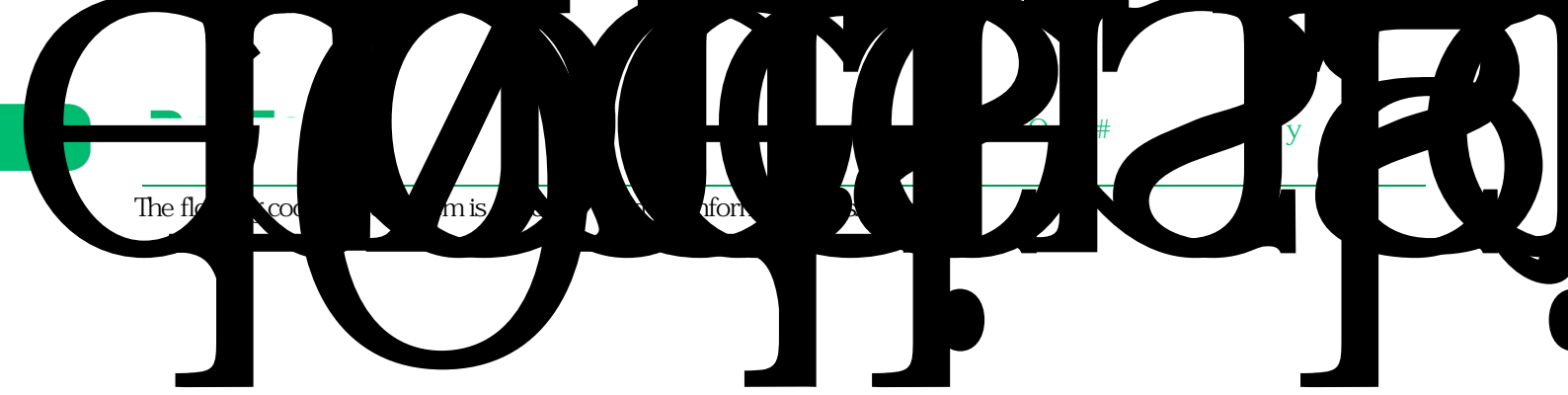
The processing control module mainly introduced in this chapter locates on the right of the drawing area. Functions are selectable in the control panel, such as the coordinate system, manual and auto control, etc.

o

All the motions in processing are the cutting head relative to the workpiece. The workpiece zero, as part zero, is marked as  in the drawing area. The correspondence between the machine coordinate systems and the workpiece coordinate system is shown below:



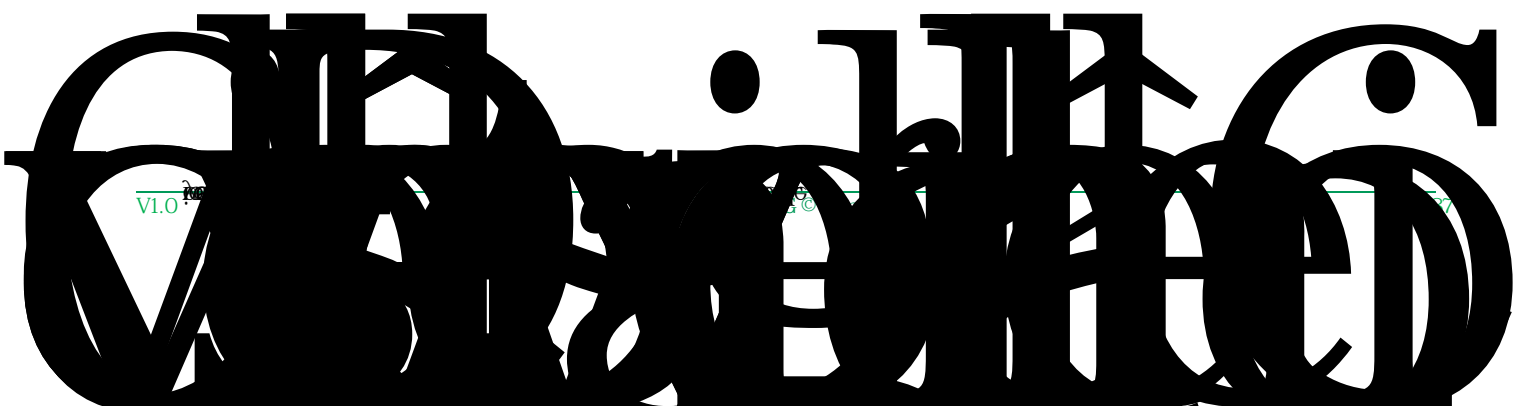
Click on Preview button in the control panel to display the positional relationship between the machine and graphic.



The flow of communication is essential for the performance of the system.

#

y



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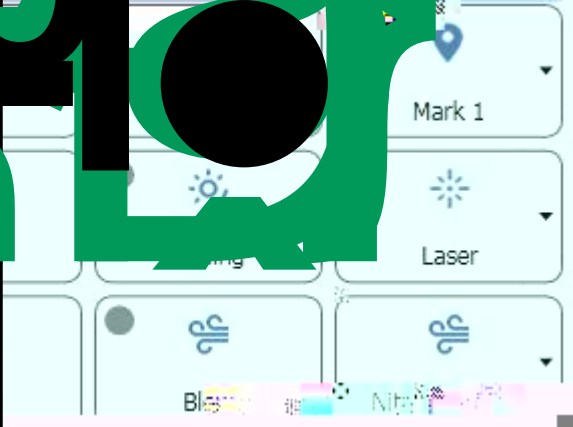
©

2023



When selecting workpiece coordinate 1 to 9, the workpiece zero point is set manually by the user by clicking on Mark, and once set saved for a long time until the next setting. The workpiece coordinate system is suitable for batch production for the workpiece position is generally determined by a fixed fixture. Keep the processing in the same position each time by using workpiece coordinate 1 to 9.

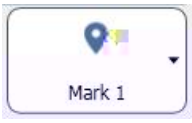
Click on the status



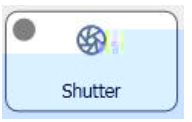
Click on the current point as the cutting head position.



Click on the button and the cutting head will move to the marked point.



Click on the button and the cutting head will be marked. Select the needed marked point in the drop-down bar.



Click on the button when the laser shutter connects to the system, click on Shutter to control the shutter switch.



Click on the button when the red laser light connects to the system, click on Aiming to control the red light.



Click on the button when the laser beam is turned on, click on Laser to turn the beam out to confirm the status of the laser beam. Set the laser parameters



by clicking on the drop-down bar.

Click on the button when the cutting head is moved to a different position.



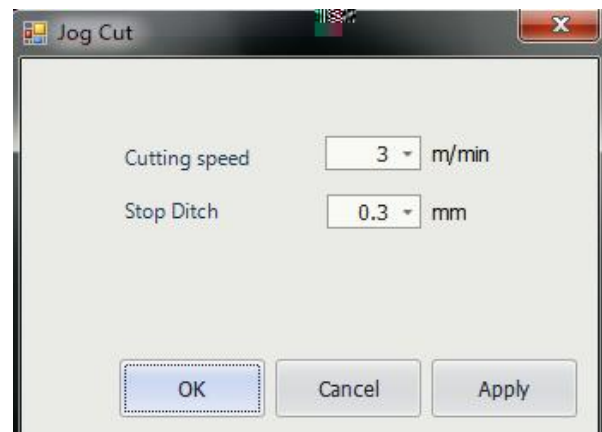
click on Blow to manually open or close the protective gas.



Click on Nitrogen. Air, nitrogen, and oxygen are all selectable for blowing

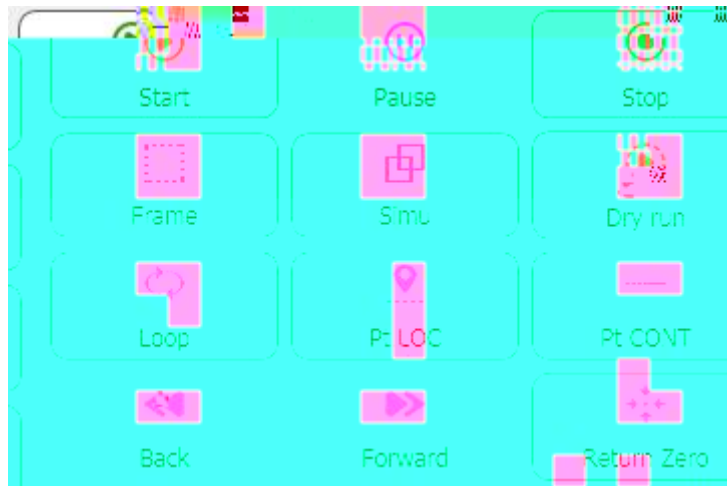


7 : after selecting and setting the speed, the axis m



Cutting speed: when the set processing speed is faster than it, it will be the maximum speed limit for jog cutting
 Stop ditch (Step height): the larger the value, the less sensitive the detection to the plate margin is, and the greater the Z-axis over move distance. The smaller the value, the more sensitive it is and the greater the probability of mistakenly detecting a plate undulation as its margin.

h #



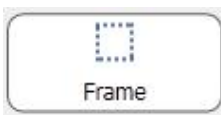
click on Start to start the processing or resume if paused. After clicking on it, the mode interface will display auto-operating status.



click on Pause when the program is running, and the auto processing will pause. The mode interface will display auto-paused status.



click on Stop, and the processing will reset to the initial status and to be ready again.



click on Frame, and the cutting head will move along the outer contour of the graphic in a rectangle shape for users to observe the graphic position in the plate.



simulate before processing. Click on Simu, and confirm the cutting path by simulation.



dry run is different from the actual processing, with no laser, no gas, and no following-up, with other steps the same as the actual ones. If user clicks on pause while dry running and wants to continue to dry run, click on Dry run to resume the simulation. In paused status, clicking on Start leads to the actual processing from the position.



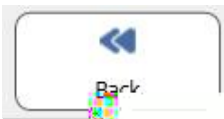
set the processing in loops at the position and click on Loop to see the following interface:



only enter the breakpoint mode in paused state. In breakpoint mode, most functions in the control panel will be locked. User can move the cutting head by button for manual operating or wireless remote, or using the fixed-height.



click on Pt CONT button, and the cutting head will move back to the located position and resume processing



click on the button in paused state, and the cutting head will move backward along the cutting path.

Click on Pause to stop the motion.



click on the button in paused state, and the cutting head will move forward.



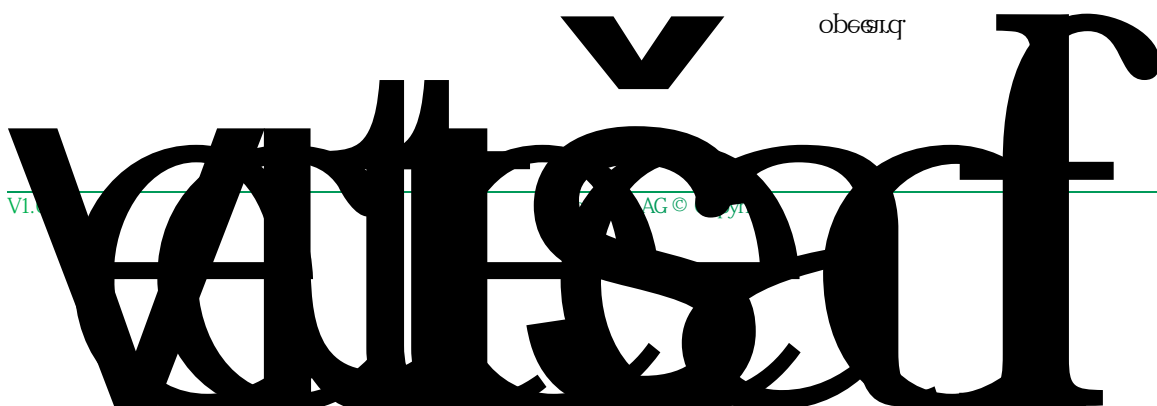
click on the button to return to the machine origin. Note that right after opening the software, the first step is to return to origin and then the functions in control panel will be activated.



after selecting, at the end of the processing, the cutting head will auto-move back to the selected marked point.



STOP

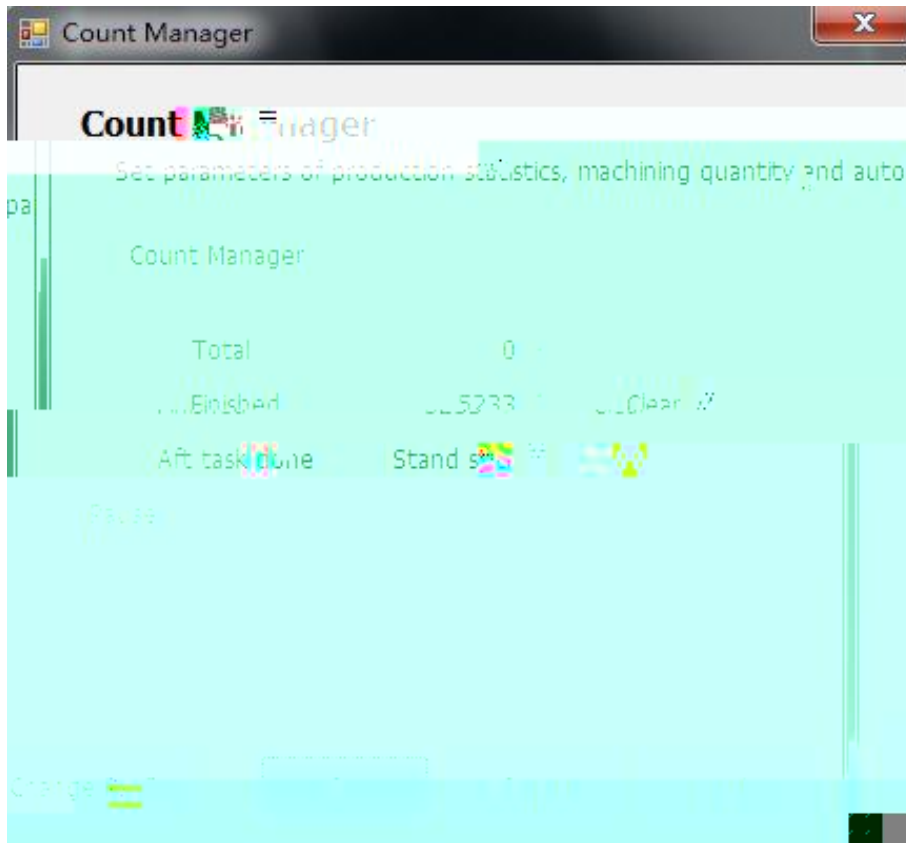


Count/Plan num15233/0 Manage

Count: count for each time of actual processing

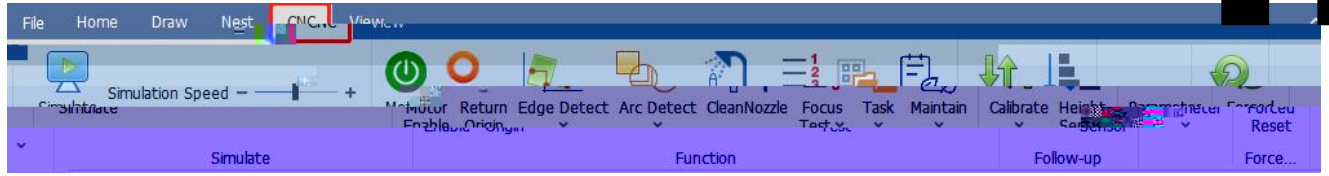
Plan: the actual count planned to be processed.

Click on Mange button in the processing control and there pops up an interface as shown below:



- u : set the expected count of the workpiece to be processed.
- 7 : display the completed count.
- # : clear current completed count.
- ° : there are corresponding prompts after the processing plan has been completed.
- h : select to pause the count of processing

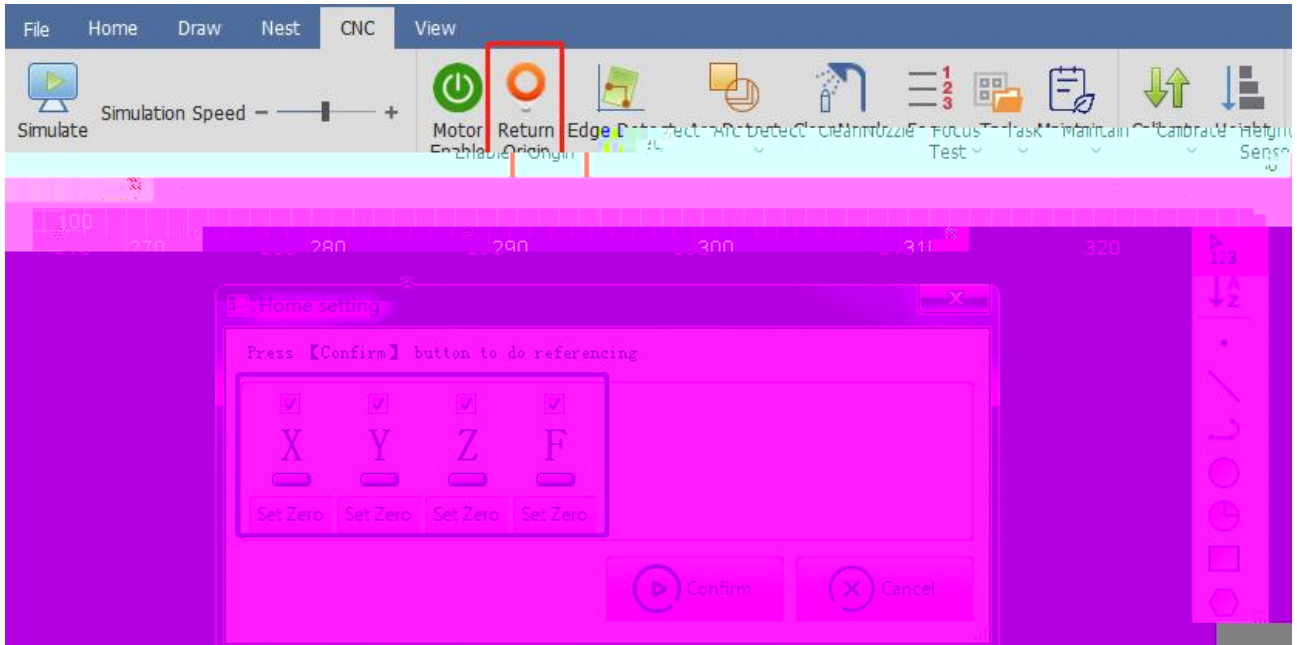
Click on the sub-menu to show...



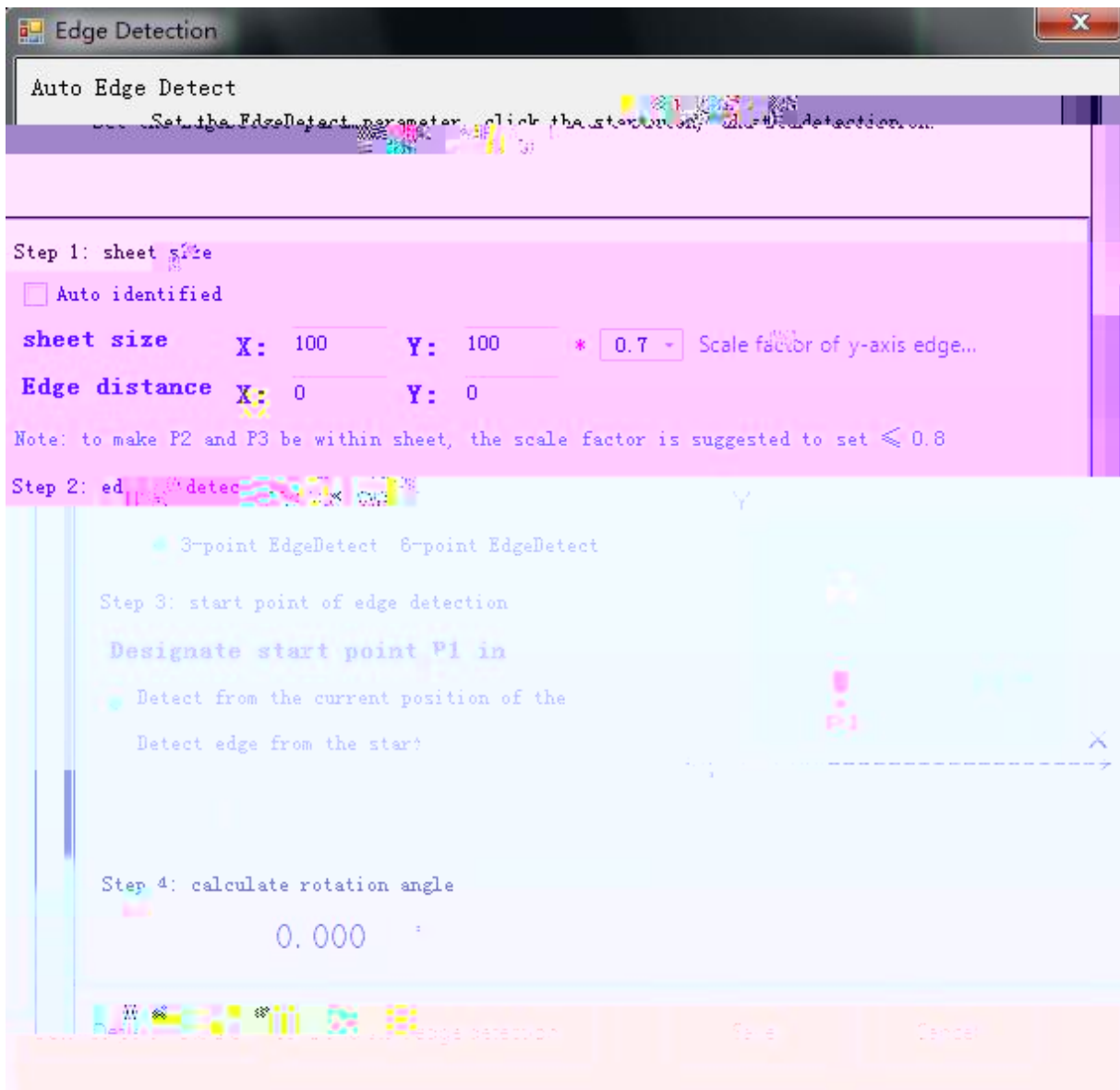
O

~~Before processing, confirm the cutting parameters.~~

to After opening the software, it is needed to return origin first. Click on Return Origin button. The setting interface of will pop up, show as follow:



Select



After completing the parameter setting, click on Save and start edge detection button, and the machine will start working. The result will be shown below the drawing area.

The following are the parameters for auto-detection:

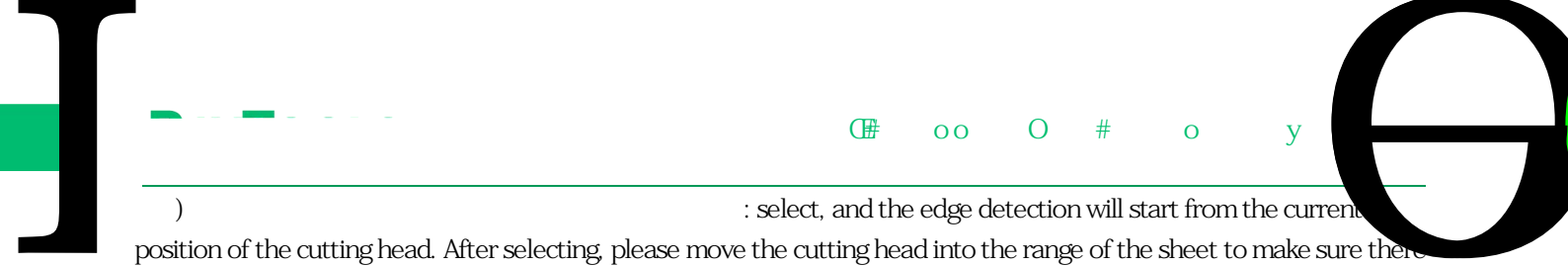
(Sheet size) : select to auto calculate the sheet size after edge detection.

: X is the length of the sheet in X-axis direction of the machine. Y is the length of the sheet in Y-axis direction of the machine. Please note that inputting the wrong sheet size will risk sticking the cutting head. Please input the actual sheet size!

: set the positional deviation of Point P for edge detection. A positive value shifts the zero point of the sheet inwards, a negative value outwards.

: 3-point and 6-point. It is suggested to use the 6-point edge detection on the thin sheet.

Detect the edge by a single point 6 times to avoid interference from the tooth tip to the edge detection on a thin sheet.



) : select, and the edge detection will start from the current position of the cutting head. After selecting, please move the cutting head into the range of the sheet to make sure there is a sheet under cutting head.

) : select, and the edge detection will start from a fixed position. Move the cutting head into the range of the sheet and click on Save start point button. The current position of the cutting head will be recorded as a fixed position for detecting edge.

: the rotation angle obtained by edge detection.

) : Set the basic parameters for capacitive edge detection.

= : the height from the cutting head to the plate in the process of edge detection.

o : the sensitive degree in edge detection. The higher the value, the less sensitive



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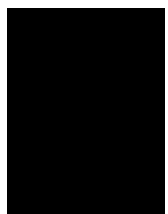
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Click on Height Sensor in MC sub-page, and the setting interface which contains the following parameters

h)	k
U	30	After Z-Axis follow-up completes, the max lifting height is the height of the cutting head bases on its current position. It is recommended not to set the value too large. The value can be set as half of the Z-axis travel



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		previous cycle (1ms ago) is greater than this value, the cutting head is considered to have touched plate, and at this time the cutting head moves upwards and starts the calibration to record the capacitance value in relation to the height.
@	0.2	It refers to the range of height used to decide if the cutting head follow-up is in place.
o 7	5	The delay can be auto-measured or adjusted by auto-tuning
=	10	The delay can be auto-measured or adjusted by auto-tuning

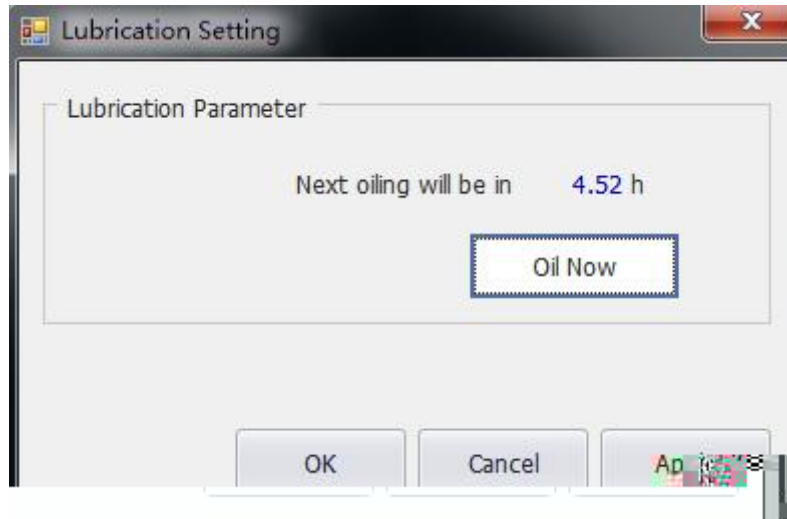
	u h h	
h)	k
h	200	In piercing, the system will alarm and stop cutting if the duration of the touch-plate signal is greater than the value.
#	100	In cutting, the system will alarm and stop cutting if the duration of the touch-plate signal is greater than the value.
)	50	When the cutting head is in a dry run, the system will alarm and stop cutting if the duration of the touch-plate signal is greater than the value.
h	0.1	If the current height is smaller than the value, it means the touch-plate signal is triggered. The function is used to protect the value, so it is fine to use the default value.
-	Disable	Enabled, once the cutting head is

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O

Click on Lubrication button in the CNC sub-page, and the setting interface will pop up. Users can check the time to do the next lubrication, or click on Oil Now to lubricate the machine at once, as shown below:



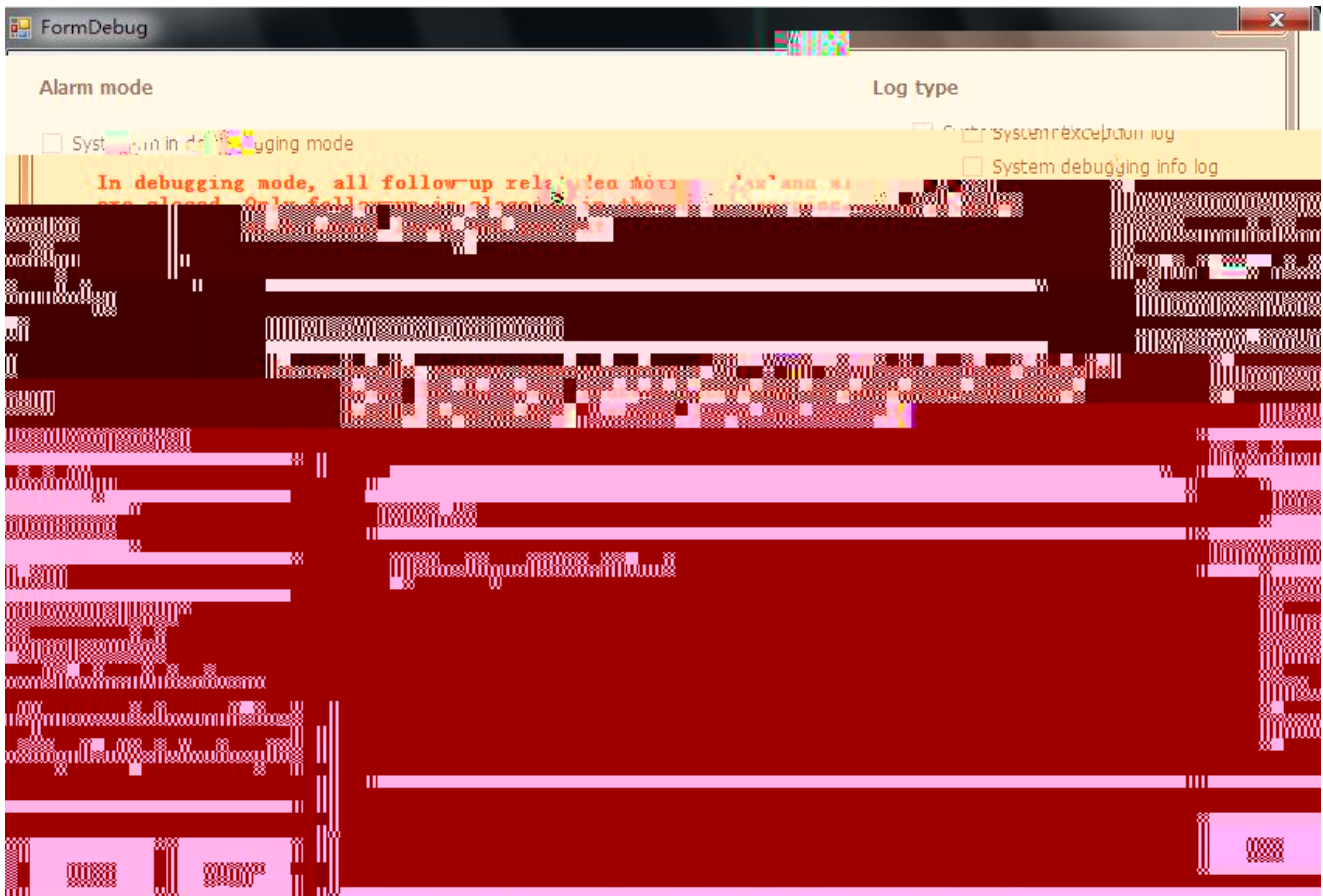
201

G# o o O # o y U

Click on Dust Removal button in the CNC sub-page, and the **setting** interface will pop up. Users can set the function open or closed, and timed output. There are also selections for all on or all off

○

Click on Setting button in the CNC sub-page and its interface will pop up, as shown below:



○ : select or deselect according to the users' needs while debugging. The default is to deselect.

○ : types of the log can be selected according to the users' needs and viewed in the log area.

7 # : click on Parameter Setting to turn on the EDS2000 hardware for fly cutting. It's also able to set the fine and coarse tuning of the pulse.

:

○ : select to place the control panel at the bottom of the mainform. It is suitable for vertical display. The setting takes effect after re-open the software.

- : select to lock the control panel and make it ineffective.

○ : select to make the software auto-enable once opened. The software will not auto-enable if deselect the function.

U : turn on the touch-plate detection when Z axis moving

○ - : turn on the function of Z-axis lifting when touching plate.

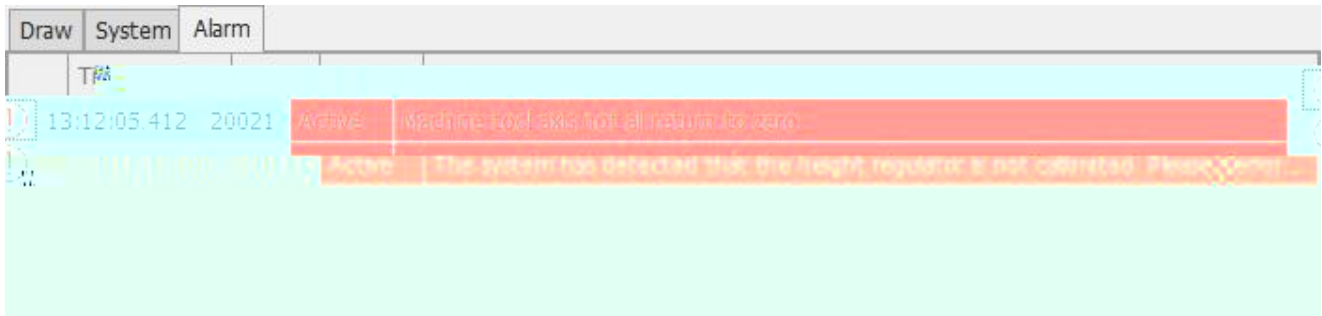
o "

The status bar at the bottom of the mainform mainly includes Draw (drawing log), Log (system log), and A



○

The system alarm is mainly used to display the current alarm or prompt, as shown below:



V : when a red alarm displays in the status bar, it is needed to clear the alarm before processing. If it is a grey or white prompt, it does not matter to the processing.