

Instructions:

Wiring instructions:



In the use of positioning cutting function, the need for external sensor

Sensor type: LTS001

wiring method:

棕色/BROWN: +V (POWER) Wiring to DC24V

蓝色/BLUE: 0V Wiring to DC0V or GND

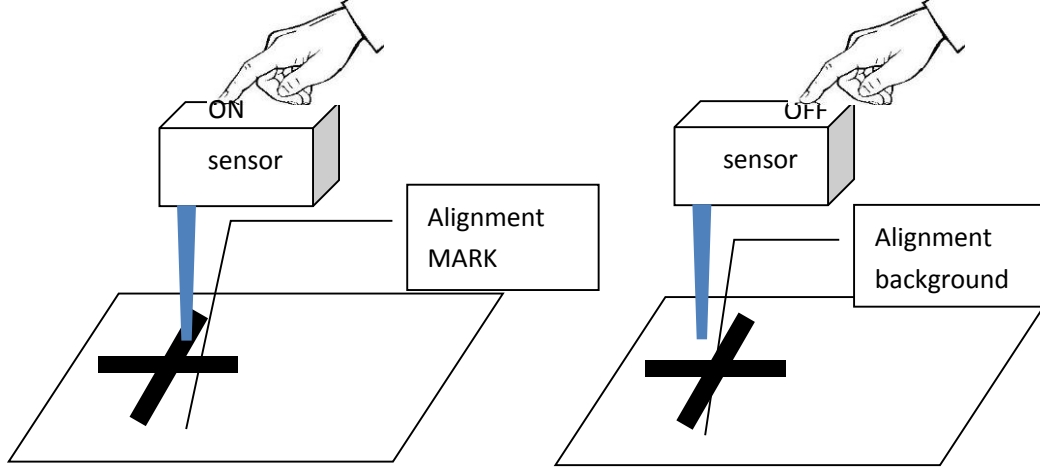
黑色/BLACK: OUT Wiring to MPC95** Controller IN3

粉色/PINK: IN Wiring to DC0V or GND

MARK color calibration:

The default value for the sensor identification of black and white MARK, if MARK is not no confusion of color, you need to re calibrate the color, to ensure that the MARK could be correctly identified.

The sensor moves to the top of the MARK, so that the luminous point of the sensor is aligned with the MARK, and then press the "ON" button about 2-3 seconds after the release, you can see the flashing lights, Calibration completed.



MARK printing requirement

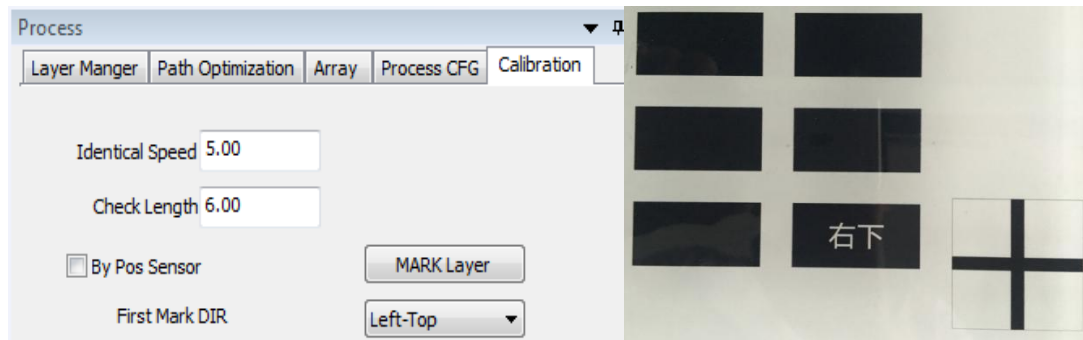
Requires 4 MARK points to be printed in the need to cut the graphics in the four corners, the width of the MARK point should be at least 5mm, the length should be at least 40mm.

The wider the line width of the MARK point, the faster the speed of the scan location can be, and the easier it is to locate it; usually the speed is set to less than or equal to 10 mm/s.

The longer the length of the MARK point, it is also possible to accurately locate the workpiece when the tilt angle is larger. Usually the workpiece angle is less than 15 degrees, the parameter settings are shown below.

There are obvious differences between the MARK color and background color, attention must have the background color (not when acrylic material printing is transparent), as shown below.

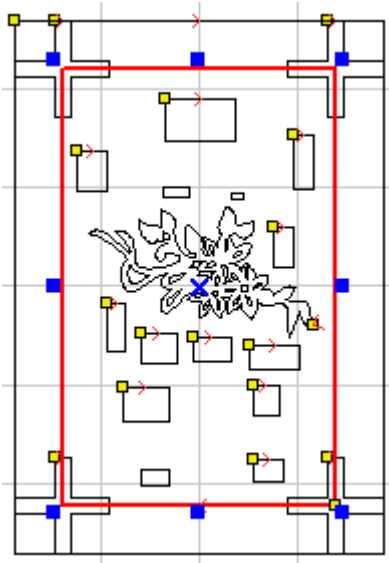
In order to facilitate the use of the MARK point each time the design of the processing are white and black, so it does not need to be processed before each re color calibration of the sensor.



The requirement of MARK point when drawing outline

1: MARK must be a single element hollow profile and closed, if it is composed of the line, you need to select the composition of all segments of MARK point, click the right mouse button, select "merge Adjacent lines", the merger is a primitive.

2: MARK points must be four hollow cross, cross center must be able to complete the formation of a rectangle, that requires the center of the 4 cross in both horizontal and vertical alignment of the two directions. As shown in the red rectangle box:

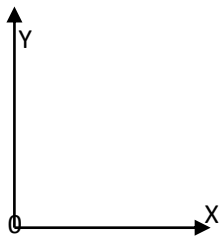


Operating Process

Sensor Calibration

Interpretation: sensor calibration is the accurate calculation of the offset between the sensor and the laser head, first used in equipment debugging or positioning needs a calibration processing before As long as the position of the sensor does not change, it is not necessary to perform the calibration operation again. However, once the software is uninstalled and reinstalled for the first time before the positioning process is used, a calibration is required. Suggestion: after the factory calibration, record the offset value and marked on the device, the user in the reinstall software, direct input can be.

Remarks: System coordinate system



X right is positive, Y up is positive

1: Rough calibration

Method 1:

Perform equipment back to the origin of the operation, and then take a piece of paper with "burst" function with the laser marker in a white above, then get the coordinates of X and Y; and then to "move" function to control the laser head movement, the scanning spot and mark sensor weight, once again to get at this time

coordinate X1 and Y1 , $X-X1=A$; $Y-Y1=B$.

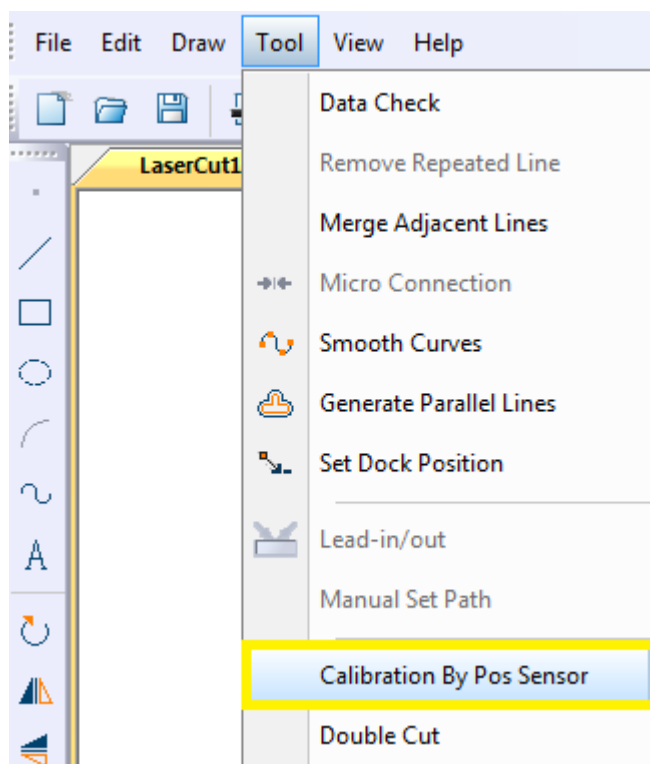
If A is positive and B is positive, the sensor is positioned on the right_up side of the laser head

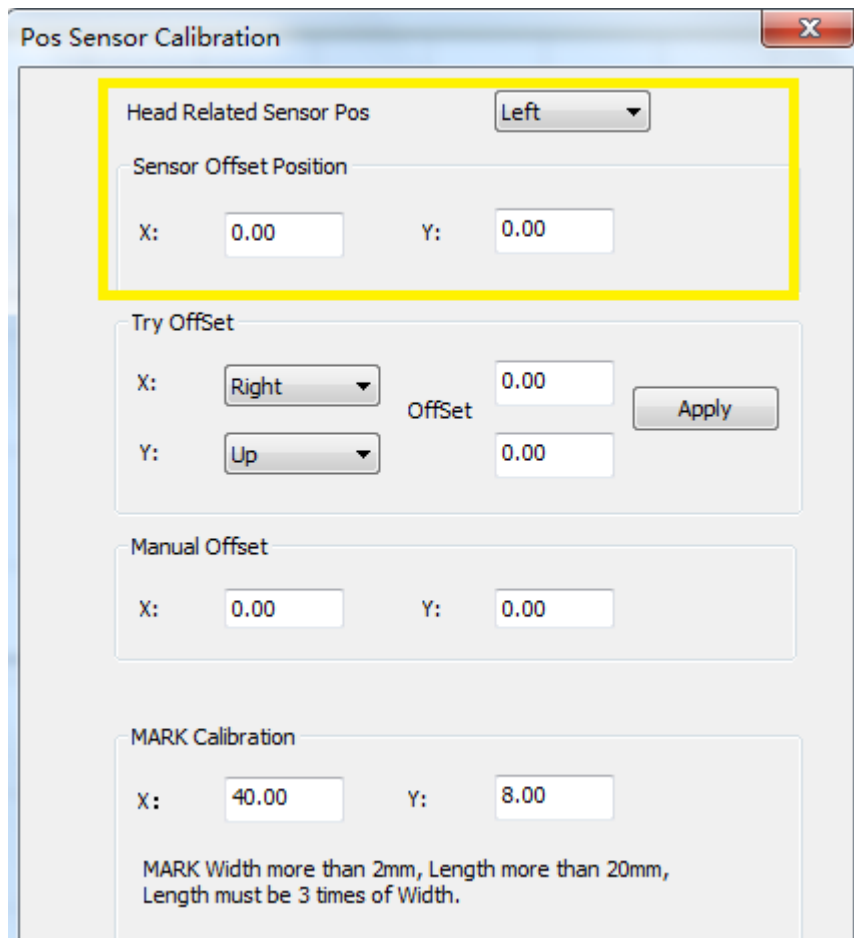
If A is positive and B is negative, the sensor is positioned on the right_down side of the laser head

If A is negative and B is positive, the sensor is positioned on the left_up side of the laser head

If A is negative and B is negative, the sensor is positioned on the left_down side of the laser head

In the laser cutting software menu click position sensor calibration, according to the calculation value position; and the corresponding A and B values to fill the X sensor offset and offset Y; here we only fill in the absolute numerical results, and the implementation of the "confirm" closed "position sensor calibration interface.





Method 2:

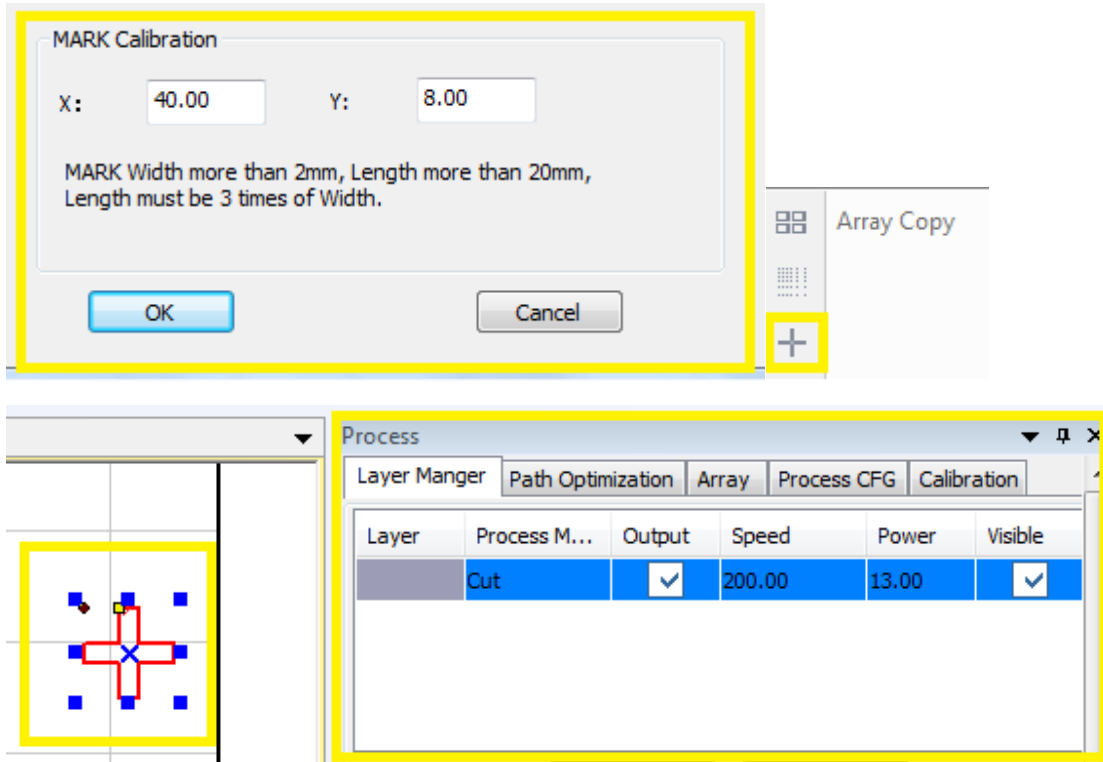
If the laser head has infrared beam design, the direct use of X and Y to measure the deviation between the midpoint of the ruler and the red light of the sensor values, at the same time through the relative position determination sensor light midpoint position relative to red mark point, directly select the “left-top / right-top/ left-bottom /right-bottom”; and the corresponding measurement value to fill out the" corresponding position sensor offset, and the implementation of the "confirm" ,and then close the position sensor calibration interface.

2: Fine positioning

Method 1:

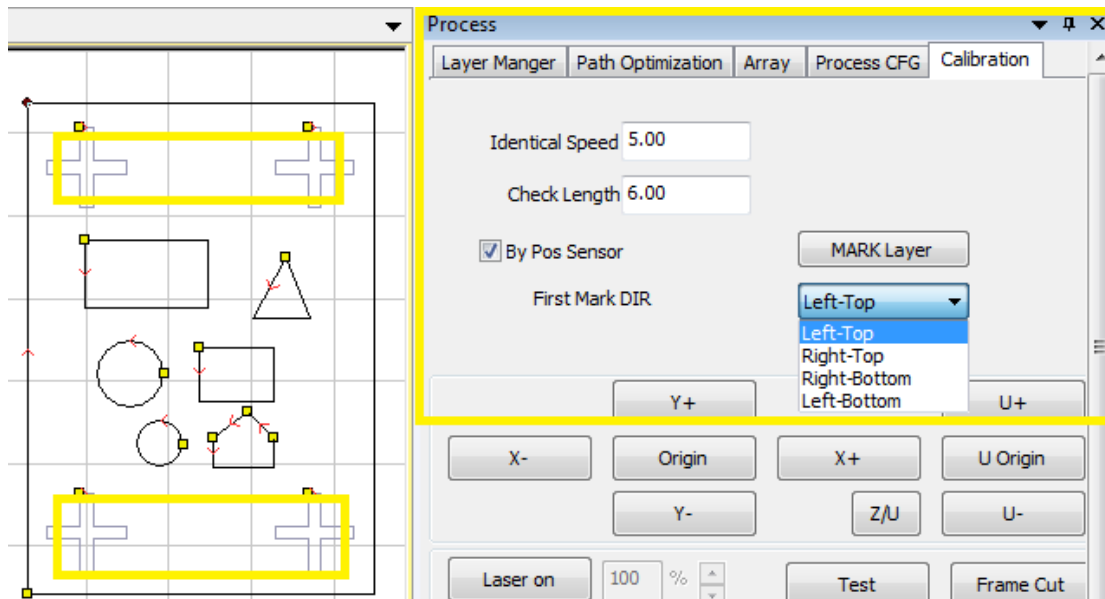
On the left side of the drawing tools selected location "MARK" standard (below) ", then the MARK standard format for any position, and set the corresponding processing parameters in the laser processing layer management interface, and then use a piece of paper stuck on a piece of hard wood as the test object, put the corresponding position in the format, and then click start processing, the software will download the MARK file to the controller after the automatic processing and accurate calibration;

Note: under normal circumstances on the white paper burned black traces need 11%-13% power, according to the actual situation. Recalibration of the sensor according to the color of the burn marks to accurately detect the relative position.

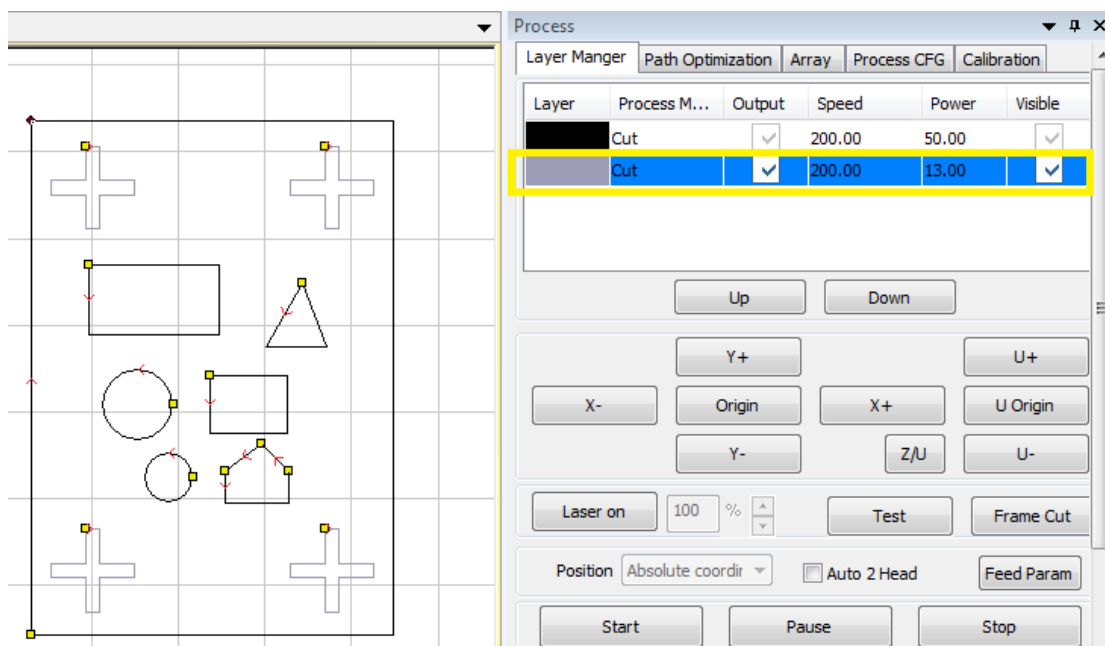


Method 2: Test and calibrate, print a standard A4 calibration drawing through the printer, and print the four corners of the cross mark when it is black, then print it in accordance with the size of 1:1;

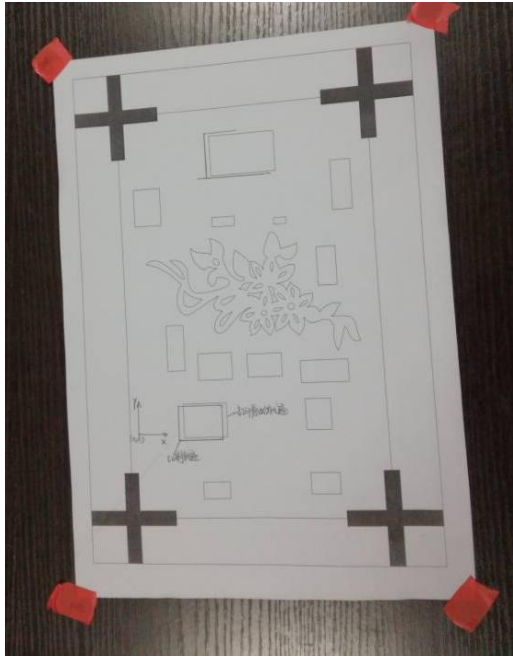
The first step: in the application software into the trial cut graphics, Mark point set, the operation as shown in the following figure:



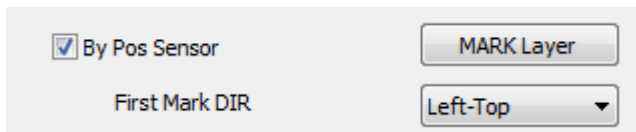
After setting, such as the following figure, will be more than a gray layer, the layer is the MARK layer, the actual processing of the layer is not processed, only used to do the positioning scan;



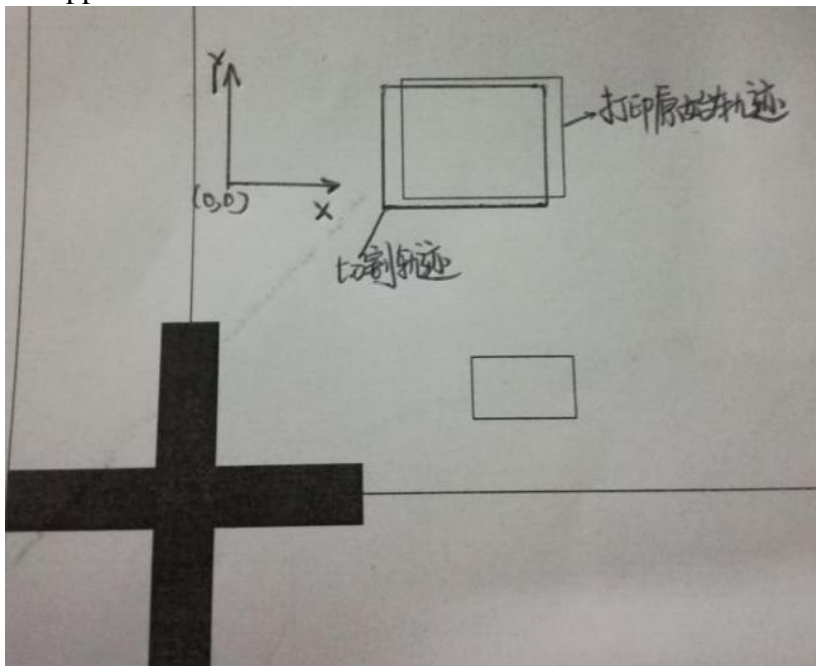
The second step: after setting the modified black layer parameters after download the file to the controller, and then print the documents placed in any location format processing machine platform, keep the paper smooth, when necessary, can take the four paste to the machine, to ensure the accuracy of the calibration.

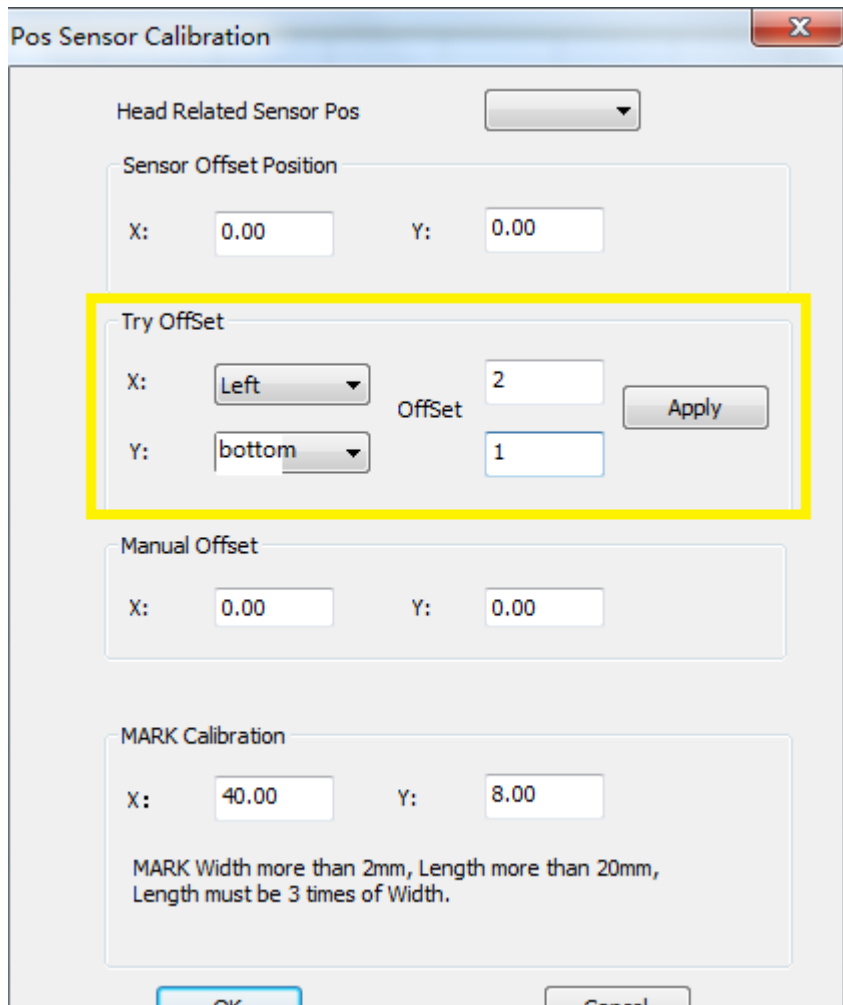


The third step: move the cursor through the panel point, so that the positioning of the cursor to move to the first MARK point azimuth (left) MARK mark the middle position, and then start processing.



The fourth step: cutting deviation between observed traces relative to the original print graphics, and the deviation to fill out the "tools" - "positioning sensor calibration" - Test cutting "offset" in the following: as shown in the figure, the cutting track is to cost about 2MM, down 1MM in cheap; cut fill in the corresponding offset the application value and click.



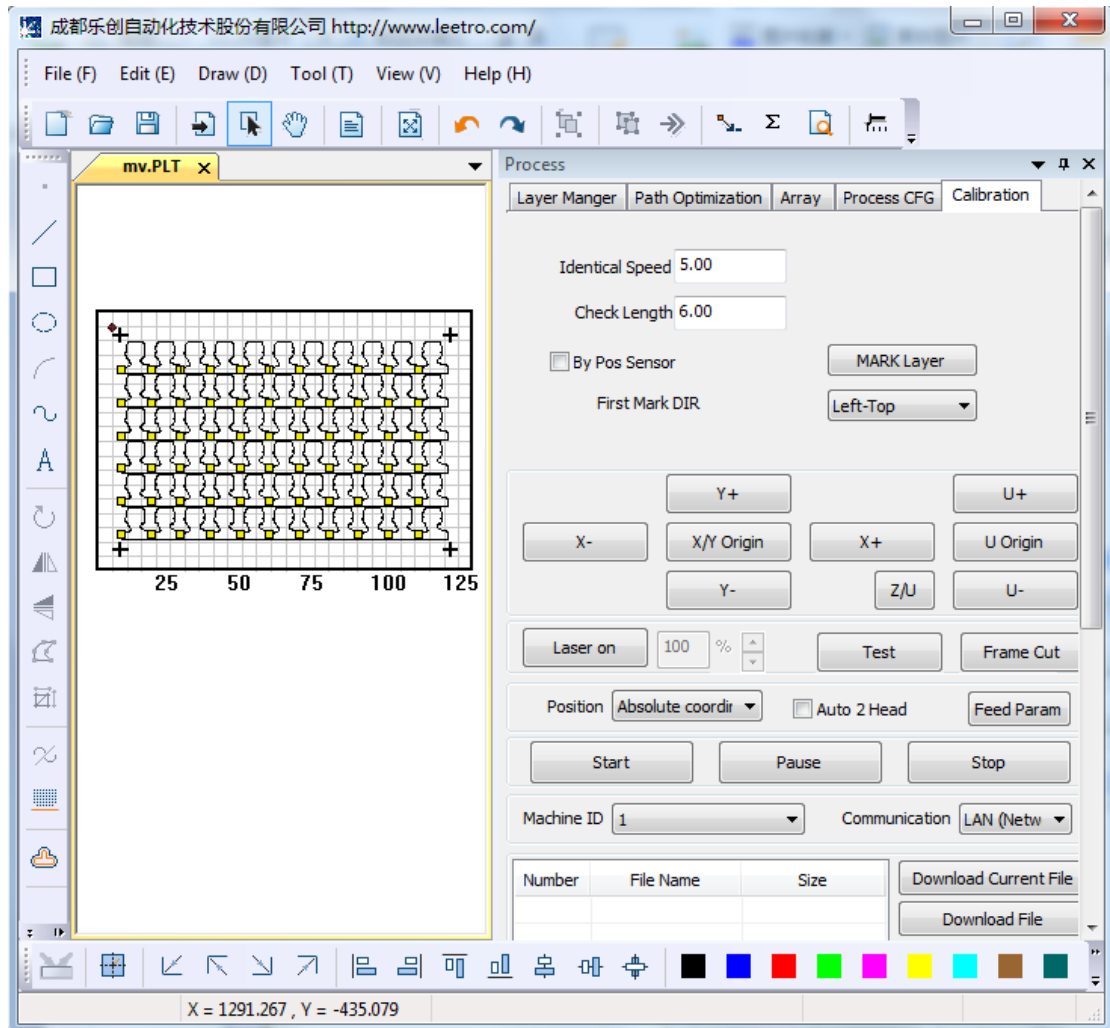


The fourth step: click confirm again after download the test cut files, repeat the first step to the third step operation, once again try to cut the calibration work, until the test cut calibration trajectory and print trajectory exactly the same sensor calibration work is completed, the accuracy of shadow sensor calibration ring following cutting accuracy.

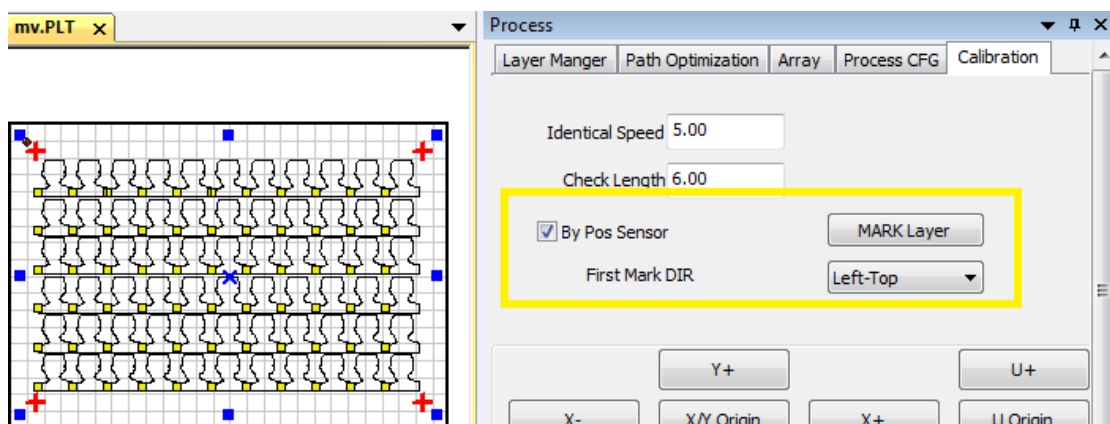
Note: in order to obtain a higher accuracy of the cutting trajectory, it is recommended to adopt method 1 for fine positioning and calibration

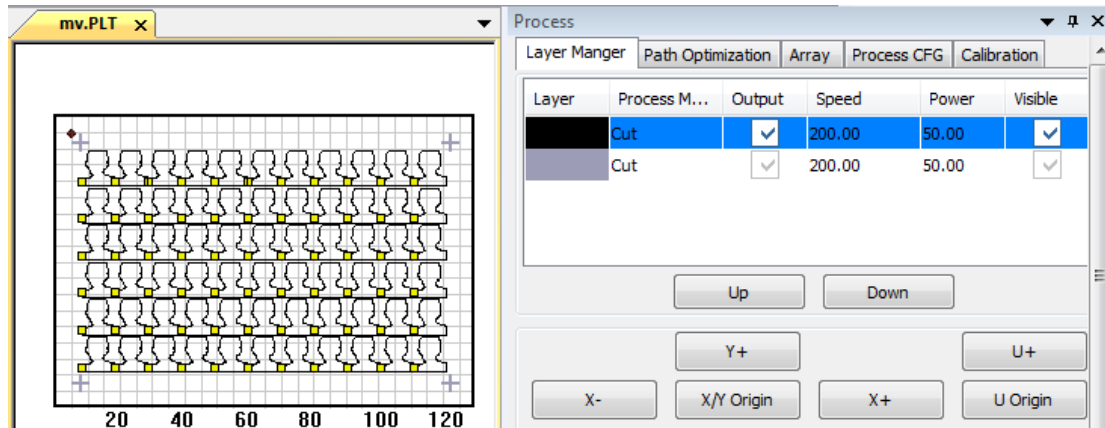
Positioning Cutting Process

1: Import processing file

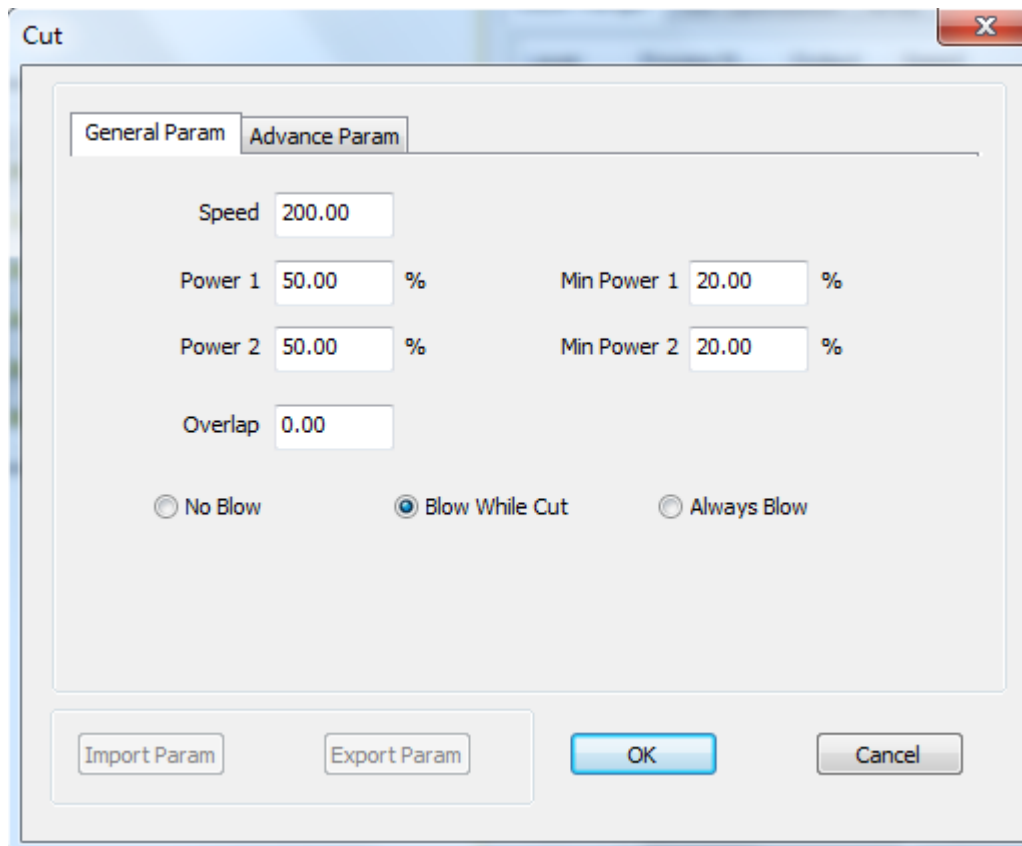


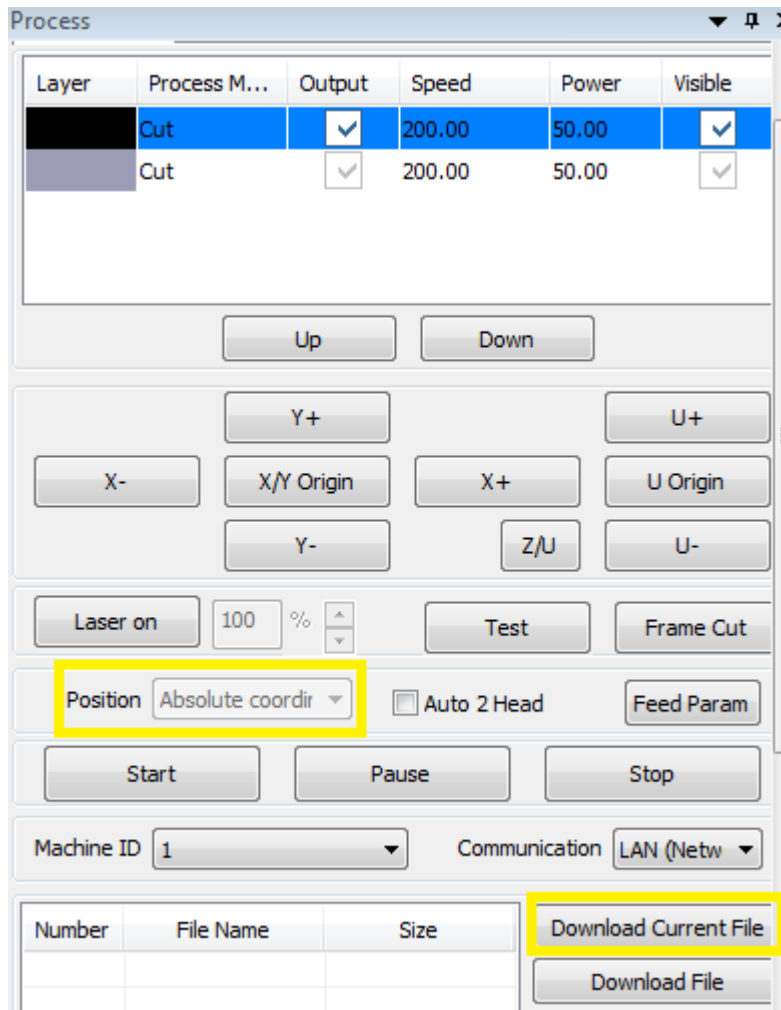
2: Set MARK Layer:



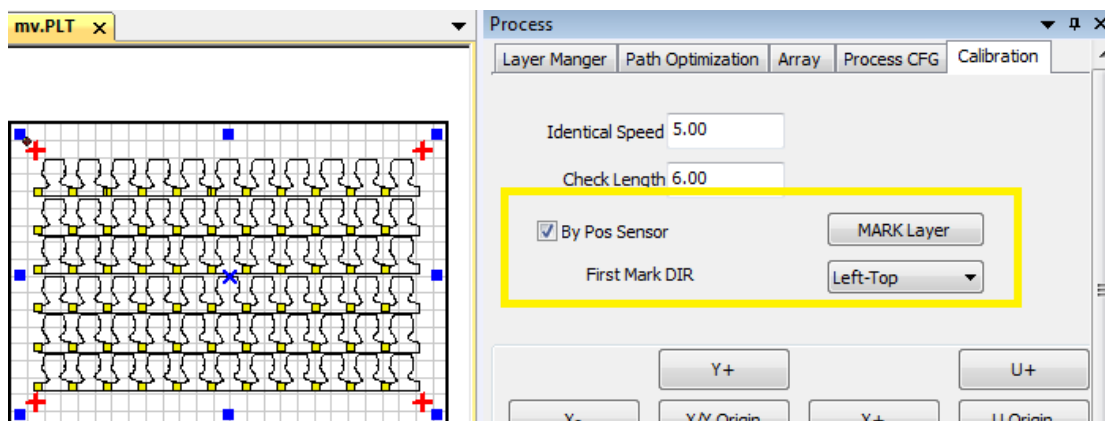


3: Set processing parameters, output processing files and download processing files





4: Move the cursor to the position of the cursor and start the process



NOTE:

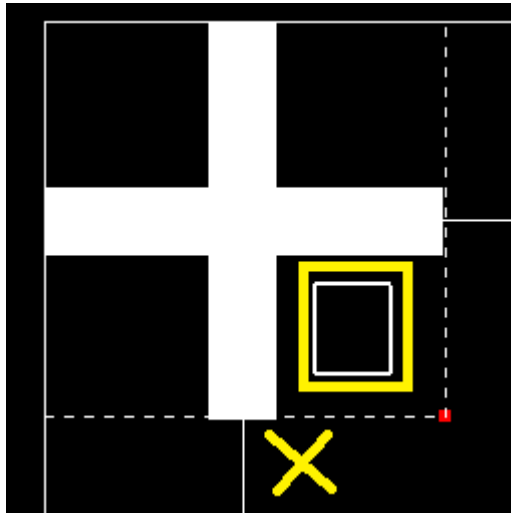
1: Positioning sensor and machine assembly must be reliable. If not fixed, the use of equipment during the process of vibration or cursor settings are likely to make the previous sensor offset position changes, thereby affecting the processing accuracy.

2: Sensor cursor settings, due to different printing or organic glass printing and

other factors, may cause the sensor cursor can not be correctly identified, need to re color calibration;

3: Machine equivalent pulse setting, calibration equipment requirements ahead of a full width rectangular, length and width of the actual test pulse equivalent to confirm the parameters affecting the cutting precision.

4: Cross the square of the square in the printing area can not print other graphics, to avoid errors caused by false identification or identification of failure, as shown in the following figure, the cross section of the dotted line can not be printed on the other graphics.



Version description:

- 1、 Jan, 2017 V0.1 New