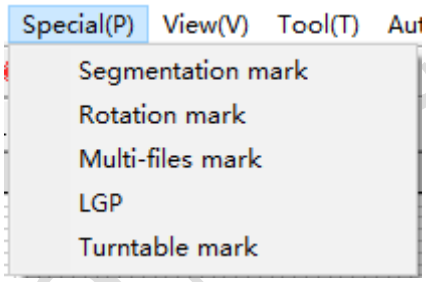
FEELTEK 菲镭泰克	Document Name	Version
APPROVED	LenMark Software---Special functions	2017.1.0

The special menu bar in LenMark_3D basic software provides 5 special functions, there are Segmentation mark, Rotation mark, Multi-files mark, LGP and Turntable mark, as shown in pic 1 below:



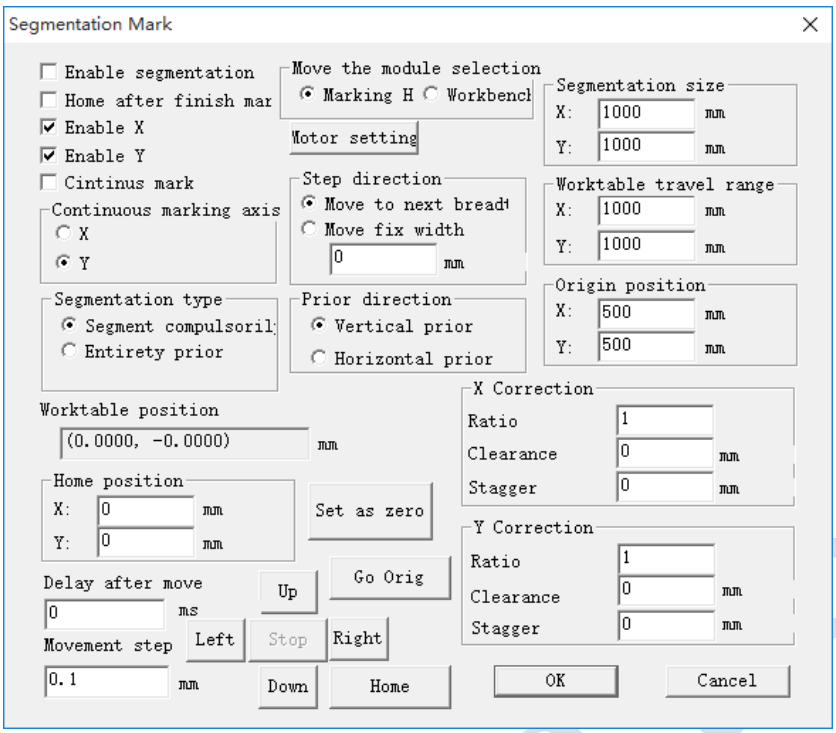
pic 1 Special functional type picture

Note: the segmentation mark, the rotation mark and the turntable mark are required to coordinate with the corresponding worktable for marking operation, and the LGP can be used for marking the transparent acrylic plate.

1 Segmentation mark

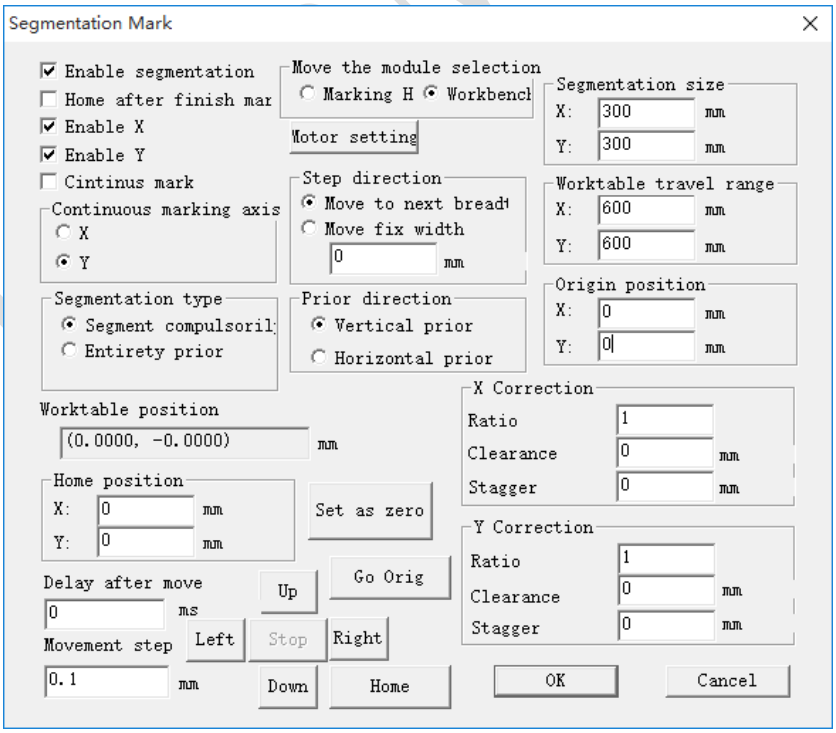
1.1 Operation steps

1. Click the "segmentation mark" function under the "special" menu, the system pop-up "Segmentation Mark" setting up dialog box, the interface as shown in pic 1-1



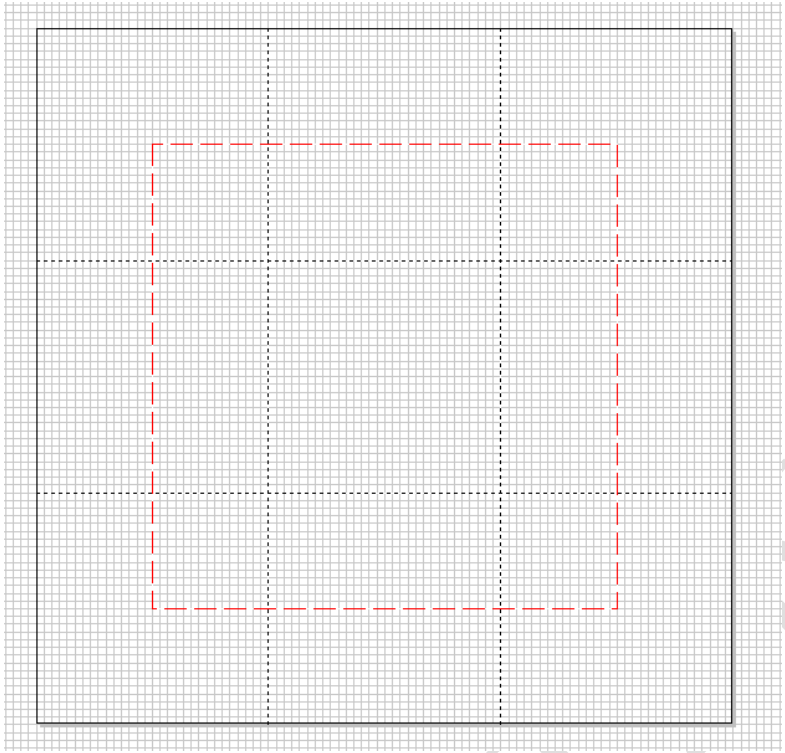
pic 1-1 Segmentation Mark setting up dialog box

2. Check the "Enable segmentation", open segmentation marking function, set segmentation size: 300*300, Worktable travel range: 600*600, origin position: 0*0, move the module selection: Workbench, Segmentation type: Segment compulsorily, the interface as shown in pic 1-2:



pic 1-2 Segmentation Mark setting up interface

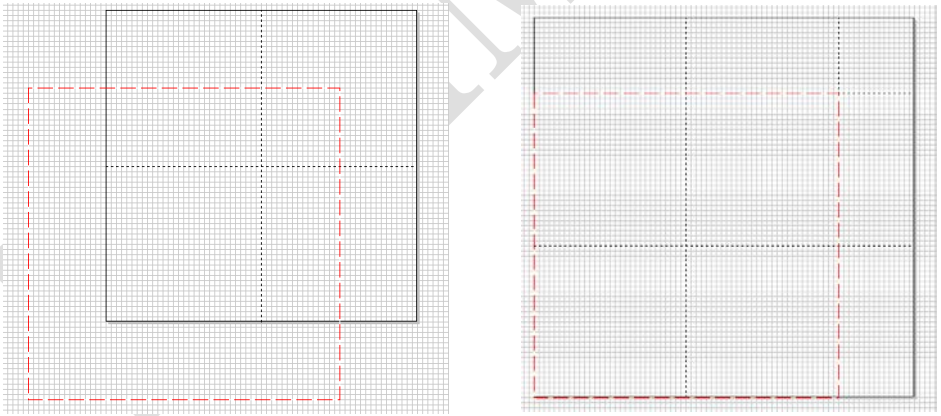
After setup is complete, click "OK" button. And the main interface of software as shown in Figure 1-3:



pic 1-3 Segmentation Mark software interface

As shown in the pic above, the red dashed area is the marking range after the software is segmented, and the black area is the maximum range for the worktable to move.

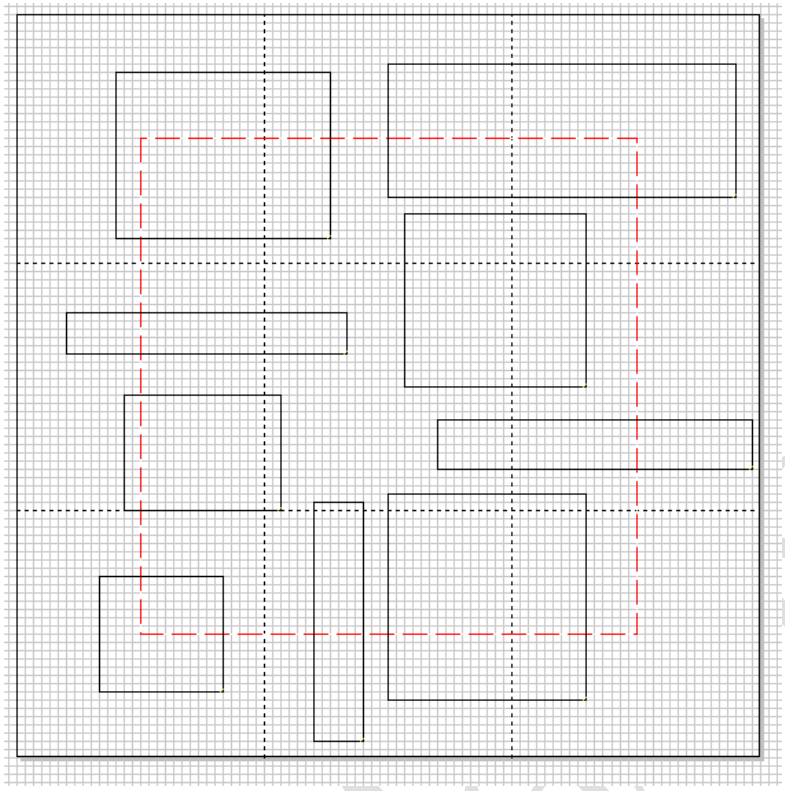
According to the different location of the origin, the location of the software after segmentation is not the same, as shown in pic 1-4:



origin position is 300*300 origin position is 150*150

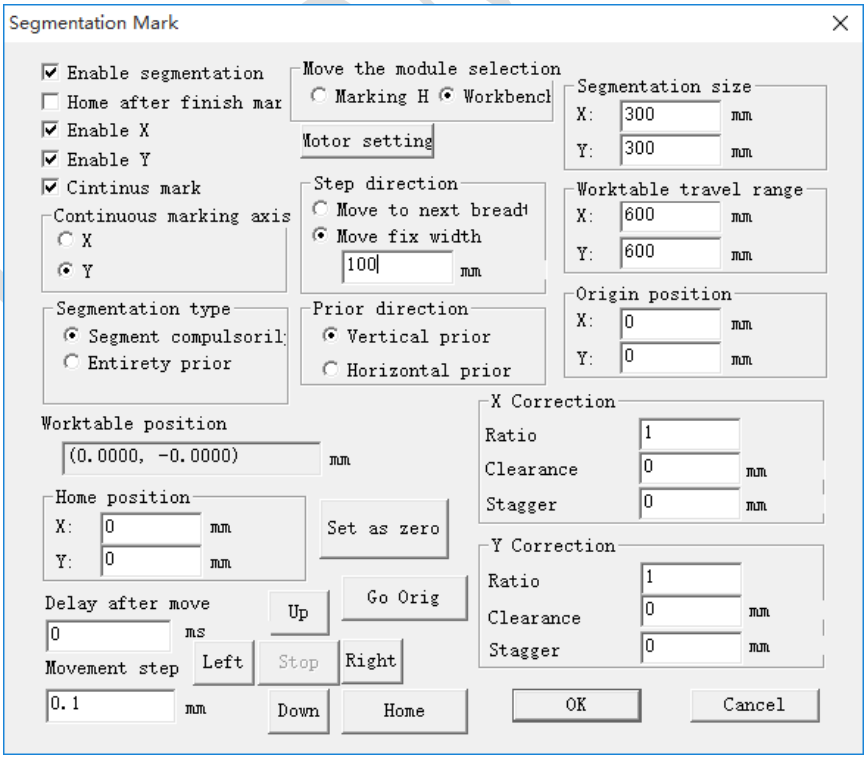
pic 1-4different origin position effect picture

3. Import the marking object or draw the marking object in the marking area, as shown in pic 1-4:



pic 1-4 import object interface

4. Click "Continus mark", set "Continuous marking axis" as: Y axis, select " Step direction" as: move fix width: 100mm, the interface as shown in pic 1-5:



pic 1-5 Continuous mark setting up interface

Click “OK” button to complete the setup, after setting marking parameters, then mark. During the

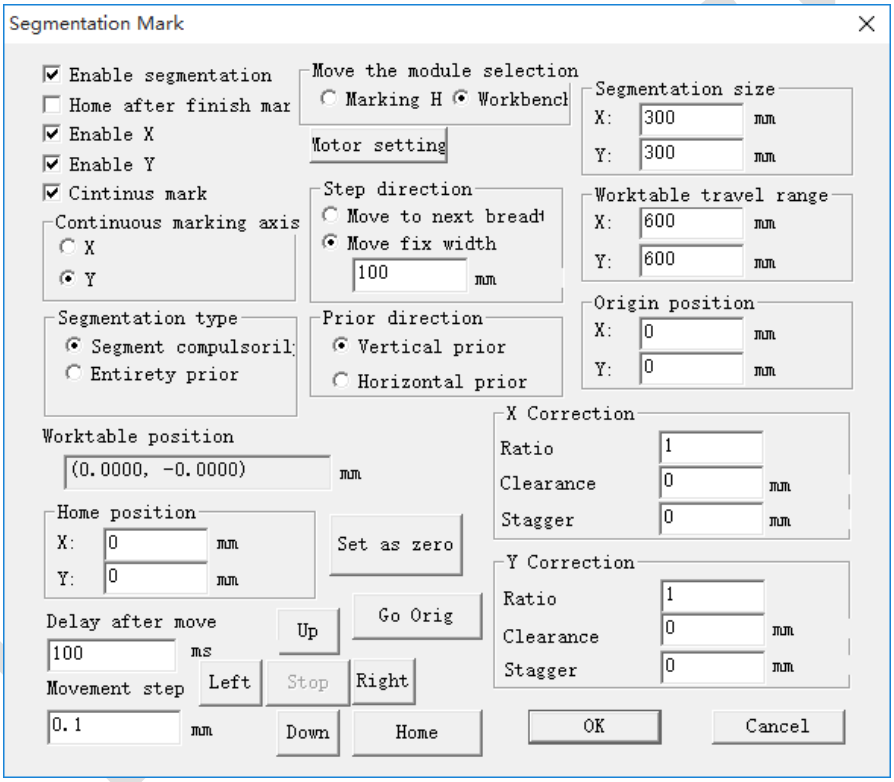
marking process, you need do the repeated marking operation in the Y axis direction interval 100mm. Select the "Step direction" to: Move to next breadth, click "OK" button to complete the set, then do the marking operation. After marking a single breadth, move to the next marking breadth, and the Y-axis repeats the marking operation.

5. Segmentation type selection

When the segmentation type is "Segment compulsorily", the object is divided according to the segmentation area, and the mark is segmented according to the segmentation line in the marking process;

When the segmentation type is "Entirety prior", less than the size of the object segmentation is not to break up, even if the object is in the segmentation line. If a segmentation area has a lot of small objects, the workbench will move once time for marking operation, instead of repeatedly moving.

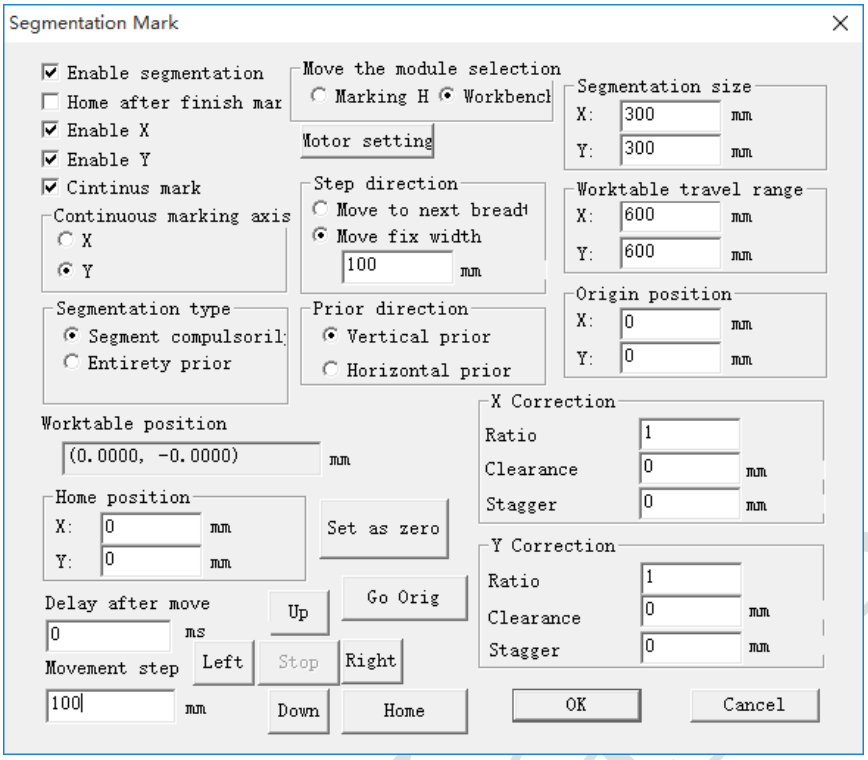
6. set the “Delay after move”: 100ms, the interface as shown in pic 1-6:



pic 1-6 Delay after move setting interface

Click “OK” button to complete the operation, after setting up the marking parameters, click “Mark” button. During the marking process, you can see that, after workbench moved 100ms, the laser began to light and mark. In this way, we can reduce the mistake of marking object caused by moving.

7. Set the " Movement step": 100mm, the interface as shown in pic 1-7:



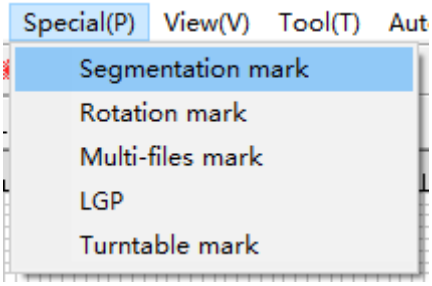
pic 1-7 Movement step setting interface

Click on the right side of the arrow keys to control the moving workbench, such as: Click "→" arrow key, workbench moves to the right 100mm; in the process of moving, the" stop "button to open the function, click the" stop "button to stop moving workbench.

8. After moving the workbench, click on “Set as zero” button, set the current workbench position to zero, marking and then click " Go orig" button, the workbench moves back to zero position; click" home "button, the workbench moves back to the mechanical zero lock position.

1.2 Making step

1. Click "Segmentation mark" button on the menu bar, the interface as shown in pic 1-8:

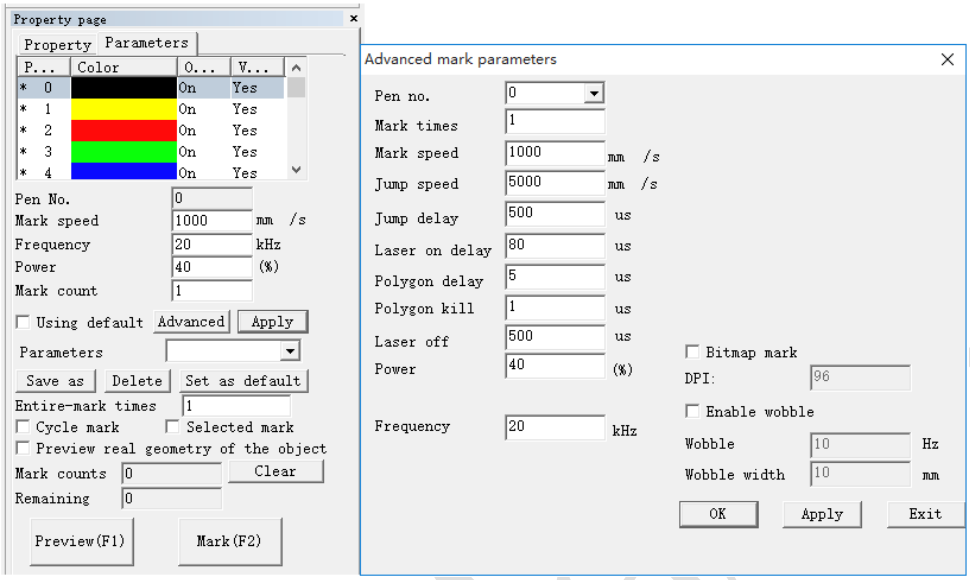


pic1-8 Segmentation mark function

2. Open the "Segmentation mark" Setting dialog box, select "Enable segmentation", and then set the "Segmentation size", "Worktable travel range" and "Origin position" and other parameters, and then click "OK" button, open the "segmentation mark" function;

3. In the drawing area, drawing the marking object, or through "import", "open" to open the already preserved marking object;

4. In the Property page, setting the marking parameters, interface as shown in pic 1-9:



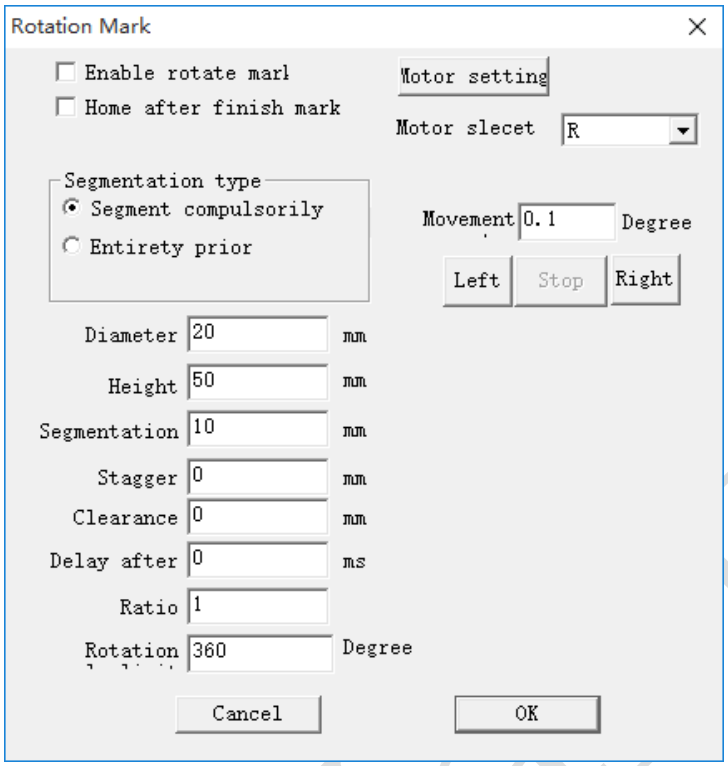
pic1-9 Marking parameters setting interface

5. After setting, click the "Mark" button or press the shortcut key "F2" to mark.

2 Rotation mark

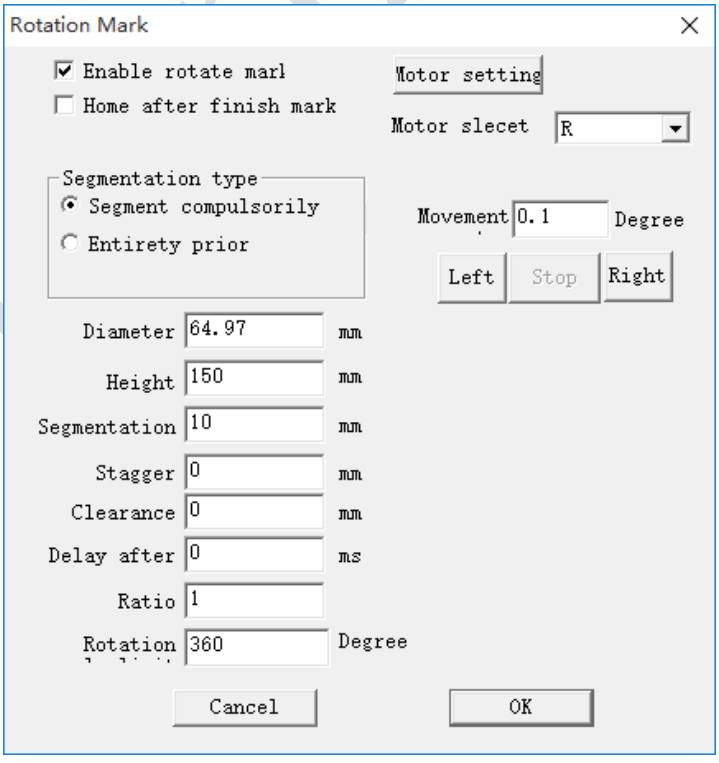
2.1 Operation steps

1. Click the "Rotation mark" function under the "special" menu, the system pop-up "Rotation Mark" setting up dialog box, the interface as shown in pic 1-1:



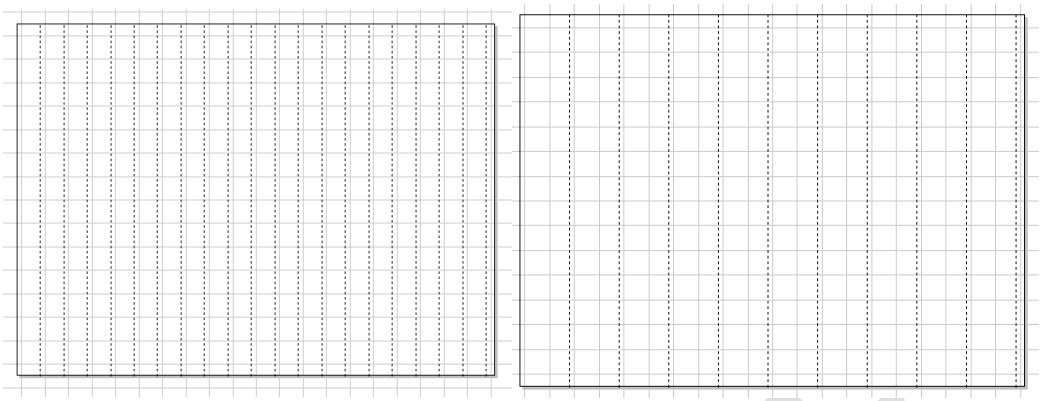
pic2-1 Rotation mark setting up dialog box

2. Check the "Enable rotate marl", open rotation marking function, set segmentation type:Segment compulsorily, according to the actual object to set the object diameter and height is: 64.97*150MM, the interface as shown in pic 1-2:



pic 2-2 Rotation mark setting interface

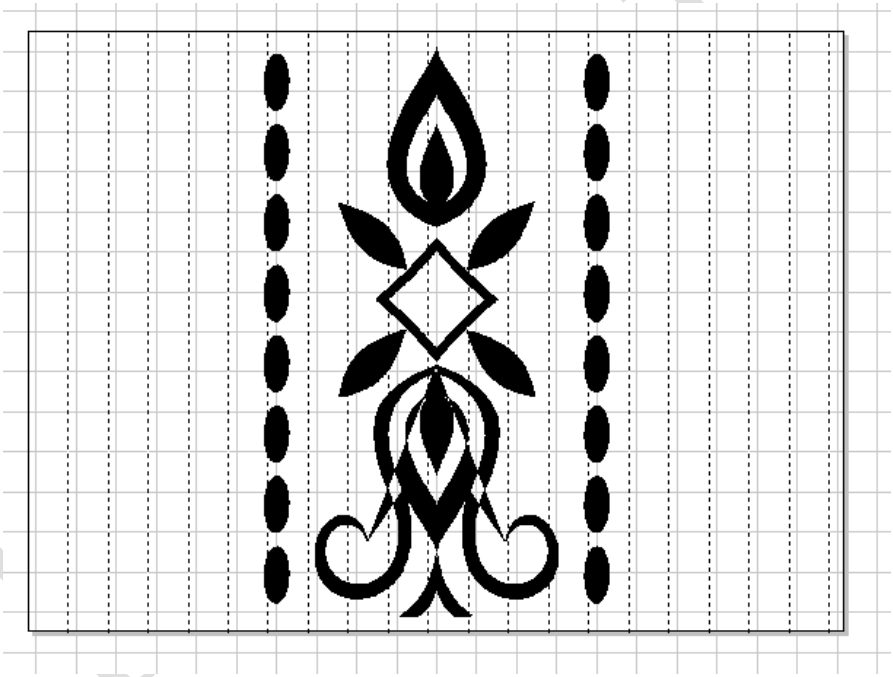
After setting, click "OK" button, the software interface is shown in pic 2-3, according to the different of segmentation size, in the software drawing area, the size of the segmentation area changes;



segmentation size is 10 segmentation size is 20

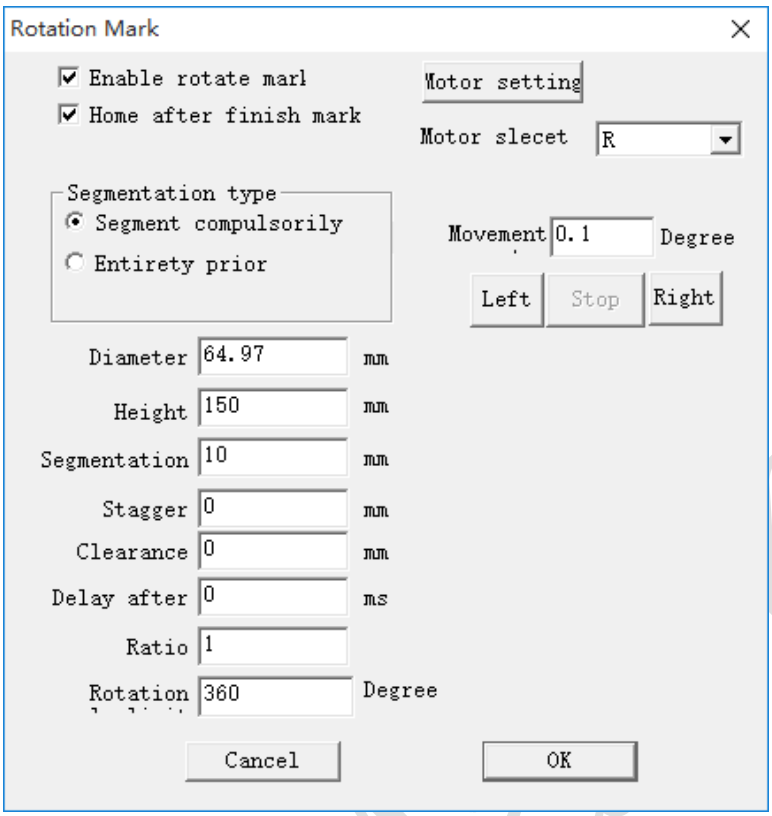
pic 2-3 Rotation mark interface effect picture

3. Import the marking object, the interface as shown in pic 2-4:



pic2-4 Import object picture

4. Check the "Home after finish mark" button, the interface as shown in pic 2-5:

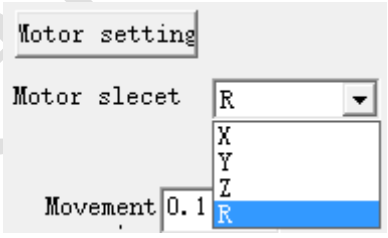


pic 2-5 Home after finish mark function

After the check, click "OK" button to complete the setting, import the mark object, click the "Mark" button for marking, after the completion of the mark, the worktable rotates back to the zero position

5. Motor select

There are X, Y, Z, R four axis available, as shown in pic 2-6:



pic 2-6 Motor select interface

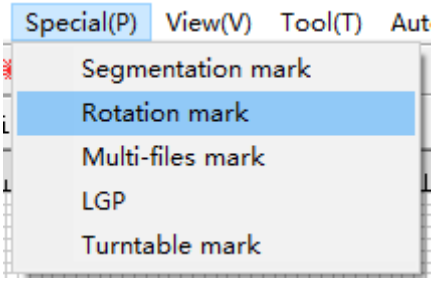
After selecting the motor, click the "Motor setting" button to enter the "stepper motor parameter setting" dialog box to set the parameters of the motor.

6. Set the “Movement” for 10 degrees, click the “←”arrow key, the motor will turn left to 10 degrees. In the rotating process, “stop” button function is open, click "stop" button, the motor will stop moving;

7. Set the "Delay after" for: 100 milliseconds, click "OK" button to complete the set. And then mark, you can see that the motor rotates to the designated position, waiting for 100ms, the laser began to light;

2.2 Mark steps

1. Click the "Rotation mark" button under the "special" menu bar, the interface as shown in pic 2-7:

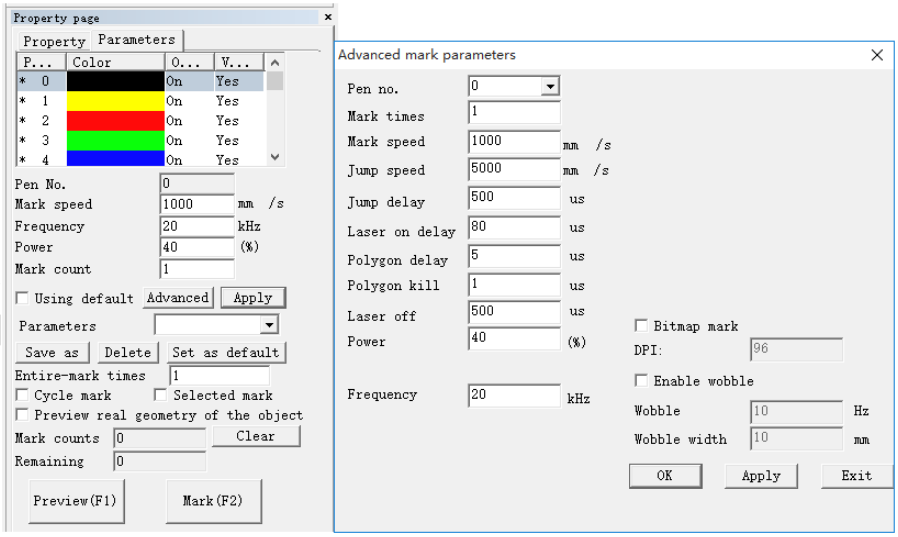


pic 2-7 Rotation mark selection interface

In the pop-up "Rotation mark" Setting dialog box, check "Enable rotate marl" button, fill in the "Diameter" of the marking workpiece and the "Height" for highly accurate values, set the motor, click the "OK" button to set the application;

2. In the drawing area, drawing the marking object, or through "import", "open" to open the already preserved marking files;

3. In the "Marking parameters" Property page, setting Mark speed, Frequency, Power and other parameters, the interface as shown in pic 2-8:



pic 2-8 Marking parameters setting interface

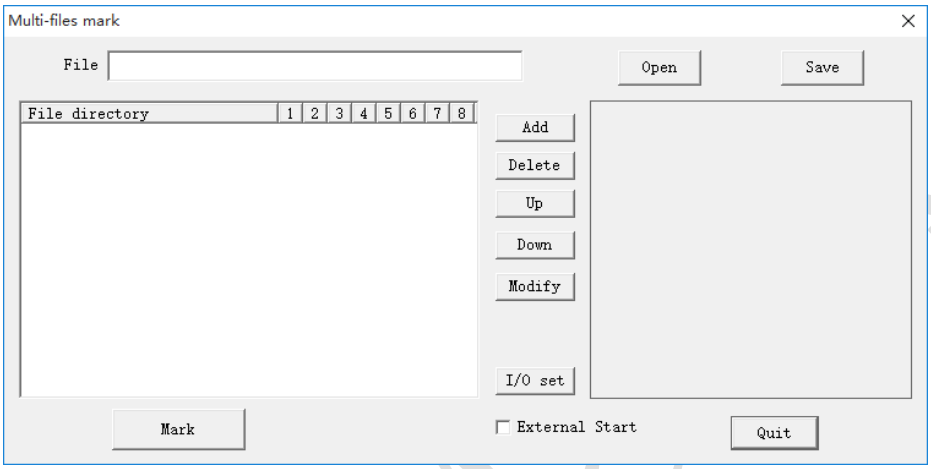
After setup is complete, click the "Apply" button to complete the set.

4. Click the "Mark" button or press "F2" for marking.

3 Multi-files mark

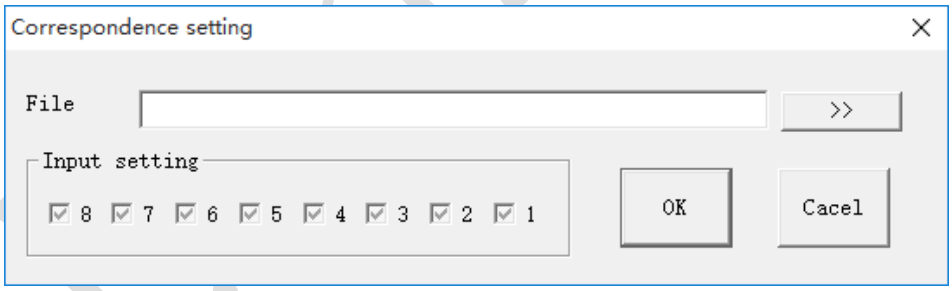
3.1 Operation steps

1. Click the "Multi-files mark" button under the "special" menu bar, the system pop-up "Multi-file mark" setting up dialog box, the interface as shown in pic 3-1:



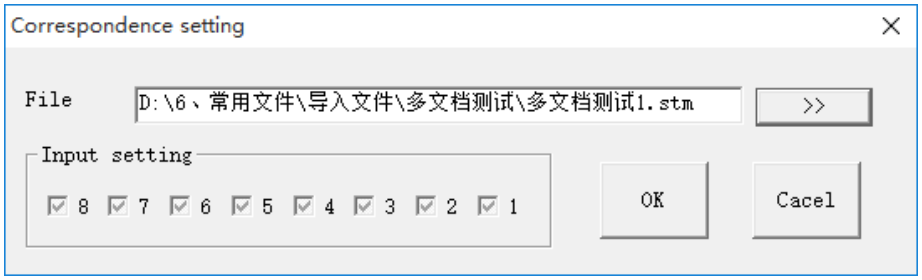
pic 3-1 Multi-files mark setting interface

2. Click "Add" button, the system pop-up "Correspondence setting" dialog box, the interface as shown in pic 3-2 below:



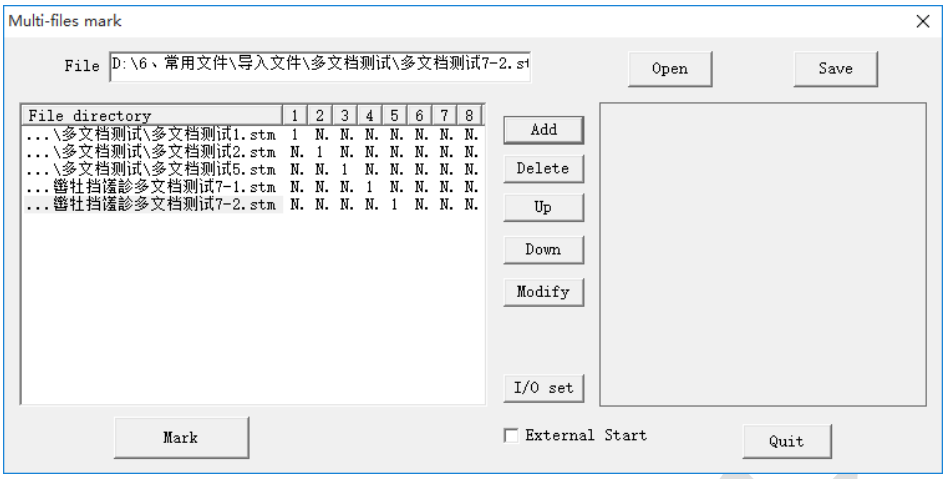
pic 3-2 Correspondence setting interface

Click the "》" button to add the object file, click "OK" button to complete the file add operation, the interface as shown in pic 3-3:



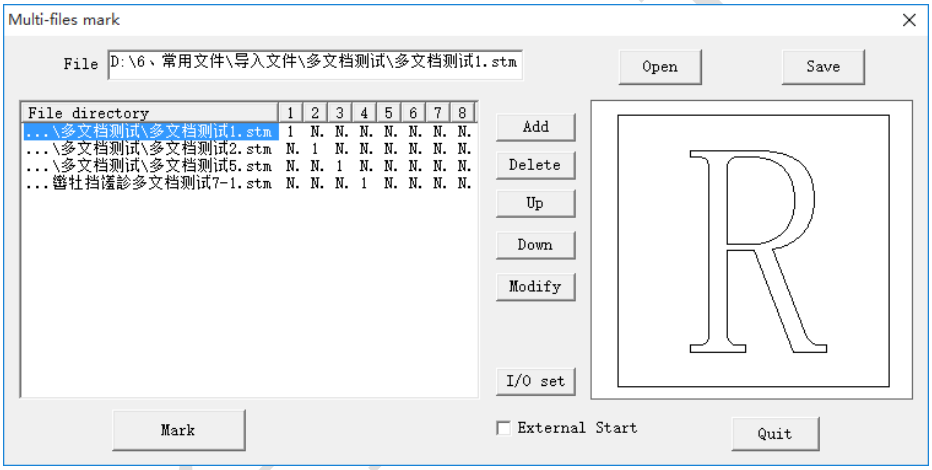
pic 3-3 Document add interface

All documents will be added, after the completion, the interface as shown in Figure 3-4:



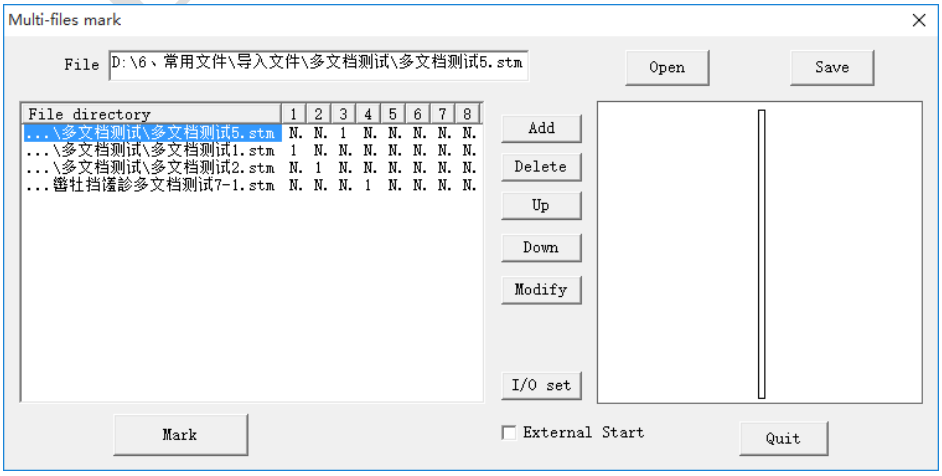
pic 3-4 Add interface effect picture

3. Click "Delete" button to delete the wrong file or invalid file, after deleting, the effect interface as shown in pic 3-5:

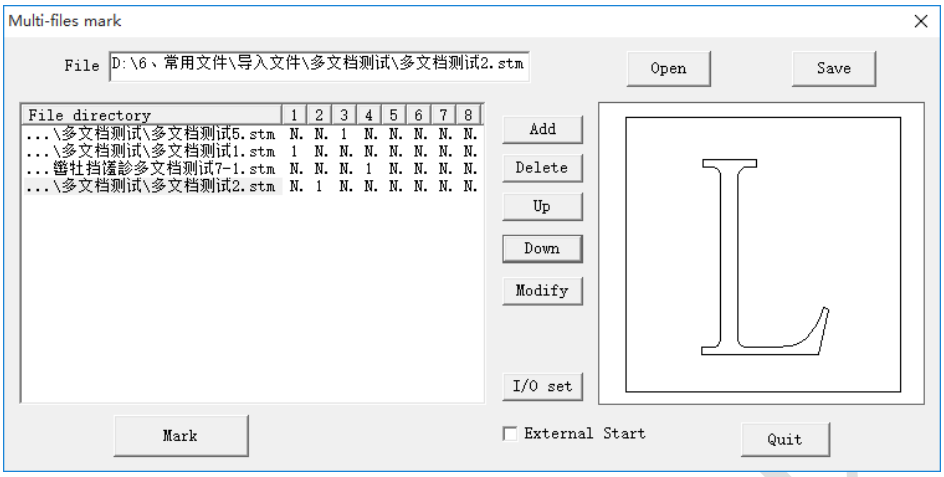


pic 3-5 Delete operation effect picture

4. After selecting the file, you can click the "Up" and "Down" button to change the file up and down sequence, the effect as shown in pic 3-6 and 3-7 below:

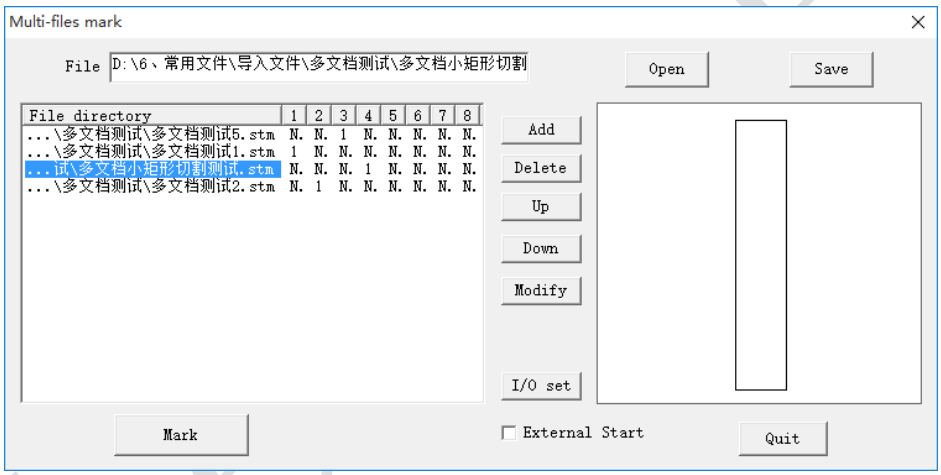


pic 3-6 Up operation effect picture



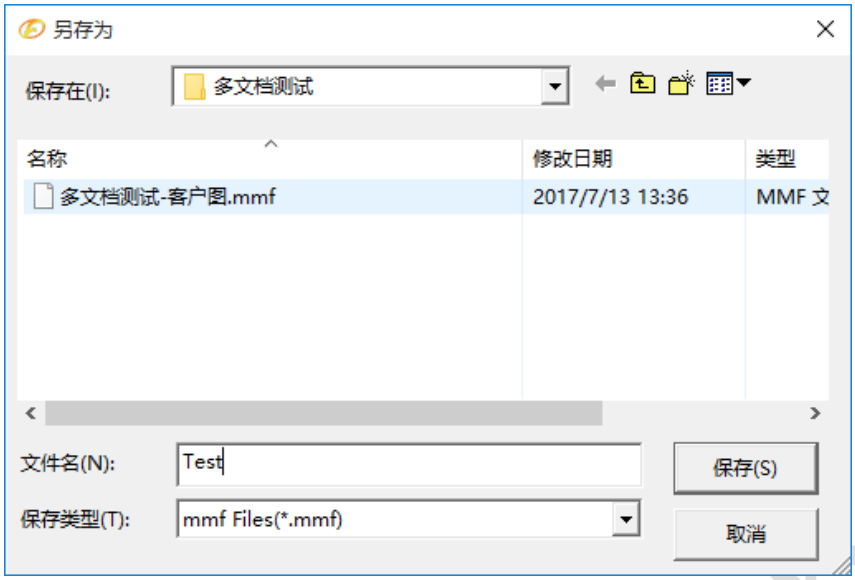
pic 3-7 Down operation effect picture

5. After selecting the file, you can click the "Modify" button to modify the added file, the effect as shown in pic 3-8:



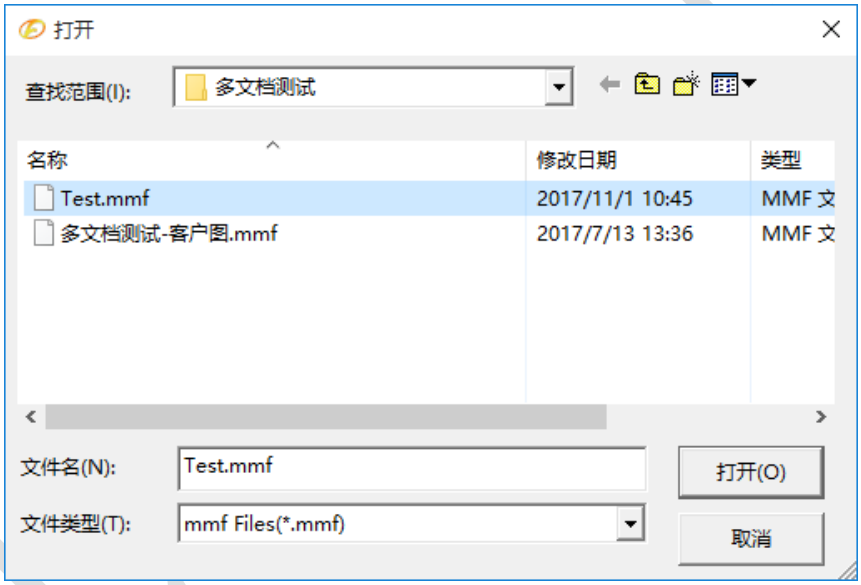
pic 3-8 Modify operation effect picture

6. Click the "Save file" button, you can add all the files as a suffix ".mmf" file, as shown in pic 3-9, add all the files as " Test.mmf ":



pic 3-9 Save the file effect picture

Click on "Open file" button, you can open the saved "Test.mmf" file, convenient for the next call, steps as shown in pic 3-10:



pic 3-10 Open file effect picture

7. Click the "I/O set" button, you can do the input setting, the software defaults to all allowed state, the interface as shown in pic 3-11 below:



pic 3-11 Input setting interface

8. When not check "External Start", click the "Mark" button, the software directly do marking, the interface as shown in pic 3-12:



pic 3-12 Marking interface

After checking the "External Start", click "Mark" button, the interface as shown in pic 3-13:

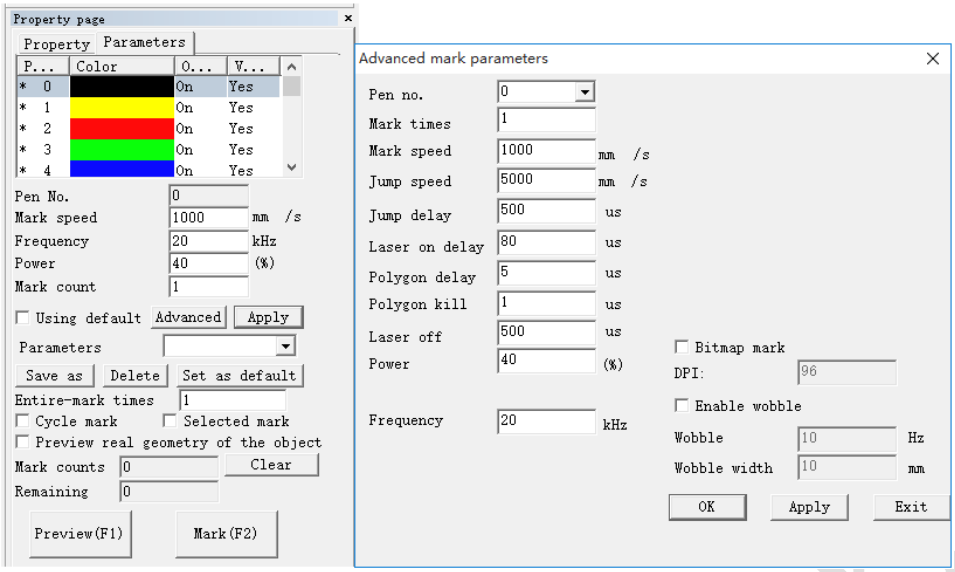


pic 3-13 External start mark interface

The software needs to give the marking signal outside, and it can mark.

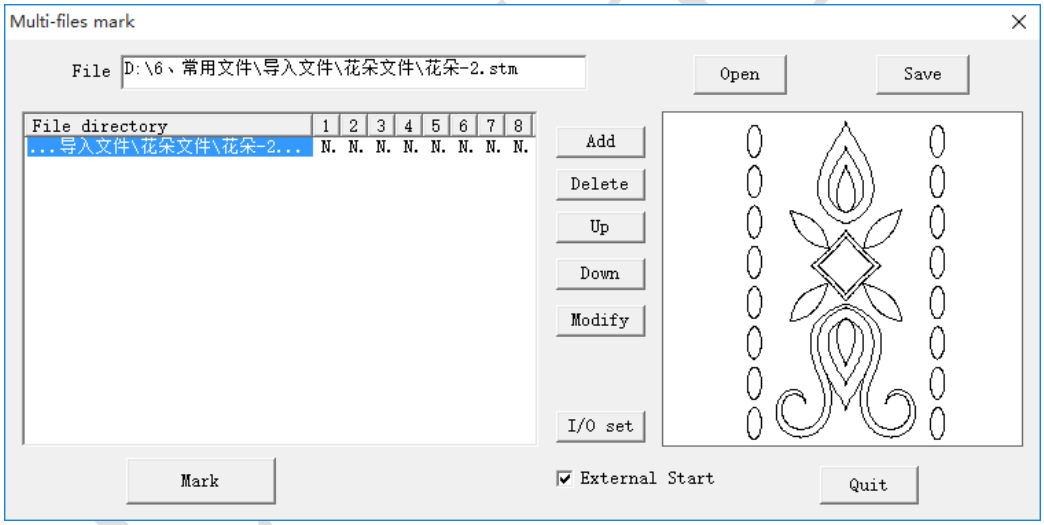
3.2 Mark steps

1. Open the file, set the marking parameters in the property pages, the interface as shown in pic 3-2-1:



pic3-2-1 Marking parameters setting interface

2. In the "Multi-files mark" dialog box, add the file which has finished configuration marking parameter, the interface as shown in the pic 3-2-2:



pic 3-2-2 File add interface

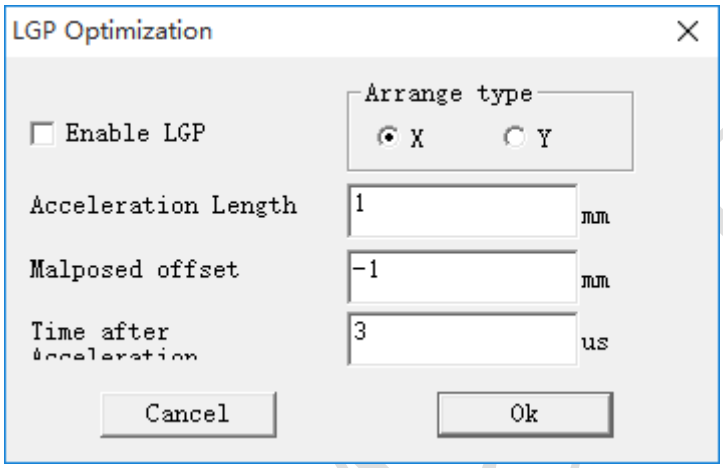
3. Click the "Mark" button for marking, you can adjust the marking parameters to achieve the desired effect of marking.

Note: the marking parameters need to be adjusted in the file, not set in the "Multi-files mark" Setting dialog box. Click the top right corner "close", default exit multi-files mark function.

4 LGP

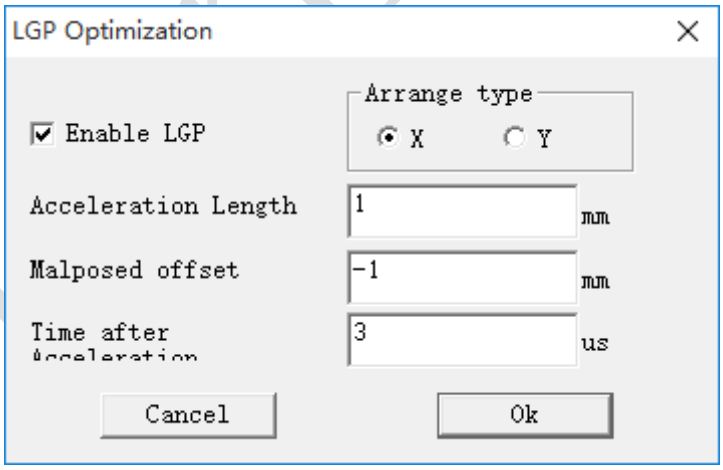
4.1 Operation steps

1. Click the “LGP” under the “special” menu bar, the system pop-up "LGP Optimization" Setting dialog box, the interface as shown in pic 4-1:



pic 4-1 LGP setting interface

2. Check the "Enable LGP", click "OK" button, open the LGP function, the interface as shown in pic 4-2:



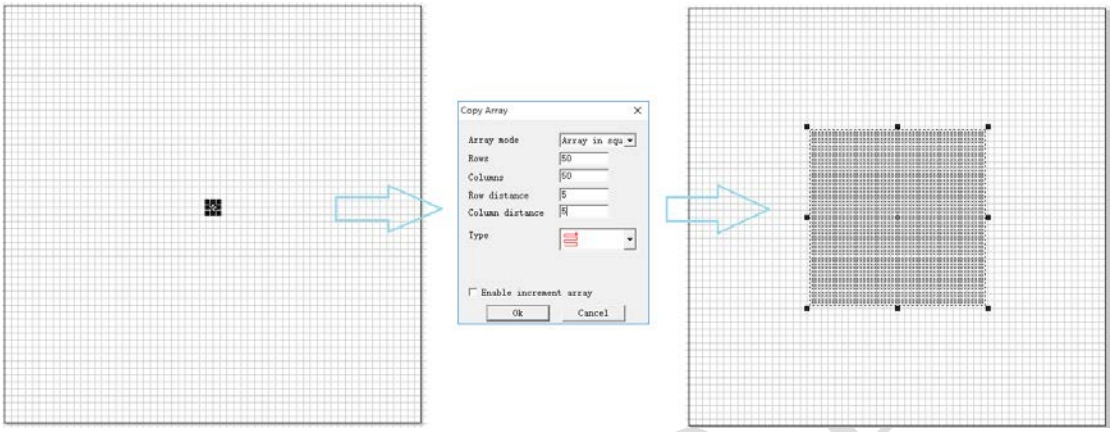
pic 4-2 Enable LGP interface

3. According to the need, set the Acceleration Length, Malposed offset, Time after Acceleration parameters, adjust the marking effect;

4.2 Mark steps

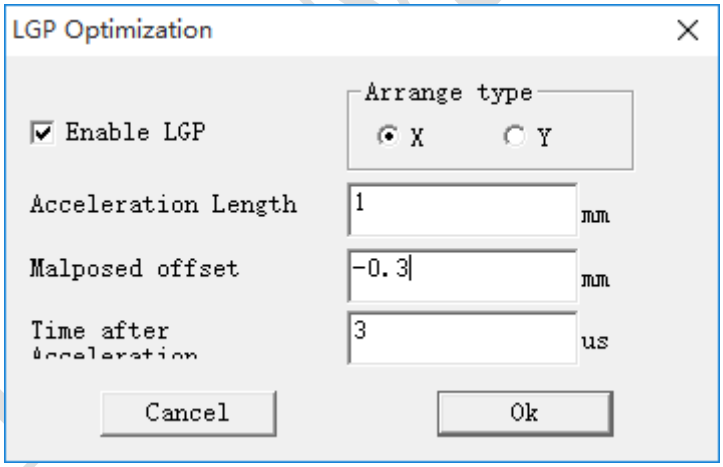
Take "mark the point" as an example to illustrate the steps of marking:

1. Draw a point in the software drawing area, click the "Edit" menu bar, select "Array mode", set the corresponding parameters in the pop-up setting dialog box, generate the marking object, the effect is shown in pic 4-3 below:



pic 4-3 Point array generation interface

2. Click the “LGP” under the "special" menu bar, in the pop-up "LGP Optimization" Setting dialog box for parameter setting, the interface as shown in pic 4-4:



pic 4-4 LGP Optimization setting dialog box

3. In the process of marking, the point position dislocation can be optimized by adjusting the parameters in the "LGP Optimization" dialog box.