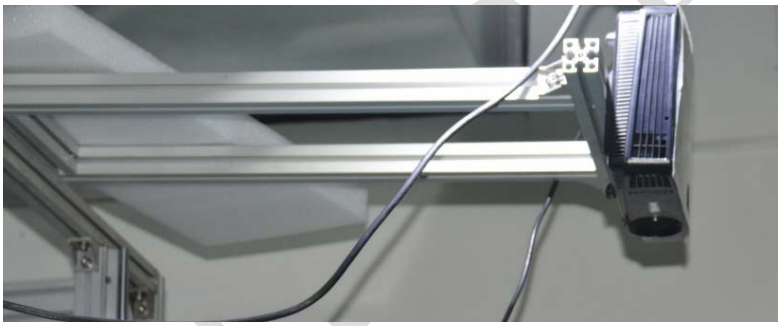
FEELTEK 菲镭泰克	Document Name	Version
APPROVED	LenMark Software---Projector Position	2017.1.0

1. Installation Procedure

1. Fix the projector on the machine frame through aluminum profiles, see below pic.1-1



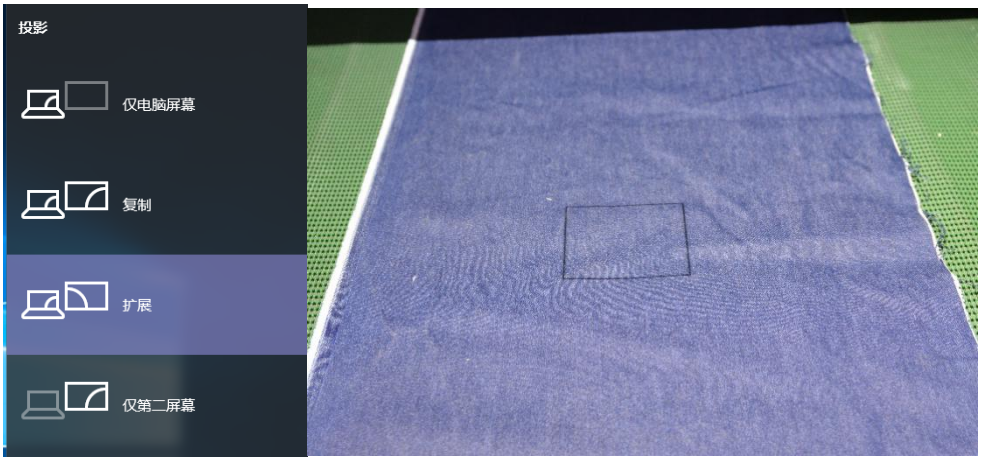
Pic1-1 projector installation

2. Connect the projector with PC through signal, see below connection pic1-2



Pic 1-2 connection

3. Projecting the PC screen to the workbench with a proper model, see below pic1-3



Pic 1-3 projector setting effect

4. Adjust the definition of projection imaging by turning the knob on the projector, see below knob interface pic1-4



Pic 1-4 focus length adjustment knob

Adjustment effect see below pic1-5



Adjustment effect (Before) Adjustment effect (After)

Pic 1-5 focus length adjustment effect

5. Make the direction of the projection screen consistent with the software through adjusting projection button, see below pic1-6



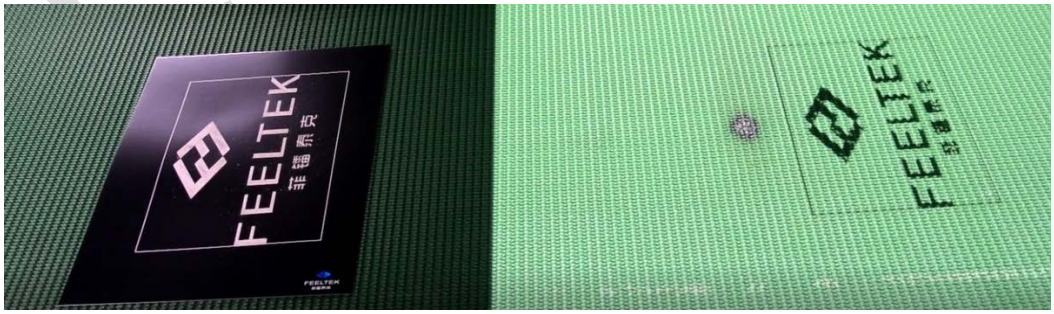
Pic 1-6projection button interface

Take the below software interface for example pic1-7



Pic 1-7 image display of software

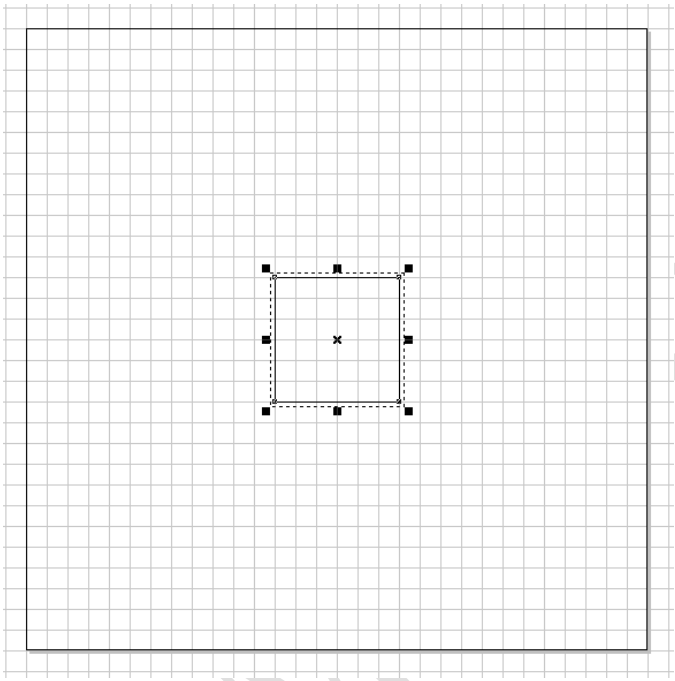
By adjusting the button, make the direction of projection image consist with software interface, which is the actual marking direction is consistent with the projection direction. See below pic1-8



Pic 1-8projection azimuth adjustment effect

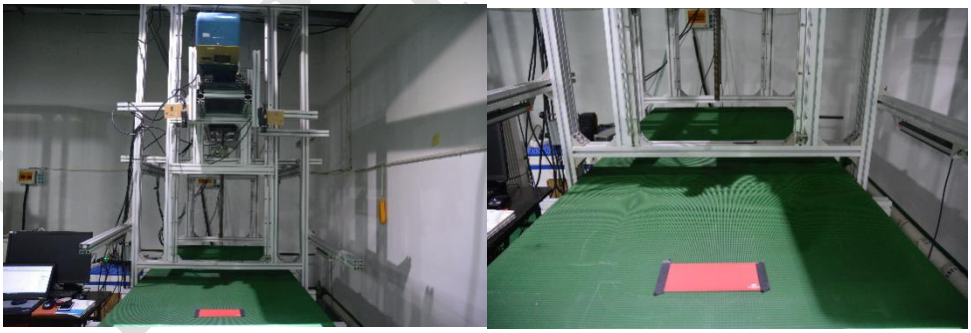
2. Operation Steps

1) Import the marking object to the drawing area, take the Ordinary rectangle for example, see below pic 2-1



Pic 2-1

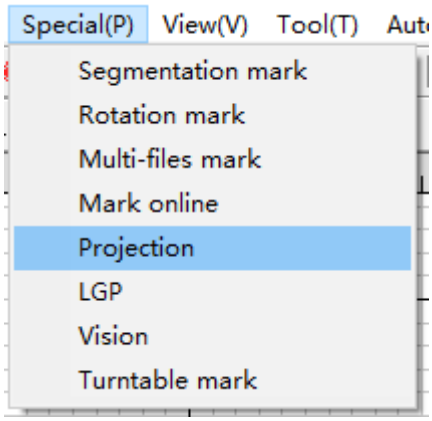
2) Place the marking object on the marking position workbench, and fix it, see below pic 2-2



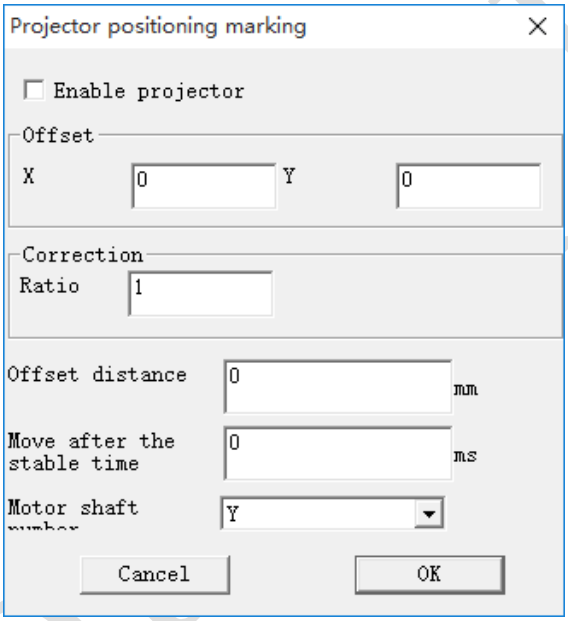
Pic 2-2 marking object placement

3) Adjust marking parameters and other information, click “marking” button or press the shortcut key “F2” to mark.

4) Click the “Special” in the software menu, select “Projector Position”, see below pic-2-3, enter the "projector positioning marking" Settings dialog, see below pic 2-4

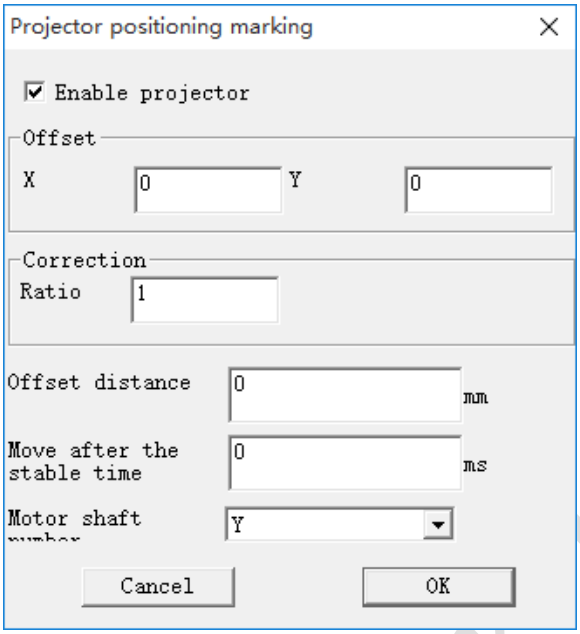


Pic 2-3 projector positioning function



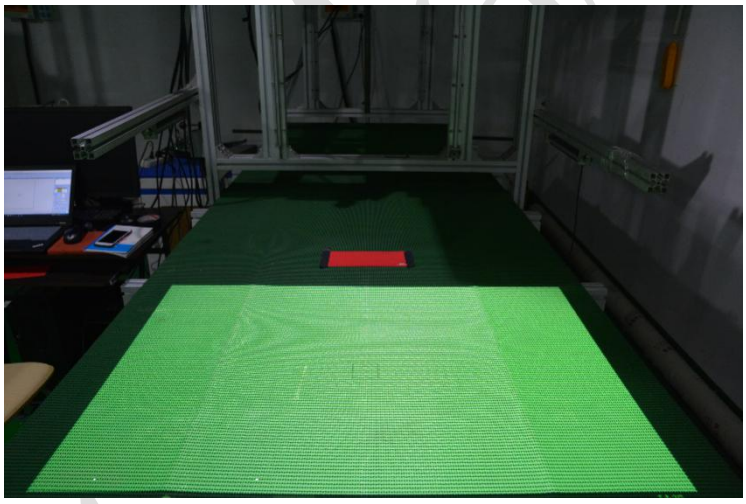
Pic 2-4 projector position marking dialog

5) Select "enable projection positioning" option, select the motor shaft number: Y. Click “YES” button, open projection positioning marking function, see below pic2-5



Pic 2-5 projection positioning open interface

6) Click the icon "" in the toolbar, Project the contents of the drawing area to the workbench, see below effect pic2-6



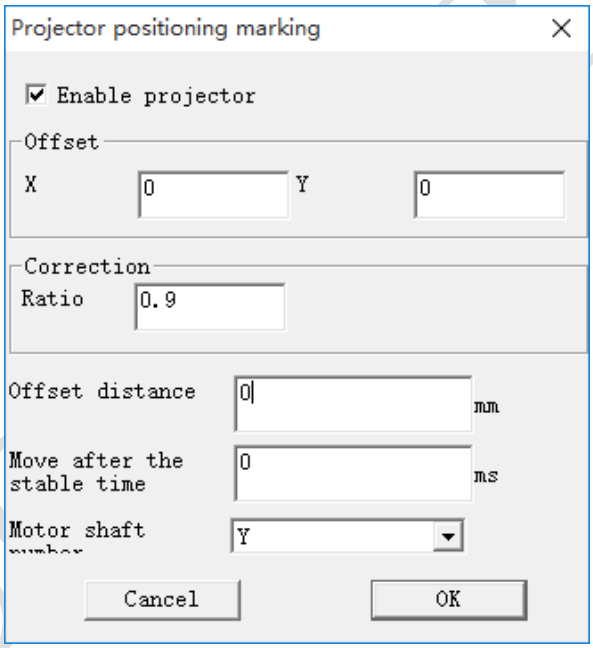
Pic 2-6 project effect

7) Measure the size of projected image, to see whether it is standard, see below pic2-7



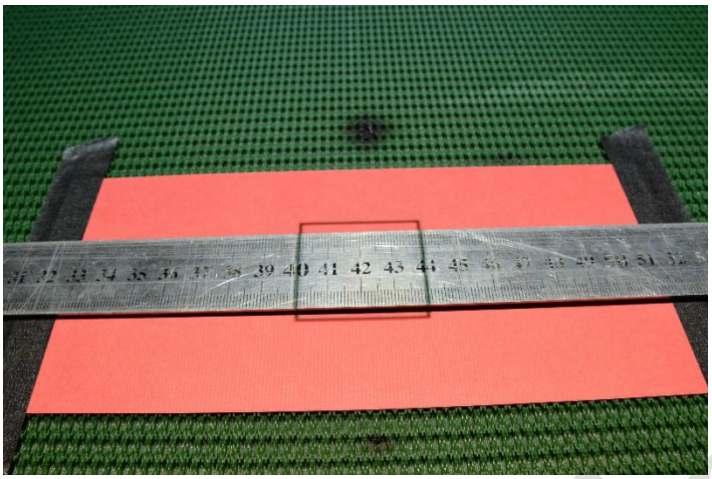
Pic 2-7 image measurement

If the projected image is not a standard figure, the need to be adjusted by modifying "correction ratio".



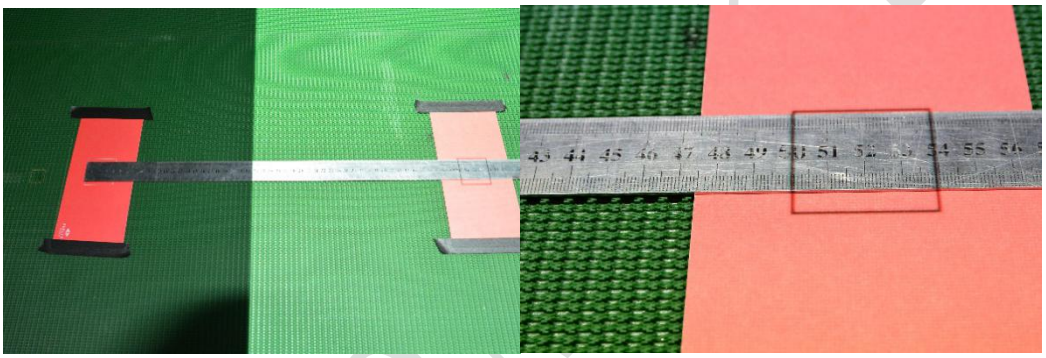
Pic 2-8correction ratio modification

See below adjustment effect pic2-9



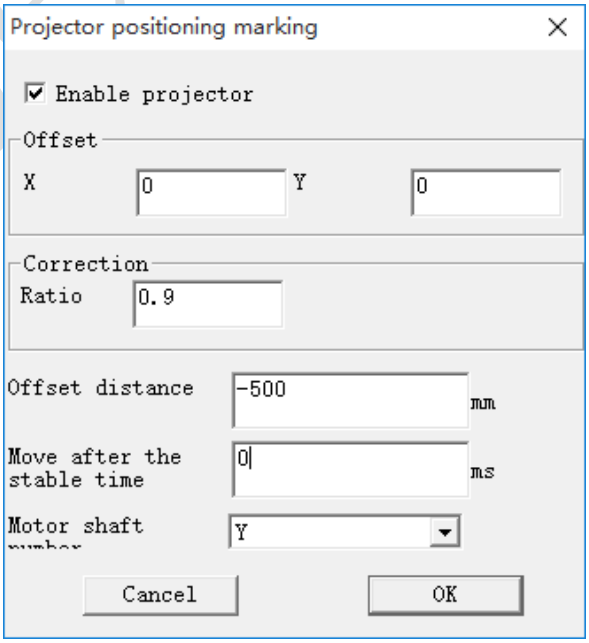
Pic 2-9 correction scale effect pic

8) Measure the distance between the projected image and the marking image by measuring tools



Pic 2-10 offset distance measurement

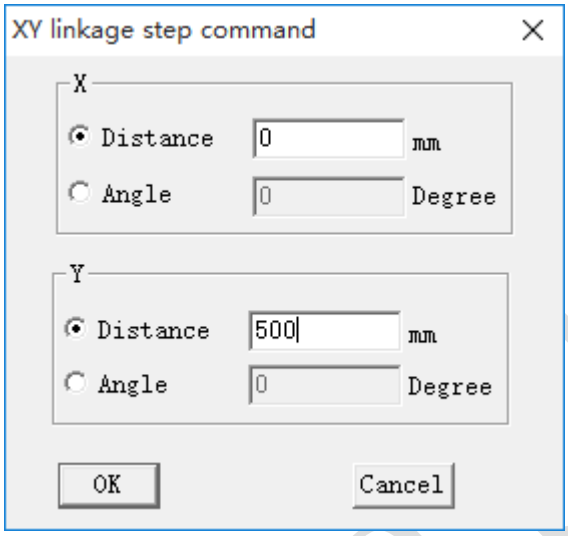
Input the measurement data in the “projector positioning marking” setting dialog, fill the distance data (between the projection position and actual position) in the “offset distance” text box, see below pic2-11



Pic 2-11 offset distance modification

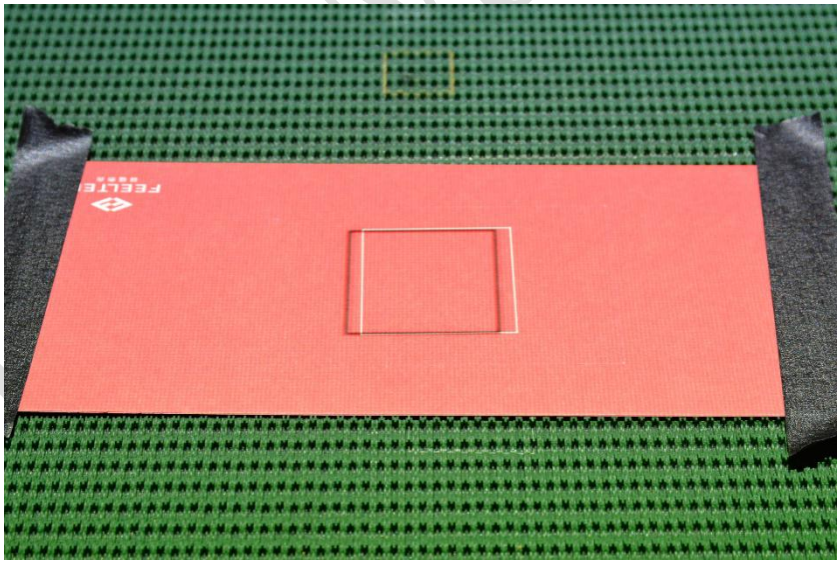
After the setting, click “YES” button and apply the setting.

9) Click “”button on the right side of software main interface, open the text box of “Stepper motor linkage control command”, enter 500 in the “moving distance” of Y direction, see below2-12



Pic 2-12 linkage command setting

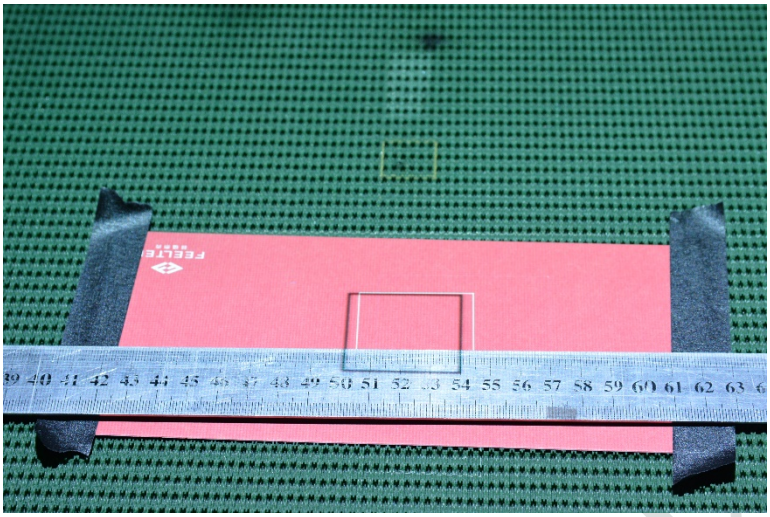
Click “YES” and finish the setting, then select the “linkage command”, click “marking” button or press the shortcut key “F2” to make, move the marking paper to the projection position. See below pic 2-13



Pic 2-13offset distance modification effect

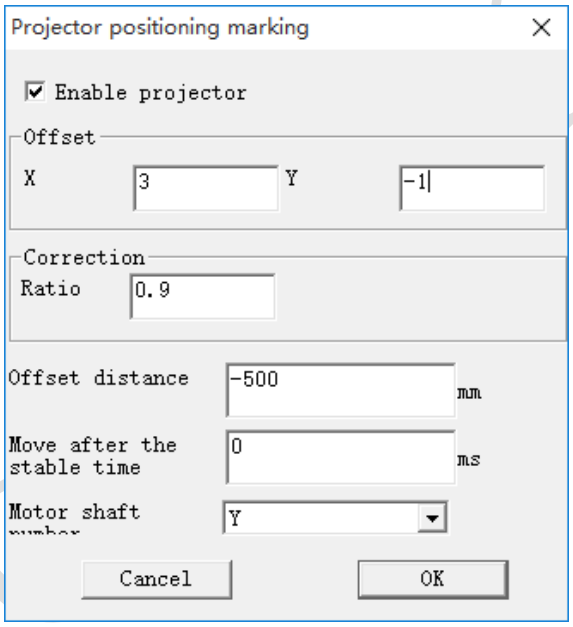
You can see from the above pic, the projected position and actual marking position is not fully coincidence.

10) Measure distance between the projected position of X, Y axis and actual marking position, see below pic2-14



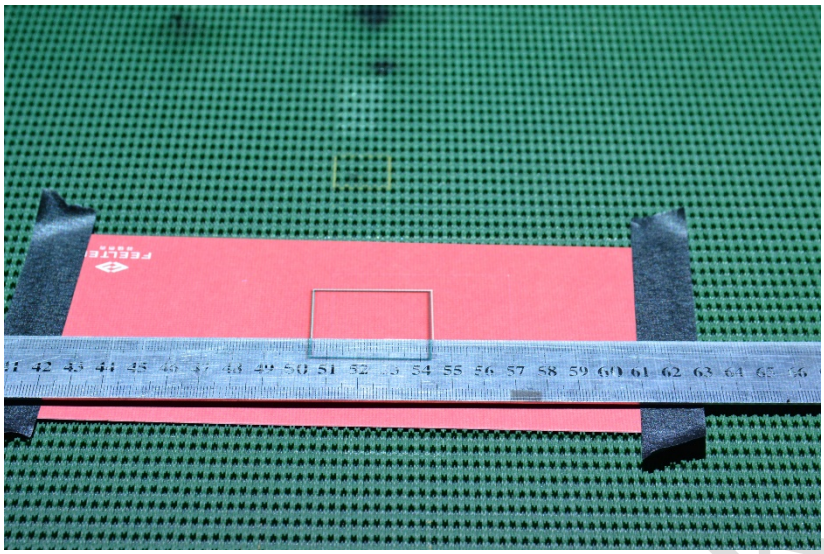
Pic 2-14 projection effect

Fill the measurement in the “position offset” text box, see below pic2-15



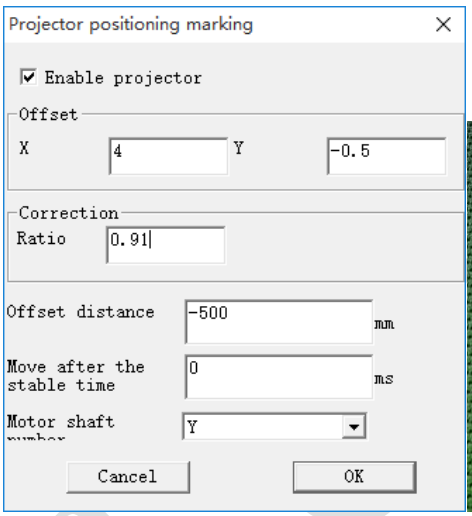
Pic 2-15 position offset modification interface

Click “YES” button to mark, view modified positioning effect, see below pic2-16



Pic 2-16position offset modification effect

Repeat the modification in the “position offset” text box until the projected position is coincide with actual marking position. See below pic2-17





Pic 2-17 projector positioning effect

11) After the setting, select marking object in the object list, then click the “mark” button to mark. During the marking process, the assembly table moves forward and stops after 500mm, and then start marking, marking effect see below pic2-18



Pic 2-18projector positioning marking effect

3. Accessory List

Please see below hardware and software list during the projector positioning:

Table3-1

Name	Description	Number
Projector	Including projector, power line, signal line	1
Projector power line	2m standard	1
Projector signal line	3m standard, if need extra length, need extra preparation.	1
Moving line workbench	Width 1.2m, step motor, software internal control	1
Software	LenMark 3D Projector Customized Version	1
HASP authorized key	HASP authorized key of projector positioning	1

LenMark