L92 Laser Marking Machine

USER MANUAL

Suzhou kingmilan laser technology Co., LTD.

Content

Foreword

Thank you for using Laser Marking Machine provided by Suzhou kingmilan laser technology Co., LTD.

You can get information of the machine from this manual.

About this machine:

This machine designed by Chinese and foreign well-known colleges ,made by engineers of nanjing, suzhou and zhangjiagang，This machine has the following characteristics:

1.Stability and ease of use

2.practicability

3.efficiency

About maintenance:

We offer one year warranty from the date of make out an invoice，artificial damage does not belong to the warranty scope

.

About manual:

About Customer Service：

If you need to order products, accessories, consumables or have any problems in use,you can consult,order and call Server through the following ways

The free services hot line：400-887-4458

Website：http://www.4008874458.com

Generality

Support Feature List：

1. The touch screen technology
2. Can be used in Pipes, cables, food, medicine, medical equipment and electronic industry
3. All the font from Windows can be use
4. Customize special font
5. Most of the code can be use
6. Design Security code
7. Support instant newsletter
8. Realize thevelocity synchronism at the work line
9. Display back trace of content
10. Design Special Functions According to the requirements of customers

Please read the following chapters in detail before use this machine

2.Packaging and accessories

2.1 Packaging

This equipment is encapsulated within the carton

2.2 Size

Size（mm）：960*840*605

2.3 Weight

Weight：host and light path　80KG

2.4 Accessories

name	quantity	notes
laser	1	●
main controlling system	1	●
lift system	1	●
operating manual	1	●
toolkit	1	●
certification	1	●
survey report	1	●
rotary encoder	1	●
optoelectronic switch	1	◎
rotating bracket	1	◎
cooling system	1	◎

Note： ●standard
◎optional

3.Notes

3.1 Laser-type

According to the medium of transmission of photons in the laser tube (gas, solid, liquid, etc.),Laser is divided into different kinds. So laser tube contains different wavelengths and energy of laser radiation. the risk degree of each laser is not the same. According to the features ,we can divide laser tube into four grades:

First-degree：the laser tube has the inherent security features or secure design.

Second-degree：the laser of the laser tube is in the visible range(400nm ≤λ≤ 700nm) ,and it can work with continuous pulse mode. If Exposure time is up to 0.25 seconds,the output power is limited within first-degree for the exposure time.IF Exposure time is over 0.25 seconds,the output power is limited to 1mW.

Third-degree-A： The output power of (CW) continuous lase is up to 5 mw or about five times of second-degree and the laser of the laser tube is in the visible range(400nm ≤λ≤ 700nm). Considering the rest of the spectrum,the laser radiation should be less than five times of first-degree

Third-degree-B：The CW laser must less than 0.5 W and the energy of the repetitve pulse laser tube should be less than 105 jm - 2

Fourth-degree：the energy of the laser has more power than third-degree

3.2 safety standards

Marking system conforms to the basic safety features,but local of it could exceed the laser safety standards. In addition to the laser aperture, laser marking system should be equipped corresponding protection device.

Any second-degree, third-degree A, B or fourth-degree laser beam emitted by the effective propagation path, should terminate A proper diffuse reflectance and thermal properties of the material or can absorb material. you should ensure that laser beam propagation path above or below eye level.

Attention:Laser beam must ending at a diffuse material.

Vibration lens, lens and the light beam splitter should be firmly installed and ensure that when laser radiation can be controlled, in order to prevent the accident from third-degree B or fourth-degree laser pseudo reflection

Each degree of laser has a risk control program:

Second-degree and third-degree A:二级和三级A：Only need to prevent continuous direct laser beam, A short of looking is not dangerous

Third-degree B:Open hole exposed under the direct of the laser beam or pseudo reflection is very dangerous

3.3 Laser safety standard

1.Laser beam must be limited within the controlled area

2.In order to Minimize the reflection, effective laser beam propagation path must be terminated in the appropriate color and reflectivity of diffuse material.

3.It is necessary to take special safety glasses if Cannot satisfy the above two points.

Do not look straight the laser light hole, do not expose any naked body parts to the light outside the hole

3.31 Forth-degree

laser beam point-blank, pseudo reflection and diffuse reflection are all could cause personal injury or fire.So in addition to the above preventive measures, and strict adherence to the following provisions：

（1） Laser equipment must be authorized by the professional personnel to install, debug and operation.

（2） Laser marking system operation must be marked with warning labels.

（3） Surrounded by laser beam and the incident area must use protective material, in order to prevent caused by a small amount of infrared laser radiation is invisible pseudo reflection spectrum.

（4） The presence of personnel should avoid the spread of the laser beam path.

（5） The end of the laser beam propagation path must be used carbon refractory plate or other thick enough.

4. operating instructions

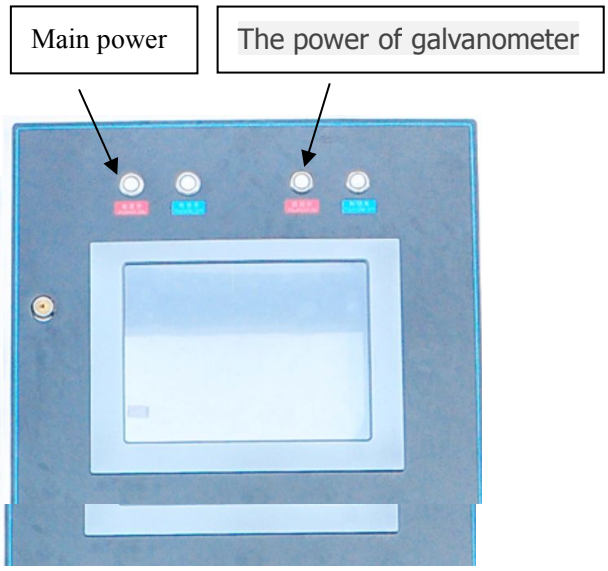
4.1 Power on and off

4.11 Environmental requirements

- Power supply requirements:220V±10%,50Hz,10A;
- Independent of the ground and must be earth well;
- Regulated power: The requirement of the voltage is in AC 220 v + 2%, 50 hz. Regulated power supply power: 2 KW;
- temperature requirement： 5~45℃. If temperature is below 5 ℃, the Laser may not work, we can use hair dryer to the fan blowing out hot air at this time;
- Humidity requirements： 5%~90%,Prevent condensation;
- Size:1*1m,Ground with carpet or plastic flooring, rubber gasket.do not move it frequently after installation

4.12 Boot order

- Press the main power off the control system
- Input account and password to enter system after executing
- Account : USER
  Password : USER
- Press the power of the galvanometer



4.13 Shutdown order

- Stop marking work and logs out to main interface
- Power off the power of the galvanometer
- Power off main power off the control system
- disconnect the attaching plug
- Cover the dust cover on the equipment

4.14 Emergency settlement

When in case of emergency as follows:

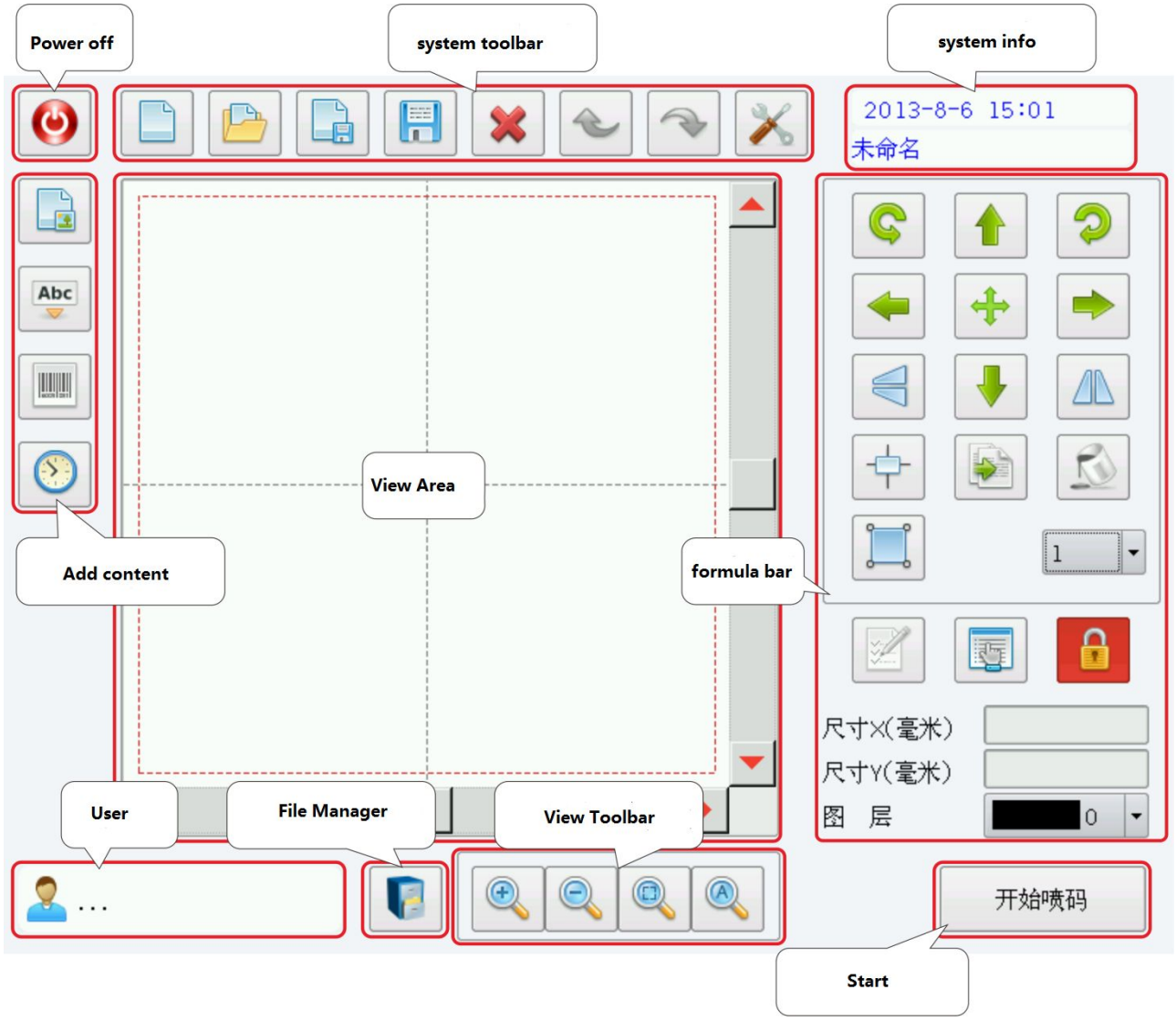
- continuous lighting
- Products put at the bottom of the laser continuously
- Any people or other equipment be burned
- Electrical failure
- It has any abnormal sound
- It has sparks

Shut down all the electrical button switch, pull out the power plug

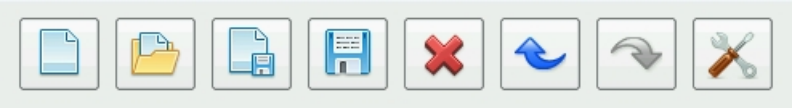
Note： each button switch do not continuous uninterrupted switch operation,at least 10 seconds

4.2 Menus

4.2.1 Main interface



4.2.2 System toolbar



	New file		Open file
	Save as		Save file
	Delete		Back out
	Reform		Settings

4.2.3 System info

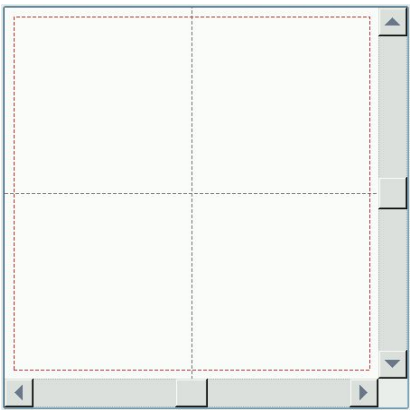
Show the system time and the file name

4.2.4 Add content

	Vector File	Abc	Text
	bar codes		Delayer

4.2.5 View area

The contents of a file must in the dashed frame



4.2.6 Formula bar

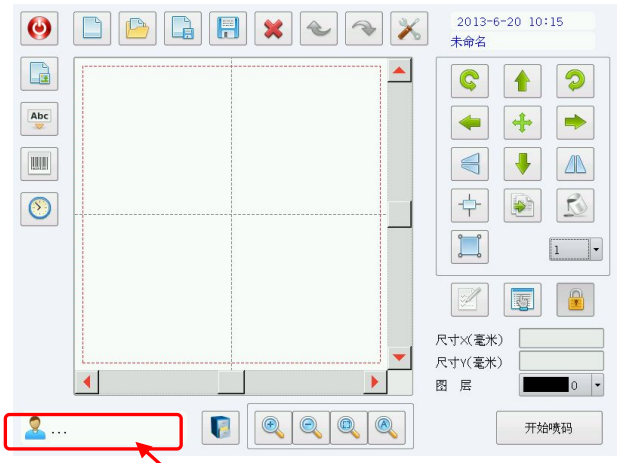
	Contrarotate		Rotate clockwise
	Up		Down
	Left		Right
	Level of the mirror image		Levels of the mirror vertical
	Move		Move to the center of the workspace
	Copy		Fill
	Radio/Multi-select	10	Units
	text editing tool		Object list
	Lock and unlock the X, Y axis wide high proportion	尺寸X(毫米) 30 尺寸Y(毫米) 31.6525	Selected object X Y axis dimension size/selected objects
图 层 0	Modify the object layer, you can set different colors to distinguish between different printing parameters		

4.2.7 View toolbar

	Magnify		narrow
	Zoom to the workspace		Zoom to selected size

4.2.8 Landing

It is show the man interface after normal booting.You can press **user button,select the ID and enter password**



ID：USER

password：USER

4.2.9 Start

4.3 Input method

拼 Switch to the pinyin input method

笔 Switch to the stroke input method

The system supports a variety of Chinese and English input method and the fast switching function between the input method.

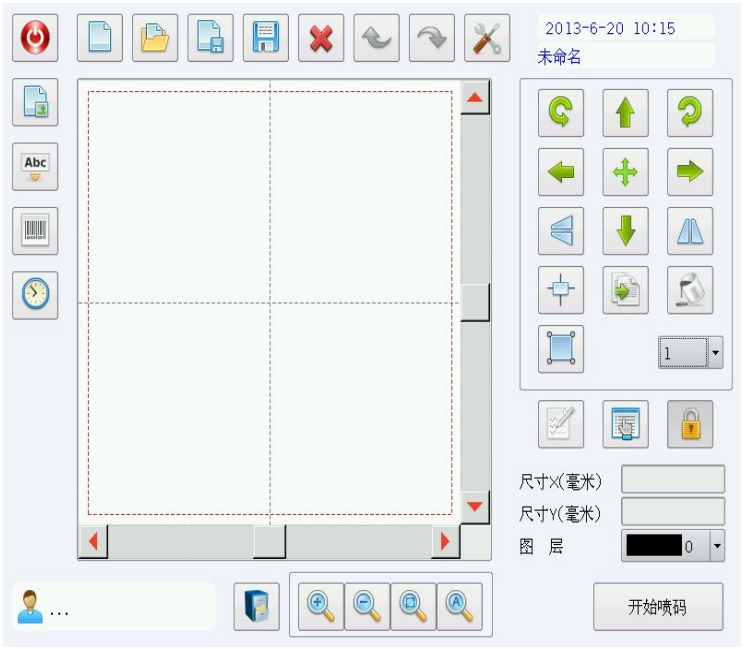
Switch to the English input method

Abc Switch to the digital input method

123 Switch to the symbol input method

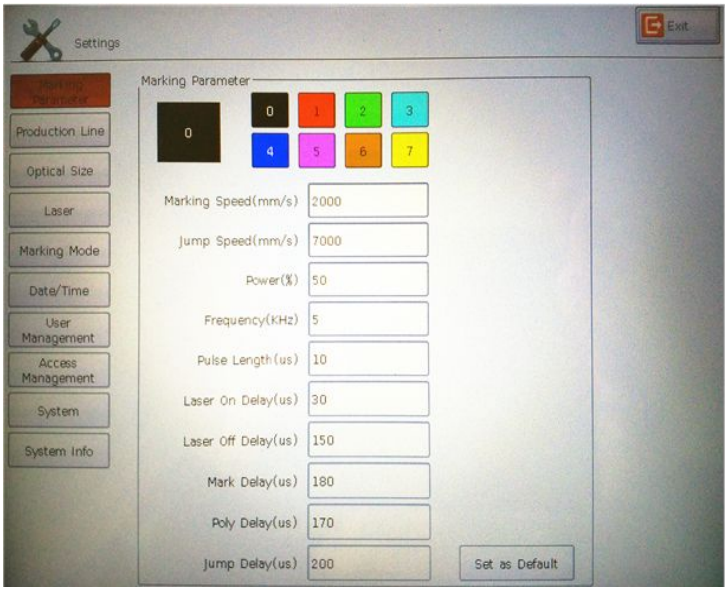
?#*

4.4 Parameter setting



You can revises the function of the systematic operation parameter

4.4.1 Marking parameter



You will use the following parameters:

1. Marking speed:

Range:1---20000mm/s

Initial value:1000mm/s

The faster of the speed, the slower of the marking, the less of the energy. For example, If the marking speed is too low, the content will not be complete. if the marking speed is too fast, the content will not be clear

Notice: Under the situation that can satisfy the requirement of marking, Marking parameter as low as possible

2. power

Range:1---100%

The greater of the power, the greater of the energy

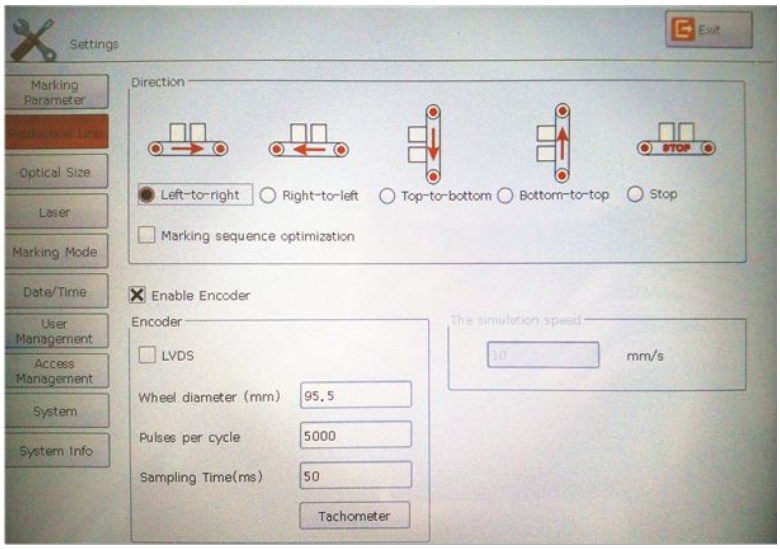
Notice: Under the situation that can satisfy the requirement of marking, power as low as possible

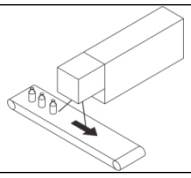
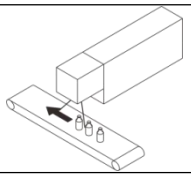
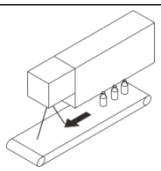
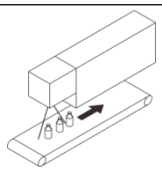
3. Frequency

Range:20KHz--500KHz

We usually set to 20

4.4.2 Production line



Right to left	Left to right	Top to bottom	Bottom to top	Stop
				

Enable encoder:

If the equipment is be equipped with encoder, you should check it.

Wheel diameter(mm):the diameter of the wheel

Pulses per cycle:the number of output pulses for a whole circle

Sampling time:The sampling time

Tachometer: Display the current speed

The simulation speed:

If the equipment is not be equipped with encoder,you should check it.

You should input suitable speed

4.4.3 Marking mode

Normal mode:Statically marking

Pipe&cables mode:Dynamically marking

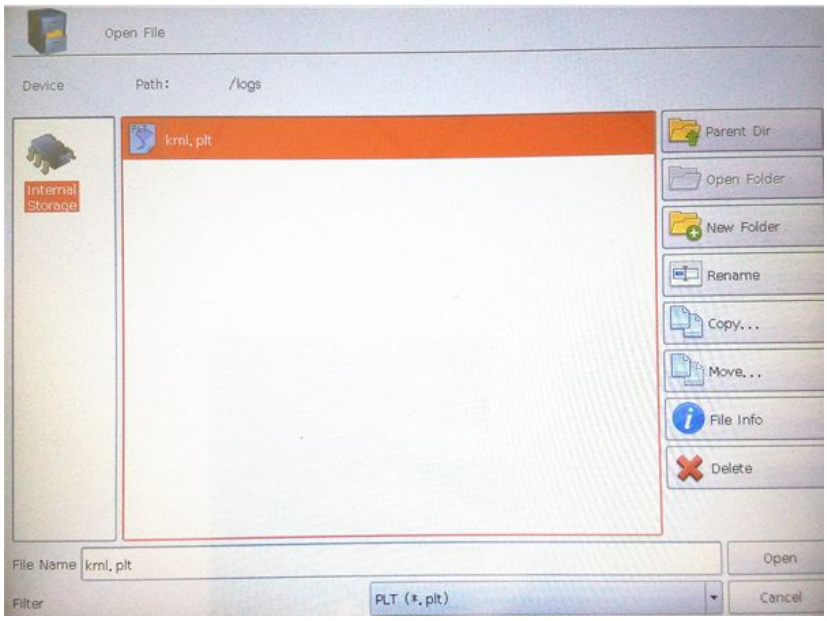
5. File operating

5.1 Example

Content:

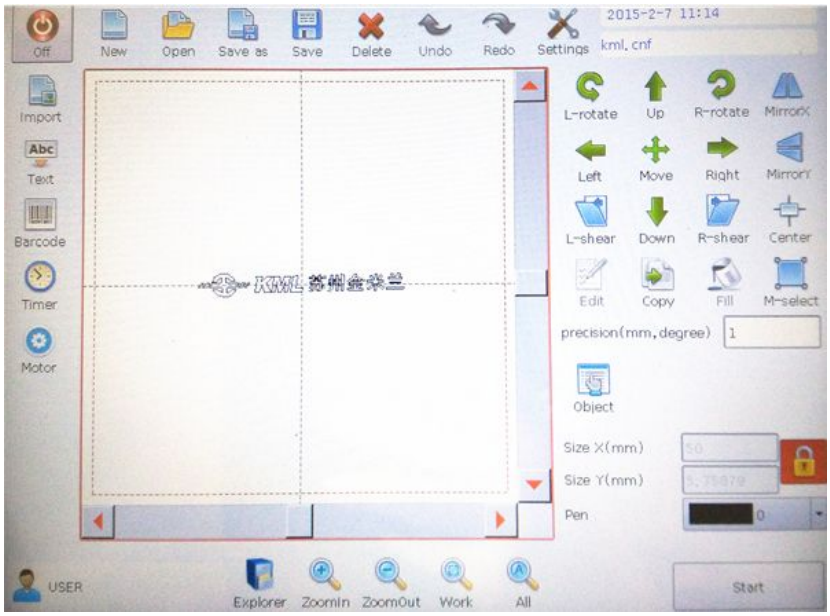
LOGO+苏州金米兰激光科技有限公司+GB/T18742.2 S3.2 dn20 x en2.8+“date”+“time”+“serial number 0-100”m

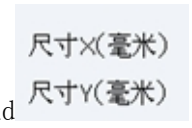
5.1.1 Insert logo



click 

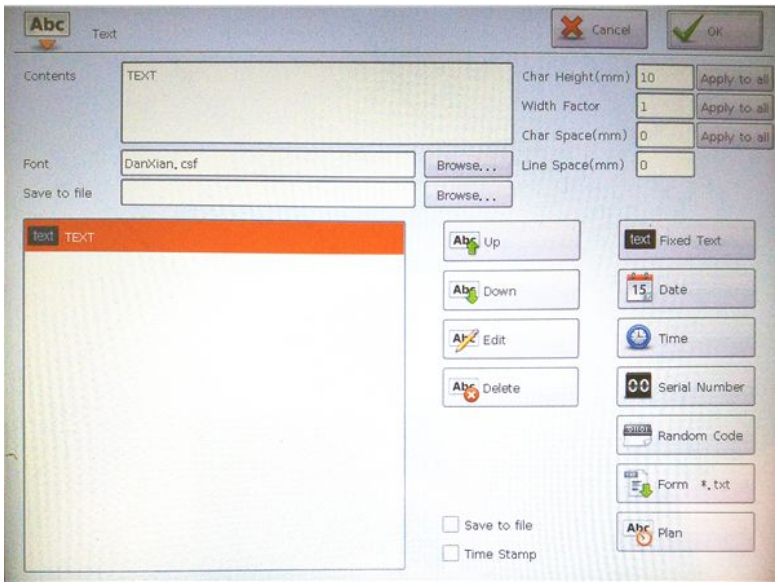
, find the logo in the list and “open”

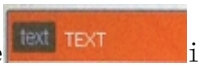


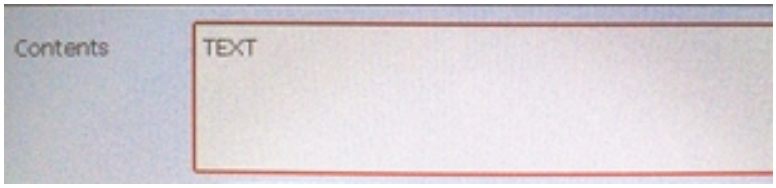
Use 
and 

To adjust the position and size of the logo

5.1.2 Insert text content(Chinese)

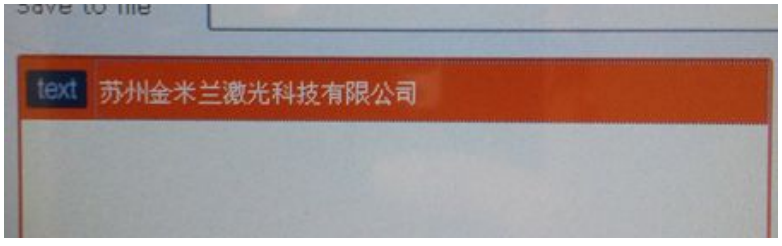


Click  , and then click  , you can see  in the list.



Click “TEXT” twice, the keyboard will be appeared.

Choice chinese input method, then input“苏州金米兰激光科技有限公司”. Input  when input is complete.



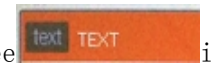
We can see“苏州金米兰激光科技有限公司” in the list

Then choice a appropriate font and set a appropriate char height

Notice:we can input a”space”after the content

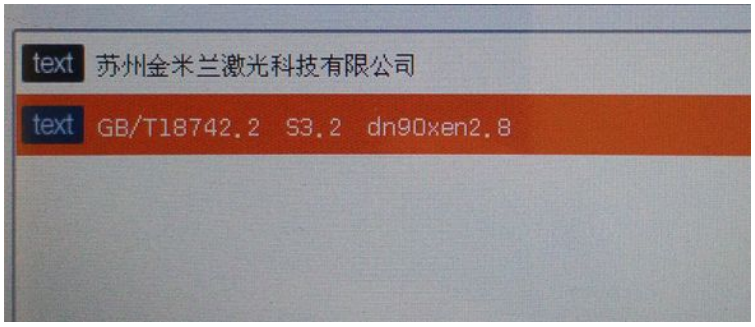
5.1.3 Insert text content(English and symbol)

Likewise,click 

, you can see 

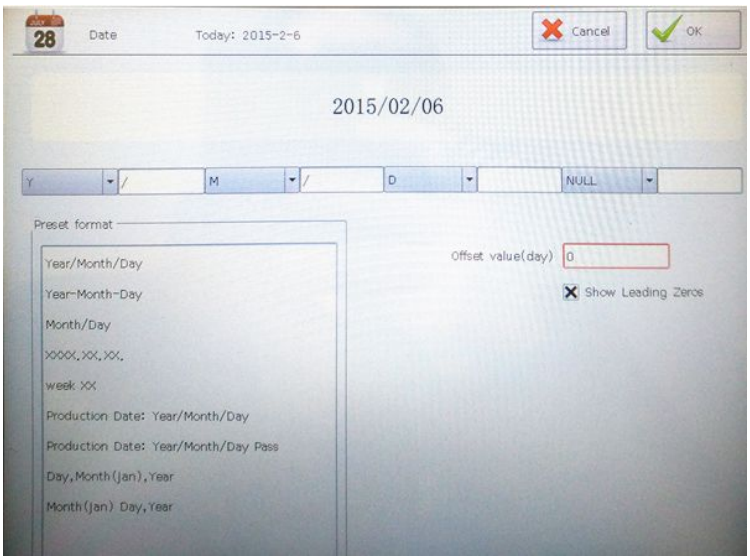
in the list,Click “TEXT” twice, the keyboard will be appeared.

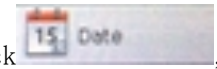
remember, it is case-sensitive, give a “space” at the end of the current.and also choice a appropriate font and set a appropriate char height



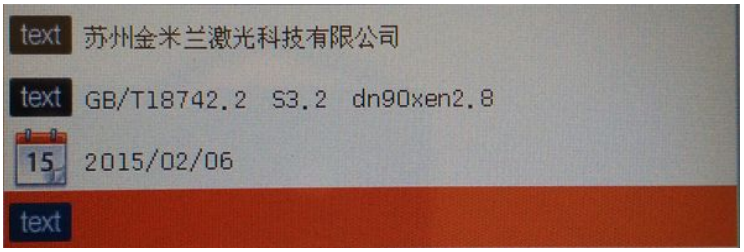
Now,we can see that in the list

5.1.4 Insert date



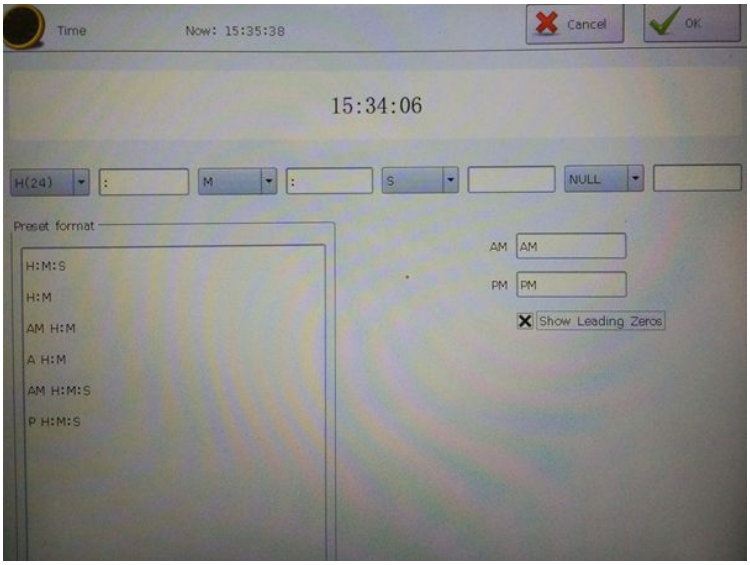
Click 

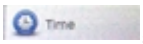
, and you can See the following interface.
Choice a suitable format and click “OK” at the top right corner.and also choice a appropriate font and set a appropriate char height



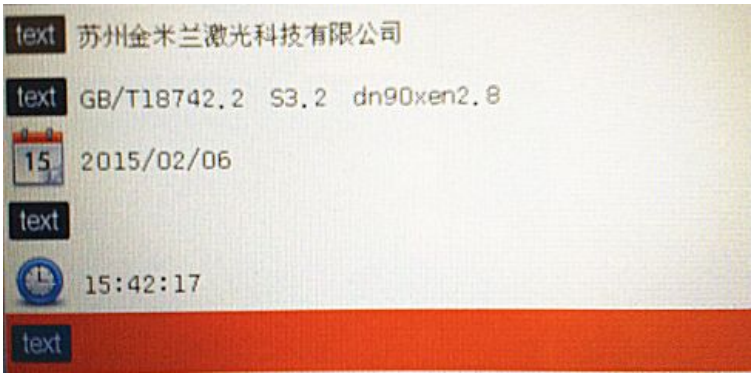
Now,we can see that in the list.
And we need to insert a text content of a “space” between date and time

5.1.5 Insert date



Click  , and you can See the following interface.

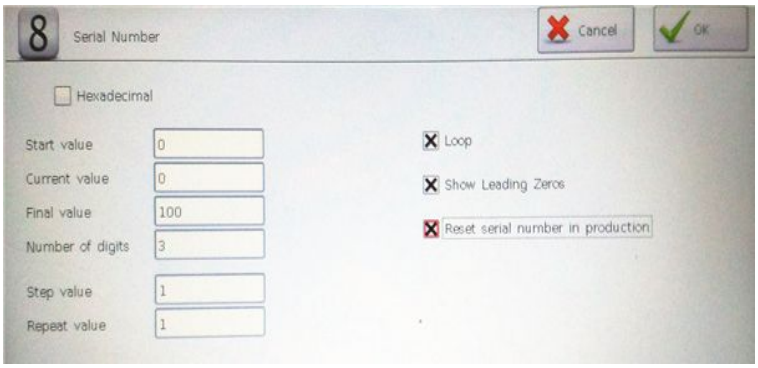
choice a suitable format and click “OK” at the top right corner. and also choice a appropriate font and set a appropriate char height



Now, we can see that in the list.

And we need to insert a text content of a “space” between time and serial number.

5.1.6 Insert serial number



Click 

Start value:0

Current value:0

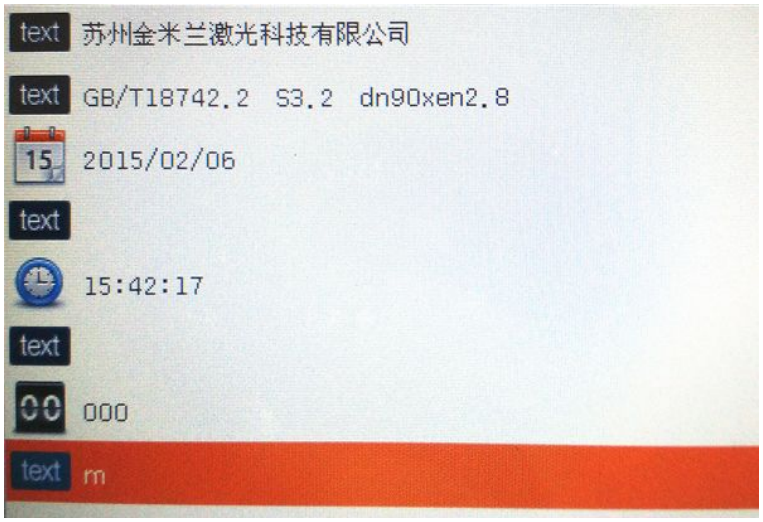
Final value:100

Number of digits:3

Step value:1

Repeat value:1

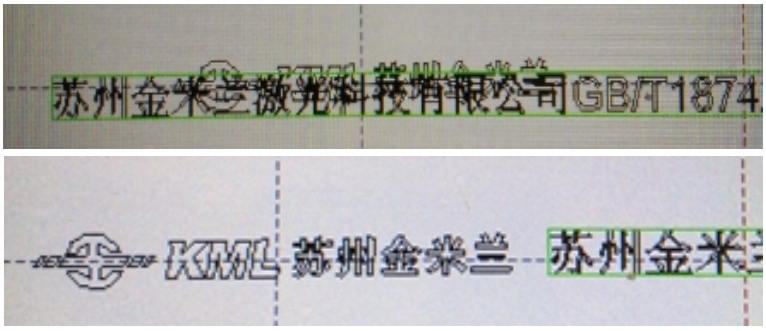
click “OK” at the top right corner



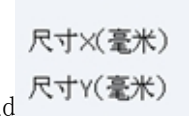
Now,we can see that in the list.

And we need to insert a text content of “m”

we need to insert a text content of a “ space ” between time and serial number.click “OK” at the top right corner

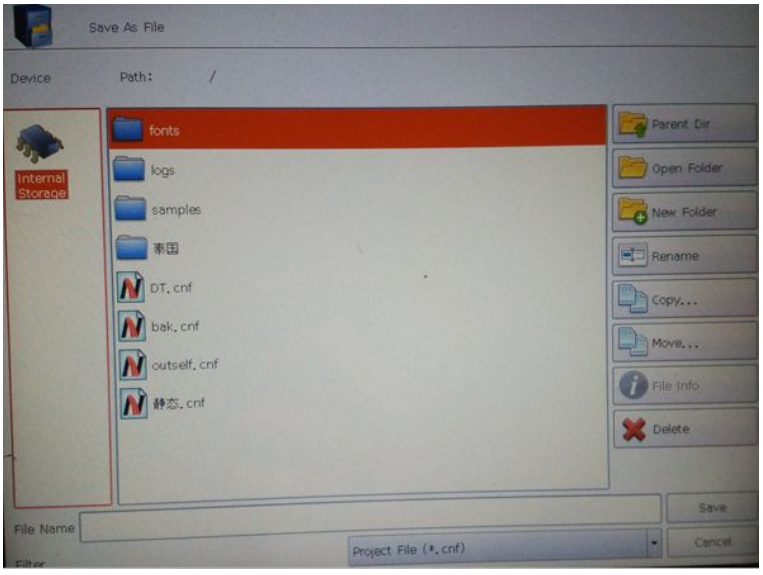


Use  and

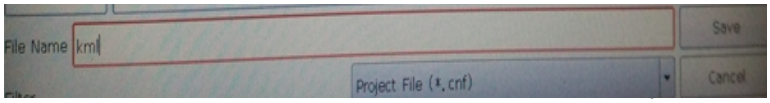


To adjust the position

5.1.7 Save



Click  ,input a file name,then click”save”.



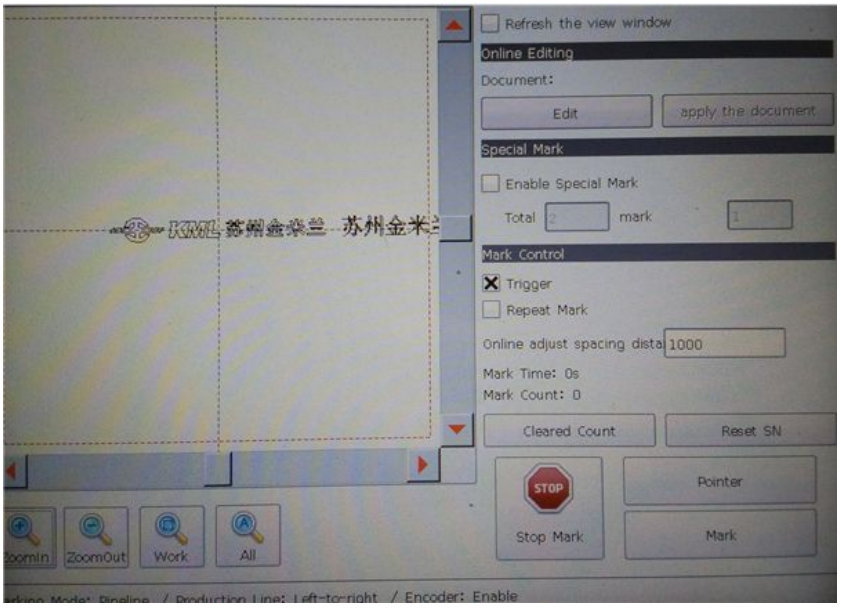
6.Marking

The direction is Right to left,and using encoder

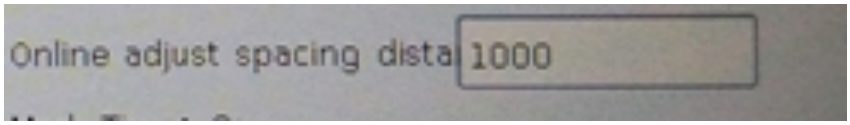
Now,open a file

For example,we select “kml”what we operated,and select the direction of Right to left,and check “enable encoder”

Then click “start”at the bottom right corner



Now,you can see the marking interface.



THE”1000”means one meter one logo

7 Routine maintenance

7.1 The maintenance of field lens

If the lens was stained with ash,do not use your hand to wipe it, you can blow the dust with the Air ball.

Must not use compressed air of the factory,because it contains a lot of oil and water.

If the lens is too dirty,you can clean it by uselessness cloth with anhydrous alcohol.

7.2 The maintenance of machine

Outside: including shell, keyboard and screen, etc

You can clean them by compressed air or wrung-out wet cloth

If the machine is too dirty,you can use neutral detergent

Inside:including Fan, fan cover, laser, conductive terminal and switching power supply , etc

You can use compressed air or dry cloth

Notice:you must power off when cleaning and must power on after the machine fully dry

8 common failures

phenomenon	reason	solution
Color is light	The material of different spray printing color is distinguishing	Different effects on different materials: 1.Black PE: gray or yellow。 2.White PP-R: between dark gray and black 3.Grey PP-R: dark gray 4.White PVC: black 2.Gray PVC: gray or yellow
	The different of font, The different of effects	1.Fill is best 2.TTF is next 3.Mongline font is worst
	The focal length is not correct	The correct distance is about 19.5mm from the product surface to mirror
	mirror surface is polluted	Clean it with the anhydrous alcohol
	Power is not enough	Access settings menus→access marking parameter Reduce marking speed Increase power

slant of the marking font	The production of linear velocity we set does not match with the actual production line speed. If the speed we set is slow, Word will lean towards the direction of the line movement in the opposite direction; If the speed we set is fast,Word will tilt towards the direction of the line direction opposite.	Access settings menu→access production line Enable encoder: Relative to tilt:narrow the wheel diameter On the contrary tilt:increase the wheel diameter The simulation speed: Relative to tilt:reduce the speed On the contrary tilt:increase the speed
Marking information is incomplete	Marking speed is too slow	Access settings menus→access marking parameter Increase marking speed
Temperature is too high	Refrigeration unit is on the fly	1.Power supply is abnormal 2.Relay is abnormal 3.Wires between energy and cooling are abnormal
	Refrigeration unit fault	1.replace the fans 2.Replace the TEC
dropping water under case	The difference of the refrigeration temperature and room temperature is too large	Set the temperature controller and raise the temperature
fan do not turn	Fan is breakdown	Replace it
	Power supply is abnormal	1.The power supply is breakdown Relay is breakdown 3.Wires are abnormal
Marking information are superposition	The production of linear velocity we set is too fast	Access settings menu→access production line Enable encoder: narrow the wheel diameter The simulation speed: reduce the speed
Marking information are separate	The production of linear velocity we set is too slow	Access settings menu→access production line Enable encoder: increase the wheel diameter The simulation speed: increase the speed

Marking information are messy	Production line direction is not correct	Access settings menu→access production line Select line direction accurately
System couldn't light	Marking count did not increase, the system didn't perform marking	1.Enable encoder: a.encoder was not equiped b.encoder is breakdown 2.Do not check the "Enable encoder"
The machine without electricity	1.Check the power plug 2.Check the power supply system 3.Check the fuse	deal with it according to the inspection results
Part of the information is blurry	The lens surface and the product surface is not parallel	Adjusted for parallel
The content of the marking present horizontal line or wavy lines	galvanometer is abnormal	Check or replace the galvanometer