iKonMac

K-10/K-30 Laser

User Manual


MFG.23/09/2008
EXP.24/10/2009
Sensation
饮用纯净水
1939 242810
THE COCA-COLA COMPANY

After downloading the winjet laser software and installing the laser on line

For a first experience of using the Laser go to

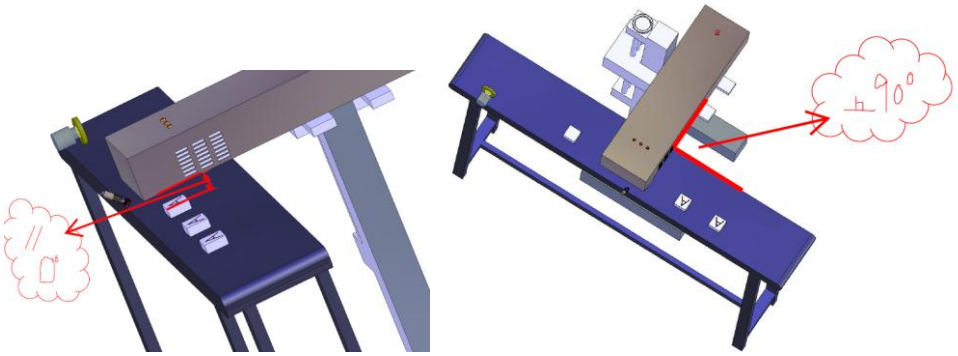
Part A quick simple start, to make your first print

Part B explains in more details the functioning of the various features of the laser and software and is more understandable after you have completed part A.

A. How to Install the hardware

1. Overview

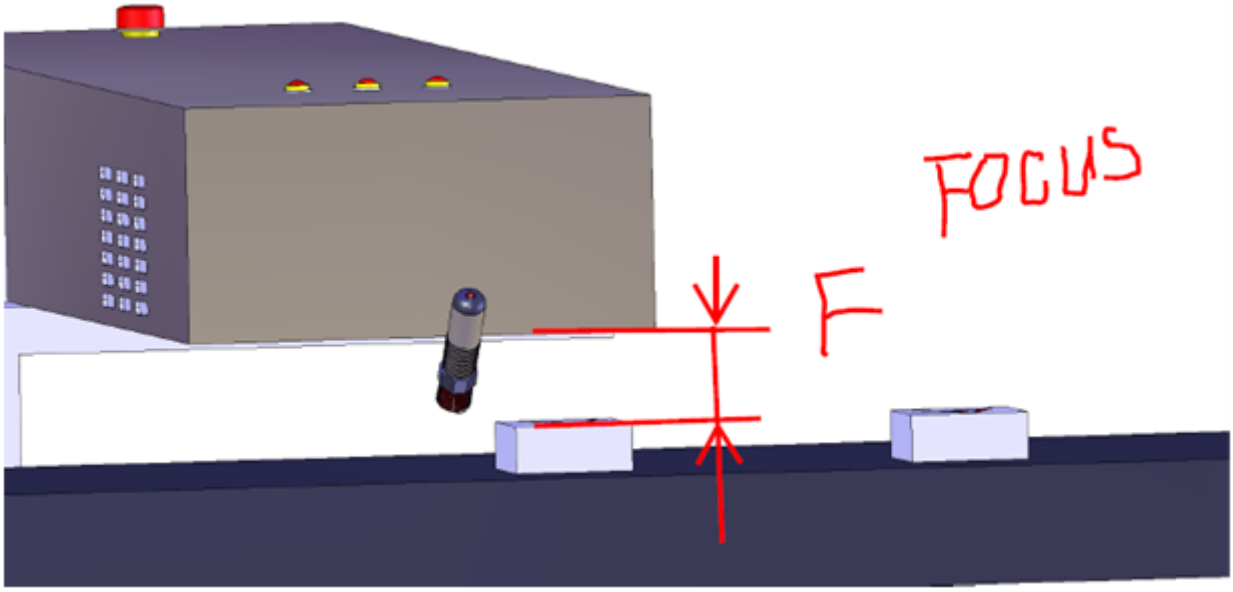
Install the laser unit level and at 90° to the conveyor or work table



a) Remove the lens cover

b) Adjust the scanhead to make the target on the focus

Adjust the laser height to be **<u>exactly 100 mm</u>** from the base of the laser box to the top of the product to be printed



<u>Exactly 100mm = 3.93Inches(4 inches)</u>

B. Software

1. Preparing to start

a) Connections

- To Connect the Laser/IO/Encoder

The WINjet laser software has been developed to run our range of lasers. Please refer to your hardware manual to help you configure the hardware to interface with the equipment in your system.

- USB

The connection to the computer to the hardware uses the USB cable. You must have a computer compatable with USB2.0

b) Install the software

When installing WinJet Laser software your computer system must have

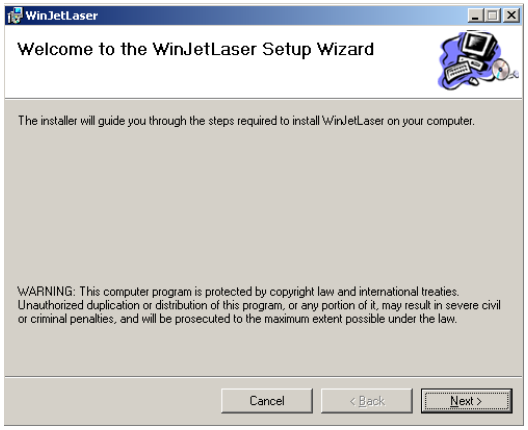
1 WindowsXP/Vista operating system

2 WindowsXP/Visa operating sytem match with USB2.0

3 The screen resolution must be 1024*768

If you received the software on CD with the laser it should automatically execute the setup.exe file.

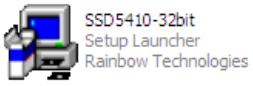
Load and follow the instructions

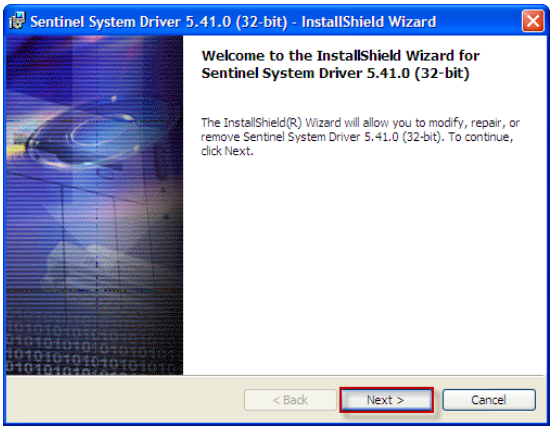


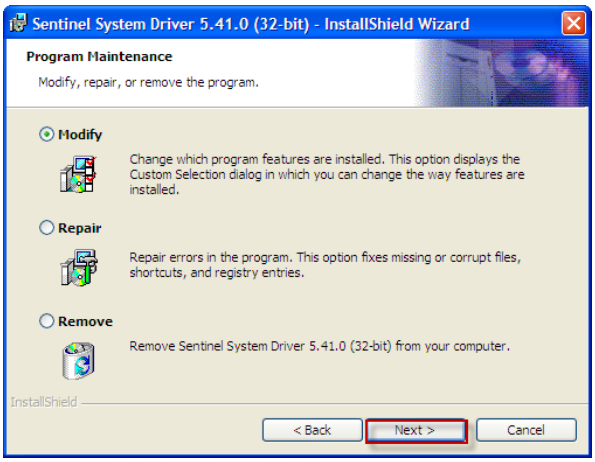
Click next until close finish the setup software

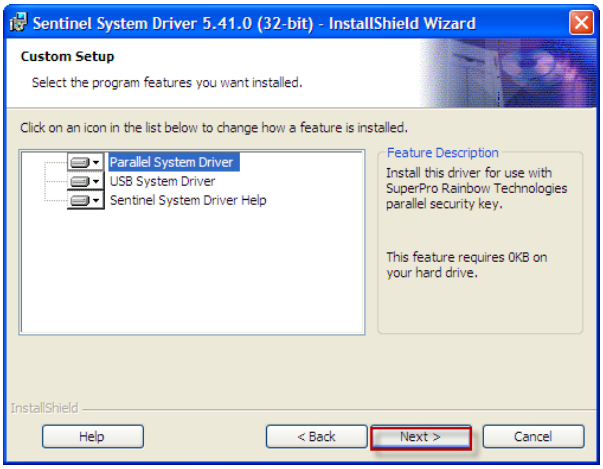
Hardware Driver install

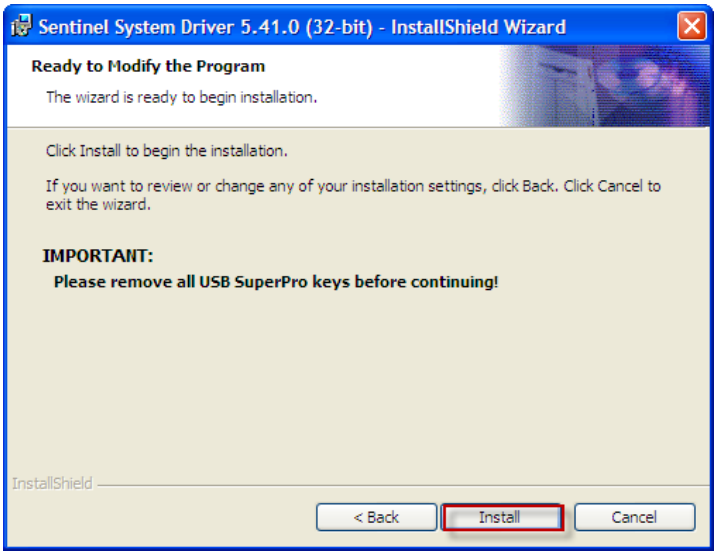
The dongle driver install

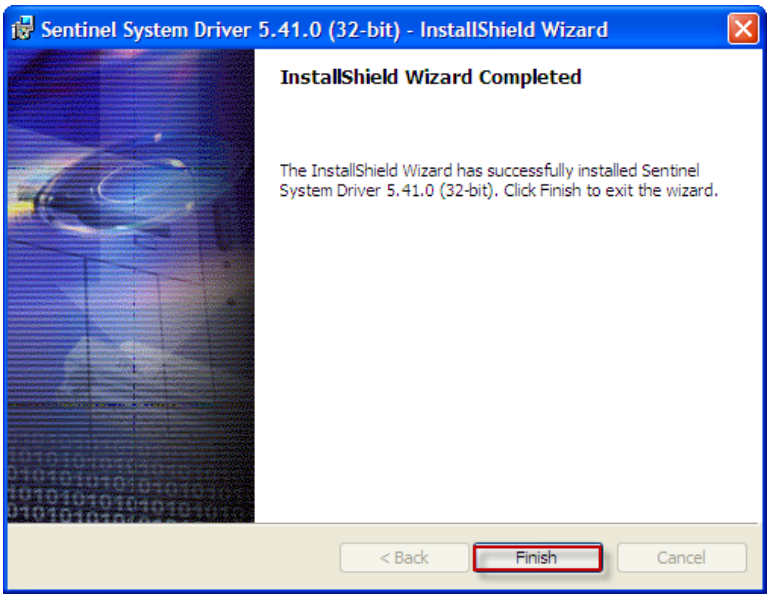



Sentinel System Driver 5.41.0 (32-bit) - InstallShield Wizard
Welcome to the InstallShield Wizard for Sentinel System Driver 5.41.0 (32-bit)
The InstallShield(R) Wizard will allow you to modify, repair, or remove Sentinel System Driver 5.41.0 (32-bit). To continue, click Next.
< Back
Next >
Cancel


Sentinel System Driver 5.41.0 (32-bit) - InstallShield Wizard
Program Maintenance
Modify, repair, or remove the program.
Modify
Change which program features are installed. This option displays the Custom Selection dialog in which you can change the way features are installed.
Repair
Repair errors in the program. This option fixes missing or corrupt files, shortcuts, and registry entries.
Remove
Remove Sentinel System Driver 5.41.0 (32-bit) from your computer.
InstallShield
< Back
Next >
Cancel

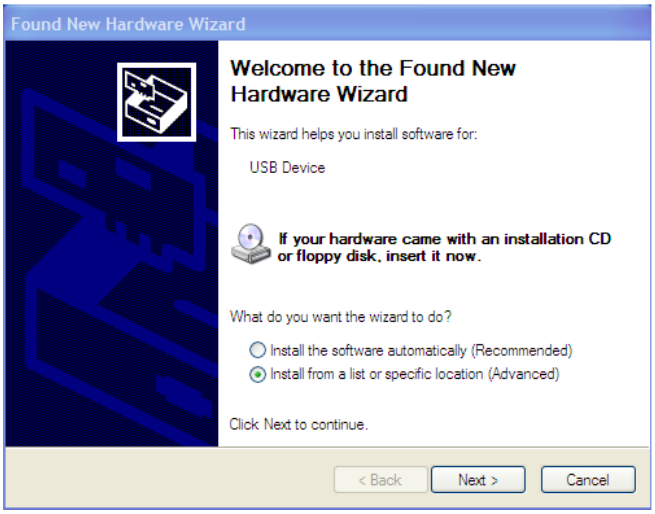

Sentinel System Driver 5.41.0 (32-bit) - InstallShield Wizard
Custom Setup
Select the program features you want installed.
Click on an icon in the list below to change how a feature is installed.
Parallel System Driver
USB System Driver
Sentinel System Driver Help
Feature Description
Install this driver for use with SuperPro Rainbow Technologies parallel security key.
This feature requires 0KB on your hard drive.
InstallShield
Help
< Back
Next >
Cancel

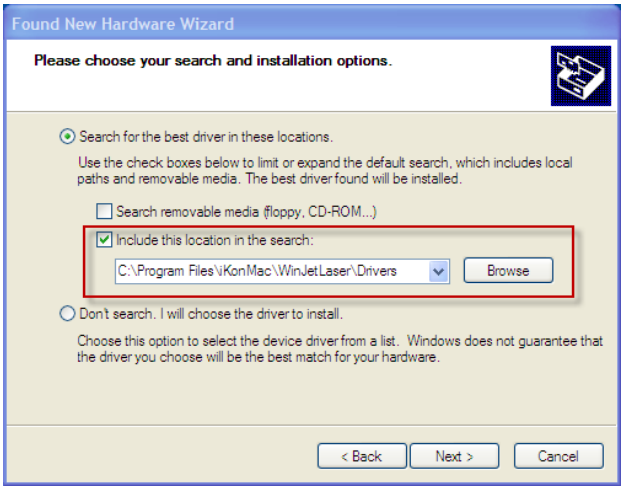


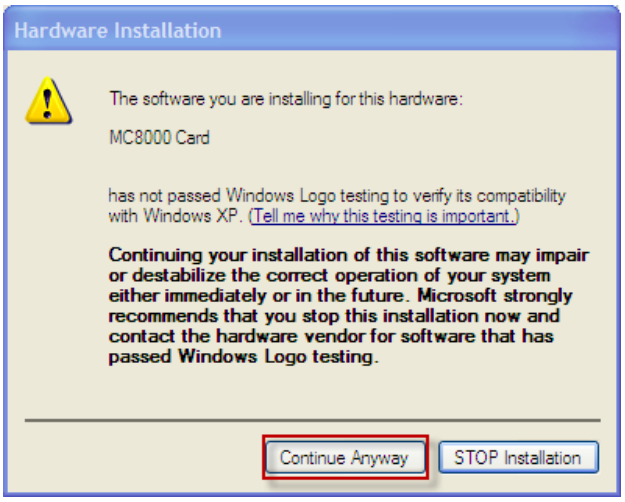


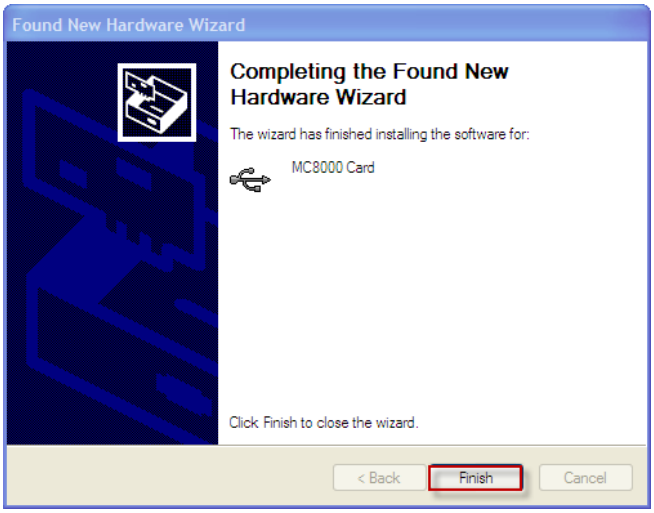
Main board driver instal

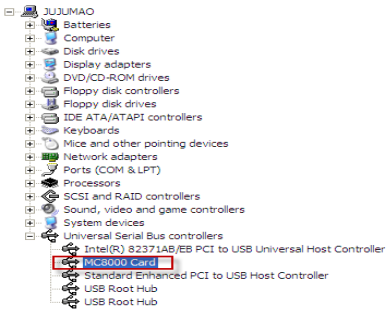
after insert USB cable,the system will read the new hardware and spring


Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
This wizard helps you install software for:
USB Device
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue.
< Back
Next >
Cancel

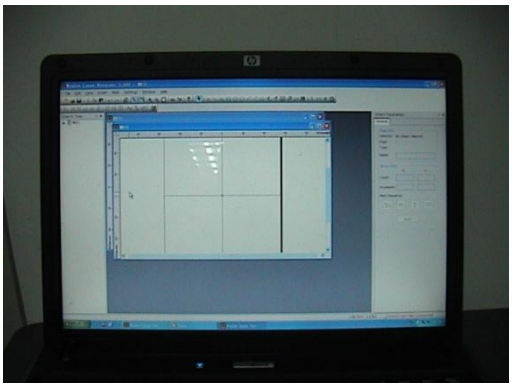

Found New Hardware Wizard
Please choose your search and installation options.
Search for the best driver in these locations.
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
Search removable media (floppy, CD-ROM...)
Include this location in the search:
C:\Program Files\iKonMac\WinJetLaser\Drivers
Browse
Don't search. I will choose the driver to install.
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.
< Back
Next >
Cancel

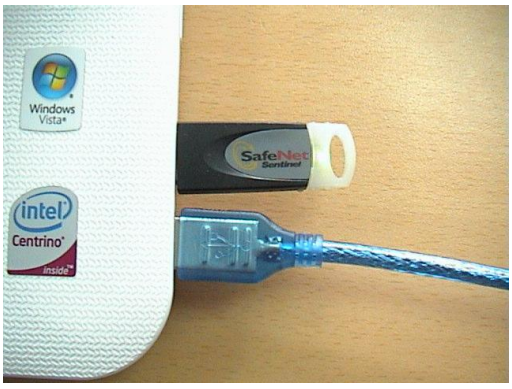

Hardware Installation
The software you are installing for this hardware:
MC8000 Card
has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation





Click on the Yellow and red icon on your desktop or in your programs and winjet laser will open



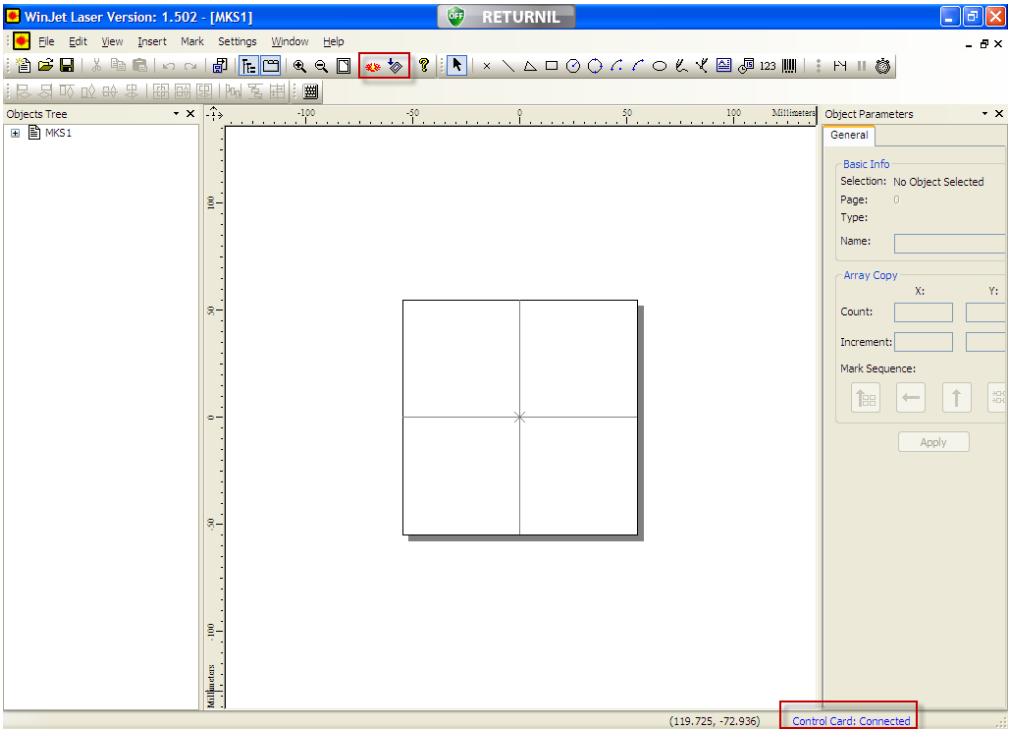


insert USB cable and dongle connect the cable to the laser

Switch on the Emergency stop button

Switch on at power and Key to **on**

With the computer program open on Winjet Laser your sceen should look like this



***Font install**

***Chinese /Japanese/Korean fonts need copy the single fonts to"C:\Program

Files\iKonMac\WinJetLaser\Sfonts\BigFont"

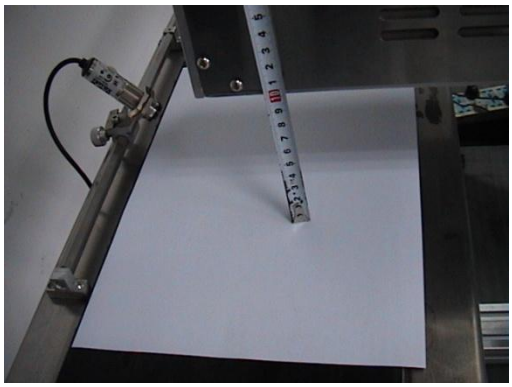
English and other letter language fonts need copy the single fonts to

"C:\ProgramFiles\iKonMac\WinJetLaser\Sfonts\SHX"

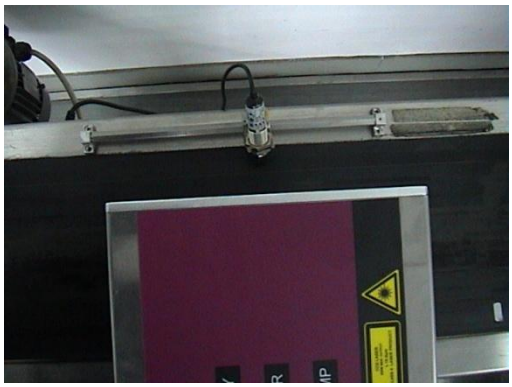
True type fonts need copy to "C:\Program Files\iKonMac\WinJetLaser\Fonts"

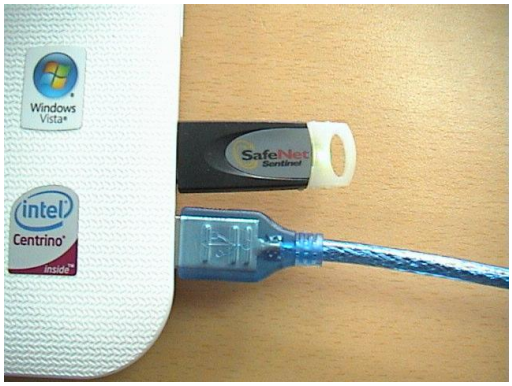
A quick simple start, make your first print

After you have installed the laser on a conveyor, remember the focus distance is very precise 100mm (4 inches) Measured from the base of the Laser to the product
For the excerise we will use a plain piece of paper, so the distance is 100mm from the base of the laser to the Conveyor.



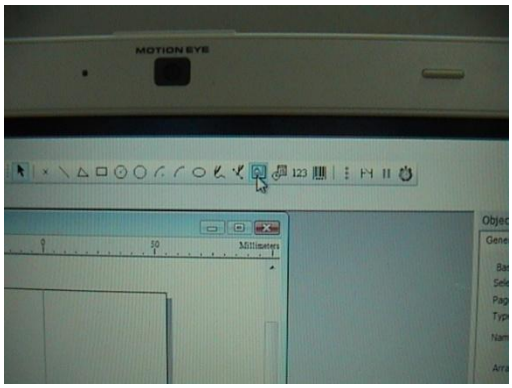
Position the photocell just before the central point of the laser, The photocell is movable and you can use it to position the print on the product (Delay). The delay can also be changed in the message software.



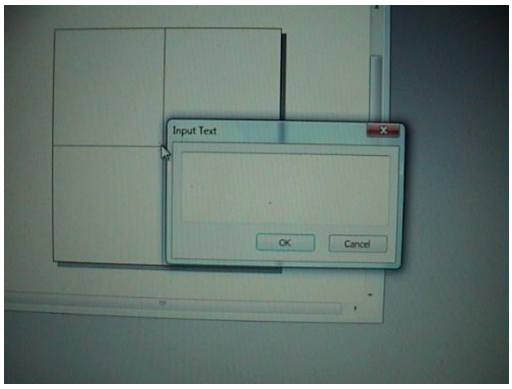


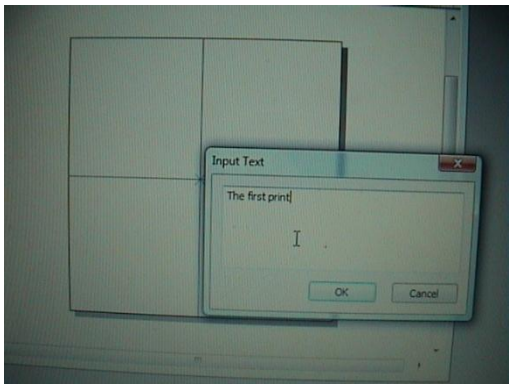
2 Instal key dongle connect USB from computer to laser

3 Switch on laser and release Emergency switch to on and turn key to on
4 Open winjet laser soft ware, and then click on the icon A. This is to make Text

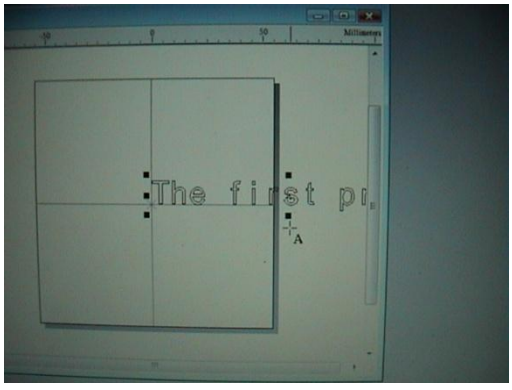


5 Input text window will open , Type a few words



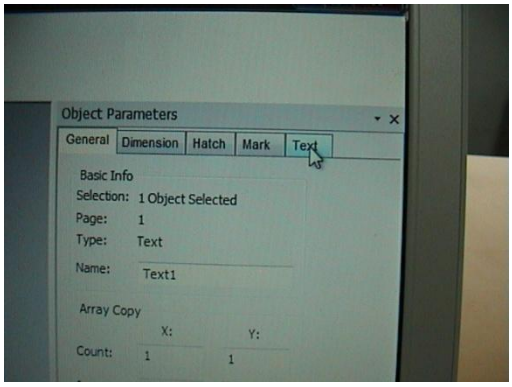


Then click OK

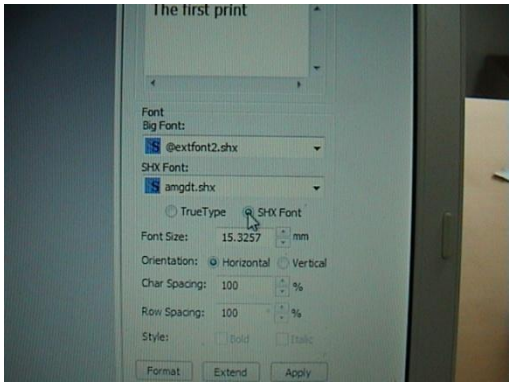


A large copy of the message will appear and the page will open on the right side

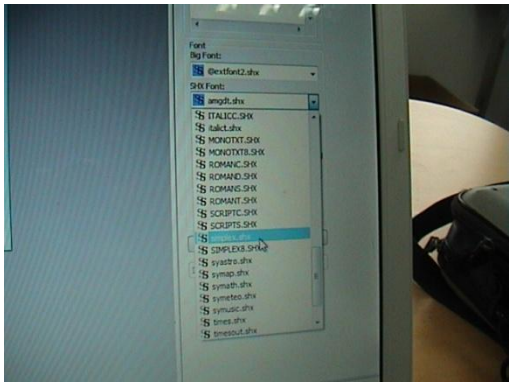
Next Click text



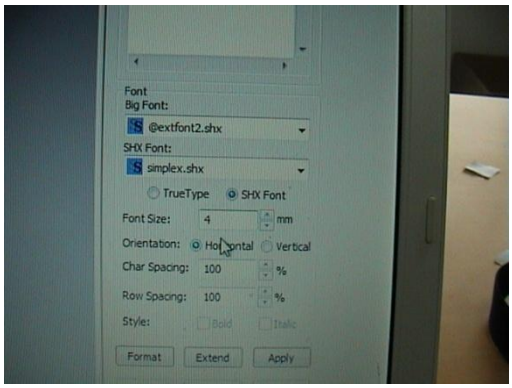
Click SHX font



Click for this exercise simplex SHX font

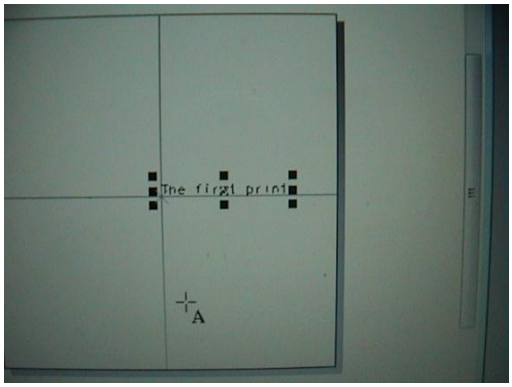


Click4mm for font size

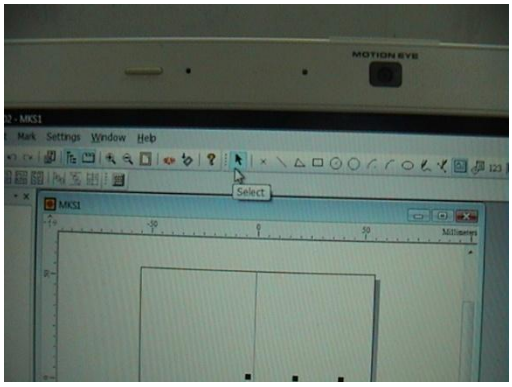


Click apply

Your screen should look like this

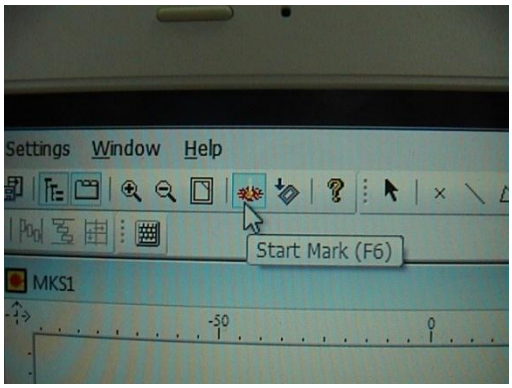


To position the print click on the arrow in the icons

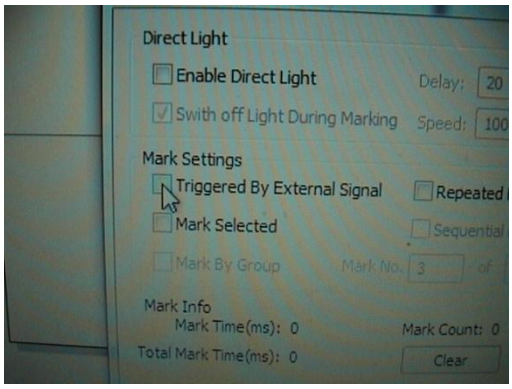


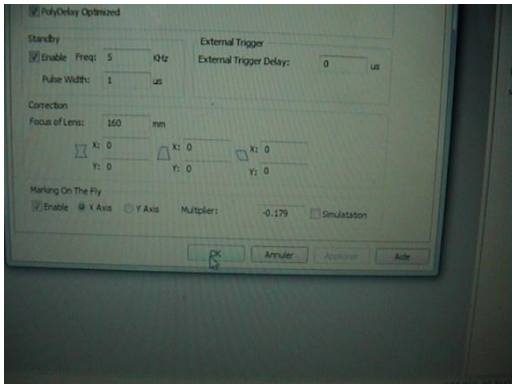
Then drag the message to behind the central cross and on the center line

Click on start mark , this is send the message to the laser

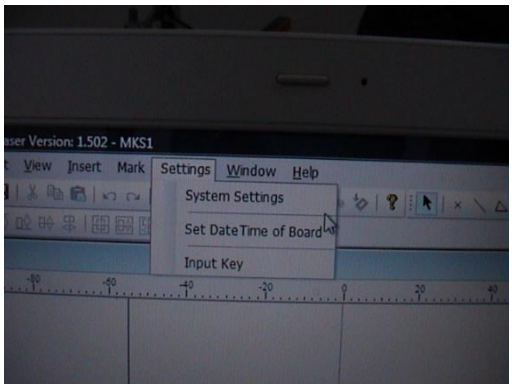


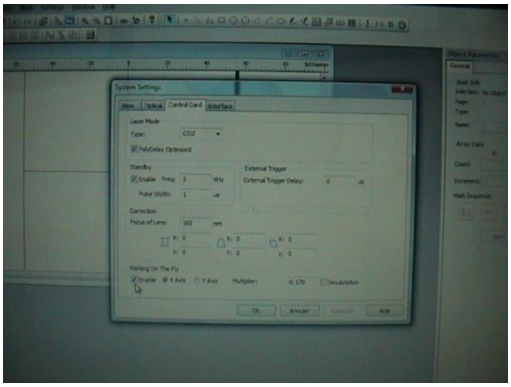
The window to send will open <u>VERY IMPORTANT click Triggered by External signal</u>
This is the photocell active (If you don't do this the laser will start to print and you will burn the conveyor a little!)

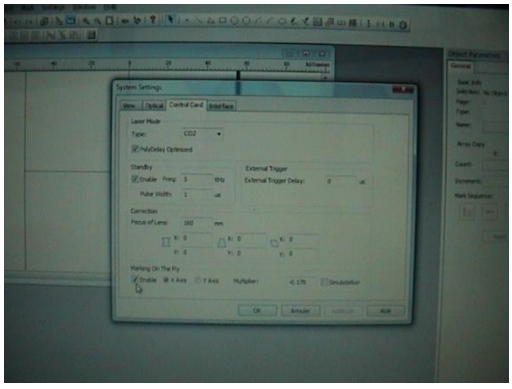


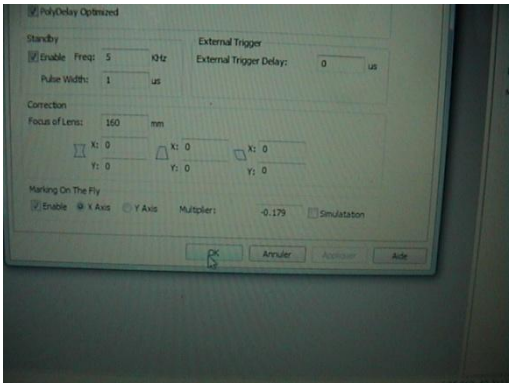


For both static and on the Fly "enable Marking on the fly" set the parameters as below if not the static printing will not give a good print (the software will be corrected later

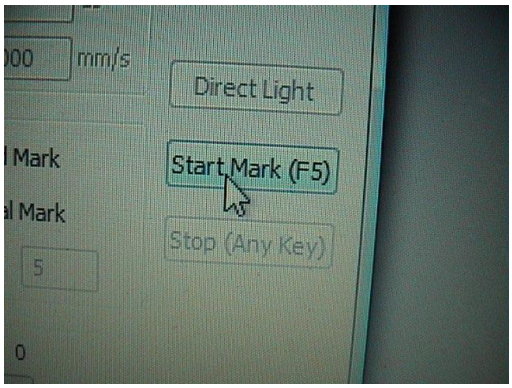






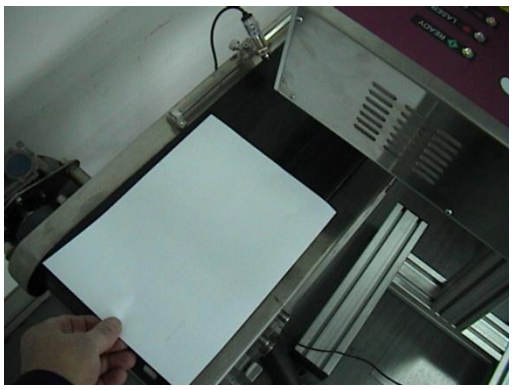


To send the message click start mark

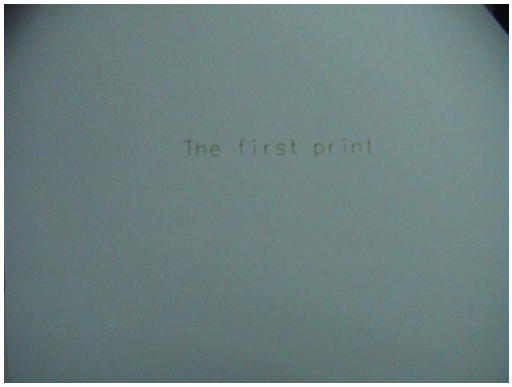


The 3 lights are on

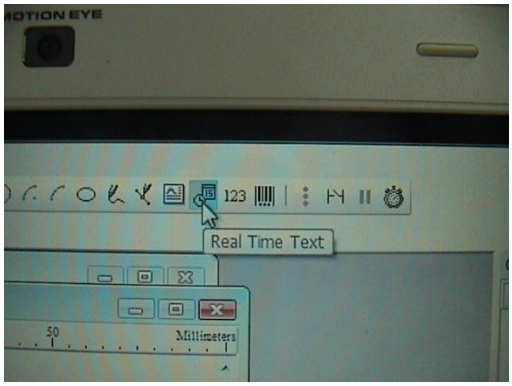
Position your paper before the laser , switch on the conveyor



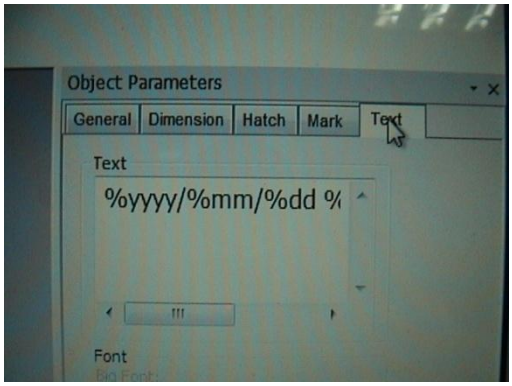
And print your first print!

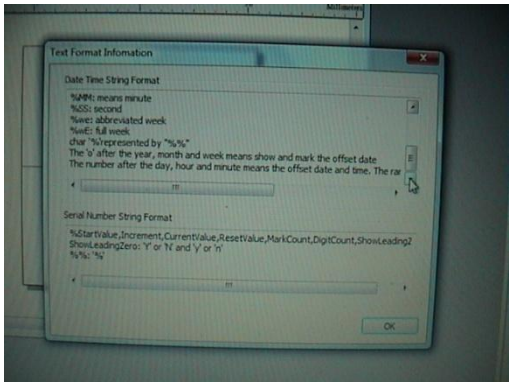


Now having done this you have established the principles of laser printing and you can go on to use variables Date Expiry count for your next stage.
This the same as before except you just click on real time. Todays date will now appear

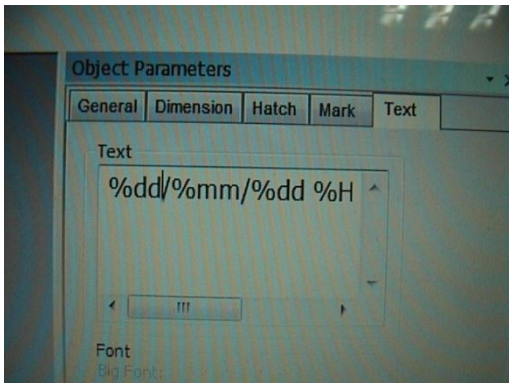


On the side of the screen you will see object parameters Click text

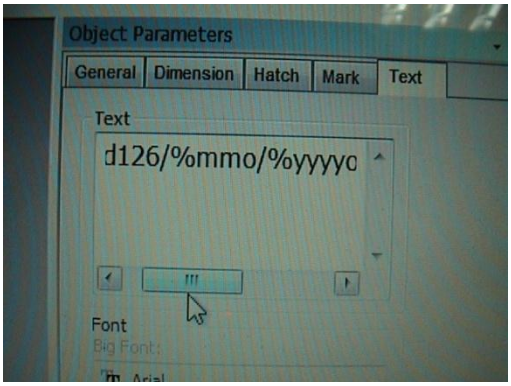




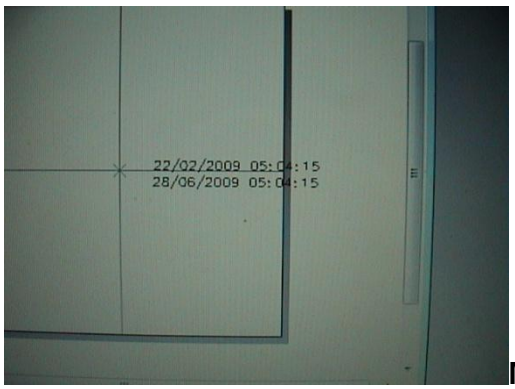
If you click on FORMAT the menu of date time variable setting will appear



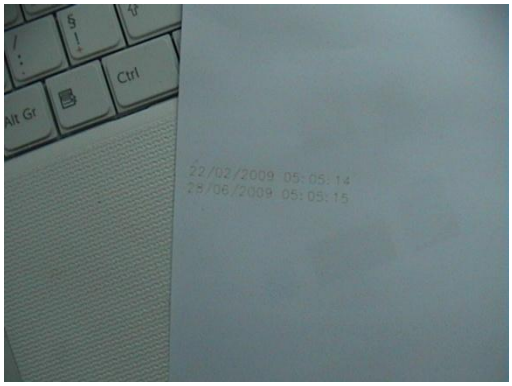
The default setting is Year month day , so replace yyyy with dd and dd with dd for Europeen infact you can do any format you wish.

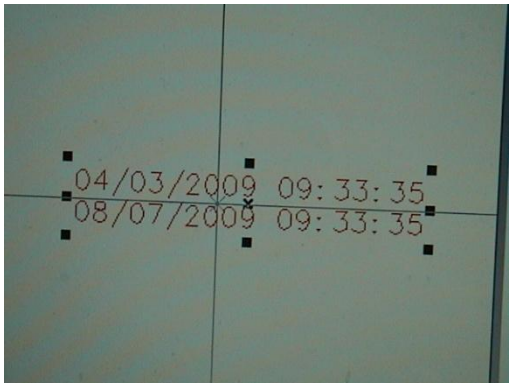


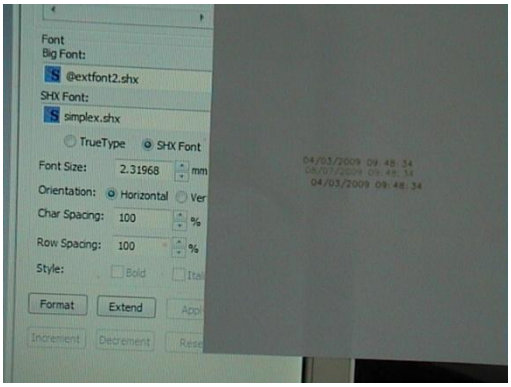
Repeat the same process for the expiry date by adding after the d d ,in this case 126 days expiry then o (NOT zero) behind the mm and o behind the yyyy then click APPLY



Make a test print; the result should be like this!



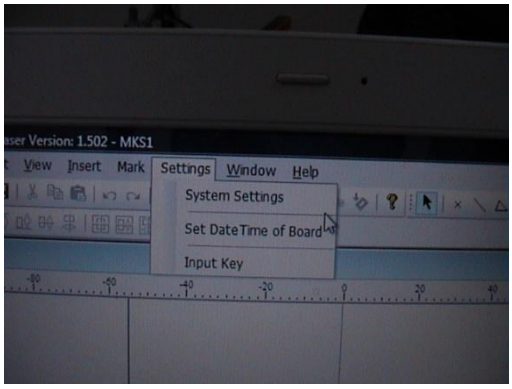


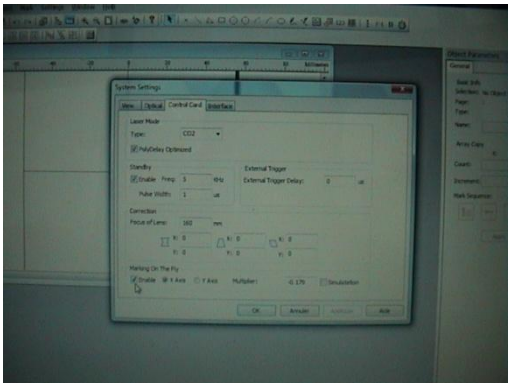


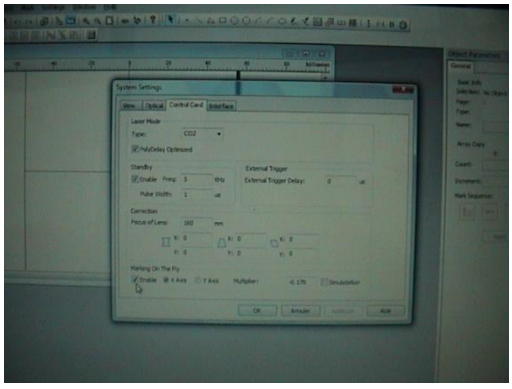
You can shrink or streach the message with ease

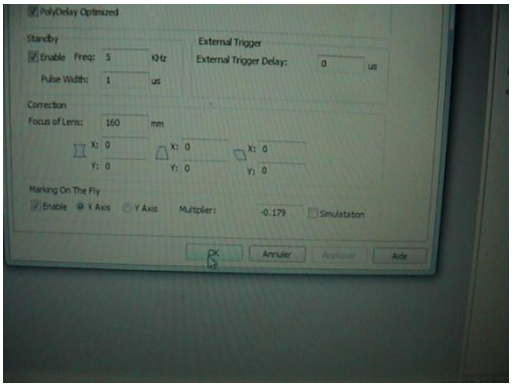
Just click on the corner square and drag out or in. and 2 mm is quite readable

- For both static and on the Fly “enable Marking on the fly” set the parameters as below if not the static printing will not give a good print (the software will be corrected later)

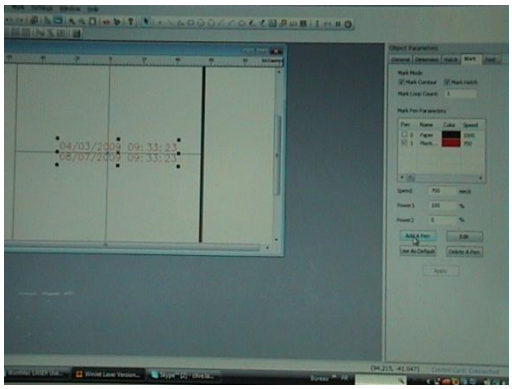




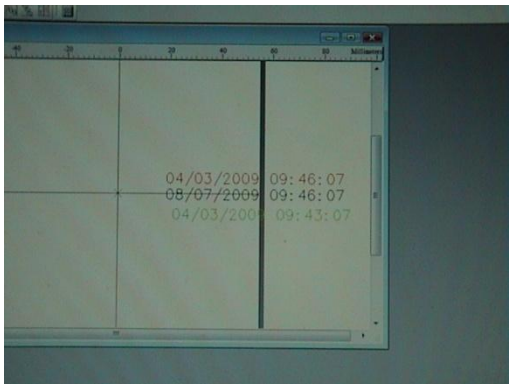
- 



2. Static marking or Marking moving products passing the laser.
The simple solution.Just move the positioning of the message!



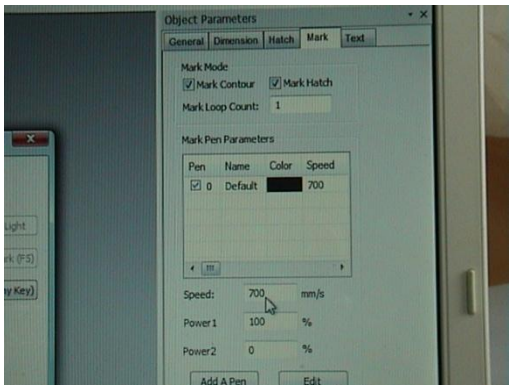
For static marking place the message slightly to the right of the center square

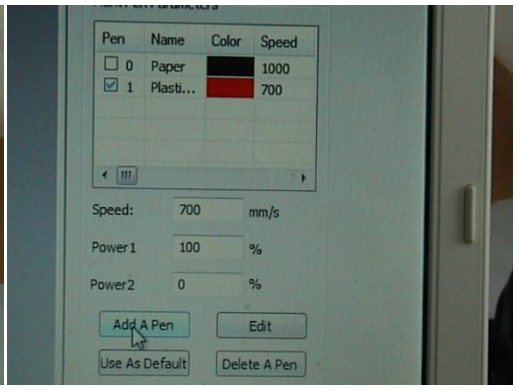


For a movingconveyor(on the fly) just move the message behind the center square like the picture This is if the conveyor is running right to left past the laser . If the conveyor is running Left to right move the message to the left side of the center cross.

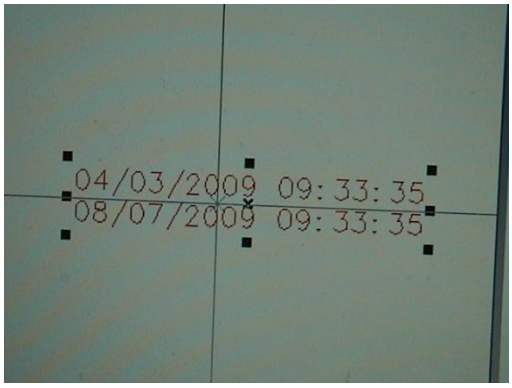
Now you are ready to move on to real printing onto real product. The principles are the same, but depending on the product, the line speed and the number of characters you wish to print, you must alter the parameters to suit.
This is a very easy way to get the ideal result

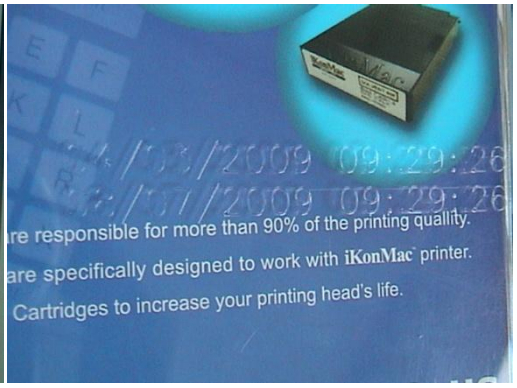
Make your message as shown before, then click “mark” to open as below . Now click “speed”. The principle is the higher the speed the less the time of the burn. So if a piece of paper is 1000 then lets try plastic at 700 . Where it says pen and it is a default setting and give it a colour
So now we have black for Paper and red for Plastic



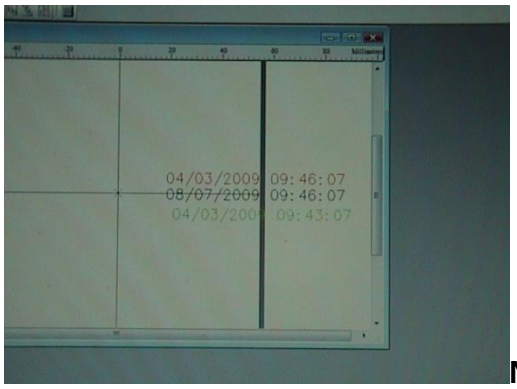


The message now becomes red **Now try a sample**
Do not forget to change the height between the laser and product (100mm)

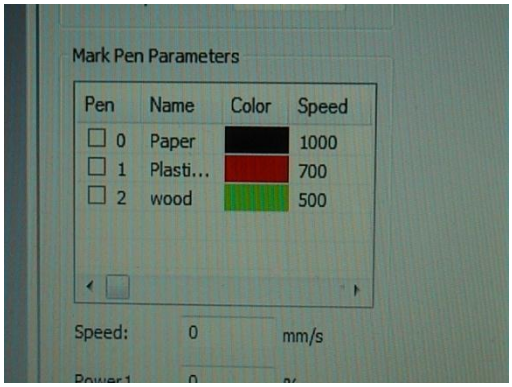




Now you can choose each line to be a different setting and each will show on the screen as a different colour



Now we do the same a try a piece of wood so set the speed to 500 and give it for instance a green colour The benefits of this are you can select each line of text give a different speed value and print all 3 at the same time . Then compare and choose the best result .



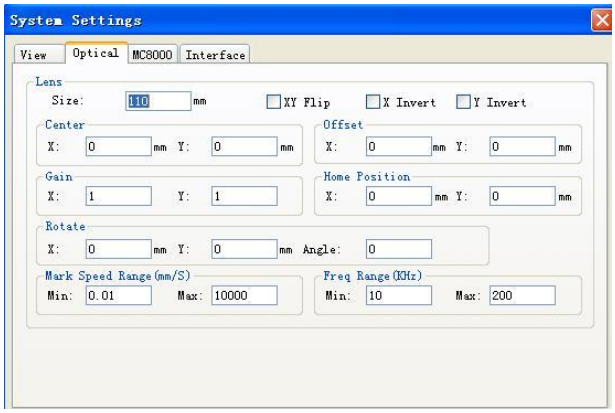
Try the test on a piece of paper then a piece of wood. If you want a greater burn just decrease the speed.

Part B the more comprehensive explaination of all the features of the laser

c) Setting the system parameter

There are overall settings that relate to your particular laser that need to be addressed before you can begin to create marking with this software.

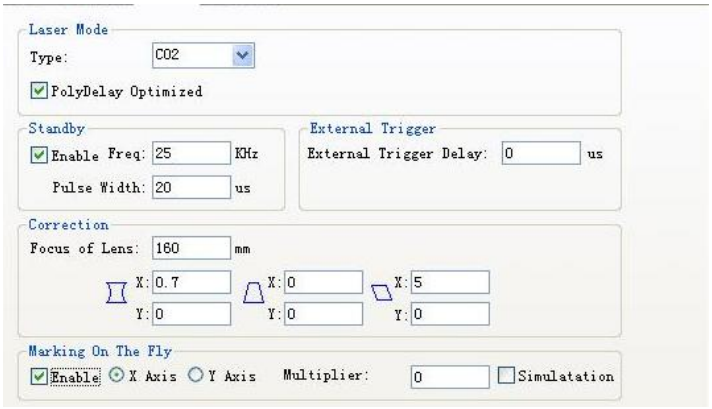
Caution: Only change these settings with power laser and galvos power OFF . After the overall settings are made, the hardware will be reset, which can cause interruptions in pulse train, and create large DAC value changes.



Settings/System Settings /Optic

Select Settings/System from the main menu bar to open the configuration window.

- **Lens:** This group of values will help define the type of optics you are using.
- **Size:** The correction file chosen will determine this value
- **Center X/Y:** This allows you to define the value that will represent the center point. Setting this value to 0 with a 120mm field will make the extremities –60mm and 60mm.
- **XY Flip/invert:** combinations of these values allow you to choose the orientation of the mark to the head. XY flip or Invert X are to common configurations.
- **Gain XY:** Making these values smaller that 1 will allow you to precise adjustment the scaling. I.e. create a 120mm square and mark it. Take 120mm value for each axis and divide it by the measured value to get the corrected value for each axis.
- **Offset XY:** These Values allow you to shift the field. This can only be used for adjustments within the total DAC size. It is recommended that you mechanically adjust and not rely on this function.
- **Home Position Enable:** This allows you to define a point in the field that the galvos will return to after each mark. It is important to use this with flexure galvos to keep the galvos in the center of travel where they draw the least amount of current.
- **External Trigger:** Enabling this feature will set the software to preload the FIFO with mark jobs which will minimize the delay between the trigger signal and starting the mark. The **Time-Out** value sets a time at which the buffer should be reloaded after the specified amount if inactivity. In an application with a time stamp you would want to periodically reload the buffer with the current time if the system sat inactive.
- **Min/Max :** This will open the Min/Max window allowing you to set operating windows for Speed, Frequency, and First pulse suppression.



a) Multiplier

For a specific distance of the target (in the above example along the X-axis), the encoder gives a specific amount of Counts. The multiplier defines the multiply constant for converting Count pulse to field units.

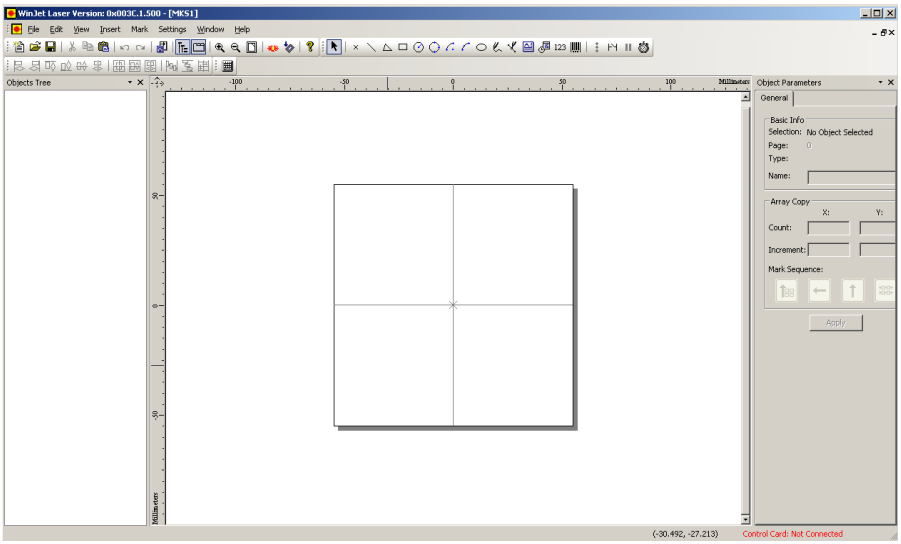
If for example the simulation mode is used and the multiplier is set to 1um/counts the MarkingOnTheFly speed is 100 mm/sec. The multiplier may also have a negative sign. This can be used to invert the compensation direction.

b) Simulation

Takes the internal 100 kHz clock generator as clock source

Edit Message

a) Interface Overview

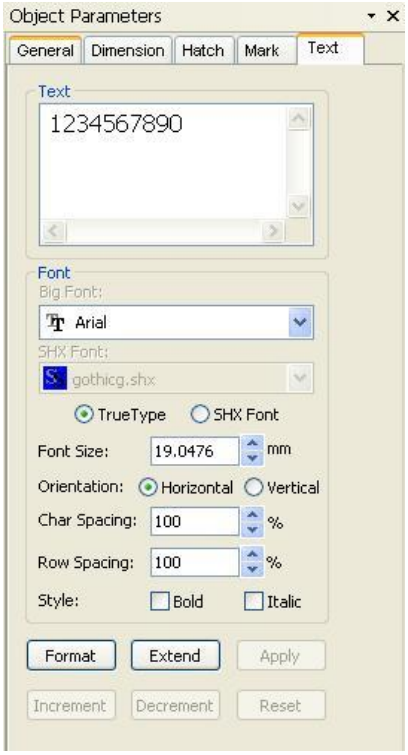


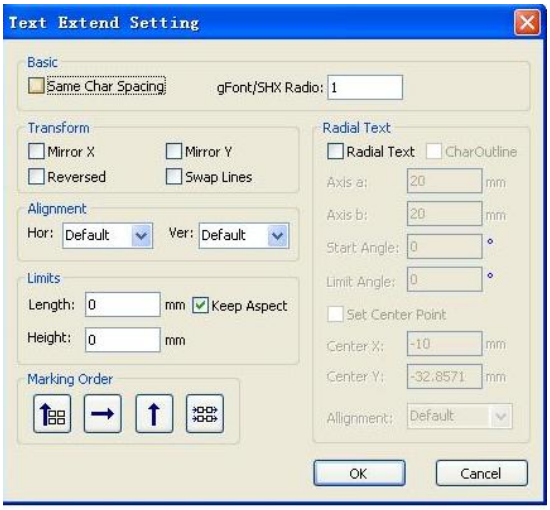
Edit Interface Overview

	import a grapic file (plt or dxf)
	center to page (F4)
	show object tree
	show object parameters
	Insert text
	insert real time text
	set input
	Set output
	add a pause
	add a timer
	star mark (F6)
	write to SD card(F7)(to write to the machine you need disconnect and power off and restart the laser)

b) Insert Text Object

Click on the Insert Text tab to add a text window in the marking field.



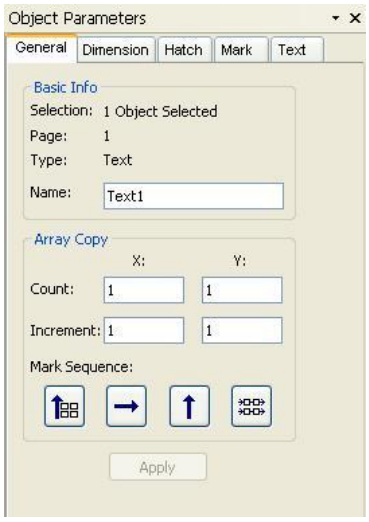


- **Extended**: Allows for further manipulation of the marked text.
- **Generate single characters**: When this option is on, all characters in the text string are generated separately, which means that each character is stored in one separate ScWinText2D object. This has the advantage that each character can be accessed and so for example each character can be hatched with a different hatch style. If this is not necessary, the option should be switched off to fasten the operations like transformation and rendering.
- **Mono spaced**: Normally spacing between characters is defined within the font and can vary between single characters. Mono spaced takes always the same spacing. This is helpful when the length of a string should not vary too much with different characters.
- **Point Resolution**: Allows you to deviate from the standard amounts of points used to create the vectors.
- **Line Spacing**: Allows you to deviate from the standard line spacing.
- **Limits**: This will allow you to set length and height limits on the text field.
- **Force**: This will force the text to fill the field defined by the limits value.
- **Keep Aspect**: Allows you to keep the length/height ratio the same.
- **Alignment**: This allows you to choose from which point in the field the text will expand from when the length changes.

- **Radial**: This will allow you to mark the text around a radius.
- **Radius**: Defines the radius the text will wrap around.
- **Start Angle**: Defines where on the radius to start the text.

c) Parameters

1. General

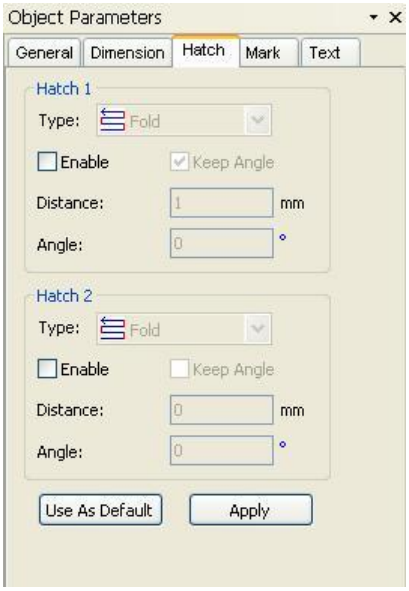


2. Determine

- **Translate**: Typing in a value and clicking on go will move the entity that distance. You may also click on the translate button on any corner of the modify box that surrounds the entity. The modify box has three different modes. The current mode can be switched with the button.
- **Scale**: Typing in a value and clicking on go will scale the entity. You may also click and pull on any of the scale buttons on any corner of the modify box. The buttons will change the outline dimensions in this mode. The current mode can be switched with the button.
- **Rotate**: Allows you to rotate an entity a relative value around the center value. You may also click and pull on any of the rotate buttons on any corner of the modify box. The buttons will skew the entity in this mode. The current mode can be switched with the button.
- **Outline**: Typing in a value and clicking on go will size the entity to that dimension. The buttons will change the outline dimensions in the scale mode. The current mode can be switched with the button.

3. Hatch

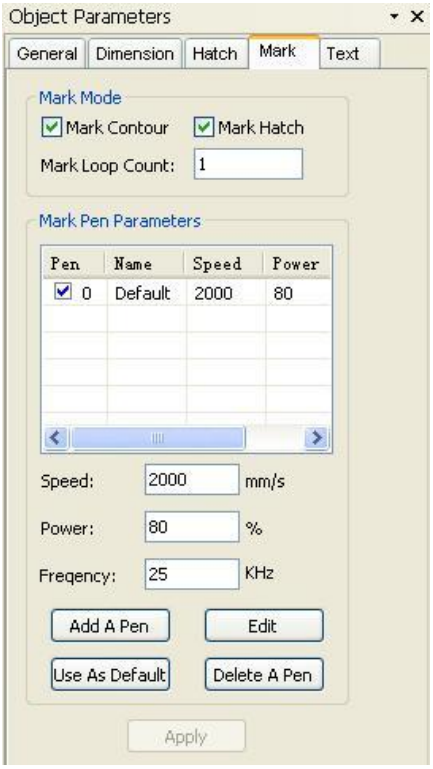
This property can be used for generating hatches for entities, which have closed poly lines.



- **Hatch1, Hatch2:** Switch between the two hatches.
- **Enable:** Activate the hatch.
- **Keep Angle:** Maintains the hatch angle if the entity is rotated.
- **Sort:** Sorts the order of the lines to get minimal jumps.
- **Distance:** The distance between two hatch lines in mm.
- **Angle:** The angle to the x-axis in degrees.
- **type:** Can be changed by clicking on the button with the bitmap. The blue lines on the bitmap show the mark lines and their direction and the red lines show the scanner jumps.

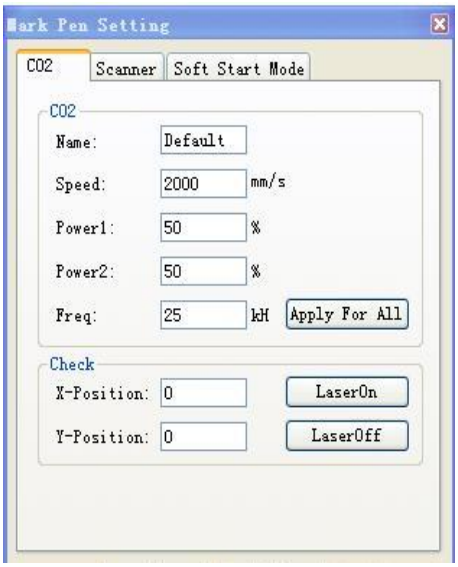
-

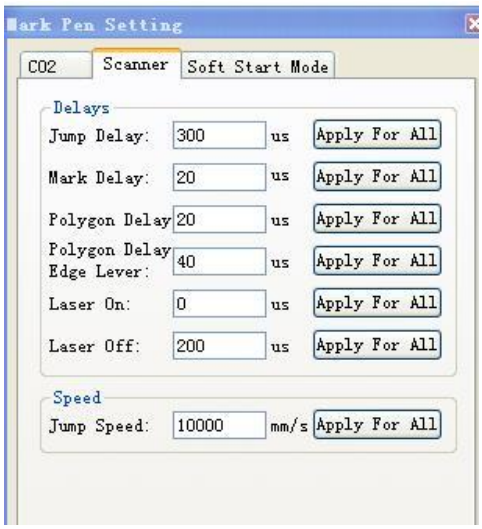
3. Static Marking

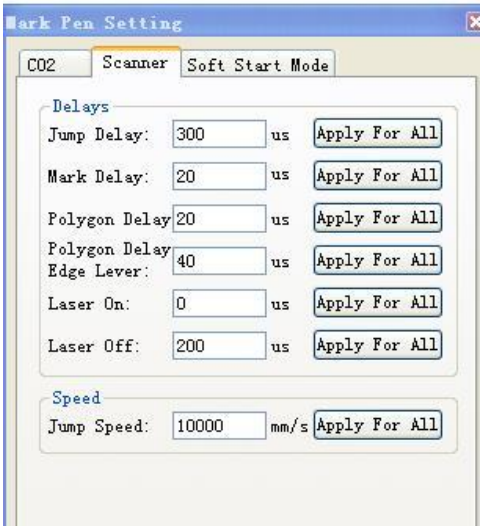


- **Pen:** You may select from all the available pens.
- **Spot Size:** Adding the correct value will give you an accurate view of the spot overlap.
- **Main:** This tab is a list of laser control functions.
- **Name:** Each pen can be assigned a name.
- **Power/Power1/Power2:** This will be a value in Watts or percentage that you can use to set the power level of the laser.
- **Speed:** A Value per second speed of the marking part of the vectors.
- **Frequency:** Pulses per second of the laser.
- **Pulse Length:** This will allow you to adjust the width of the pulse.
- **First Pulse:** This pulses a second DAC at the beginning of the vector that can be used to suppress the power of the first pulse.
- **Stand by:** Tickle pulse value for CO2
- **Power Control:** Enables the software control of laser power. Lee laser selection allows you to switch to Panel control.
- **Half period:** This is used to define a stand by pulse in YAG mode when laser gate is OFF (set globally in the IPG laser setting).
- **Stand by:** Stand by pulse in YAG mode when laser gate is OFF.
- **Long Delay Enable:** For lasers with slow power up speeds.
- **All:** The all button will apply that setting to all pens.

a) Scanner: This tab lists galvo control variables. Click edit





A 

Delays:

- **Jump delay:** A delay value at the end of a jump vector that allows the galvos catch up to the move commands.

  Delay too long: No visible effects but does add to total mark time.

Delay too short: The succeeding mark will start while the galvos are still settling. This will make a unstable mark at the beginning of the marked vector.

- **Mark delay:** A delay value at the end of a mark or a Poly E vector.

  Delay too long: No visible effects but does add to total mark time.

  Delay too short: The succeeding jump will start while the galvos are still moving. The mark will turn in the direction of the jump at the end of the marked vector.

- **Poly delay:** This is a delay between the segments of a poly like an S and even the corners of a W.

  Delay too long: Burn spots or darker mark appear along the poly segments.

  Delay too short: The galvos never achieve position and your O's will mark smaller that the rest of the letters.

- **Laser on:** Adjusts the delay at the beginning of each mark.

  Delay too long: Burn spots or darker mark appear at the beginning of each mark.

  Delay too short: The first part of each mark will be missing.

- **Laser off:** Adjusts the delay at the end of each mark.

  Delay too long: Burn spots appear at the end of each mark.

  Delay too short: The last part of each mark will be missing.

a) Multiplier

For a specific distance of the target (in the above example along the X-axis), the encoder gives a specific amount of Counts. The multiplier defines the multiply constant for converting Count pulse to field units.

If for example the simulation mode is used and the multiplier is set to 1um/counts the MarkingOnTheFly speed is 100 mm/sec.

The multiplier may also have a negative sign. This can be used to invert the compensation direction.

b) Simulation

Takes the internal 100 kHz clock generator as clock source. Min:1.7 max1000

If simulation select and set about 1.7

Moving speed v= 10kX1.7=17mm/s=1.02(M/MIN)

If not selet simulation the 10k use the v*rrp/3.14xD (the encoder fre)replace

If th encoder is 1200rrp the moving speed is 18M/MIN=300mm/s the encoder diameter 40mm

300X1200/(40X3.14)x(multiplier)=300

So multiplier= 40X3.14/1200=0.104

If the encorder moving direction is opposite, need set multiplier -0.104

And the object moving speed is irrespective

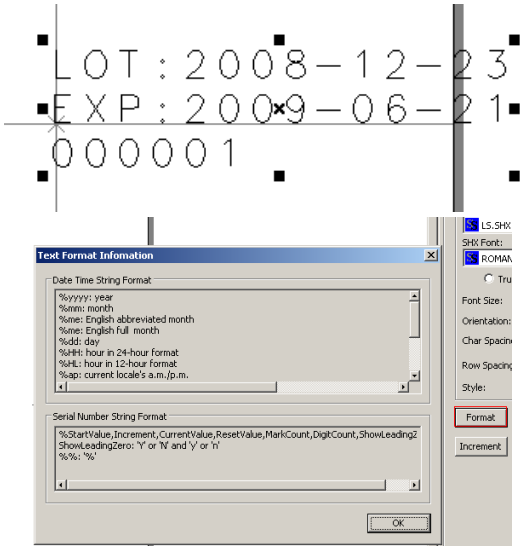
4. Offline Mode

1.First if the message is not only a text or a time or a serial- number , you must put their code together in any text code box. For example

MAN:%yyyy-%mm-%dd

EXP:%yyyyo-%mmo-%dd180

%1,1,1,999999,1,6,y%



DATE TIME STRING FORMAT

%yyyy: year

%mm: month

%me: English abbreviated month

%me: English full month

%dd: day

%HH: hour in 24-hour format

%HL: hour in 12-hour format

%ap: current locale's a.m./p.m.

%MM: means minute

%SS: second

%we: abbreviated week

%wE: full week

char '%'represented by "%%"

The 'o' after the year, month and week means show and mark the offset date

The number after the day, hour and minute means the offset date and time. The ran

SERIAL NUMBER STRING FORMAT

%StartValue,Increment,CurrentValue,ResetValue,MarkCount,DigitCount,ShowLeadingZero%

ShowLeadingZero: 'Y' or 'N' and 'y' or 'n'

%%: '%'

write to SD card (need dongle)

Take out the usb cable then power off the machine wait about 1 minute,and then pwer on the machine .It can work by the photocell and encoder. If something wrong you need do write sd card again

C. FAQ

Question	Reason	Answer
The System can not start	Incorrect electrical connection.	Check the main connection. Check the switchs Check if the fuse wire is OK
ready tem The LED is not on	Wrong voltage is supplied or trun on the system too quick after turn off. The laser tube fuse is blown	turn off the system after all the LED off then restart check the power supply check the laser tube fuse
No laser come out	Does not Remove the cover of lens Incorrect usb cable connection Plus modal the photocell is wrong The software system wrong setting, such as the scanner speed is too fast that laser can't destroy the target or the power setting is 0% The target is not on the focus The laser tube fuse is broken The laser signal is missing, if have the signal the laser LED must be high bright	Check the USB cable Replace the USB cable until the software inspects the cable connect with the hardware. Check the photocell whether the software can receive the signal when the cable connect with computer. Adjust the system setting Adjust the target distance to the focus Replace the laser tube fuse Check the laser signal
The characters are be out of shape	The system wrong setting Plus modal does not connect the encoder The targe' s moving direction changed, but the multiplier does not change the plus-minus symbol	Check the system setting [optical] Check the encoder Adjust the multiplier
Only one line or be a line at the end which is tparallel to the direction	the laser is continuously working,the frequency setting it too high. The multiplier is wrong	10tile later Adjust the frequency below 8khz Adjust the multiplier
There is a line which Vertical	Static modal the text is out of the rectangle frame	Static modal the text must in the rectangle frame
Static modal only some Lines marked	One of the scanner does not work The scanner is broken	Check the cable of the scanners,reconnect. Change the scanner
The characters and squares are not closed	The value of the parameter laser off too low delay	Adjust the laser off delay
The first starts too late when the laser is on	The laser on delay too long	Adjust the laser on delay