LFC Desktop Workstation User Manual

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4F., No.236, Fude 2nd Rd., Xizhi Dist., New Taipei City 22151, Taiwan 886-2-6616-6692 Fax:886-2-2694-6875

Release Note

Version	Release Date	Change
1.0	Apr, 2020	First Version
2.0	Jul, 2022	Product label updated
		Mechanical overview updated
		Add the instruction of hardware and software mode
		Add optional items installation guide
		Add optional items operation guide
3.0	Mar, 2025	Add new models and minor revised
4.0	Nov, 2025	Add new JML models and minor revised

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Chapter 1

Safety

1.1 Principles of CO2 Laser

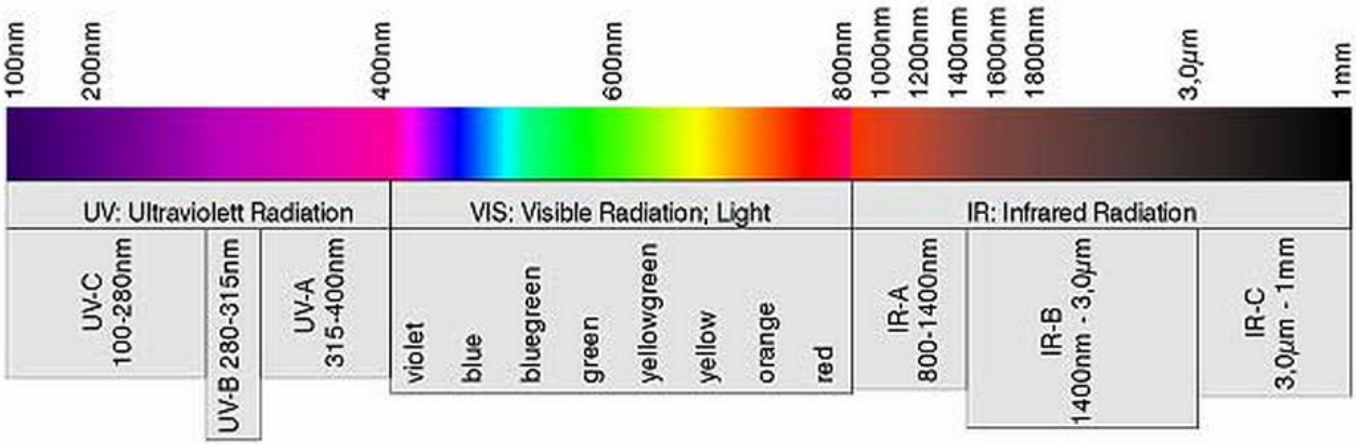
LASER is the acronym for Light Amplification by Stimulated Emission of Radiation. GCC LaserPro StellarMark C series CO2 (carbon-dioxide) laser works by electrically stimulating the molecules within a carbon dioxide gas mixture. When focused through a lens, this highly-intense, invisible beam will vaporize many materials. Depending on the speed and intensity of the projected beam, a CO2 laser may be used to mark or cut through a wide variety of materials.

1.2 Principles of Fiber Laser

LASER is the acronym for Light Amplification by Stimulated Emission of Radiation. GCC LaserPro StellarMark IF-series is equipped with the state-of-art fiber laser technology. A fiber laser is built with “all fiber” technology and uses a telecom grade diode to pump an optical fiber, and the fiber is doped with rare-earth elements as a gain medium to generate 1064nm laser light. Compared to the conventional DPSS technology, fiber laser is immune of misalignment and does not request any adjustment during operation.

1.3 Safety Rating

The GCC LaserPro LFC Series Workstation carries two kinds of laser markers, a sealed CO2 (carbon-dioxide) laser for StellarMark C series laser marker, or a fiber laser for StellarMark I series laser marker. Both laser markers emit intense and INVISIBLE laser radiation, C series with a wavelength of 10.6 microns for CO2 laser, while I series with a wavelength of 1064nm (1micron) for fiber laser in the infrared spectrum. The LFC Series Workstation is designed with laser safety rating of Class 1, meaning that the system is equipped with key safety features and an enclosed laser head to completely contain the laser under normal use. One of the key safety features found on the LFC Series workstation is Class 2 red dot safety guidance pointers allowing users to see where the laser beam is travelling and helping find out the precise focus point for laser to do quality job. Even though the LFC Series Workstation is equipped with the most powerful laser, through proper usage and taking necessary hardware safe guards will make it an extremely safe machine. When the side doors (left and right) are open, the laser machine becomes a Class 4 equipment, users MUST wear safety goggles to operate the machine.



1.4 The Safety Interlock System

The LFC Series Workstation is equipped with a safety interlock system utilizing limit switch sensors on the electronically controlled front door. The limit switch sensor will shut the laser off when detecting front door open. Do not attempt to remove or modify these limit switches or any other component of the safety interlock system. If any time, the front door is open while the laser keeps firing, unplug the system IMMEDIATELY, and contact GCC local representative for technical support and maintenance instructions.

WARNING

- DO NOT operate the laser system if any component of the safety system is malfunctioning.
- DO NOT attempt to remove or modify any component of the safety interlock system.

1.5 Safety Label

According to CDRH standards, all fixed or removable covers that allow access to a laser beam must have the appropriate laser warning labels attached to them. These warning labels must be clearly visible to the operator prior to removing the cover. Additional labels must be applied inside of the machine and be visible in the event the covers are removed. A label clearly displaying the manufacturer's name, date of manufacture, description of product, model number, serial number, and compliance statement must be attached to the outside of the machine.

In compliance with CDRH standards, the required warning labels are affixed at the time of manufacture to the GCC LFC Series Workstation in the appropriate locations. These labels are not to be modified in any way or removed for any reason. Please familiarize yourself with the specific labels and their locations on the machine. Below is a list of all the safety labels and their locations on the machine.

Product Label

This label is located on the left side of LFC Series Workstation. All the product information such as Serial Number, Model Name, Electric power and Input can be found here. Before requiring any tech support, always provide service person the information on this label.

Product Label Example

Please refer to the following table to view all available models and related information.

LFC D-CIIS Series

Model Number	Wavelength	Power	Input
LFC D-CIIS 12 010	10.57~10.63 μm	CO2 12W	AC 100-240V, 50-60Hz, Max. 15A
LFC D-CIIS 12 050			
LFC D-CIIS 12 070			
LFC D-CIIS 12 140			
LFC D-CIIS 30 010		CO2 30W	
LFC D-CIIS 30 050			
LFC D-CIIS 30 070			
LFC D-CIIS 30 140			
LFC D-CIIS 30 200			

LFC D-IFIIS Series

Model Number	Wavelength	Power	Input
LFC D-IFIIS 20JFL 070	1064 nm	Fiber 20W	AC 100-240V, 50-60Hz, Max. 15A
LFC D-IFIIS 20JFL 110			
LFC D-IFIIS 20JFL 180			
LFC D-IFIIS 30JFL 070		Fiber 30W	
LFC D-IFIIS 30JFL 110			
LFC D-IFIIS 30JFL 180			
LFC D-IFIIS 50JFL 070		Fiber 50W	
LFC D-IFIIS 50JFL 110			
LFC D-IFIIS 50JFL 180			
LFC D-IFIIS 30JML 070		Fiber 30W	
LFC D-IFIIS 30JML 110			
LFC D-IFIIS 30JML 180			
LFC D-IFIIS 60JML 070		Fiber 60W	
LFC D-IFIIS 60JML 110			
LFC D-IFIIS 60JML 180			

LFC D-3DS Series

Model Number	Wavelength	Power	Input
LFC D-3DS 20JFL	1064 nm	Fiber 20W	AC 100-240V, 50-60Hz, Max. 15A
LFC D-3DS 30JFL		Fiber 30W	
LFC D-3DS 50JFL		Fiber 50W	
LFC D-3DS200 30JML		Fiber 30W	
LFC D-3DS200 60JML		Fiber 60W	
LFC D-3DS300 30JML		Fiber 30W	
LFC D-3DS300 60JML		Fiber 60W	

Safety Label

CDRH and CE regulations require that all laser manufacturers add warring label in specific locations throughout the equipment. The following warning labels are placed on the laser system for your safety. Do not removed these labels for any reason. If the labels become damaged or have been removed for any reason, do not operate the laser system and immediately contact GCC local representative or e-mail us for a replacement.

Please refer to the following content to review all safety labels.

❶ Warning Label

Warning Label is written with all the necessary information to be aware of during machine operation.

❷ Protection Window Label

This label indicates the protection wavelength.

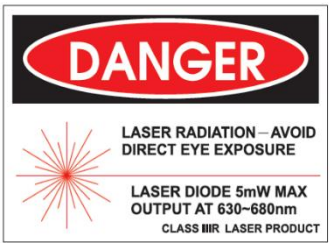
❸ Emergency Stop Label

This label indicates the emergency stop button. You can find this label on the right side of LFC Series Workstation front button operation section.

❹ CDRH Label

This label indicates the class level of CDRH.

For StellarMark C Series



For StellarMark I Series

1.6 Safety Measures

- **LASER RADIATION WARNING:** Exposure to laser radiation may result in physical burns and severe eye damage. Proper use and regular maintenance of this machine is important to the safety of all people in the immediate area.
- Prior to operation, carefully read and familiarize yourself with the warning labels located on both your laser system and in this manual.
- Never leave the machine unattended during the laser cutting and marking process. The laser may ignite combustible materials. A well-maintained fire extinguisher and operational smoke or fire detector should be kept in the vicinity of the machine.
- Resulting debris from laser cutting are very dangerous and may cause fire hazard.
- Always wear safety goggles when the GCC LFC Series is in operation. Reflective materials such as mirrors, enameled brass and anodized aluminum may partially-reflect some of the invisible laser radiation. Severe eye damage may occur if appropriate safety goggles are not worn.

NOTE

StellarMark C series laser marker is shipped with a single pair of safety goggles. If additional safety goggles are required, please contact GCC directly or GCC local representative. If you wish to purchase one on your own, please make sure the safety goggles meet these requirements:

190 - 398 nm OD5+
10,600 nm OD5+
Visible Light Transmission: 92.9%

NOTE

StellarMark I series laser marker is shipped with a single pair of safety goggles. If additional safety goggles are required, please contact GCC directly or GCC local representative. If you wish to purchase one on your own, please make sure the safety goggles meet these requirements:

190 - 534 nm OD5+
910 - 1,070nm OD6+
Visible Light Transmission: 23.5%

- Connect the machine to a properly grounded power outlet. Ensure the voltage of the power source is identical to the voltage of the machine.
- Ensure the immediate work area of the machine is well-ventilated. Odors, vapors, and dust are byproducts generated during the laser marking and cutting process. An exhaust system is recommended. Please contact GCC or your local GCC distributor for more information.
- Do not laser heat-sensitive surfaces or materials that may generate toxic fumes, such as PVC and Teflon.
- Regularly clean and maintain your machine according to our cleaning and maintenance instructions. Doing so will ensure a machine that will operate effectively and safely over a long period of time.

1.7 Operating

Please follow the guidelines when considering a suitable location to set the GCC LFC Series. Improper work environments may lead to operational malfunction and/or unsafe working conditions. The GCC LFC Series should be placed and operated in a clean environment, avoid places where the machine is exposed to high temperatures, dust, or high humidity

- Keep the machine where the room temperature is between **15 – 30 degrees Celsius** or 58 – 85 degrees Fahrenheit.
- Avoid small, enclosed areas where a considerable amount of dust is present.
- Avoid areas where the humidity is above 70% or where the temperature is near the dew point.
- Setup the machine to be apart from the wall for at least 40cm (1.5 feet).
- Choose a flat surface that is not exposed to high levels of vibration.
- Be sure that your mounting platform has been securely fastened to the table, stand, or floor.
- Choose a location that is large enough to accommodate the machine, the computer and a work/storage table.
- Have a fire extinguisher close to the working location at all times.
- Make sure your smoke/fire detecting system is functioning.

Chapter 2

Unpacking & Content

Unloading & Unpacking

Contents & Accessories checklist

2.1 Contents & Accessories Checklist

The GCC LaserPro LFC Series Workstation is shipped in one crate that contains machine, software, and all of the necessary accessories. The following section shows detailed step-by-step instructions for unpacking and assembly the accessory to workstation.

⚠ WARNING

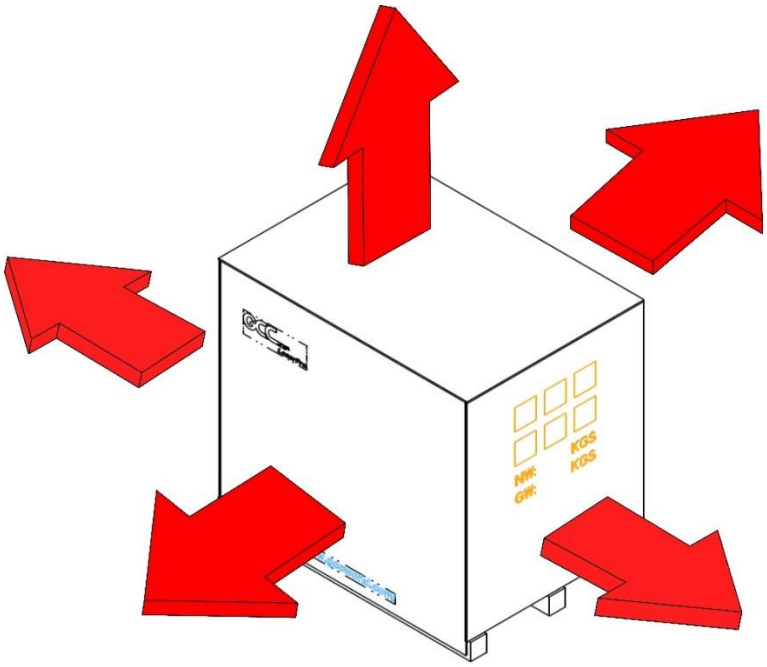
More than one person may be needed when loading and unloading the shipping crate in order to avoid body injury or damage to the machine.

NOTE

Please keep and store the original shipping crate in case it is needed for future transportation or product servicing.

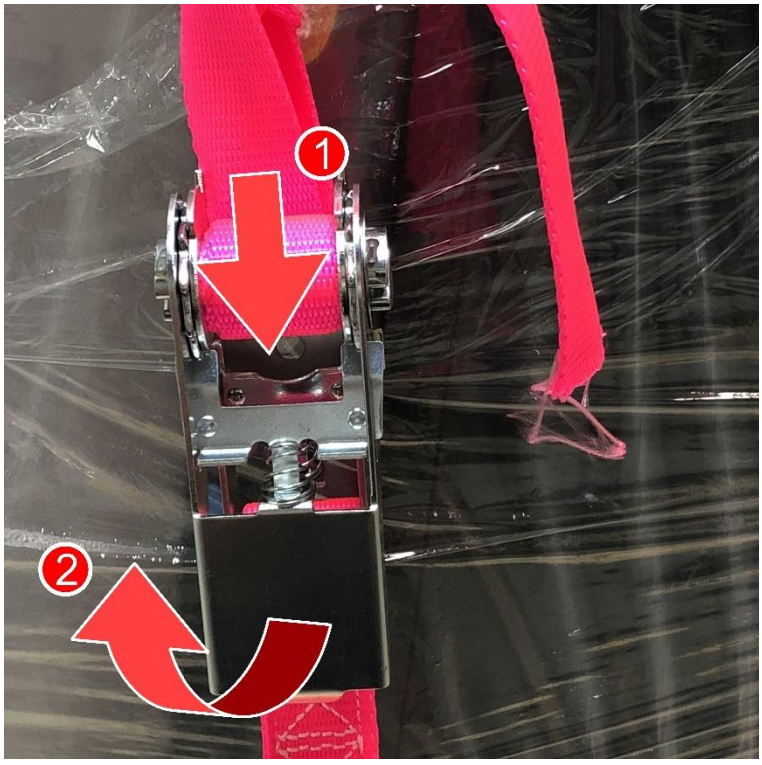
Step 1. Move the shipping crate to the proximity of the designated work area.

Step 2. Loosen the screws fixed crate top and side panels, and remove all the panels.

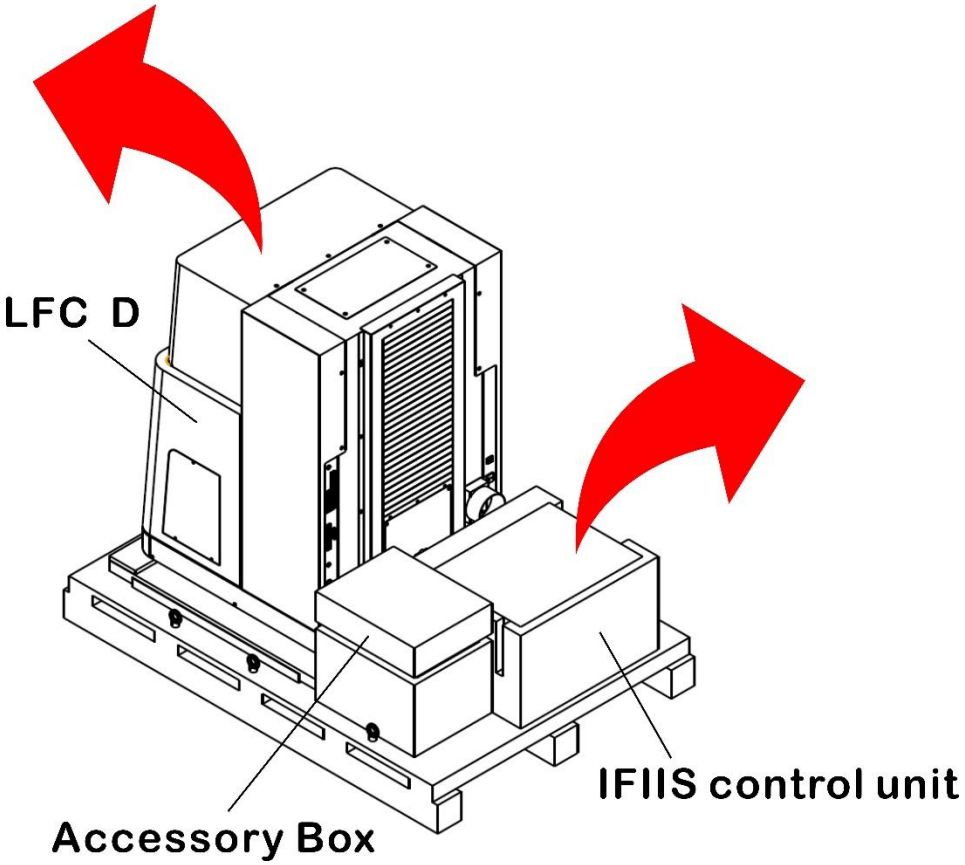


Step 3. Untie the knot.

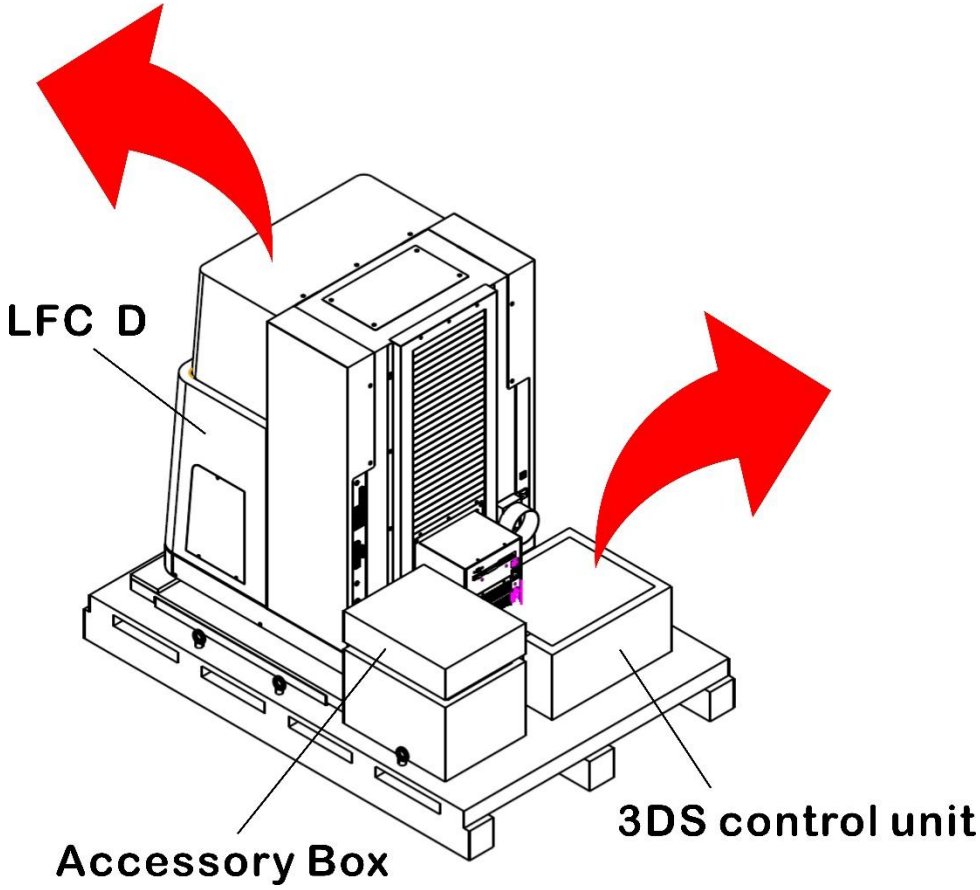
Step 4. Unbuckle and remove the two safety harnesses that hold the machine in place.



Step 5. Move the machine and placed on a stable desktop.



▲ LFC D-IFIIS series package contents



▲ LFC D-3DS series package contents

NOTE

The fiber cable has connected to the control unit and LFC D. Excessively tight fiber bends (less than a 10 cm radius) will permanently damage and possibly ignite the fiber. Please move it carefully.

2.2 Contents & Accessories Checklist

Please check to make sure that all the following items are included within the shipping crate. If any of the following items are missing, immediately contact your local GCC representatives.

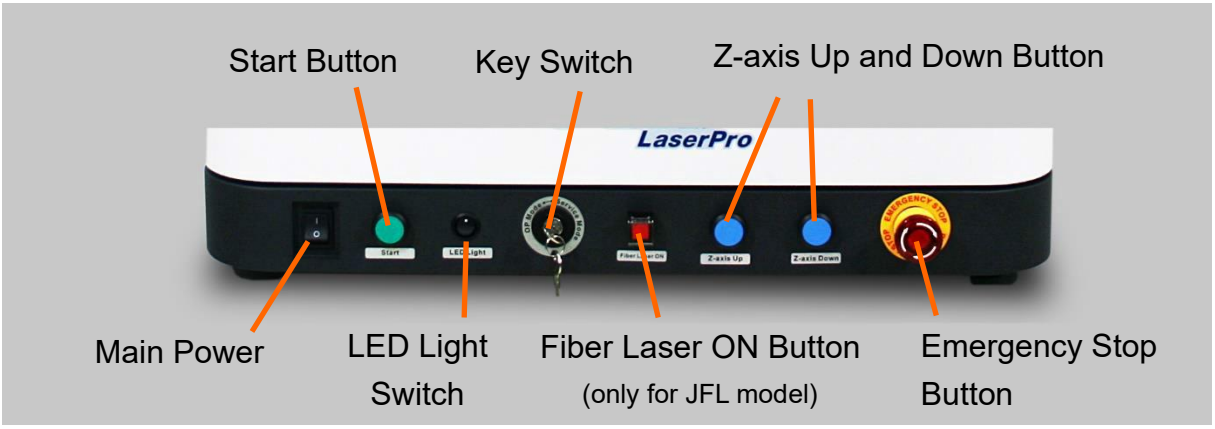
GCC LaserPro LFC-D Workstation Checklist

Name	Unit
C-Series I/O Cable	1
I-Series I/O Cable	1
D-SUB 15pin Rotary Cable 750mm	1
Safety Key	2
External Signal Indicator	1
AC Power Cable (Europe)	1
AC Power Cable (US)	1
AC Power Cable (Australia)	1
AC Power Cable (US) (Connect with the control unit and LFC D)	1
Exhaust Pipe 500mm	1
Hose Clamp (ZHCB-110)	2
LFC Port Cable (only for I series)	1
Socket head set screw.(M6*12L)	6
Cancellation of CD Disc Notification	1

Chapter 3

Mechanical Overview

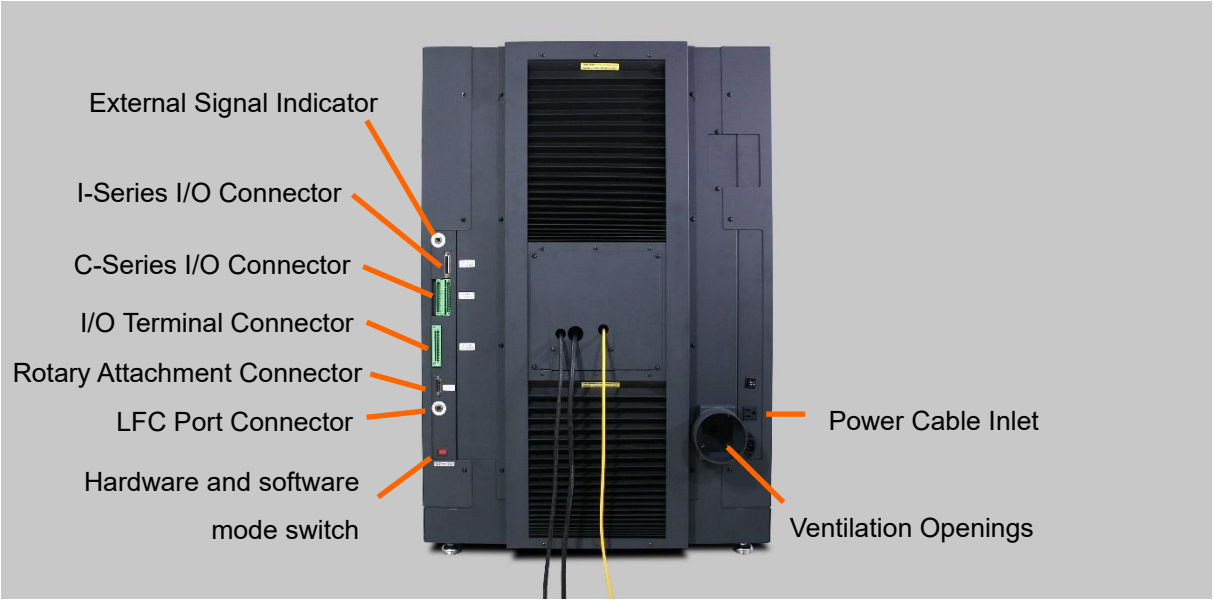
3.1 Front View



3.2 Right View

3.3 Left View

3.4 Rear View


External Signal Indicator
I-Series I/O Connector
C-Series I/O Connector
I/O Terminal Connector
Rotary Attachment Connector
LFC Port Connector
Hardware and software
mode switch
Power Cable Inlet
Ventilation Openings

Chapter 4

Machine Installation

Machine Installation

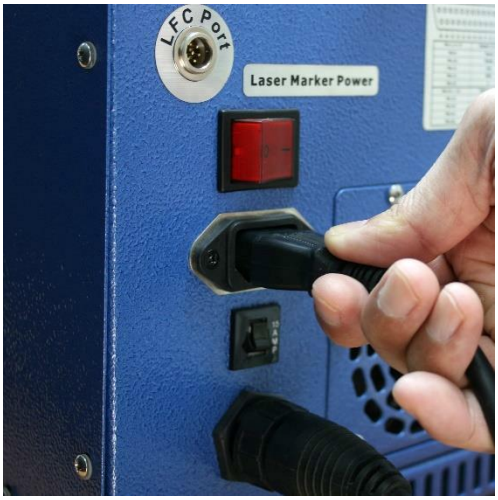
Rotary Attachment Installation (Optional)

4.1 Machine Installation

4.1.1 LFC D-IFIIS series installation

1) Plug in the power cable on the back of the LFC D

2) Please find the American power wire in the accessory box and connect it between the control unit and Laser power cable inlet of the LFC D.



3) Put the external signal indicator on the LFC D and connect the external signal indicator to the external signal indicator port. The external signal indicator is located on the back of the LFC D.

4) Connect the I/O cable between the control unit and LFC D.

5) Connect the LFC port cable between the control unit and LFC D.

6) Connect the USB cable between the control unit and computer / Laptop.

7) Plug the G-Mark software keypro to the computer / laptop's USB port.

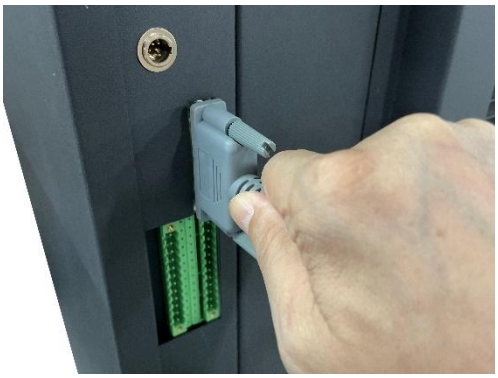
8) Turn on the power of the LFC D and the installation is completed.

4.1.2 LFC D-3DS series installation

1) Plug in the power cable on the back of the LFC D

2) Please find the American power wire in the accessory box and connect it between the control unit and Laser power cable inlet of the LFC D.

3) Connect the I-series I/O Connector cable between the 3DS and LFC D.



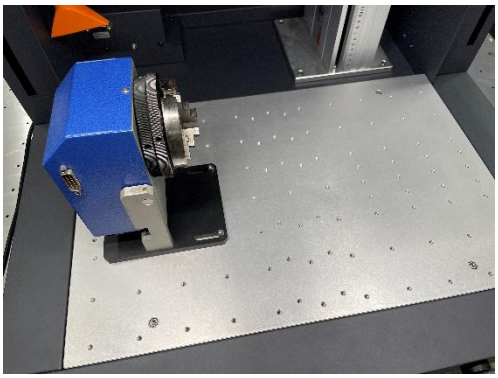
4) Put the external signal indicator on the LFC D and connect the external signal indicator to the external signal indicator port. The external signal indicator is located on the back of the LFC D.

5) Connect the USB cable between the control unit and computer / Laptop.

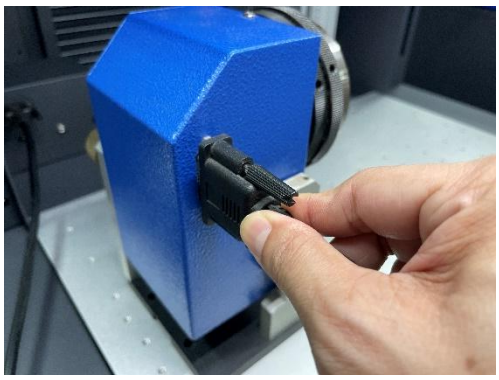
6) Turn on the power of the LFC D and the installation is completed.

4.2 Rotary Attachment Installation (Optional)

1) Put the rotary attachment on the working table of the LFC D. You can use

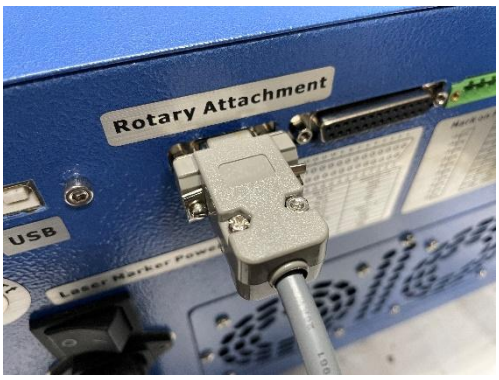


2) Connect the D-SUB 15 pin cable between the rotary attachment and LFC D.



3) Connect another D-SUB 15 pin cable between the control box of the rotary attachment and LFC D. The D-SUB 15 pin cable can be found in the accessory box of the LFC D.

4) Connect D-SUB 9 pin cable between the marker's control unit and the control box of the rotary attachment.



5) Plug in the power cable on the control box of the rotary attachment.

6) Turn on the power of the rotary attachment and the installation is completed.

Chapter 5

Software Setup

5.1 Recommended Computer Configuration

The LFC Series Workstation and G-Mark software are designed to work best using a Windows based system with the following minimum requirements.

Computer Configuration

- CPU Intel Pentium, 1GHz or above
- DRAM 1GB RAM or above
- HDD 500 MB of free hard drive space
- SVGA Super VGA display (1204 x 768 min. resolution)

Recommended Operating System for G-Mark Marking Software

- Windows XP SP3
- Windows 2000
- VISTA 32 bit
- Windows 7 32 bit

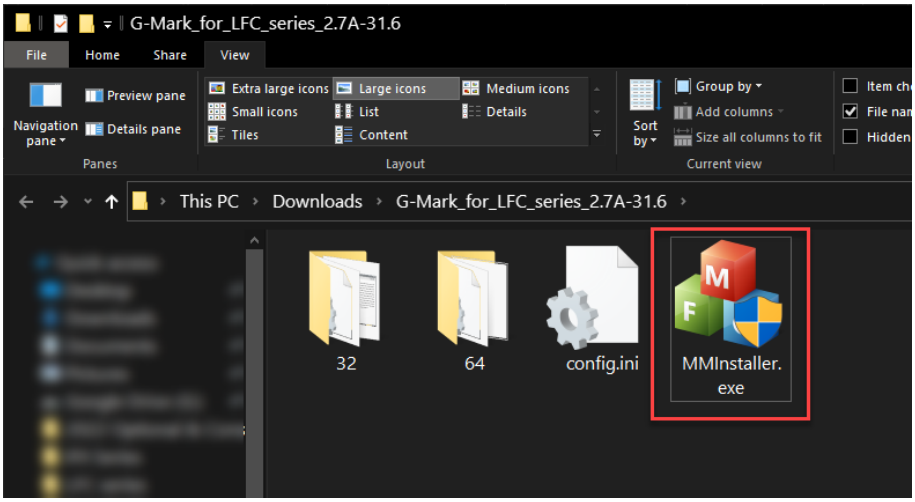
5.2 Software Installation for Windows System

Step 1. To take care of our environment, we have cancelled the installation CD in the accessory box. Please go through the following link to download the latest version of the G-Mark marking software.

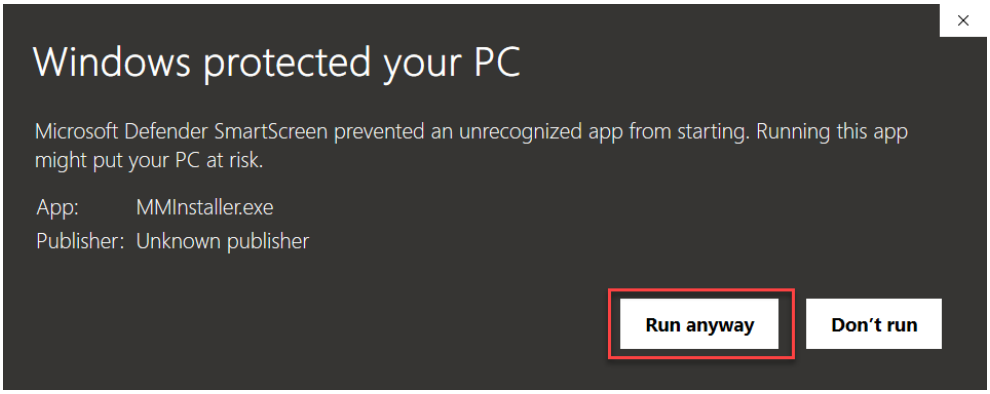
LFC D_Laser Marker_Download Area_Support | GCC provides Laser Engravers, Vinyl Cutters, and UV Printers (gccworld.com)

If the link is not working, please go to www.GCCworld.com → Support → Download area → Laser Marker → LFC D to download the software.

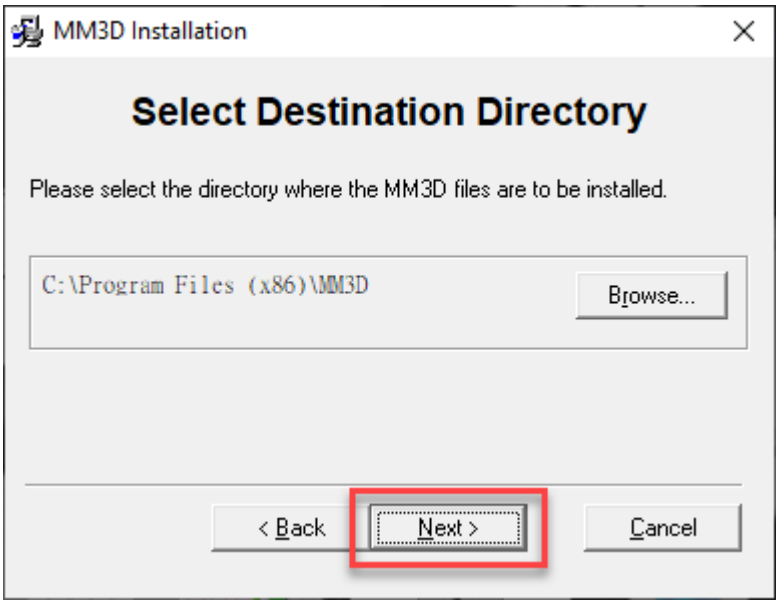
Step 2. Unzip the file and double click the “MMInstaller.exe” to run the software installation.



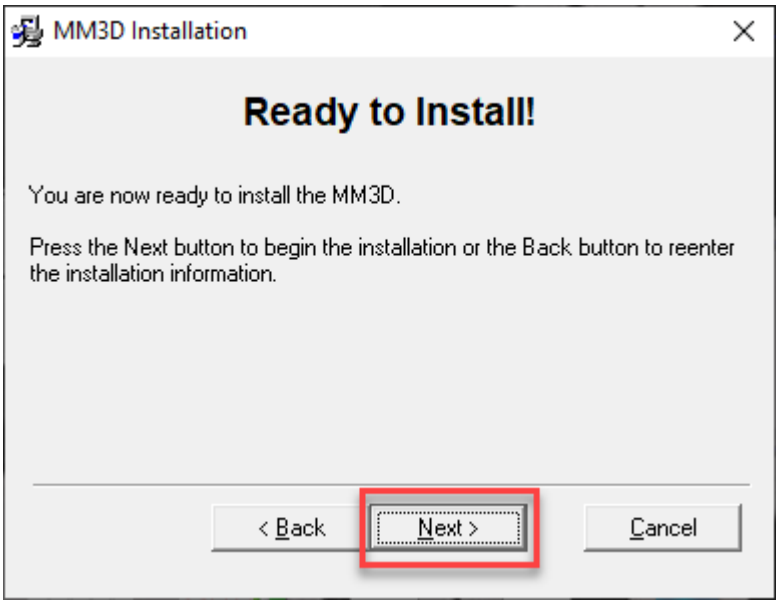
Step 3. If the system shows a message of the “Windows protected your PC”, please click “More info” and click the “Run anyway” button to install the software.



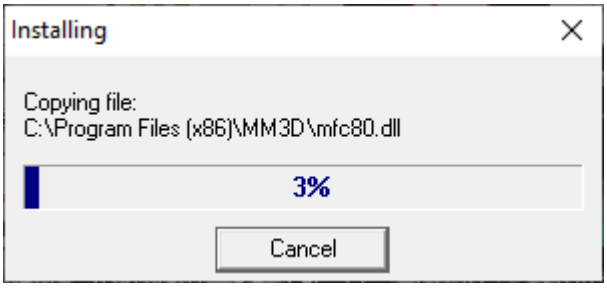
Step 4. Set the destination directory and click "Next>"



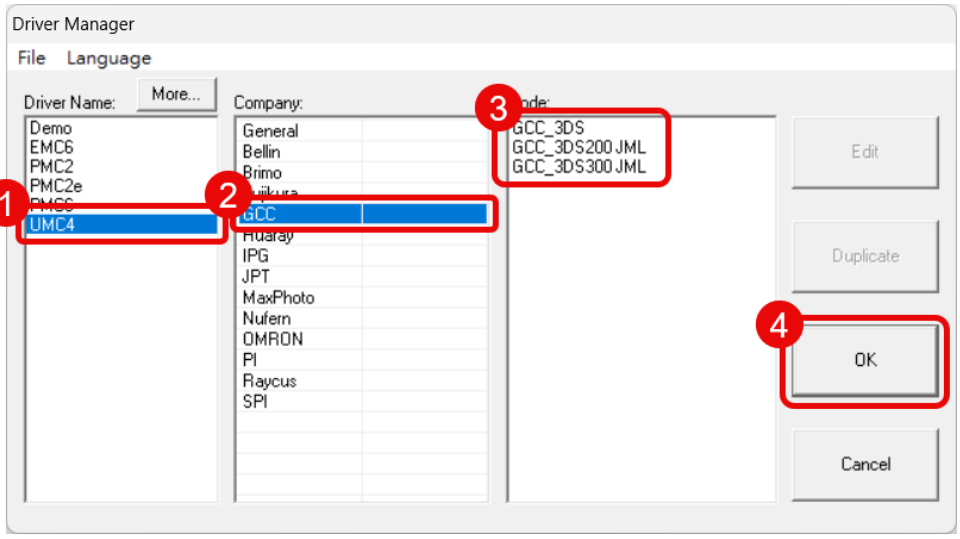
Step 5. Select "Next>"



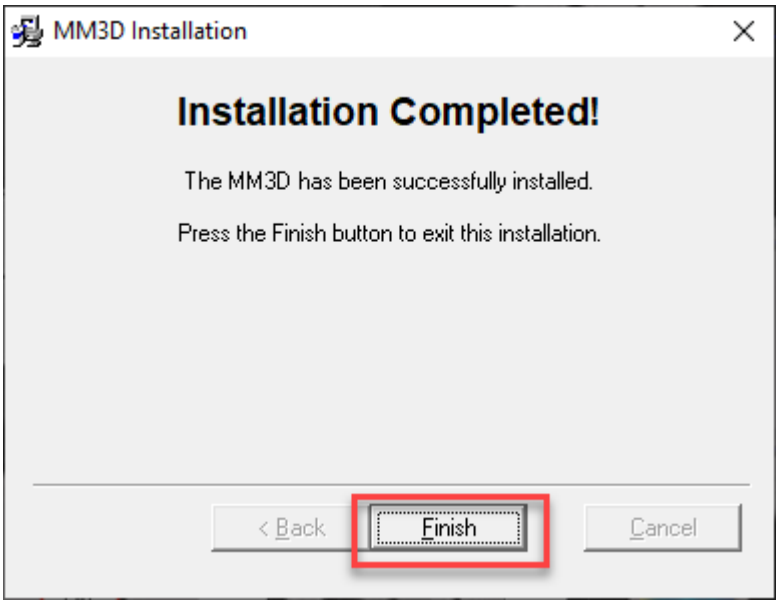
Step 6. Installing



Step 7. When the installation reaches 95% completion, the Driver Manager window will appear. Please select “UMC4” > “GCC” > “GCC_3DS,” “GCC_3DS200JML,” or “GCC_3DS300JML” according to your model, then click the “OK” button to continue.



Step 8. After installing is complete, please click the “Finish” button to close the window.



Step 9. Once the installation is completed, you will find “Laser marking controller” at the lower right hand corner on your computer screen, this indicates the computer is able to communicate with StellarMark laser marking system.

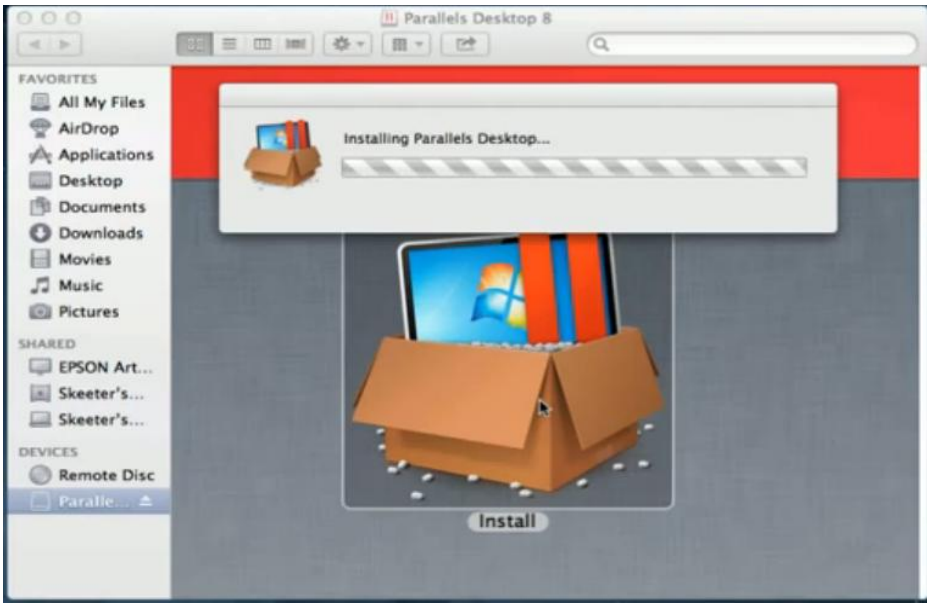
Step 10. Import or Open a new G-Mark graphic file to start the graphic design and setup the laser parameters for output.

5.3 Software Installation for MAC System

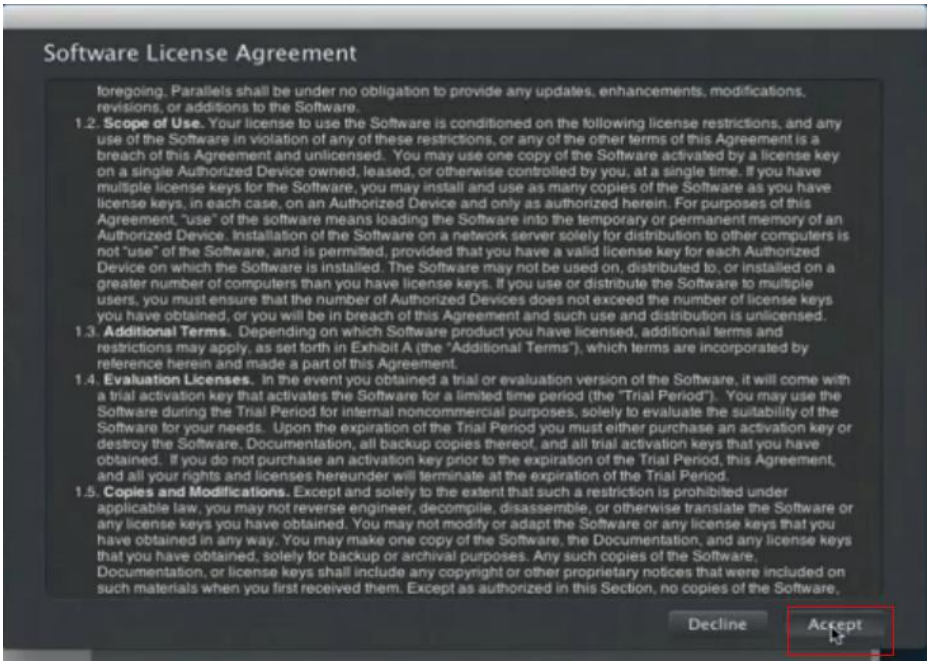
MAC users can use GCC StellarMark machines by purchasing the Parallels Desktop software which allows you to install Windows OS in MAC computers and run Windows based software under MAC computer and output with G-Mark.

Step 1. Purchase Parallels Desktops on its official website.

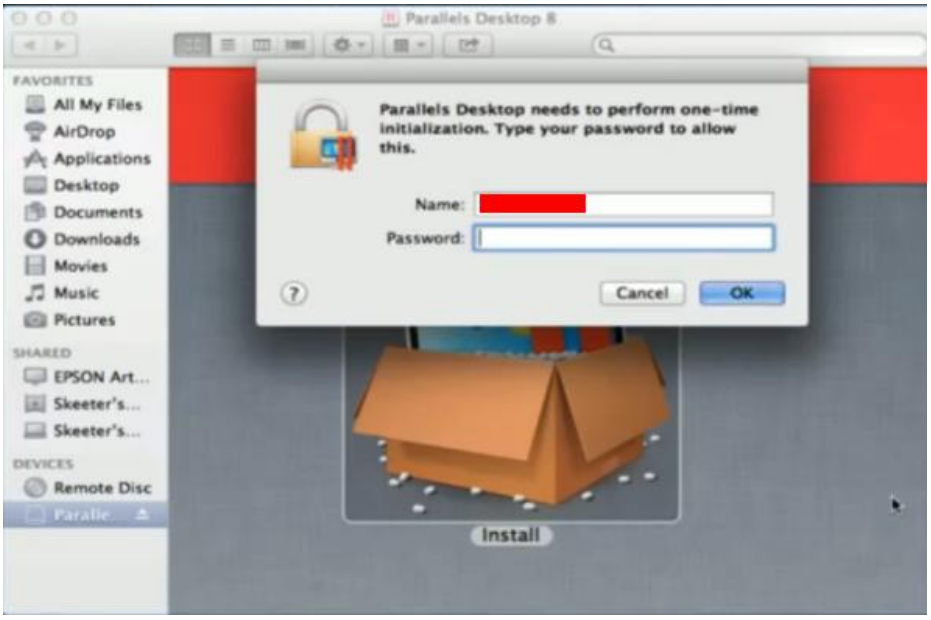
Step 2. Install Parallels Desktops under Mac OS environment.



Step 3. Read Software License Agreement and press “Accept” to continue installation

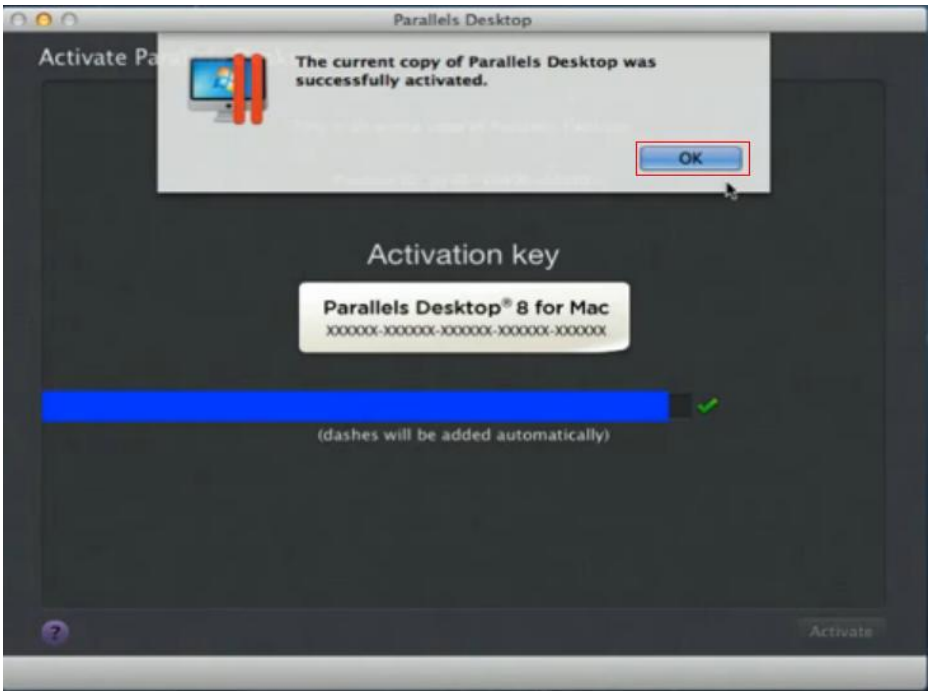


Step 4. Enter your Mac OS X User Name and Password then press “OK”

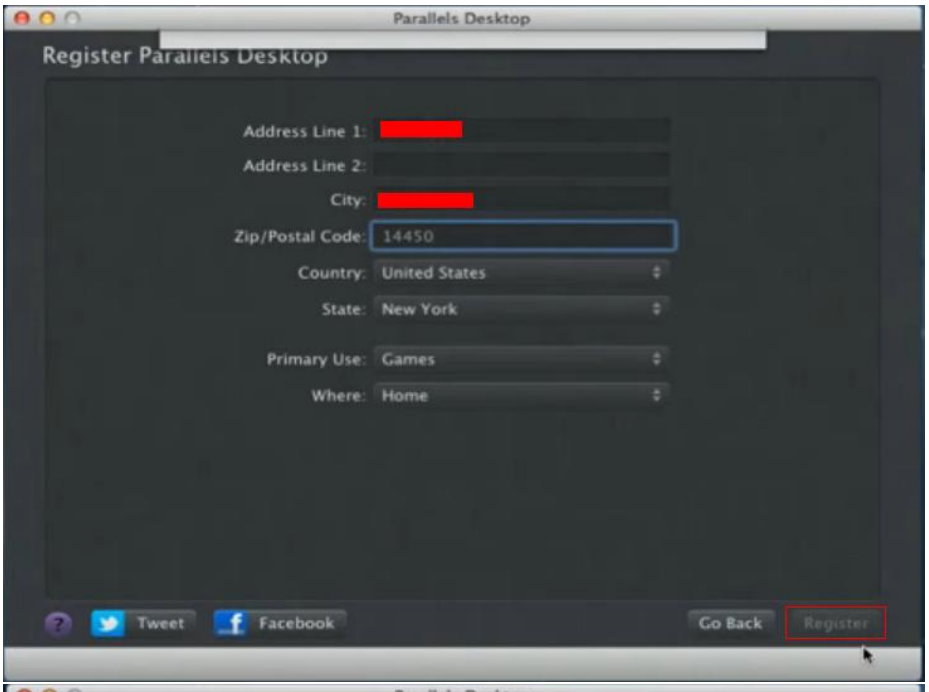


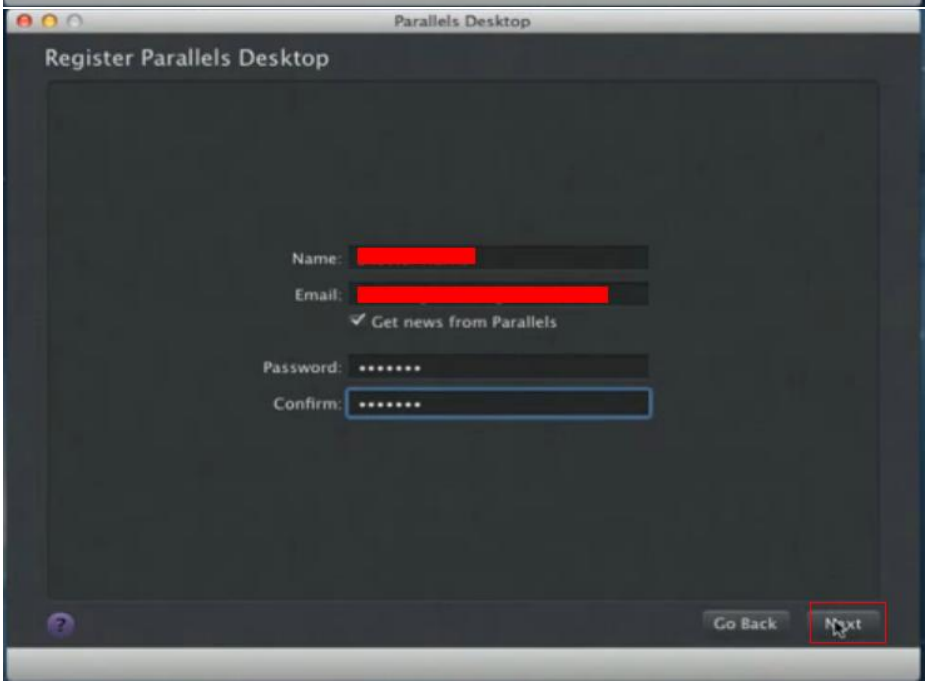
Step 5. Press “Active”

Step 6. Press “OK” when activation is complete.



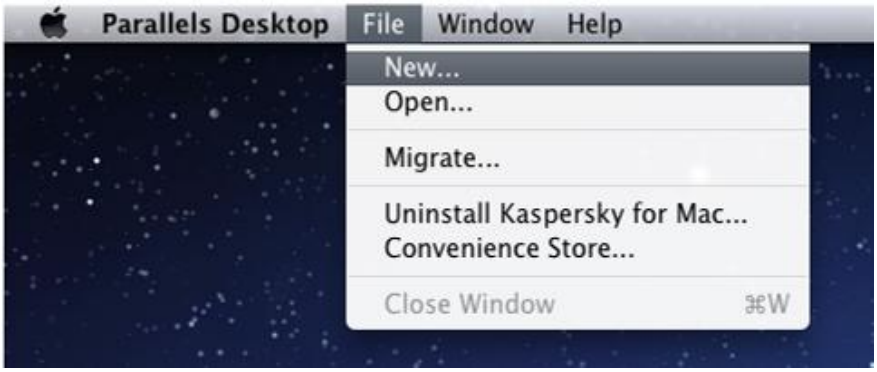
Step 7. Register Parallels Desktop





Step 8. Press “Register” and “OK” to complete the installation of Parallels Desktop.

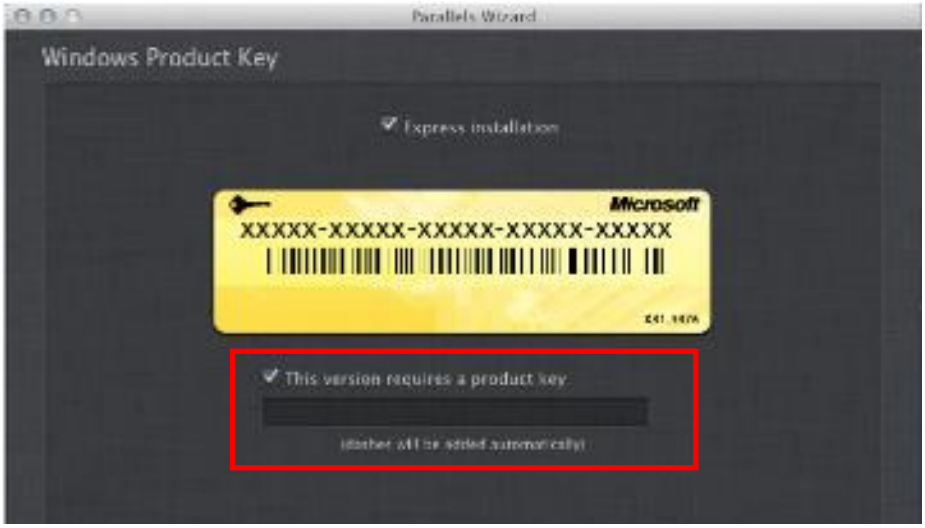
Step 9. Open **Parallels Desktop** (in the **Applications** folder) then choose **File** → **New**



Step 10. Press “Install Windows from DVD or image file” then press “continue” to install windows OS

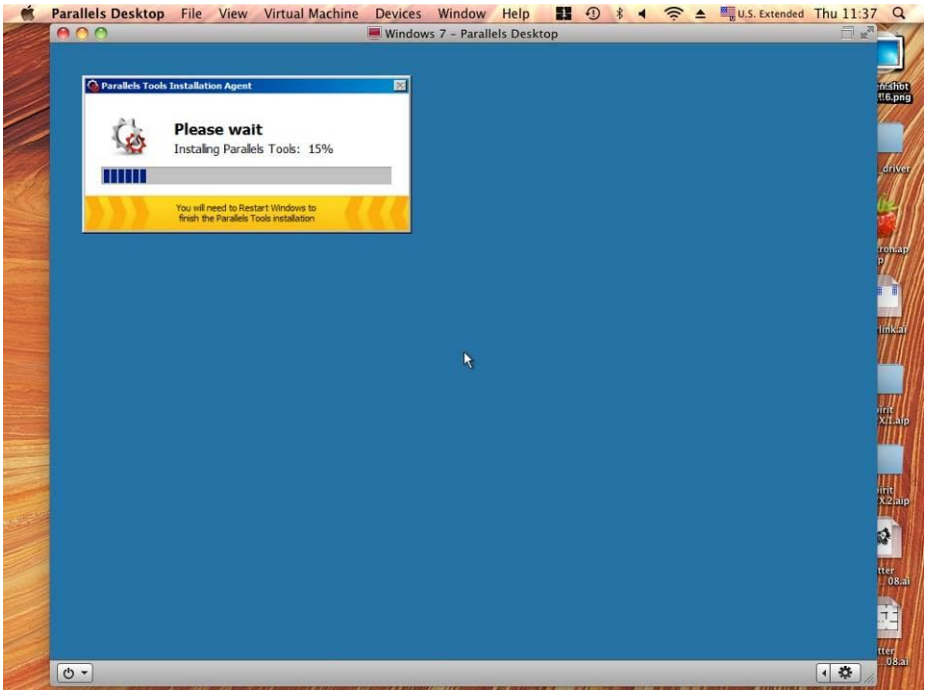
Step 11. Select CD-ROM drive with the Windows installation CD

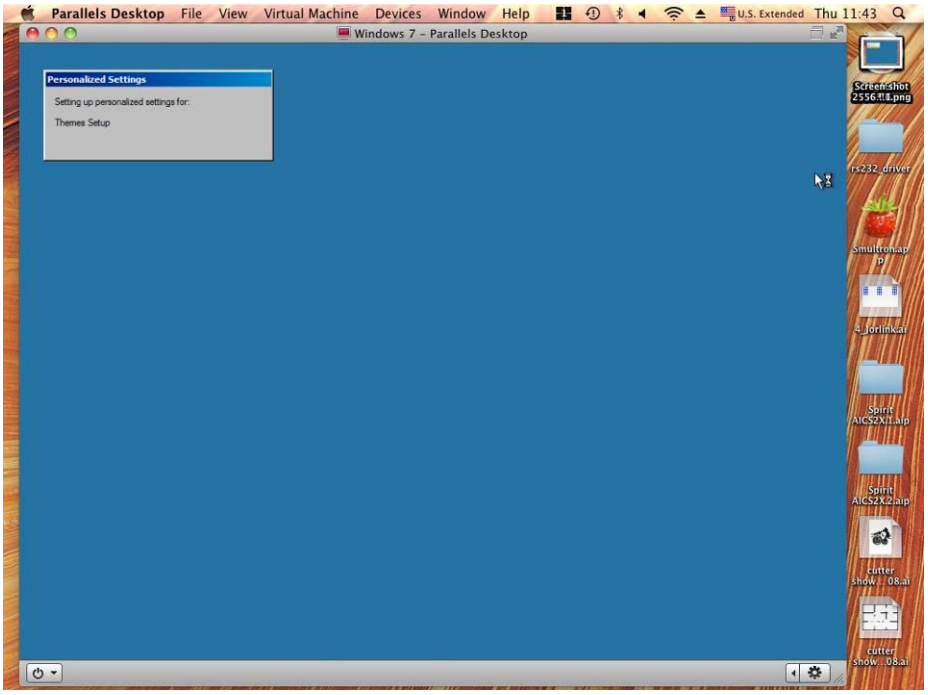
Step 12. Enter the Windows OS product key



Step 13. Select how you would like to run your Windows program.

Step 14. After the prior setting is complete the windows OS installation procedure will start automatically.





Step 15. Windows OS installation is complete then you can refer to “5.2 Software Installation for windows system” to install G-Mark / G-Mark Library.

NOTE

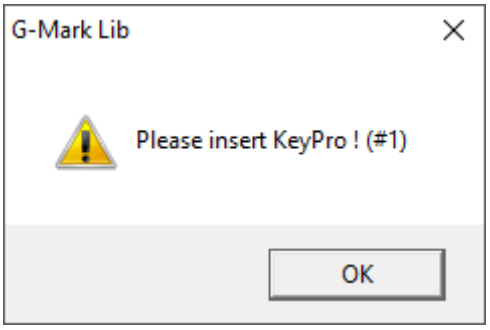
Once the G-Mark software installation is completed, you can start to open a new file to edit or import an existing file to G-Mark for laser processing. For G-Mark software operation manual, you can refer to “G-Mark software user manual” in the StellarMark CD from accessory box.

5.4 Communication Troubleshooting

After installing, some computers will not install the controller driver automatically and showing an error message when you open the G-Mark software program.

Please perform the following steps to solve problem.

- Error message 1 – Please insert KeyPro! (#1)



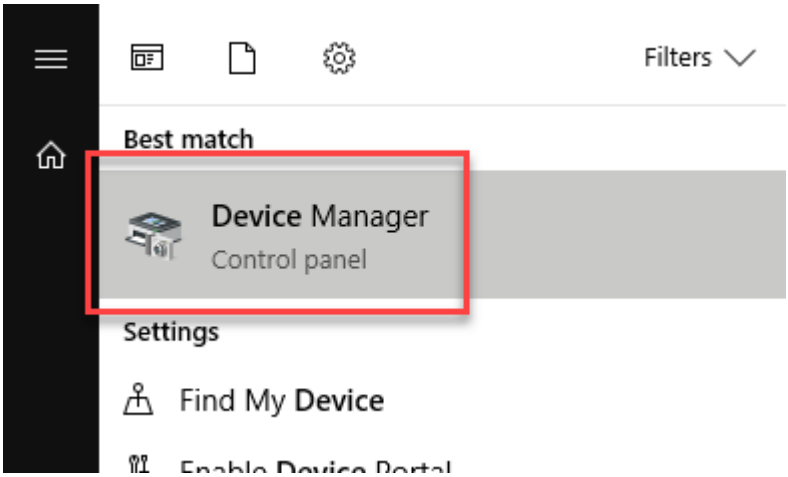
Fix 1:

Please close the G-Mark software program and re-plug the KeyPro from PC/Laptop, and then repoen the G-Mark software program.

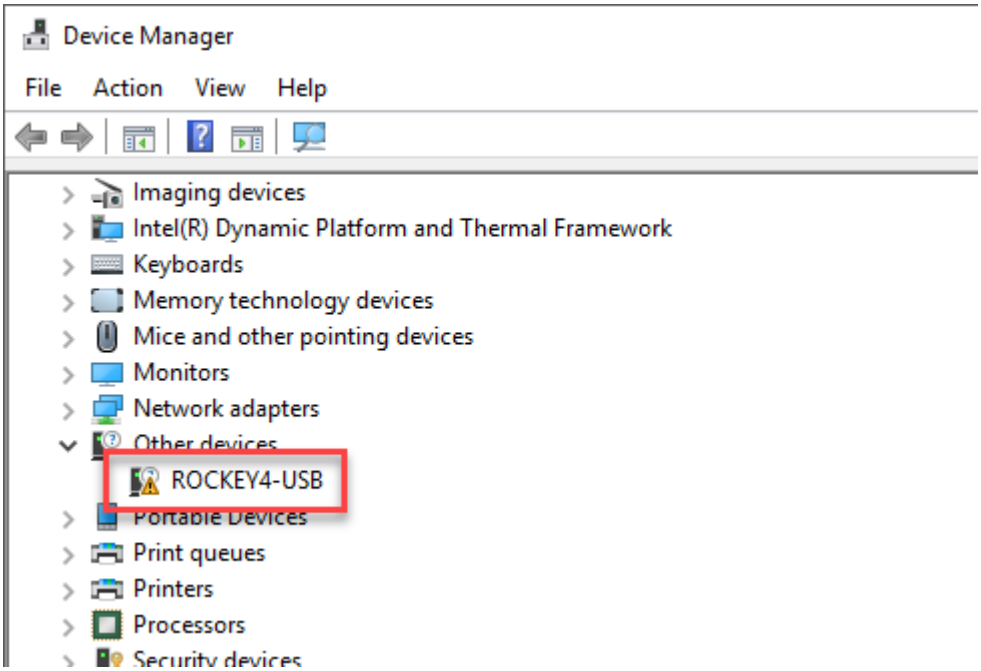
Fix 2:

Step 1. Select the “Start” button and type “device manager”.

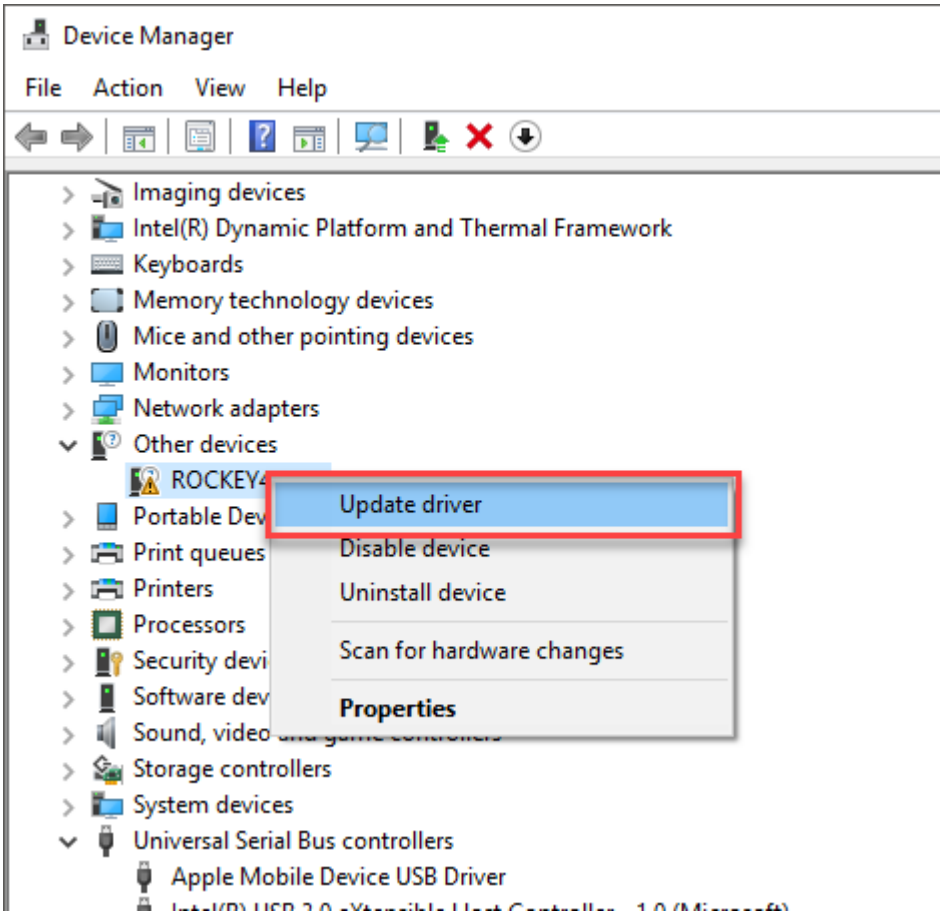
Step 2. Select “Device Manager”



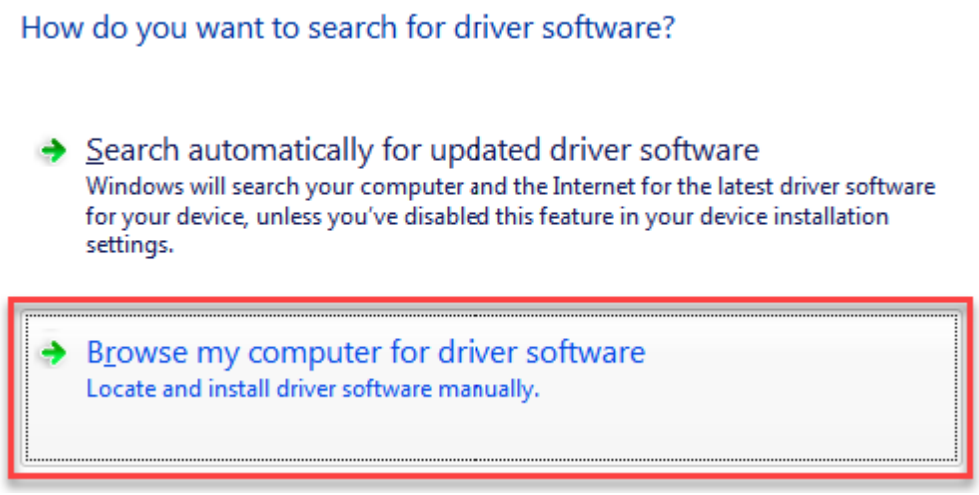
Step 3. Please check if there is any "!" USB device from the below chart:



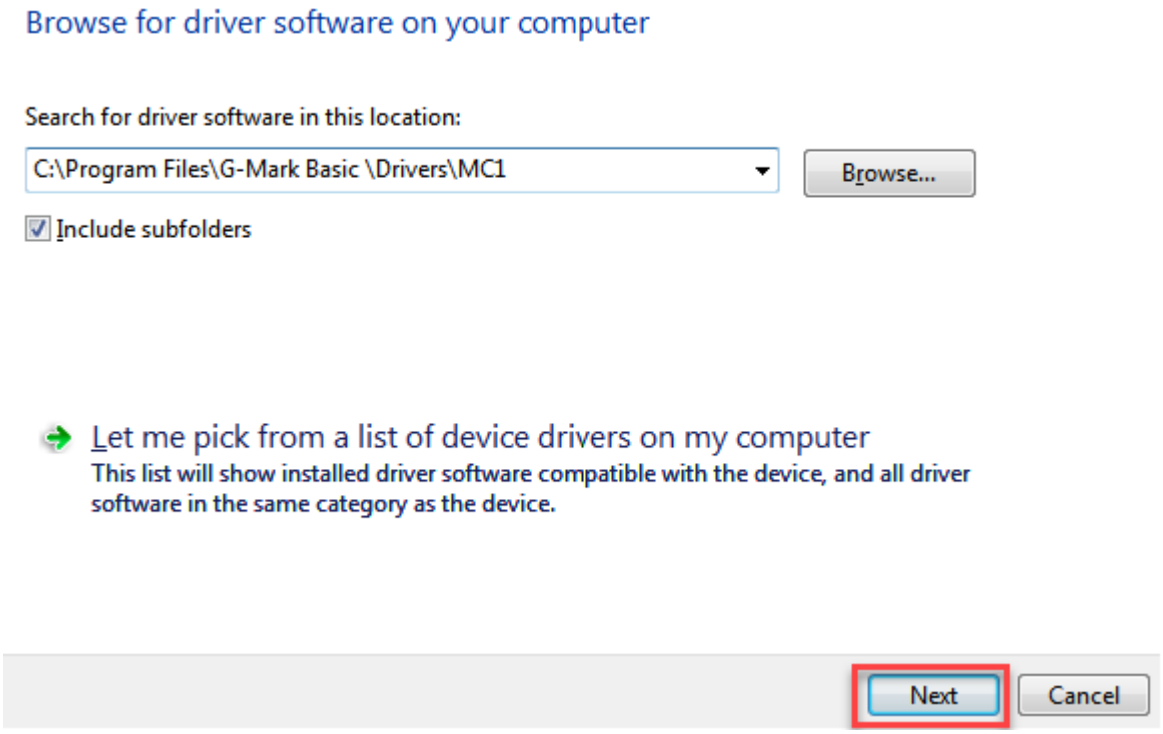
Step 4. Then click on "USB Driver' and click on right mouse button and update the driver.



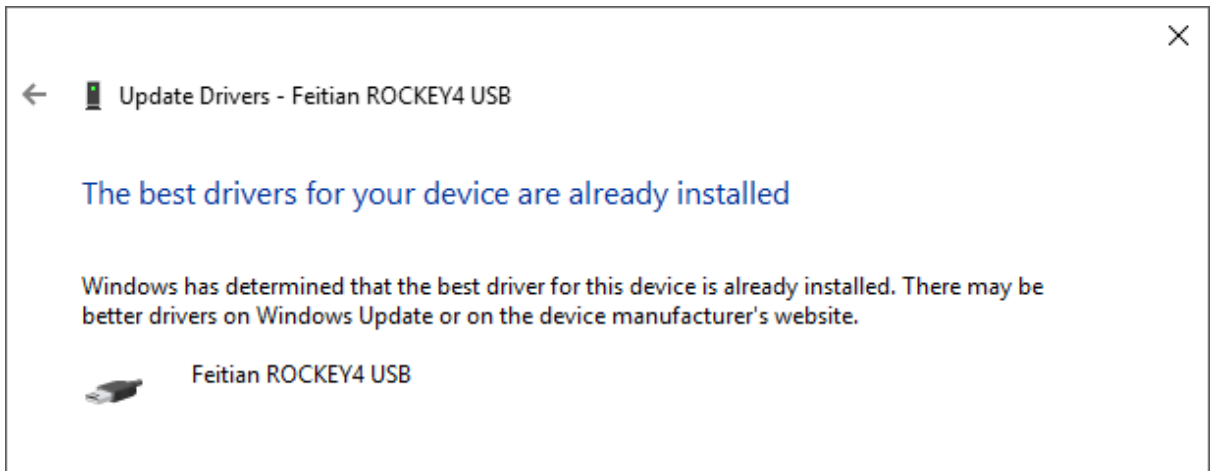
Step 5. Click on ”Browse my computer for driver software”



Step 6. Key in the specific path: “C:\Program Files\G-Mark Lib\Drivers\MC1. Then press “Next”



Step 7. Press “Close” and now you can reopen the G-Mark software



- Error message 2 – Controller not found!

Fix 1:

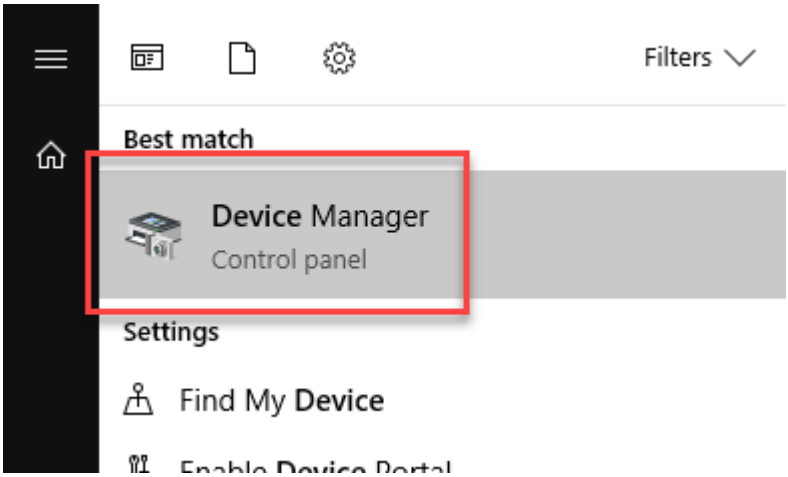
Reconnect the USB cable between a PC or Laptop and the Control unit, and then reopen the G-Mark software program.

Fix 2:

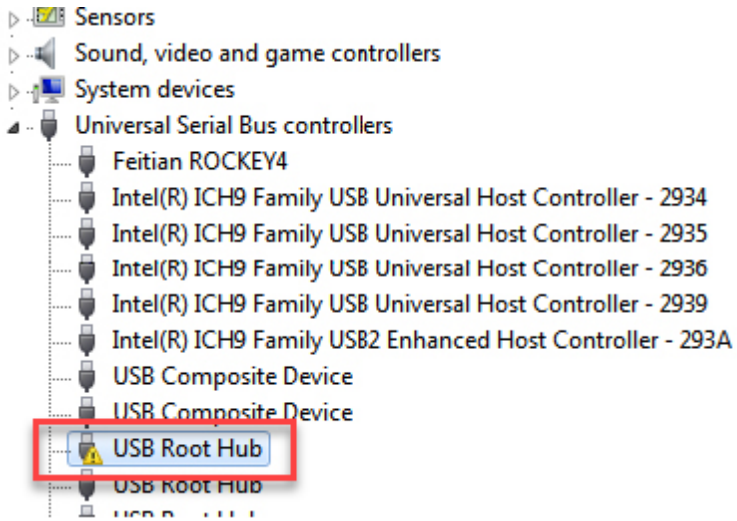
Update the controller driver

Step 1. Select the “Start” button and type “device manager”.

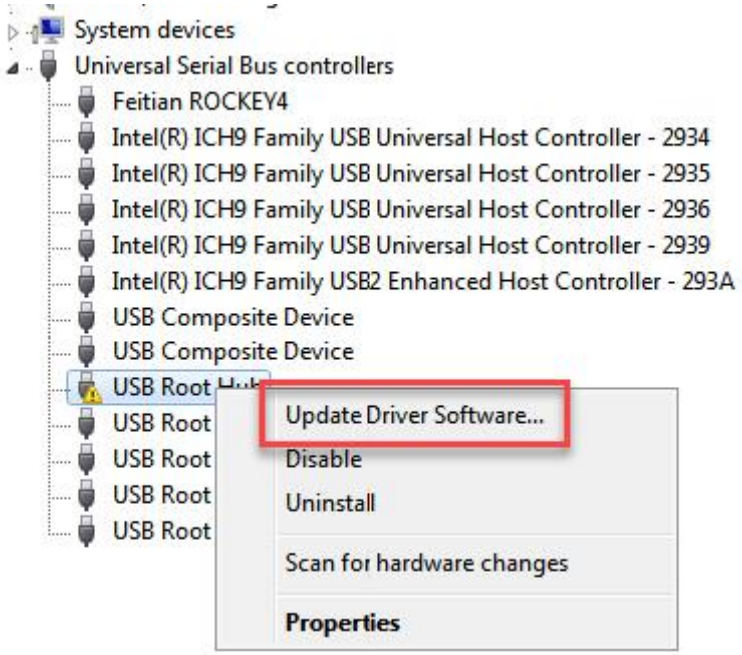
Step 2. Select “Device Manager”



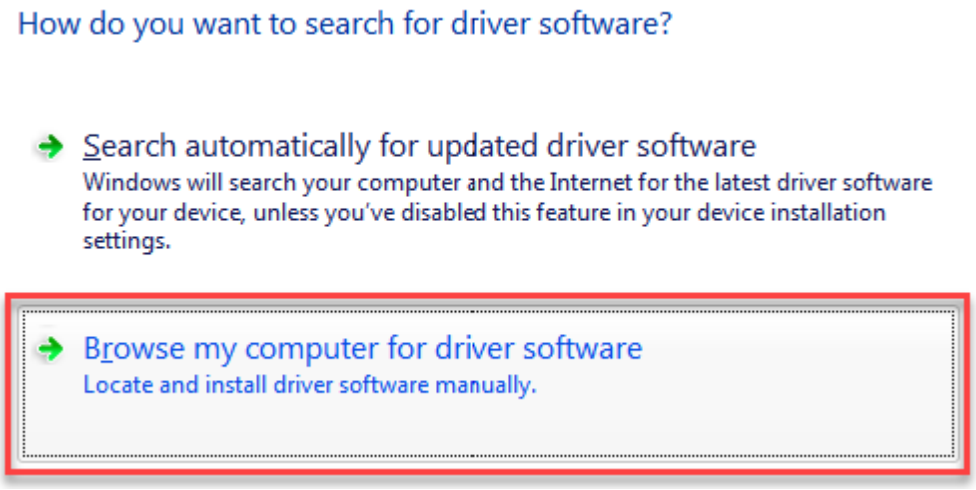
Step 3. Please check if there is any “!” USB device from the below chart:



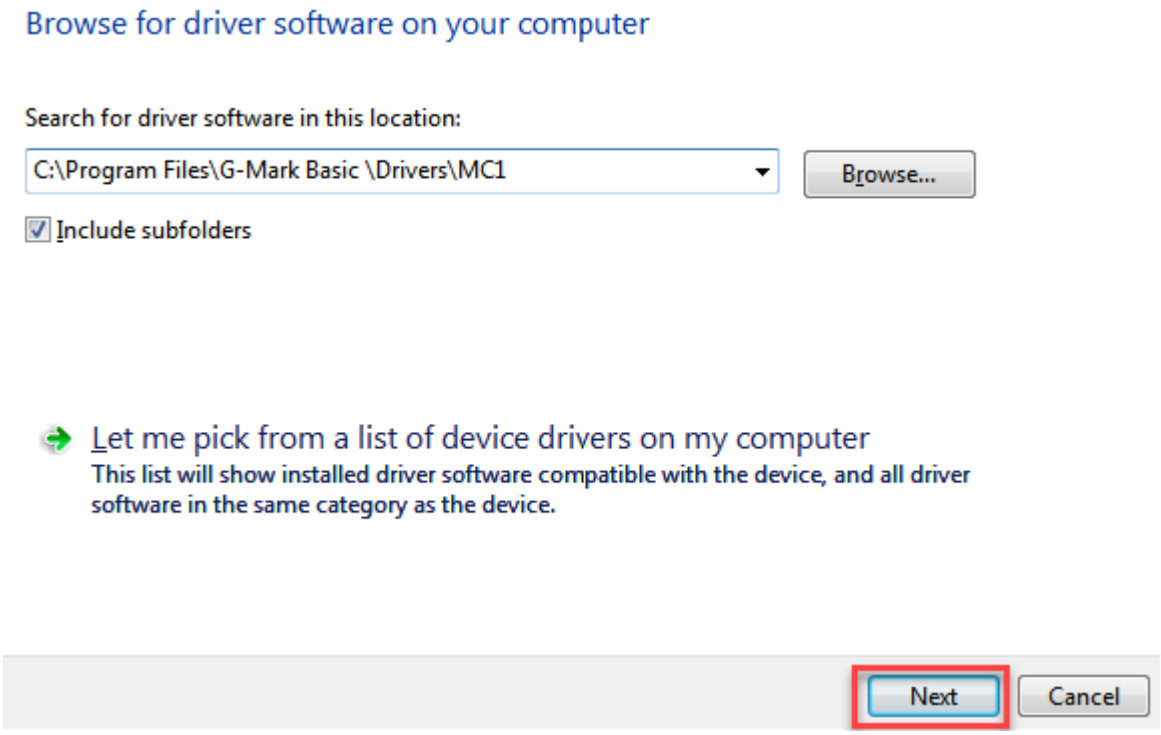
Step 4. Then click on “USB Driver’ and click on right mouse button and update the driver.



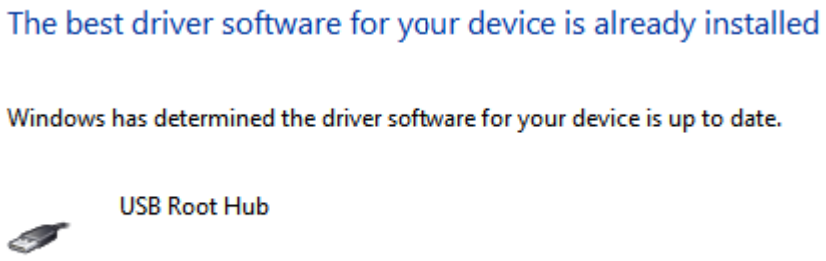
Step 5. Click on ”Browse my computer for driver software”



Step 6. Key in the specific path: “C:\Program Files\G-Mark Lib\Drivers\MC1. Then press “Next”



Step 7. Press “Finish” and now you can activate the G-Mark software



Fix 3:

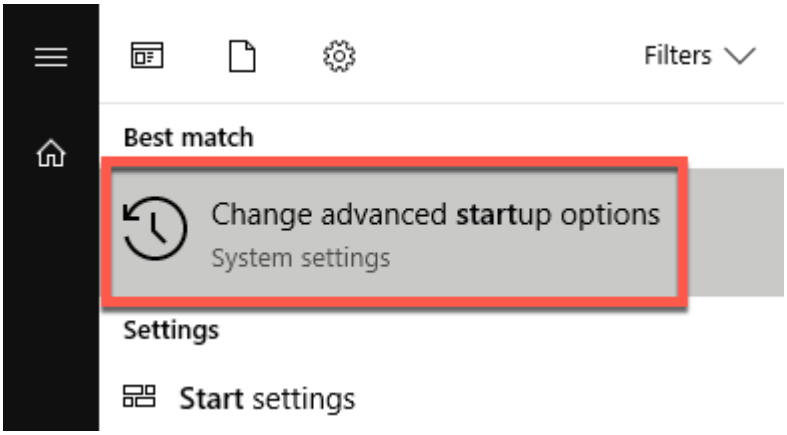
Some users of windows 10/11 has found the “!” USB device from list of the device manager, but cannot update the driver. We recommended you disable the driver signature enforcement on safe mode, please perform the following steps

For Win 10 users

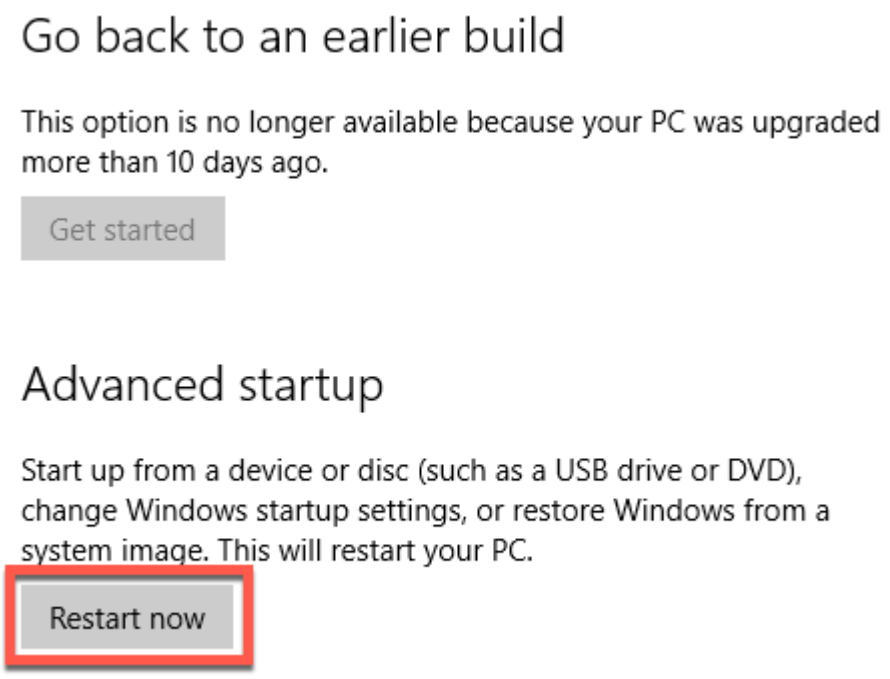
Step 1. Select the “Start” button.

Step 2. Type “startup”.

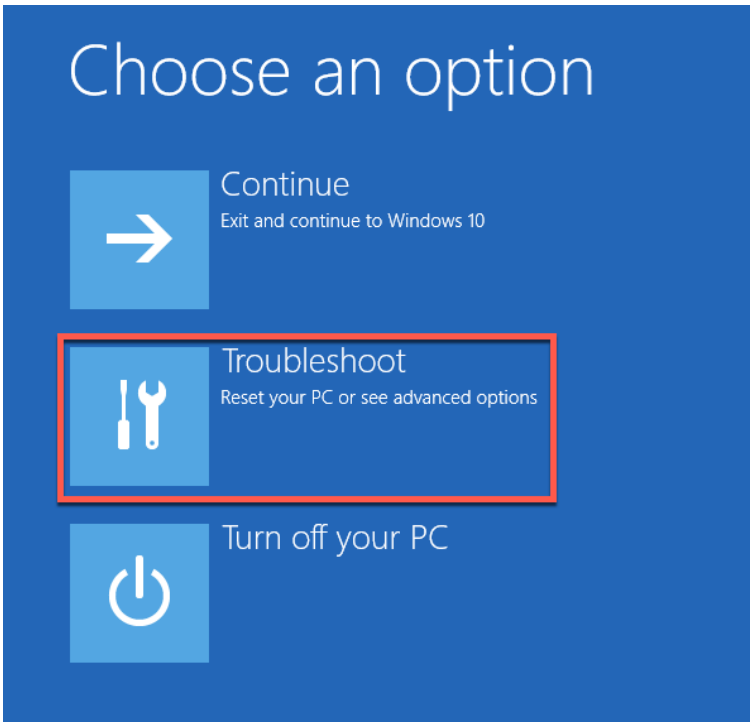
Step 3. Select “Change advanced startup options“.



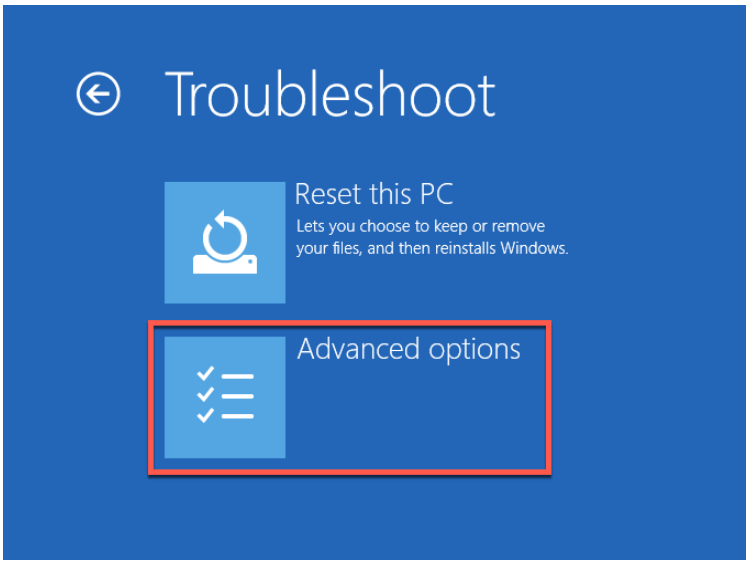
Step 4. Select “Restart now” under the “Advanced startup” area. Then the computer will reboot and enter to the safe mode



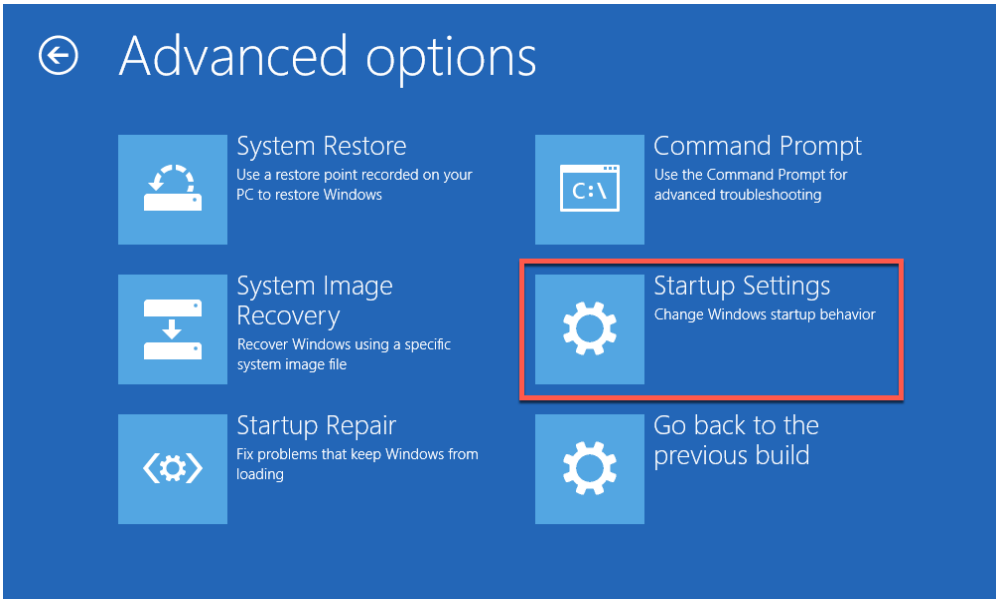
Step 5. Select "**Troubleshoot**".



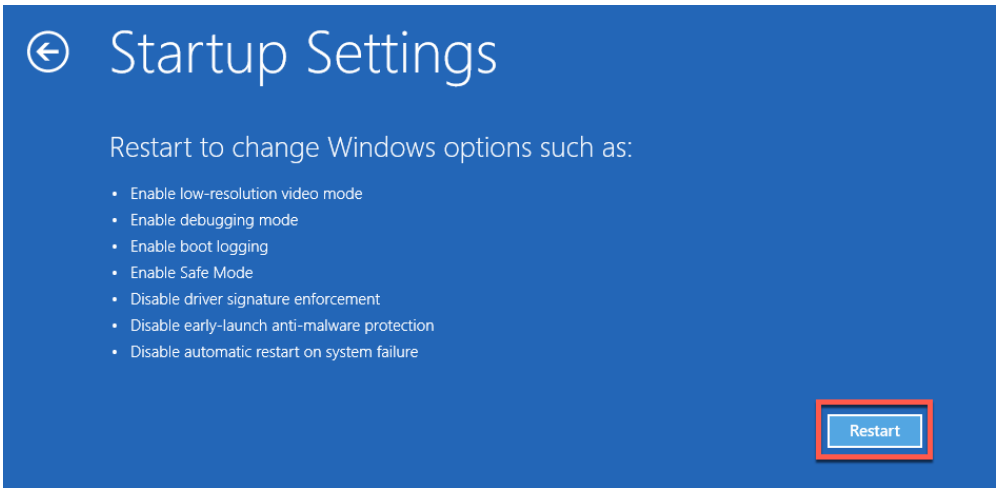
Step 6. Select "**Advanced Options**"



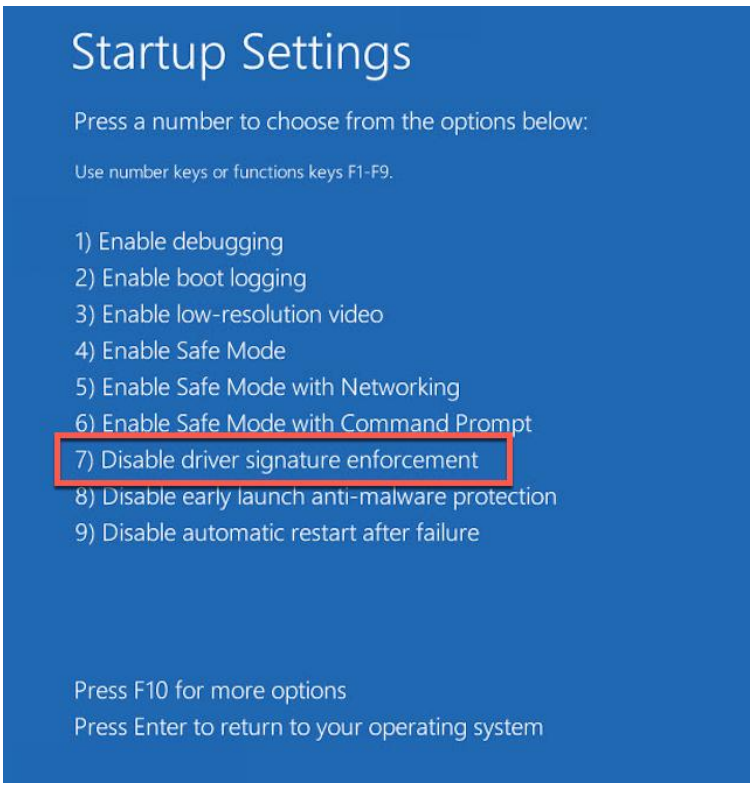
Step 7. Select "**Startup Settings**".



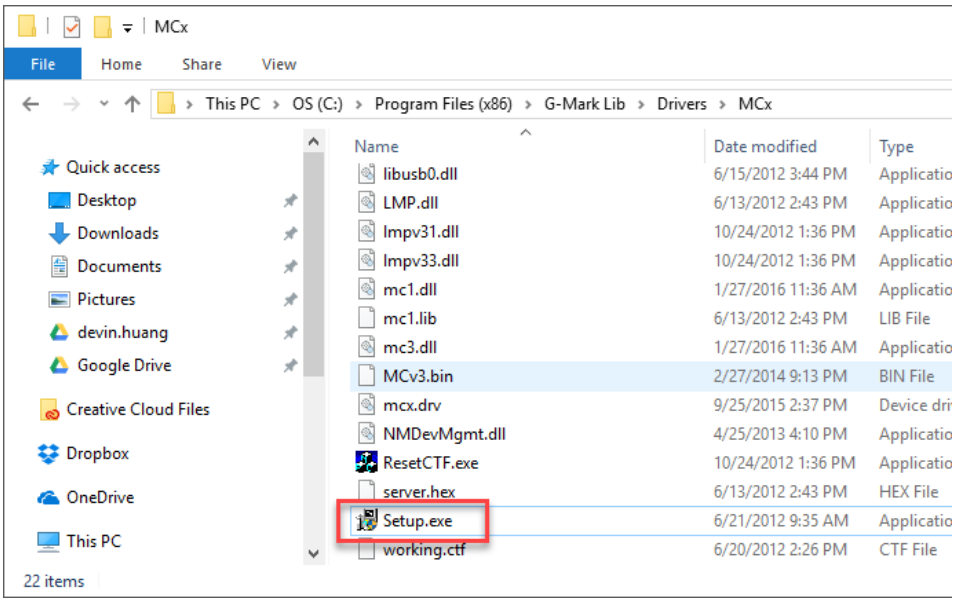
Step 8. Select "**Restart**".



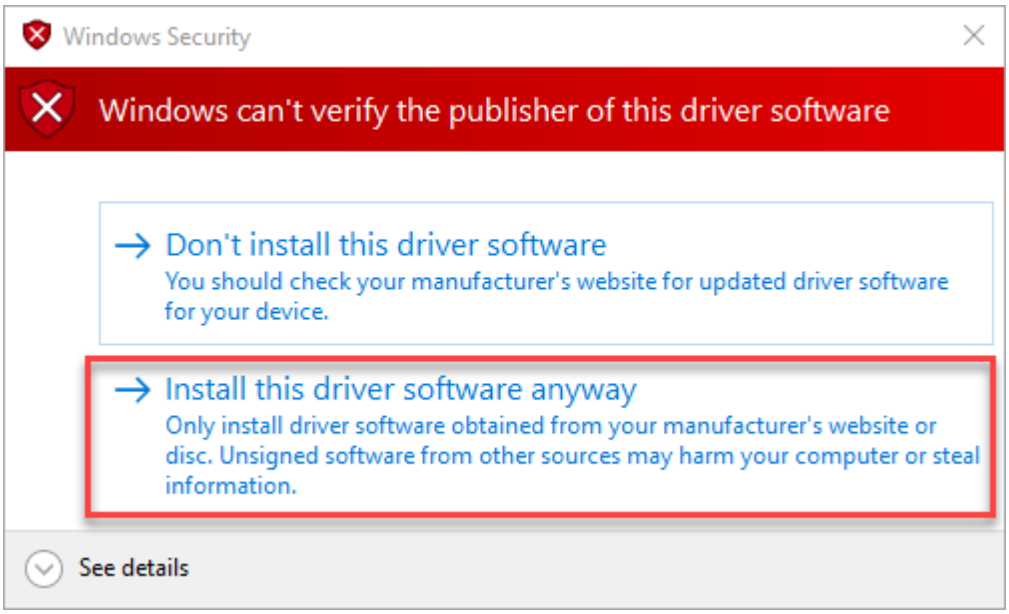
Step 9. A menu will appear where you can press "**F7**" on your keyboard to choose "**Disable driver signing enforcement**".



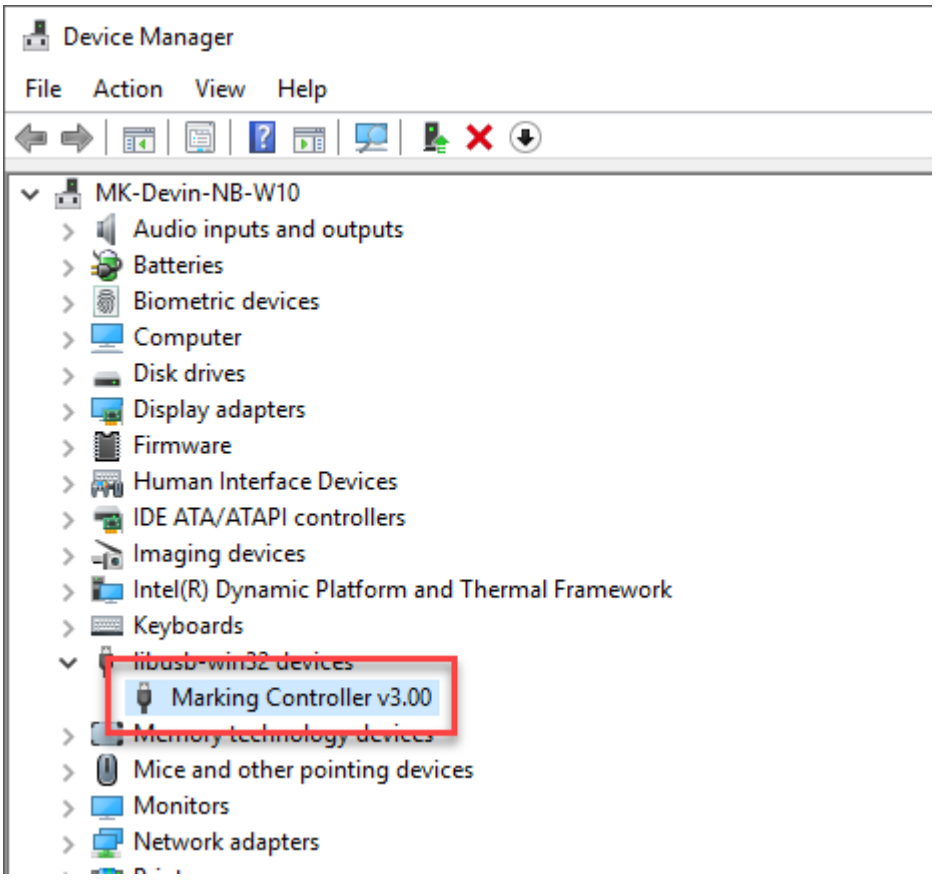
Step 10. After rebooting, go to "C:\Program Files (x86)\G-Mark Lib\Drivers\MCx" and click on "Setup.exe" to install.



Step 11. “Windows Security” will pop up, and then click on “Install this driver software anyway”

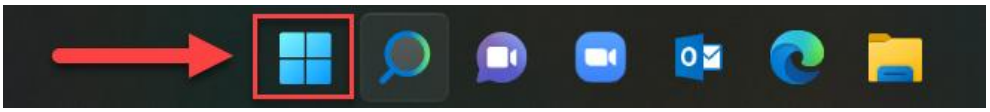


Step 12. After installing, go to device manager and make sure the controller driver has been installed.

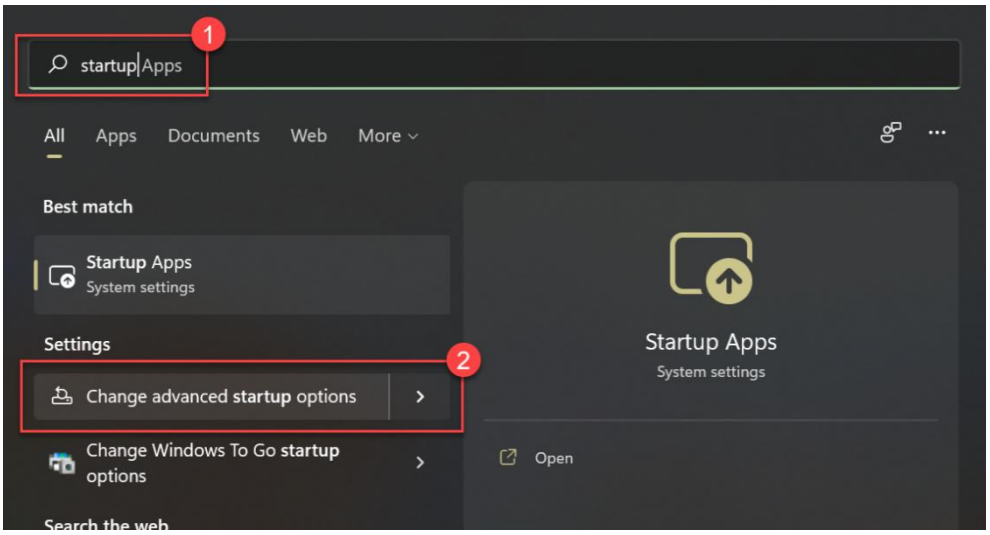


For Win 11 users

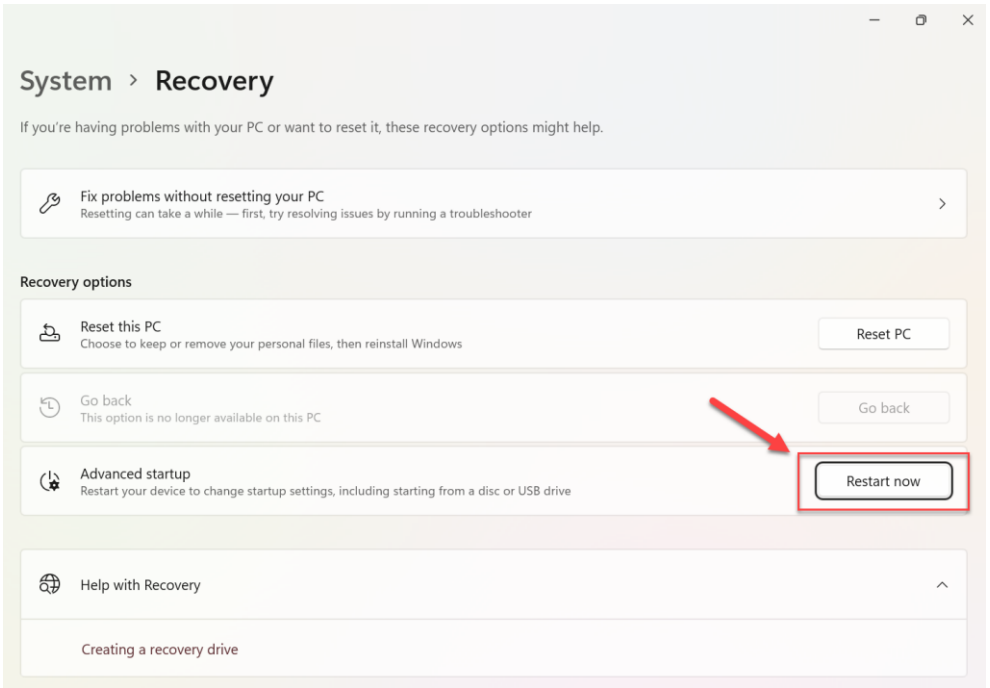
Step 1. Select the “Start” button.



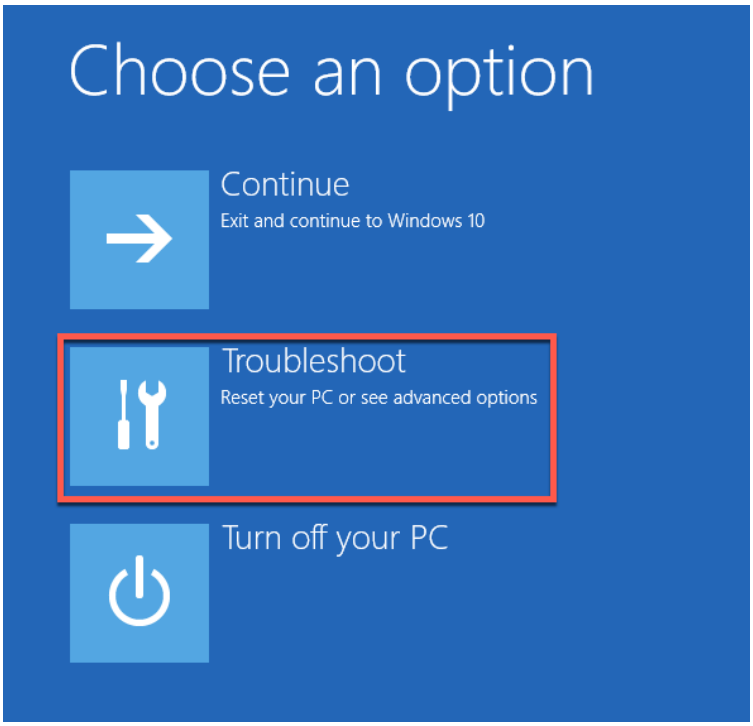
Step 2. Type “startup” and select “Change advanced startup options“.



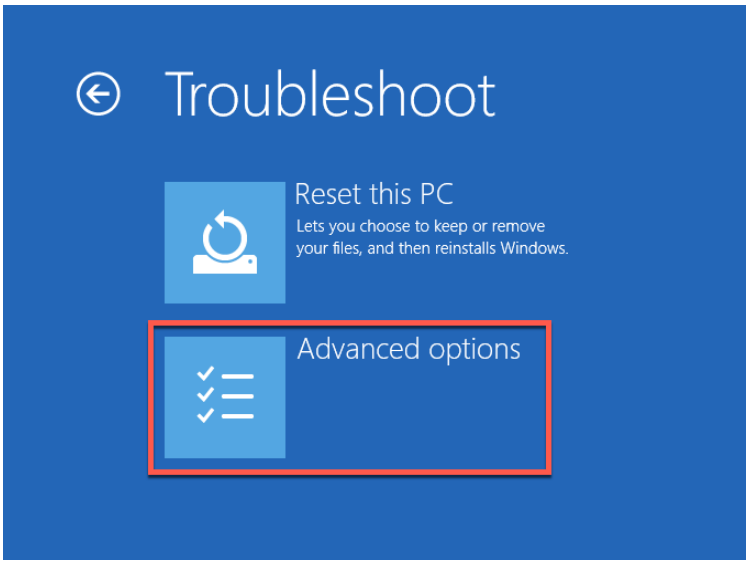
Step 3. Select “Restart now” under the “Advanced startup” area. Then the computer will reboot and enter to the safe mode



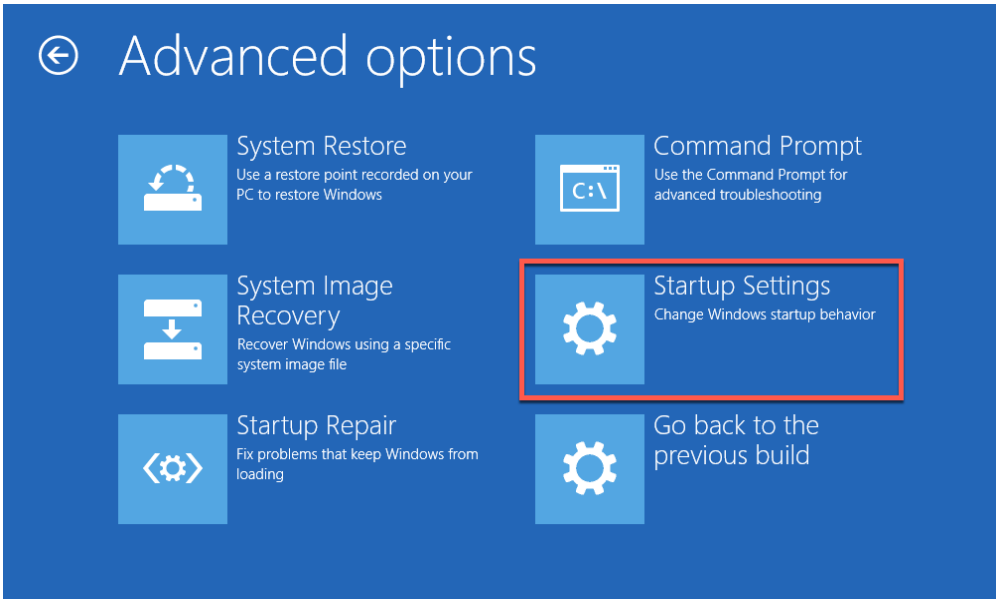
Step 4. Select "**Troubleshoot**".



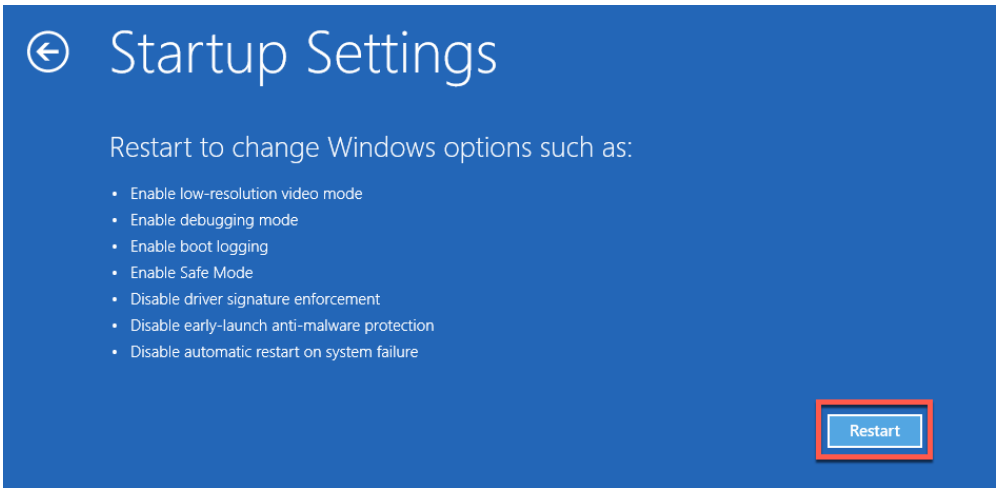
Step 5. Select "**Advanced Options**"



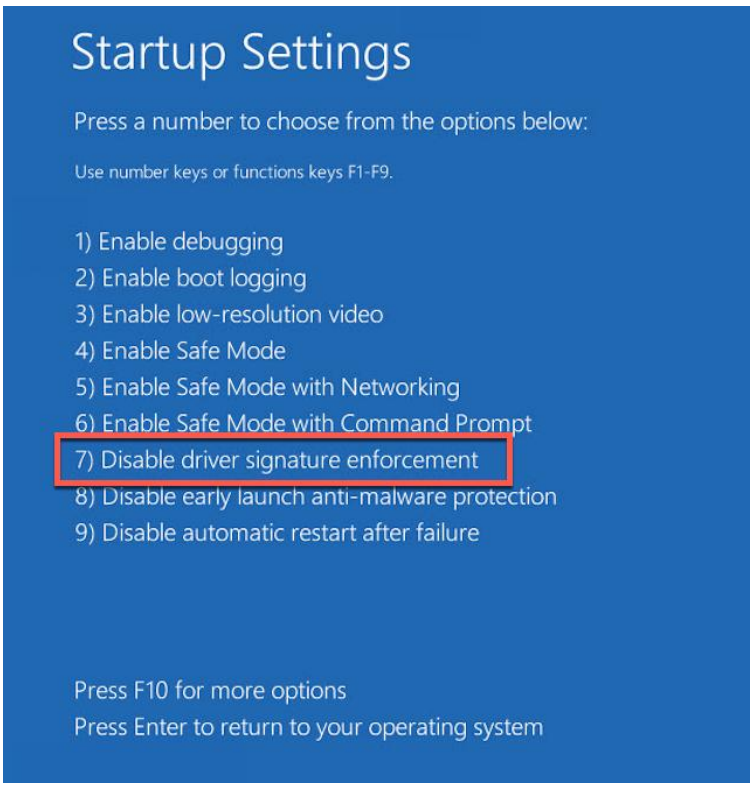
Step 6. Select "**Startup Settings**".



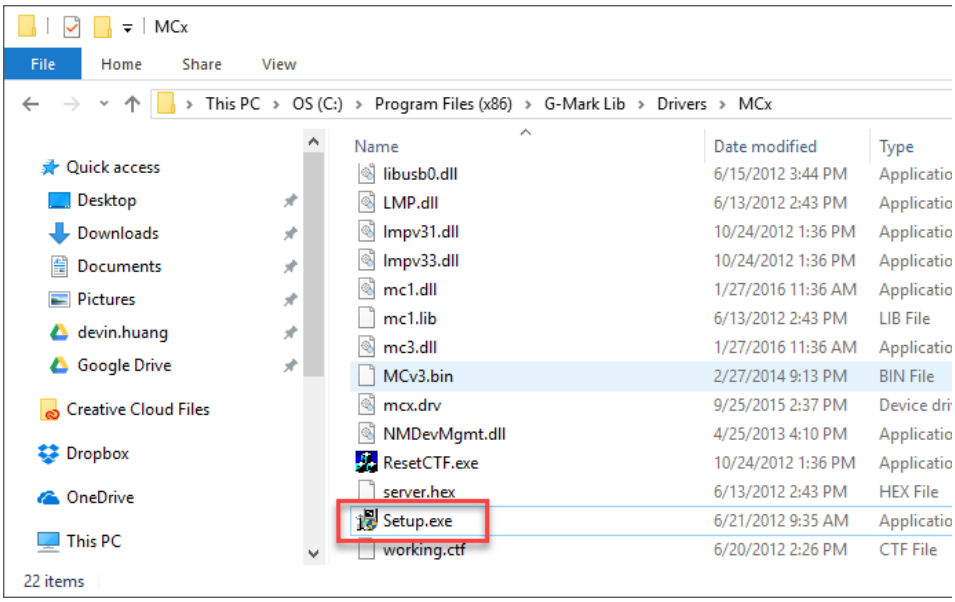
Step 7. Select "**Restart**".



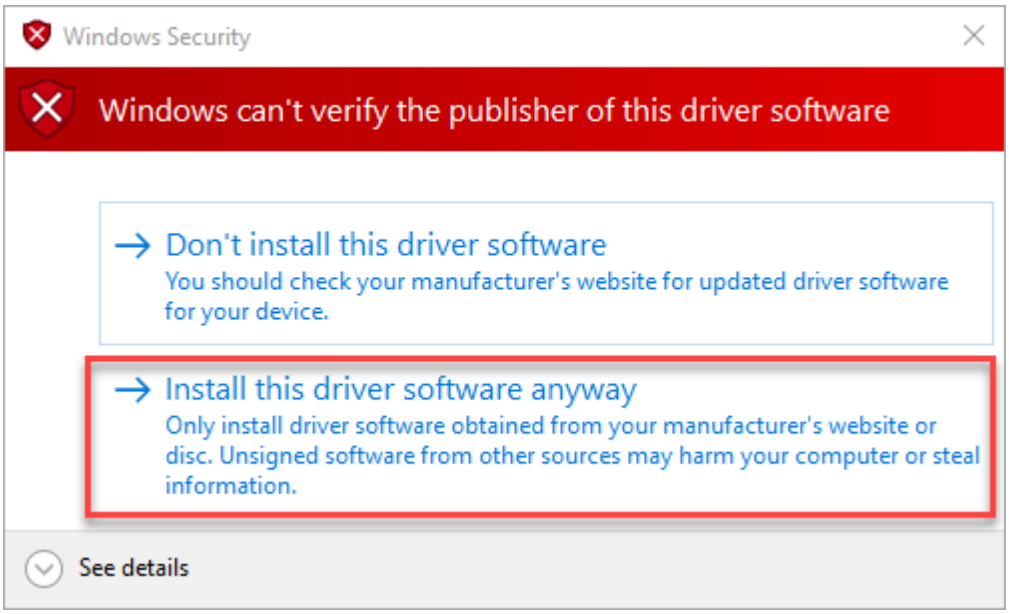
Step 8. A menu will appear where you can press "**F7**" on your keyboard to choose "**Disable driver signing enforcement**".



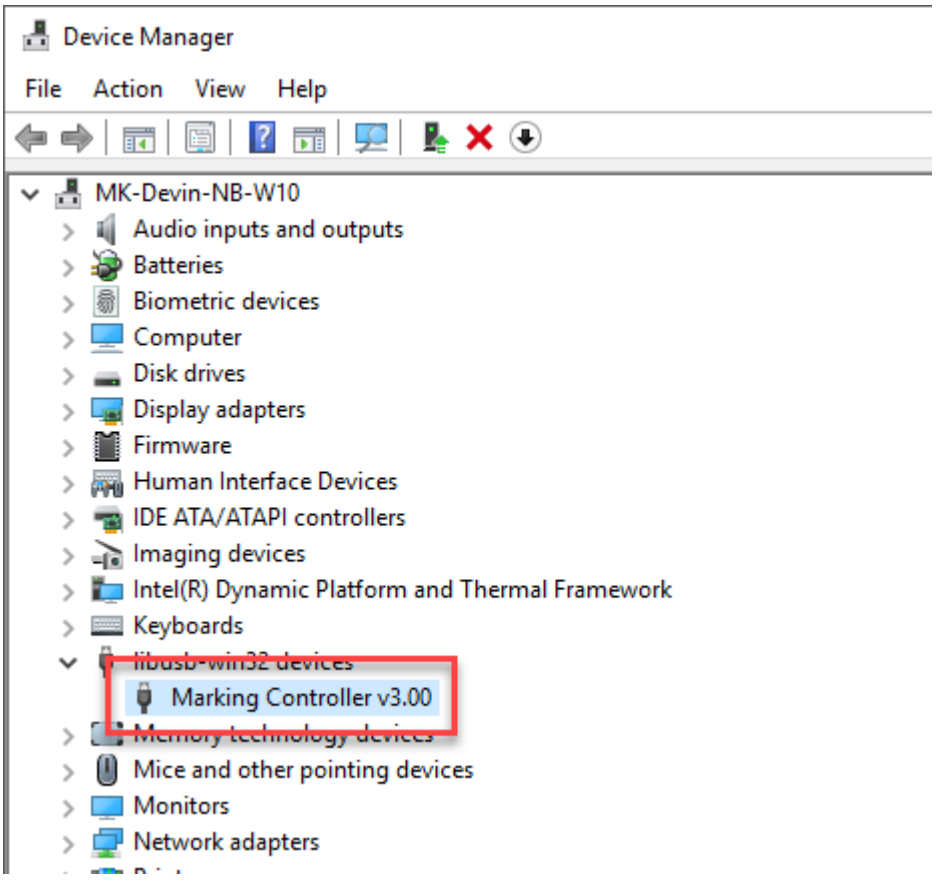
Step 9. After rebooting, go to "C:\Program Files (x86)\G-Mark Lib\Drivers\MCx" and click on "Setup.exe" to install.



Step 10. “Windows Security” will pop up, and then click on “Install this driver software anyway”



Step 11. After installing, go to device manager and make sure the controller driver has been installed.



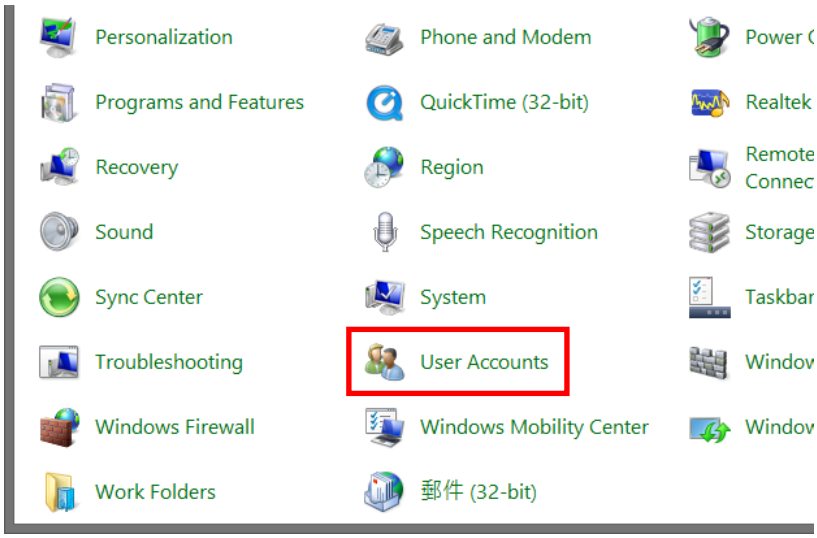
5.5 Change the series and model type

After installing G-Mark, you can change the series and model type through the model manager program.

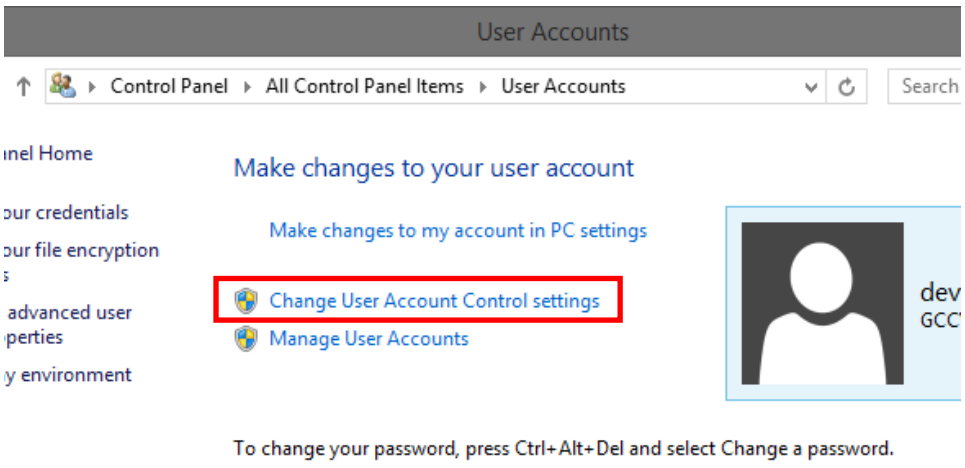
The following steps illustrate how to change the series and model type

5.5.1 Change the User Account Control Settings

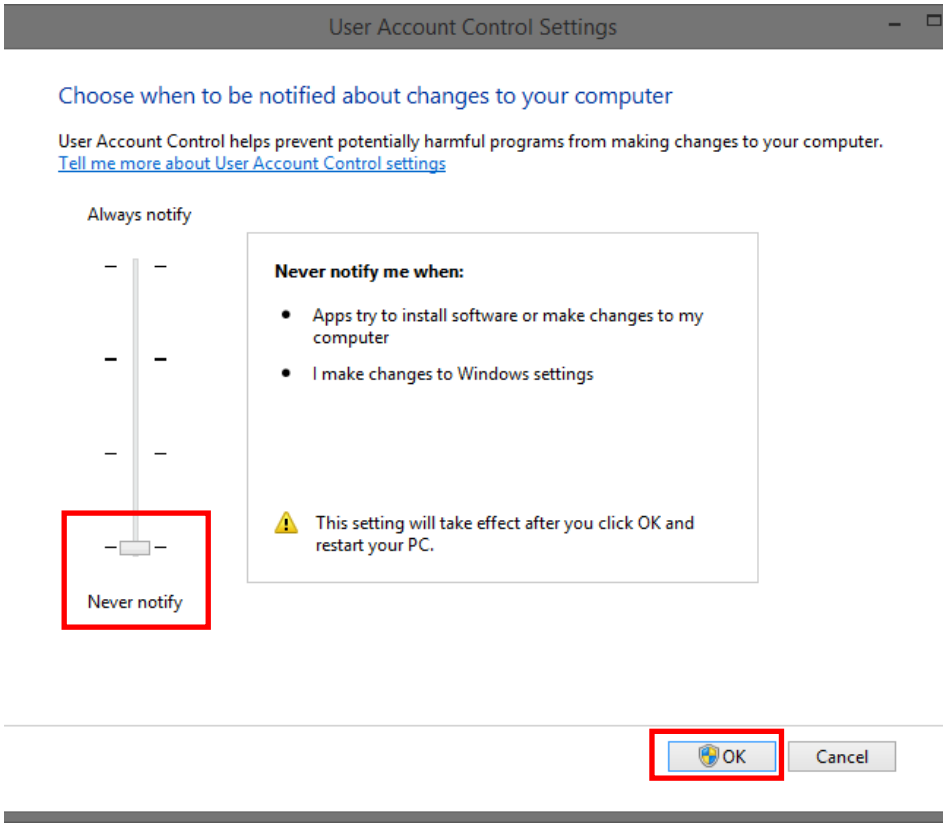
Step 1. Please go to “control panel” and click on “User Accounts”



Step 2. Then click on “Change User Account Control settings”

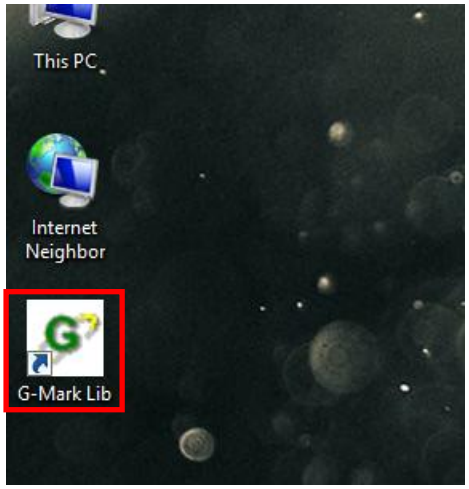


Step 3. Set the notification to be “Never notify” and press “OK” to complete the setting

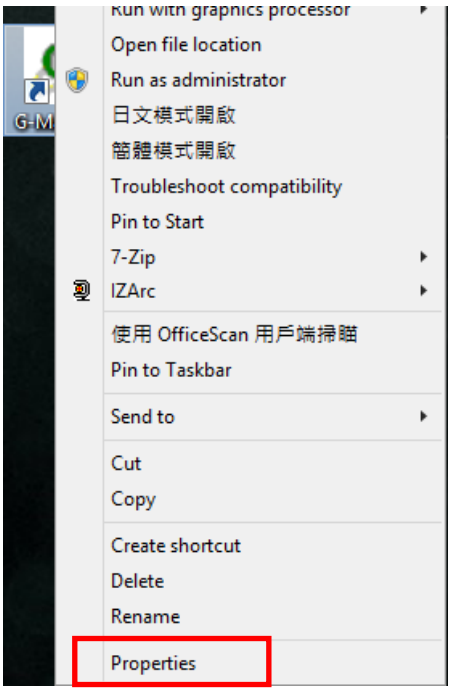


5.5.2 Setting the “Run this program as an administrator”

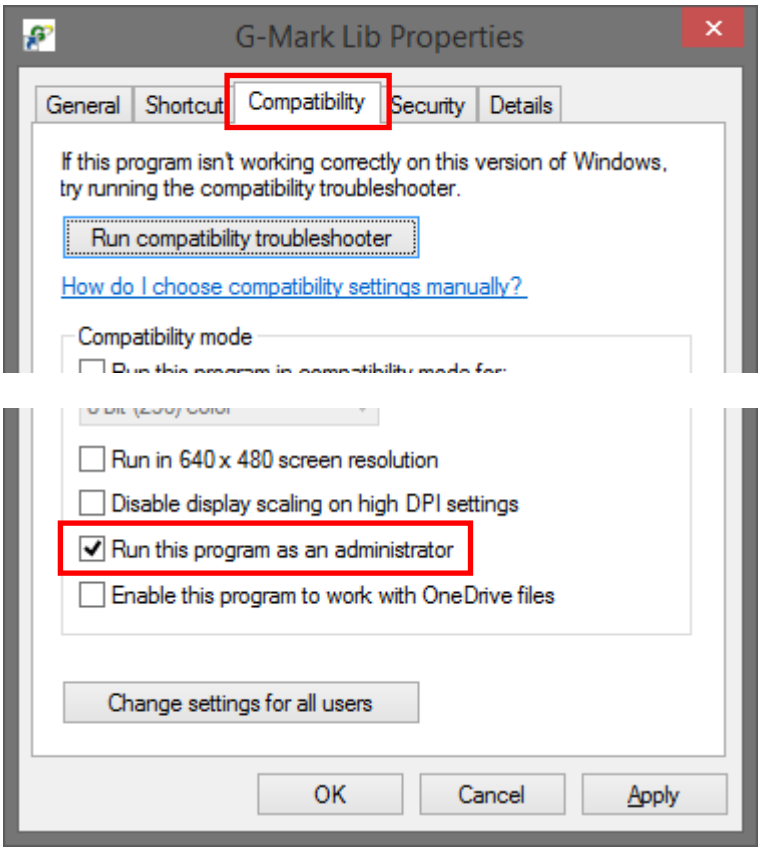
Step 1. Find the ”G-Mark Lib” which is located at the desktop of PC



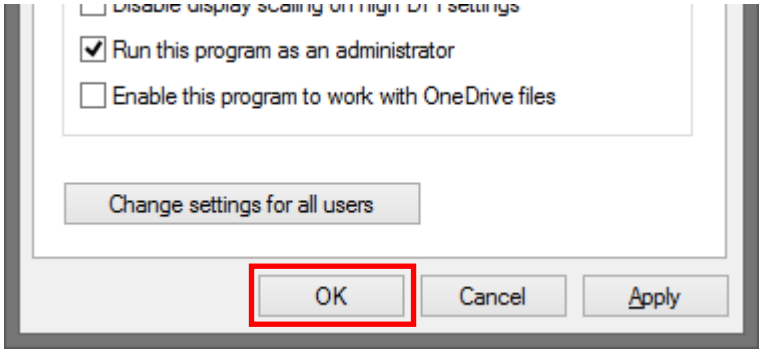
Step 2. Position the mouse on the ”G-Mark Lib” and right-click, properties for the ”G-Mark Lib” appears then press the properties.



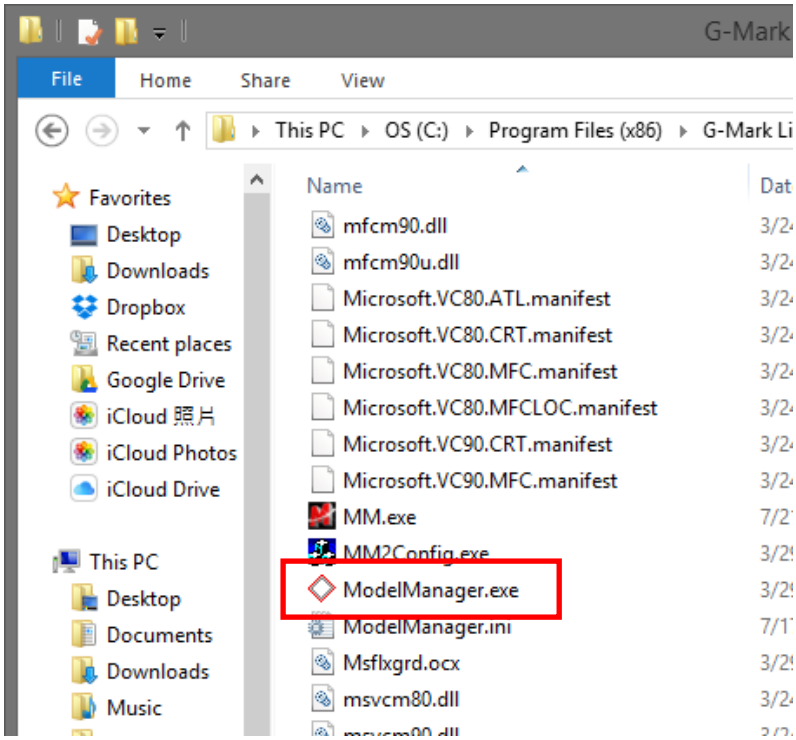
Step 3. Click “Compatibility” tab and select checkbox “Run this program as an administrator”



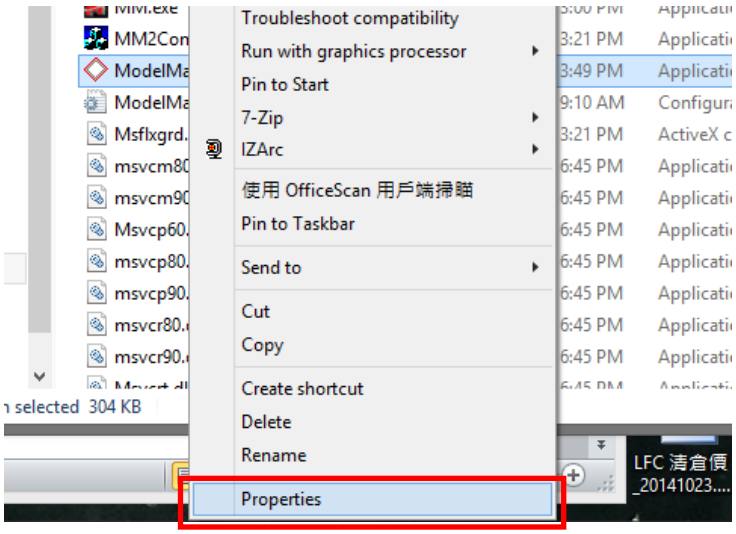
Step 4. Press “OK” to complete the setting



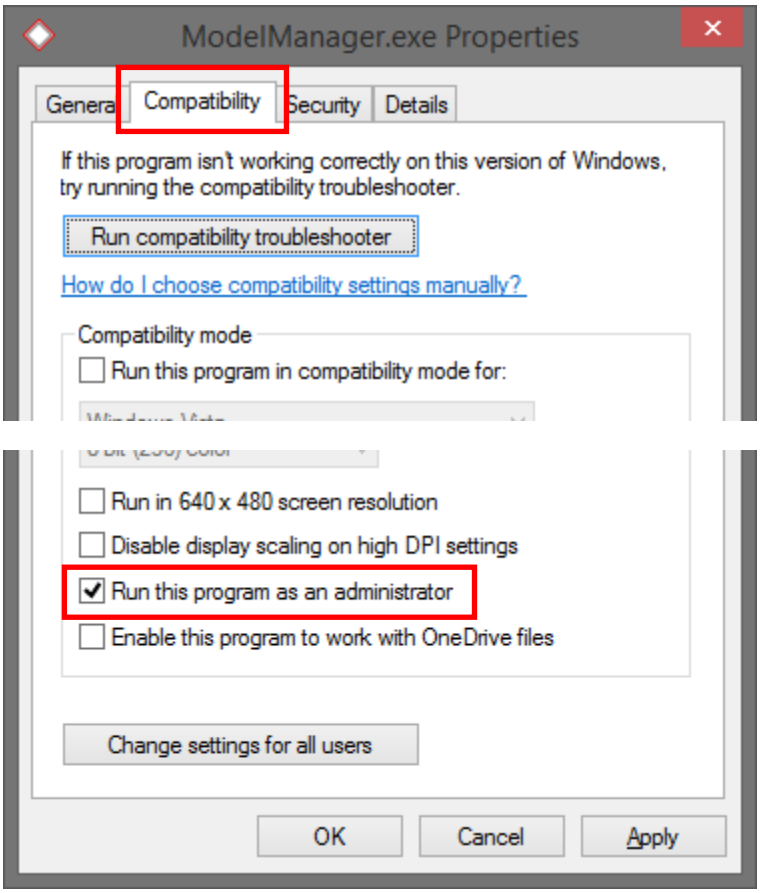
Step 5. Find the ”ModelManager.exe” which is located at “C:\Program Files (x86)\G-Mark Lib”



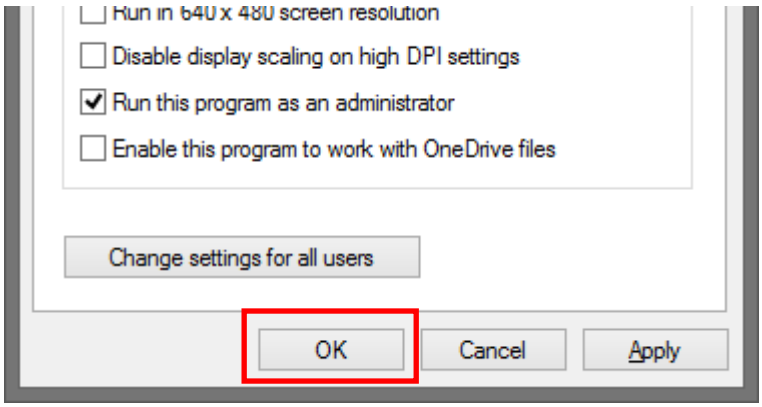
Step 6. Positions the mouse on the “ModelManager.exe” and right-click, properties for the “ModelManager.exe” appears then press the properties



Step 7. Click “Compatibility” tab and select checkbox “Run this program as an administrator”

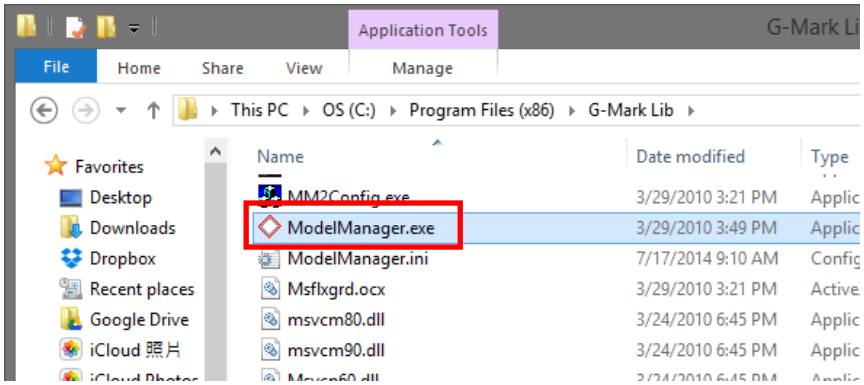


Step 8. Press “OK” to complete the setting

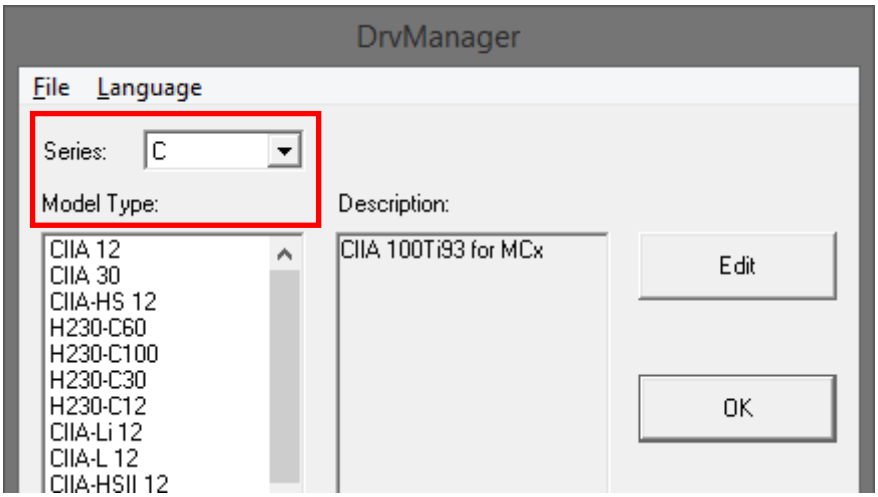


5.5.3 Change the series and model type

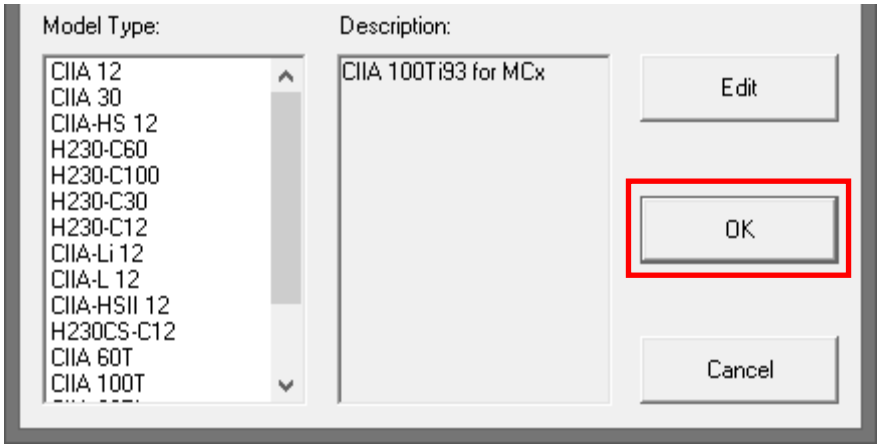
Step 1. Open the ”ModelManager.exe” which is located at “C:\Program Files (x86)\G-Mark Lib”



Step 2. Model Manger window will show up, select your series & model type



Step 3. Press “OK” to complete the change series and model type

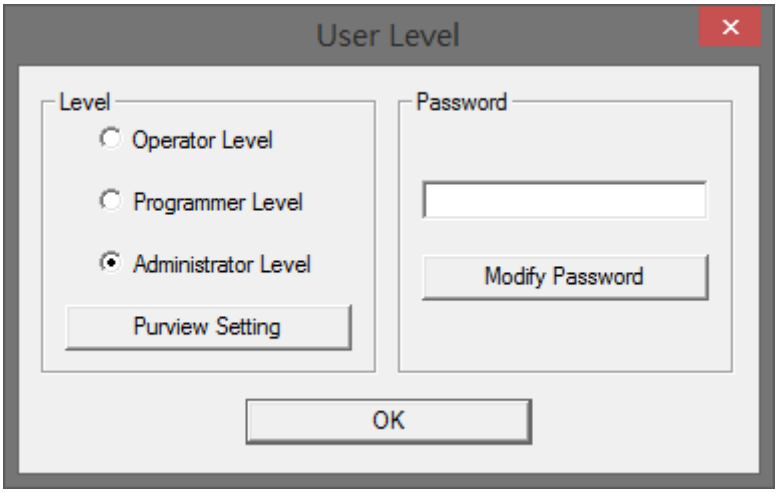


NOTE

Wrong setting for series and model type may cause the machine out of order.

5.6 Setting User Level

There are three user levels of G-Mark, operator, programmer and administrator. Director has authority to enable/disable the software functions for each level.



Find the different definitions for each user levels:

Operator Level

Operator only can read and output files.

Programmer Level

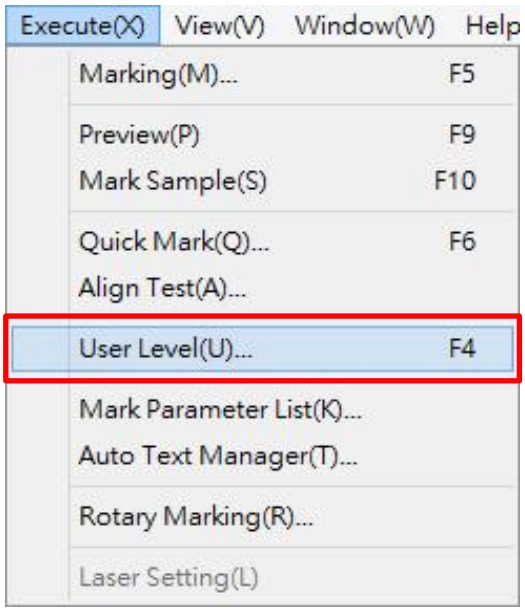
Programmer can edit objects and use some limited functions.

Administrator

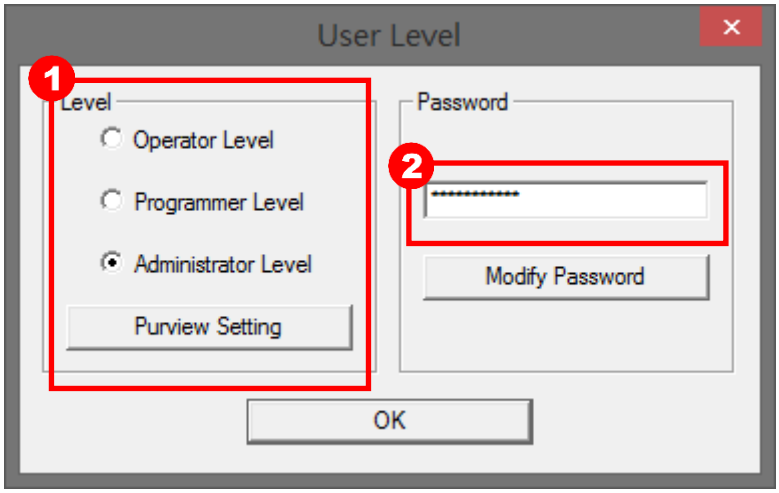
Administrator can use all G-Mark functions and has authority to change the system setting. Such as change password or authorize software function for each user level.

5.6.1 Switch User Level

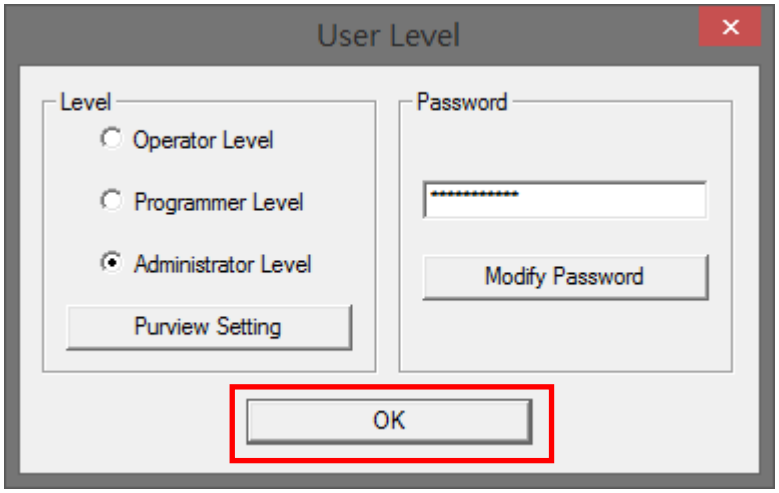
Step 1. Select “Execute” → “User Level” from menu bar



Step 2. Select user level and input password



Step 3. Click on “OK” to switch user level



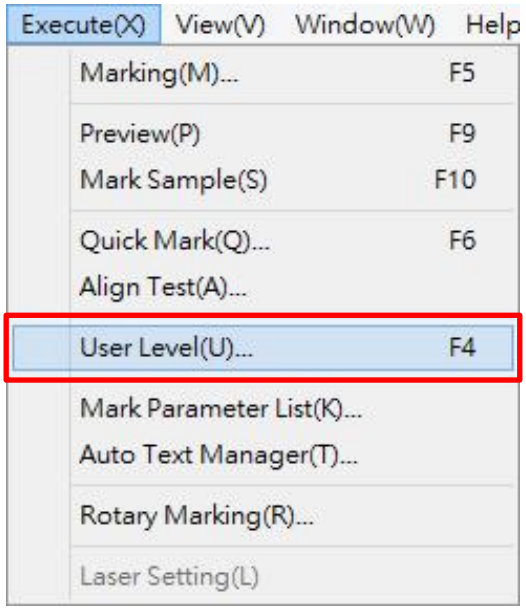
NOTE

- Password is protected in Programmer & Administrator user levels.
- Default password for Programmer & administrator levels is “stellarmark”.

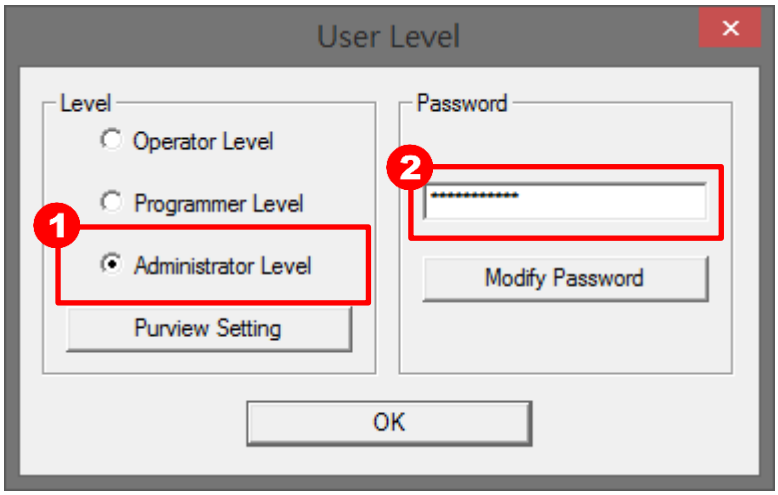
5.6.2 Modify Password

The following steps illustrate how to modify user level password

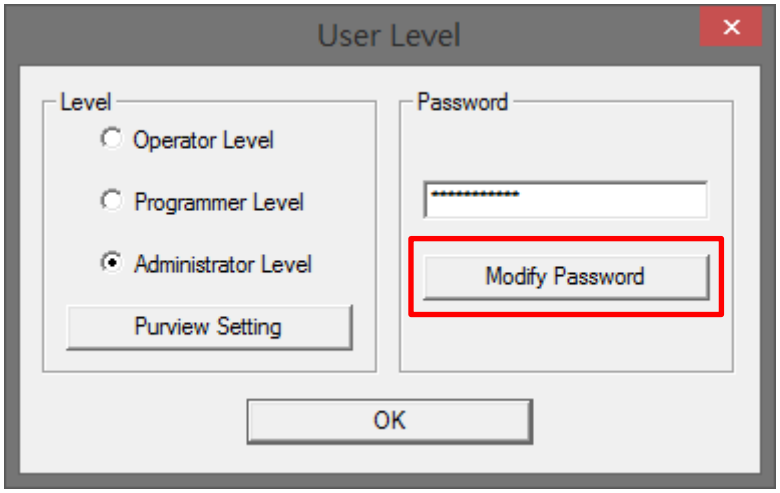
Step 1. Select “Execute” → “User Level” from menu bar



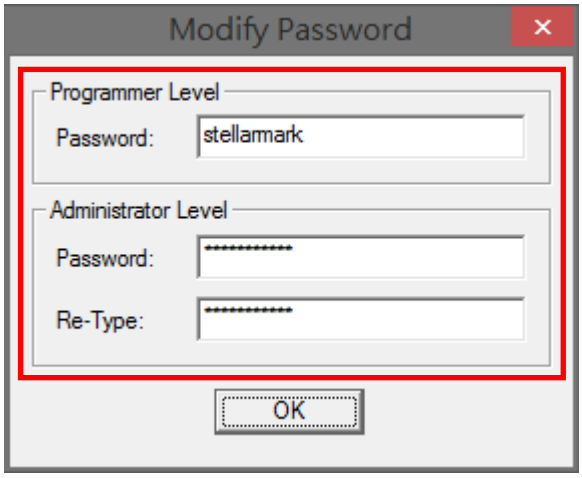
Step 2. Select “Administrator Level” and input password.



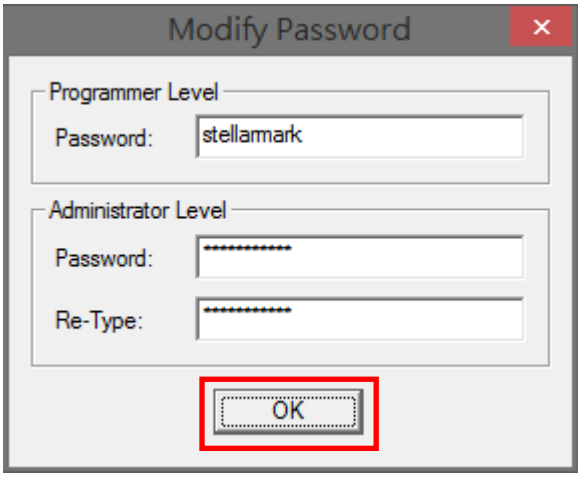
Step 3. Click on “Modify Password” and the modify password window will show up.



Step 4. Input the new password for programmer level or administrator level.



Step 5. Click on “OK” after the password modification is complete.



Warning

- If you forget your password or don't know it, you need to reinstall G-Mark to restore the default password. Therefore, please remember your password.

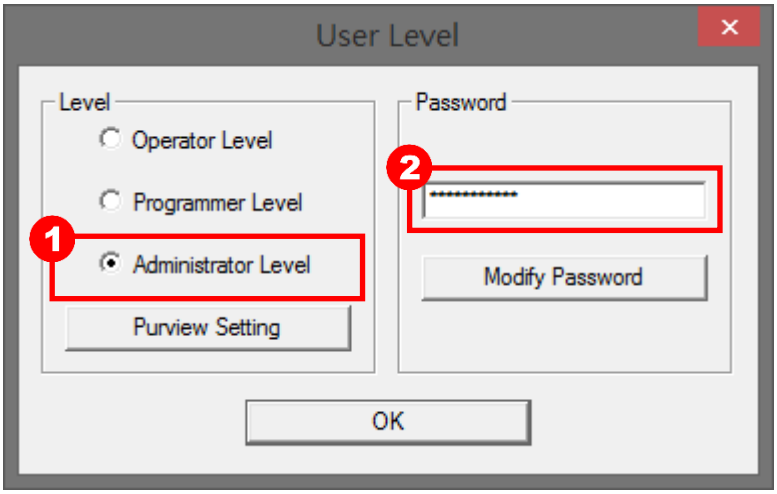
5.6.3 Purview Setting

Purview setting only for administrator level, administrator can enable/disable software function for programmer and operator level.

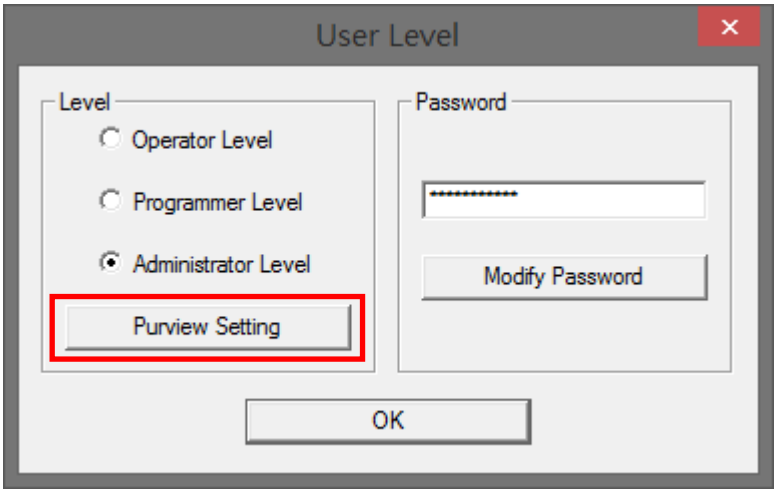
The following steps illustrate how to setting the purview

Step 1. Select “Execute” → “User Level” from menu bar

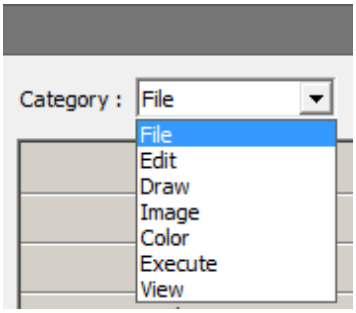
Step 2. Select “Administrator Level” and input password



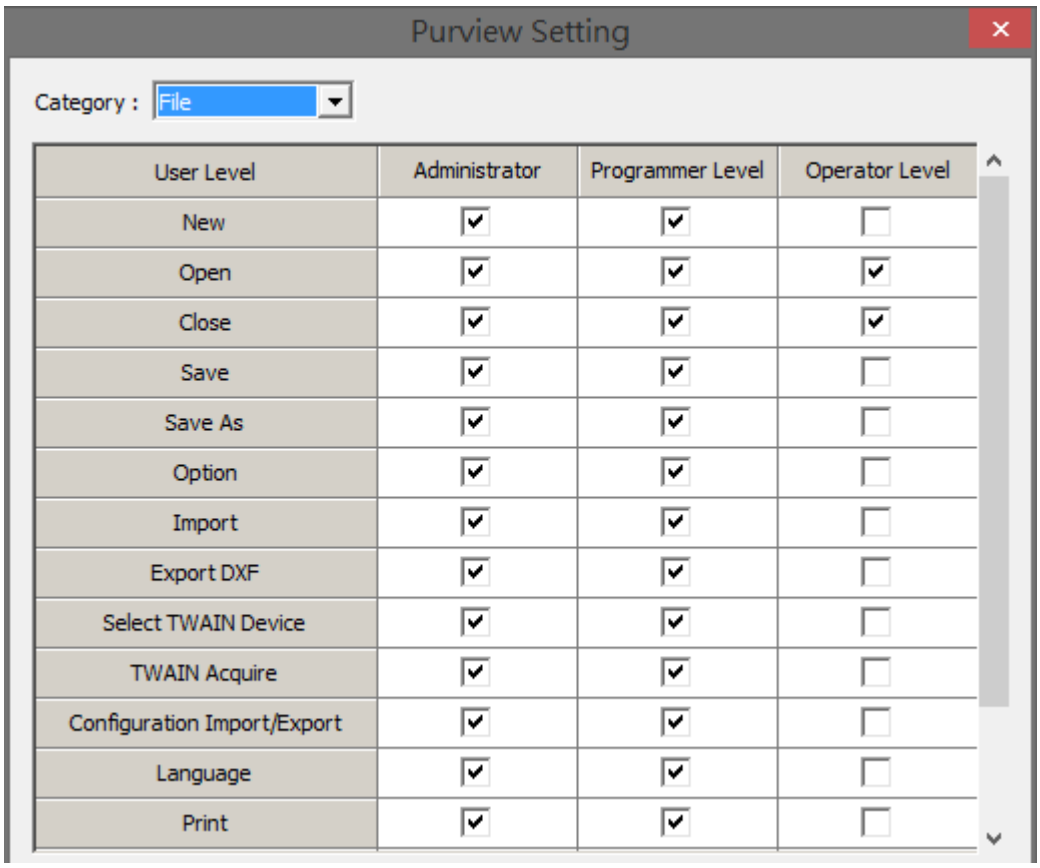
Step 3. Click on “Purview Setting” button and the Purview Setting window will pop up.



Step 4. Click “Category” list to set all the software function



Step 5. All the software function can be authorized or unauthorized in the purview setting; select checkboxes allow you to activate a function for different user level and vice versa.



Step 6. Click on “Exit” button after the setup is complete.

Chapter 6

Operating the LFC Desktop Workstation

Hardware Introduction

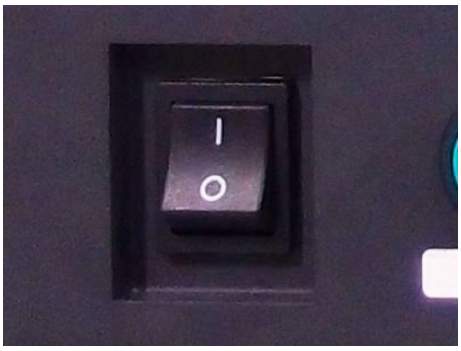
Service Mode Operation

OP Mode Operation

MultiFOCUS Operation (Optional)

6.1 Hardware Introduction

6.1.1 Main Power ON/OFF Switch



Switch the AC Power ON/OFF of the LFC desktop workstation.

6.1.2 Start Button

Allow to execute the laser firing job. It can also be used to control the opening and closing of the door.

6.1.3 LED Light Switch

Switch the LED light ON or OFF.

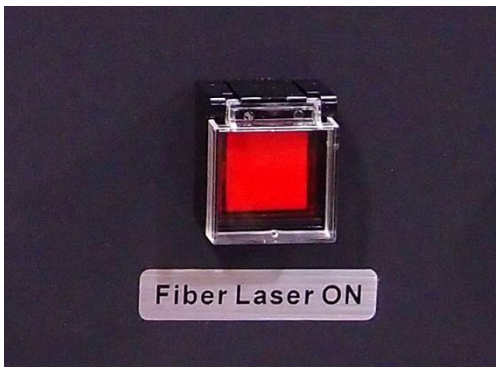
6.1.4 Key Switch

Switch the LFC D between Operator Mode and Service (repair) Mode.

WARNING

Service Mode only for administrator, always remove key when setup or service completed.

6.1.5 Fiber Laser ON Button (only for JFL model)



The Fiber Laser ON button is only for StellarMark IFII JFL models. It should always be turned ON to enable fiber laser firing.

6.1.6 Z-axis Up and Down Button

Control the z-axis of LFC D up and down.

NOTE

The z-axis up and down button are only support in the “Hardware Mode”. Please refer to the chapter 6.1.7 to switch the mode.

6.1.7 Emergency Stop Button

Press the Emergency Stop button to stop the AC power of the LFC desktop workstation for emergency. To reset this button, rotate clockwise.

NOTE

Please turn off the mater power of machine and reset emergency stop button then re-start the machine and G-Mark software after pressing the emergency stop button.

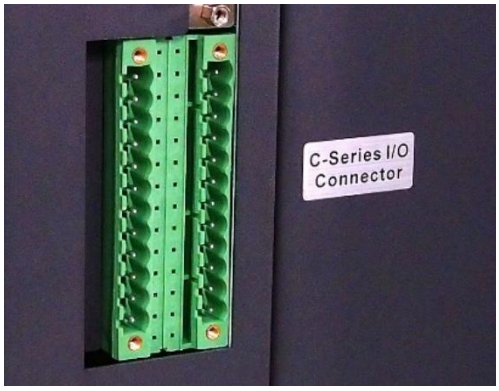
6.1.8 External Signal Indicator

It allows users to connect an External Signal Indicator. Please refer to the chapter XXX to install the External Signal Indicator.

6.1.9 I-series I/O connector

Connect I-series I/O between LFC D and control unit. You can get the I/O terminal in the accessory box.

6.1.10 C-series I/O connector



Connect I-series I/O between LFC D and control unit. You can get the I/O terminal in the accessory box.

6.1.11 I/O Terminal

6.1.12 Rotary Attachment Connection Port

6.1.13 LFC Port Connector (only for IFII JML models)

After connecting the cable, the user can turn the fiber laser ON/OFF by the "Fiber Laser ON" button from the front panel of the LFC D.

Please find the cable in the accessory box of the LFC D and connect it between the control unit of the laser maker and LFC D.

6.1.14 Hardware and Software Mode Switch

Allow the user to switch the mode between the Hardware and Software.

Hardware Mode – The user can control the z-axis up and down by Z-axis Up and Z-axis Down button.

Software Mode – The user can control the z-axis up and down through G-Mark marking software.

6.1.15 Laser Marker Power Cable Inlet

Connect the power cable between the control unit and LFC D.

6.1.16 Ventilation Opening

The 4” ventilation opening on the back of the LFC D, allows the user to connect with the fume extraction system.

6.2 LFC Desktop Workstation Service Mode Operation

The service mode is providing a convenient way for the administrator / engineer to set material and find out the parameter. In this mode, the auto door will always open, please ware goggle to operate the machine.

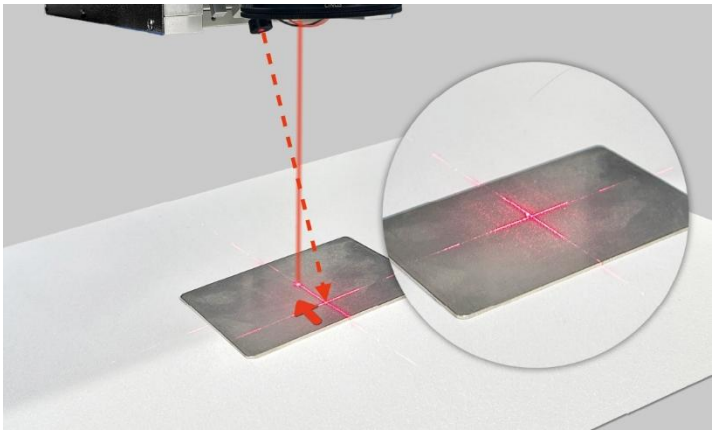
Please refer to the following steps for the operation of the Service mode.

Step 1. Turn on the machine.

Step 2. Turn the key switch to service mode, and then the door will open automatically if door is closed.

Step 3. Put the marking object on the Z-axis table

Step 4. Adjust the height of the laser marker to ensure that 2 points are combined to finish the focus adjustment.



NOTE

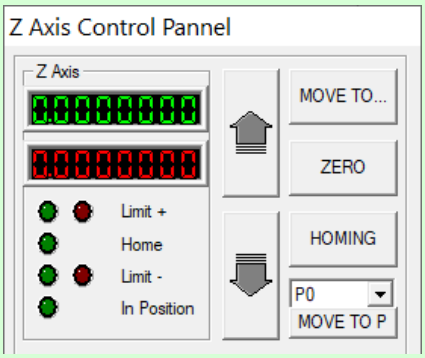
Before adjusting the focus, please check the mode of the LFC D first and refer to the following instruction to adjust the focus accordingly.

Hardware Mode

Please press the Z-axis up and down button from the front panel of the LFC D to adjust the focus.

Software Mode

Press the up and down button in the Z Axis Control Panel on G-Mark/MM3D marking software to adjust the focus.

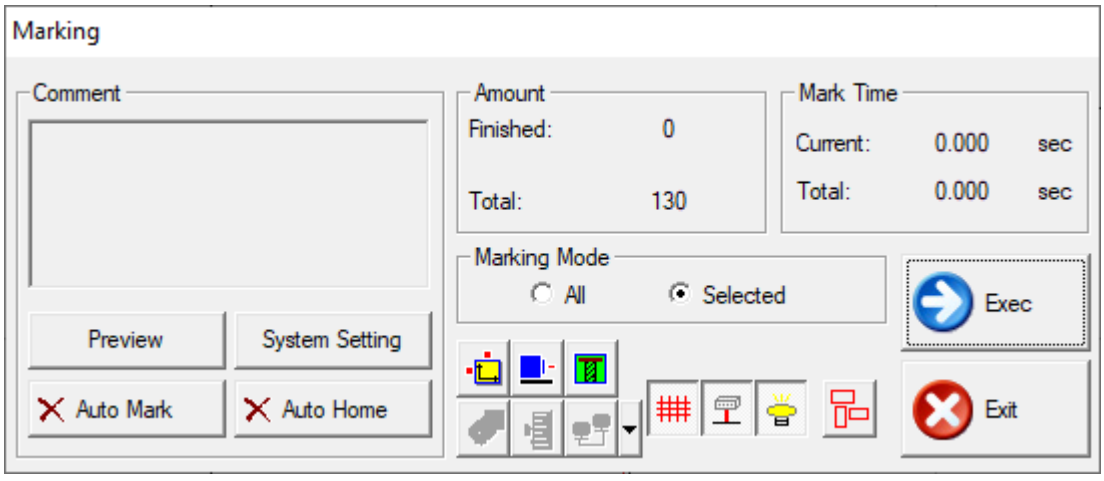


NOTE

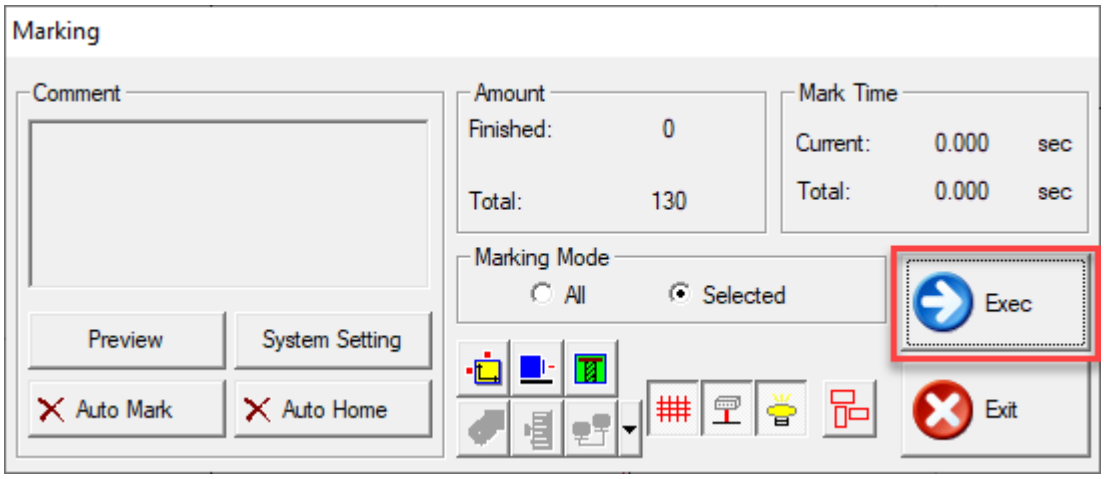
If the machine has equipped a pyramid focus tool, please put down the pyramid focus tool, and then move the Z-axis table up or down until the object touches the bottom screw of pyramid ruler.

Step 5. Open / import the marking file on G-Mark/MM3D marking software.

Step 6. After setting the parameter, click “Marking” button, and then the “Marking” window will pop up.



Step 7. Click “Exec” button on G-Mark/MM3D marking software to starting the job.



NOTE

The auto door will always open in the service mode, please ware goggle to operate the machine.

Step 8. Job is completed.

6.3 LFC Desktop Workstation OP Mode Operation

This mode allows the operator to run the mass production. All settings are done by the administrator in the service mode and the operator just needs to load the material and press the “Start” button to run the marking job, then unload the material manually.
In the OP mode, the door will open and close automatically to provide a safe environment for the operator.
Please refer to the following steps for the operation of the OP mode.

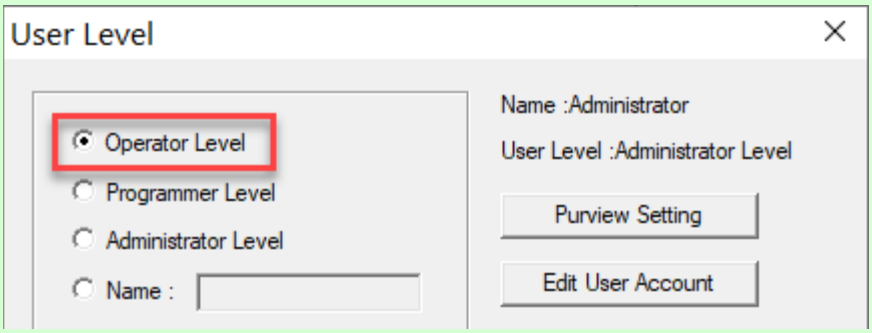
Step 1. Turn on the machine.

Step 2. Turn the key switch to OP mode, and then the door will open automatically if door is closed.

NOTE

Please switch the user level to “Operator level” on G-Mark/MM3D marking software after turn the key switch to OP mode to avoid any abnormal.

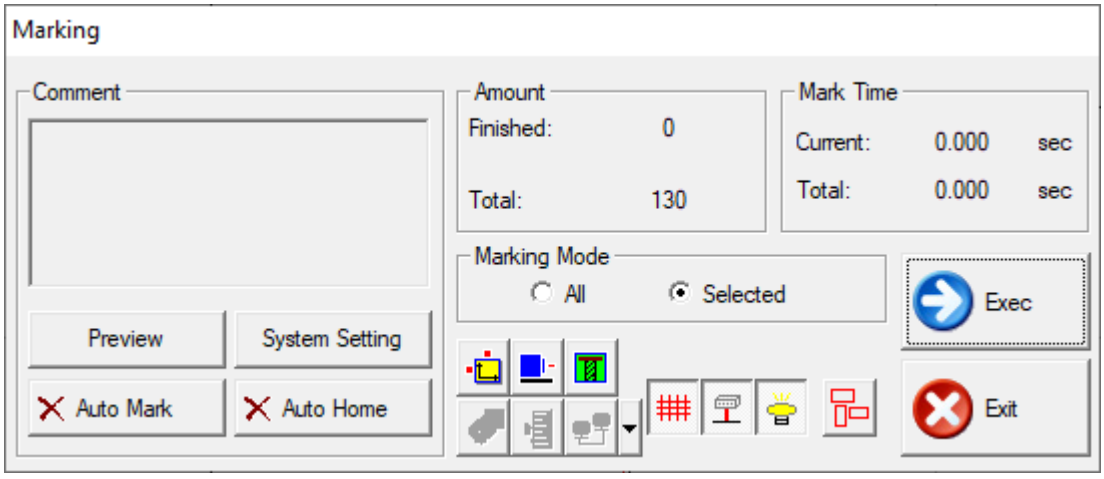
Please refer to the chapter 5.4 for more detail settings.



Step 3. Put the marking object on the Z-axis table

Step 4. Open / import the marking file from G-Mark marking software.

Step 5. Click “Marking” button, and then the “Marking” window will pop up.



Step 6. Press the “Start” button on the front panel of the LFC D to start the job.

Step 7. When the job starts, the door will be closed automatically, and then run the marking.

Step 8. The door will open automatically when the Job is completed.

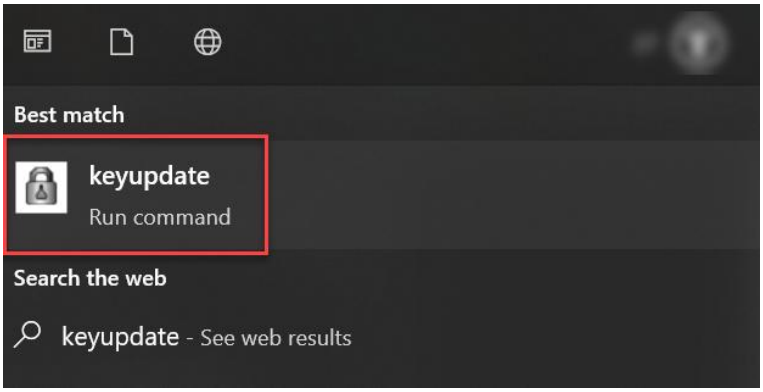
6.4 MultiFOCUS operation (Optional)

MultiFOCUS is an optional function that allows the user to process the different heights of objects in one job. LFC D will auto-move the z-axis to specific heights according to your setting and run the marking.

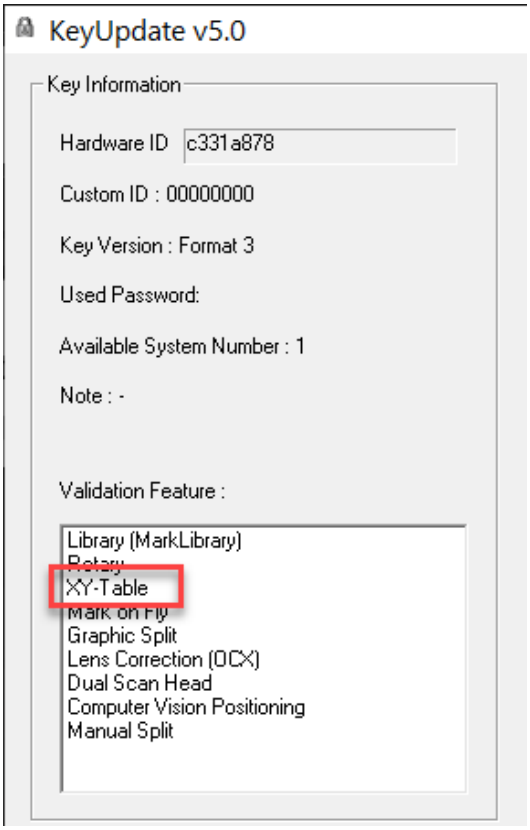
6.4.1 Active the MultiFOCUS function

Before using the MultiFOCUS function, please make sure that the function has been added to your keypro/machine. You can refer to the following steps to check the function.

Step 1. Please click the “Windows“ icon on your windows system, and type “keyupdate” then run it. The Keyupdate window will pop up automatically.



Step 2. Check the “XT-Table” function has been shown on the list of the “Validation Features”



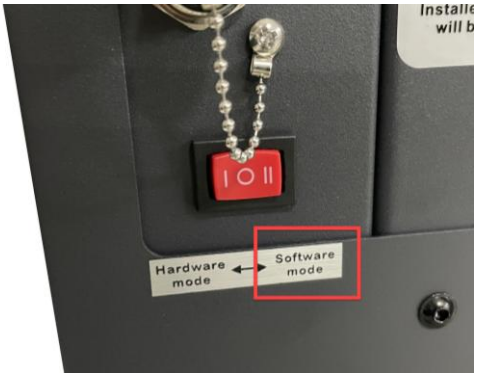
NOTE

If the function has not been shown on the list of validation features, please contact your local distributor to purchase the function for your system.

6.4.2 MultiFOCUS Operation

The following example takes an object with steps to demonstrate how to set up the MultiFOCUS

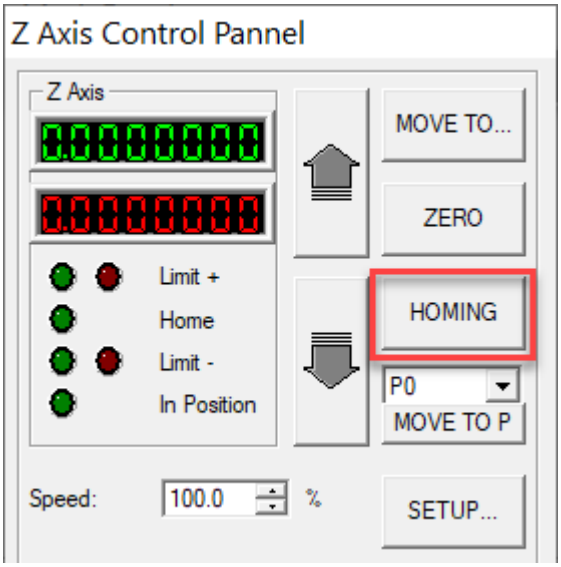
Step 1. Set the LFC D to software mode, the switch is in the back of the LFC D.



Step 2. Open or create the file on G-Mark/MM3D marking software.

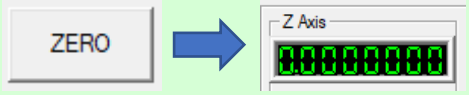
Step 3. Click the “Z Axis Control Panel” button on mark panel of G-Mark/MM3D, and the Z Axis Control Panel window will pop up.

Step 4. Click the “Homing” button to set the Z axis back to “0”.

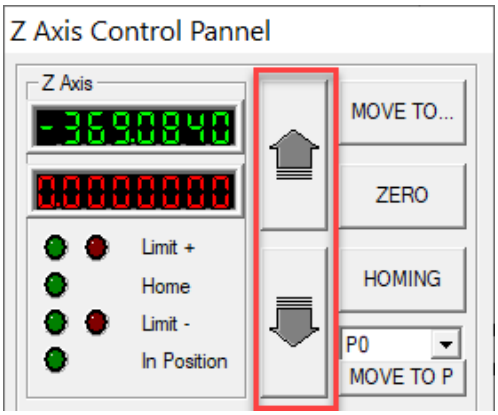


NOTE

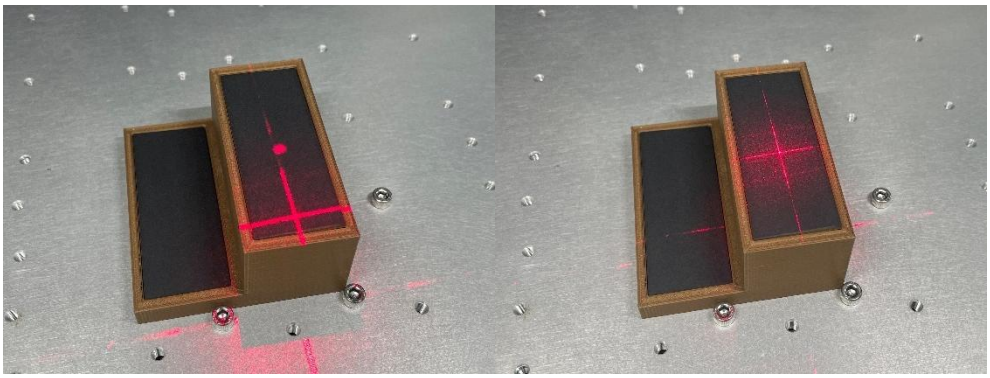
The default setting of Homing is to set the Z axis on top of the LFC D. If the number of the Z axis is not shown as 0, please make sure the Z axis is located on top of the LFC D and click the "ZERO" button to set the number to 0.



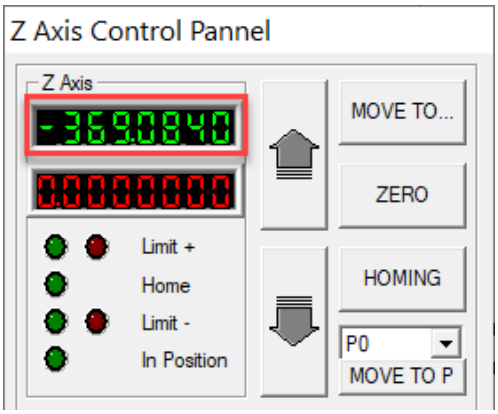
Step 5. Put the object on the working table of the LFC D and press the up and down button on the Z Axis Control Panel to set the focus for first step.



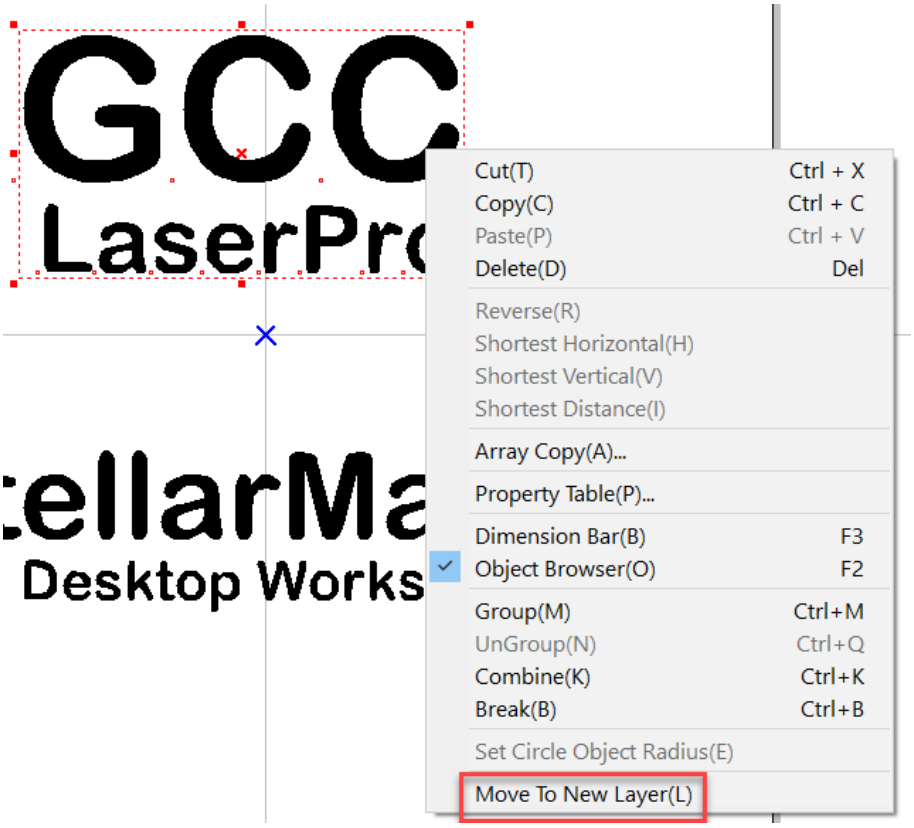
The red point will be closed to the red cross when you adjust the z axis. Please ensure that the red point has been put in the center of the red cross to set a correct focus distance.



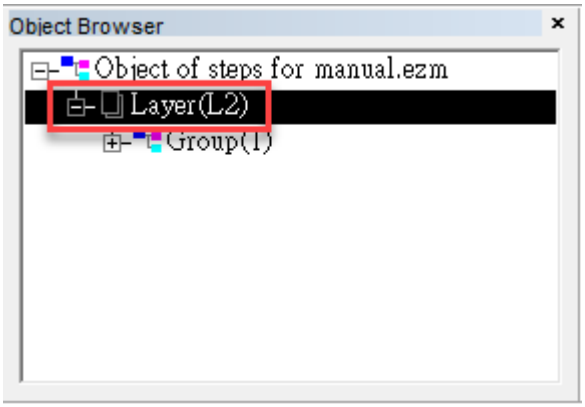
Step 6. Remember the number of the Z axis after finishing the focus adjustment.

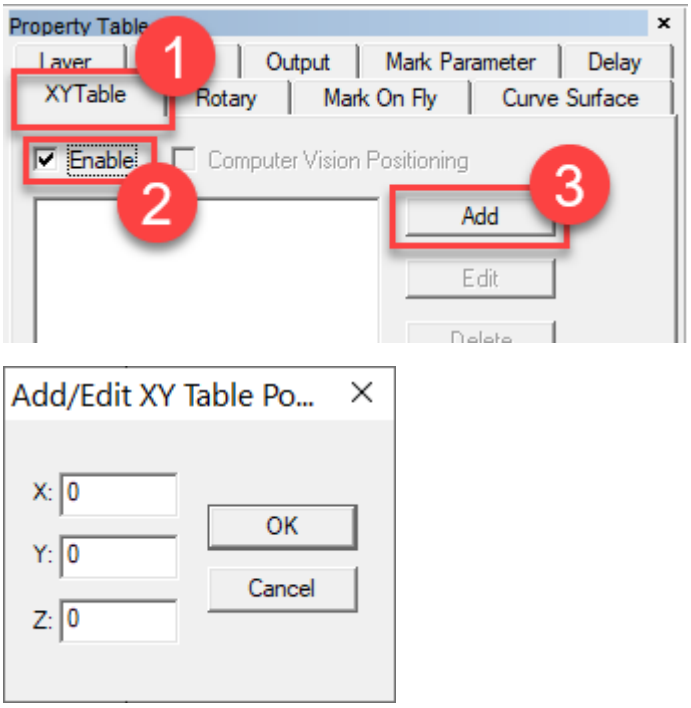


Step 7. Select the object of the first step and click the right mouse button, then select “Move To New Layer(L)” from the right-click menu.

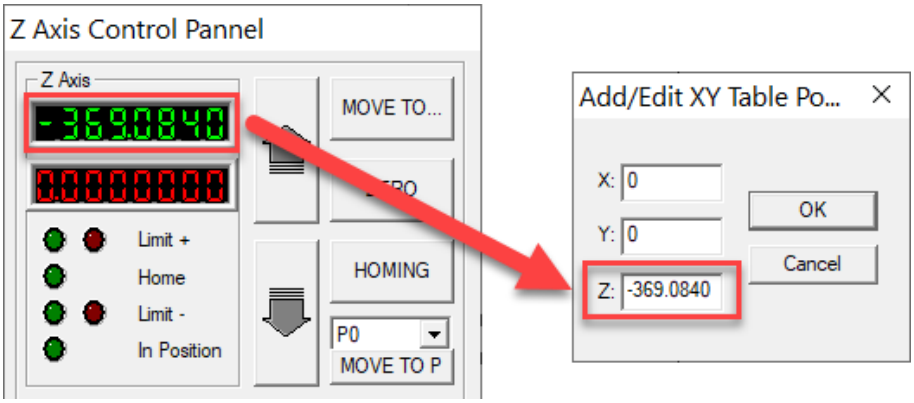


Step 8. Select the layer in the “Object Browser” window on the left side of G-Mark/MM3D marking software and go to “XY table” tab on the property table. Active the “Enable” and click the “Add” button, the Add/Edit XY table property window will pop up.

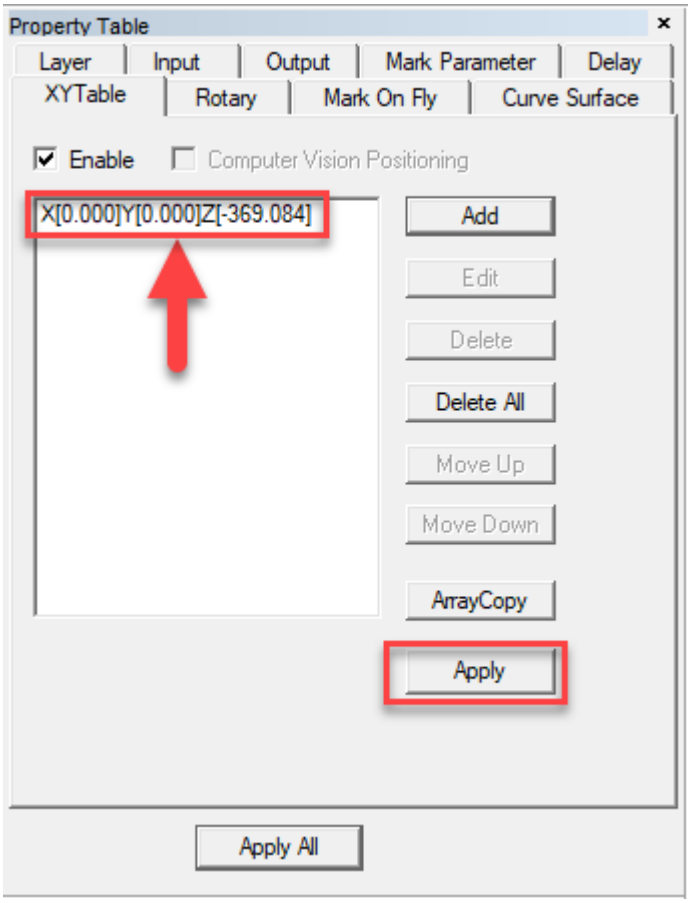




Step 9. Input the value of Z axis that you got from the Z Axis Control Panel and click the OK to close the window.



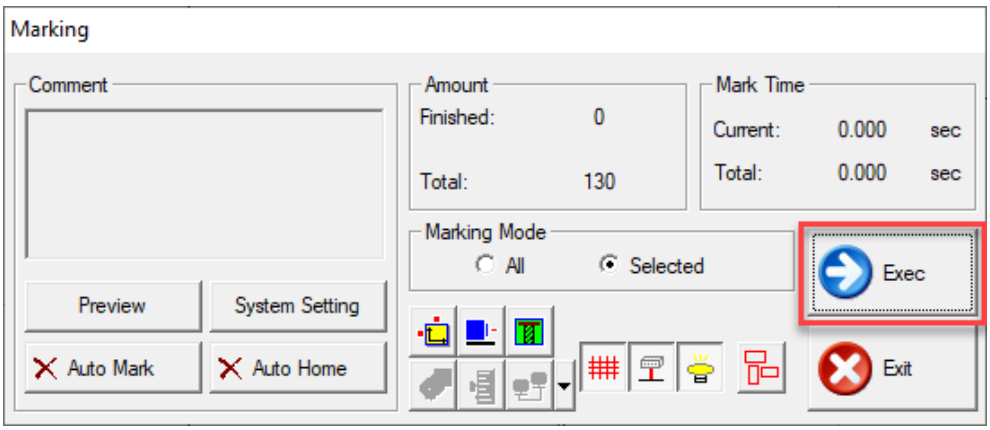
Step 10. The value will be added in the list, please click the “Apply” button to finish the setting.



Step 11. Repeat the step 5 ~ step 10 to set height value of the second step.

Step 12. Set the marking parameter.

Step 13. Click the “Marking” button on G-Mark/MM3D marking software and click the “Exec” button to process the job. The z axis of LFC D will move to the specific height to mark the object automatically.


Marking
Comment
Amount
Finished: 0
Total: 130
Mark Time
Current: 0.000 sec
Total: 0.000 sec
Marking Mode
All
Selected
Exec
Preview
System Setting
Auto Mark
Auto Home
Exit

Chapter 7

External Control

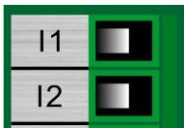
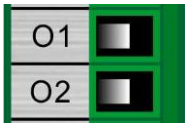
I/O Pin Assignments

Laser Working Flow Chart

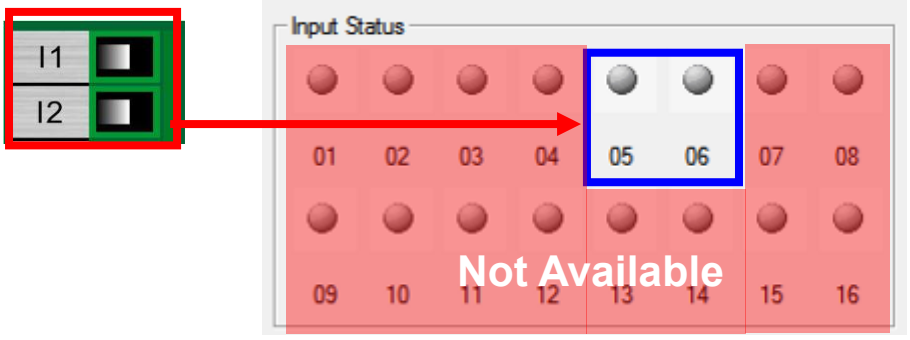
Laser Reaction Timing Diagram

7.1 I/O Pin Assignments

The I/O terminal connector is located on the bottom rear of LFC workstation, and the definition corresponding with the input and output signals on the G-Mark software as follows.

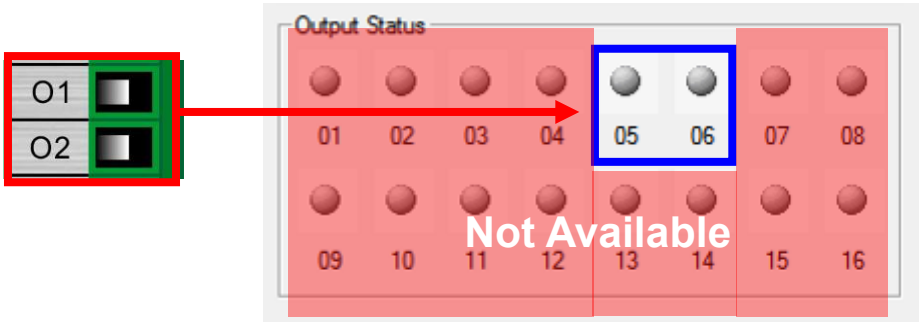
I/O		TYPE	DESRIPTION
P1~P2		**INPUT**	There are 2 input signals (External device → LFC) available to communicate with external devices.
P3~P4		**OUTPUT**	There are 2 output signals (LFC → External device) available to communicate with external devices.
P5		**INPUT**	When Start- pin and Ground pin are at short status, laser marker will trigger the fire.
P6		**INPUT**	When Stop- pin and Ground pin are at short status, laser marker will stop working.
P7		**INPUT**	This is terminal used to connect external emergency stop.
P8		**GND**	Ground

(1) Input pins



The pin 1~4 & pin 7~16 from Input status are not available to communicate with laser marker.

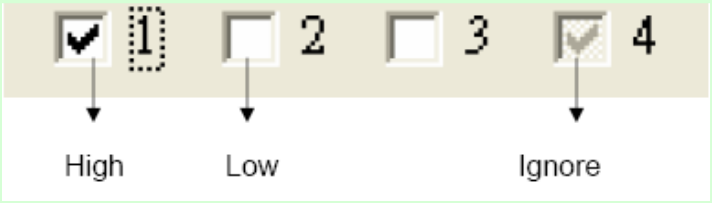
(2) Output pins



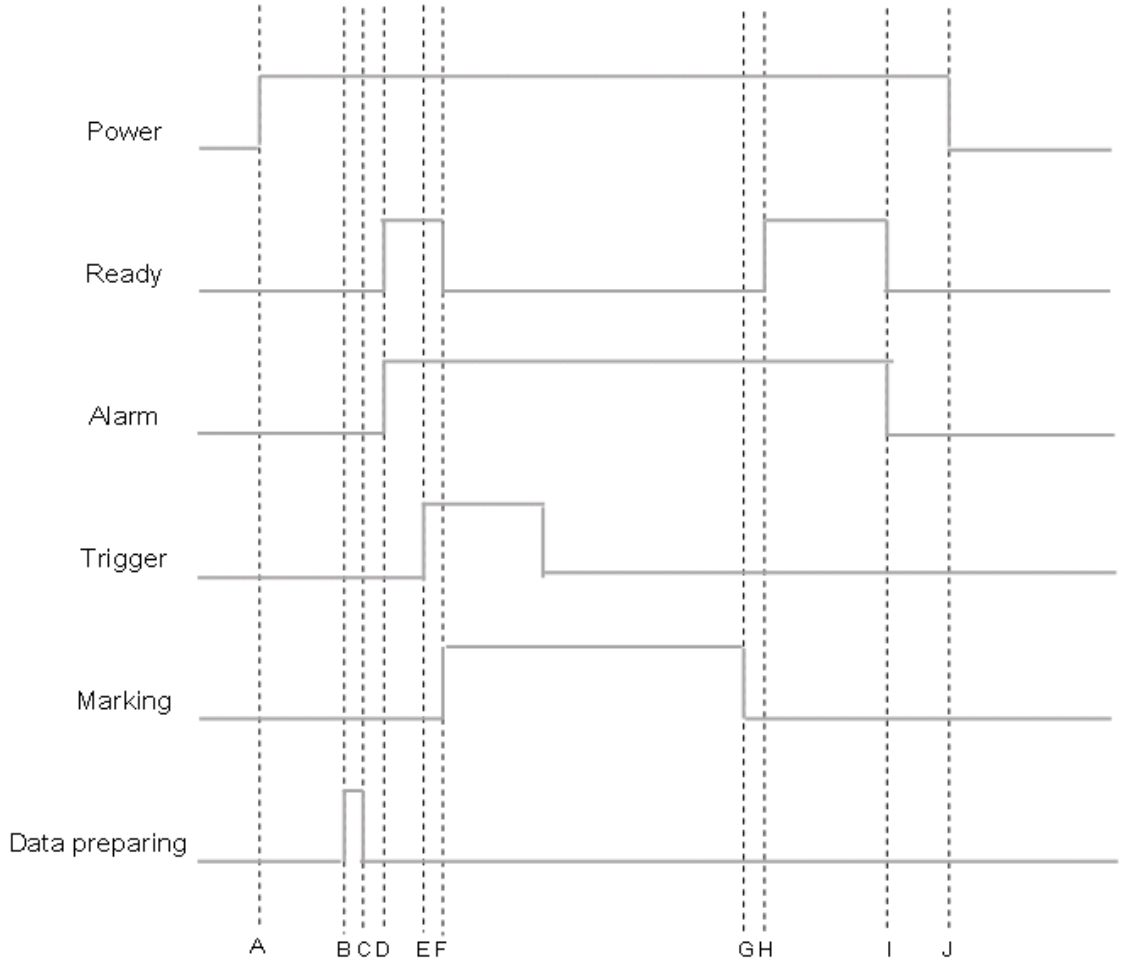
The pin 1~4 & pin 7~16 from Output status are not available to communicate with laser marker.

NOTE

High / Low definitions in G-Mark software



7.2 Laser Working Flow Chart

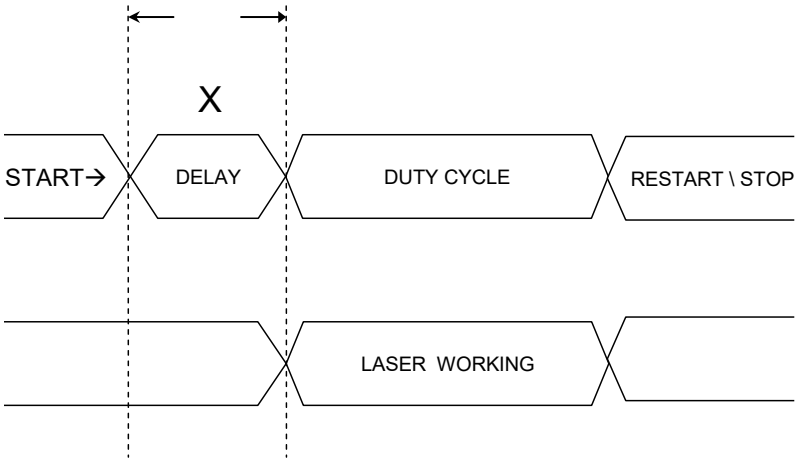


Definitions:

A	Power on
B	Time consuming between the “reading file” to the next step of “Ready to fire” depends on the size of working object.
C~D	After the file reading is completed, it will take less than < 1μ sec. for the external device to receive a “Ready” signal from the laser marker
E	It will take between 0.1m sec. ~ 50m sec. for laser to trigger firing after receive the command of “Start”
F	Ready signal is OFF when laser is firing
G	Job is completed
G~H	it will take about less than < 1μ sec. for the external device to receive a “Ready” signal from the laser marker
I	G-Mark marking software is closed
J	Power off

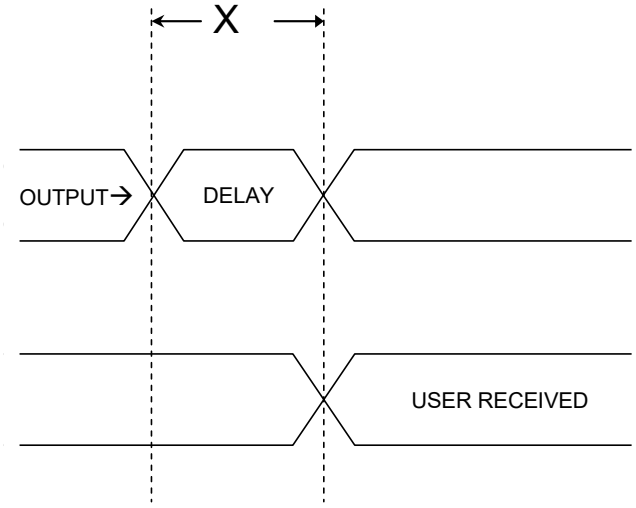
7.3 Laser Reaction Timing Diagram

- Start → Laser Firing Delaying Time
  It takes about 0.1m sec <X< 50m sec to fire laser after receive the command of "Start".



0.1 m sec < X < 50 m sec

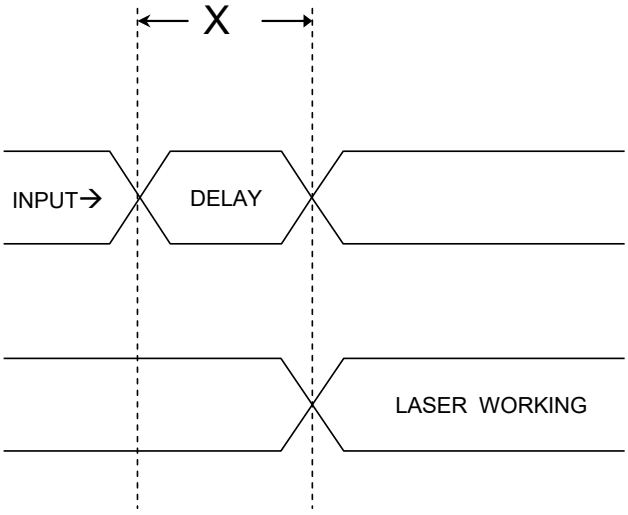
- Laser Signal Output → External Device Delaying Time
  It takes about X < 1μ sec for the external device to receive an output signal from the laser marker.



X < 1 μ sec

◆ External Device Output Signal →Laser Firing Delaying Time

It takes about 10 μ sec < X < 20 μ sec for the laser marker to receive an input signal from the external device



10 μ sec < X < 20 μ sec

Chapter 8

Basic Maintenance

Regular Spot Check

Cleaning the Scan Lens

Keep the LFC Series Workstation clean and well maintained will ensure quality output, consistent reliability, and extended product life. Smoke, dust or residue built-up inside the laser system can cause reduction in the laser power, reduced product life cycle, and other potential problems which can be prevented in advance.

This section will cover how to perform regular maintenance for the scan lean of LFC Series Workstation.

The frequency of the cleaning schedule will depend on number of variables such as the types of material you work with, the immediate work environment, the frequency of use, the quality of the exhaust system, etc.

WARNING

- Always turn off and unplug the laser workstation and laser marker before cleaning!
- Electrical shock may occur if do not turn off and unplug the laser workstation and laser marker before cleaning.
- Damage may occur to the system if you do not turn off and unplug the laser workstation and laser marker before cleaning.

8.1 Regular Spot Check

Before each use, inspect the machine, power cables, connector cables, and the working environment. Look for frays in cables, proper connections, and any abnormalities that could have an effect on marking performance and/or user safety. Be sure the LFC Series Workstation is properly secured and mounted.

If a problem ever arises with the G-Mark software or the StellarMark laser marker, be sure to notify GCC local representative as soon as possible.

8.2 Cleaning the Scan Lens

Oil from hands and the residue built up on the scan lenses can distort the laser beam passing through, resulting in poor quality markings and may cause cracks on lens by the uneven heat conduction.

To clean the scan lens, simply remove the scan lens and inspect it for light and heavy residue marks.

To clean light residue marks, apply some lens cleaner on each side of the lens. Use a new, lint free cloth to remove the lens cleaner. Make sure that the cloth only travels in one direction to prevent scratching the scan lens. Let the lens dry before reattaching it to the StellarMark™. Be sure to clean only one side at a time.

To clean a heavy residue mark, apply some lens cleaner on each side of the lens. Use a cotton swab to remove the caked on residue mark. Be careful not to scratch the lens. Use acetone if the lens cleaner will not remove the mark. After the mark is removed, follow the steps used to clean light residue marks in order to finish the cleaning.

WARNING

Acetone is an EXTREMELY FLAMMABLE LIQUID AND VAPOUR.
The vapour is heavier than air and may spread long distances making distant ignition and flashback possible.

NOTE

Never touch the scan lens with your bare hand. The oils from your hand will distort the laser beam passing through the lens. Use finger cots or rubber gloves when cleaning.

Chapter 9

Appendix

LFC-D Workstation Specification

Model		LFC-D
		CIIS 12, 30
		IFIIS JFL and JML models
		3DS JFL and JML models
Marking Fields	CO2	70 x 70mm, 140 x 140mm, 200 x 200mm
	Fiber	70 x 70mm, 110 x 110mm, 180 x 180mm
Front Door		Automatic Door
Max. Loading		50 kg
Z-axis Travel		540 mm
Safety Class		Class 2 (EN60825-1)
Software		G-Mark
Operating System		Win 2000 / XP / Vista / 7 / 8 / 10
Interface		USB x 1, VGA x 1
Power Supply		AC Auto Switching 115 / 230V, 50-60Hz / Single Phase
Power Consumption		1240W
Operating Temperature		15C~35C
Operating Humidity		10 ~ 80% Non-condensing
Dimension		94(L) x 102(W) x 147(H)
N.W.		100 kg
G.W.		180 kg
Optional Items		Rotary Attachment
		MultiFOCUS
		Air Extraction System