VIGO 维果科技 TEC

Hardware Installation Manual

Support: **VG-L7**

Overall Size: 445×401×128mm (L×W×H)

Mechanical Size: 330×190mm (L×W)

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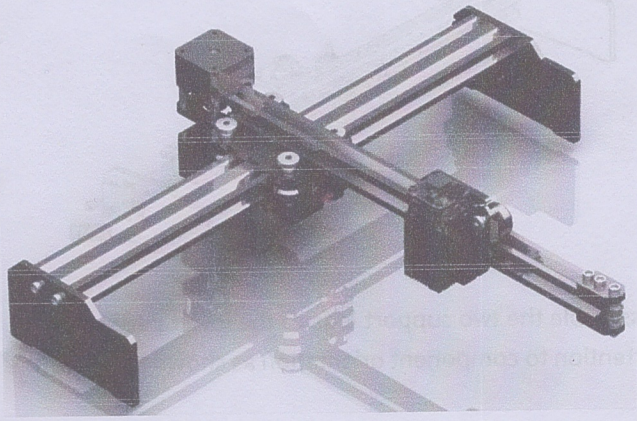


CATALOGUE

Scan for User Guide and videos

VG-L7

1. Parts list

Parts list of VG-L7 Kits

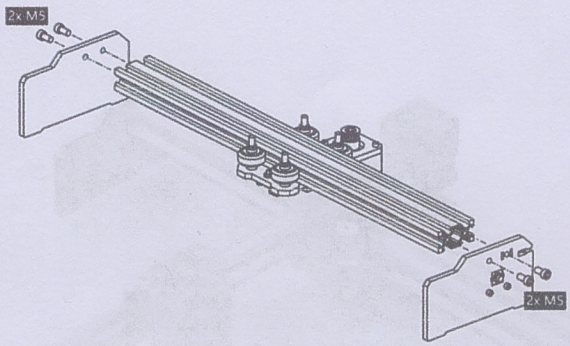
Serial N	Parts	Quantity
F1	Frame Part A (Lower part)	1
F2	Frame Part B (Upper part)	1
F3	Laser	1
/	Stepper Motor wire	2
/	Laser wire	1
/	Side to Main control board wire	1
/	USB cable	1
/	Power supply	1
/	Protective glass	1
/	Hardware installation manual	1

VG-L7 Tools

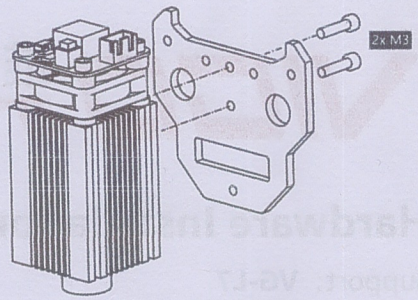
Serial N	Parts	Quantity
N1	M5 Nut (Frame Fixed)	4
N2	M3x12 Screw (Laser Fixed)	2
N3	M3 Nut (Laser Fixed)	2

2. Installation

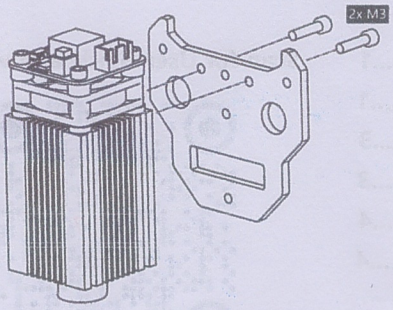
Please read the following installation instructions and control board instructions carefully, and pay attention to the sequence of installation. The shape of parts in the following installation instructions is only as a sigh. Please refer to the shape of the actual parts purchased.



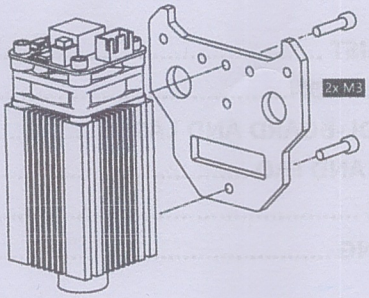
1. Assemble the two support legs to the lower parts. Please pay attention to component orientation as shown in the figure.



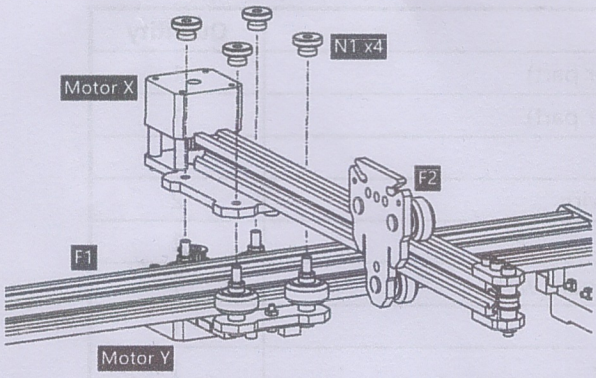
2.1 Assemble the laser and backplane. Please pay attention to different installation methods according to laser parts.



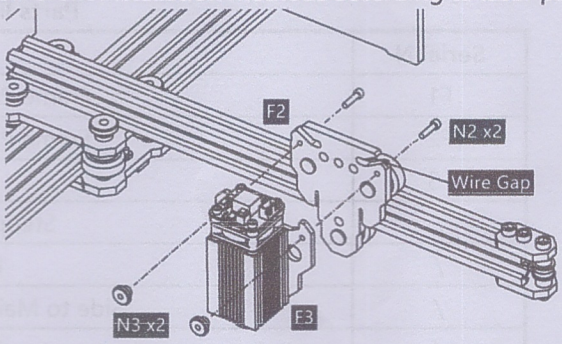
2.2 Assemble the laser and backplane. Please pay attention to different installation methods according to laser parts.



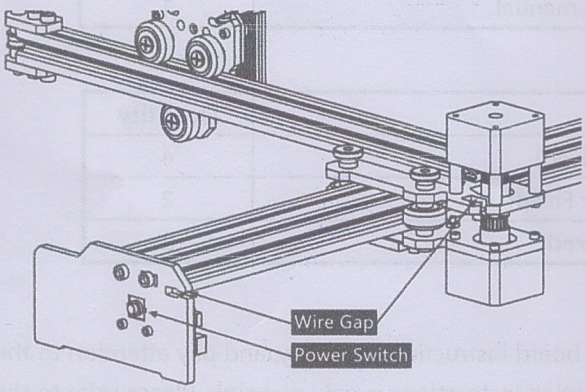
2.3 Assemble the laser and backplane. Please pay attention to different installation methods according to laser parts.



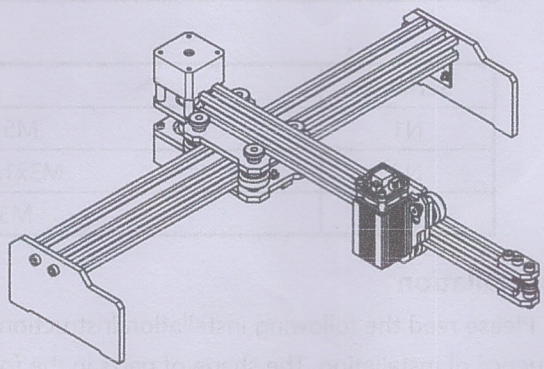
3. Assemble upper and lower parts.



4. Assemble laser part to the frame. Please notice that the laser wire should penetrate the gap before fix the Laser-Module(F3).



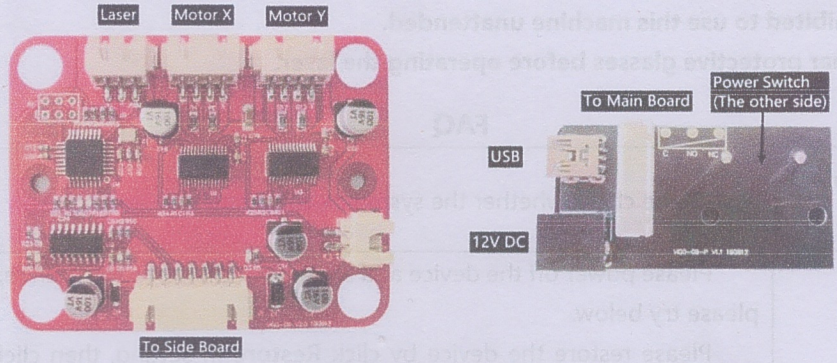
5. The side to main board wire, laser wire and upper motor wire can be fixed with the reserved gaps.



6. Finished above. Please notice that all the belts and wires are not shown above.

3. Control-Board and Laser

3.1 Instructions for control board (Optional)



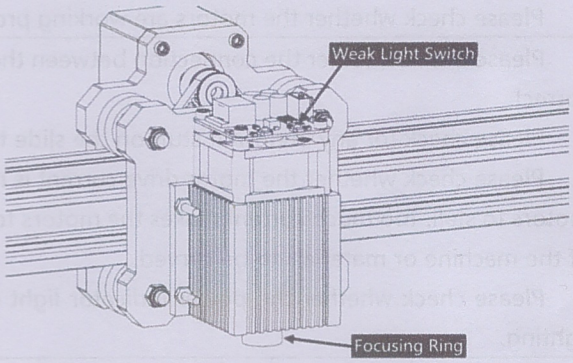
Main Control Board (Left), Side Board (Right)

The Motor-X and Motor-Y interface on board should be connected to the X-Part and Y-part motors correspondingly. The 6Pin of the motor wire is for the motor, and the 4Pin is for the control panel.

Please connect the laser to the control board with the 3pin wire. Connect the side board to the main control board. And Connect the power supply and the computer with the USB cable.

Please focus the laser on the materials to be carved referring to the laser instructions below before starting carving.

3.2 Instructions for laser.



Please wear the protective glasses before operating the laser!

When all the connections are completed, turn on the power, and the laser is standby for working. The red light on the top of the laser is continuous lighting at this time.

Turn on the weak light and adjust the focal length

Please lay the materials to be carved flat under the laser. The recommended distance from laser outlet to materials is 5~10cm. Out of range may be out of focus.

Press the weak light switch on the top of the laser (Marked as ⊕). Then the red light will flash and the weak light on. Laser spots can be seen on the materials to be carved at this time. Rotate the focusing ring slowly on the laser outlet to shrink the laser spots. When the laser spots are minimized, it is the optimum state for laser carving.

After that, press the weak light switch again, and the weak light is turned off. The red light on the top of the laser is continuous lighting at this time, and the laser is standby for working.

It is important to understand that this weak light switch on the top of the laser is not controlled by control software. So be sure to switch back to normal (make sure that weak light is off) before you start carving.

4. Notice and FAQ

(1).The shape of all parts above in this description is only as a sign. There may be a difference between the actual parts and the parts in the installation instructions. Please refer to the shape of the actual parts purchased.

(2).Please pay attention to the sequence of the installation steps to avoid repeated disassembly.

(3). Make sure hibernate and sleep are disabled when working long hours. This feature may cause the laser to continue to glow out of control, and burning on the table.

(4). It is strictly prohibited to use this machine unattended.

(5). Make sure to wear protective glasses before operating the laser.

FAQ

The control software cannot be opened	Please check whether the system is Win7 or above.
Wrong control respond	Please power off the device and shut down the software, then restart both. If useless, please try below. Please restore the device by click **Restore** in setting, then click **Model Select** and choose the device you used to reset parameters.
The carving is not good or there is no burned trace	Please check whether the focal length of laser is in the recommended distance. Please check whether the laser focus is at a minimum. Please check whether the object to be caved is laid flat. Please check whether the laser is in weak light mode. Please check whether the power indicator light on the control panel is continuous lighting. Please check whether the motors are working properly.
The stepper motors are not working properly .	Please check whether the connection between the three motors and control board is correct. Please check for any irrelevant stuff on the slide to block movement. Please check whether the motor drive current is normal. Too little current causes the motors to stall. Too much current makes the motors to vibrate, and causes the movement of the machine or materials to be carved. Please check whether the power indicator light on the control panel is continuous lighting.

5. Update

Our software will be updated continuously.

Please visit our website: www.vigotec.cn for more new products and software.

Please be sure to download the VigoEngraverL7 for this machine.

Please refer to the Software Installation Manual for control software instructions.

Please contact us if you have any questions.

6. Warning

Strictly prohibit laser irradiation of the eyes!

Strictly prohibit watching laser without wearing protective glasses!

Strictly prohibit using by children!

Strictly prohibit using this machine unattended!

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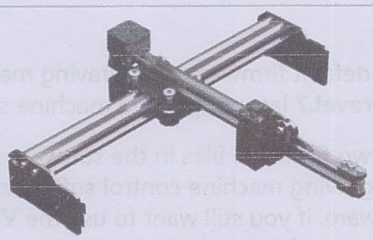
VG-L7 User Guide

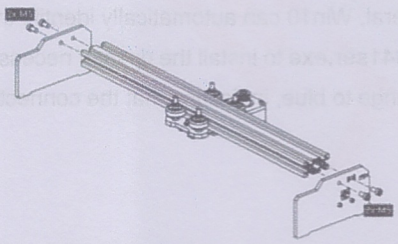


Welcome to use VG-L7 laser engraving machine. You can follow the steps below to get started. You can also scan the right QR code to watch videos and browse related content to understand the installation and basic use of the VG-L7 engraving machine.

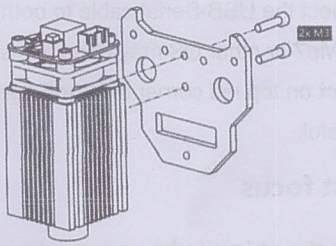
Scan for Videos and more guides

VG-L7

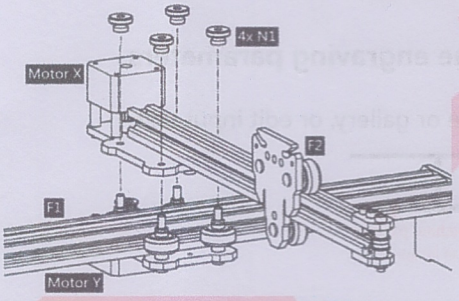
1. Assemble the machine



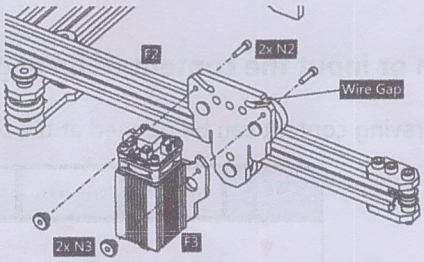
a. Assemble the two support legs to the lower parts.



b. Assemble the laser and backplane.



c. Assemble upper and lower parts. Plug in x-axis motor plug



d. Assemble laser part to the frame.

2. Download and run the software "VigoEngraverL7"

Open our website www.vigotec.cn

Find the control software **VigoEngraver** of VG-L7, then right-click to pop up the menu and click "Save as" to save it to your computer.

Green software doesn't need to be installed. Decompress the file you downloaded just now. The software running OS is Win7 Win8 and Win10.

Open the fold and double-click the **VigoEngraveL7.exe** file to run the engraving software. The OS may prompt that the software will use the network, please click **OK** (some computer systems do not prompt, if the software cannot use the network, please allow it manually in the firewall).

Note: The default firmware of engraving machine control main board is VIGOTEC special firmware. You can only use the **VigoEngraveL7** laser engraving machine software you just downloaded to control engraving.

There are two firmware files in the software directory, which are special firmware and general firmware. If you want to use other engraving machine control softwares, please update the firmware of engraving machine motherboard to general firmware. If you still want to use the **VigoEngraveL7** laser engraving machine software after you updated the general firmware, please update the firmware back to the special firmware.

The main board firmware update method is as follows: Click **Settings** > **Model Select**, Click **Upload Firmware** at the bottom left of the dialog box, Click **OK**. Then select one of the firmware file you want to update and click **Open**, and wait for the firmware to update automatically.

If you fail to update the firmware with **VigoEngraveL7**, you can also use **XLoader** to update the firmware of the control board. Please refer to step 8 for update method.

3. Connect Engraving software and laser engraving machine

After pressing the power key on the engraving machine panel, connect the engraving software and laser engraving machine through the following methods.

USB-Serial Connection.

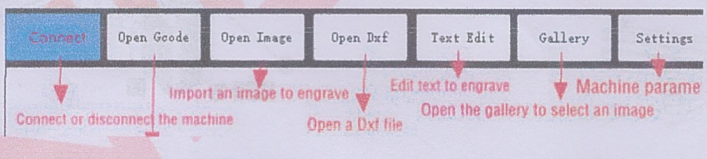
Connect the USB-Serial cable to both control board and computer. In general, Win10 can automatically identify the device While Win7 or other OS may need to install driver manually. Double click **ch341ser.exe** to install the driver if necessary. Click **Connect** on top left corner of **VigoEngraverL7**. The color of title bar will change to blue, indicating that the connection is successful.

4. Adjust focus

Place the object to be engraved on the lower part of the laser module, the recommended distance is 3-10cm. Click the weak light button in the upper right corner of the software to turn on the weak light of the laser, then turn forward and back the focusing ring of the laser module head until the light spot on the surface of the object to be engraved become smallest and clearest.

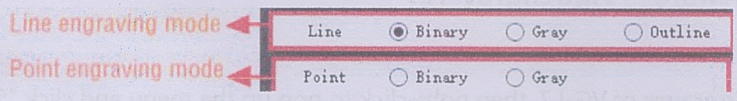
5. Open or input the content to be engraved and adjust the engraving parameters

Engraving content can be opened at the top of the software image or gallery, or edit input text.



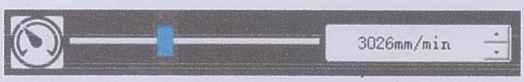
Set the start point of engraving and adjust the size of engraving.

Select one of the engraving modes. There are wire engraving mode and point engraving mode, which can respectively engrave black-and-white images, grayscale images and outlines (only line engraving is supported for outline, please use outline when cutting objects)



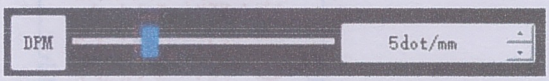
Set engraving parameters. There are four engraving parameters that can be set. These parameters will affect the engraving speed and engraving effect. It is necessary for you to understand the function of these parameters and adjust them according to different engraving materials and contents.

(1) Line engraving speed: Set the engraving speed (only valid for line engraving mode). Note that the set speed may not be reached when the image is too small or the dot distance is too dense.

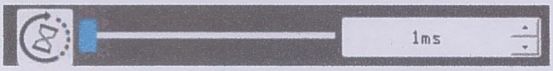


(2) Maximum laser power: Set the maximum laser power, which is the laser power when the maximum gray level (i.e. all black) in the dot matrix gray mode and line scan gray mode and the laser power in the Binary (black and white) engraving mode. The unit is the percentage of the installed laser full power .

(3) Engraving point distance: set the precision of dot matrix engraving or line scanning engraving, and the number of lines or points per millimeter.



(4) Time of dot engraving: Set the engraving time of each dot. The unit is millisecond. According to the power of the laser module, we generally recommend to set about 1ms to 5ms.

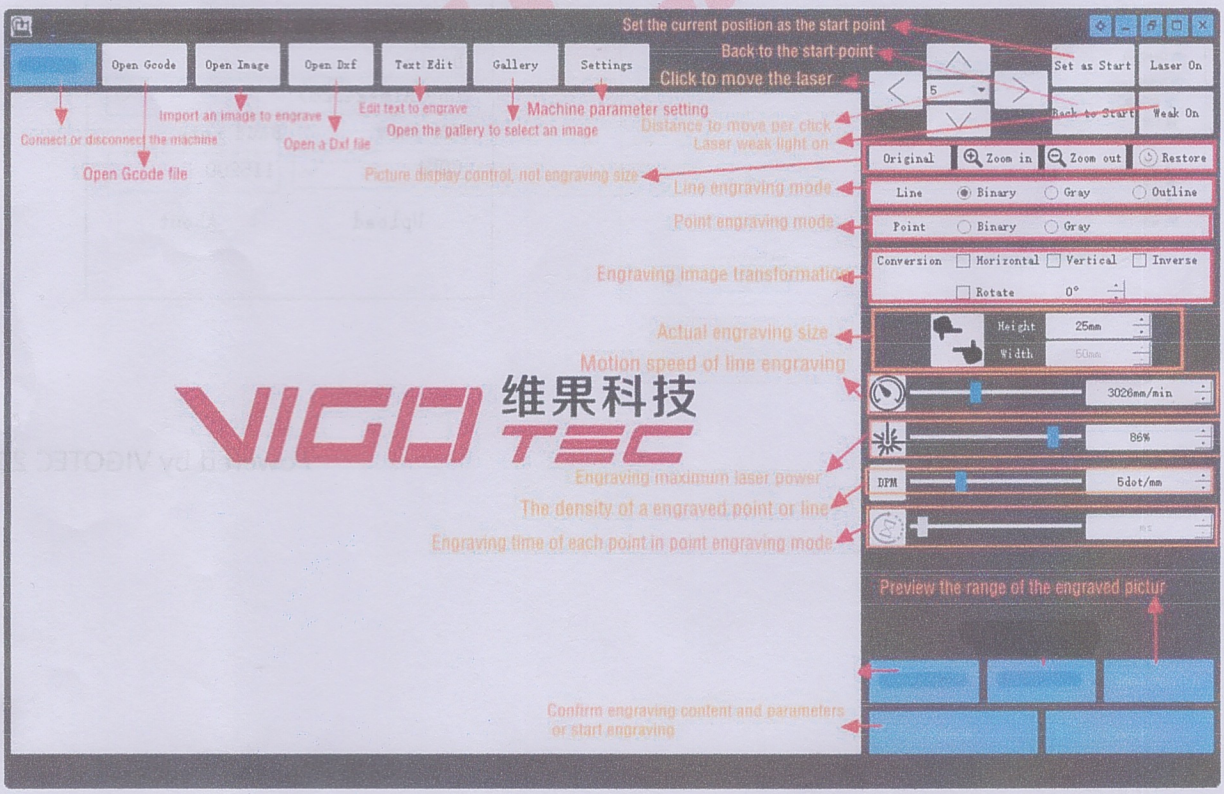


6. Preview the engraving range and start engraving

Click **Range preview** to confirm the position and range of engraving. Click **Start** and wait for the engraving to be completed.

7. Introduction of software interface function

To learn more about the hardware and software features of VG-L7, Please scan the QR code of hardware manual and software manual at the end of the paper.



Scan to browse software manual

L7 software manual

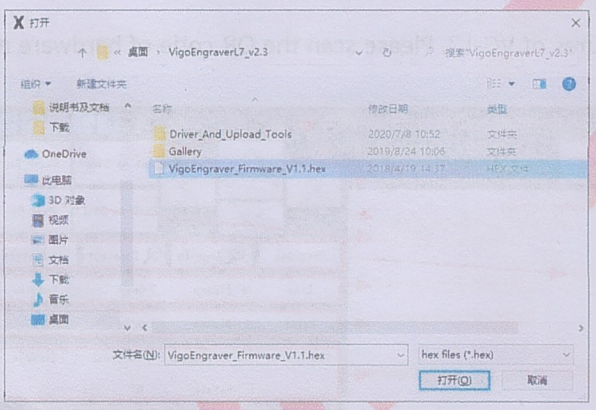
Scan to browse hardware manual

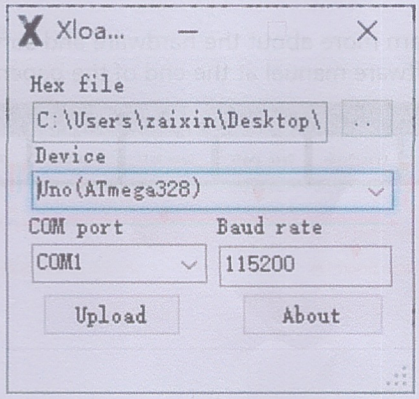
L7 hardware manual

8. Trouble and Solution

If the engraving half stops and the software can't control the movement of the machine, we suggest that you use **XLoader** to update the firmware to recover. The method is as follows:

Turn off the power switch of VG-L7, Close the engraving control software, then Run the **XLoader.exe** file under **Driver_And_Upload_Tools\XLoader** directory. Select firmware file ******.hex** under the software directory, select Device **Uno(ATmega328)** , select COM port, baud rate **115200**, click **upload**, and wait for **XLoader** to show upload successfully. If prompt fails, please try again.





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