

Data sheet

Wattsan FL ST/TT/LT/HH Laser Marker



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Note!

The equipment you purchased directly may differ from the equipment shown in the pictures.

Safety measures

1. Read the instructions carefully before starting operation. Untrained personnel should not be allowed to work with this equipment.
2. The equipment complies with safety class IV LASER. The use of this equipment may lead to the following consequences:
 - ignition of nearby materials;
 - various working materials can become sources of dangerous gases during the operation of laser equipment;
 - laser beams can cause direct harm to humans.
3. The location of the equipment must be equipped with fire extinguishing equipment. It is prohibited to store combustible and explosive substances near the equipment.
4. The user must make sure that the material being processed is suitable for laser treatment in order to avoid risks to the life and operation of the equipment.
5. Assembly and start-up of equipment should not be carried out by unqualified specialists.
6. The operator is prohibited from leaving the equipment unattended during its operation. The equipment must be turned off at the end of operation.
7. Before starting, ensure the protective grounding of the equipment housing.
8. The use of highly reflective materials is prohibited in order to avoid the reflection of the laser beam on a person.
9. The equipment must be located in a dry, unpolluted place. The indoor temperature should be 10-40 ° C. Humidity should be within 5-95% (provided there is no condensation).
10. The equipment operates from a 220 V AC power supply with a frequency of 50Hz. It is forbidden to use the equipment without a voltage stabilizer.

Attention!

The seller is not responsible for improper use of the equipment and failure by the user to take precautions.

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Table of contents

Section 1. Technical Data	4
Section 2. General view	5
Section 3. Focal length adjustment.....	7
Section 4. Installing software on a PC	7
4.1. Driver installation	7
4.2. Launching the program	10
Section 5. Safety precautions when working with a laser marker	10
5.1. General safety measures.....	10
5.2. Safety requirements before starting work.....	11
5.3. Safety requirements during operation.....	11
5.4. Safety requirements at the end of work	11

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Section 1. Technical Data

Characteristics	FL ST	FL TT	FL LT	FL HH
Working field, mm	150 * 150 / 200 * 200 / 300 * 300			
Laser power, W	20 / 30 / 50 / 100			
Type of emitter.	Ytterbium MaxPhotonics / Raycus / IPG			
Wavelength	1064 nm			
Table type	Floor-standing	Desktop		
Lifting table	Screw-type manual			
Removable laser head	No	No	No	Yes
Depth of lowering of the working table, mm	400			
Marking speed, mm/s	0...7000			
Line width, mm	0.012			
Software	EzCad			
Supported formats	PLT, DXF, BMP, JPG, PNG, etc.			
Supported OS	Windows XP/7/8/10 (32/64)			
Connection interface	USB			
Laser cooling method	Air-cooled			
Power supply	220 50Hz			
Power consumption, kW	> 1.5 kW			

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Section 2. General view

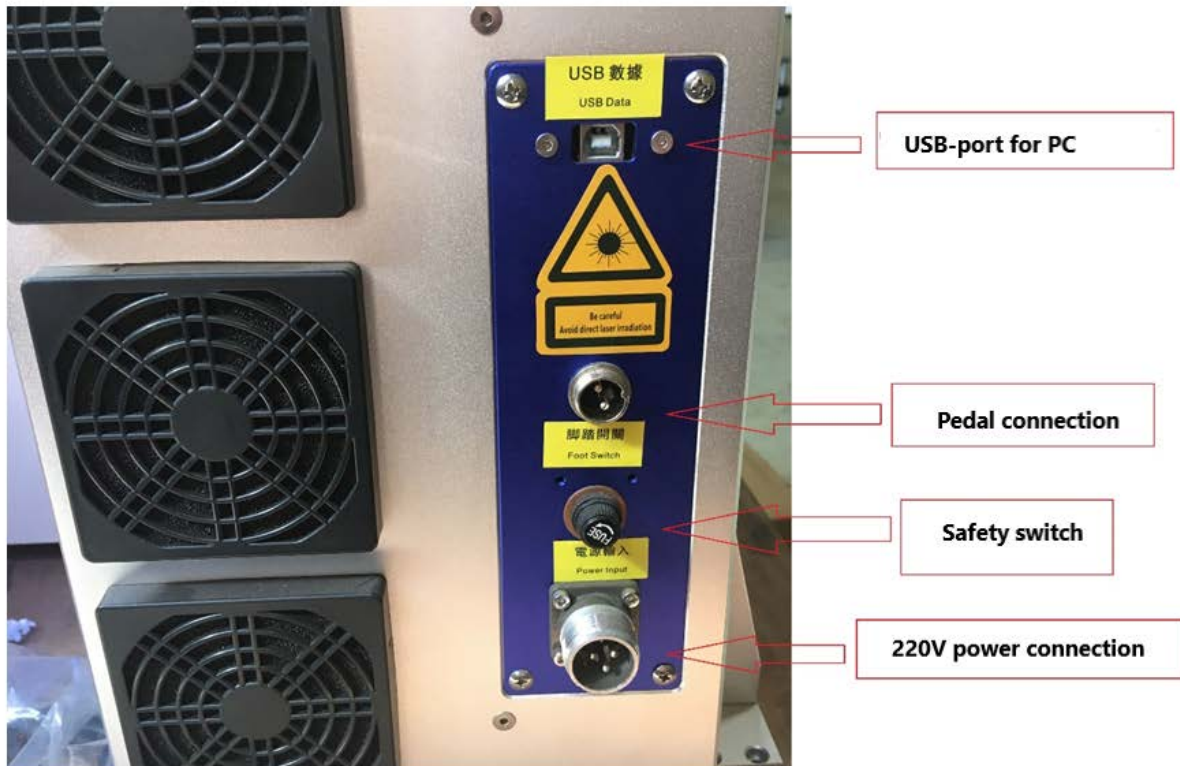


1. Head lift handle
2. Stand
3. Galvanometer
4. Lens
5. Controller power button
6. Emitter power button
7. General power button

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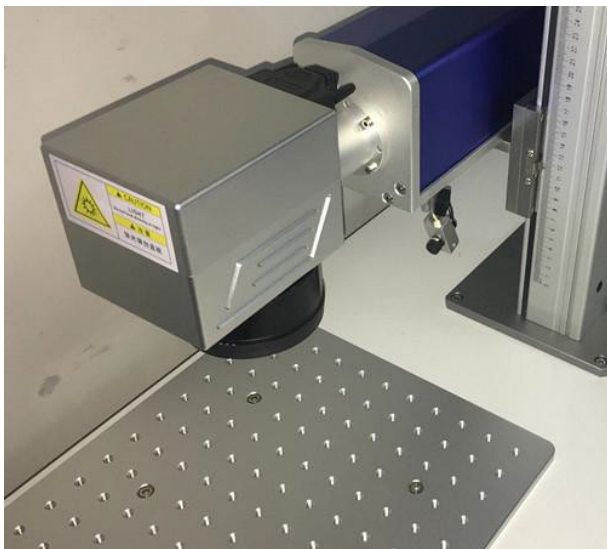
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Connection:

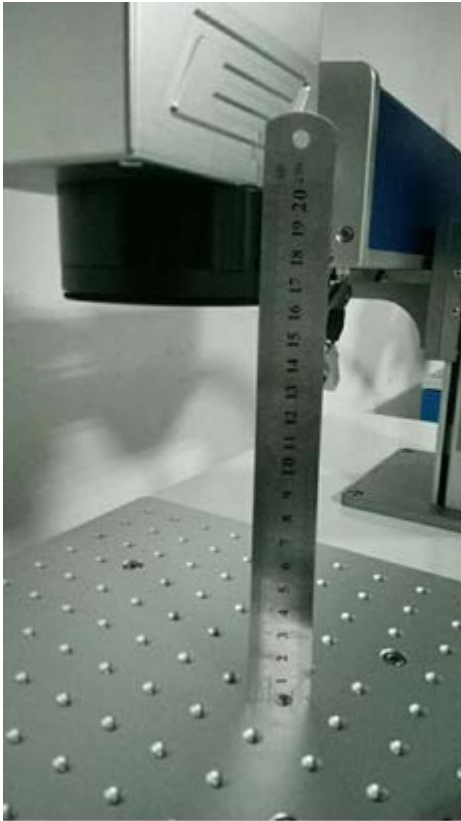
1. Connect the 220V power cable and USB cable to the machine
2. Press all the buttons on the control panel of the machine and turn the key to the "On" position.
3. Adjust the focal length.



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Section 3. Focal length adjustment

Put the material under the focusing lens. Start marking. Adjust the position of the laser head. When the sparks from the material in contact with the laser beam are greatest, it will mean that you have found the focal length.

Fix the material at the focal length. Disable marking mode. 2 laser pointers will beam on the material: the first laser point comes out of the focusing lens, the second – from the laser pointer mounted on the laser head of the marker. It is necessary to unscrew the mounting screws of the laser pointer and adjust the pointer so that it coincides with the laser point coming out of the focusing lens. After that, fix the mounting screws of the laser pointer.

In the future, the search for the focal length will be reduced to the fact that you will need to raise the laser head until the 2 laser points come together. This will mean that you have found the focal length.

Section 4. Installing software on a PC

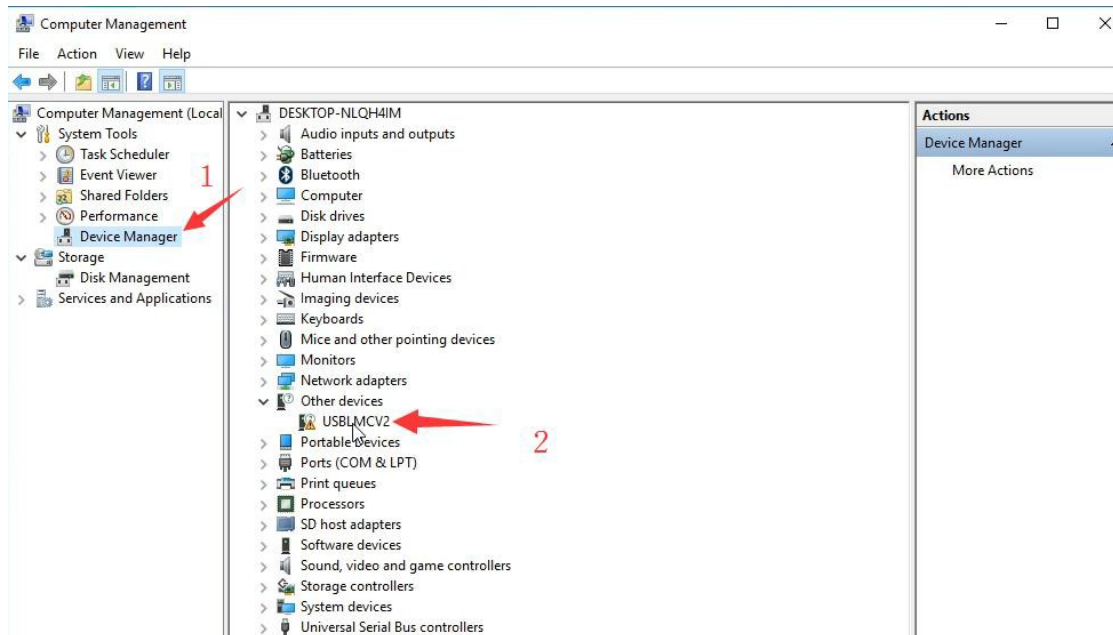
4.1. Driver installation

1. Copy the Ezcad folder to your hard drive.
2. Go to the Windows Device Manager and find USBLMCV2 in “Unknown devices” (Other devices):

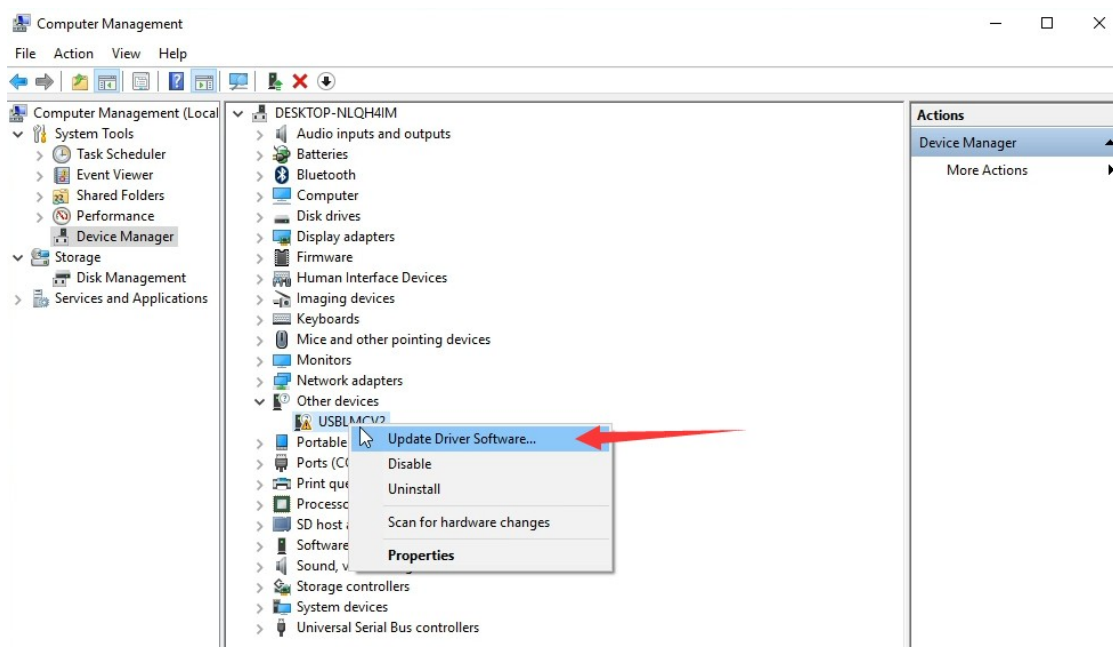
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3. Right-click on it and select “Update driver software”:

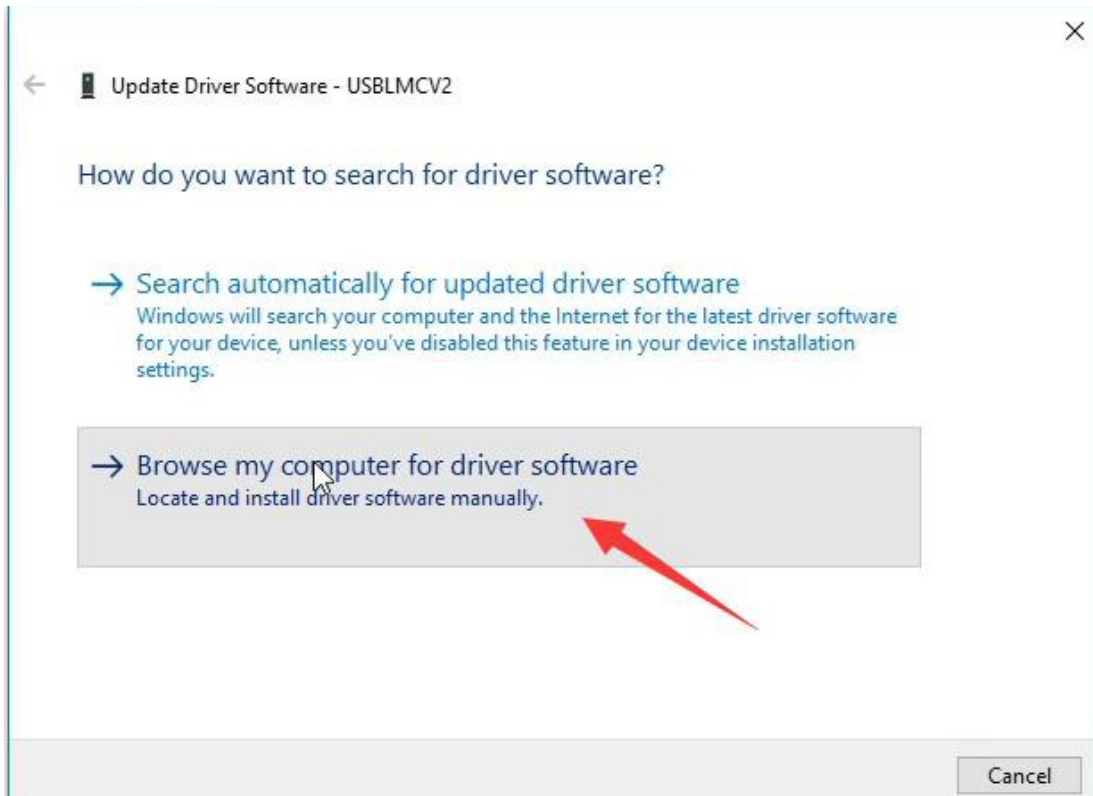


4. Select “Browse my computer for driver software”:

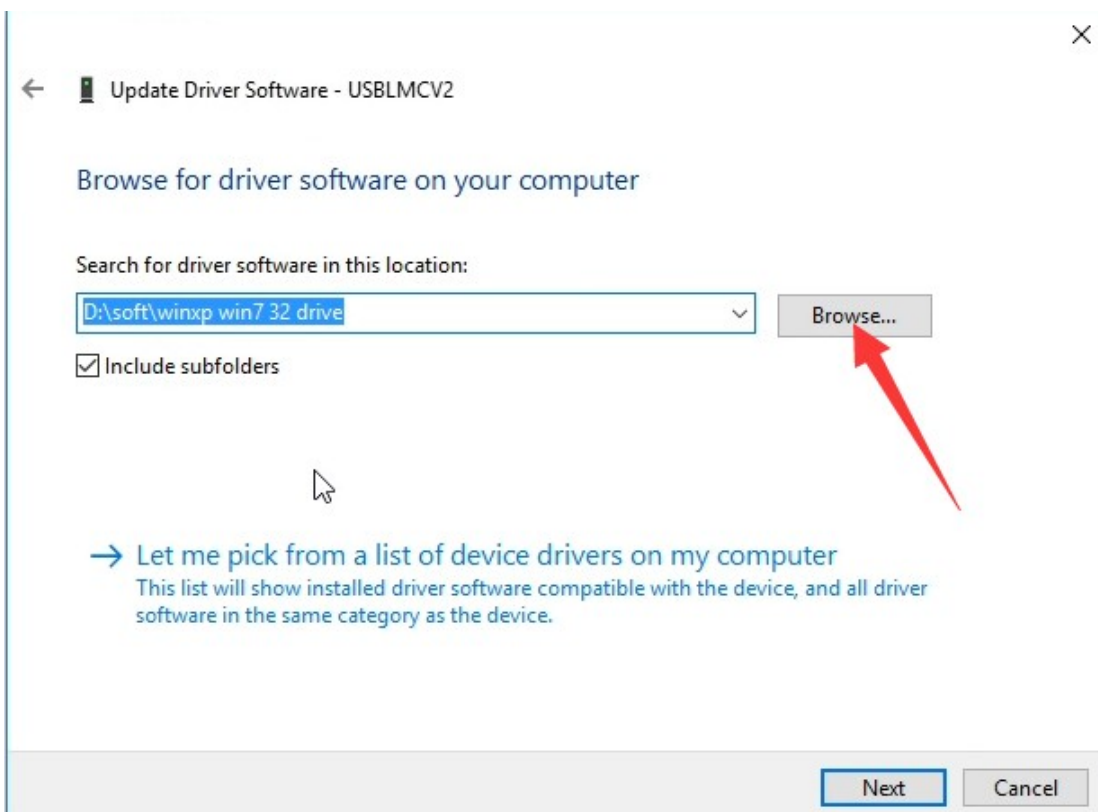
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5. Specify the path to the folder with Ezcad.2.12.2:



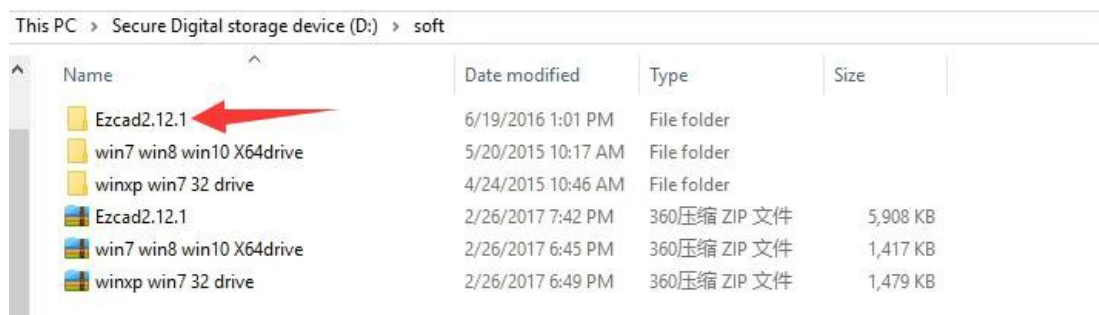
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4.2. Launching the program

Open the Ezcad folder:



Run EzCad2.exe .

Section 5. Safety precautions when working with a laser marker

In order to ensure safe working conditions for personnel, maximum permissible levels of laser radiation have been established, i.e. levels of laser radiation that, when exposed to a person on a daily basis, do not cause deviations in the state of health detected by modern methods of medical research during work or in the long term. There are formulas for calculating the maximum permissible levels of laser radiation, taking into account additional factors. Mastering the calculations of the maximum permissible levels, if necessary, it is advisable to perform laboratory and practical work.

Taking of certain laser safety measures, first of all, depends on the class of lasers. The hazard class of the laser is set by the manufacturer.

It is necessary to place the equipment freely enough. For lasers of classes 2, 3 and 4, it is necessary to leave a free space 1.5 meters wide on the front side of the consoles and control panels with a single-row arrangement of lasers and 2.0 meters with a double-row arrangement.

In cases where laser safety is not ensured by collective means of protection, individual means of protection - glasses and masks (the latter - when working with Class 4 lasers) should be used. Depending on the wavelength of the laser radiation, orange, blue-green or colorless glasses are used in anti-laser glasses.

Persons at least 18 years old who have passed a medical examination and have no medical contraindications are allowed to service lasers.

5.1. General safety measures

5.1.1. Persons who have special education or have been trained to work with the equipment, have been instructed in safety, fire safety, internship at the workplace, and knowledge testing of labor protection requirements are allowed to work independently on laser equipment.

5.1.2. Do not work without eye protection with reflective metals. Avoid working with materials that are sensitive to high temperature and emit toxic substances (for example, PVC, Teflon, ABS resins, polychloroprene).

5.1.3. Do not store flammable substances (alcohol-containing, gasoline) near the equipment.

5.1.4. Ensure the presence of a CO2 fire extinguisher. Do not use powder fire extinguishers, because they can damage the laser parts.

5.1.5. Dangerous factors for working on the equipment can be:

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- direct laser beam;
- reflected laser beam;
- an invisible laser beam produced by a laser tube;
- conductive wires with damaged insulation.

5.1.6. The employee who witnessed the incident must immediately inform his immediate supervisor about any accident that occurred at work, a situation that poses a threat to human life and health.

5.1.7. In case of violation of the requirements of this instruction, the employee is brought to disciplinary, and in appropriate cases – to material and criminal liability in accordance with the procedure established by the legislation of the Russian Federation.

5.2. Safety requirements before starting work

5.2.1. Ventilate the room.

5.2.2. Make sure that there are no flammable substances near the equipment.

5.2.3. Make sure that the workplace is ready to start work – the working surface of the installation is cleaned of dirt and foreign objects.

5.2.4. Make sure that the machine is ready for launch – the side panels and the rear panel of the machine must be fixed to the housing, the starting equipment and the laser operation indicator are in good condition.

5.2.5. Make sure that the ventilation system of the equipment is working properly and there are no obstacles to the air outlet.

5.2.6. Wear safety glasses.

5.3. Safety requirements during operation

5.3.1. Avoid getting your hands and other body parts into the work area of the laser to avoid burns.

5.3.2. Work only with protective glasses, as a laser beam can destroy the cornea of the eye.

5.3.3. Do not look at the laser beam when working.

5.3.4. Work with reflective materials should be carried out only with the machine lid closed, since the reflected beam is no less dangerous than the main one.

5.3.5. Do not open the back cover of the machine if the equipment is connected to the mains. High voltage used to power the laser source may cause electric shock.

5.3.6. Ensure ventilation of the room during operation.

5.3.7. Do not leave the operating equipment unattended.

5.3.8. If a malfunction is detected, disconnect the equipment and inform the specialists. Do not allow self-repair of equipment.

5.3.9. Turn off the power supply of the equipment during a thunderstorm or if the equipment is not used for a long time.

5.4. Safety requirements at the end of work

5.4.1. Disconnect the equipment from the power supply.

5.4.2. Clean the work surface and the guide from material particles.

5.4.3. Ventilate the room.

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