



ACCTEK Laser Cleaning Machine

Operating Manual

Before installing and using the equipment:

Please read it carefully

Thank you for choosing our company's hand-held laser washer products!



Read this description before using a laser cleaning machine!

[Risk] Failure to follow the right operation may timely lead to serious personal injury or even life-threatening

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1. Overview

1.1 Introduction of the laser cleaning machine:

Laser cleaning series products feature by the use of optical fiber to transmit laser, so the laser to reach the surface of the cleaned object, so that it has excellent cleaning performance and high ergonomic characteristics, and can be very convenient and quickly installed on the machine hand and other automatic systems. Moreover, due to the unique fiber transmission technology, the energy distribution of the similar output laser beam is like a flat curve, and all the energy in the laser beam is fully utilized in the best way, so as to obtain a good cleaning effect and improve the cleaning efficiency.

1.2 Working principle of handheld laser cleaning machine:

The process of high power pulse laser cleaning is dependent on the properties of optical pulses generated by optical fiber lasers, based on the photophysical reaction formed by the interaction between high intensity beams, short pulse lasers and pollution layers. The physical principles can be summarized as follows:

1.2.1 The beam emitted by the ray is absorbed by the contaminated layer on the treatment surface;

1.2.2 The energy is absorbed to form a sharply expanding plasma, producing a shock wave;

1.2.3 Strike waves turn the contaminant into debris and be removed;

1.2.4 The pulse width must be short enough to avoid the accumulation of heat causing damage to the treated surface;

1.2.5 When there are oxides on the metal surface, the plasma is produced on the metal

surface.

1.3 Main advantages of the laser cleaning machine:

1.3.1 Ray cleaning is a "green" cleaning method, do not need to use any chemical and cleaning liquid, the waste is basically solid powder, small volume, easy to store, recyclable, can easily solve the environmental pollution problem brought by chemical cleaning;

1.3.2 Unified cleaning method is often contact cleaning, which has mechanical force on the cleaning object surface, damage the surface of the object or cleaned medium attached to the cleaned surface, cannot be removed, produce secondary pollution, no abrasive and non-contact of laser cleaning makes these problems solve;

1.3.3 Ray can be transmitted through optical fiber, cooperate with the machine hand and robot, convenient to achieve long-distance operation, can clean the parts that are not easy to reach the traditional methods, which can be used in some dangerous places to ensure the safety of personnel;

1.3.4 Ray cleaning removes various types of contaminants on the surfaces of various materials to cleanliness not achieved by conventional cleaning. The contaminants of the material surface can also be selectively cleaned without damaging the material surface.

1.4 Benefits of a laser cleaning machine:

1.4.1 Ray cleaning operation is simple, plug-in can be use, do not need chemical reagents to improve safety;

1.4.2 Ray cleaning process there will be no consumables, there is no waste production, reduce the number of waste, will not cause pollution to the environment;

2. Equipment safety

Warning

Failure to operate, adjust or control the instructions in this manual may result in serious personal injury, even life-threatening. Therefore, the equipment must be operated and maintained with full familiarity with all safety requirements and operating steps.

2.1 General safety instructions:

Fiber optic laser washer, specially designed to reduce incidents of exposure to hazardous radiation.

To ensure safe operation and optimal performance of the product, follow the following tips and warnings. Warning: Be sure to ensure a secure wire connection when using the laser device. NOTE: Before energizing the laser device, determine that 220V or 380V AC is entered, and that the incorrect voltage input may cause damage to the equipment.

2.2 Laser Type:

The laser used in this equipment belongs to Class 4 lasers. If improper use will cause harm to the human body, users should take protection measures according to the requirements of this manual.

The laser used in the device has an invisible wavelength of 1064nm, avoiding direct exposure of the eyes or skin to laser radiation.

Do not attempt to open the device, any maintenance and services can only be done by technicians authorized by the Company.

2.3 Laser hazards:

The laser output by the laser is invisible infrared and may cause third degree burns even deviate from the focal distance. The beam output by the device contains visible and invisible radiation. Hious to human eyes. Do not look directly at the laser beam.

2.4 Explosion and fire attack:

Fiber optic laser washer is not used in flammable and explosive situations. Do not use them in situations with volatile solvents such as alcohol, steam, oil, etc.

2.5 Electrical safety:

This equipment should not be disassembled at will, with high pressure, easy to cause harm to the human body. In case of a failure, only the professional and technical personnel can turn on the machine.

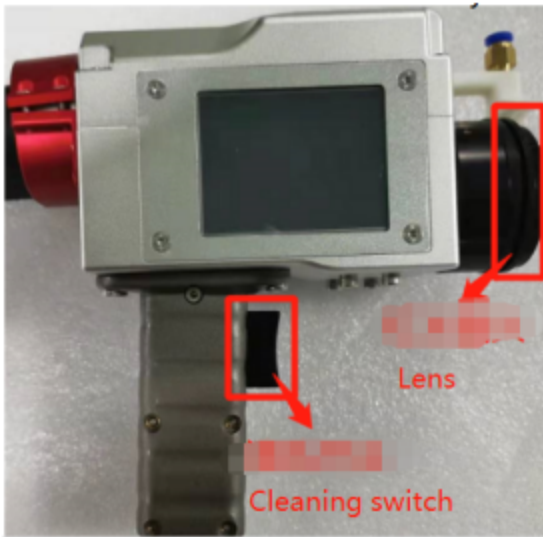
2.6 Workroom marking and labeling

The installation and operation room of optical fiber laser washer shall be marked with "beware of laser" in a prominent position.

3. Equipment switch-off machine

3.1 Inspection before the startup:

Before using the cleaning machine, 1, check whether the power supply is AC 220V or 380V;2,, remove the cleaning head red lens cover, check whether the lens has dust particles, wipe with the lens cleaning wipes (as shown in the figure below); 3. check whether the cleaning head switch is sensitive and locked by the previous user (as shown in the figure below);



3.2 Start-on

Step 1: Connect to the power supply (as shown in the figure below) to determine if the power supply is AC 220V or 380V;



Step 2: Turn on the total power supply (as shown below)



Step 3: Open the cabinet door and check whether the water level is in the green area (as shown in the figure below). If the water level does not reach the green area, please add pure

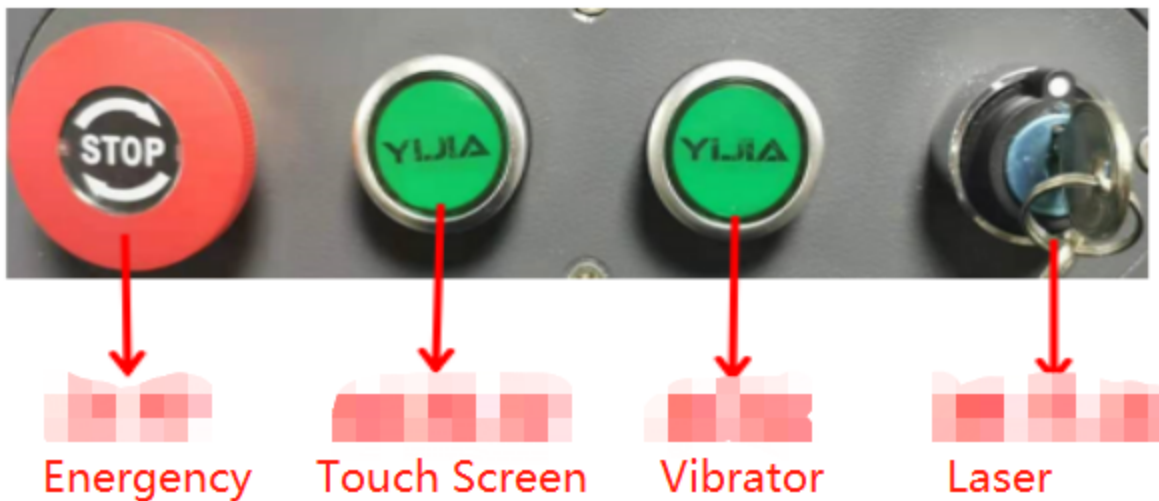
water from the water inlet (as shown in the figure below).



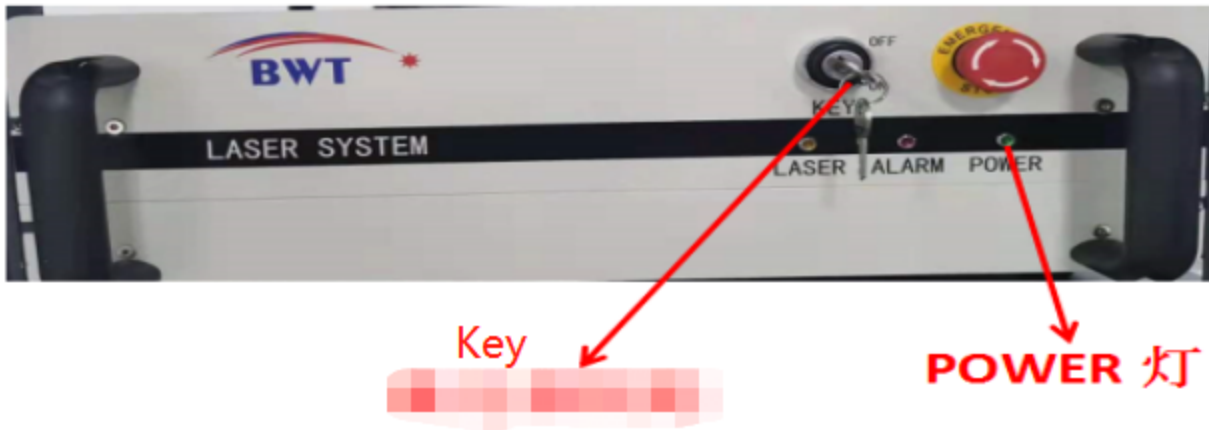
Step 4: Turn on the water cooler switch, confirm that the operation indicator light and the water pump indicator light are on, let the water cooler cycle for 5-10 minutes, check whether the water pipe leaks, confirm that if the water temperature reaches more than 20 ° C and take the next step (as shown in the figure below).



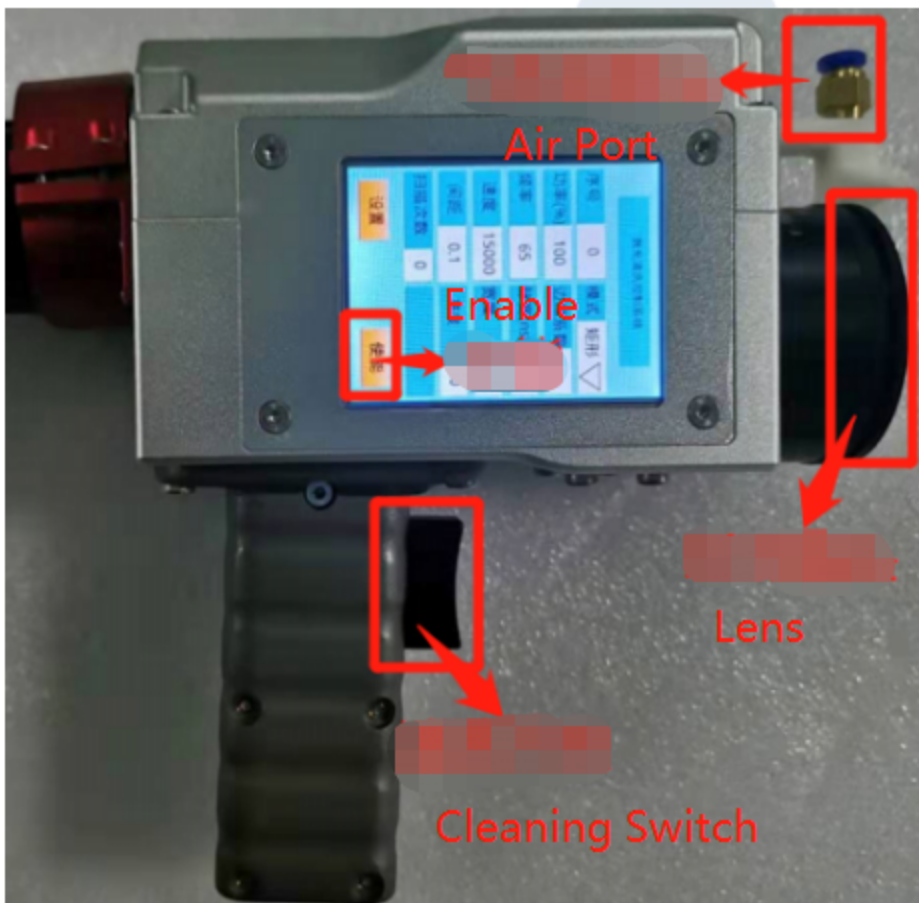
Step 5: Turn on emergency stop, on touch screen, on vibrator, and on the laser (as shown in the figure below)



Step 6: Adjust the laser key gear to the ON position and the POWER lights on (as shown in the figure below). If other lights indicate that the laser fails, do not proceed to the next step.

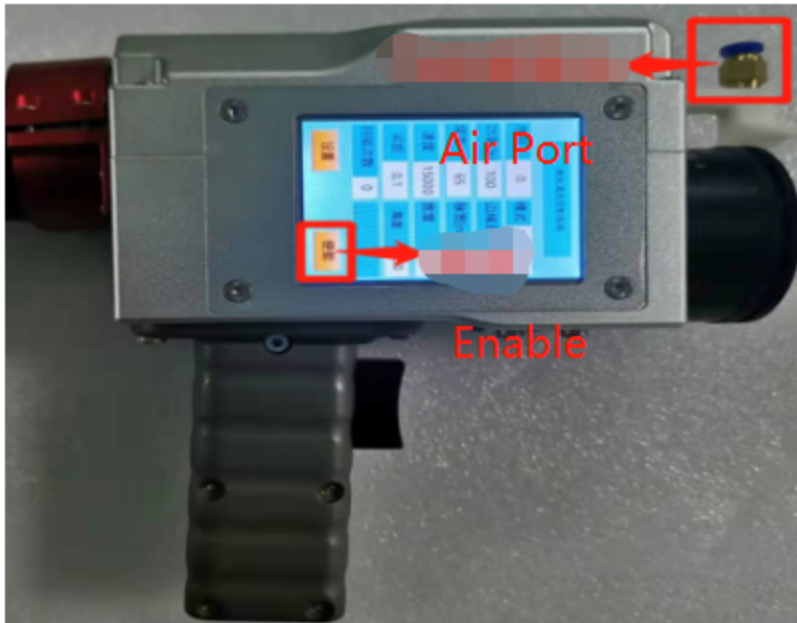


Step 7: Holding the cleaning head, the position of the red cleaning head lens alignment must be an open place, the cleaning head is not opposite people, remove the lens cover, the cleaning head alignment to the object to clean to confirm whether there is red light, link the protection gas (compressed air), confirm the good to have red light enabling switch, press the cleaning head switch (as shown in the following figure below)



3.3 Shutdown

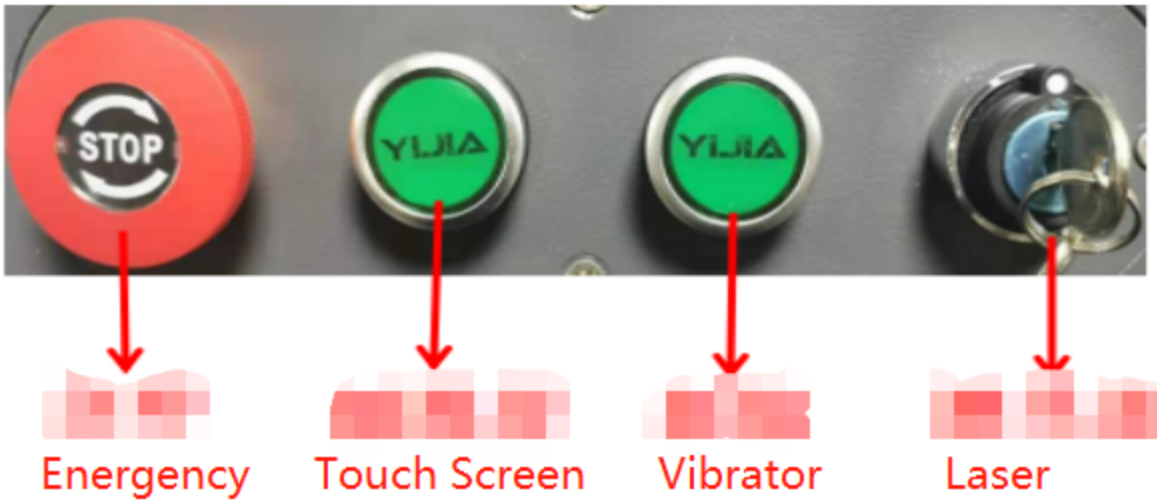
Step 1: Pull out the protective gas (compressed air) and turn off the enabling switch (as shown in the figure below)



Step 2: Adjust the key switch on the laser to the OFF gear (as shown below)



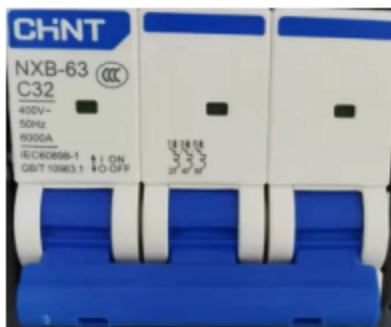
Step 3: Turn off the laser, turn off the vibrator, turn off the touch screen, and turn off the emergency stop (as shown in the figure below)



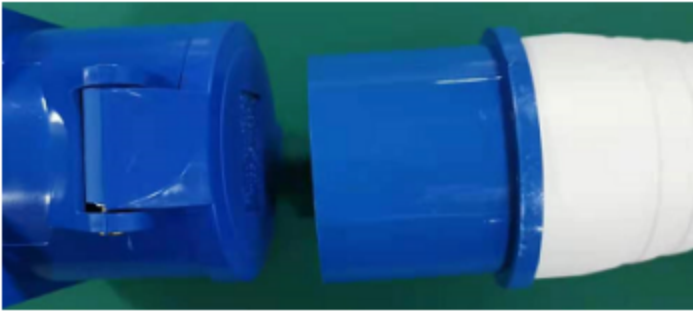
Step 4: Wait 3-5 minutes, let the water cooler cycle for a while, when the water temperature drops below 25 °C, turn off the water cooler switch (as shown in the figure below).



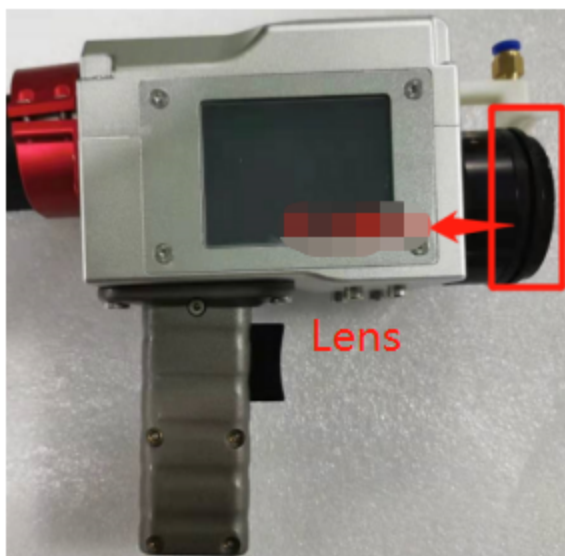
Step 5: Turn off the total power supply (as shown below)



Step 6: Unplug the power plug (as shown below)



Step 7: After all the power supply is turned off, finally confirm whether the red light lens of the cleaning head has dust particles. You can wipe the lens with the lens cleaning wipes and determine that the lens cover is covered if there is no dust particles.



If an abnormal power outage occurs during operation, turn off the washer in the following order:

Turn off laser gear to OFF position → off laser key power → off mirror power → off touch screen power → off emergency stop → off total power → unplug the power plug

4. Maintenance and Common Faults

4.1 Maintenance

4.1.1 When the machine is not working, the cleaning machine power is cut off.

4.1.2 When is not working, cover the field red light lens to prevent dust from polluting the

optical lens.

4.1.3 Native operating circuit is high voltage, non-professional personnel, do not overhaul on startup, to avoid electric shock.

4.1.4 Native any fault should be cut off immediately.

4.1.5 Do not move the marking machine during the cleaning machine to avoid damage to the machine.

4.1.6 Machine abnormal during use, please contact the dealer or manufacturer, do not bring abnormal work to avoid damage to equipment.

4.1.7 When uses the equipment in summer, please keep the indoor temperature at around 25~27 degrees to avoid device condensation and burning the device.

4.1.8 Shall is shock proof, dustproof and damp proof.

4.1.9 Native operating voltage must be stable, and use the voltage stabilizer if necessary.

4.2.0 Equipment is used for a long time, the dust in the air will be adsorbed on the surface of the red lens, the light person will reduce the power of the laser, affect the cleaning effect, the heavy person causes the optical lens to absorb too heat and heat to crack. When the cleaning effect is poor, carefully check whether the red light lens surface is contaminated. If the surface of the lens is polluted, use the lens to clean the wipes to wipe the surface, pay attention not to break or fall, at the same time, do not touch the lens with a hand or other items on the mirror. The method of cleaning is to mix anhydrous ethanol (analytic pure) with ether (analytic pure), in a ratio of 3:1, invade the mixture with a long fiber cotton swab or lens paper, gently scrub the lower surface of the focus mirror, each wipe, must replace the cotton swab or lens paper.

4.2 Common faults and troubleshooting methods:

This machine may fail due to use or otherwise. In order to judge and troubleshoot some simple faults in time, we list the fault-prone phenomena and solutions for reference only.



No	Faault	Cause of the fault	The Solution
1	No power supply input	No market electricity	
		Power cord is not	Connect the power cord

		properly connected	
2	The vibration mirror indicator light is not on	No power supply input	Repeat the serial number 1
		The vibrator indicator lamp is damaged	Replace the vibration mirror switch
3	Laser indicator light is not on	The laser indicator lamp is damaged	Replace the laser switch
4	The laser indicator is on, no laser output, and no error prompt in the software	Field mirror protection cover is not removed	Remove the lens protection cover
		Laser power setting is too small	Adjust the high power percentage
		The piece surface is not in the focal plane	Adjust the focal length to keep the workpiece in the focal plane
		Laser damage	Seek the technical support
5	The software prompts a laser system failure or a laser overheating	The laser power supply is not turned on	Power on the laser
		Laser signal wire is damaged	Replace the laser signal line
		Laser damage	Seek the technical support

5. Warranty is Provided

5.1 Warranty regulations:

Complete warranty for 2 years (damage caused by irresistible factors not covered by human

factors or environment)

5.1.1 During the warranty period, the Company provides free maintenance service.

5.1.2 Products after the warranty period, the company provides the maintenance services to charge a certain maintenance costs.

5.1.3 Does not dismantle the seal damage caused by unauthorized products, not used according to the correct method, man-made fault, or the equipment number plate is missing or unclear, the company does not undertake free maintenance.

5.1.4 The equipment number behind is very important and only after the equipment number is confirmed.

5.1.5 Commercial reserves the right to change the product specifications without prior notice.

5.1.6 Dealers shall only bear due legal obligations to the products sold to the user, shall not bear other losses caused by the user after the product failure, and shall not be liable for indirect damages. It shall not be liable for any loss of commercial profits, business interruption or any other money arising from the use or abnormal use of the product.

6. Parts list

The equipment is equipped with accessories when it leaves the factory:

1 Protective glasses

5 protective lenses

1 Laser and computer cable

5 Lens wipe paper

Any questions please feel free to contact any one of the following technicians ,For a quick answer, you'd better tell us the series number and a photo of your machine.

THANKS FOR READING!

A circular watermark logo for AccTek, featuring the company name in a stylized font.

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