



CKJG-200W-05 laser cleaning machine

User's Manual

USER MANUAL

Shenzhen Super Fast Laser Technology Co. LTD

Copyright Description

The copyright of this user manual belongs to Shenzhen Super fast Laser Technology Co., LTD. (hereinafter referred to as "Super fast Laser"). Super fast Laser retains the ownership. Except as permitted by copyright law, no third party entity or individual shall reproduce, adapt, disseminate or publish this document on a searchable system for any purpose by any means and medium without the permission of Super Fast Laser, and the copyrighted copy shall retain all notices of the corresponding copyright and original version.

Super fast Laser believes that the information provided in this manual is correct and reliable, but does not make any warranty, representation, expression or implication that this document can be used for reference in other applications, and does not assume any liability for patent infringement or infringement of any third party rights arising from the use of this document. Super fast Laser is not liable for any indirect or direct damage to the equipment that may be caused by the use of this document.

Super fast Laser and the Super fast Laser logo appearing in this document have been registered as trademarks by Shenzhen Super fast Laser Technology Co., LTD. This trademark does not violate any provisions of trademark law. Super fast Laser does not grant any rights to any patents or intellectual property rights appearing in the information contained in this document.

Any information in this document is subject to change and adjustment without notice.

Quotes

Welcome to use the handheld Laser cleaning Machine developed and produced by Shenzhen Super Fast Laser Technology Co., LTD. In order to facilitate better use and maintenance of your handheld Laser cleaning Machine equipment, we organized personnel to compile this document. Due to the limited level of the editor itself, the document inevitably has batch leakage, if you have any comments and suggestions in the process of use, please feel free to give us advice, in order to help us constantly revise and improve. Thank you again for your use of super fast laser products!

Before using this product, please read the "User Manual for Handheld Laser cleaning Machine" provided by Super fast Laser carefully to familiarize yourself with the operation and maintenance of this equipment. We strongly recommend that operators read Chapter 2 of this manual, Safety Information, before operating the equipment.

This manual will be included as an accompanying attachment to provide our current or potential customers with important operational, safety and other information. [Please be sure to read the manual carefully to avoid unnecessary risks.](#)

Company Profile

Shenzhen Super fast Laser Technology Co., LTD. (hereinafter referred to as Super fast), headquartered in Shenzhen, has its own research and development base and advanced production equipment. Super fast focuses on silicon rubber mold, foam mold, injection mold and other laser washing application fields, with the pursuit of product specialization as

the primary goal, to provide customers with laser washing machine, laser cleaning line and a full set of intelligent laser cleaning supporting application solutions of professional high-end services, according to customer needs, research and development of professional automatic cleaning solutions, To achieve a more intelligent and efficient cleaning purpose.

Super fast in the field of laser cleaning machine is located in the leading position in China, its products include cabinet laser washing machine, pull rod laser cleaning machine, back and shoulder laser cleaning machine, automatic matching laser cleaning machine and other multi-purpose model laser cleaning machine. Perfect product marketing system and after-sales service system, so that the products are more competitive, at any time within 24 hours to respond, to provide you with the after-sales service of the products.

"Because of professional, so excellent", super fast laser technology will be first-class technology, stable quality, reasonable price, high quality service to impress you, become your most loyal partner!



Shenzhen Super Fast Laser Technology Co., LTD

Address: Floor 3, Building 3 & Workshop 2, Floor 1, Shangnan East Road, No.128, Huangpu
Community, Xinqiao Street, Bao 'an District, Shenzhen

Official website: www.ckjiguang.com

Hotline: 400-168-9906

Email: szckjg@163.com

Table of Contents

Chapter 1 Product Introduction ----- 1

1-Introduction to Laser mold washing ----- 1

2-Principle of Laser die washing ----- 2

3-Advantages of laser mold washing ----- 2-3

Chapter 2 Safety Information ----- 3

1-Use Safety ----- 3-4

2-Safety Regulations ----- 4-5

3- Laser Protection ----- 5-6

4- Quote Standard ----- 6-7

5- General Safety Instructions----- 7-11

Chapter 3 Specification Parameters-----11-12

Chapter 4 Structure layout----- 13

Chapter 5 Operation process----- 14

1- Power requirements----- 14

2- Power on steps-----	14
3- Control screen main screen-----	15
4- Cleaning parameters screen-----	15
5- Cleaning parameter Settings-----	15-17
Chapter 6 Laser mold washing application case-----	17
Chapter 7 Service and maintenance-----	18
1- Maintenance Instructions-----	18
2- Service Statement -----	18-19
Chapter 8 Warranty Statement-----	19
1- General Clause-----	19
2- Warranty Limit-----	20

Chapter 1 Product introduction

1. Introduction of laser mold washing

Laser mold cleaning machine is a new generation of high-tech non-contact cleaning products developed by super fast laser to solve the problem of silicone rubber mold cleaning. Does not hurt the mold knife edge, electroplating and grain, no consumables, energy saving, environmental protection, no noise, can efficiently remove the mold surface oil, stains, vulcanizing agent residues, rubber high-temperature residues, corrosion, oxidation layer and other surface residual stains. It can meet the cleaning process of silicone rubber products mold, achieve higher cleaning effect and lower comprehensive cost. Mainly used in silicone rubber mold, foam mold, injection mold and other industries.

Two, laser washing principle

The process of pulsed laser cleaning depends on the characteristics of the light pulse generated by the laser, based on the photophysical reaction generated by the interaction between the high intensity beam, the short pulse laser and the polluted layer. The light source of laser cleaning belongs to the cold light source, the safety level is four, the beam will not cause injury and damage to the human body and the mold substrate after focusing for many times. Its physical principle can be summarized as follows:

- a) The beam emitted by the laser is absorbed by the contaminated layer on the surface to be treated;
- b) the absorption of large energy forms a rapidly expanding plasma which produces shock waves;
- c) The shock wave breaks contaminants into fragments and is removed;
- d) the light pulse width is short enough not to cause heat accumulation that destroys the surface being treated;
- e) Experiments show that plasma is produced on the metal surface when there are oxides on the surface.

3. Advantages of laser mold washing

Compared with traditional mold washing, laser mold washing has huge advantages:

- 1) Only electricity, without any other consumables, energy saving, save the cost of consumables;
- 2) No noise, no pollution, environmental protection, avoid environmental pollution troubles;

- 3) Laser non-contact cleaning, does not damage the mold substrate, knife edge, grain, prolong the life of the mold;
- 4) Non-destructive coating, product appearance and product quality is guaranteed;
- 5) Clean thoroughly and efficiently, improve production capacity and quality;
- 6) High degree of automatic cleaning, saving the salary of mold washing staff and management costs;
- 7) Not affected by temperature, cold mold, hot mold can be cleaned;
- 8) The cleaning method is flexible, can be hand-held cleaning, machine automatic cleaning;
- 9) no dead Angle, not limited by the shape, light irradiation can be cleaned;
- 10) No wear, long service life of equipment, up to 80,000-100,000 hours;
- 11) One-time input, lifetime benefit.

Chapter 2 Safety Information

1- Use safety

Laser mold washer - belongs to the fourth Class (Class IV) laser products!

This laser can emit up to 200W above 1064nm wavelength invisible laser!

Avoid eye or skin exposure to direct or scattered radiation from the optical output mirror!

Do not open the case without authorization, otherwise there will be no warranty. This product has no parts that can be repaired by the customer. All repairs must be performed by Super fast laser professionals; Or must be done under the guidance of an Super fast laser professional!

1. For your safety and the safety of others, do not point the cleaning head at yourself or others;

2, handheld laser cleaning machine must wear appropriate and certified 1064nm near infrared band laser protective glasses and safety gloves before use;



3. The cleaning operation of the handheld laser washing machine needs special person to operate; Non-operator please do not operate at will;

4. Wear a mask when cleaning high reverse materials;

5. The grounding break will cause the product shell to be live, which may lead to personal injury to the operator;

6, reliable grounding is a prerequisite for normal operation of the product, otherwise it may cause laser alarm, light, laser cleaning inhumane hidden faults;

7, do not work in high temperature and humidity environment, otherwise it may cause short circuit and high temperature and humidity alarm, affecting the normal life of the laser.

2- Safety regulations

As shown in the table below, all safety warning signs during the operation of a handheld laser cleaner include:

Safety marks	Meaning	Description
	Hazard Warnings	Potential harm to human body; It is necessary to follow certain procedures, otherwise it may cause harm to your body or others. Do not violate the warning labels when performing this operation to ensure the personal safety of the operator.
	Be aware	Potential hazards to the product; You need to follow certain procedures, or you may damage your equipment or components. Do not violate the requirements of the attention sign when operating to ensure the normal use of the equipment.
	Output	This logo represents laser radiation and we have affixed this logo to the laser output of the product.

Please note: © Ultra-fast handheld mold washer, wavelength 1064nm, not in the visible light range, but these beams may cause irreversible damage to the retina and cornea. It is recommended that you wear qualified and safe protective glasses at all times when operating the mold washer, and ensure that the gun head is not pointed directly at yourself or others when the laser is turned on.

3- Laser protection

1. Laser protection requirements

Laser safety glasses should be able to shield the whole wavelength range of laser emitted by the handheld laser cleaning machine as the standard for selection. When operating the equipment, please choose a reasonable safety glasses according to the laser wavelength emitted by the laser equipment and ensure that you always wear them. If the device is a laser-tunable or Raman product, it will emit laser beyond the normal output wavelength range of the device, and the corresponding safety protection should be taken

during protection.

2. Manufacturer of laser protection equipment

Ultrafine Laser recommends materials or equipment provided by the following laser safety equipment suppliers for you: LaserVision USA, Kentek Corporation, RochweLL Laser Industrie s, etc. This supplier information provided by Super fast Laser is only for the convenience of use by the user and does not accept responsibility for any problems caused by the use of the above suppliers' products.

4- Referencing standards

Emc emission:

EN 55011:5009 + A1:2010

CISPR 11:5009 + A1:2010

FCC Class A

Electromagnetic compatibility Anti-jamming:

EN 61000-3-2:5006+A1:5009+A2:5009

EN 61000-3-3:5008

EN 61326-1:5006

EN 61000-4-2:5009

EN 61000-4-3:5006+A1:5007+A2:2010

EN 61000-4-4:5004+A1:2010

EN 61000-4-5:5006

EN 61000-4-6:5009

EN 61000-4-11:204

Electromagnetic Compatibility Other: Class A digital instruments comply with Canadian ICES-5003

Power supply security:

EN 61010-1:5001

Laser Safety:

EN 60825-1:5007

CDRH 21 CFR 1040s 10

Functional safety:

EN ISO 13849-1:5008+ A1:5009 Cat, 3/PLd

Please note:

- © The performance of ultra-fast handheld laser cleaner meets the requirements of CE EMC certification and EMC requirements specified in the EMC Directive of European market.
- © According to the relevant national standards and requirements, the laser must be classified according to the output power and laser wavelength. According to the national standards, ultra-fast laser high power MFP series of laser products belong to Class 4 products.
- © According to the relevant European Union standards and requirements, this product belongs to Class 4 instruments (in accordance with EN 60825-1 Article 9).

5- General Safety Instructions

1. Specular reflection

Handheld laser cleaning machine outlet location may produce a secondary laser beam,

and is a plurality of angles to the outside radiation. This phenomenon caused by the divergence of the main beam of the handheld laser cleaning machine after the plane reflection is called specular reflection. Although the energy of the secondary laser beam is much less than that of the primary laser beam, the intensity can cause harm to, for example, human eyes, skin, or some material surfaces.

Warning © Since laser radiation light is not visible, you must exercise extra caution to avoid or reduce specular reflection.

2, accessories safety notice:

Handheld laser cleaning machine related optical accessories integrated photosensitive components may be damaged by laser exposure, such as: video camera, photomultiplier tube and photoelectric secondary tube. It is necessary to pay attention to the relevant device protection.

Super fast Laser Handheld Laser Cleaner output laser intensity is tuned to the extreme, enough to cut or clean metal, burn skin, clothing and paint, ignite volatile materials such as alcohol, gasoline, Etiti, etc. Therefore, during the operation and use of the handheld laser cleaner, please be sure to isolate flammable materials around the machine.

3. Optical operation instructions

Super fast laser strongly recommends that you read the following operation points before operating the handheld laser cleaning machine:

- (1) When starting up the power supply, do not directly look at the gun light hole of the handheld laser cleaning machine;
- (2) Avoid placing the handheld laser cleaning machine and related optical output devices at the same level as the eyes;

- (3) the output outlet of the handheld laser cleaning machine should be equipped with a laser beam shell;
- (4) According to the output power and wavelength requirements of the handheld laser cleaning machine reasonable selection of safety protective equipment, to ensure the safety of operators;
- (5) The door placing the space of the handheld laser cleaning machine should be controlled with interlock, and a warning label should be affixed to limit the safe area of the operation of the handheld laser cleaning machine;
- (6) Do not use the handheld laser cleaning machine in the dark environment;
- (7) If you do not strictly follow the instructions in this document to operate the equipment, may weaken the protective device and performance of the equipment, the Super fast laser will not be guaranteed.

4. Electrical operation Instructions

Super fast laser strongly recommends that you read the following operation points before operating the handheld laser cleaning machine:

- (1) Please ensure that the equipment housing is well grounded, the interruption of any point in the grounding loop may cause personal injury;
- (2) For the power supply connected to the equipment, please make sure that it is connected to the protection ground before use;
- (3) In order to reduce the risk of fire, when necessary to replace the line fuse can only be the same type, the same grade, and can not use other fuses or materials instead;
- (4) Ensure that the hand-held laser cleaning machine input AC voltage is normal AC mains voltage (single-phase voltage 220V), and the wiring is correct, any wrong wiring

mode, may cause personal injury or equipment;

(5) This product has no parts, components or components that users need to repair by themselves, and all maintenance operations need to be completed by super fast laser professionals;

(6) Please do not remove the case, disassemble and install the handheld laser cleaning machine and destroy the relevant labels without authorization, which will lead to the risk of electric shock or burn;

(7) any unauthorized disassembly of the product will no longer enjoy the warranty rights.

© The input voltage of handheld laser cleaning machine is single-phase alternating current (220V/AC), there is the risk of electric shock. All relevant cables and connecting wires have potential hazards.

5, handheld laser cleaning machine operating environment requirements

In order to ensure the safety of the laser working area, appropriate enclosures should be used. This includes, but is not limited to, hazard prevention work such as laser safety signs, interlocking devices, and the interaction between the laser and the work surface, which can produce gas, sparks and debris due to high temperatures, may pose additional safety hazards. The corresponding operators need to undergo certain examination training, and be familiar with and master the conventional safety specifications of laser operation.

Please note that the output component cannot be installed at eye level. Due to the interaction between laser and metal materials, high intensity ultraviolet or visible radiation will be generated. Please ensure that the handheld laser cleaner is equipped with a protective cover to avoid radiation damage to eyes or other parts of the body.

Super fast laser recommends that you follow the following measures to prolong the service life of the handheld laser cleaning machine:

1. Ensure that the working area is properly ventilated and the handheld laser cleaner is placed in a cabinet with temperature and humidity control and dust control functions. Do not expose the handheld laser cleaner to high temperature and humidity.
2. Running the equipment at high temperature will accelerate aging, increase the current threshold, and reduce the sensitivity and conversion efficiency of the handheld laser cleaning machine. If the equipment overheats, please stop using it and seek help from the Super fast laser.

Note:

© Please operate the equipment carefully to avoid accidental damage to the equipment.

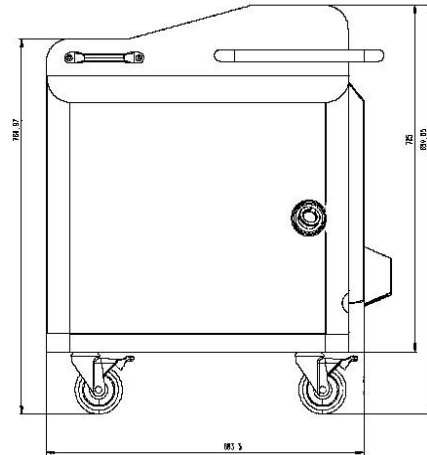
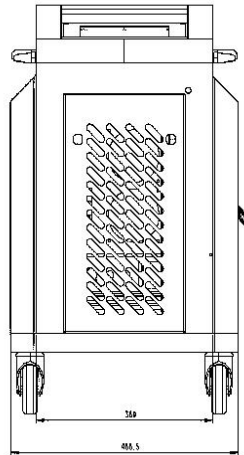
Chapter III Specification parameters

Project	sequence	Features	Test conditions	Minimum	Typical value	Maximum value	Units
Electrical characteristics	1	Supply voltage	220	210	220	230	AC
	2	Maximum current loss	$P_{out}=P_{nom}$	4	5	6	A
	3	Machine power	900	890	900	910	W

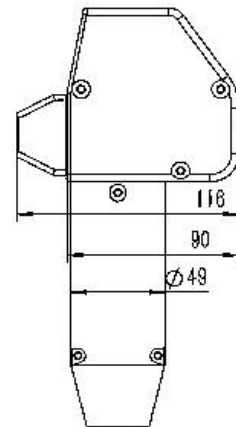
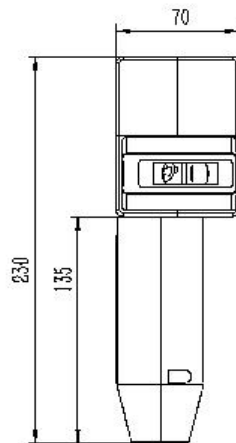
		consumption						
	4	Fiber optic cables		5	5	5	10	M
General characteristics	1	Operating temperature range			0		50	℃
	2	Storage temperature			- 10		60	℃
	3	Laser power			200			W
	4	Peak power			> 30			KW
	5	Cooling method			Water cooling/Air cooling			/
	6	Laser rating			4 levels			/
	7	Pulse energy			1.5			mJ
	8	Laser wavelength			1064			nm
	9	Preheat time	Reach a point where you can begin operation		0			s
			Achieve complete stability		10			
	10	Humidity			10		95	%
	11	External machine size			L867 x W600 x H850			mm
	12	Whole machine weight			110			kg

Chapter 4 Structure layout

1. Machine appearance and size



2. Appearance and size of 90° out gun head



Chapter 5 Operation procedure

Declaration:

© Super fast laser guarantees that this product has been perfect test and inspection, all the inspection items are up to the written quality specifications.

Note:

© If you find any damage to the outer packaging and inside of the product upon receipt, please contact Super Fast Laser Company or designated agent immediately.

1. Power supply requirements:

AC 220V 50/60Hz, three wire grounding.

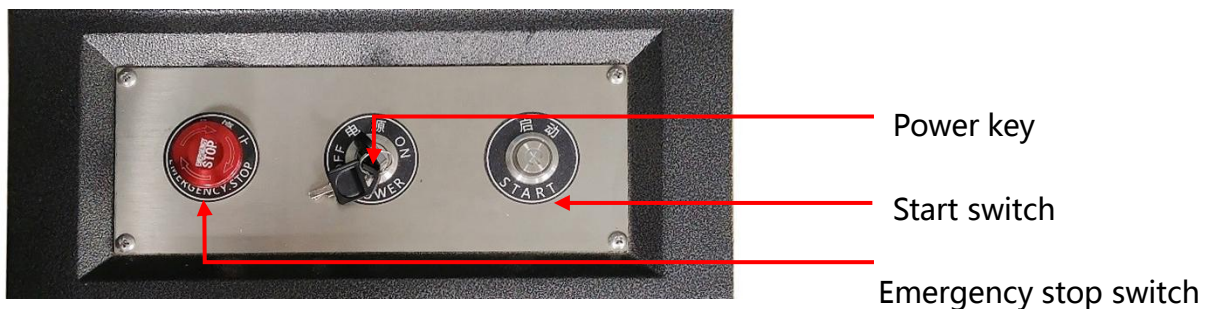
2 , Startup steps:

a, turn on the general air control switch at the rear of the cabinet to face up;

b, turn out the red emergency stop switch to the unpressed state;

c, turn the power key clockwise to power on the whole machine and enter the startup interface;

d, the start button is the cleaning starting device, please keep the state unpressed when starting up, and press it when finally starting cleaning.



3 , Control screen main interface



The system will be upgraded from time to time, please refer to the actual latest version!

4 , Cleaning parameters interface



The system will be upgraded from time to time, please refer to the actual latest version!

5 , Cleaning parameter Settings (default optional graphics: line, mesh, square, ring four kinds)

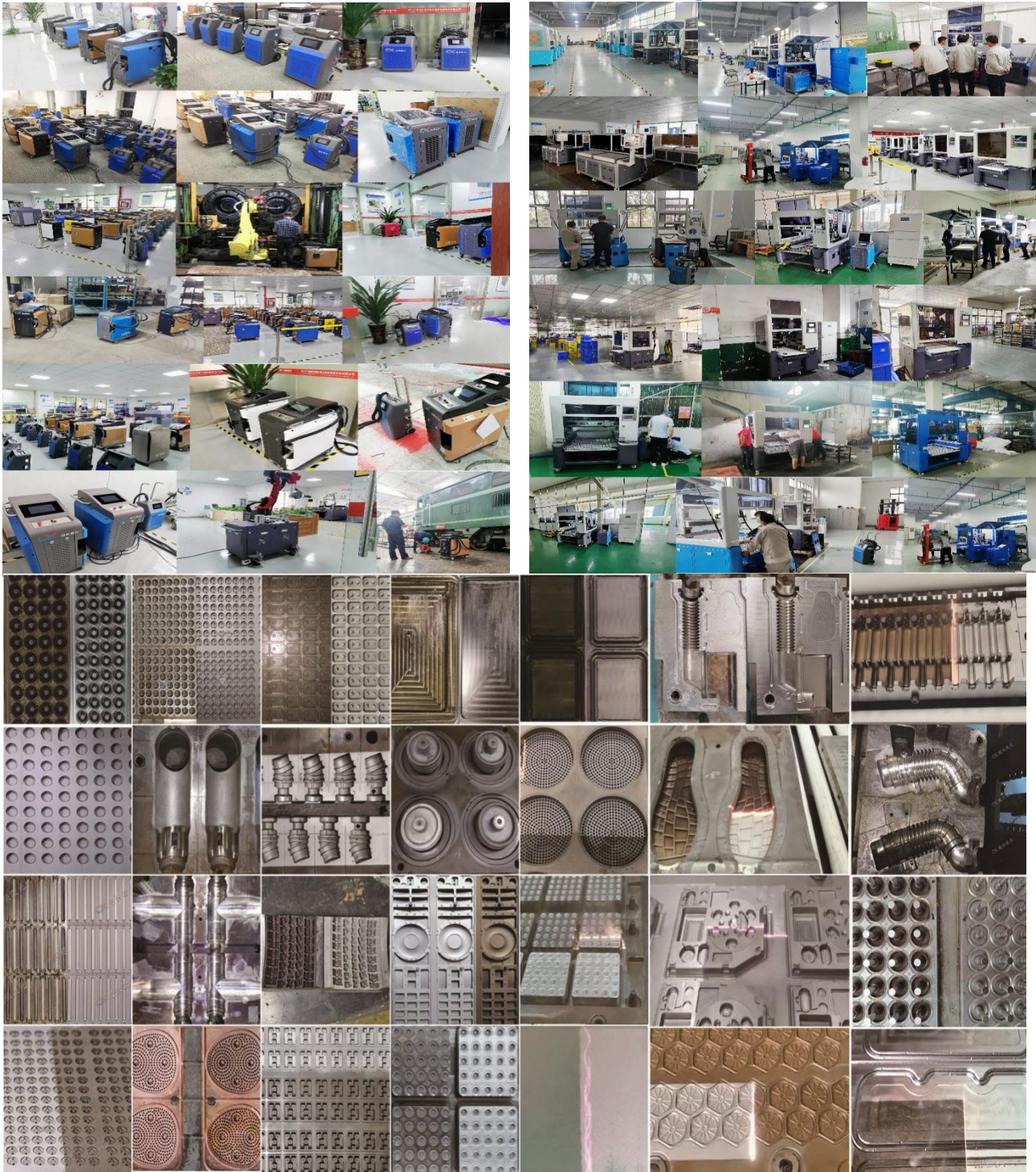
- 1、 Scanning width: In square mode, adjust the automatic scanning range of the laser beam between 0 and 50.

2. Galvanometer speed: Adjust the vibration frequency of the optical galvanometer.
- 3, laser frequency: laser pulse frequency, 1K-5000K adjustable.
- 4, laser power: adjust the laser output power, adjustable in the range of 1%-100%.
- 5, MOPA: can be used in the use of modulated pulse width laser.
6. Graphic length: the length of the laser cleaning scan line. The laser graphic length can be adjusted in the range of 1-150MM.
- 7, graphic width: the maximum width of 3MM, in this range can be adjusted at will.
- 8, fill spacing: using circular laser cleaning, the distance between the laser.
- 9, light delay and light delay: adjust the delay switch at both ends of the laser harness.
- 10, the diameter of the outer circle: in the range of 1-30 can adjust the direct parameters of the outer circle to change the size of the circle.
- 11, inner circle diameter: adjust the direct laser inner circle, can be adjusted in the range of 1-30, not greater than the diameter of the outer circle.
- 12, password setting: used to set the parameter interface lock password, in case the parameter is tampered with.
- 13, save: after setting parameters in the interface, remember to click save parameters, so that the next direct call.
- 14, red light: used for preview positioning.

15, laser: control laser light and light off.

16, mode: according to different cleaning requirements, save multiple groups of cleaning parameters, convenient for subsequent direct call.

The sixth chapter laser mold washing application cases



Chapter 7 Service and Repair

1- Maintenance instructions

Note:

© This product has no parts, components or components that users need to repair by themselves. All maintenance operations need to be completed by super fast laser professionals.

In order to protect your rights and interests, please be sure to contact Super fast Laser or your local representative as soon as possible after finding the fault, and apply for product repair or replacement service. After being authorized by Super fast Laser, please pack the warranty products to match, and then send them back to Super fast Laser.

© When any damage is found after receiving the product, you must keep the supporting documents so that you can claim the right to the carrier.

Important:

© Do not send any product directly back to the super fast laser without communication and confirmation.

© If the product is not within the warranty period or scope, please customer responsible for the cost of product repair.

Changes:

Super fast Laser reserves the right to make any changes to the design or structure of the product without prior notice.

2- Service Statement

Please read this manual carefully and strictly follow the operating instructions for any

questions regarding the safety, setup, operation, or maintenance of Super fast laser products.

If you have any problem, please call the Super fast Laser Customer Service Department: 400-168-9906. Your feedback problem will be confirmed by the Super fast Laser Customer Service Department, and will be followed up by the technical support team. If your problem can not be solved after communication with the technical support team, you may need to send the product back to the Super fast Laser for in-depth investigation.

Chapter 8 Warranty Statement

1- General clause

Shenzhen Super Fast Laser Technology Co., Ltd. provides warranty services for products with defects caused by materials or production processes during the contract warranty period, and guarantees that the products meet the relevant quality and specification requirements mentioned in the documents under normal use.

Shenzhen Super fast Laser Technology Co., Ltd. on the contract warranty period due to materials or production process caused by fault products, to provide repair or replacement services, within the scope of the warranty of the product repair or replacement, still in accordance with the remaining warranty period of the original product warranty.

2- Warranty restrictions

Products, components (including fiber optic connectors) or equipment are not covered under warranty if:

- 1 , Being tampered with, opened, dismantled or modified by a person other than the ultra-fast laser;
- 2 , Damage caused by improper use, negligence or accident;
- 3 , The products are used outside the scope of product specifications and technical requirements;
- 4 , Damage of laser indirectly caused by failure of user software or interface;
- 5 , Due to incorrect installation, maintenance or other abnormal operating conditions not covered by this manual;

Customer has the responsibility to understand and operate the above information in accordance with the user manual, otherwise the product failure will not be covered by the warranty.

Important:

- ⦿ Under warranty, customers must give feedback within 30 days of discovering the fault.
- ⦿ Super Fast Laser does not grant any third party units or individuals the right to repair or replace our products.