



Shenzhen Super Fast Laser Technology Co., Ltd

Integral Style Automatic Laser Cleaning Machine

CKJG-MJ-120W-05



[User manual](#)

[Thank you for choosing our products. Please read this manual carefully before use it.](#)

Content

Chapter 1 Company profile.....	3
About Super Fast Laser.....	3
Applications.....	3
Advertages of laser cleaning.....	3
 Chapter 2 Product Introduction.....	 4
2.1 Exterior environment and preventive measures.....	4-5
2.2 Power Supply.....	6
2.3 Product pecification.....	6
Electrical characteristics.....	6
General characteristics.....	6
 Chapter 3 Use and Operation.....	 7-13
3.1 Preparation before use and operation.....	7
3.2 Laser control software operating.....	7-8
3.3 Man-machine interface operation.....	9
3.4 Debugging.....	10
Focusing page.....	11
Axis control page.....	12
3.5 Parameter setting.....	13
 Chapter 4 Maintenance and troubleshooting.....	 14

Chapter 1 Company profile

About Super Fast Laser

Super Fast Laser Technology Co., Ltd. was established in 2018, is currently the first wholesale, production, laser cleaning machine manufacturers, headquartered in Shenzhen, and set up a branch in Wuxi. We have our own R & D team and production base, and have obtained a number of honors and patent certificates, in the field of laser cleaning is the domestic leader. Super fast laser focus on laser high-tech applications, to pursue product specialization as the primary purpose, to provide customers with professional laser cleaning, fully automated supporting equipment and software, a full set of laser solutions, and strive to the most professional high-end technical services!

Applications

Super Fast brand laser cleaning equipment is not only popular in China, but also sold all over the world, such as Japan, South Korea, Singapore and Southeast Asia and other countries and regions. At present, the company has formed large-scale production of products. The equipment is widely used in all walks of life, such as railway industry, mold industry, automobile manufacturing, cultural relic restoration, shipbuilding, food machinery processing, petrochemical and other related industries cleaning.

Advantages of laser cleaning

Super fast laser cleaning machine is mainly used in oil cleaning, paint cleaning, corrosion cleaning, oxidation layer cleaning, coating coating cleaning, cleaning before welding after welding. And has the following advantages:

1. Low maintenance cost: no consumables, power supply can run.
2. No damage to the matrix: no contact, no grinding, no stress cleaning, high cleanliness.
3. Portable operation: It can be hand-held, mobile and automatically cleaned to meet different scenarios and conditions.
4. Energy saving and environmental protection: no chemical waste liquid, no noise harm, no dust pollution.

Chapter 2 Product Introduction

2.1 Exterior environment and preventive measures



Note: The machine appearance will be a little different for different customers' different applications.

WARNING: Laser cleaning machine equipment can only work under properly grounded and nominal voltage power supply.

WARNING: This device has an output optical head connected by optical cable, please be careful out of the output head.

CAUTION: Make sure the laser cleaner is turned off when using the sight (e.g. when mounting the sight on a fixture, or viewing the end face with an optical instrument, etc.).

CAUTION: Do not expose the device to high temperature or humidity.

WARNING: There are 2-5 fans on the rear panel of the laser cleaner for heat dissipation, ensuring that there is enough airflow to cool the device.

WARNING: Before turning on the device, ensure that the ambient temperature and humidity are within the specified range.

WARNING: Do not look directly at the output head, and ensure that laser goggles are worn when handling the product.

WARNING: Supply interruption is very dangerous to the equipment, please provide continuous supply voltage.

CAUTION: Operations other than those mentioned in this manual for control, adjustment or performance may pose a risk of radiation exposure.

CAUTION: For collimated output, keeping the output lens clean is the most basic, do not touch the output lens, do not use any solvent to clean, can use a dust-free cloth to clean.

CAUTION: Failure to follow the above instructions may cause optical damage, which is not covered by the warranty

2.2 Power Supply

Laser cleaning machine power supply is voltage: 220VAC.

2.3 Product Specification

Electrical characteristics

NO.	Characteristics	Test conditions	Min Value	Typical Value	Max Value	Unit
1	Power input	220	210	220	230	AC
2	Max power leak	Pout=Pnom	17	21	25	A
3	Total power	6500	6450	6500	/	W
4	Fiber length	5	5	5	5	M

General characteristics

NO.	Characteristics	Min Value	Typical Value	Max Value	Unit
1	Working temperature	0		+40	°C
2	<u>Storage temperature</u>	<u>-10</u>		<u>+60</u>	<u>°C</u>
3	Laser power		120		W
4	Peak power		>35KW		KW
5	Cooling method		Air cooling		
6	Laser grade		4 grade		
7	Pulse energy		1.5mJ		mJ
8	<u>Laser wavelength</u>		<u>1064</u>		<u>nm</u>
9	Pre-heat time		10		s
10	Humidity	10		95	%

Chapter 3 Use and Operation

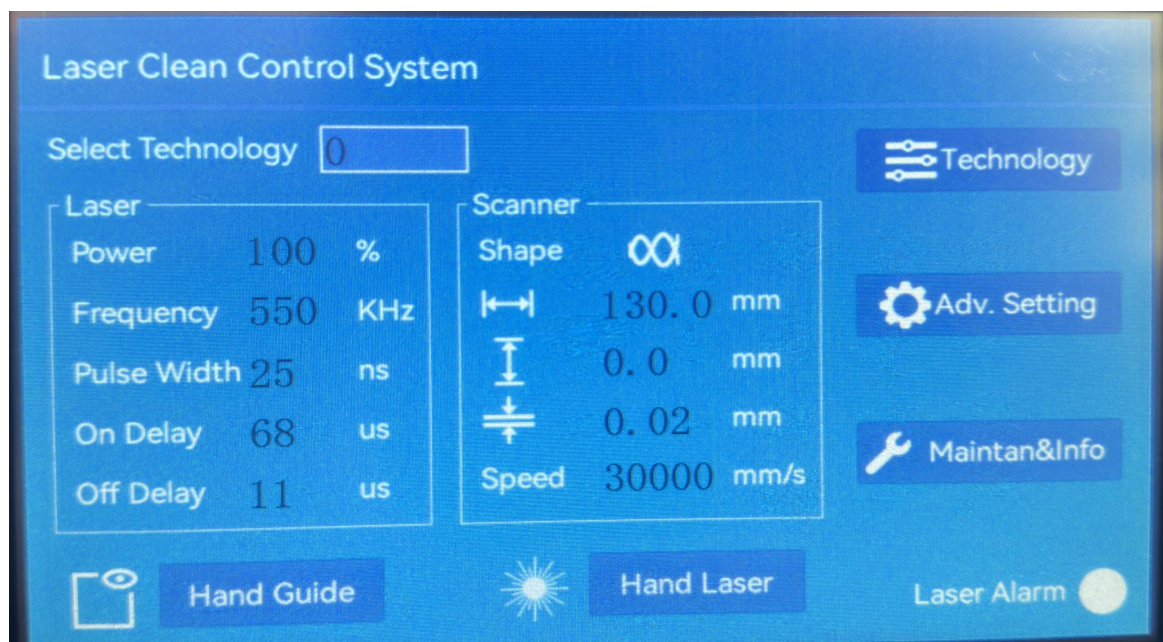
3.1 Preparation before use and operation

Statement

NOTE: As the equipment user is Chinese, so some of the controlling screen just displays in Chinese.

The super fast laser ensures that the product has been tested and inspected thoroughly, and all the test items have reached the written quality specifications before transportation. Note: If you find any damage to the outer packaging or interior upon receipt of the product, please contact Ultrafest Laser or designated agent immediately.

3.2 Laser control software operating



Cleaning parameter Settings screen

- Field lens selection: The focus lens parameters can be selected to display 160mm focal length, 254mm focal length and 330mm focal length. By default, 254 views are standard.
- The galvanometer speed: Reflector swing speed adjustment, X reflector at maximum 50HZ, each gear increased by 50/30. The Y mirror is the fastest 200HZ,

200/30 increments per gear.

- Laser Frequency: Laser pulse frequency, 1K-200K optional.
- Laser power: Adjust laser output power, adjustable from 1% to 100%.
- Laser pulse width is used when using a laser that can modulate the pulse width.
- Figure Length (Laser figure is square) Length of the laser cleaning scan. The maximum length is 120MM. You can adjust the length at will within this range.
- Figure width (laser figure is square)

The maximum width is 4MM, and the width can be adjusted freely within this range.

- Fill spacing The distance between lasers when circular laser cleaning is used.
- When the speed of the laser galvanometer is too fast and the graph length is too long, the switching light delay can be set to achieve the ideal result.
- Save: After setting parameters in the interface, remember to click save parameters, so that you can use them directly next time.
- Red light: Press the button, the red button turns red, red light. Press the red light button again to turn off the red light.
- Laser laser light switch, press the button, laser light. If red light is emitting at this time, the laser light will be forced to emit. Press the laser button again to turn off the laser light, and the button will turn gray again.
- Mode

Mode selector that can hold nine groups of data. Click the number on the right of the mode to select the set mode parameters freely, and click Apply. After setting the parameter OK on each screen, remember to pree Save.

Pay special attention:

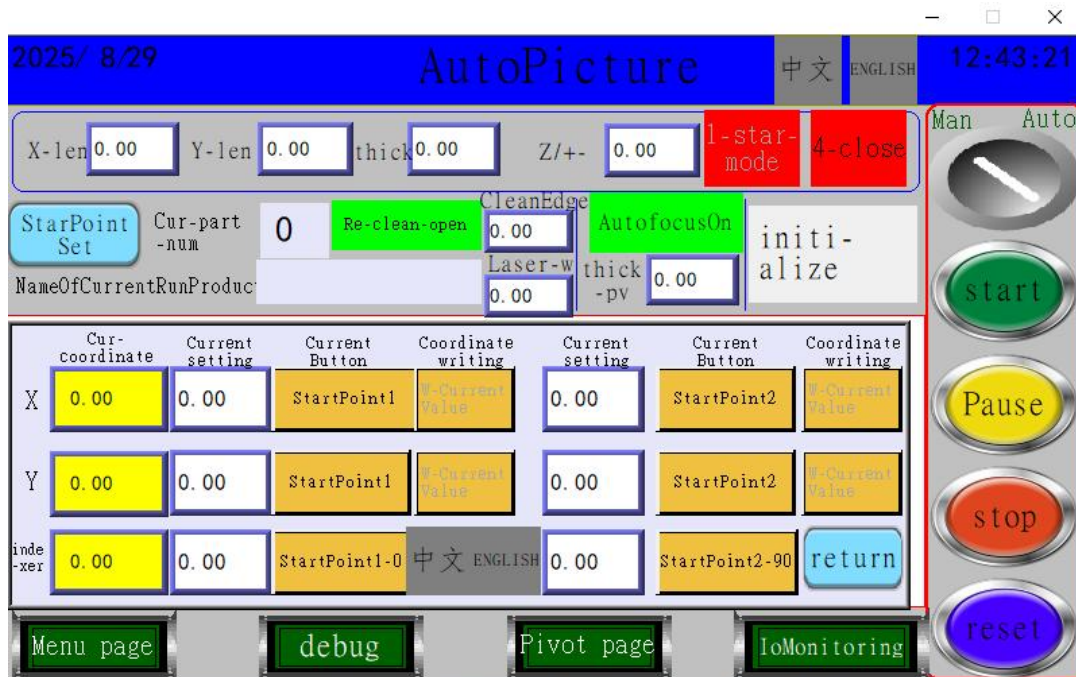
1. As for the cleaning parameters, our staff will adjust the parameters according to the actual situation of the user before leaving the factory or during debugging. Please do not adjust the parameters at will to avoid affecting the use.
2. In order to facilitate the user's operation, our staff will save multiple sets of parameters according to the customer's mould conditions for the convenience of calling.

3.3 Man-machine interface operation

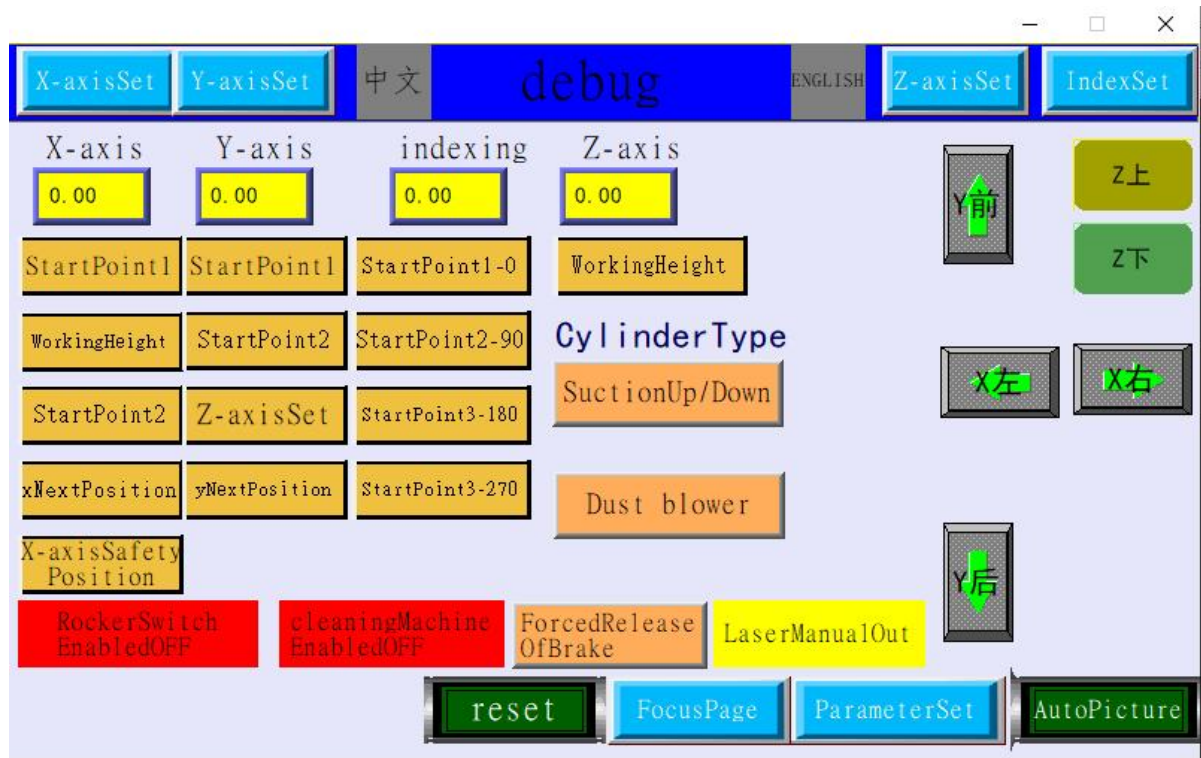
Touch screen user Login Operation Password Login:

Engineer login password: 3

The automatic screen is as shown below :



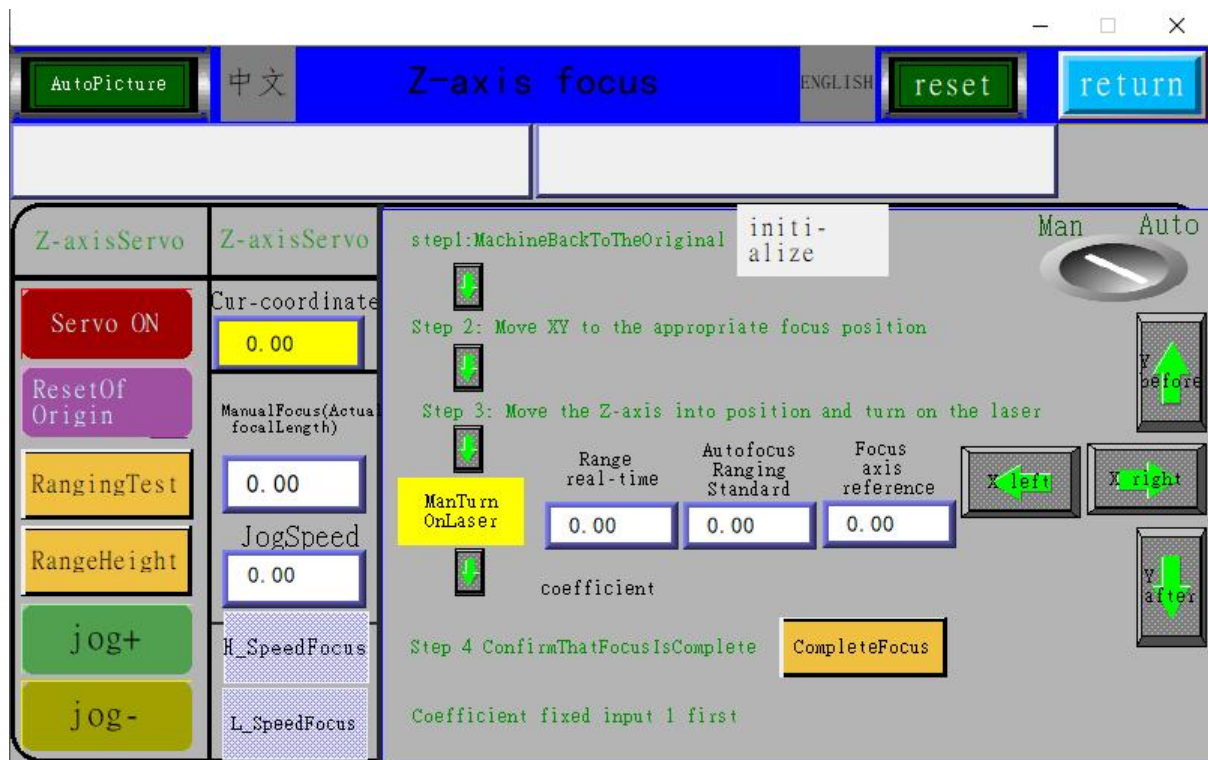
- 1, To set the starting point, first switch the device to manual mode, shake the manual rocker (X/Y axis) of the machine to adjust the red light to the starting point of the X-axis direction where the workpiece needs to be cleaned, and then open the starting point setting. Long press the starting point 1 and then "Write current value" of the X/Y axis to complete the starting point setting. If cleaning is needed for four times, repeat the above actions, locate the starting position of the Y-axis direction, and write the starting point two.
- 2, Width, length and thickness of the die: input according to the size of the die when using, such as auto focus open without input workpiece thickness.
- 3, Repeat cleaning switch: open state, left and right back and forth repeat cleaning, closed state, before and after superposition cleaning.
- 4, Automatic focus: open state, manual rocker rangefinder red point moved to the position of the cleaning surface, and then start automatic cleaning, close the state, you need to manually input the thickness of the mold that is automatic cleaning.
- 5, Cleaning times: in the open state, the left and right times are 4 times; in the closed state, the left and right times are only cleaned.



- 1, X axis: 11, starting point 1 is the position where cleaning starts in the X direction and the indexing axis is 0 degrees 41,12, returning 1 is the position where cleaning ends in the X direction and the indexing axis is 180 degrees 43,13, starting point 2 is the position where cleaning starts in the X direction and the indexing axis is 90 degrees 42.
- 2, Y axis: 21, starting point 1 is the position where cleaning starts in the Y direction and the degree axis is 0 degrees 41,22, starting point 2 is the position where cleaning starts in the Y direction and the degree axis is 90 degrees 42,23 Return 2 is the position where cleaning ends in the Y direction and the degree axis is 270 degrees 44.
- 3, Z axis: 51, cleaning focal length height. It will be set when leaving the factory, please do not adjust at will, so as not to affect the use.

Note: In order to ensure the normal operation of the machine, the machine will be debugged before leaving the factory, do not adjust at will, so as not to affect the use. If adjustment is required, please contact our technical staff to assist in on-site or remote adjustment.

The focus page :



- 1, Laser manual output: 21, manually turn on the laser.
- 2, Servo JOG+ : 11, moving down the Z-axis.
- 3, Servo JOG- : 12, moving up the Z-axis.
- 4, Finish focusing: 31, when the focus and the range finder's red point in the same plane, the focal length reaches the best (the brightest light, the loudest sound), long press to finish focusing to end focusing.

Note: Because the machine has auto focus function, the machine will be set before leaving the factory. No need to manually focus again. If the focus is out of place due to misoperation, repeat the preceding steps to refocus. Or contact our technical staff to assist the completion of home or remote.

The axis control page :

AutoPicture
中文
Servo 1 axis -X axis
ENGLISH
reset
Previous

Next page

Servo operation	Servo position and speed parameters					
Servo ON ResetOf Origin jog+ jog-	Cur-coordinate	Origin migration	Offset velocity	Origin velocity	Creep velocity	JogSpeed
	0.00	0.00	0.00	0.00	0.00	0.00
	GO position	Coordinate MM (display)	Speed MM			Coordinate MM
	StartPoint1	0.00	0.00	W-Current Value		0.00
	Back 1	0.00	0.00	W-Current Value		
	StartPoint2	0.00	0.00	W-Current Value		0.00
	xNextPosition	0.00	0.00	2-dis-inc 0	X-axisSafety Position	

AutoPicture
中文
Servo 2 axis -Y axis
ENGLISH
reset
Previous

Next page

Servo operation	Servo position and speed parameters					
Servo ON ResetOf Origin jog+ jog-	Cur-coordinate	Origin migration	Origin velocity		Creep velocity	JogSpeed
	0.00	0.00	0.00		0.00	0.00
	GO position	Coordinate MM (display)	Speed MM			Coordinate MM
	StartPoint1	0.00	0.00	W-Current Value		0.00
	yNextPosition	0.00	0.00	0		
	StartPoint2	0.00	0.00	W-Current Value		0.00
	Start point 2 Return	0.00	0.00	W-Current Value		

- 1, From the starting point 1, manually move to the starting position of cleaning, the indexing axis is 0 degrees, and write the current value of X and Y.
- 2, From starting point 2, manually move to the starting position of cleaning, the indexing axis is 90 degrees, and write the current value of X and Y.

Note: This page setting can also be completed by clicking "Starting point Setting" on the home page

3.5 Parameter setting

中文		ParameterSet		ENGLISH	
WorkpieceLength1 (X axis) :	0.00	CurrentCoordinates Of X-axis	0.00	StartPoint1Of X	0.00
WorkpieceLength2 (Y-axis) :	0.00	CurrentCoordinates Of Y-axis	0.00	StartPoint1Of Y	0.00
WorkpieceHeight	0.00	CurrentCoordinates Of Z-axis	0.00	Rotation starting point 1 Angle:	0.00
Laser width:	0.00	RotationCurrent Coordinate	0.00	Rotate to return 1	0.00
Cleaning speed:	0.00	Indexer Coordinate	0.00	Indexing starting point 1 Angle:	0.00
Working speed:	0.00			StartPoint2Of X	0.00
Z-axisWorkingHeight:	0.00			StartPoint2Of Y	0.00
TransverseCleaningReturns CompensationFor Y-axis	0.00			Rotate starting point 2 angles:	0.00
LongitudinalCleaningReturns CompensationForX-axis	0.00			Rotate back to 2:	0.00
				Indexing starting point 2 Angle:	0.00
Menu page		AutoPicture		debug	
				Next page	

中文		Parameter set 2		ENGLISH	
X-axis maximum travel:	0.00	X returns 1 target value read-only:	0.00		
Y-axis maximum travel:	0.00	X returns 1 compensation:	0.00		
CylinderProtectionIsSetWhenRotatingAtStartingPoint1Angle		Y Return 2 compensation:	0.00		
X axis blowing maximum stroke:	0.00	Y Returns2TargetValueRead-only:	0.00		
X axis blowing minimum stroke:	0.00				
CylinderProtectionIsSetWhenRotatingAtStart1Return		Z down when range compensation is negative	0.00		
X axis blowing maximum stroke:	0.00	X axisSafePositionWhenRotation IndexReturnsToOriginal	0.00		
X axis blowing minimum stroke:	0.00				
Automatic cylinder rise time	0.000				
Menu page		AutoPicture		Previous	

- 1, Length, width and thickness of the workpiece: the length and thickness of the mold.
 - 2, laser beam width: the length of the laser beam.
 - 3, cleaning speed: automatic cleaning speed, generally set 6-10mm/ second
 - 4, working speed: no light when empty run reset speed.
 - 5, The rotation Angle/indexing starting point is the Angle of the gun head, which will be set when leaving the factory. Please do not adjust it at will.
 - 6, Maximum stroke of X/Y axis: it will be set when leaving factory, please do not adjust at will.
- X/Y return target value, return compensation: the factory will be set, do not adjust.

Note: Some of the non-adjustable parameters mentioned above have been set before delivery. Please do not adjust them at will to avoid affecting the use.

Chapter 4 Maintenance and troubleshooting

1, Maintenance

a, Keep the lens clean, and gently wipe the lens with a dust-free cloth dipped in a small amount of 100% sewage alcohol before use to ensure the lens cleanliness.

b, If you remove the head of the gun for hand-held cleaning, handle it gently. Do not bend or trample the optical fiber.

c, Do not change the cleaning parameters of the cleaning machine. If you need to change, please contact our technical staff to help adjust.

2, Troubleshooting

a, Cleaning machine operation page alarm, cleaning machine has red light, no laser:

a1 Considering that the temperature is too high, the laser will start to protect itself, so it needs to be cooled down to recover the light.

a2 Laser light, but the light is weak and uneven, consider the focus is wrong, need to refocus. Or the gun lens with ash is serious, need to clean the lens.

b, If the laser overlaps too much, assuming that the actual length of the laser is 95mm and the cleaning width of the parameter page is 90mm, there will be an overlap area of about 5mm. Therefore, the cleaning width of the parameter page should be adjusted to 94-95mm.

c, If a 2mm area at the laser connection fails to be washed, assuming that the actual length of the laser is known to be 95mm and the cleaning width of the parameter page is 97mm, there will be areas about 2mm that fail to be cleaned, and the cleaning width of the parameter page needs to be adjusted to 94-95 mm.

d, If the automatic equipment alarm, cleaning suddenly stop or do not move. Then you can press the emergency stop button and start cleaning again after initialization. If it still cannot operate normally, please contact our staff to help solve the problem.

3 · list of wearing parts

a. F254-1064 field mirror

b. b. Field mirror protection lens

C. Laser yellow armored cable (minimum bending radius 100MM)

C. d. (exposed) photoelectric sensor