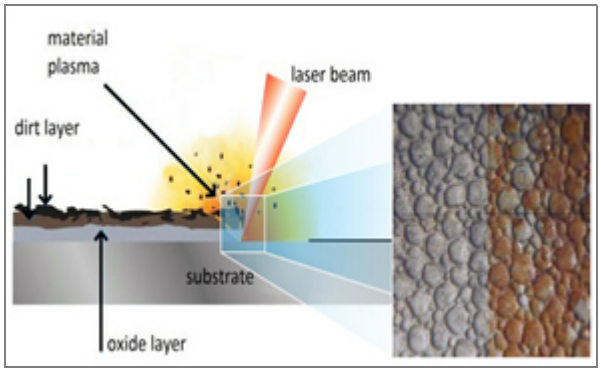
Sintec Optronics

STX Series Laser Cleaning Machines

1.STX Series Fiber Laser Cleaning Machines

Our cleaning system is the new generation product with a high technology that applies for the purpose of the material surface cleaning application, which is easily to be set up, operated and automated. No need of chemistry, water or other working medias, the equipment can be also applied for removing the resin, grease, stains, dirt, rust material, coating, coating and paint. This device can be auto-focused on a specified area of the target surface of the material, which leads to a high performance of cleanliness result.



Principle:

- A high-energy-density laser beam is used to irradiate
- The surface of the workpiece, so that the dirt,
- Rust spots or coating on the surface instantly evaporate

Advantages:

- Non-contact cleaning, without damage to parts matrix.
- Precise cleaning, with accurate location, precise size and selective cleaning.
- No chemical cleaning fluid, no consumables, safe and environmental protection.
- Simple operation, the power can be charged, and the automatic cleaning can be realized by hand or with the manipulator.
- Cleaning efficiency is very high and saving time.
- The laser cleaning system is stable and little maintenance requirement.

Features:

- No damage to the base of the material due to the no-touch surface cleaning performance
- Precise cleaning technic for the specific area in a selected area
- No need of chemistry or other added supplies
- Easy to be operated, can be hand-held or auto-cleaned by installing a robotic arm
- Small cleaning time consumption and comes with a high quality finishing result

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Applicable Industry:

- Metal surface derusting
- Surface paint removal paint treatment
- Handheld model
- Fiber laser source
- Cable length:3m/5m
- Laser head:3KG
- Packing size:100*63*109cm
- Weight: 200 KG

Specifications:

Model	STX-QX100	STX-QX200	STX-QX300	STX-QX500
Ave. Laser Power (W)	100	200	300	500
Wavelength	1064+5nm			
Pulse Frequency (kHz)	20-200	10-50	20-50	20-50
Cable Length (m)	3	5	5	10
Cooling	Air-Cooling	Water-Cooling	Water-Cooling	Water-Cooling
Scanning Width (mm)	10-10			
Speed (mm/s)	1000-8000			
Laser Head Weight (kg)	3			
Total Power (W)	1000	2700	3900	4700
Machine Weight (kg)	125	200	200	240
Operating Voltage	Single phase 220VAC/50-60Hz			

Samples:

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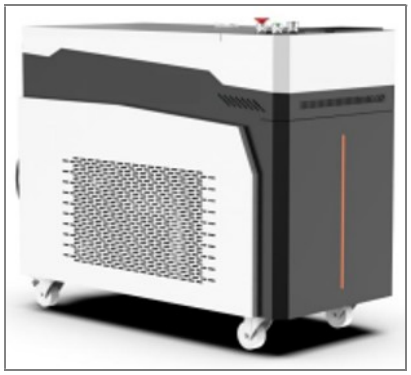
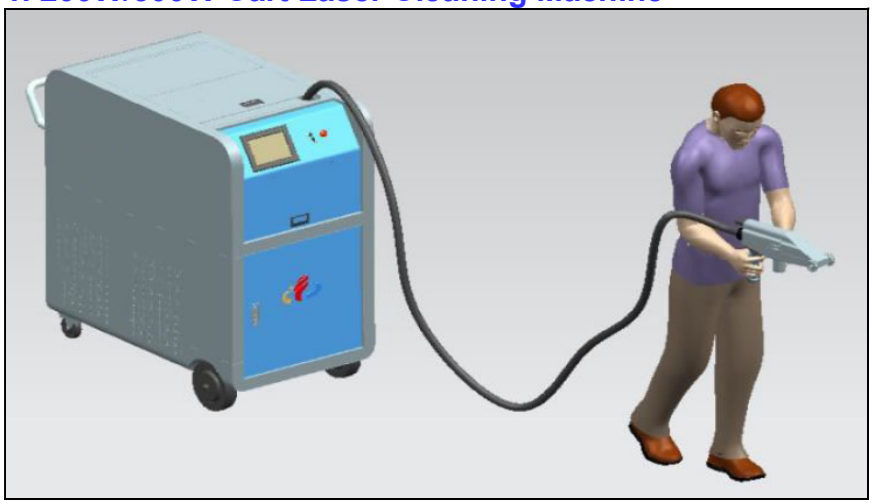
2. STX 1500W~3000W Continuous-wave Fiber Laser Cleaning Machine

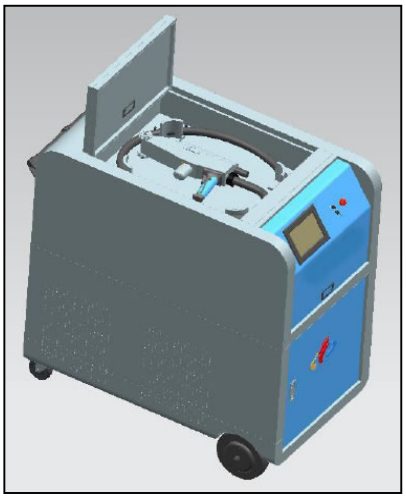


S/N	Parameter	1500W	2000W	3000W
Laser Source				
1	Laser Power	1500W	2000W	3000W
2	Modulation Frequency	1 – 20,000Hz		
3	Wavelength	1080 +/- 5nm		
4	Cooling Method	Water-cooled		
5	Power Required	220V±20%/AC/50Hz	380V±20%/AC/50Hz	380V±20%/AC/50Hz
6	Power Consumption (per hr)	7kW	9.5kW	13.3kW
7	Fiber Length	8m		
8	Fiber Core Diameter	50um		
Cleaning Head				
9	Weight	0.8kg		
10	Beam Width	Up to 300mm		
Machine Dimension and Weight				
11	Dimensions	1000 x 530 x 725mm	1000 x 530 x 725mm	1120 x 580 x 1020mm
12	Net Weight	Up to 150kg		

STF Series Laser Cleaning Machines

1. 200W/300W Cart Laser Cleaning Machine





Product Introduction

- Cart design, easy to move
- Pulse fiber laser: 200W/300W water cooling
- Voltage of the power supply: 220VAC
- Cabinet integrated with chiller & dust extractor
- Top hat beam profile

Advantages

- Cart cabinet: equipped with wheels and convenient to move in the workshop.
- Touch screen: easily to modify and save the parameters.
- Integrated dust extraction port on cleaning head: No extra dust extraction pipe needed.
- Integrated chiller & dust extraction system inside.
- Adopted spiral cleaning method: to avoid damage on the surface of parts
- Top hat beam mode: with high efficiency and no damage on the substrate surface. a good choice on cleaning mould, paint, floating rust, saponification liquid and oil stain.
- High tolerance technology: focus height tolerance can be up to 40 mm range, it is beneficial to improve the cleaning efficiency under the condition of uneven surface and reduce the focusing requirements of hand-held operation.

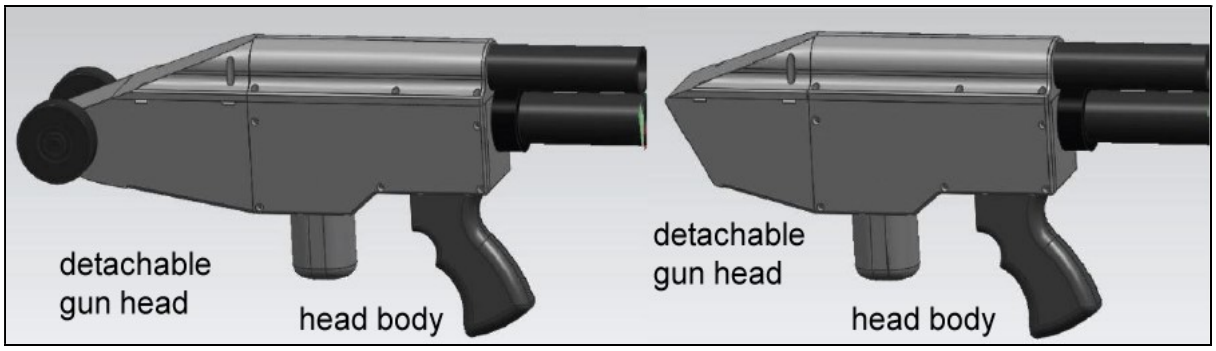
Laser cleaning machine consists of two parts: cart cleaning control system and laser cleaning head.

Cart Cleaning Control System

It's easy to manually move to the work area to achieve target selection and positioning cleaning. The product has high average power (200W), high single pulse energy (10mJ), high average power (200W), high single pulse energy (10mJ), top hat mode, high beam uniformity; uniform distribution of spot energy, good bottom processing effect, no damage to substrate, high cleaning efficiency, easy to use and maintenance.

Laser Cleaning Head

It is equipped with a long exhaust nozzle and a short exhaust nozzle. The long exhaust nozzle is equipped with a roller, which can directly roll on the surface of the workpiece and it is convenient for manual hand-held cleaning operation to fix the focus. The short exhaust nozzle without roller can set the cleaning length up to 110mm. The hand-held cleaning gun can realize the spiral cleaning mode, which has obvious advantages over the ordinary linear cleaning method. The linear cleaning method will form color difference marks (called zebra stripes) on the surface of the parts due to the unstable hand speed of the operator. The spiral cleaning method makes the laser focus run in spiral lines, and does not form color difference marks on the surface of the parts.



Model	STF-FED-CLD200R	STF-FED-CLD300R
Average laser power	200W	300W
Single pulse energy	10mJ	12.5mJ
Repeat frequency	20-50kHz	20-50kz
Beam mode	Top hat	Top hat
Wavelength	1064±5nm	1064±5nm
Focus length	160mm	160mm
Scan length	1-100mm	1-100mm
Scan width(in spiral mode)	1-10mm	1-10mm
Cooling method	Water	Water
Max consumption	2500W	3300W
Environment temperature	0~40℃	0~40℃
Weight	200kg	220kg
Size	1060x620x1020mm	1060x620x1020mm
Cleaning paint / rust (20um)	9.5 ㎡/h	13 ㎡/h
Cleaning oil pollution (20um)	11 ㎡/h	15 ㎡/h
Cleaning oxide film of titanium alloy	7 ㎡/h	9.5 ㎡/h

Model	STF-FED-LCD200I
Fiber Laser	IPG
Laser power	200W
Beam Mode	Top hat
Power adjustment range	10~100（%）
Stability of laser power	<5%
Beam Quality（M^2）	9~10

Wavelength	1064±5
Polarization	random
Repeat frequency adjustment range	10~50kHz
Output fiber length	3m (other lengths available)
Environment temperature	10~40℃
Cooling method	Water
Power supply	220VAV, 50/60Hz, 2.5kW
Scan length	5-110mm
Scan depth of focus	±20mm
Scan width (in spiral mode)	2-10mm
Cleaning oxide film of titanium alloy	7㎡/h
Cleaning paint / rust (20um)	9.5㎡/h
Cleaning oil pollution (20um)	11㎡/h

Dust extractor & filter

Model	STF-LB-JZ150	STF-LB-JZ1500
Power	150W	1500W
Working noise	60dB	
air volume flow	320m³/h	1500m³/h
Purification rate (0.5um）	99.7%	99.9%
Power Supply	220VAC	380VAC

Remark:
STF-LB-JZ150 is a built-in extractor, which is placed in the cleaning machine control system. STF-LB-JZ1500 is an external extractor. It is better to add the external extractor when the cleaning head is over 10 meters away from the control system.




Custom-made laser cleaning machines are available upon request. We can make the specific machines according to your specific applications and choose best suitable lasers to meet your requirements.