



Fiber Lasers for Cleaning

INTRODUCTION



RFL-P200	
Output rating (W)	100@10kHz 200@20-50kHz
Size (W*H*D)mm	485X237X764

RFL-P300	
Output rating (W)	250@20kHz 300@30-50kHz
Size (W*H*D)mm	485X237X764

RFL-P500	
Output rating (W)	200@10kHz 500@20-50kHz
Size (W*H*D)mm	502X254X755



RFL-P1000	
Output rating (W)	400@10kHz 1000@20-50kHz
Size (W*H*D)mm	698X898X865

RFL-P2000	
Output rating (W)	2000@20-50kHz
Size (W*H*D)mm	1018X836X850

Advantage comparison

Laser Cleaning

Non-contact cleaning;
Accurate cleaning, accurate position;
Precise size, selective cleaning;
Strong environmental protection;
Simple operation;
Mechanized cleanliness achieved;
High cleaning efficiency, saving time;
The laser cleaning system is stable and requires little maintenance;
Economic efficiency;

Chemical Cleaning

Contact cleaning, damage substrate;
cleaning uncontrollable, poor accuracy;
chemical pollution environment;
cleaning effect is general but uneven;
process flow is complex,
high requirements for operators
Low cleaning efficiency, low first input
high cost of consumables

Mechanical Cleaning

Contact cleaning, damage substrate;
cleaning is not controllable, accuracy is general;
pollute the environment, cleaning effect is general, but uneven;
The manual operation physical strength is big, needs the safety protection environment;
the cleaning efficiency is low;
High input for the first time, low labor cost of consumables

Drikold Cleaning

Non-contact cleaning, no damage to substrate,
Poor accuracy; use dry ice cleaning agent, do not pollute the environment;
Excellent cleaning effect, but uneven;
Simple operation, can be held or with the manipulator to achieve automatic cleaning and environmental protection;
Medium cleaning efficiency;
low first input; extremely high cost of consumables

Sonicleaning

Contact cleaning, no damage to the substrate;
can not specify the cleaning range;
Use special cleaning liquid cleaning method, do not pollute the environment, cleaning effect is excellent, but the clean range is small;
Simple operation, but need to add consumables manually;
Strong environmental protection;
medium cleaning efficiency;
low first input; medium consumption cos

Application



Derusting the metal surface



Surface dirt cleaning



Mold surface cleaning



Remove paint from the surface of articles



Removal of attachments from the surface of the statue



Pretreatment of welding surface and spraying surface

Traditional industrial cleaning has a variety of cleaning methods, mostly using chemical and mechanical methods for cleaning. Nowadays, the world is advocating environmental protection, industrial cleaning can be used in fewer and fewer chemicals. Therefore, we need to explore a more efficient and non-damaging cleaning method. Laser cleaning has the characteristics of no grinding, no contact, no thermal effect and suitable for all kinds of materials. It is considered to be a reliable and effective solution at present. At the same time, laser cleaning can solve the problem that can not be solved by traditional cleaning.

Raycus has launched a new series of high power pulse fiber laser products, with high average power (200-2000 W), high single pulse energy, square or circular homogenized spot output, easy to use and maintain, is an ideal choice such as mold surface treatment, automobile manufacturing, shipbuilding, petrochemical, rubber tire manufacturing, etc.

Industry

- Aerospace
- Rail traffic
- Shipbuilding
- Electron industry
- Automobile
- Tire mold
- High-end machine tool
- ETC



Comparison of efficiency and cost between laser cleaning and traditional cleaning of tire mold

Project	Sand blast cleaning	Drikold cleaning		Laser cleaning	
		On-Line	Off-Line	On-Line	Off-Line
Stop the machine and unload the module	220min	50min	135min	25min	110min
preheat		-170min	-85min	-195min	-110min
Before and after the temperature(°C)	/	170/150	130/55	170/170	130/55
Cleaning time	35min	25min	30min	25min	25min
VH hole dredging	Artificial drill through	no drill,sulfer directly		no drill,sulfer directly	
Dirt cleaning	mold release will remain	clean		clean	

		time saving(min)		average curing time	amount of increased tire		Unit price per tire	Each of the profits	increasing returns(yuan)		cleaning cost(yuan)		net return(yuan)	
		drikold	laser		drikold	laser			drikold	laser	drikold	laser		
cope and drag pattern	on-line	170	195	15min	11	13	¥200	25%	550	650	225	179	325	471
	off-line	85	110	15min	6	7	¥200	25%	300	350	225	179	75	171

According to the customer's field measurement, in the application of tire mold cleaning, laser cleaning and sandblasting cleaning can save 89% of the working time, and 13 tires can be increased compared with drikold cleaning. Laser cleaning of two molds can increase 128% income under off-Line. At present, Raycus' high power cleaning laser has been widely used in tire mold and other kinds of mold cleaning, with higher efficiency, better effect, no damage to the mold, and relatively higher profit margin.

Raycus
Stock code:300747

CLEANING Laser



Reshape Fiber Laser

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