



Mold nondestructive laser cleaning equipment

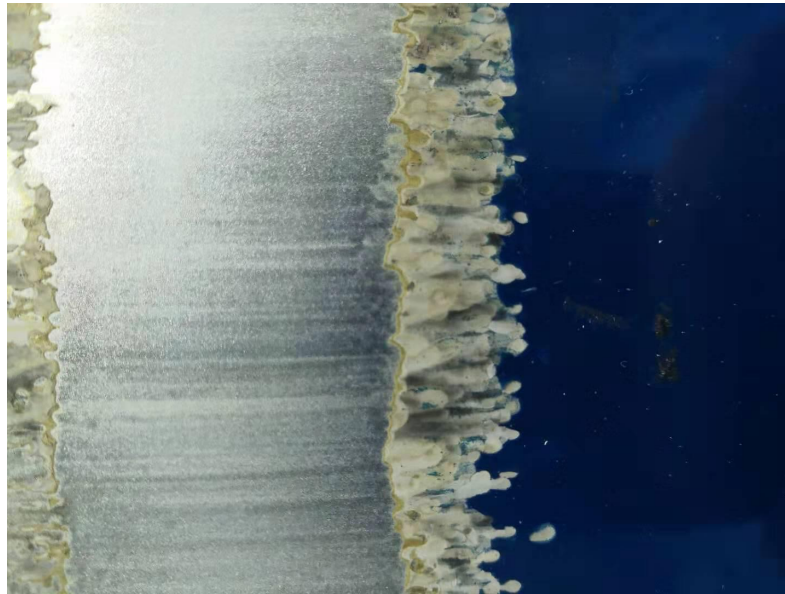


Laser cleaning

Laser cleaning technology is a new type of green cleaning technology, which USES a nanosecond pulse laser with high power and high energy to act on the surface of metal material and remove various pollutants such as rust, paint and rubber.



Remove rust



Remove paint



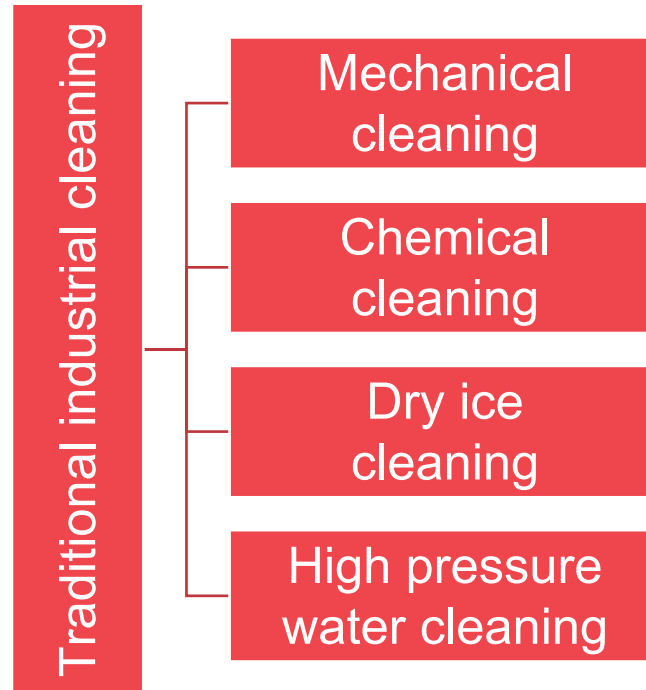
Tyre cleaning mould



Project background

Industry Introduction

Industrial cleaning is the fouling layer or covering layer formed by physical, chemical or biological action on the surface of an object, which is called dirt. The process of removing these contaminants or covering layer and restoring the original surface condition is called cleaning.



Project background | Technology Introduction

Laser cleaning technology is a new type of **Green cleaning technology**, which **USES a nanosecond pulse laser with high power and high energy** to act on the surface of metal material and remove various pollutants such as rust, paint and rubber.

Two kinds of physical action:

- The coating is vaporized (detached from sublimation)
- Remove pressure caused by high temperature

VS

Do not damage the substrate

Accurate positioning

Higher cleanliness

Super long service life

No consumables

Maintenance costs are extremely low



Project background

Market segment

Tire mold

Mold is an important tool used in tire vulcanization process, to ensure its surface cleanliness, to ensure the quality of the tire and the life of the mold.

The main pollutants are **sulfide, inorganic oxide, silica, carbon black and so on.**



The two halves of the mold are composed of two pieces of upper mold and lower mold



Adjustable mold, composed of pattern ring, mold sleeve, upper and lower side plate

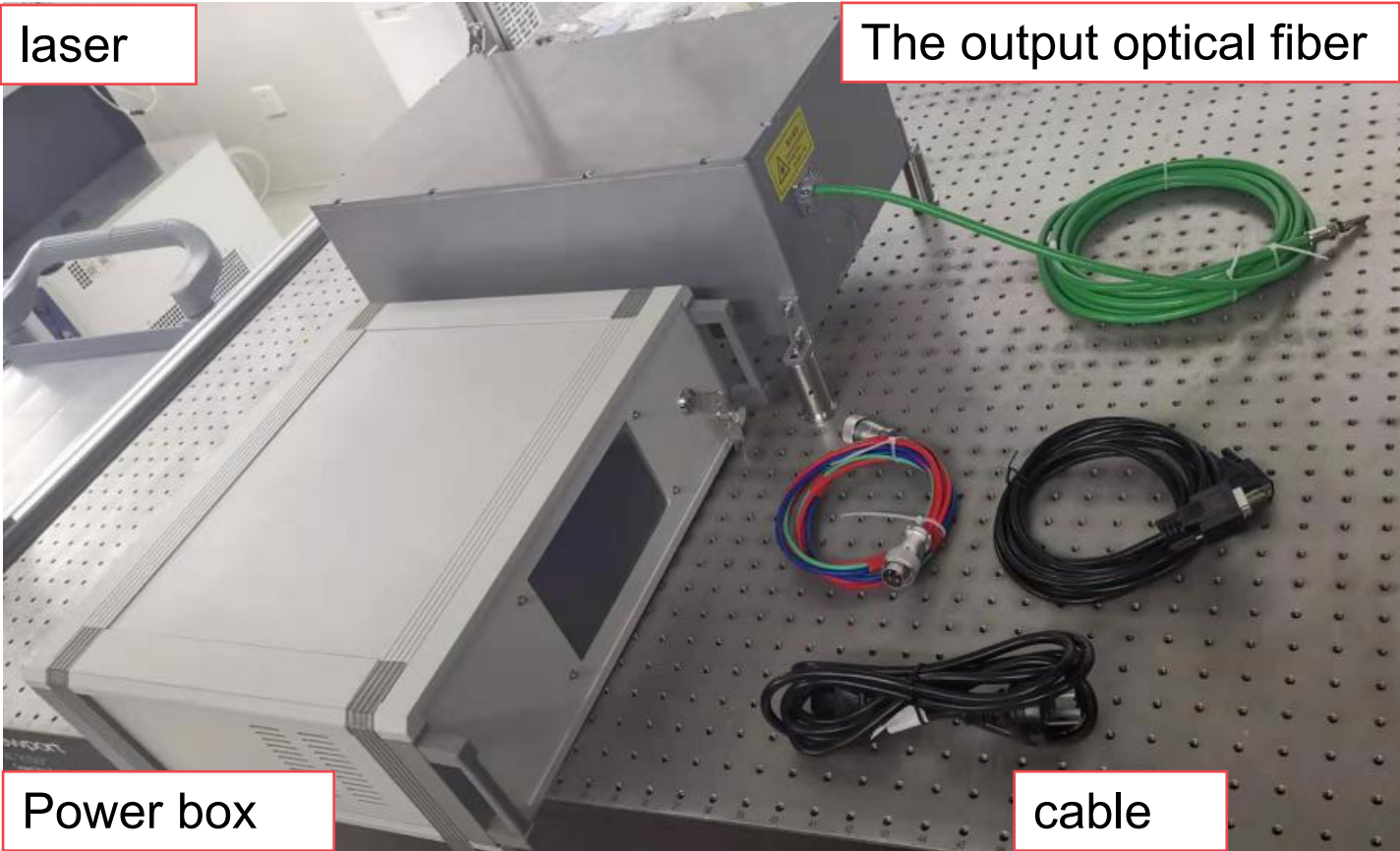
Project background

Industry focus

VS	Laser cleaning	Chemical cleaning	Sand blast cleaning
Cleaning method	Laser non - contact	Chemical cleaning agent, contact	Sand blasting, contact
The artifact damage	Non-destructive	Destructive	Destructive
Cleaning efficiency	H	L	L
Consumables	Only need electricity	Chemical cleaner	Silicon carbide
Consumables cleaning effect	Excellent, high cleanliness	Not uniform	Uniform, damage the substrate
Safety and environmental protection	No pollution	Chemical waste liquid pollutes water quality	Dust seriously pollutes the air
Operator health	No harm to the human body	Chemical corrosion, irritation of skin and respiratory tract	Dust seriously damages respiratory health



High performance laser



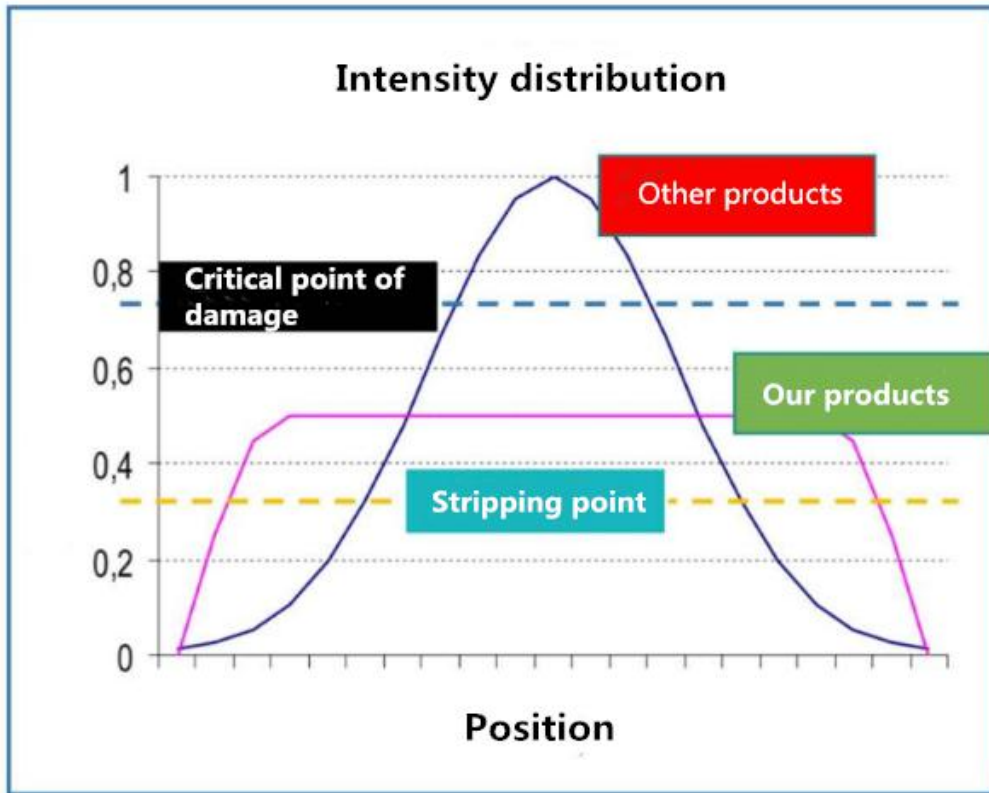
Fcp-200 nanosecond pulse laser and matching power box

Models	FCP-200	FCP-500
Maximum average power	200W	500W
Pulse frequency	10k-20kHz	10k-20kHz
Maximum single pulse energy	15 mJ @ 10 kHz	40mJ @ 10 kHz
The pulse width	50ns @ 10 kHz	50ns @ 10 kHz
Maximum peak power	300 kW@ 10 kHz	800 kW@ 10 kHz
Output fiber type	D80	QBH
Output fiber core diameter	400μm	400μm

Performance parameters of high power nanosecond pulse laser



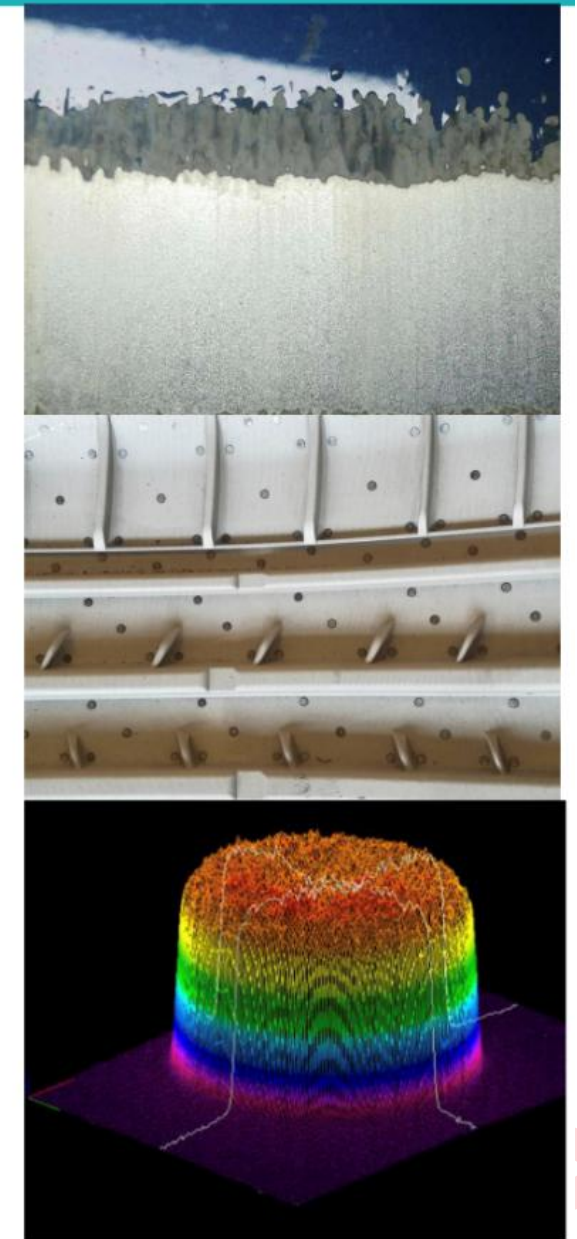
Die non - destructive laser cleaning technology



Other products



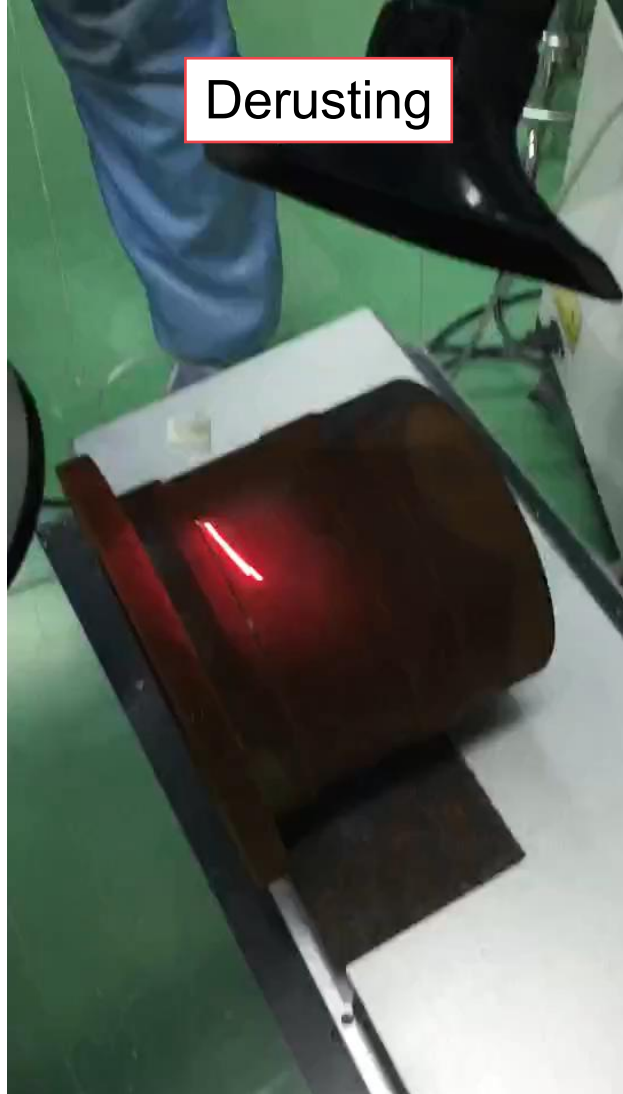
Our products



Product operation

The product application

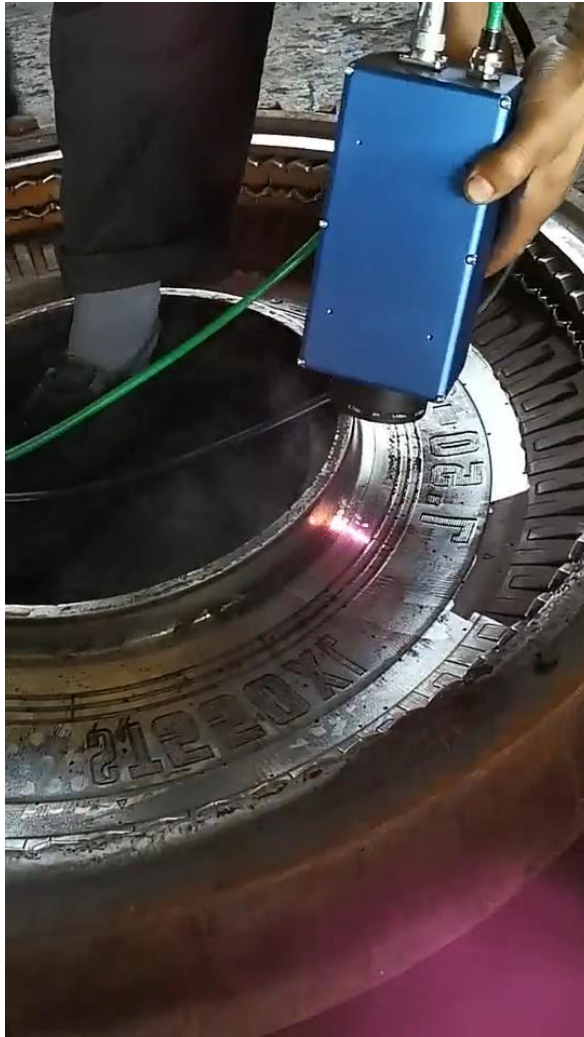
Features: "green", fast, economical and safe



Product operation

The product application

On-site demonstration of tire mold enterprises

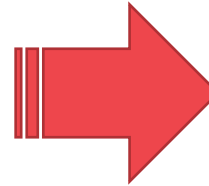


Product operation

The performance comparison

Our company's technical strength first-class

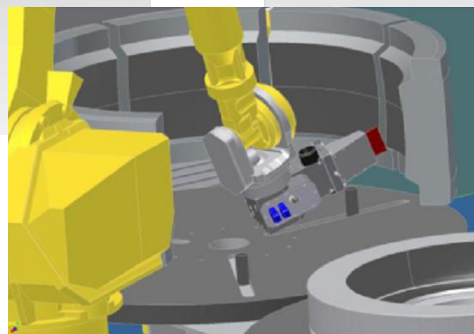
Company	IPG Photonics	Our Product	Competitive advantage
SIZE	YLPN-50-100-500-R	FCP-500	
MAX.POWER	500W	500W	
Maximum single pulse energy	50mJ	40mJ	High energy Monopulse
Pulse width	100ns	50ns	small effect Thermal
Peak power	500kW	800kW	High peak power
High cost performance			



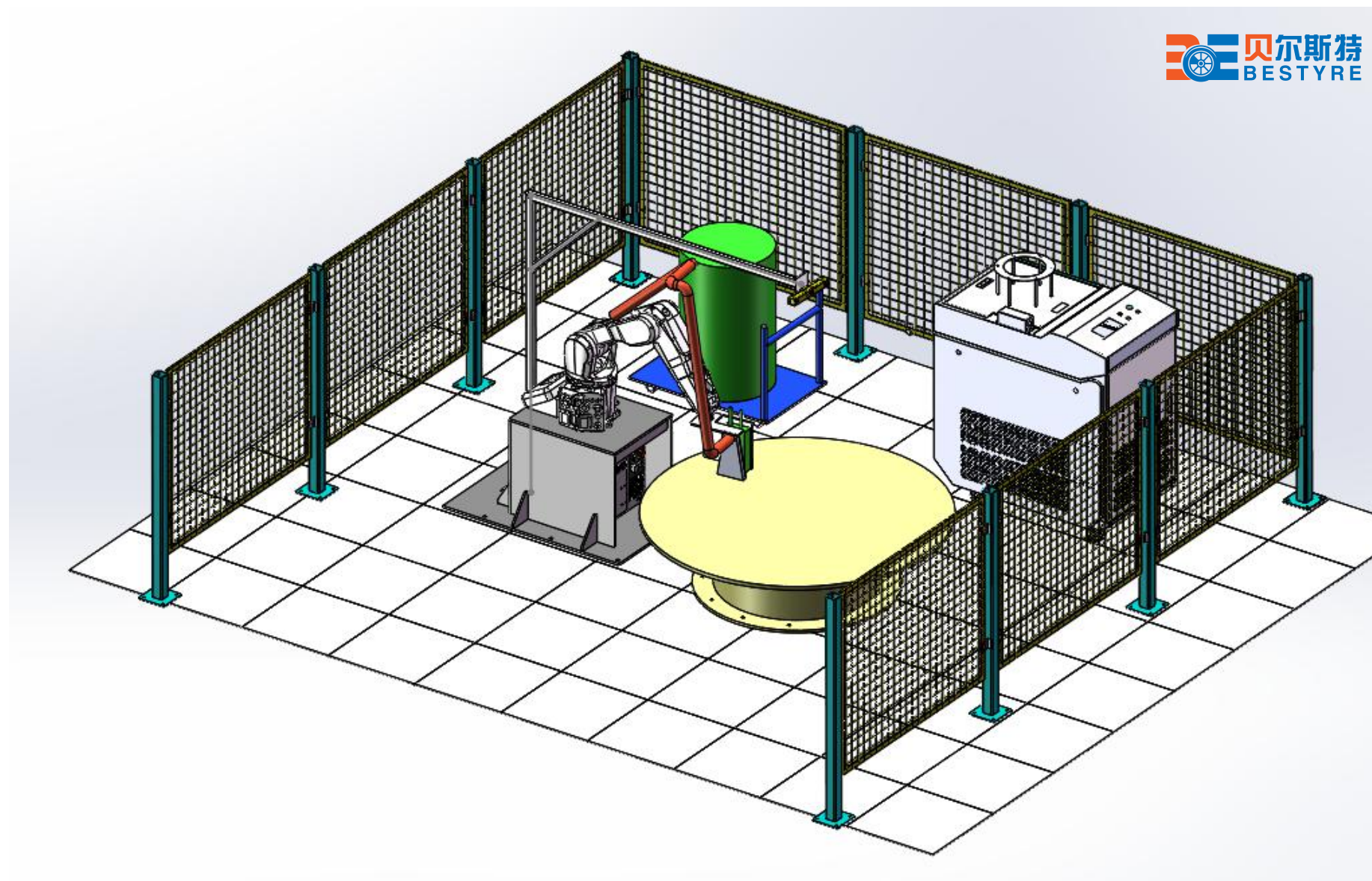
Our strengths :

- **Advanced technical solutions**
 - Advanced cavity design + amplification technology
 - Advanced high energy laser fiber coupling technology
- **Domestic leading technical indicators**
 - High output single pulse energy (> 40mJ)
 - The laser has a higher peak power (> 800kW)

Automatic customization solution



Automatic customization solution





THANKS

