

TURIN

Robotic Laser Welding Workstation



Shanghai Turin Smart Robot Co., Ltd.

TEL: 400-778-9969

Email: sales@turinrobot.com

Web: www.turinrobot.com

R&D Center: Building 7, No.66 Huiyuan Road Jiading District, Shanghai,
China
Factory: Building 10, No. 169 Lifa Avenue, Hai'an City, Jiangsu, China
Branches:
Room 802, Building B2, Yunzhi Science Park No. 75 Mudun Road, Guangming Street,
Guangming District, Shenzhen, China

TURIN

High welding efficiency

Single-pass welding for less consumables

Perfect weld without grinding or polishing

Simple operation & versatile applications



Primarily designed for laser welding, the workstation features an integrated design with a small foot print. Equipped with retractable wheels that offers easy maneuverability, the station can be repositioned conveniently at any time according to the site requirements. With a complete set of welding processes, it can be applied to welding of sheet metal, such as stainless steel, carbon steel, and aluminum alloy, in various scenarios including sheet metal fabrication, furniture, kitchenware, lamps, water tanks, billboards, door and window frames, and auto parts.

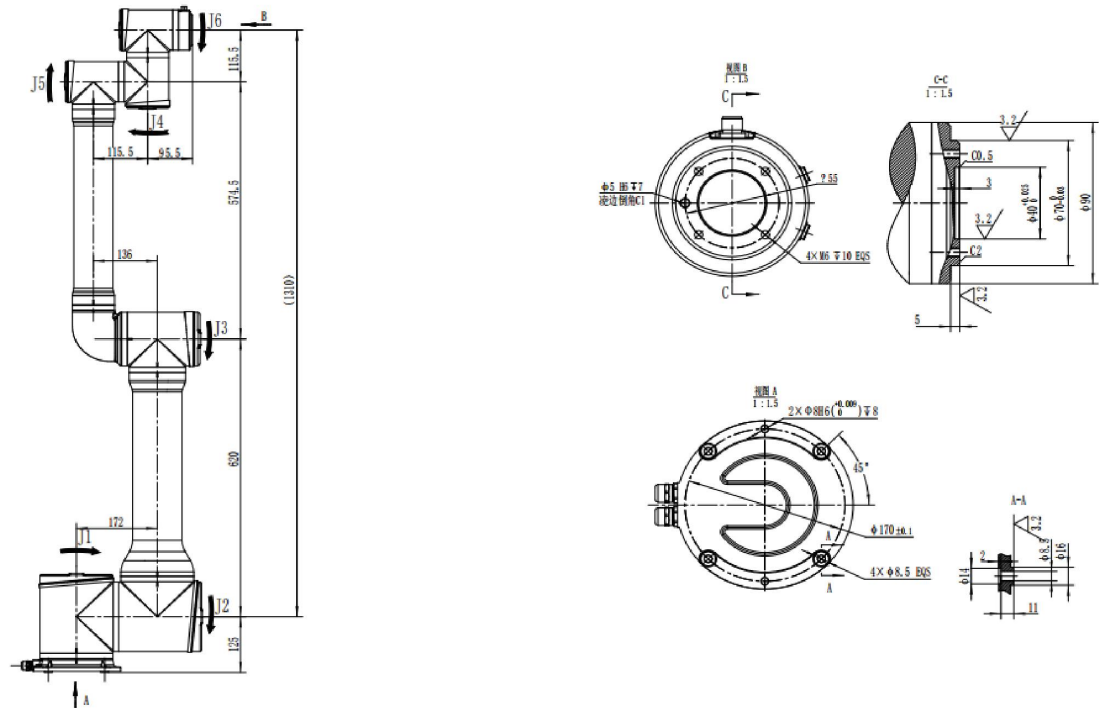
TCR100
load: 10kg
Arm length: 1310mm

Parameters of Collaborative Robot		
Payload	10kg	
Max Working Radius	1310mm	
Body Weight	43kg	
Rated Power	3.5kw	
Max Speed	J1	120°/s
	J2	120°/s
	J3	120°/s
	J4	180°/s
	J5	180°/s
	J6	180°/s
Max Operation Area	J1	±175°
	J2	±175°
	J3	-245° ~ +65°
	J4	±175°
	J5	±175°
	J6	±360°
protective specification	IP54/IP67	
Position Repeat Accuracy※	±0.05mm	
Working Temperature	0~45℃	

A yellow and grey collaborative robot arm, model TURIM T9000, is shown in a 3D rendering. The arm is yellow with grey joints and a grey base. It has a long, slender design with a gripper at the end. The brand name 'TURIM' and model 'T9000' are visible on the upper arm section.



Installation Dimensions of Collaborative Robot

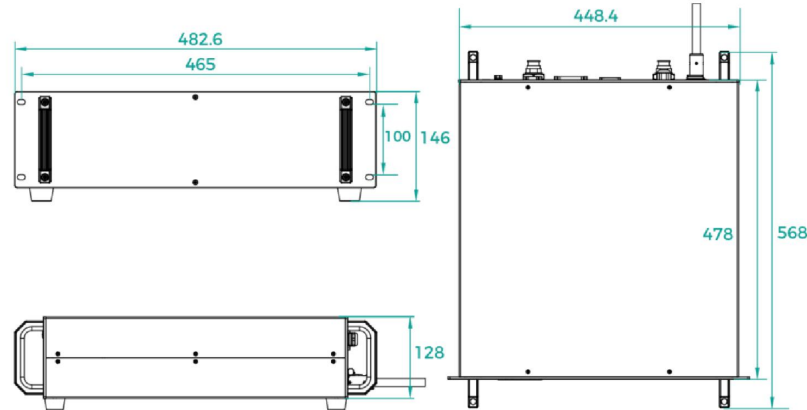


Laser Amplifier

The photoelectric conversion efficiency of fiber laser amplifier is as high as 40%, which is more than 13 times that of solid-state YAG amplifiers (3%). Its power stability is <±1.5%, providing reliability and long service life.

Parameters of 1.5KW Laser Amplifier	
Model	EFRC-1500-CN
Optical Properties	
Output power (W)	1500
Working mode	Continuous/pulsed
Polarization state	Random
Power range (%)	10~100
BPPBeam parameter product (mm × mrad)	<1.5
Power stability (%)	<±1.5 (1Hour (s))
Center wavelength (nm)	1080±10
FWHMSpectral width FWHM(nm)	<5
Max modulation frequency (kHz)	20
Indicator red light power (μw)	>200
Output Cable Parameters	
Output mode	QBH
Cable length (m)	10
Output fiber core diameter (μm)	25/50
Fiber optic cable bend radius (mm)	200
Electrical Properties	
Electrical Properties (VAC)	200~240.50/60Hz
Rated power (kW)	5
Control mode	RS232/AD/Ethernet
Other Parameters	
Operating ambient temperature (℃)	10~40
Operating ambient relative humidity (%)	10~85
Cooling method	water-cooling
Set temperature of cooling water (℃)	Ambient temperature≥30 26 Cooling water flow <30 22
laser amplifier (L/min)	>15 (laser) , >2 (QBH)
Cooling water pressure (Bar)	≥3
Outer diameter of cooling water connector (mm)	12
Overall size(mm)	wide482.6×deep478×high128 (Handle free)
Total weight (kg)	28±2

Dimensions of Laser Amplifier

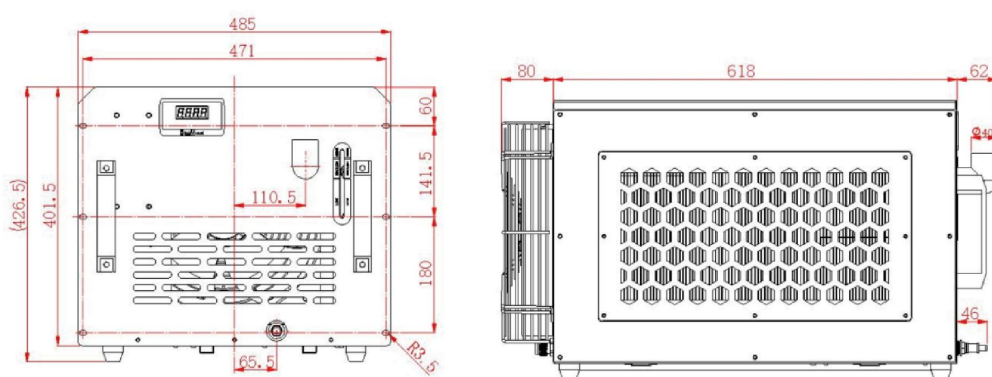


Water Cooler

The water cooling system is composed of an internal optical path cooling system and an external optical path cooling system. The internal one comes with the laser amplifier, while the external one uses the laser water cooling unit to ensure the long-te rm stable operation of the laser. The refrigeration unit will automatically refrigerate when the water temperature exceeds the specified limit, or stop refrigeration when the water temperature is lower than the specified limit.

Parameters of Water Cooler				
Model	SCH-1500		SCH-2000	
Voltage & Frequency	1p 220V/50Hz	1p 220V/60Hz	1p 220V/50Hz	1p 220V/60Hz
Current	9.5A	9.1A	11.4A	11.0A
Machine power	2.1kW	2.0kW	2.5kW	2.4kW
Application environment	0°C<Environment temperature<45°C, Relative humidity<95%			
Tempe. control accuracy	±1° C			
Cooling capacity	4.5kW		5.6kW	
Electric heating power	400W (Normal temperature)			
Refrigerant	R32			
Rated flow of water pump	2m/h			
Max.pump lift	20.5m		27.5m	
Pump power	0.25kW		0.32kW	
Tank vo lume	13L			
Laser nozzle interface	G1/2* Φ 12mm Quick connector			
QBH head nozzle interface	G1/2* Φ 6mm Quick connector			
Size and weight of the machine	760*485*430mm 41 kg		760*485*430mm 43kg	
Packing size and weight	800*500*595mm (L*W*H) 49kg		800*500*595mm (L*W*H) 51kg	
Functional characteristics	Efficiency &environmental protection ; double temperature controls; flow &over temperature alarm : Thermal protection of compressor			
Recommended matching	1.5kW Continuous fiber laser		2.0kW Continuous fiber laser	

Dimensions of Water Cooler



Welding Head

The drawer design of protective lens ensures low maintenance and perfect sealing. Full optical and body water cooling improve the stability and service life of the welding head. It can also be equipped with automatic wire feeding device to complete wire-filling welding. Special air knife or coaxial blowing method to effectively protect the lens.

Parameters of Welding Head	
Max power	2000W
Optical fiber interface	QBH/RD
Collimating	F100
Focusing	F200 (Standard)F250/F300/F400(assorting)
Clear aperture	D26mm
Collimating Protective Lens	D28X2mm
Focusing Protective Lens	D30x4mm
Protective gas pressure	10、 15、 20、 25bar
Weight	1.95kg
CCD cable length configuration	Cable length 5m (standard)Cable length 8m/10m (optional)



Welding finish



Dimensions of Welding Head

