

Technical Data

3015-3KW plate laser cutter

1.Main parameters

Laser type	Fiber pipe and plate laser cutter
Optical maser wave length	1070 mm
Output rating	3000 W
Optical quality	<0.373mrad
X-axis	1500mm
Y-axis	3000mm
Z-axis	120mm
Effective Cutting Range	1500×3000mm
Cutting accuracy	≤±0.05mm
Repeat positioning accuracy of table	≤±0.03mm
Maximum positioning speed	120m/min
The maximum load of the table	1500KG
Phase	3
Power rating	380V
Frequency	50Hz
Total power protection level	IP54

2.Speed unit Meter/minute(3000W)

MFMC-3000(100 μ m)cutting data											
Material	Thickness (mm)	Speed (m/min)	Focus position	Cutting height (mm)	Gas	Nozzle type	Air pressure (bar)	Laser power(W)	Cutting frequency (Hz)	Duty cycle (%)	Cutting effect
Q235B	1	38~40	0~-0.5	0.5	N2	Single layer 1.0	12~16	3000	5000	100	Glossy
	2										
	3	4~4.2	4.5~5.5	0.8	O2	Double layer: 1.0	0.6~0.9	3000	5000	100	
	4	3.3~3.5	4.5~5.5	0.8	O2	Double layer: 1.2	0.6~0.9	3000	5000	100	
	6	2.3~2.5	4.5~5.5	0.8	O2	Double layer: 1.2	0.6~0.9	3000	5000	100	
	8	2.1~2.2	4.5~5.5	0.8	O2	Double layer: 1.2	0.6~0.9	3000	5000	100	

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	10	1.5~1.7	2~3	1.5	O2	Double layer: 3.0	0.6~0.9	2200~2400	5000	100	Matte surface
	12	1.2~1.4	2~3	1.5	O2	Double layer: 3.0	0.6~0.9	2200~2400	5000	100	
	14	1~1.1	2~3	1.5	O2	Double layer: 4.0	0.6~0.9	2200~2400	5000	100	
	16	0.85~0.9	2~3	1.5	O2	Double layer: 4.0	0.6~0.9	2200~2400	5000	100	
	18	0.7~0.75	2~3	1.5	O2	Double layer: 4.0	0.6~0.9	2200~2400	5000	100	
	20	0.6~0.65	2~3.5	1.5	O2	Double layer: 4.0	0.6~0.9	2200~2400	5000	100	
	22	0.5~0.55	2~3.5	1.5	O2	Double layer: 4.0	0.6~0.9	2200~2400	5000	100	
	25	0.45~0.5	2~3.5	1.5	O2	Double layer: 5.0	0.6~0.9	2200~2500	5000	100	
SUS304	1	35~37	0~-1	0.5	N2	Single layer: 1.0/1.2/1.5	12~16	3000	5000	100	No slag
	2	13~15	-1.5~-2	0.5	N2	Single layer: 1.5/2.0	12~16	3000	5000	100	
	3	7~8	-2.5~-3	0.5	N2	Single layer: 2.0/2.5/3.0	16~20	3000	5000	100	
	4	4.5~5.5	-3.5~-4	0.5	N2	Single layer: 3.0	16~20	3000	5000	100	
	6	1.7~1.9	-5~-5.5	0.5	N2	Single layer: 3.5/4.0	16~20	3000	5000	100	
	8	0.8~1.0	-6~-7	0.5	N2	Single layer: 4.0	16~20	3000	5000	100	
	10	0.6~0.7	-7.5~-8.5	0.5	N2	Single layer: 4.0	16~20	3000	5000	100	
AL (6061)	1	30~33	-0.5~-1	0.5	N2	Single layer: 1.0/1.2/1.5	12~16	3000	5000	100	
	2	10~12	-1~-1.5	0.5	N2	Single layer: 1.5/2.0	12~16	3000	5000	100	
	3	5.5~5.9	-2.5~-3	0.5	N2	Single layer:	16~20	3000	5000	100	

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						2.0/2.5/3.0					
	4	2.8~3.2	-3.5~-4	0.5	N2	Single layer: 3.0	16~20	3000	5000	100	
	6	0.7~0.8	-5~-5.5	0.5	N2	Single layer: 3.5/4.0	16~20	3000	5000	100	
	8	0.5~0.6	-6~-7	0.5	N2	Single layer: 4.0	16~20	3000	5000	100	
brass	1										
	2										
	3	4.5~5	-2~-2.5	0.5	N2	Single layer: 2.0/2.5/3.0	16~20	3000	5000	100	
	4	3~3.5	-3~-3.5	0.5	N2	Single layer: 3.0	16~20	3000	5000	100	
	5										
	6	1~1.2	-5~-5.5	0.5	N2	Single layer: 3.5/4.0	16~20	3000	5000	100	
	8										
Red copper	1										
	2										
	3										
	The green thickness of the material means that it can be processed in large quantities for a long time.										
	The material with yellow thickness indicates that it can be processed, but as the material temperature rises, the cutting air pressure fluctuates, the sheet composition is uneven and other factors fluctuate, the processing process is unstable, and a higher power laser is recommended.										
	The material with red thickness indicates that it can be cut but cannot be processed in batches.										
note	1. In the cutting data, the 3000W laser output fiber core diameter is 100 microns;										
	2. The cutting data adopts Jiaqiang cutting head with an optical ratio of 100/125 (collimation/focus lens focal length);										
	3. Cutting auxiliary gas: liquid oxygen (purity 99.6%) liquid nitrogen (purity 99.995%);										
	4. Due to the differences in equipment configuration and cutting technology (machine tool, water cooling, environment, cutting nozzle, gas pressure, etc.) used by different customers, this data is for reference only.										

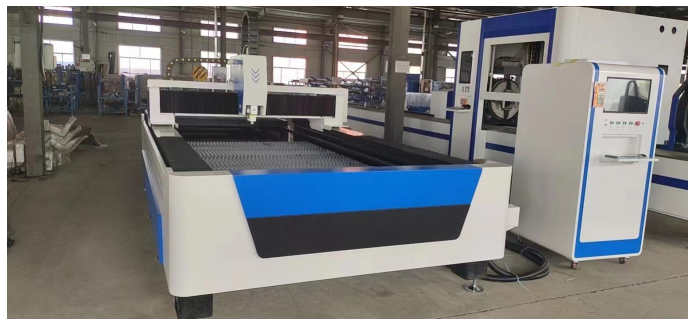
3.Standard Components

Components	Name	Qty	Manufacturer	Origin
Laser device	Fiber laser generator	1 set	MAX	Germany
	Laser power			

Professional laser cutting torch		1 set	Raytools	Switzerland
Machine body	Workbench	1 set	Rbqlty	Anhui China
	X、 Y gear and rack	1 set	SMG	Japan
	Linear guide rail	1 set	SMG	Japan
	AC servo motor & driver	4 sets	Lead-motion	Germany
	Proportional valve	1 set	SMC	Japan
	Reducer	3 sets	Motovario	France
	Gas circuit control	1 set	SMC	Japan
	Machine tool accessories	1 set	Rbqlty customized	Anhui China
CNC system (including control software)		1 set	FSCUT2000	Shanghai China
Standard device	Smoke exhaust device	1 set	Rbqlty customized	Anhui China
	Dust collecting device	1 set	Rbqlty customized	Anhui China
	Water cooling device	1 set	S&A	Guangzhou
Optional device	Screw air compressor	1 set	Hanbell	Shanghai China
	Automatic voltage regulator	1 set	Xinwen	Shanghai China
Lubrication system	Automatic lubrication system	1 set	Rbqlty customized	Anhui China
Z-axis precision ball screw	High precision ball screw module	1 set	Rbqlty customized	Anhui China
Bed structure	Gantry	1 set	Rbqlty customized	Anhui China

4.Detailed Pictures

Front View



Workbench

Linear Guide Rail

Back View



Gear Rack

Lubricating Oil Pump




			
<p>Guide Rail Gear Rack Cover</p>	<p>Wireless Remote Control</p>	<p>Dust Tray</p>	<p>Table</p>
			
<p>Servo Motor</p>	<p>Reducer</p>	<p>Waterproof Electric Cabinet</p>	<p>Water cooling machine</p>
			

5.Machine pictures (for reference)



6.Optional equipments

1.Laser Device

Optional Laser Source		
Max	Raycus	IPG
		

2.Laser cutting torch

Optional Laser Cutting Torch	
Raytools	Precitec

3.Dust collector (including CE)



Model	MCJC-5500
Power	5.5KW
Voltage	380V
Frequency	50Hz
Air volume + suction	3100m ³ /h + 3800pa
Cabinet size	800*830*1900mm

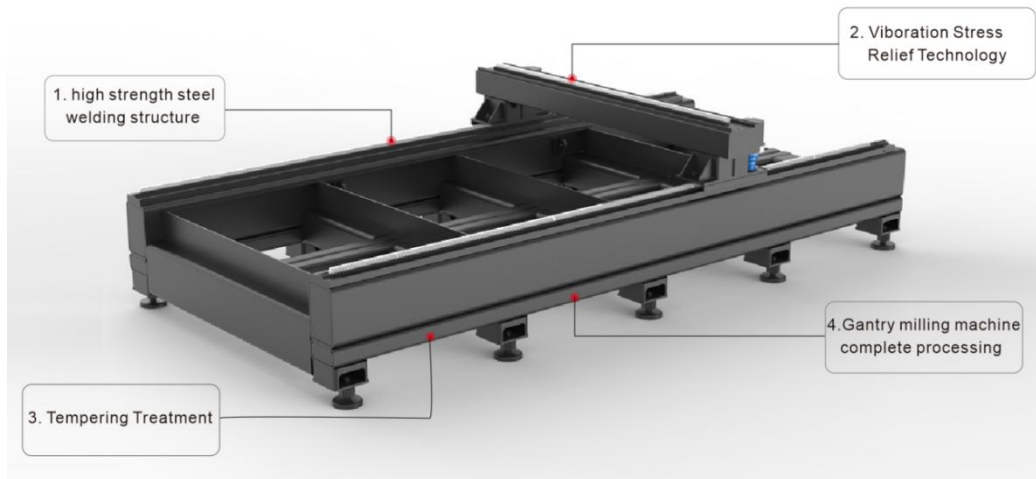
7.Machine parts

1.Workbench Structure

- 1) The workbench adopts quenching steel welding gantry structure to ensure the rigidity and durability of the machine.
- 2) The workbench Surface is processed by gantry milling machine at one time.
- 3) The steel structure internal stress is eliminated by vibration stress relief equipment
- 4) Aluminum casting ensures the stability and rigidity of the Y axis beam
- 5) The Y axis beam runs at high speed steadily and smoothly, greatly reducing the consumption of gas.

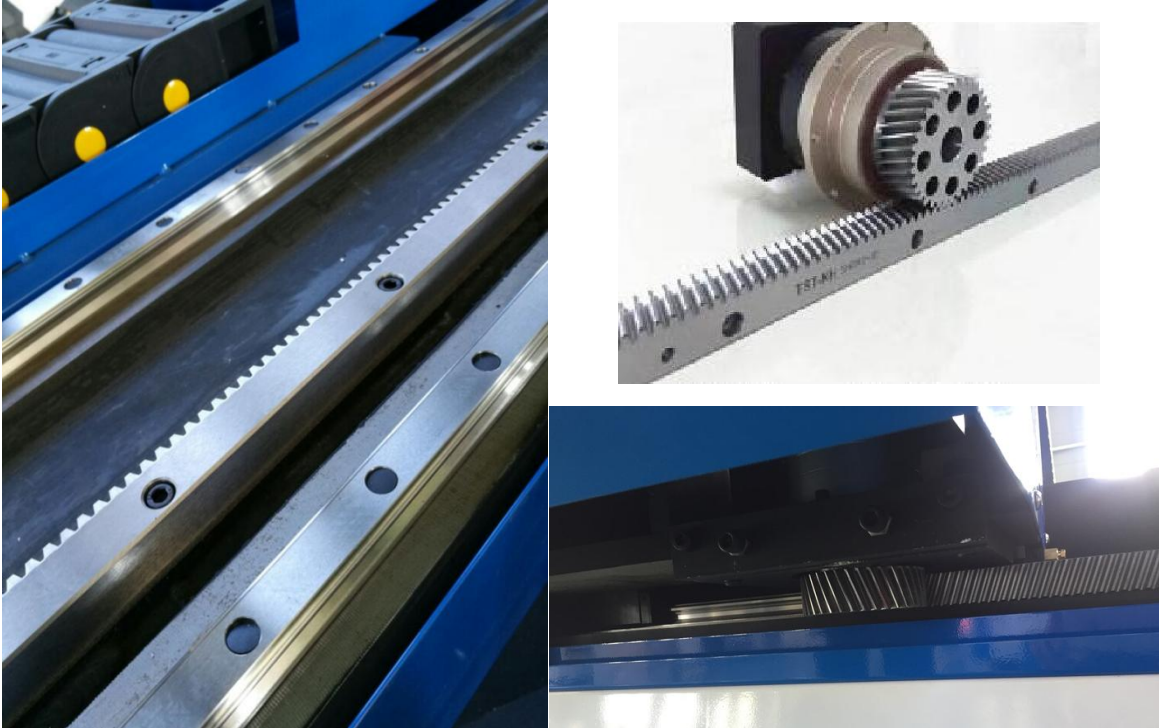
Quenching Aluminum Casting Beam

Speedy stable movement



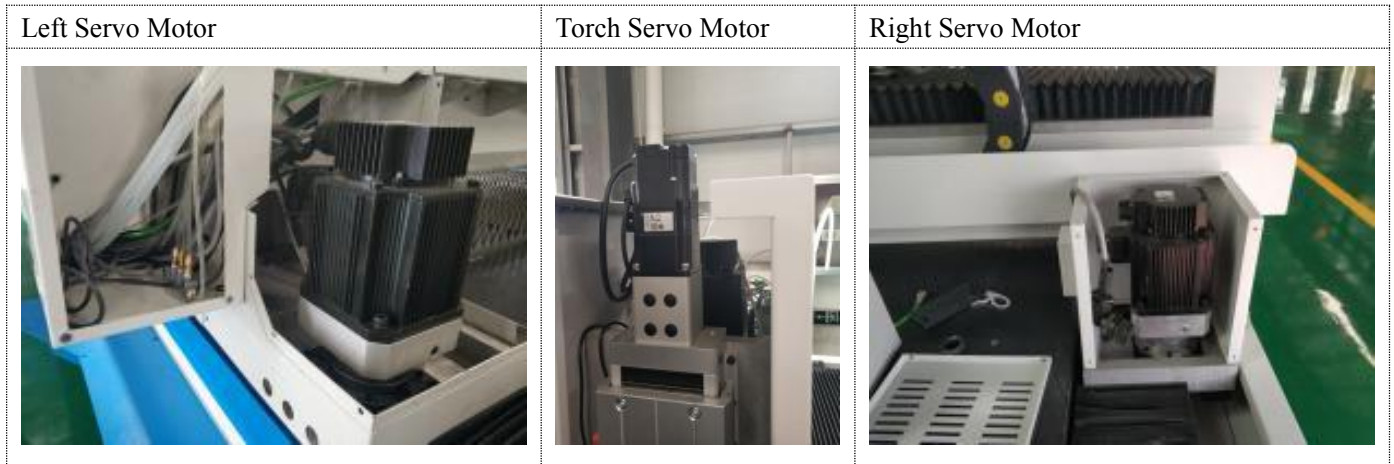
2. Gear Rack & Guide Rail

Using double linear guide rails, helical gear & rack on X, Y axis to achieve high precision and good dynamic performance.

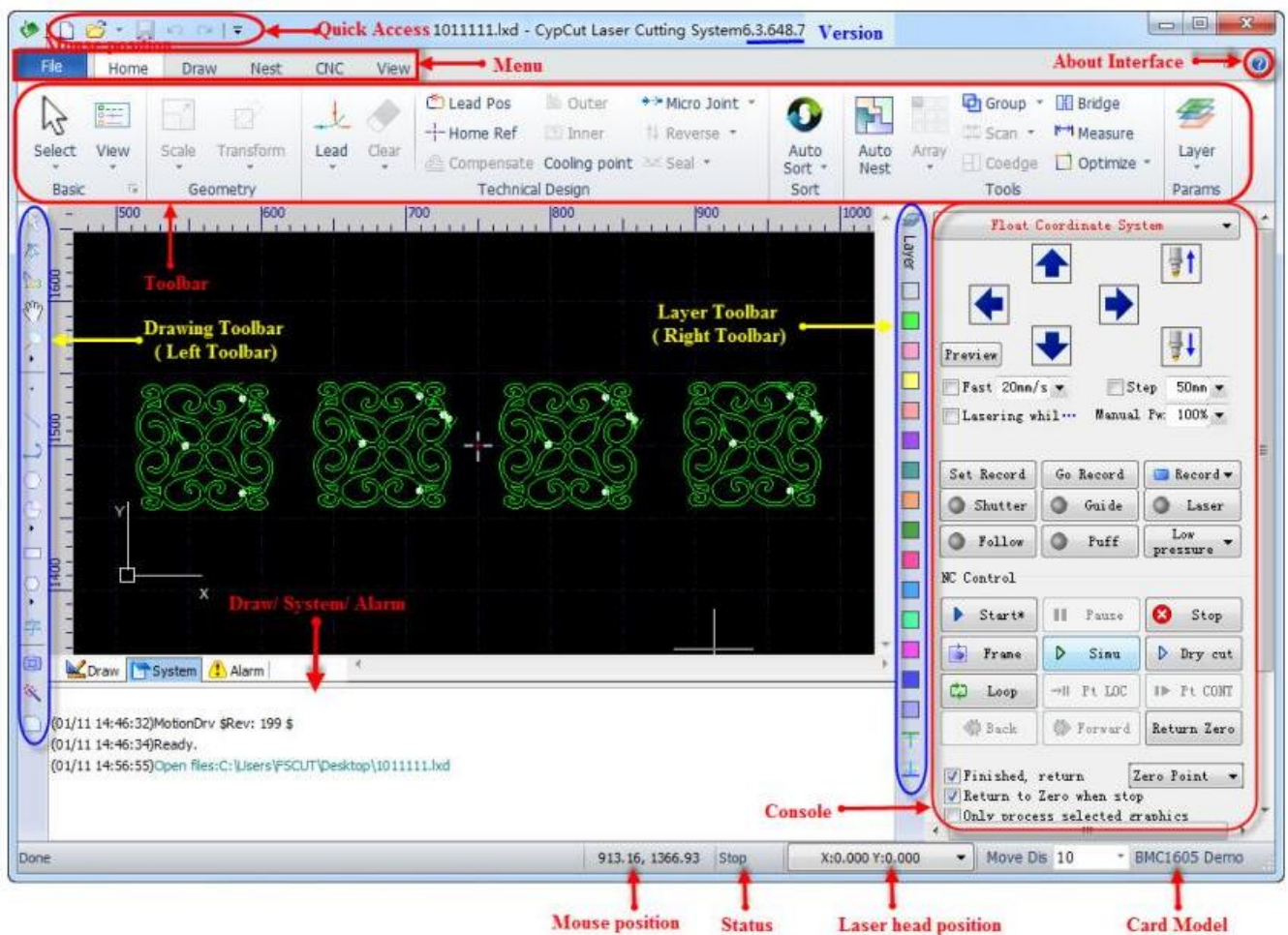


3. AC servo motor & driver





4.Cypcut software



8.Running Consumption

Power consumption:

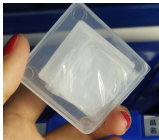



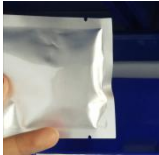

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Machine Components	Power consumption(KW/h)	Total
Laser Generator	≅ 3	≅ 25.25 KW/H
Machine body	≅ 9	
Water cooling system	≅ 3	
Screw air compressor	≅ 5.5	
Air Dryer	≅ 0.25	
Dust Collector	≅ 3.5	

Wearing parts

Name	Life span	picture	1 year
Protective lens	600 hours		20 pcs
Collimating protective lens	4000 hours		1 pc
nozzle	600 hours		20 pcs
Ceramic ring	4000hours(No impact,don't replace)		1 pc
Focus lens	4000 hours		1 pc
Collimating lens	4000 hours		1 pc