



LASER

HN-FL3015E

TECHNICAL SOLUTION

Supplier: Gentronics

Buyer:



GENTRONICS
WELDING SUPPLIES AND SERVICE

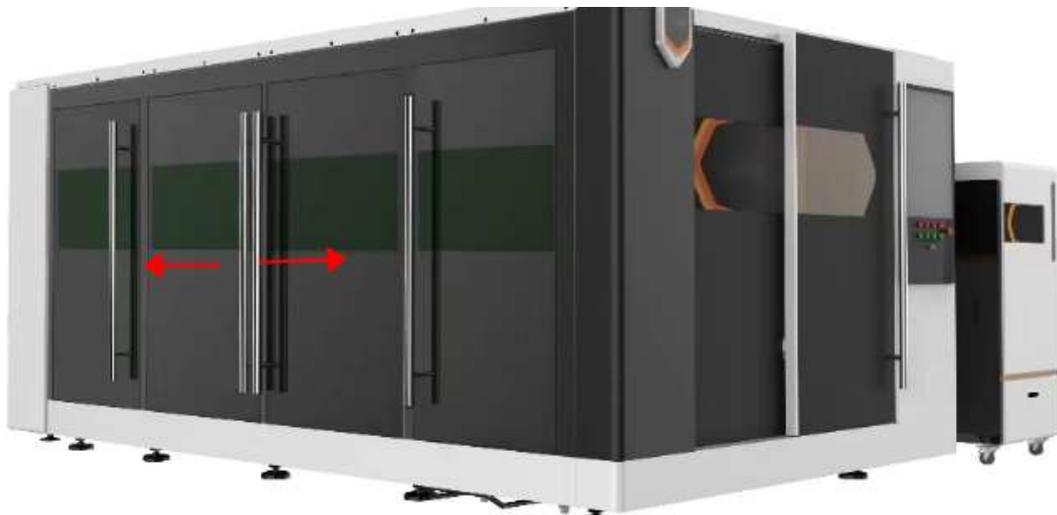
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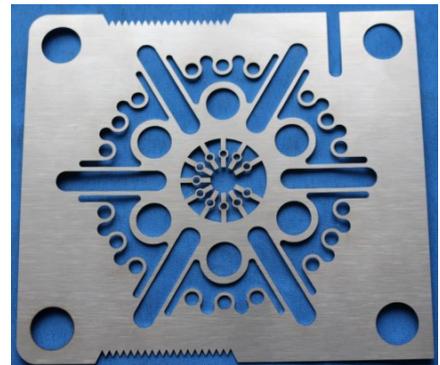
FIBER LASER CNC CUTTING MACHINE

Model: HN-FL3015

TECHNICAL DOCUMENT



Cutting Samples:



Notice: The pictures for reference only, please refer to the actual object.



I. General Tech Data

Model Specifications	HN-FL3015E
Fiber Laser Source	3000W MAX
Effective working length X axis	1525mm
Effective working length Y axis	3050mm
Max cutting thickness	MS ≤22mm SS≤12mm
X,Y axis positioning accuracy	±0.02mm/m
X,Y Axis repositioning accuracy	±0.02mm/m
X,Y Axis moving speed	≤90m/min
Rated supply voltage	380V, 3Phase
Frequency	50Hz
Power consumption	23KW
General power protection class	IP54
Maximum load of workbench	800KG
Net Weight	3000KG
Dimension (Length*Width*Height)	4614x2250x2200mm

II. Laser Capacity and Cutting Thickness(Recommend)

MAX	Carbon Steel	Stainless Steel	Aluminum	Brass
1000W	10	5	3	3
1500W	13	7	4	3
2000W	18	8	6	5
3000W	20	10	6	6
4000W	25	10	8	8
6000W	25	16	14	14
12000W	25	25	25	12
20000W	50	35	30	18

Remark: Different material cutting needs different gas and consumables. Above data is for general use. It may vary according to operator's skill, gas conditions and types and related equipment. Detail cutting thickness and speed in form Page 6 and 7.

III. Main configuration

<p>Fiber Laser</p>	<p>3000W MAX Outstanding brand of laser source, 16 years of unremitting exploration in device and laser technology, MAX quality stable and reliable, which approved by thousands of customers in the world.</p>	
<p>Laser Head</p>	<p>Raytools (Switzerland) Automatic focus, high effectiveness, save your time; Anti-collision design, height adjustment; Easy protective lens maintenance and Focus lens adjustment. Locates edges and improves processing efficiency. Improves the cutting efficiency. High Precision: without manual adjust, 0 fault cutting.</p>	
<p>CNC System</p>	<p>FSCUT hardware and Cypcut software FSCUT laser cutting system is a full-solution specially designed for sheet metal fabrication industry, easy to install and adjust, excellent performance and fully integrated solutions. CypCut cutting software is an in-depth design for fiber laser cutting industry. It simplifies complex CNC machine operation and integrates CAD, Nest and CAM modules in one. From drawing, nesting to workpiece cutting all can be finished by a few clicks.</p>	
<p>THC</p>	<p>BCS100 BCS100 capacitance height controller provides excellent performance in distance control. It served as height follow unit for FSCUT laser cutting control system via Ethernet communication, can realize functions including height sensing, segmented and stepping pierce process, detect and find workpiece edge, vibration suppression etc. Latest anti-collision function can effectively avoid tip-up collision risk in production.</p>	
<p>Servo System</p>	<p>YASKAWA servo motor (Japan) Enhanced vibration suppression function; Improve follow performance and reduce response time; Reduce the vibration; Improve mechanical performance by combining inertia motors; Low motor heat.</p>	

<p>Reducer</p>	<p>Shimpo (Japan) Perfect combination of servo system with the Shimpo planetary gearbox and Helical Rack & pinion improves the position and re-positioning accuracy of the machine.</p>	
<p>Gear Rack</p>	<p>YYC High precision, long life, can provide rigorous support for quenching helical gears and grinding helical gears, so that the load drive structure is compact, can effectively reduce the driving torque.</p>	
<p>Linear Guide Rail</p>	<p>THK (Japan) Low noise, wear-resistant, smooth to keep fast moving speed of laser head. The linear transmission system comprises of from Helical Rack and Linear guides which improves accuracy and efficiency.</p>	
<p>Water Chiller</p>	<p>HanLi Water Chiller Specially designed for fiber laser equipments, compatible with various brand lasers; Full range of environmentally friendly refrigerants, worry-free export; Laboratory inspection, quality assurance; Stable and reliable performance, low failure rate, energy saving and power saving.</p>	
<p>Electric Apparatus Elements</p>	<p>Schneider (France) 1.Circuit protection against short-circuit currents, Circuit protection against overload currents, Breaking and industrial disconnection as per standards IEC/EN 60947-2. 2.Over voltage resistance, high performance limitation to fast closing independent of the speed of actuation of the toggle.</p>	
<p>Auto Lubricate</p>	<p>Automatic Lubrication System for both X Y axis guide rails and Z ball screw. We can set the adding oil's frequency and quantity by adjusting the relevant parameters on computer, so it largely improve the machine's lifetime, save manpower.</p>	

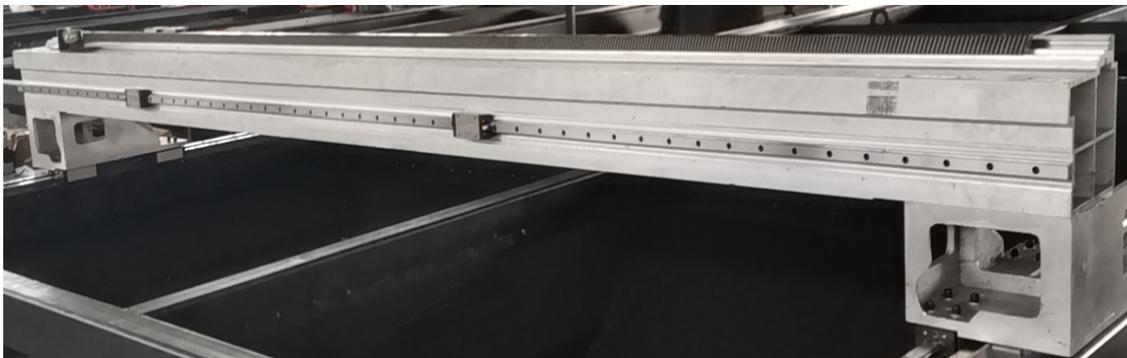
IV. Structure

1. Working table

The bed body adopts the overall welded structure of steel. It is subjected to roughing after annealing to eliminate internal stress. And is finished by secondary vibration aging treatment, which better solves the stress caused by welding and processing. Thereby it greatly improved the machine tool stability.



2. Tensile Aluminum Cross Beam



Better performance and looks brighter than cast aluminium, stable and not easy deformed, light in weight and good in dynamic performance. After secondary vibration and aging treatment, it is finished to ensure the strength, rigidity and stability of the beam.

V. Laser Capacity and Cutting Thickness And Speed



Material	Thickness	1000w	1500w	2000w	3000w	4000w	6000w	8000w	10000w	12000w	15000w	20000w
		m/min	m/min	m/min	m/min	m/min	m/min	m/min	m/min	m/min	m/min	m/min
Carbon Steel (Q235B)	1	24-26	30-38	34-39	37-42	40-50	43-52	48-54	48-54	50-55	55-60	61-72
	2	8-9	12-14	16-17	18-20	21-23	23-29	26-35	28-35	28-40	30-42	32-45
	3	2.8-3.0	2.9-3.2	3.4-3.6	4.0-4.2	5.0-5.2	6-10	10-20	16-25	18-30	20-30	25-35
	4	2.2-2.4	2.4-2.6	3.1-3.2	3.3-3.5	3.5	3.5-3.7	3.5-3.7	3.5-5.5	3.5-5.5	3.5-5.5	4.0-5.0
	5	1.5-1.7	1.8-2.0	2.7-3.0	2.8-3.0	3.0-3.2	3.2-3.3	3.2-3.3	3.3-4.5	3.3-4.8	3.3-4.8	3.5-5.0
	6	1.2-1.4	1.6-1.8	2.0-2.2	2.3-2.5	2.6-2.8	2.6-2.8	2.6-2.8	3.0-4.2	3.0-4.2	3.0-4.2	3.3-4.8
	8	1.0-1.1	1.1-1.3	1.5-1.7	2.1-2.2	2.1-2.3	2.4-2.5	2.4-2.5	2.5-3.5	2.5-3.5	2.5-3.5	3.0-4.0
	10	0.75-0.85	0.9-1.0	1.2-1.4	1.5-1.7	1.8-2.0	2.2-2.3	2.2-2.3	2.2-2.7	2.2-2.7	2.2-2.7	2.5-3.5
	12	0.6-0.65	0.8-0.9	1.0-1.1	1.2-1.4	1.5-1.6	1.9-2.0	1.9-2.0	1.2-2.1	1.2-2.1	1.2-2.1	1.5-2.5
	14		0.6-0.7	0.9-1.0	1.0-1.1	1.2-1.4	1.2-1.5	1.5-1.7	1.7-1.9	1.7-1.9	1.1-1.9	1.3-2.0
	16		0.5-0.6	0.8-0.85	0.85-0.9	0.9-1.0	0.9-1.1	0.85-1.3	0.9-1.7	0.9-1.7	0.9-1.7	1.0-2.0
	18			0.7-0.75	0.7-0.75	0.85-0.95	0.7-0.8	0.7-0.8	0.65-0.9	0.65-0.9	0.65-1.9	0.7-1.5
	20			0.55-0.6	0.6-0.65	0.65-0.7	0.6-0.65	0.6-0.65	0.6-0.9	0.6-0.9	0.6-0.9	0.7-1.3
	22				0.5-0.55	0.55-0.6	0.55-0.6	0.55-0.6	0.8-0.8	0.5-0.8	0.5-0.8	0.6-1.1
	25				0.45-0.5	0.45-0.5	0.5-0.55	0.5-0.55	0.3-0.7	0.3-0.7	0.3-0.7	0.5-0.9
	30						0.3-0.5	0.3-0.7	0.3-0.7	0.3-0.7	0.25-0.35	0.4-0.7
	35								0.37-0.38	0.3-0.4	0.3	0.35
	40								0.25-0.26	0.25-0.35	0.3	0.33
45									0.2-0.25	0.25	0.3	
50										0.2	0.25	
60											0.2	
Stainless Steel (304)	1	28-32	32-35	35-41	38-42	40-45	45-47	55-60	60-75	70-85	72-85	80-92
	2	6-7	9-10	14-15	20-30	32-35	35-37	37-40	40-55	50-66	52-70	55-75
	3	2.8-3.0	4.2-4.5	6.5-7.0	13.5	14-17	18-20	21-23	27-38	33-45	38-50	45-58
	4	0.9-1.2	2.1-2.3	3.5-4.0	5.0-6.5	6.5-7.0	14-15	15-17	18-25	22-32	25-35	30-40
	5	0.8-0.9	1.6-1.8	2.0-2.2	3.0-4.5	4.8-5.0	8-10	11-12	15-22	18-25	20-30	25-36
	6	0.5-0.6	1.0-1.2	1.3-1.5	3.5	4.5	6.0-6.5	8-10	12-15	15-21	18-25	22-35
	8		0.5-0.6	0.7-0.8	1.6	2.0	4.0-4.2	5-6	8-12	10-16	12-18	15-20
	10			0.55-0.60	0.8	1.4	1.8-2.0	3.8-4.1	6-8	8-12	10-15	12-18
	12				0.6	0.9	1.1-1.3	1.7-2.2	3-5	6-8	8-10	9-15
	14					0.4	0.9-1.0	1.1-1.7	1.8-3.0	3-5	3.5-6.0	5-12
	16						0.8-0.85	1.1-1.3	1.7-2.1	2.5-4.5	3.5-5.5	4-9
	18						0.6-0.7	0.9-1.2	1.3-2.0	2.0-3.8	2.5-4.0	3-7
	20						0.5-0.6	0.7-0.9	1.2-1.8	1.8-3.0	2.0-3.5	2.5-5.0
	25							0.2-0.4	0.6-0.7	1.2-1.8	1.5-2.0	2-4
	30								0.5-0.6	0.6-0.7	0.8-1.0	1-2
	35								0.45-0.55	0.5-0.65	0.7-0.9	0.9-1.2
	40								0.4-0.5	0.5-0.6	0.6-0.8	0.7-1.0
	45									0.35-0.45	0.5-0.7	0.6-0.8
50									0.3-0.55	0.3-0.6	0.5-0.7	
60										0.2	0.4-0.5	
70										0.1	0.3	
80											0.2	
90											0.1	
Aluminum	1	19-21	20-28	25-30	30-33	35-37	50-52	55-60	60-75	7-85	70-85	75-90
	2	4.5-5.0	8-9	8-12	10-15	15-17	28-29	37-40	33-45	38-50	40-55	50-65
	3	1.8-2.0	3.8-4.2	5.5-6.0	5.5-5.9	6.5-7.0	15-17	21-23	25-35	30-40	35-45	45-58
	4		2.0-2.2	2.5-3.0	2.8-3.2	4.5-4.8	9-10	15-17	21-30	25-38	30-40	40-55
	5		0.8-1.0	1.5-2.0	2.0-2.2	3.8-4.2	6.0-6.5	11-12	13-20	15-25	20-30	25-35



	6			0.6-0.8	0.7-0.8	2.0-2.2	4.5-5.0	7-8	9-12	13-18	15-24	21-33	
	8					1.0-1.2	2.8-2.9	3.5-4.0	4.5-8.0	9-12	11-15	18-28	
	10					0.5-0.6	1.9-2.0	2.3-2.7	4-6	4.5-8.0	6-10	12-20	
	12						1.1-1.2	1.5-2.0	2.2-3.0	4-6	5-8	9-15	
	16						0.5-0.6	0.9-1.1	1.5-2.0	2.2-3.0	2.5-3.5	5-9	
	20							0.7-0.9	1.0-1.6	1.5-2.0	2.0-2.5	3.0-5.5	
	25							0.4-0.7	0.7-1.0	1.0-1.6	1.2-2.0	2.1-4.8	
	30							0.3-0.6	0.5-0.7	0.7-1.0	1.0-1.8	1.5-3.0	
	40									0.3-0.7	0.7-1.2	1.2-2.0	
	50										0.3-0.7	1.0-1.6	
	60											0.9-1.3	
	65											0.5-0.8	
Brass	1	16-18	25-27	31-35	35-40	35-40	45-55	55-60	65-75	75-85	75-85	80-95	
	2	3.0-3.5	7-8	8-10	10-12	12-14	25-35	37-40	33-45	38-50	40-55	60-85	
	3	1.1-1.3	2.7-3.0	5.5-6.0	4.5-5.0	6.5-6.8	17-20	21-23	25-40	30-50	32-55	45-68	
	4		1.5-1.7	2.5-3.0	3.0-3.5	4.5-4.7	10-12	15-17	15-24	25-33	27-35	35-50	
	5			1.8-2.0	2.8-3.0	3.8-4.2	7-8	11-12	9-15	15-24	18-26	25-35	
	6			0.9-1.1	1.0-1.2	1.3-1.5	5-6	7.3-7.5	7-9	7-9	10-18	20-30	
	8				0.5-0.7	0.7-0.8	2-3	3.5-3.8	4.5-6.5	4.5-6.5	8-10	15-23	
	10						1.6-2.0	2.3-2.5	2.4-4.0	2.8-4.2	5-7	10-18	
	12						1.3-1.7	1.5-1.9	1.5-2.2	1.0-1.8	2.8-4.2	8-12	
	14							0.8-1.0	1.0-1.1	0.6-0.8	0.8-1.5	1.0-1.8	5-8
	16							0.5-0.6	0.9-1.0	0.4-0.6	0.6-0.8	0.5-1.5	2.0-4.0
	18								0.7-0.8	0.3-0.5	0.4-0.6	0.6-0.8	1.0-1.5
	20										0.3-0.5	0.4-0.6	0.8-1.0
	25											0.3-0.5	0.6-0.8
	30												0.4-0.6
35												0.3-0.4	

VI. Packing Size

Content	Dimension	Weight
Main machine and accessories	4614x2250x2200mm	3000KG

Note: Use full container to transport.