

S SERIES HIGH-POWER FIBER LASER CUTTING MACHINE FOR METAL SHEET

with all-around protective covering and double exchange tables



High Power Laser Cutting Machine - S Series

Equipped with high/super power laser device, efficient thick plate cutting is no longer a dream, thin plate cutting is more speed; BODOR database of cutting process will provide you with data support of performance and energy saving to save your cutting cost.

Product parameters

Model	S4020	S6020	S6025	S8025
Working Area	4000*2000mm	6100*2000mm	6100*2500mm	8100*2500mm
Laser Power	30000w/20000w/15000w/12000w/8000w/6000w			
X/Y-axis Positioning Accuracy	0.05mm			
X/Y-axis Repositioning Accuracy	0.03mm			
Max. linkage speed	200m/min			

LIGHTEYE EDGE SEARCHING

 1-3S TO COMPLETE EDGE SEARCHING

- **Flash Positioning**

It only takes 200ms to complete single image processing and 1-3s to complete edge searching and positioning. 5 times faster than capacitance searching.

- **Ultimate Precision**

Apply smart sensor system to achieve $\pm 1.0\text{mm}$ comprehensive positioning precision and 0.1mm max cutting precision, improving both material usage rate and product passing rate.

- **Safety and Reliability**

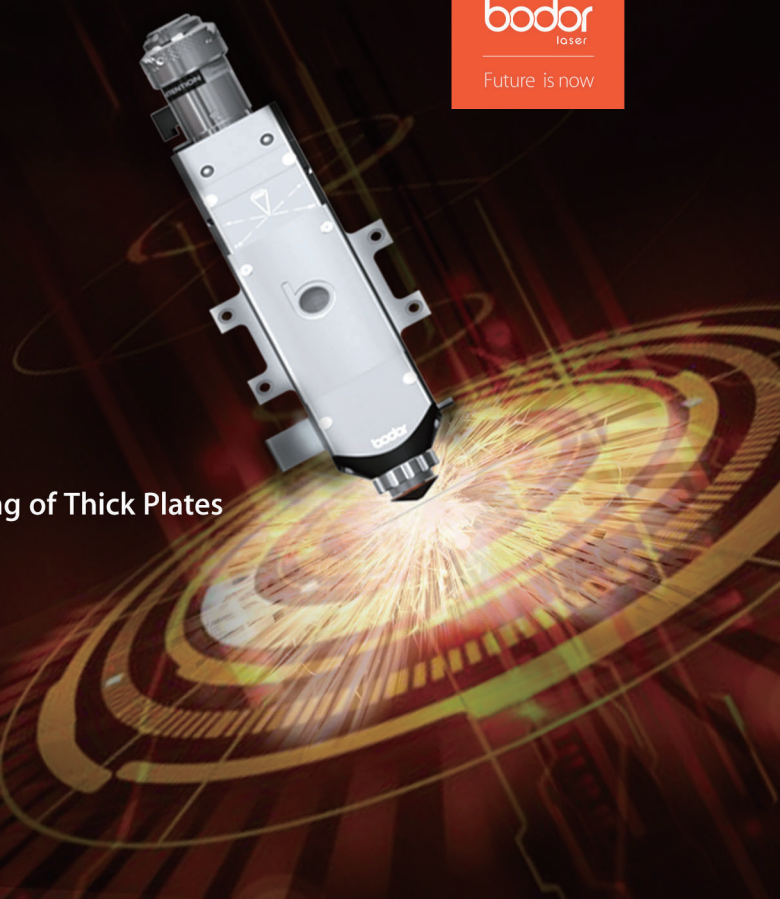
Use digital processing to avoid the risk of probing collision of the following module, guaranteeing the safety.

- **High Applicability**

Widen the application situations, suitable for not only standard rectangle sheets but multiple sheet shapes.

Vortex Start

Slag Treatment Process during Perforated Cutting of Thick Plates
(Equipped with Beckhoff System)



- ⚙️ Smartly choose vortex process according to the material and its thickness, sparing the need for repeated adjustments and reducing operating difficulty.
- ⊖ Remove the slag produced during perforation to the greatest extent, improving the cutting effects and making sure that the cutting edges are smooth and material surface intact.
- ⬆️ Greatly improve stability of cutting follower, and prolong service life of nozzle and ceramic ring.



Unbounded Cutting

Process for Cutting Leftover Material
(Equipped with Beckhoff System)

- Automatic adjustment without programming, operating more easily.
- Cutting leftover materials, reduce waste, lower cost.
- 6 programs to realize arbitrary cutting of metal plate.

Pierce Monitor

New generation of intelligent perforation technology
(Equipped with Beckhoff System)

// Pierce Monitor Perforation Time



Significantly reduce perforation time, average perforation time of medium & thick plate is reduced to 4s.



Avoid blasting holes and avoid the failure of sheet overheating for prolonged perforation.



The system automatically matches perforation parameters, which ensures the consistency of perforation parameters in continuous perforation process without repeatedly modification.

CAST IRON BED

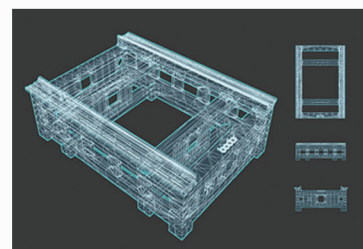
A CAST IRON BED LAST FOREVER



Material is more suitable



Technique is more suitable



Structure is more reasonable

Clone production

Pouring Mold, clone production; integrally formed, reject splicing

Durable

The usage of flake graphite with the lowest tensile strength of 200MPa gives the whole equipment strong shock absorption, wear resistance, high hardness, high carbon content, high compressive strength.

Low notch sensitivity and thermal sensitivity of cast iron bed reduces the loss of equipment in using, keeps the precision of cutting unchanged permanently and no deformation in its life cycle.

Automatic Obstacle Avoidance



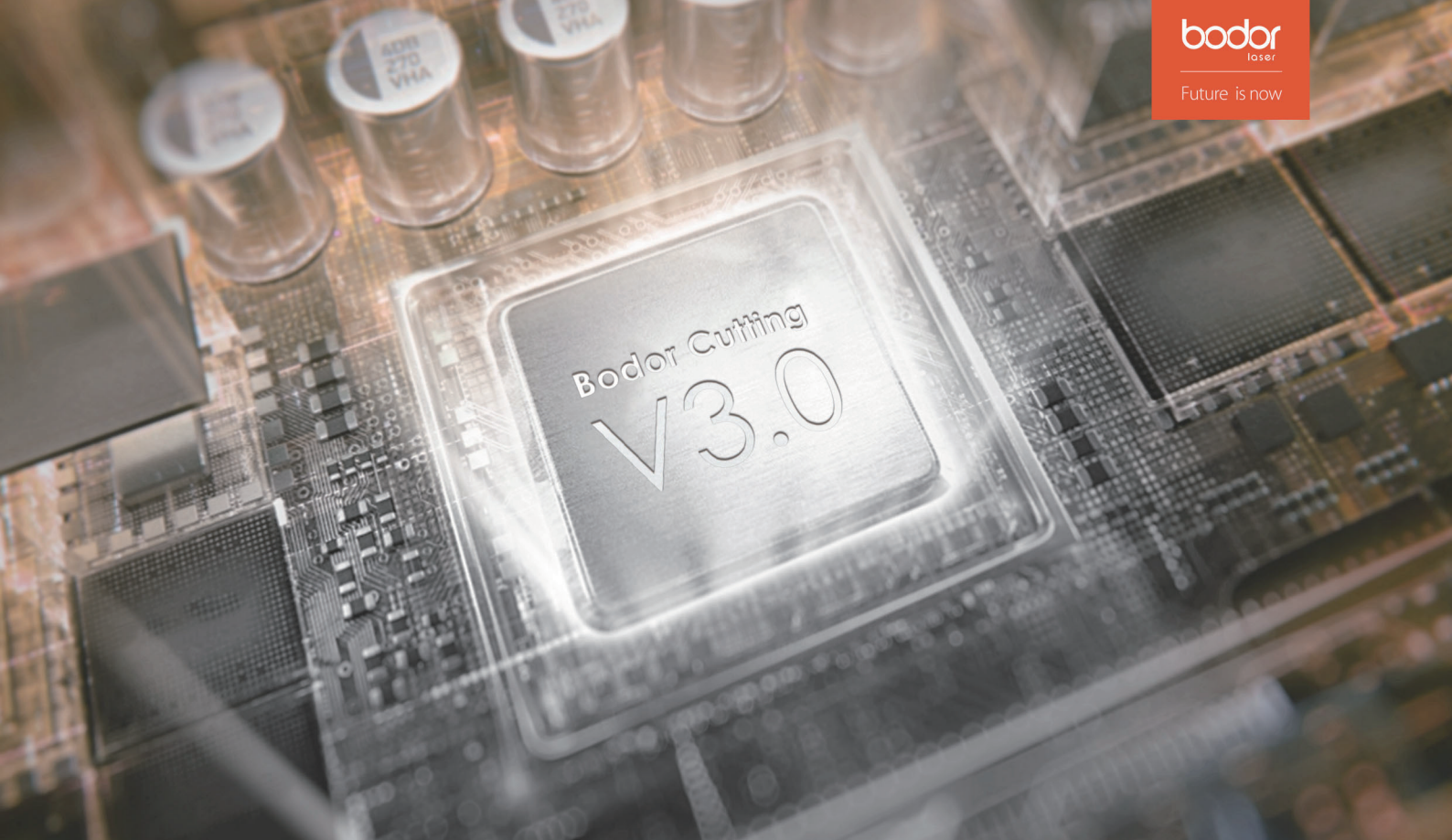
Intelligent anti-collision

360°radar system can detect any obstacles in advance, and Z axis high-speed motion will be activated to immediately avoid obstacles, avoiding collisions.



Higher Efficiency, Lower Cost

This function Lowers the damage rate of laser head, and accordingly reduces maintenance cost, prolonging service life of the machine. Avoid production halt caused by collisions, ensuring continuous production.

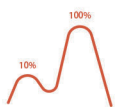


Bodor Cutting 3.0



Carbon Steel Oxygen Fast Cutting (COF)

Thick plate cutting realizes to doubles the speed while ensuring the cutting quality.



Carbon Steel Economic Fast Cutting (CEF)

At a specific power, cutting cost is only 10% of nitrogen cutting and creates more economic value for clients.



Low Nitrogen Pressure Fast Cutting (LNF)

The nitrogen pressure reduces to 4Bar during cutting the 10mm stainless steel, its speed improves at least 10% than common cutting.

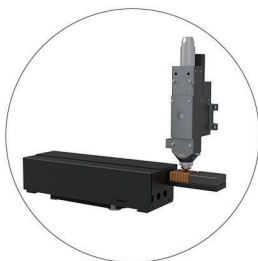


Matched with High-End CNC System to realize the minutely control

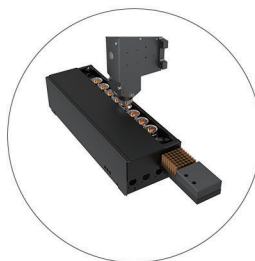
Realizing high-speed and high-precision cutting.



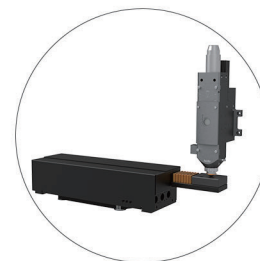
AUTOMATIC NOZZLE CHANGER



Automatic Cleaning



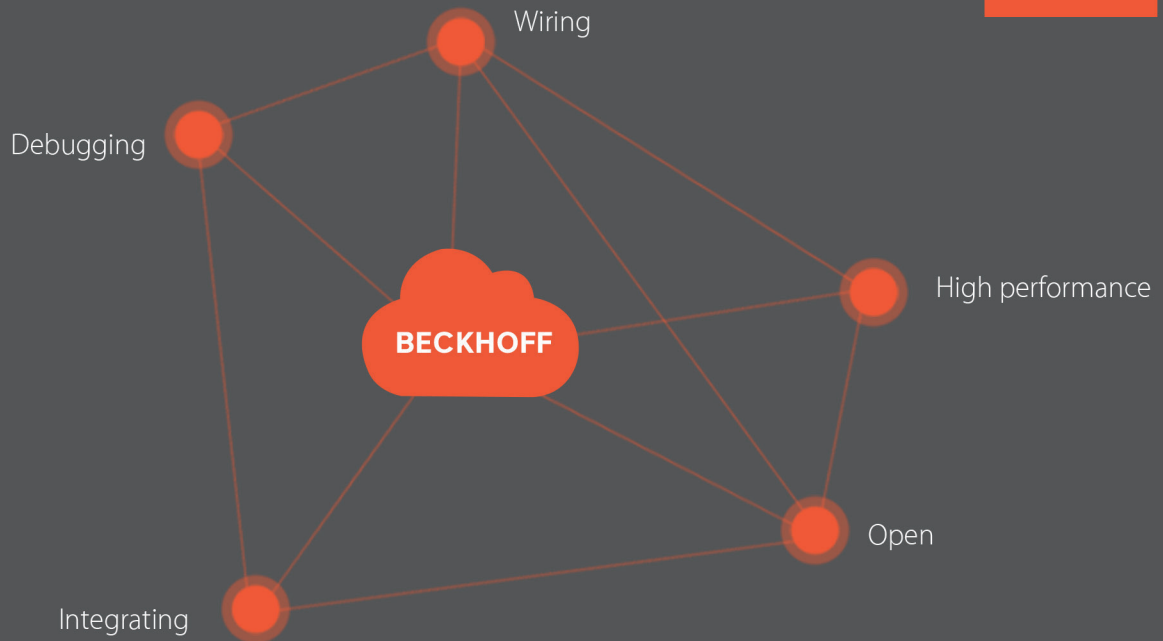
Automatic Replacement



Automatic Calibration

Automatic Nozzle Changer, Let Machine Know More About You

Adopting abundant and accurate control system can realize automatic replacement of nozzles according to different materials and thicknesses, saving manual replacement time and improving processing efficiency, smart and convenient; Newest automatic calibration and cleaning functions can achieve fully automatic laser head calibration and nozzle cleaning, reducing the repetitive manual work; High-precision drive system provides a reliable replacement precision and stability to ensure that every replacement can be perfectly safe. Fully enclosed protection of the whole part improves the safety of parts and personal.



Germany Beckhoff system

Open

Support customized development. Beckhoff can customize Bodor interface and Bodor specific features to support multi-touch screens and monitor device processing condition remotely.

High performance

EtherCat bus control provides quick signalling and high-accuracy of sync, especially for high-speed cutting.

FUNCTIONS

The heavy bed makes the equipment more stable in working, the light crossbeam makes it work faster; perfect industrial design is more in line with man-machine engineering; high quality electrical software control system gives equipment higher cutting precision. The machine owns more comfortable operation, more stable performance, more durable quality, higher cutting efficiency and wider application scope.

Intelligent travel protection

Automatically monitor operation range of crossbeam and cutting parts, keeping operation within machining range. Double guarantees of fixed limitation greatly improve equipment and personal safety, minimizing the using risks.

Automatic lubrication system

Automatic lubrication system provides timing and ration lubricating oil for equipment to ensure its normal and high speed operation, and owns functions of abnormal alarm and liquid level alarm. The system greatly enhances cutting accuracy and effectively extends service life of transmission mechanism.

A new generation of safety following module

Laser head keeping distance with work piece in cutting process can reduce collision risks. It will stop cutting when colliding plate. The safety following module reduces accident rate and improves cutting performance.

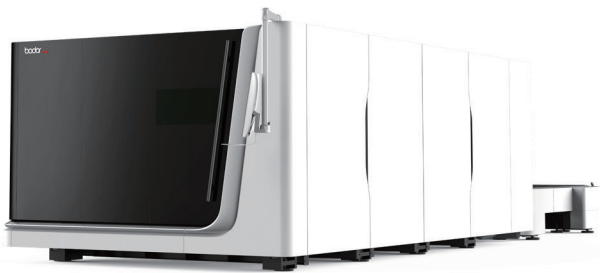
Intelligent alarm system

The system will start full abnormal alarm and push it to the interface through control center when equipment is abnormal.

Finding equipment abnormal in advance and reducing hidden dangers can multiply improve the equipment troubleshooting efficiency.

Ultrafast stepless perforation

Ultrafast stepless perforation, significantly reduces perforation time by 75%. The rate of abandoned hole is reduced to 2‰ from 5%. Stable starting point and following-up, high precision, less slag. Save time and electricity, improve material utilization and reduce damage to device. Check to enter the mode, saving debugging time and no technical threshold to users.

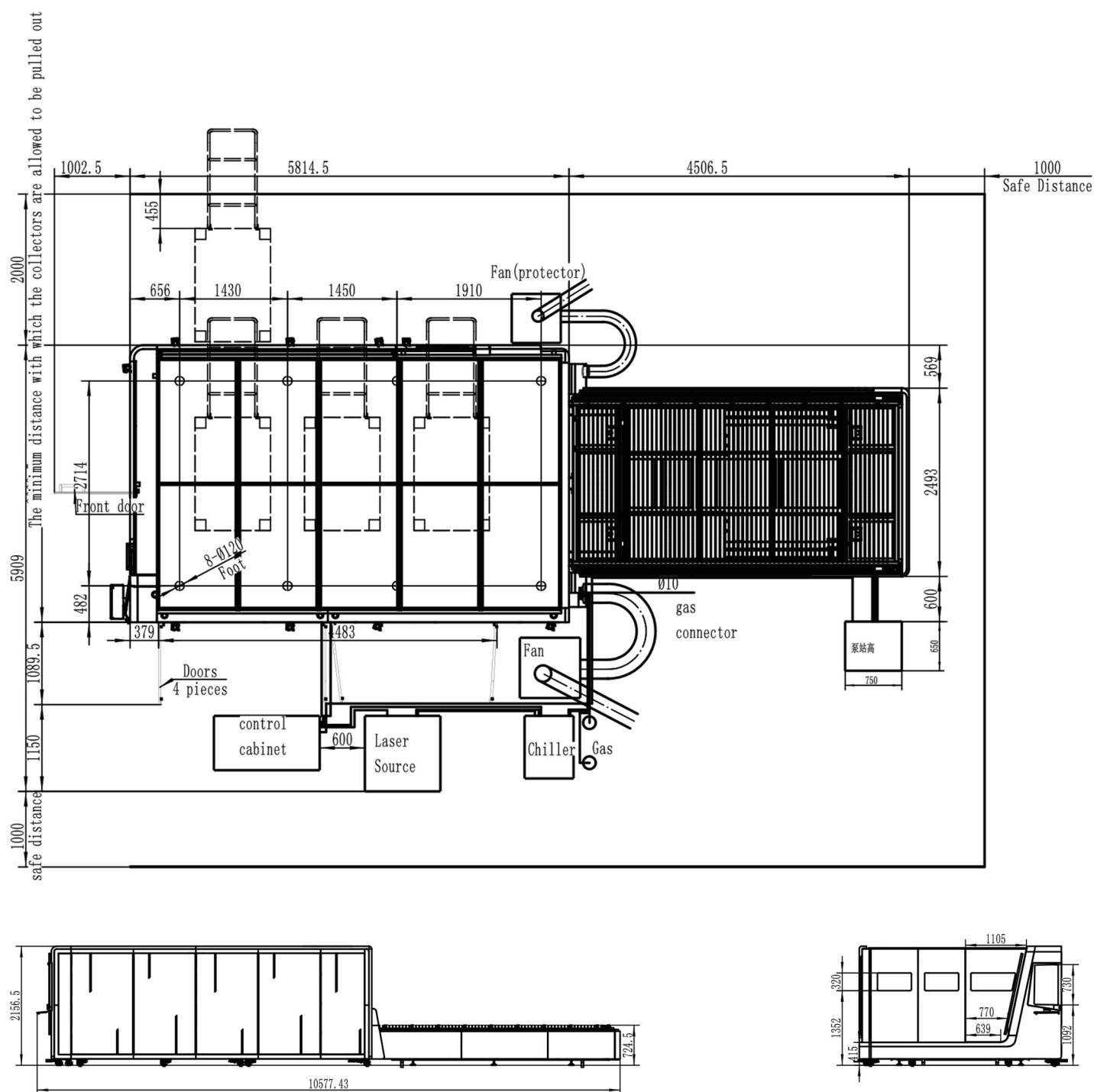


Appearance design

Aesthetics was introduced to industrial ID, perfect combination of technology and aesthetics

The UI design lets display respond to processing table, making processing more intuitive. Meeting the certification standards of CE and FDA, fully enclosed design and strong exhaust system realize zero pollution to environment, laser protection glass realizes zero harm to human eyes. Built-in 1080P HD camera takes machining process in a glance. One button WiFi remote control, time-saving and high efficient. Surrounded by baking paint silver decoration, coordinated with diamond cutting tempered glass and alpine white sheet metal design, the international design of the machine is accepted by global consumer groups. Bright strip warning system will remind process of machine tool all the time.

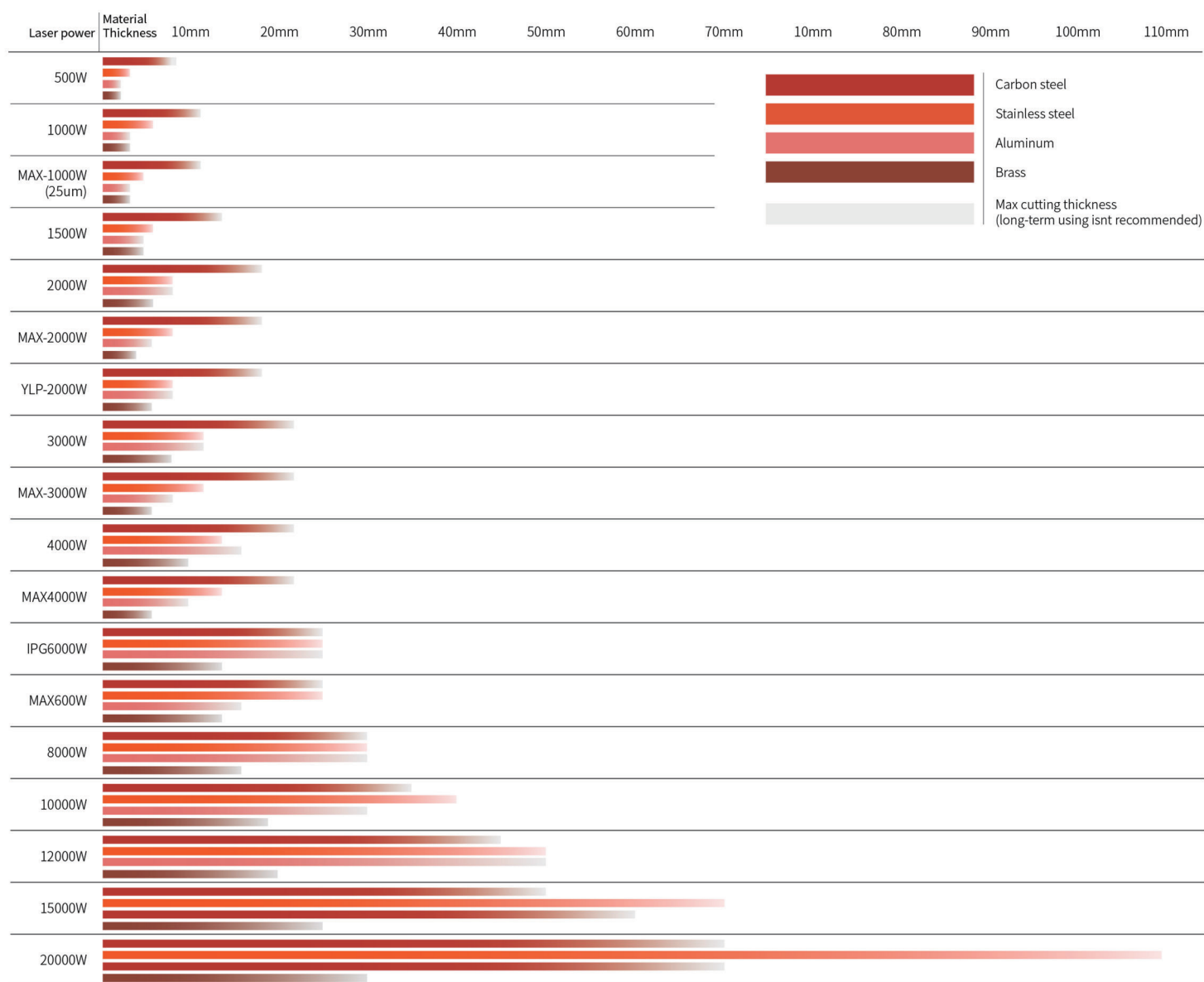
S4020 • FLOOR PLAN



PLACING REQUIREMENT

- 1.The whole machine should keep away from obstacles at least 1m.
- 2.The whole machine should be far away from the hypocenter.
- 3.The planeness of placing field should be less than 5mm.
- 4.Voltage fluctuation of the whole machine should be kept in $\pm 5\%$.

Cutting Capacity



Above data is only for reference

Fiber Laser Cutting Process Parameters

		1000W	MAX-1000W(25um)	1500W	2000W	MAX-2000W(50)	YLR-2000W	3000W	MAX-3000W(50)	4000W	MAX-4000W(50)	IPG 6000W	MAX 6000W	8000W	10000W	12000W	15000W	20000W
Material	Thickness	speed m/min	speed m/min	speed m/min	speed m/min	speed m/min	speed m/min	speed m/min	speed m/min	speed m/min	speed m/min	speed m/min	speed m/min	speed m/min	speed m/min	speed m/min	speed m/min	speed m/min
Carbon steel (Q235A) Q2	1											8-10	8-10	8-10	9-11	9-11	9-11	9-11
	2											5-7.5	5-7.5	5-7.5	5-7.5	5-7.5	5-7.5	5-7.5
	3											3.5-5	3.5-5	3.5-5	3.5-5.5	3.5-5.5	3.5-5.5	3.5-5.5
	4											3.0-4.5	3.0-4.5	3.0-4.5	3.5-5	3.5-5	3.5-5	3.5-5
	5											3.0-4.2	3.0-4.2	3.0-4.2	3.3-4.0	3.3-4.8	3.3-4.8	3.3-4.8
	6											2.5-3.5	2.5-3.5	2.6-3.7	3.0-4.0	3.0-4.2	3.0-4.2	3.0-4.2
	8											2.2-3.2	2.2-3.2	2.3-3.5	2.5-3.5	2.5-3.5	2.5-3.5	2.5-3.5
	10											1.8-2.5	1.5-2.2	2-2.5	2.0-2.7	2.2-2.7	2.2-2.7	2.2-2.7
	12											1.2-2.0	1.2-2.0	1.2-2.1	1.2-2.1	1.2-2.1	1.2-2.1	1.4-2.1
	14											1.2-1.8	1.0-1.5	1.2-1.9	1.7-1.9	1.7-1.9	1.5-1.9	1.5-1.9
	16											0.8-1.3	0.7-1.2	0.8-1.5	1.1-1.7	1.2-1.7	1.2-1.7	1.2-1.8
	18											0.6-0.9	0.6-0.9	0.8-1.5	0.8-1.6	1.0-1.8	1.2-1.5	1.2-1.8
	20											0.5-0.8	0.5-0.8	0.6-1.3	0.6-1.4	0.6-1.5	1.2-1.5	1.2-1.6
	22											0.4-0.8	0.4-0.6	0.5-0.8	0.6-1.4	0.5-1.5	1.0-1.5	1.2-1.5
	25											0.3-0.55	0.2-0.5	0.3-0.7	0.5-1.0	0.5-1.1	0.8-1.5	0.8-1.4
	30													0.2-0.7	0.3-0.8	0.3-0.9	0.6-1.0	0.8-1.2
	35													0.2-0.4	0.3-0.5	0.4-0.6	0.6-0.9	
	40															0.2-0.4	0.3-0.5	0.5-0.8
	45															0.2-0	0.2-0.5	0.3-0.5
	50																0.1-0.5	0.2-0.4
	60																	0.2-0.4
	70																	0.1-0.3
Stainless steel (201) N2	1											42-52	42-52	50-65	60-72	70-85	72-100	72-100
	2											20-33	20-33	30-40	35-45	40-66	45-70	50-75
	3											15-22	15-22	18-27	20-30	35-45	38-50	38-55
	4											10-15	10-15	12-16	15-22	20-32	25-35	25-33
	5											8.0-12	6.5-8.0	10-15	10-18	18-25	20-30	22-30
	6											4.8-8.0	4.2-6.0	6.0-10.0	8-12	12-15	15.0-25.0	17-25
	8											3.0-4.0	2.5-3.5	3.5-5.0	5.0-7.5	8-12	8.0-12.0	12-18
	10											1.6-2.5	1.2-2.0	2.0-2.7	3.0-7.0	6.0-8.0	6.0-10.0	6.0-12.0
	12											0.8-1.5	0.8-1.5	1.2-2.0	2.5-3.9	4.0-5.5	4.0-6.0	4.0-8.5
	14											0.6-0.8	0.5-0.8	1.2-1.8	1.8-2.8	3.0-5.0	3.5-6.0	3.5-6.0
	16											0.5-0.8	0.4-0.7	1.0-1.6	1.7-2.3	2.2-2.8	2.5-3.0	2.5-3.3
	18											0.4-0.6	0.3-0.6	0.8-1.2	1.2-1.8	1.2-2.0	1.2-2.2	1.8-2.7
	20											0.3-0.5	0.2-0.5	0.4-0.7	0.9-1.5	1.0-1.6	1.3-1.8	1.5-2.0
	25											0.2-0.4	0.2-0.4	0.3-0.5	0.6-0.7	0.5-0.8	0.6-1.2	1.0-1.5
	30													0.2-0.4	0.3-0.6	0.3-0.6	0.5-1.0	0.5-1.1
	35														0.3-0.5	0.3-0.5	0.4-0.8	0.4-0.8
	40														0.3-0.5	0.3-0.5	0.3-0.6	0.3-0.6
	45															0.2-0.4	0.2-0.5	0.2-0.6
	50															0.1-0.2	0.1-0.5	0.2-0.5
	60																0.1-0.2	0.1-0.3
	70																0.05-0.1	0.1-0.3
	80																	0.1-0.3
	90																	0.1-0.2
	100																	0.07-0.1
	110																	0.05-0.1
Aluminum N2	1											42-55	42-55	48-65	55-65	60-85	70-100	70-100
	2											20-40	20-40	25-48	33-45	38-50	40-55	40-55
	3											15-25	15-25	20-33	25-35	30-40	35-45	35-45
	4											9.5-12	9.5-12	13-18	15-25	20-30	30-40	30-40
	5											5.0-8.0	5.0-8.0	9.0-12	13-20	15-25	20-30	20-30
	6											3.8-5.0	3.8-5.0	4.5-8.0	9.0-12	10-15	15-24	15-24
	8											2.0-2.5	2.0-2.5	4.0-5.5	4.5-6.5	7.0-12	8.0-12.0	8.0-12.0
	10											1.0-1.5	1.0-1.5	2.2-3.0	2.8-4.0	4.5-8.0	6.0-10.0	6.0-10.0
	12											0.8-1.0	0.8-1.0	1.5-1.8	1.9-2.5	4.0-5.0	4.0-6.0	4.0-6.0
	16											0.5-0.8	0.5-0.8	1.0-1.6	1.5-2.0	1.5-2.5	2.0-3.0	2.0-3.0
	20											0.5-0.7		0.7-1.0	0.8-1.2	0.9-1.5	1.3-1.8	1.3-1.8
	25											0.3-0.5		0.4-0.7	0.6-0.8	0.6-0.9	0.6-1.2	0.6-1.2
	30													0.3-0.6	0.3-0.7	0.3-0.8	0.5-1.0	0.5-1.0
	35															0.3-0.6	0.3-0.8	0.3-0.8
	40															0.2-0.4	0.2-0.5	0.2-0.5
	50															0.1-0.2	0.3-0.7	0.3-0.7
	60																0.2-0.5	0.2-0.5
	65																	0.1-0.3
Brass N2	1											35-45	35-45	40-55	50-60	55-65	75-85	75-85
	2											20-30	20-30	28-40	33-40	38-50	40-55	40-55
	3											12-18	12-18	20-30	15-23	20-30	32-50	32-50
	4											5.0-8.0	5.0-8.0	10-15	10-16	15-20	27-35	27-35
	5											4.5-6.0	4.5-6.0	6.0-9.0	9.0-13	10-15	18-26	18-26
	6											3.0-4.5	3.0-4.5	4.5-6.5	7.0-9.0	6.0-8.0	10-18	10-18
	8											1.6-2.2	1.6-2.2	2.4-4.0	4.5-6.5	5.0-7.0	8.0-10.0	8.0-10.0
	10											0.8-1.2	0.8-1.2	1.5-2.2	2.4-4.0	4.5-6.5	5.0-7.0	5.0-7.0
	12											0.3-0.5	0.3-0.5	0.8-1.2	1.5-2.2	2.4-4.0	2.8-4.2	2.8-4.2
	14											0.3-0.4	0.3-0.4	0.4-0.6	0.6-1.2	0.8-1.5	1.0-1.8	1.0-1.8
	16													0.3-0.5	0.4-0.6	0.6-1.2	0.8-1.5	0.8-1.5
	18														0.3-0.5	0.4-0.6	0.6-0.8	0.6-0.8
	20															0.3-0.5	0.4-0.6	0.4-0.6
	25																0.3-0.5	0.3-0.5
	30																	0.2-0.4
	35																	0.1-0.2

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