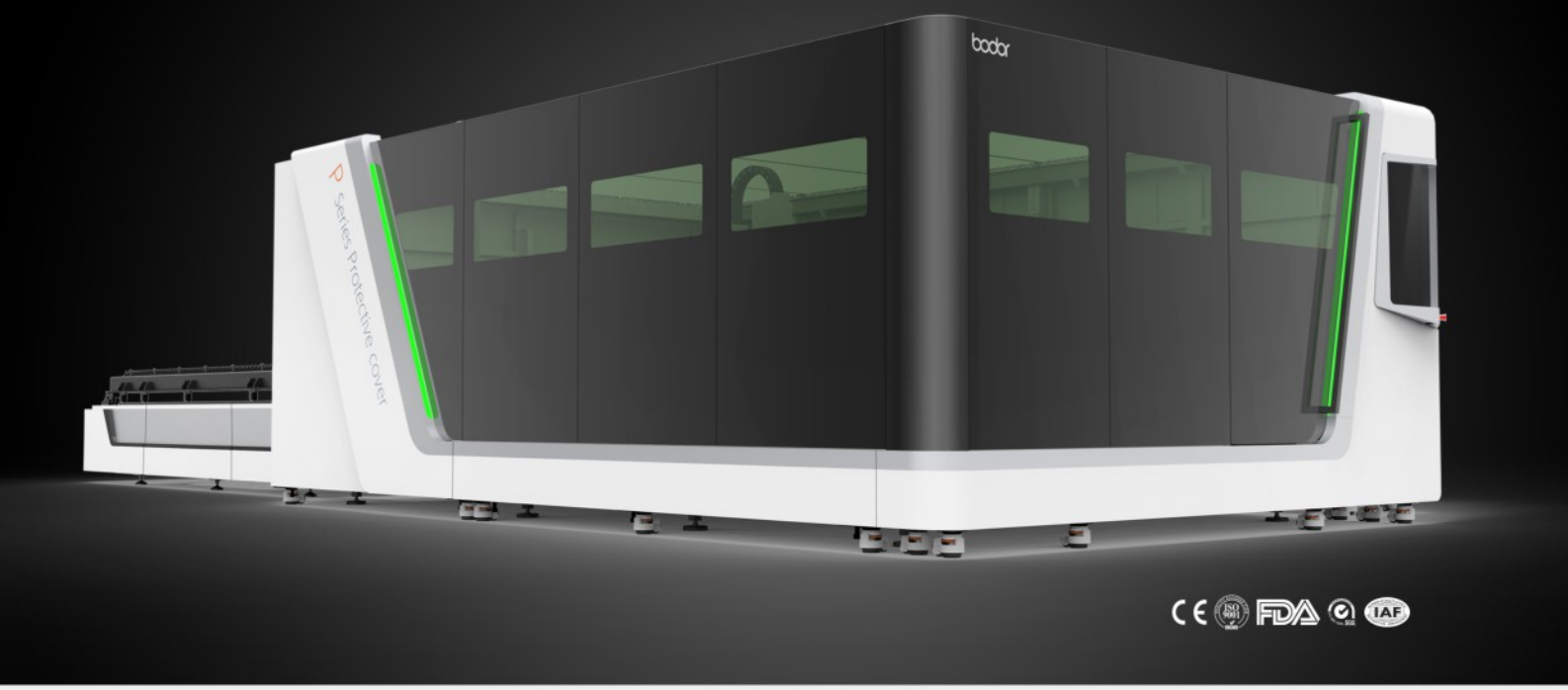
CLOSED OPERATION, MULTIPLE PROTECTION

All Cover Exchange Platform Laser Cutting Machine - P 1530



All Cover Exchange Platform Laser Cutting Machine — P1530

The equipment meets the parts processing requirements of most industries, working accuracy is stable. Selecting the optimal force and supporting structure, the overall mechanical property of equipment is perfect. Adopting cutting-edge optical concept to improve cutting performance. High speed cutting, auxiliary loading and unloading and efficient production reduce labor costs. At present, laser cutting machines have been widely used in electronics, electrical, mechanical hardware, new energy lithium, packaging, solar, LED, automotive and other industries.

Product parameters

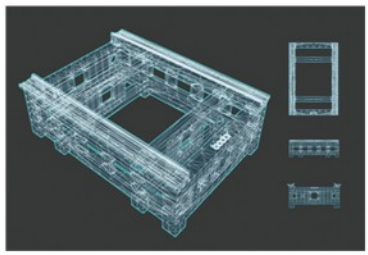
Model	P1530
Working area	1500*3000mm
laser power	4000W/3000W/2000W/1000W
Maximum moving speed	100m/min
Maximum cutting speed	5m/min
positioning accuracy	0.03mm
repositioning accuracy	0.02mm
min. line width	0.1mm

A CAST IRON BED LASTS FOREVER.

No deformation in a life cycle

Material is more suitable

Technique is more suitable



Structure is more reasonable

Clone

Mold pouring, clone production; integrally formed, reject splicing

Durable

Using flake graphite cast iron, the lowest tensile strength of which is 200MPa. High carbon content, high compressive strength and high hardness.
Strong shock absorption and wear resistance. Low thermal sensitivity and bed gap sensitivity reduce the loss of equipment in using, so the machine accuracy could maintain for a long time,
and no deformation in a life cycle.

For more information, please go to the website : www.bodor.com

AUTO - FOCUS

Applicable to various focal lengths, which are controlled by machine tool control system. Focal point will be automatically adjusted in cutting process to achieve the best cutting effect of different thicknesses sheets metal.

Free

Free your hands. Focal length is controlled by operating system. We don't need to do manual regulation, which effectively avoids errors or faults caused by manual operation.

Fast

It can automatically adjust the most appropriate focal points in working process, greatly improving cutting speed;
When replacing different materials or different thicknesses sheet, manual focus laser head needs to adjust focal length manually, very inefficient; auto focus laser head can read system storage parameters automatically, very efficient;

Accuracy

Increasing perforation focus length, separately setting perforation focal length and cutting focal length, enhance cutting accuracy.

Durable

Built-in double water-cooling structures can ensure constant temperature of collimating and focusing components, avoid lenses overheating and extend service life of lenses;
Increasing collimation protective lens and focus protective lens, carefully protect key components.

For more information, please go to the website : www.bodor.com

ENVIRONMENT FRIENDLY AND HEALTHY

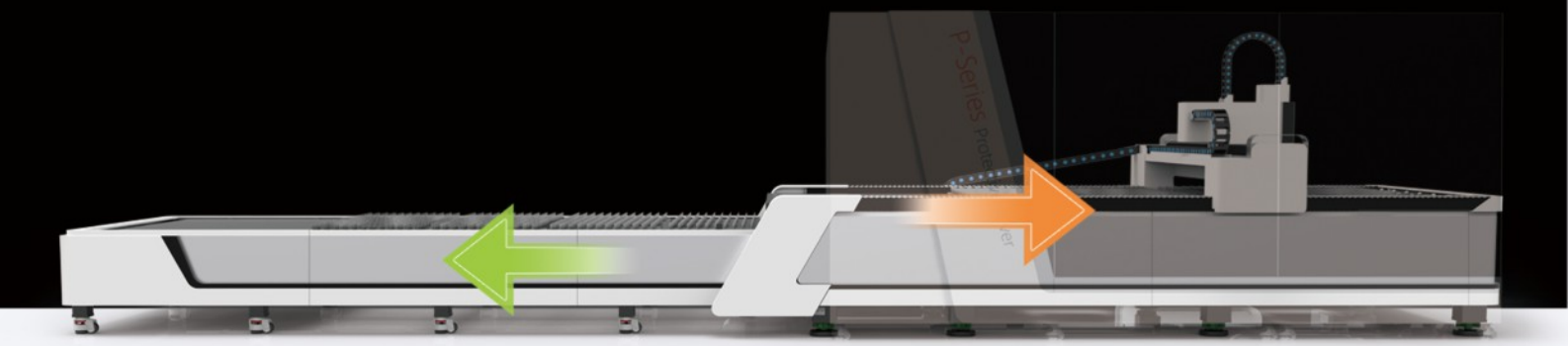
FULL PROTECTION COVER

All Cover Exchange Platform Laser Cutting Machine — P1530

Full closed protection improves using security; laser protection glass isolates laser radiation to human beings; automatic collection system of smokes and dusts is environment friendly; intelligent monitoring system reduces accident rate, making us enjoy beauty and health in cutting process.

TIME-SAVING AND EFFORT-REDUCING

TWO AUTOMATIC EXCHANGE PLATFORMS SYSTEM



All Cover Exchange Platform Laser Cutting Machine — P1530

Rapid exchanging between two platforms greatly improve work efficiency. Rack and pinion transmission system has better rigidity and higher accuracy, saving feeding time, making operation more efficient.

Bodor pro2.0

Bodor pro2.0

Adhering to "simple, acme, fast" of BODOR laser,the interface of BodorPro2.0 is more affinity,closer to user,and paying more attention to user experience.

Optimizing functions and algorithms makes system more stable and efficient! Dual-camera monitoring gathers processing interface and monitor interface at one.

One software with two configurations, plane cutting and tubing cutting can switch freely.

BodorPro2.0 optimized equipment,integrated compatibility and equipment perfectly, and made the system more stable, smooth and efficient.

It adopted the basic architecture of windows platform and fully inherited operating habits of office, reducing the operator's threshold.

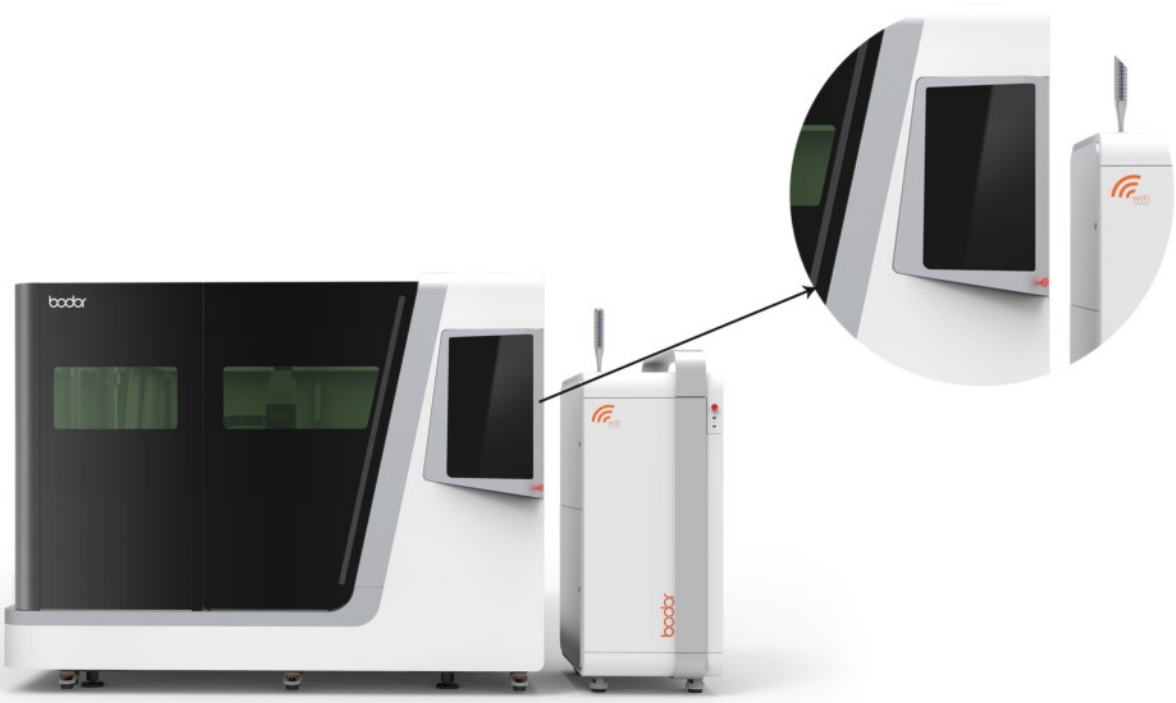
Registration through mobile phone is convenient,fast and safer.

For more information, please go to the website : www.bodor.com

OPERATING SYSTEM DISPLAY

Operating system display

The first one to use UI design in the world which lets display respond to processing table, making processing more intuitive. Elegant curves precisely fit machine body. Strong waterproof breathable system creates the best space, making operation more convenient. Diamond cutting process and HD plasma tempered glass make screen more exquisite and comfortable to use.

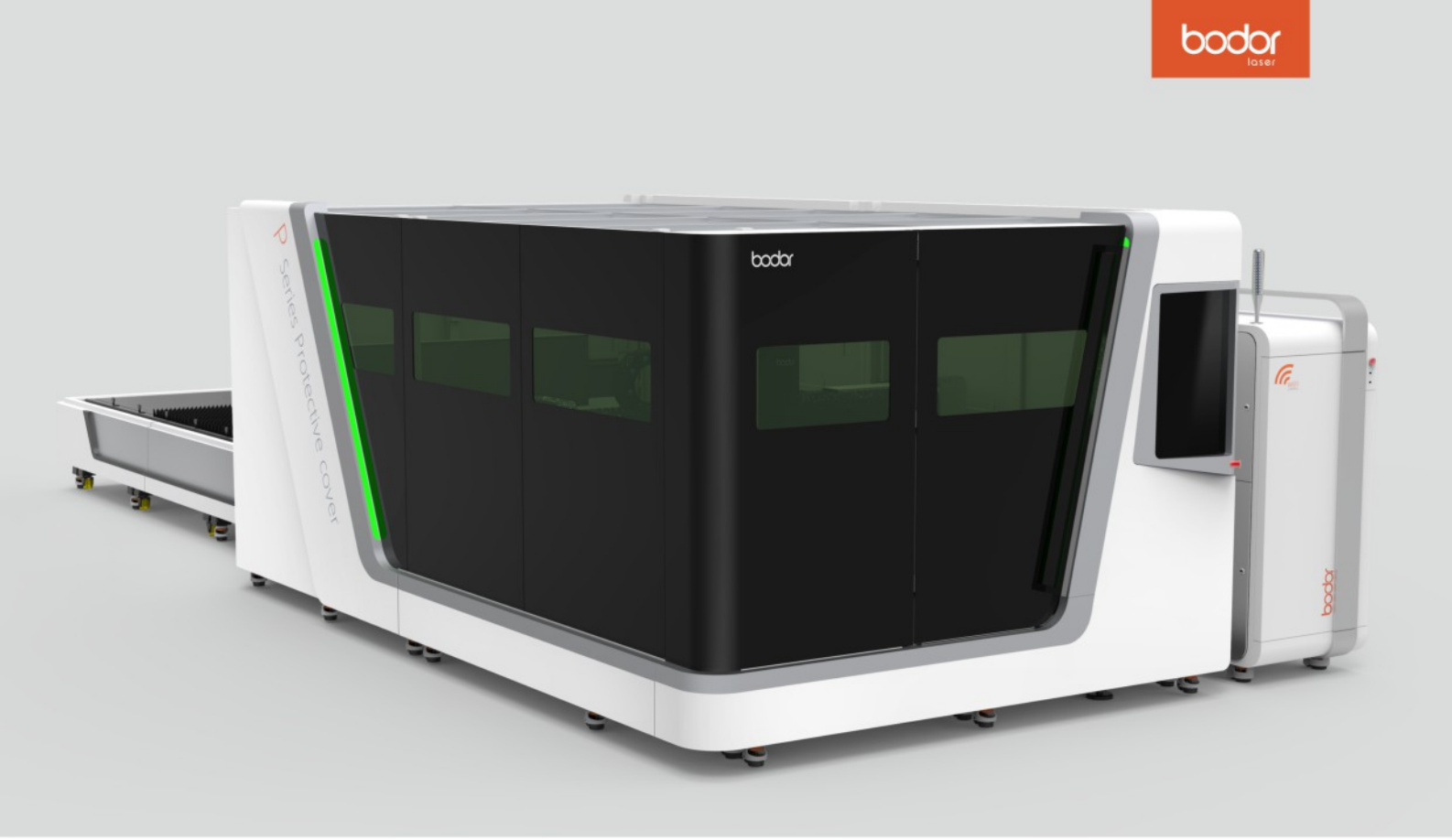


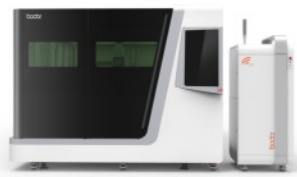
CAST ALUMINUM CROSSBEAM

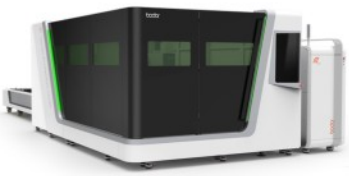
Cast aluminum crossbeam

Integral steel mold pressure casting, light, flexible and efficient

After artificial aging, solution treatment and finishing, crossbeam owns good integrity, rigidity, surface quality, toughness and ductility. Aluminum alloy's metal characteristics of light weight and strong rigidity are helpful to high speed movement in processing, and high flexibility is beneficial to high-speed cutting of various graphics based on high accuracy. Light crossbeam can give equipment a high operation speed, improving processing efficiency to ensure processing quality.



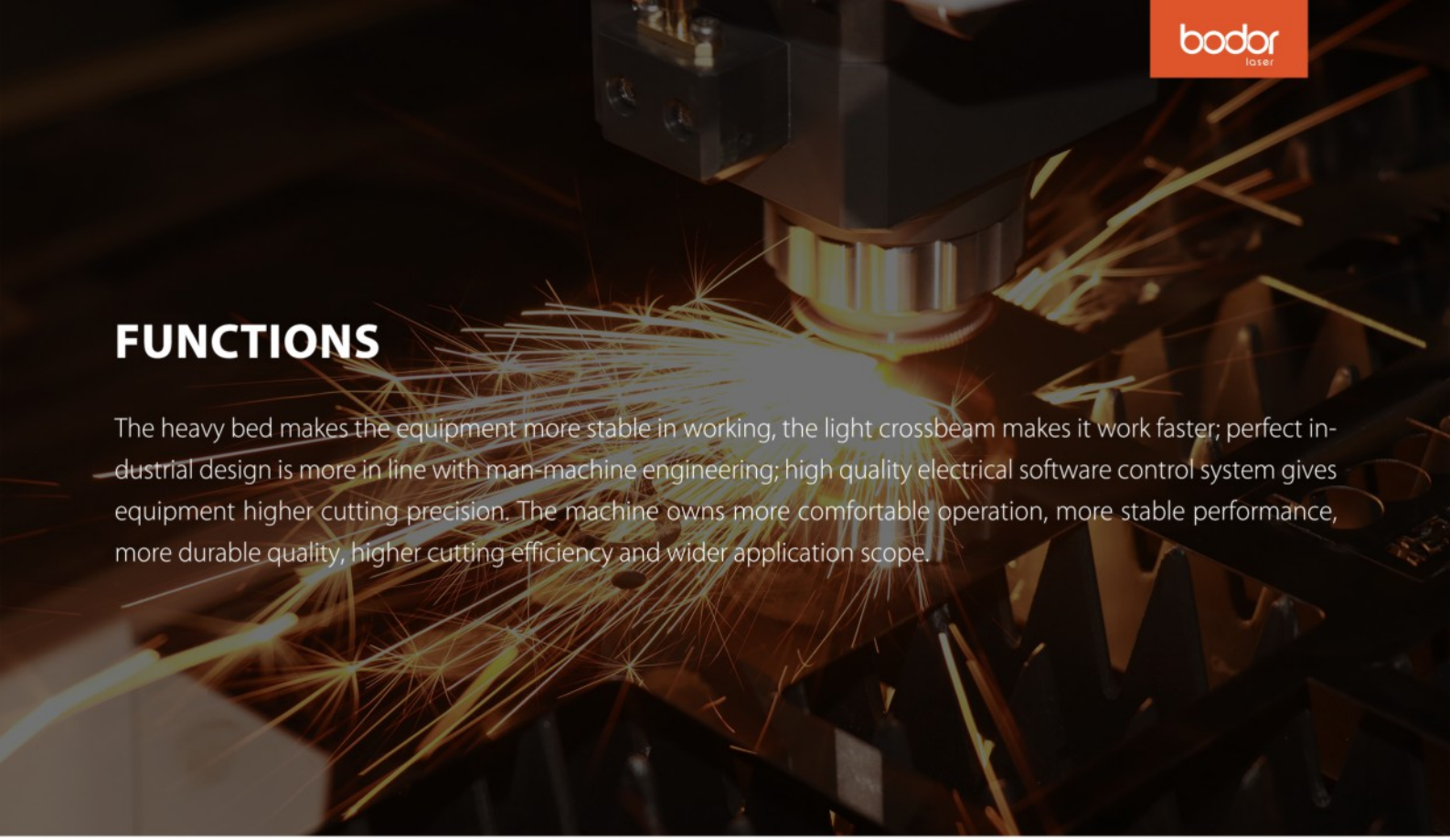




Appearance design

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

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.
The workplace is neat, orderly and space-saving.



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.

Auxiliary feeding mechanism

The promotion and demotion of subsidiary roller table reduces friction force between parts and working table, making loading and unloading more convenient.

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.t

WIFI remote intelligent assistance

Global real-time feedback ; Providing real-time fault analysis and troubleshooting.

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.

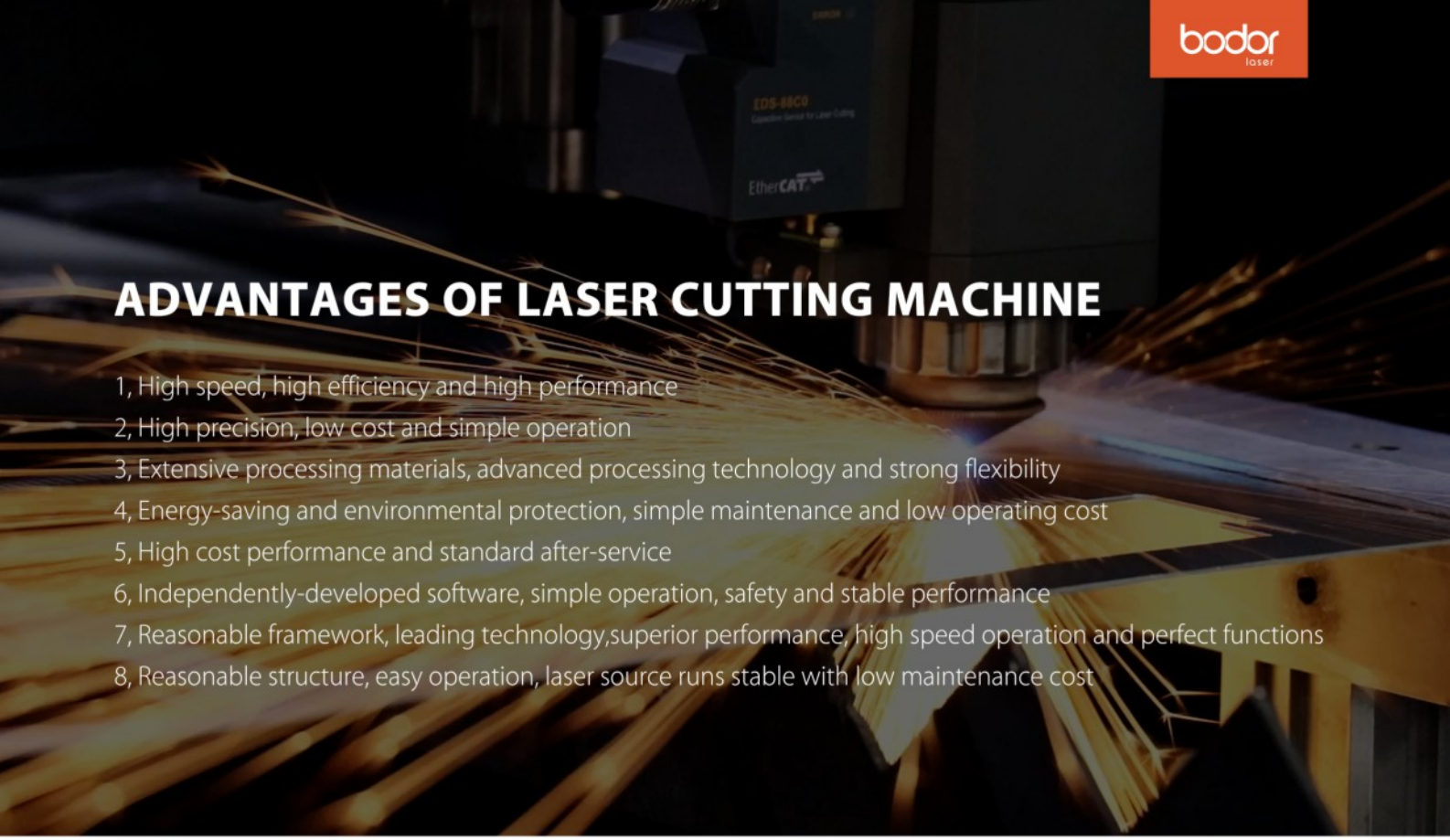
Intelligent alarm system

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.

Auxiliary gas low pressure alarm function

Providing real-time pressure detection, pushing abnormal information when pressure value is lower than optimal cutting effect and precision. Ensure the cutting performance, accuracy and timeliness of gas replacement.



ADVANTAGES OF LASER CUTTING MACHINE

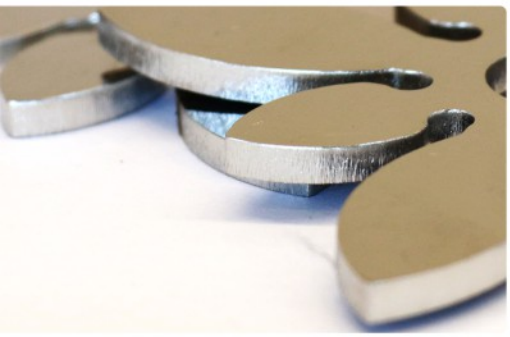
1, High speed, high efficiency and high performance
2, High precision, low cost and simple operation
3, Extensive processing materials, advanced processing technology and strong flexibility
4, Energy-saving and environmental protection, simple maintenance and low operating cost
5, High cost performance and standard after-service
6, Independently-developed software, simple operation, safety and stable performance
7, Reasonable framework, leading technology,superior performance, high speed operation and perfect functions
8, Reasonable structure, easy operation, laser source runs stable with low maintenance cost

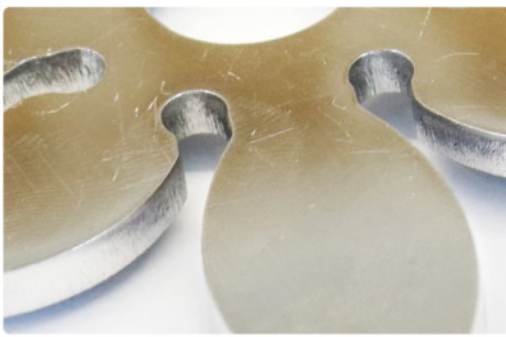
The advantages of laser cutting compared with traditional cutting methods

1, High precision: focusing accuracy is 0.05mm, repetition focusing accuracy is 0.02 mm
2, Narrow kerf: The laser beam is focused into a small spot, making the focus reach high power density, the material is quickly heated up to the gasification then evaporates to form holes. With the relative linear movement of the light beam to the material, the hole is continuously formed narrow gaps. Kerf width of the incision is usually 0.10 ~ 0.20mm.
3, Smooth section: cutting surface without burrs, roughness of incision surface is generally controlled within Ra12.5.
4, Good cutting quality: Non contact cutting, cutting edge is less affected by heat, basically no thermal deformation of work piece, completely avoid down edge formed by material punching, in general, slit doesn't need secondary processing.
5, No damage to work piece: Laser cutting head won't contact surface of material to ensure no scratches to work piece.

Advantages compared with other cutting methods

1, Wire cutting: high precision, difficult to perforate, low cutting speed. Low investment in equipment. The price range of a device is from tens of thousands to hundreds of thousands or so.
2, Laser cutting: high precision, cutting speed is influenced by plate thickness which is generally within 10 m / min. Not suitable for thick plate (only for 0~25mm plate), high investment in equipment is suitable for large batch processing.
3, Water jet cutting: high precision, low cutting speed. It is not suitable for large batch processing, and equipment investment is high.
4, Plasma cutting: high precision(The verticality of the product is not high), fast speed and consumption. Suitable for large batch processing, and equipment investment belongs to medium level.
5, Flame (oxygen) cutting: accuracy(thermal deformation), low speed, suitable for large batch processing. Equipment investment is small and operation cost is cheap.
6, Punch： Difficult for processing various small-batch materials, suitable for few large batch processing. It is difficult to cut the thick plate. Equipment investment belongs to medium level.
7, Plate shearing machine: not suitable for curvilinear cutting, straight line cutting is OK, difficult for thick plate cutting.





Metal Samples

For more information, please go to the website : www.bodor.com

OFFICE

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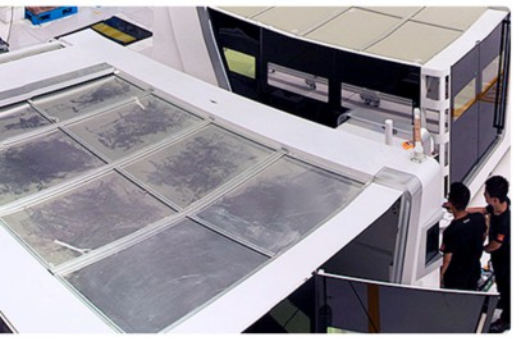
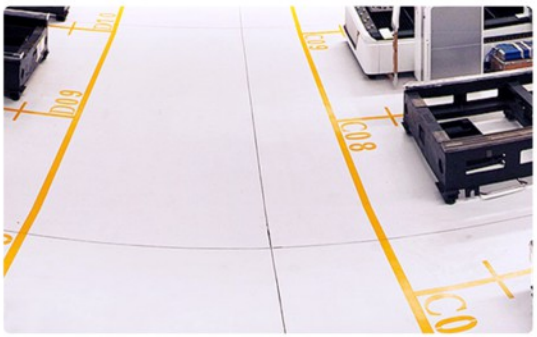




WORKSHOP

For more information, please go to the website : www.bodor.com

EUROPORPEAN QC SYSTEM

Precision testing and installation process

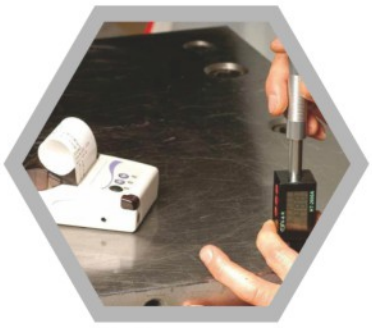
Flatness
Large CNC milling machine processing

Solidness
Each equipment is processed with 650°Cheat aging treatment machine body is stable without any deformation

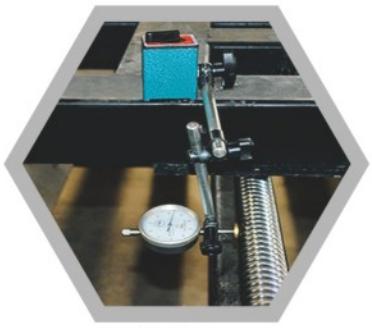
Precision
3 axes coordinate meter tests coordinate setting precision

Straightness
Laser collimator detects guide line

Fineness
Every tiny parts is detected with many times



Flintiness
Lathe Bed hardness measurement



Parallelism
Rack gear parallelism test

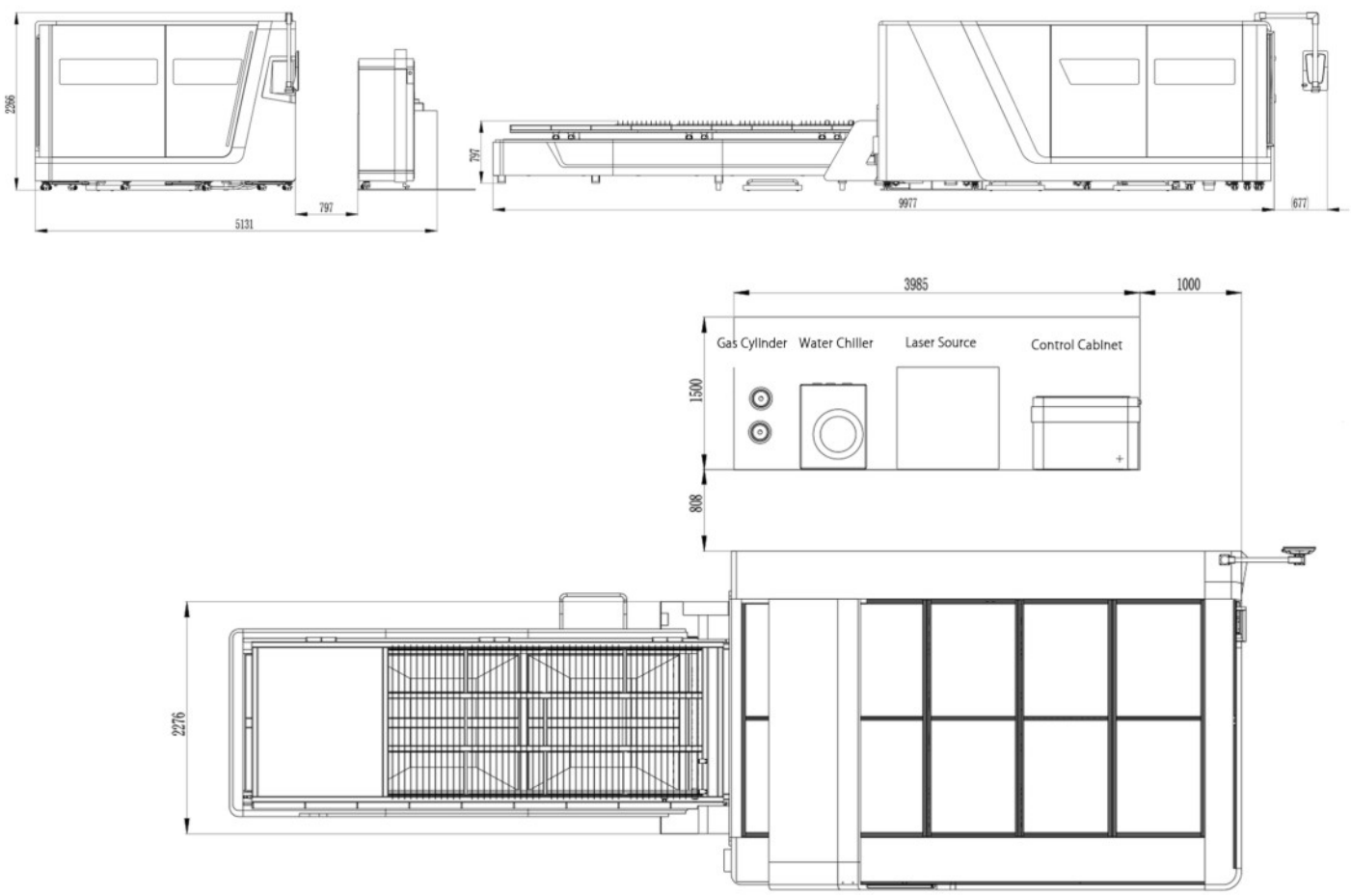
Parallelism
Ball gear parallelism test

Perpendicularity
Marble feet for lathe bed verticality test

Skillfulness
Quantity production with skilled technique and advanced manufacturing process

Durability
72 hours aging test without laser

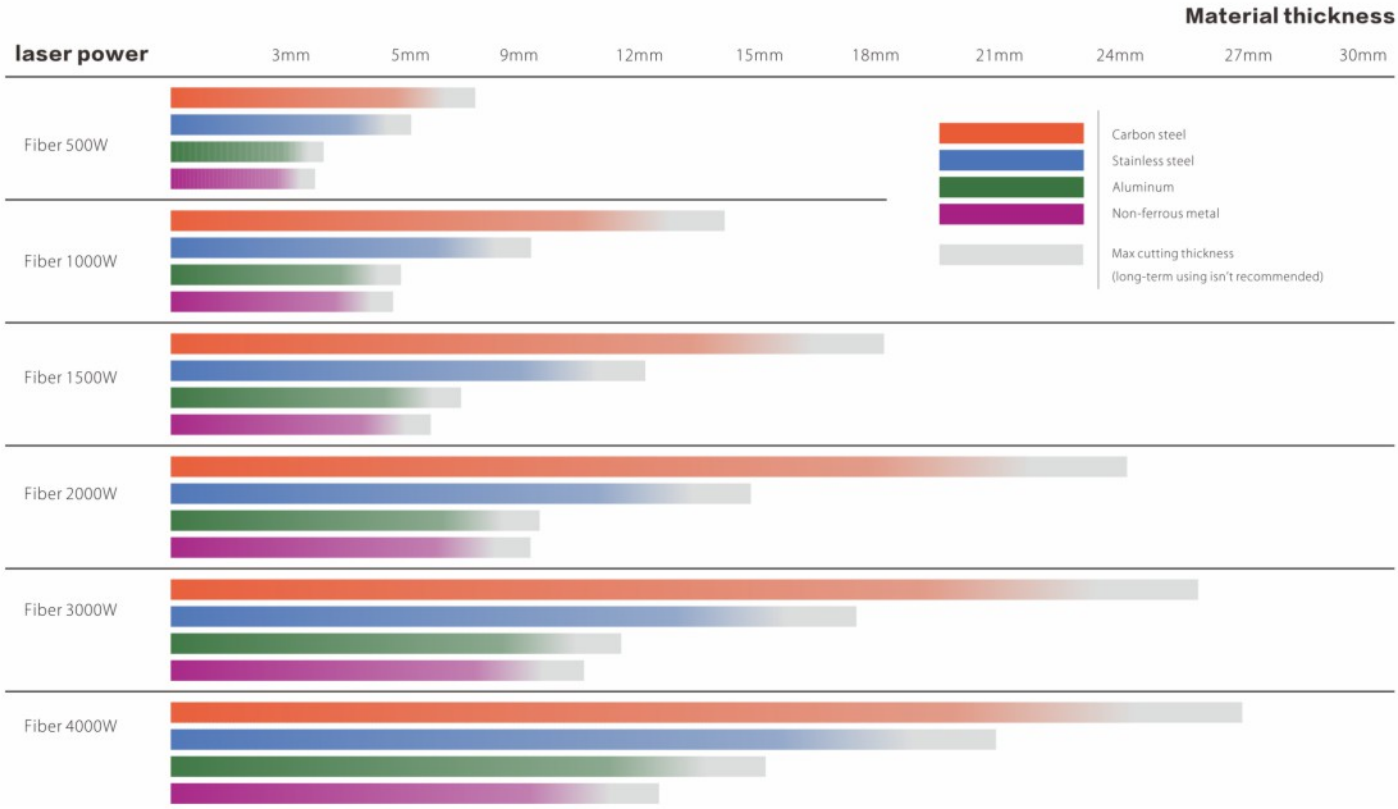
Stability
12 hours cutting test with laser



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± 5%

Cutting Capacity



Above data is only for reference

1000W FIBER LASER USING COST

Assisted gas / Consumption		Choosel:using air compressor Group as air supply to cutting stainless steel	Choosell:using O_2 cutting stainless steel	Choosellll:using N_2 cutting stainless steel
Power Consumption	Laser module	4 kw	4 kw	4 kw
	Water Chiller Group	2.8kw	2.8kw	2.8kw
	Host Machine	5.4kw	5.4kw	5.4kw
	Dust Exhausting Equipment	3kw	3kw	3kw
Total Power		15.2kw	15.2kw	15.2kw
Average Power Consumption (Take 80% Cutting Efficiency)		15.2×80%=12.16kw	15.2×80%=12.16kw	15.2×80%=12.16kw
Gas Consumption		15×85%=12.75kw	About 20L/h(1.45 $)	About 50L/h(3.61 $)
Quick-wear Part		0.36 $/h	0.36 $/h	0.36 $/h
All Cost Reference 0.1 $/kwh		1.216+1.275+0.36=2.85 $/h	1.216+1.45+0.36=3.03 $/h	1.216+3.61+0.36=5.19 $/h

500W FIBER LASER USING COST

Assisted gas / Consumption		Choosel:using air compressor Group as air supply to cutting stainless steel	Choosell:using O_2 cutting stainless steel	Choosellll:using N_2 cutting stainless steel
Power Consumption	Laser module	2kw	2kw	2kw
	Water Chiller Group	2.2kw	2.2 kw	2.2kw
	Host Machine	5.4kw	5.4kw	5.4kw
	Dust Exhausting Equipment	0.75kw	0.75 kw	0.75kw
Quick-wear Part		0.29 $/h	0.29 $/h	0.29 $/h
Gas Consumption		11×85%=9.35kw	About 20L/h(1.45 $)	About 50L/h(3.61 $)
Total Power		10.35kw	10.35kw	10.35kw
Average Power Consumption (Take 80% Cutting Efficiency)		10.35x80%=8.28kw	10.35x80%=8.28kw	10.35x80%=8.28kw
All Cost Reference 0.1 $/kwh		0.828+0.935+0.29=2.06 $/h	0.828+1.45+0.29=2.571$/h	0.828+3.61+0.29=4.73$/h

Above data is only for reference

3000W FIBER LASER USING COST

Assisted gas / Consumption		Choosel:using air compressor Group as air supply to cutting stainless steel	Choosell:using O_2 cutting stainless steel	Choosellll:using N_2 cutting stainless steel
Power Consumption	Laser module	12kw	12kw	12kw
	Water Chiller Group	4.94kw	4.94kw	4.94kw
	Host Machine	10.5kw	10.5kw	10.5kw
	Dust Exhausting Equipment	3kw	3kw	3kw
Total Power		30.44kw	30.44kw	30.44kw
Average Power Consumption (Take 80% Cutting Efficiency)		30.44×80%=24.35kw	30.44×80%=24.35kw	30.44×80%=24.35kw
Gas Consumption		20×85%=17kw	About 20L/h(1.45 $)	About 50L/h(3.61 $)
Quick-wear Part		0.43 $/h	0.43 $/h	0.43 $/h
All Cost Reference 0.1 $/kwh		2.435+1.7+0.43=4.57 $/h	2.435+1.45+0.43=4.32 $/h	2.435+3.61+0.43=6.48 $/h

2000W FIBER LASER USING COST

Assisted gas / Consumption		Choosel:using air compressor Group as air supply to cutting stainless steel	Choosell:using O_2 cutting stainless steel	Choosellll:using N_2 cutting stainless steel
Power Consumption	Laser module	8 kw	8 kw	8 kw
	Water Chiller Group	3.1kw	3.1kw	3.1kw
	Host Machine	6kw	6kw	6kw
	Dust Exhausting Equipment	3kw	3kw	3kw
Total Power		20.1kw	20.1kw	20.1kw
Average Power Consumption (Take 80% Cutting Efficiency)		20.1×80%=16.08kw	20.1×80%=16.08kw	20.1×80%=16.08kw
Gas Consumption		20×85%=17kw	About 20L/h(1.45 $)	About 50L/h(3.61 $)
Quick-wear Part		0.36 $/h	0.36 $/h	0.36 $/h
All Cost Reference 0.1 $/kwh		1.608+1.7+0.36=3.67 $/h	1.608+1.45+0.36=3.42 $/h	1.608+3.61+0.36=5.58 $/h

Above data is only for reference

4000W FIBER LASER USING COST

Assisted gas / Consumption		Choosel:using air compressor Group as air supply to cutting stainless steel	Chooselⅱ:using O_2 cutting stainless steel	Chooselⅲ:using N_2 cutting stainless steel
Power Consumption	Laser module	15kw	15kw	15kw
	Water Chiller Group	6.08kw	6.08kw	6.08kw
	Host Machine	10.5kw	10.5kw	10.5kw
	Dust Exhausting Equipment	3kw	3kw	3kw
Total Power		34.58kw	34.58kw	34.58kw
Average Power Consumption (Take 80% Cutting Efficiency)		34.58×80%=27.66kw	34.58×80%=27.66kw	34.58×80%=27.66kw
Gas Consumption		20×85%=17kw	About 20L/h(1.45 $)	About 50L/h(3.61 $)
Quick-wear Part		0.43 $/h	0.43 $/h	0.43 $/h
All Cost Reference 0.1 $/kwh		2.766+1.7+0.43=4.90 $/h	2.766+1.45+0.43=4.65 $/h	2.766+3.61+0.43=6.81 $/h

Above data is only for reference

Fiber Laser Cutting Process Parameters

Material	Thickness	500W speed m/min	1000W speed m/min	1500 speed m/min	2000W speed m/min	3000W speed m/min	4000W speed m/min	6000W speed m/min	8000W speed m/min	10000W speed m/min	12000W speed m/min
Carbon steel (Q235A)	1	7.0--9.0	8.0--10	15--26	24--30	30--40	33--42	No support			
	2	3.0--4.5	4.0--6.5	4.5--7.0	4.7--6.0	4.8--7.5	5.2--8.0				
	3	1.8--3.0	2.4--3.0	2.6--4.0	3.0--4.8	3.3--5.0	3.5--5.5				
	4	1.3--1.5	2.0--2.4	2.5--3.0	2.8--3.5	3.0--4.2	3.1--4.8				
	5	0.9--1.1	1.5--2.0	2.0--2.5	2.2--3.0	2.6--3.5	2.7--3.6				
	6	0.6--0.9	1.4--1.6	1.6--2.2	1.8--2.6	2.3--3.2	2.5--3.4				
	8		0.8--1.2	1.0--1.4	1.2--1.8	1.8--2.6	2.0--3.0				
	10		0.6--1.0	0.8--1.1	1.1--1.3	1.2--2.0	1.5--2.0				
	12		0.5--0.8	0.7--1.0	0.9--1.2	1.0--1.6	1.2--1.8				
	14			0.5--0.7	0.7--0.8	0.9--1.4	0.9--1.2				
	16				0.6-0.7	0.7--1.0	0.8--1.0				
	18				0.4--0.6	0.6--0.8	0.65--0.9				
	20					0.5--0.8	0.6--0.9				
	22					0.4--0.6	0.5--0.8				
	25						0.3--0.5				
Stainless steel (201)	1	8.0--13	18--25	20--27	24--30	30--35	32--40				
	2	2.4--5.0	7.0--12	8.0--13	9.0--14	13--21	16--28				
	3	0.6--0.8	1.8--2.5	3.0--5.0	4.0--6.5	6.0--10	7.0--15				
	4		1.2--1.3	1.5--2.4	3.0--4.5	4.0--6.0	5.0--8.0				
	5		0.6--0.7	0.7--1.3	1.8-2.5	3.0--5.0	4.0--5.5				
	6			0.7--1.0	1.2-2.0	2.0--4.0	2.5--4.5				
	8				0.7-1.0	1.5--2.0	1.6--3.0				
	10					0.6--0.8	0.8--1.2				
	12					0.4--0.6	0.5--0.8				
	14						0.4--0.6				
	20										
	25										
	30										
	40										
Aluminum	1	4.0--5.5	6.0--10	10--20	15--25	25--38	35--40				
	2	0.7--1.5	2.8--3.6	5.0--7.0	7--10	10--18	13--25				
	3		0.7--1.5	2.0--4.0	4.0--6.0	6.5--8.0	7.0--13				
	4			1.0--1.5	2.0--3.0	3.5--5.0	4.0--5.5				
	5			0.7--1.0	1.2--1.8	2.5--3.5	3.0--4.5				
	6				0.7--1.0	1.5--2.5	2.0--3.5				
	8				0.6--0.8	0.7--1.0	0.9--1.6				
	10					0.4--0.7	0.6--1.5				
	12					0.3-0.45	0.4--0.6				
	16						0.3--0.4				
	20										
	25										
	35										
Brass	1	4.0--5.5	6.0--10	8.0--13	10--16	20--35	25--30				
	2	0.5--1.0	2.8--3.6	3.0--4.5	4.5--7.5	6.0--10	8.0--12				
	3		0.5--1.0	1.5--2.5	2.5--4.0	4.0--6.0	5.0--6.5				
	4			1.0--1.6	1.5--2.0	3.0-5.0	3.2--5.5				
	5			0.5--0.7	0.9--1.2	1.5--2.0	2.0--3.0				
	6				0.4--0.7	1.0--1.8	1.4--2.0				
	8					0.5--0.7	0.7--1.0				
	10						0.2--0.4				
	12										
	14										