

A decorative graphic consisting of two intersecting laser beams. One beam originates from the top left and the other from the bottom right, meeting at a central point. Each beam is composed of many fine, parallel lines that create a sense of depth and focus.

SENFENG

SF1313G

RC 3000W

Laser cutting machine



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INDEX

Laser cutting machine

Basic components and
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Classic G Series

**SF1313G
RC 3000W**

Laser cutting machine



- High Strength machine bed
- Fully automatic focusing
- High Strength aluminum alloy beam
- Intelligent tracking system



TECHNICAL PARAMETERS

TECHNICAL PARAMETERS (SF1313G)

No.	Item	parameters
1	Working area	1300*1300mm
2	X-axis travel	1300mm
3	Y-axis travel	1300mm
4	Z-axis travel	100mm
5	X/Y-axis positioning accuracy	±0.05mm
6	X/Y-axis repeated positioning accuracy	±0.02mm
7	Maximum speed	80m/min
8	Maximum acceleration	0.8G
9	Total weight (kg)	1870KG
10	Maximum load (kg)	220KG
11	Dimensions (length x width x height)	2985*2160*2000mm
12	Phase	Three-phase
13	Rated power supply voltage	380V
14	Frequency	50Hz
15	Overall power supply protection level	IP54

Note:

1. Workpiece accuracy depends on factors such as the type of part, pretreatment conditions, sheet size, and position within the working area.
2. Technical specifications are subject to change without prior notice and the actual order agreement shall prevail.



CUTTING PARAMETERS

CUTTING PARAMETERS (SF1313G)

Material	Thickness (mm)	Cutting speed (m/min)	Gas
Stainless steel	1	30-45	N2/Air
	2	20-25	N2/Air
	3	8.0- 10	N2/Air
	4	5.0-6.0	N2/Air
	6	2.0-3.0	N2/Air
	8	1.0- 1.5	N2/Air
	10	0.5- 1.0	N2/Air
	12	0.4-0.6	N2/Air
Carbon steel	1	30-40	N2/Air
	2	15- 20	N2/Air
	3	3.5-4.5	O2
	6	2.5-3.5	O2
	8	1.8-2.3	O2
	10	1.4-1.8	O2
	12	1.0- 1.4	O2
	14	0.8- 1.0	O2
	16	0.7- 1.1	O2
	20	0.5-0.7	O2

Note:

1. The cutting parameters table is for reference only, and actual cutting materials shall prevail due to differences in carbon content.
- 2 Dark areas cannot be processed as a full sheet and are only suitable for sample cutting. Please take this into account.



CUTTING PARAMETERS

CUTTING PARAMETERS (SF1313G)

Material	Thickness (mm)	Cutting speed (m/min)	Gas
Brass	1	25-30	N2/Air
	2	12- 17	N2/Air
	3	5.0-6.0	N2/Air
	4	2.0-3.5	N2/Air
	5	1.8-2.5	N2/Air
	6	0.8- 1.0	N2/Air
Aluminum	1	30-35	N2/Air
	2	14-20	N2/Air
	3	8.0- 10	N2/Air
	4	5.0-6.5	N2/Air
	5	2.5-3.5	N2/Air
	6	1.2- 1.5	N2/Air
	8	0.7- 1.3	N2/Air

Note:

1. The cutting parameters table is for reference only, and actual cutting materials shall prevail due to differences in carbon content.
2. Dark areas cannot be processed as a full sheet and are only suitable for sample cutting. Please take this into account.

COST-BENEFIT ANALYSIS

COST-BENEFIT ANALYSIS (SF1313G)

Item		Air	O2	N2
Energy Consumption	Laser generator (kW)	10	10	10
	Water chiller (kW)	5	5	5
	Air compressor (kW)	15	/	/
	Machine power (kW)	5	5	5
	Aspiration (kW)	1.5	1.5	1.5
Consumption and gas (RMB/H)		0.5	4.5	60.5
Total power (kW)		36.5	21.5	21.5
Total energy consumption (kW/h)		21.9	12.9	12.9
Total operating costs (1 RMB/kWh)		22.4	17.4	73.4

If computed with the necessary cutting gas, the cost will be the actual electrical consumption of the air compressor + the electrical consumption of the machine tool + consumables such as protective lenses and cutting nozzles.

Note:

1. The electricity rates and gas prices indicated above are for reference only and may vary depending on the region.
2. Auxiliary gas consumption will vary depending on the thickness of the plates being cut. As an example, 25 mm carbon steel is used for oxygen consumption and 1 mm stainless steel for nitrogen consumption. These figures are for reference only.



ADVANTAGES OF LASER CUTTING

ADVANTAGES OF LASER CUTTING

(SF1313G)

Items	Cutting by plasma	Cutting by laser	Advantages of laser cutting
Positioning accuracy	0.4 mm (especially 10 m chassis)	0.14 mm (especially 10 m chassis)	High precision
Edge tilt	5 mm (especially 40 mm thickness)	0.4 mm (especially 40 mm thickness)	No fine processing required.
Kerf	4-6.0mm	0.2-1.6mm	Save 6-9% of materials.
Edge cutting	10mm	3-4mm	Save 6-9% of materials
Heat-affected zone	0.5-2.0mm	0.1-0.4mm	Lower heat absorption, less deformation.
Cutting effect	Average	Excellent, less slag.	No sanding required.
Cutting speed	Average	Very fast	High production efficiency
Perforation	Small holes cannot be cut.	Diameter-to-depth ratio of 10-20%.	Save on drilling and handling
Working environment	Smoky	Clean	Healthy and environmentally friendly

CONFIGURATION

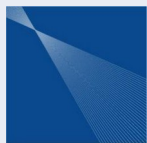
CONFIGURATION (SF1313G)

No.	Item	Qty.	Brand
	Laser generator		
1	Laser generator	1	Raycus
	Laser cutting head		
1	Laser cutting head	1	SENFENG TYRFING
	Machine Central Unit		
1	Transmission system	3	SENFENG
2	Machine tool and accessories	1	SENFENG
3	Reduction	3	MANDOLIN
4	Electrical and pneumatic systems	1	Japan SMC & Taiwan AIRTAC
5	AC servo motor and controller	4	INOVANCE/DELTA/SCHNEIDER
6	Water chiller	1	Tongfei
	CNC control system		
1	CNC control system	1	FSCUT 2000

Note:

This is the optimal configuration verified by our company. Changing the brand or configuration may cause irreversible effects. Please keep this in mind.

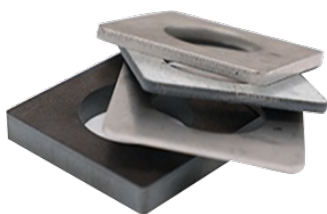
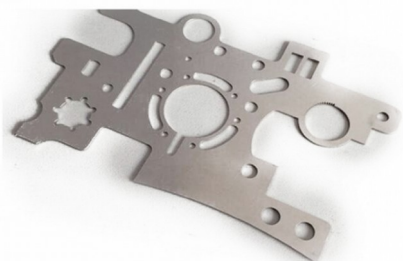
The warranty period for the entire machine (excluding consumables, force majeure natural disasters, wars and violations, human damage, and other reasons) is 2 years.



CUTTING SAMPLES

CUTTING SAMPLES (SF1313G)

CUTTING SAMPLES





GEENERADOR LÁSER

GENERADOR LÁSER (SF1313G)



LASER SERVICE

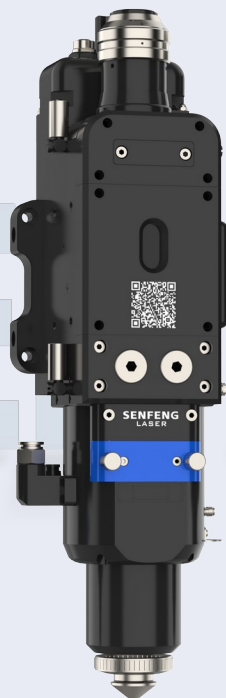


1. **Small fiber core: better laser beam quality.**
2. **Higher cutting speed: greater cutting efficiency.**
3. **Improved resistance to high reflectivity: new optical components with multilayer anti-reflective design for efficient processing of various metals.**
4. **Enhanced intelligence: state-of-the-art software with intelligent application mode for real-time monitoring.**
5. **High electro-optical conversion: over 40% efficiency, reducing energy consumption.**
6. **Improved components: new-generation pump sources offer greater reliability and stability, with improved beam quality and a 30% to 40% increase in brightness thanks to patented nonlinear suppression technology.**
7. **Light and compact: reduced size and compact design for easy integration.**
8. **Enhanced safety: improved safety features.**



CABEZAL LÁSER

CABEZAL DE CORTE (SF1313G)



1. Full optical design and water-cooled body



2. Three dust-protection lenses



3. Light weight and reduced size



4. Independent spotlight protection window module



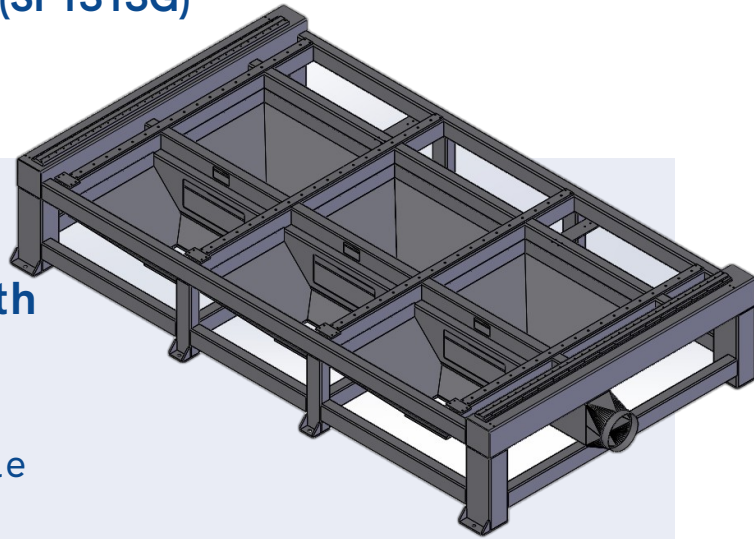
5. Anti-contamination by oil for the air path

MACHINE BED SYSTEM

MACHINE BED SYSTEM (SF1313G)

Machine bed welded with tubes

Durable and non-deformable



Technology

Precision welding technology.

Core

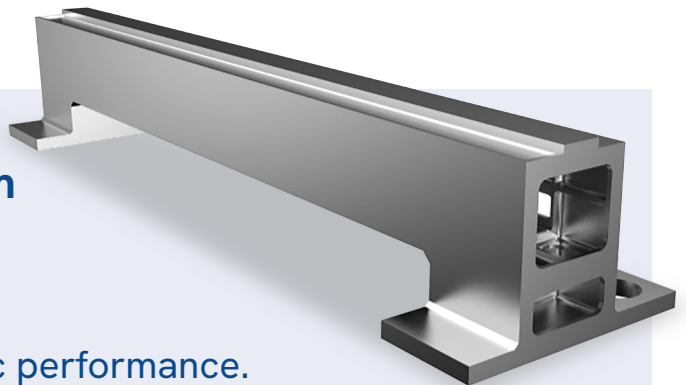
After annealing to relieve internal stress, the machine bed undergoes secondary vibration, an aging treatment, and precision finishing.

Feature

The overall mechanical structure shows small deformation and low vibration, ensuring cutting precision.

High-strength aluminum alloy beam

Light weight and good dynamic performance.



Núcleo

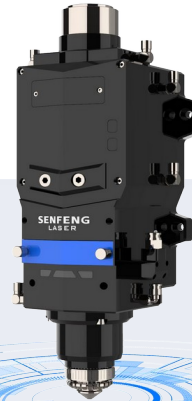
La viga es ligera y ofrece un rendimiento dinámico excepcional.

Característica

Se somete a un mecanizado en bruto tras el recocido para eliminar la tensión interna y después, se acaba tras un tratamiento secundario de envejecimiento por vibración, lo que garantiza la resistencia y estabilidad generales de la viga.

MACHINE BED SYSTEM

MACHINE BED SYSTEM (SF1313G)



Auto-focus system

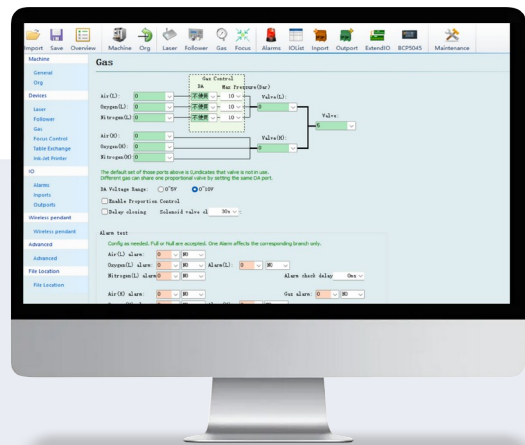
Higher processing efficiency

Feature

Equipped with an auto-focus laser head, the machine can adjust the focus to the optimal cutting distance based on the material and thickness, improving efficiency.

Pneumatic system

Precise control



Core

The pneumatic system is equipped with control valves and proportional regulating valves from the well-known brands SMC and AIRTAC. Through electrical control, the pressure and flow rate of each gas can be precisely adjusted.

Feature

Auxiliary cutting gas (O₂, N₂, compressed air, etc.)



AUTOMATIC GAS DISTRIBUTION DEVICE

AUTOMATIC GAS DISTRIBUTION DEVICE



AUTOMATIC GAS DISTRIBUTION DEVICE

Precise gas control

Equipped with three gas channels: air, nitrogen (300 psi), and oxygen. Each gas channel can independently control its flow and pressure.



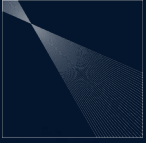
· The software terminal automatically selects the auxiliary gas.



· The type and pressure of the auxiliary gas can be configured and automatically selected through the CNC program, eliminating the need for manual operations.

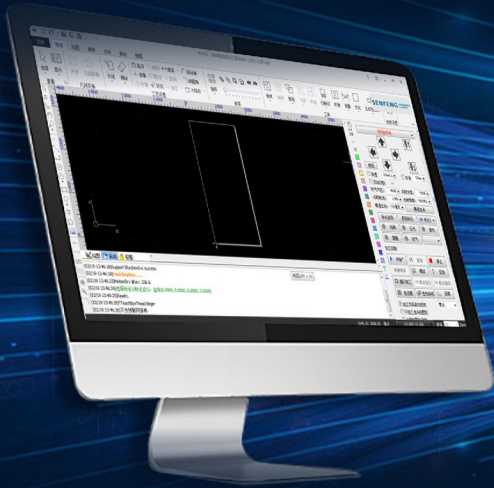


· The actual gas pressure at the cutting head outlet can be easily read and is displayed in real time on the panel.



NUMERICAL CONTROL SYSTEM

NUMERICAL CONTROL SYSTEM



FSCUT2000

FSCUT2000 cutting system

Fast operation and efficient cutting

The FSCUT2000 high-power laser cutting system is a full-featured open-loop control system designed for the sheet metal processing industry. It is easy to install and debug, with excellent performance and a comprehensive solution. It is stable, reliable, easy to implement, ensures safe production, and offers numerous functions. The system supports modular, customizable, automated, and informative solutions, with a powerful cutting process database containing parameters for various materials and thicknesses, enabling fast operation and efficient cutting.



· The user-friendly interface provides error analysis reports.



· Automatically selects the type and pressure of the auxiliary gas.



· Piercing control system.



· Direct laser pulse power modulation.



· Breakpoint return function.



· The automatic Z-axis adjustment program supports tracking control to eliminate plate irregularities.



· Supports obstacle avoidance function during movement and intelligent skip function.



AFTER-SALES SERVICE AFTER-SALES SERVICE

Staff training to improve production efficiency

· Before shipping the equipment

The buyer can send 1-2 operators to our factory or showroom to receive a week of training. The specific date will be subject to the availability of our company's customer service department.

· Equipment warranty

The buyer can also request our company to provide free training for another operator (1-2 people).

· Training

Includes the principle of the laser, the equipment structure, process description, equipment maintenance, laser safety protection, operating procedures, and simple troubleshooting.

· Requirement

Trainees must be mechanical, electrical, or optical engineers or assistant engineers, capable of operating the machine after passing the evaluation on equipment operation, basic laser principles, laser safety protection, maintenance, etc.

Packaging and transport to ensure equipment quality



· Packaging

Standard packaging, suitable for long-distance transport by vehicle, resistant to moisture, rust, and impact. Indicates the center of gravity and lifting points, suitable for general lifting.



· Transport

Domestic transport within China is fully covered by our company, including freight and insurance.



· Packaging and certificate

A detailed content list and a quality certificate will be attached to each packaging box. The equipment instructions and all other documents and materials are also attached inside. The content list is located outside the packaging box and the certificate inside.

Equipment installation is professional and high quality



1 Equipment installation

The delivery location is your company's installation site, and our company will send engineers to carry out the equipment installation;



2 Equipment testing

After installation, debugging is carried out to ensure normal equipment operation;



3 On-site training

Training on equipment maintenance, safety protection, operating procedures, and simple troubleshooting at the customer's facilities for 7 days to ensure normal use.



4 On-site acceptance

The engineer can leave after on-site acceptance by the customer (the customer may veto).

Customized Service

HIGH-QUALITY CUSTOMIZATION

In the digital age, the intelligent transformation of the metal processing manufacturing industry is essential, and building a fully automated factory is the only way to achieve this transformation. Customized metal forming automation solutions become an absolute priority.



05_{TM}

International PCT patent

520_{TM}

Local technology patent

Currently, our company has successfully developed core components such as the laser generator, laser processing head, and laser numerical control system, which are widely used in the fields of cutting, welding, cladding, and automation. A complete industrial chain development model has been created that integrates cutting, bending, welding, cladding, and automation, and covers laser cutting equipment, laser welding equipment, laser cladding equipment, laser cleaning equipment, bending centers, and flexible laser processing production lines, which are widely used in power towers, construction machinery, shipbuilding, bridge formwork, aerospace, and other industries. Thanks to its great advantages, Jinan Senfeng Laser Technology helps companies reduce the production cycle and save manufacturing costs, in order to obtain greater economic benefits in competition.

Customized standards

1

Understand the current situation of the client's industry and the specific production situation. Identify problems and understand the client's needs.

2

Conduct in-depth exchanges with clients on-site and customize metal forming automation solutions based on their pain points and needs.

3

Significantly differentiate from competitors' models and formulate the most suitable solutions.

4

According to the customized plan, we provide R&D and production from blueprints to complete machines, and control every procedure until the customer is satisfied..

Servicio 5 estrellas

SERVICIO 5 ESTRELLAS CON RESPUESTA RÁPIDA

Jinan Senfeng Laser Technology siempre se adhiere al concepto de «el cliente es lo primero» y ofrece servicios globales de alta calidad con dedicación y profesionalidad. Ante la epidemia, no nos echamos atrás, sino que resolvimos los problemas de los clientes a tiempo, lo que nos valió el favor y la confianza de clientes nacionales y extranjeros.



Efficient

Efficient

Las 24 horas del día, los 7 días de la semana, los 365 días del año para responder a las llamadas de reparación. En un plazo de 10 minutos, los ingenieros técnicos profesionales responderán, en 1 hora se determinará el plan de mantenimiento y en 1 día laborable se enviarán los ingenieros.

Solución exclusiva y servicio personalizado: plan de servicio personalizado según la situación específica de los clientes.

Sistema de certificación de ingenieros de servicio: cada ingeniero de servicio, tras una formación y evaluación rigurosas, obtiene un certificado.

Professional

Professional

Formación sobre AQ: según el modelo del equipo, el ingeniero certificado elaborará las preguntas frecuentes y formará a los clientes.

Asesoramiento individual en línea: Ingenieros sénior con amplia experiencia guían a los clientes para resolver problemas a través del teléfono, videoconferencia y otros medios de comunicación en red. Una vez es suficiente: una vez depurado el equipo, los problemas similares se reparan de una sola vez.

Reassuring

Reliable

Servicio previo: formación teórica y práctica sobre el funcionamiento, formación en autodiagnóstico de averías comunes, guía de reparación rápida para averías difíciles, recordatorio de precauciones de uso.

Servicio regular: recordatorio de mantenimiento periódico, servicio regular a domicilio, actividades regulares de promoción de ventas.

Servicios de valor añadido: servicio de actualización de hardware y software de los equipos, servicio de arrendamiento financiero, servicio de garantía ampliada.



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