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SF6016T

Tube laser cutting machine

1.0- 3.0KW fiber laser



I. Introduction

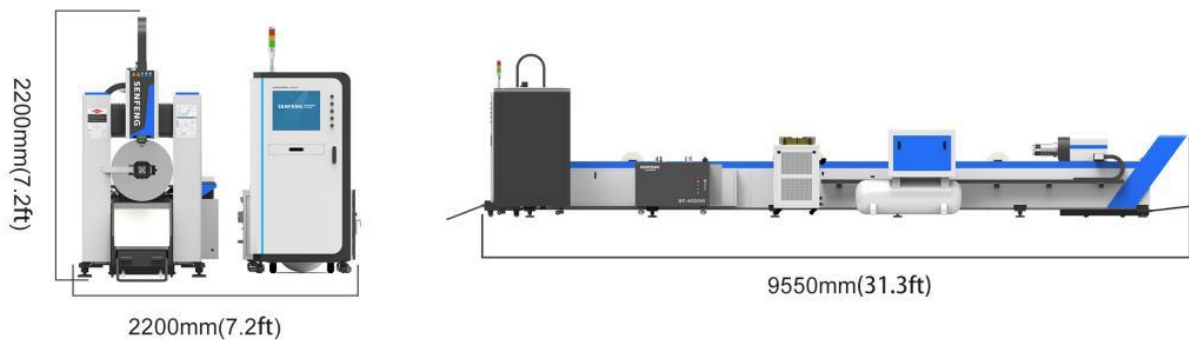
SF6016T metal tube laser cutter is also called tube laser cutting machine, which is used for cutting round tube, square tube and other metal tube. Pipe processing range 500-7100mm* ϕ 10~160mm (square tube: 10*10-110*110mm).

SF6016T metal tube laser cutting machine is equipped with fiber laser device, laser power from 1kw to 3kw. Besides, the machine has a smaller footprint, the size is 9m*2.2m*2.2m.



II. Technical Parameter

Item	Parameter			
	1KW	1.5KW	2KW	3KW
Pipe length	500~7100mm (manual feeding)			
Pipe diameter	Φ 10~Φ 160mm			
Z-axis Travel	170mm			
X/Y axis Positioning accuracy	±0.05mm			
X/Y axis Repeated positioning	±0.02mm			
Maximum Feeding speed	80m/min			
Maximum acceleration	0.8G			
Machine Total weight(KG)	3145KG	3130KG	3230KG	3300KG
Maximum load(KG)	100KG	100KG	100KG	100KG
Outline size (mm)	9550*2200*2200mm			
Power parameters	Three-phase AC 415V 50Hz			



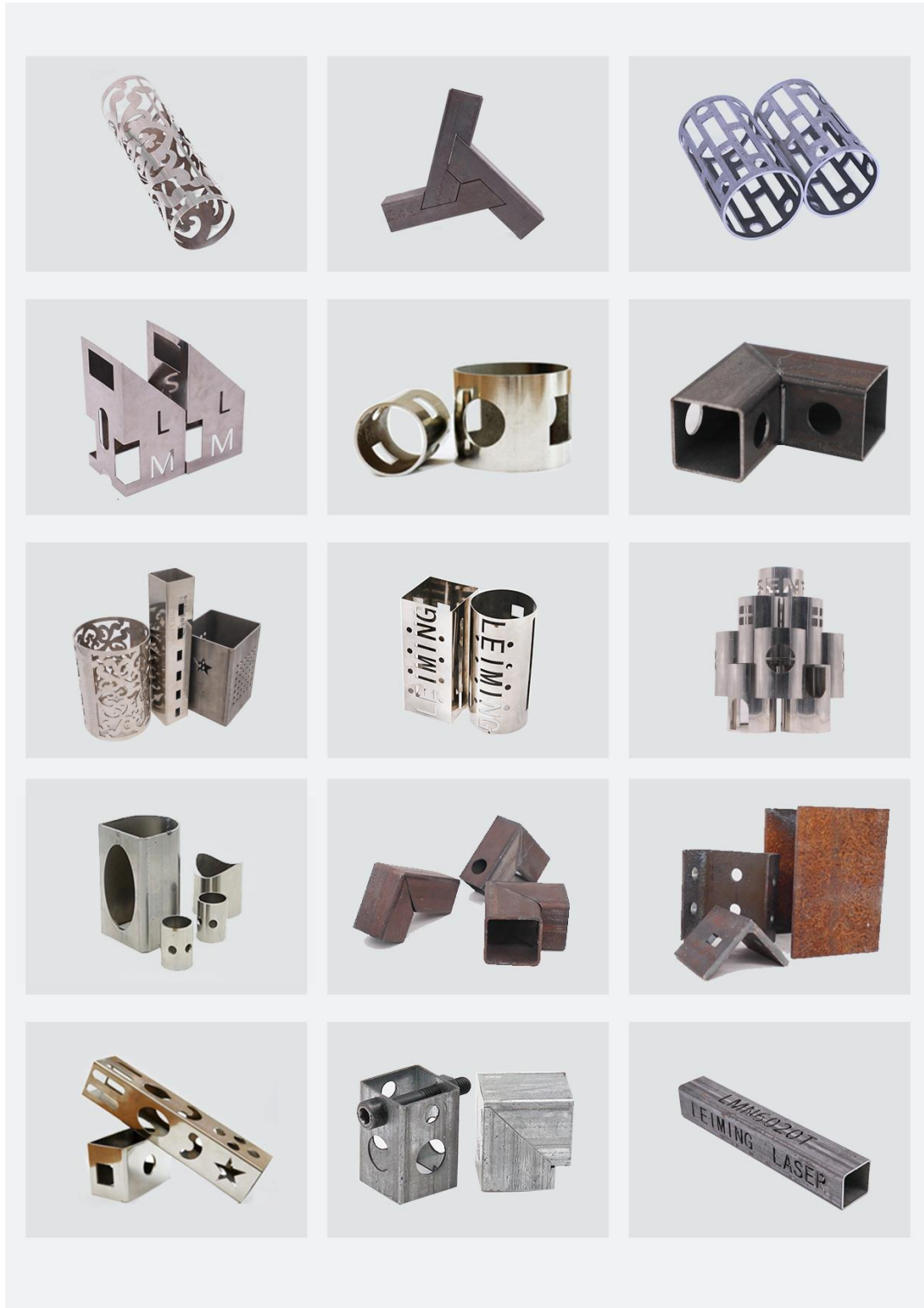
III. Configuration

NAME	NO.	BRAND
FIBER LASER DEVICE		
Fiber laser source	1 set	Raycus
LASER HEAD		
Laser head	1 set	Raytools
Main Machine		
Transmission	4 set	LAPPING/SENFENG
Machine bed accessories	1 set	SENFENG
Motor reducer	4 set	MOTOREDUCER
Electrical and pneumatic	1 set	SCHNEIDER SMC/AIRTAC
Server motor and driver	5 set	DELTA
Water cooling	1 set	HANLI
CNC CONTROL SYSTEM		
Raytools system	1 set	XC4000-T2

IV. Cutting Capability and Application

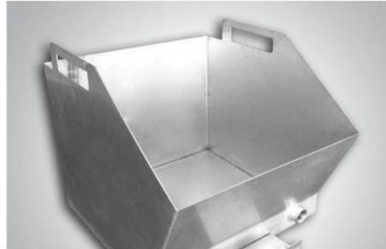
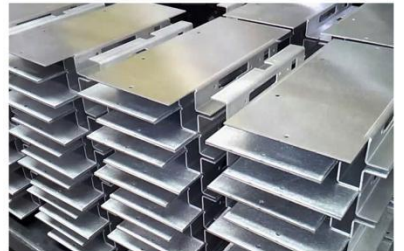
◆ Cutting Materials

Carbon steel, stainless steel, aluminum alloy, brass, copper, galvanized sheet, silicon steel sheet, electrolytic sheet, titanium alloy, manganese alloy, etc.



◆ Application Industry

Sheet metal processing, machinery manufacturing, auto parts manufacturing, electrical manufacturing, elevator manufacturing, petroleum machinery, food machinery, shipbuilding etc.



◆ Cutting Thickness

Material	1000w	1500w	2000w	3000w
Carbon steel (mm)	1-10	1-10	1-10	1-16
Stainless steel (mm)	1-5	1-6	1-6	1-8
Aluminum (mm)	-	-	1-4	1-6

◆ Cutting Parameters

Material	Thickness (MM)	1KW	1.5KW	2KW	3KW
		Cutting Speed (m/min) (gas)	Cutting Speed (m/min) (gas)	Cutting Speed (m/min) (gas)	Cutting Speed (m/min) (gas)
Stainless Steel	1	12-14(N2)	15-18(N2)	18-20(N2)	20-25(N2)
	2	3.5-4(N2)	6-7(N2)	8-9(N2)	10-12(N2)
	3	1.5-2(N2)	2.5-3(N2)	4.1-4.5(N2)	5-6(N2)
	4	0.8-1.1(N2)	1.3-1.7(N2)	2.1-2.5(N2)	4-5(N2)
	5	0.4-0.6(N2)	0.8-1.1(N2)	1.7-2(N2)	3-4(N2)
	6		0.3-0.6(N2)	0.6-1(N2)	2-3(N2)
	8				1(N2)
Carbon Steel	1	9-11 (O2)	10-13 (O2)	13-15(O2)	25-30(O2)
	2	3.0-4.2 (O2)	4.8-5.5 (O2)	4.2-4.8(O2)	7(O2)
	3	2.2-3 (O2)	3.5-4 (O2)	4.1-4.5(O2)	4.5-5(O2)
	4	1.8-2.3 (O2)	2.4-3 (O2)	3.1-3.5(O2)	3.5-4(O2)
	5	1.4-1.6 (O2)	1.7-2 (O2)	1.7-2(O2)	3.0-3.2(O2)
	6	1.1-1.4 (O2)	1.5-1.8 (O2)	1.6-1.9(O2)	2-2.5(O2)
	8	1-1.2 (O2)	1.1-1.4 (O2)	1.5-1.7(O2)	1.8-2.2(O2)
	10	0.6-0.8 (O2)	0.8-1.1 (O2)	1-1.3(O2)	1.2-1.5(O2)
	12				0.9-1.2(O2)
	14				0.8(O2)
	16				0.7(O2)
Aluminum	1			10-15 (N2)	20-25(N2)
	2			7-10 (N2)	12-14(N2)
	3			3-4 (N2)	5-7(N2)
	4			1-1.5 (N2)	4-5(N2)
	5				2-3(N2)
	6				1-2(N2)

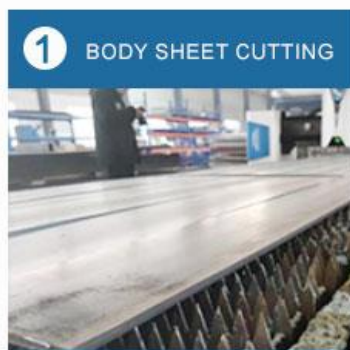
V. Features

◆ High strength machine bed

The high strength machine bed is welded with high-quality steel plates and pipes. After welding, stress relief annealing, secondary aging treatment, and ultra-large gantry milling machine precision processing ensure that the bed has sufficient structural stability and shock resistance. Withstand higher acceleration. There is no connection inside the bed to block heat transfer, avoiding the heat generated by cutting from being transferred to the bed and affecting the processing accuracy. The bed will not be deformed after long-term use, which improves the service life of the equipment.

➔ Bed body processing process

Senfeng Leiming has an independent bed production workshop. Many important process such as bed welding, heat treatment, shot blasting, cleaning, painting are all carried out in the workshop. Strictly control the quality of the bed, and timely delivery.



“0” Tail Material

The minimum tail length is 20mm, which truly realizes 0 tail cutting, reduces the cost of raw materials, and brings great production benefits

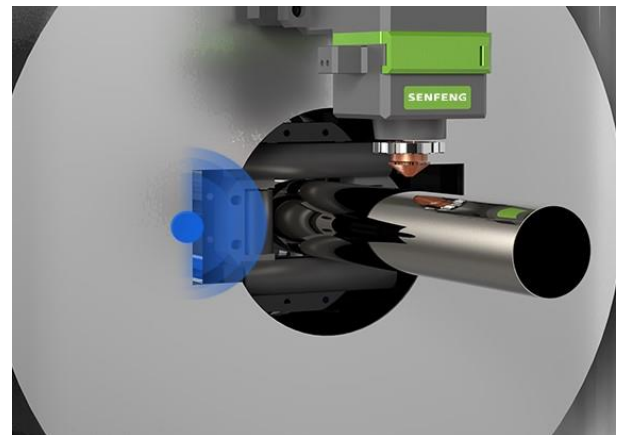
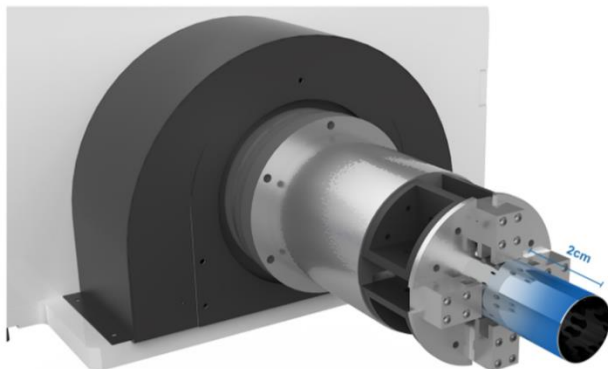
◆ Ultra-fast Tube Cutting

The first ultra-fast tube cutting process, the chuck speed can reach 125r/min; the running speed can reach 120m/min; the motion acceleration has reached 1.2G, which is the current tube cutting field, which has achieved fast dynamic performance and excellent equipment one. The cutting speed has reached 60m/min, which has a high market position in the industry.

◆ Unique Chuck Release Detection Function

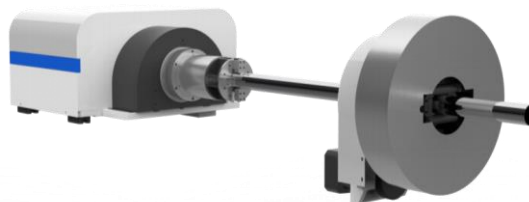
Extend equipment service life, reduce equipment maintenance time, and make laser tube cutting easier;

It greatly improves the reliability of the chuck operation, and is the core support technology and process system for dual chucks to achieve "zero" tailings.



◆ Pneumatic Self-centering Chuck

Clamp has high precision and fast speed; the gear drive is self-centering, and the efficiency is high; the load-bearing capacity of the pipe can reach 120KG, breaking the industry's clamp limit



VI. More Details



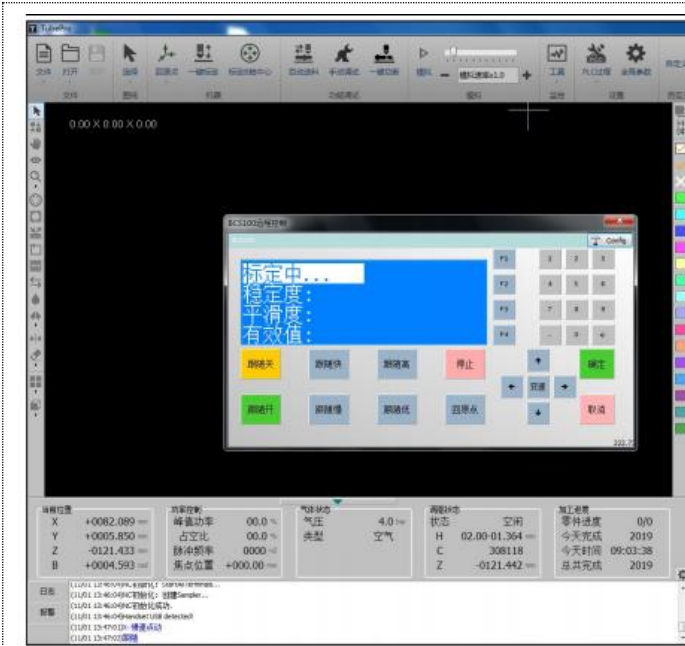
Automatic Focusing Fiber Laser Cutting Head

1. This kind laser head has a strong advantage on medium power large format fiber laser cutting application.
2. Completely sealed internal structure of laser head can avoid optical part polluted by dust.
3. Two point centering adjustment of laser head; the focus adjusting take imported motor driving and has great improvement in perforation.
4. Protective lens take more convenient replacement drawer installation way.
5. Can be equipped with various kind of QBH connectors laser machine.



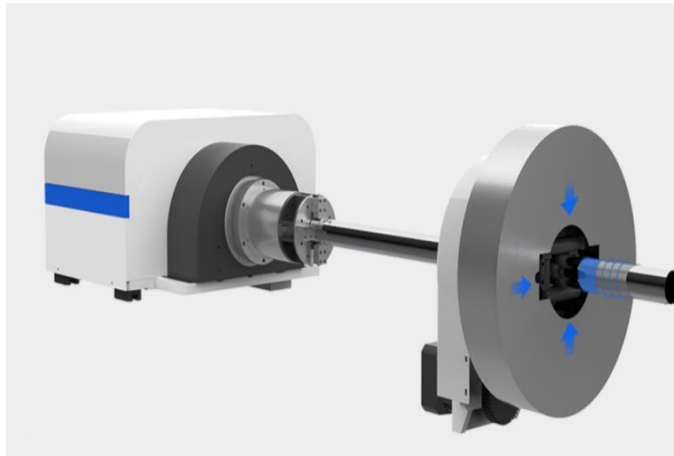
Raycus Laser Device

It has the advantages of high electro-optical conversion efficiency (>40%), good beam quality, high energy density, wide modulation frequency, strong reliability, long life, and maintenance-free operation. It can be widely used in welding, precision cutting, cladding, and surface treatment, 3D printing and other fields.



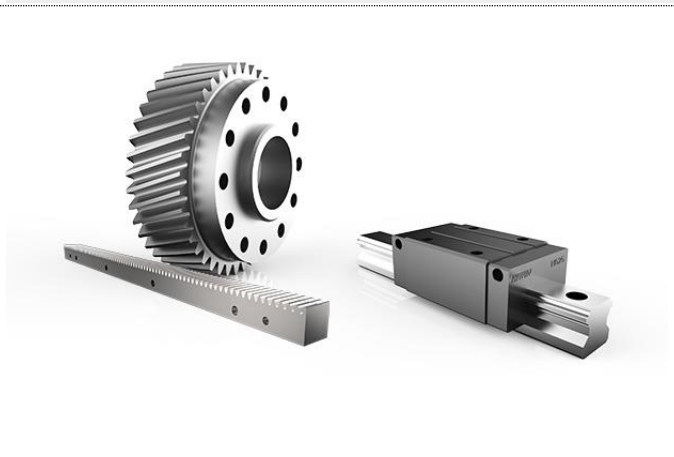
Professional Tube cutting Control System

Raytools pipe cutting control software is used in ultra-high speed laser pipe cutting machine. It has the functions of real-time offset compensation, automatic feeding, manual debugging, one key cutting, one key aligning pipe head, automatic centering, corner technology, weld detection, curve monitoring, fast frog leaping, and pipe core deviation compensation.



Double Chuck Clamping

Clamping round tube $\phi 10\sim\phi 160\text{mm}$. Servo motor and reducer are driven synchronously to ensure processing accuracy. Both front and rear chucks are pneumatically tightened.



Transmission System

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.



Circuit board



Water Cooling System

Large cooling capacity, stable performance, trouble-free, clean water quality, good heat exchange effect with fiber laser, and linkage signal to protect the laser



Height Controller



Automatic Lubrication System

1. Lubricating the guide rails of X axis, Y axis, Z axis automatically, which could reduce maintenance cost and save time significantly.
2. Oiling time can be adjusted according to processing amount, which is more humanized.

VII. Product Certification

Senfeng leiming fiber laser machines have passed CE from TÜV, ROHS, FDA, ETL certificates, which is in line with European and American standards.

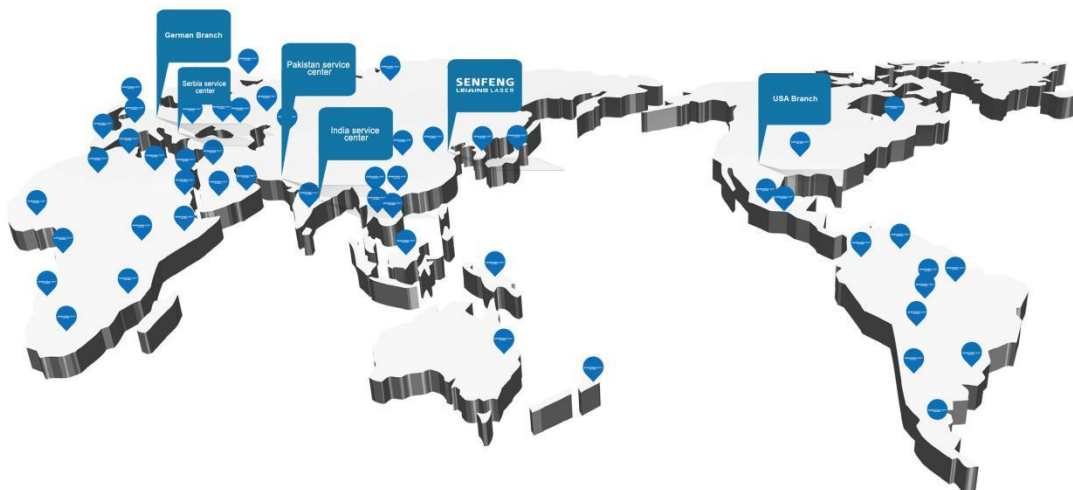


About Senfeng

SENFENG LEIMING LASER has established many branches in United States, Germany, India, Pakistan, Serbia with perfect quality and service, to provide localized services and technical support for global customers.



Products sold in more than 160 countries and regions.



Core Technology-Independent Developed Laser Head

➤ **Auto Focus**

Operator can set consequent focus adjustment by procedure, finishing quick piercing to thick plates and cutting different thickness plates automatically.

➤ **water cooling**

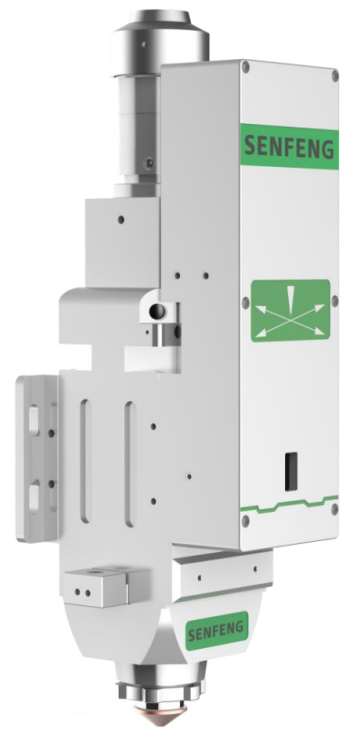
Focusing parts of laser cutting head with water cooling, reducing high temperature and flog by long time cutting.

➤ **storm cut**

Storm cut technology with ultra high power laser source, with SENFENG cutting technology, realizing high speed cutting.

➤ **Bright Cut Technology**

Bright Cut Technology developed by SENFENG LASER can efficiently solve: too much burr, cutting surface not smoothly, difficult to cut high-reflect material etc.



More details about SENFENG LEIMING R&D, feel free to visit website: www.sfcnclaser.com

Senfeng laser generators which are independently developed have been widely used in laser cutting, welding, cleaning, cladding additive and other fields

