Contents

I. Product introduction

HS6020T

Metal tube laser cutter

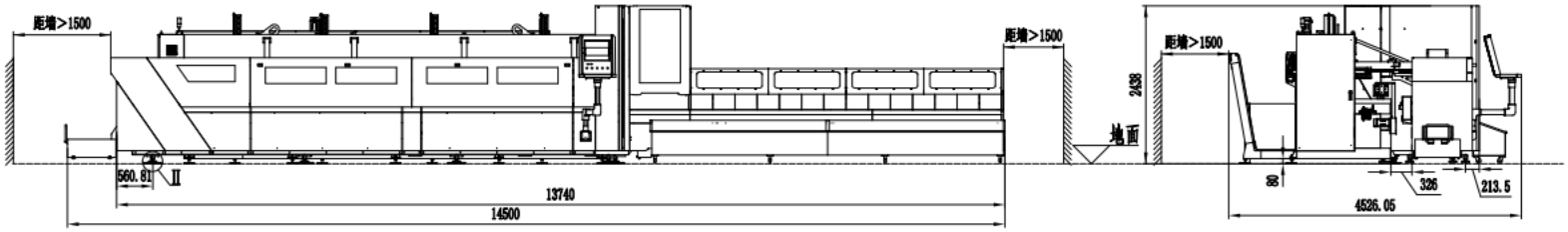
- HS6020T metal tube laser cutter is also called tube laser cutting machine, which is used for cutting round tube, square tube and other metal tube.
- Pipe processing range **6000mm* φ20~220mm** (square tube: **20*20-150*150mm).**

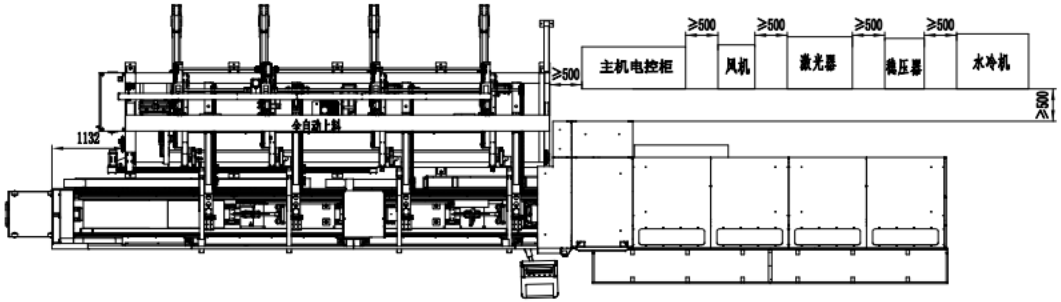
II.Technical Parameter

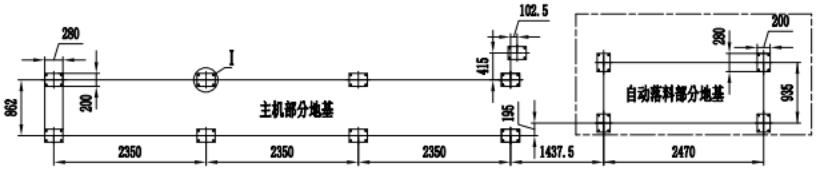
Item	Parameter				
	1500W	2000W	3000W	4000W	6000W
Pipe Length	1000~6000mm				
Pipe Diameter	Φ20~Φ220mm				
Z-axis Travel	220mm				
X/Yaxis Positioning Accuracy	±0.05mm				
X/Yaxis Repeated Positioning	±0.02mm				
Maximum Speed	80m/min				
Chuck Maximum speed	100r/min				
Maximum Acceleration	0.8G				
Machine Total Weight(KG)	7100KG				
Table Maximum Load(KG)	150KG				
Outline size (mm)	13500*2900*2400mm				
Power parameters	Three-phase AC380V 50Hz				
Protection Level of Total Power Supply	IP54				

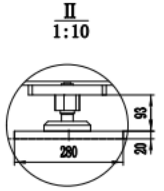
测量单位：mm，1in=25.4mm

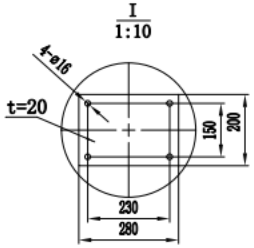
Please see page 2 for English.











切管机安装说明

1、客户自备地脚板1　13块，尺寸280X200X20；
2、地脚板用膨胀螺栓固定在水泥地面上，膨胀螺栓规格
M12×100，数量26件；
3、将机床调平后，在地脚板上的适当位置，点焊床身自带的M24×150
螺柱，用于固定床身；下料部分同理；上料部分，调试完成后，直接将地脚板固定在地面上；
4、原则上要求地脚板下面浇筑500×500×400的水泥柱，再将地脚板
固定在水泥柱上。如客户地面硬度足够，并能够承受大约每平米
5吨的负载，也可直接将地脚板固定在水泥地面。
5、激光器、水冷机、风机以到货实际尺寸为准。

安装用资料（客户自备）			
名称	规格	数量	备注
地脚板1	280*200*20	13	
膨胀螺丝	M12×100	26	

标记	处数	分区	更改文件号	签名	年、月、日
设计			标准化		
审核					
工艺			批准		

地基图		
阶段标记	重量	比例
		1:45
共　张　第　张		

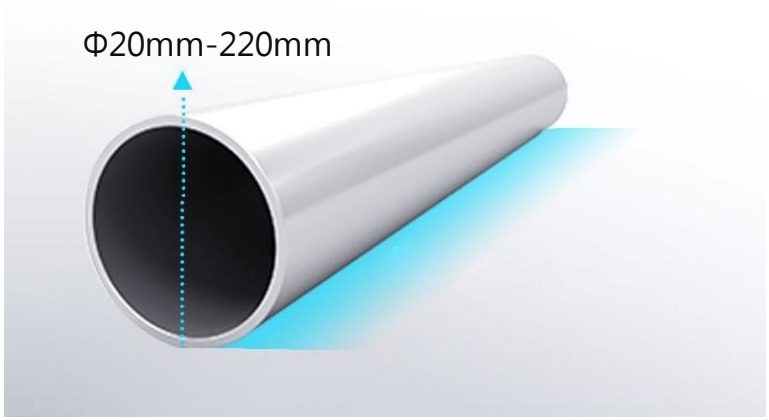
济南森锋激光科技股份有限公司
SF6020T(伸缩上料+下料)地基图
SF6020T.14A.12

III.Configuration

NAME	NO.	BRAND
FiberLaser	1 set	RAYCUS
Laser Head	1 set	RAYTOOLS
Transmission	4 set	THK
Motor Reducer	4set	MOTOREDUCER
Electrical and Pneumatic	1 set	SCHNEIDER/SMC/AIRTAC
Server Motor and Driver	5set	PANASONIC
Water Cooling	1 set	HANLI
Control System	1 set	FSCUT 5000

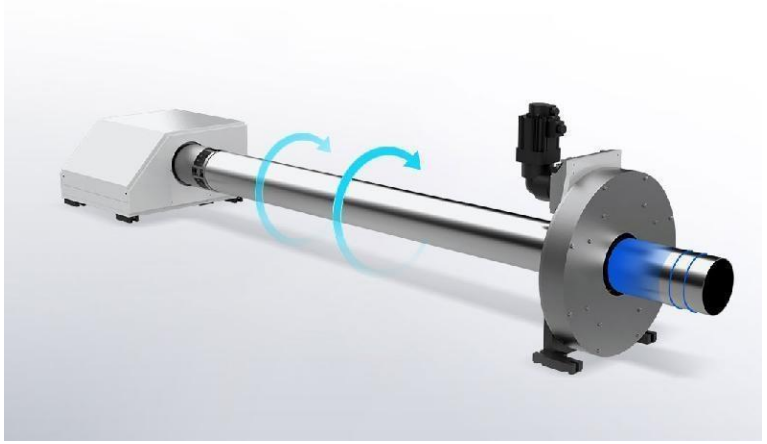
IV.Main Features

Wide Processing Range, Large Loading Ability



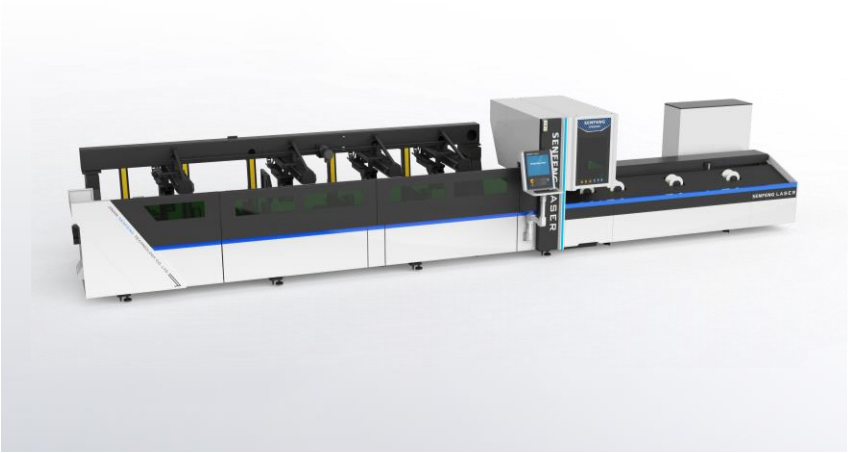
- Round Tube Diameter:**Φ20mm-220mm**
- Square Tube Length: **20*20mm-150*150mm**
- Processing round pipes, square pipes, rectangular pipes.
- Single tube load bearing up to 150kg.

Powerful Dynamic Performance



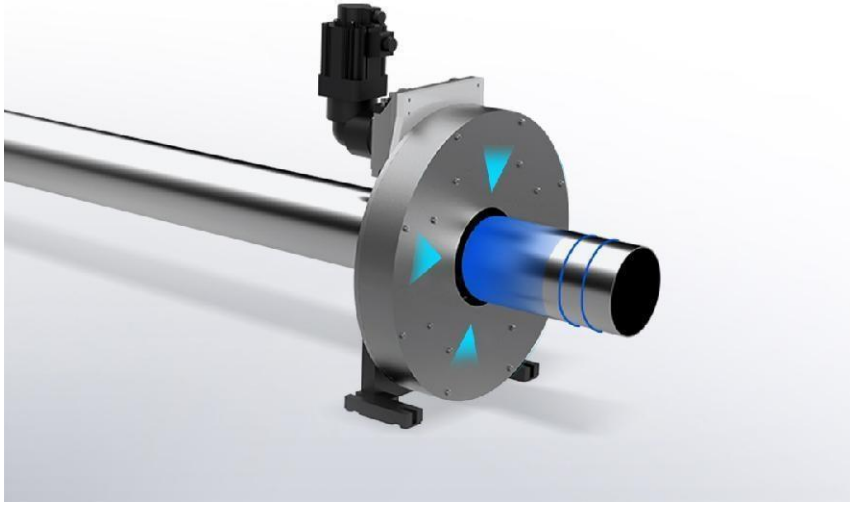
- Maximum speed can reach **80m/min**, the chuck speed can reach **100r/min**, which has achieved fast dynamic performance.
- This new tube laser cutting machine, with ultra-high performance and ultra-high precision, can meet your strict requirements for products in the field of tube cutting.
- Clamping round tube φ20~φ150mm. Servo motor and reducer are driven synchronously to ensure processing accuracy.
- Both front and rear chucks are pneumatically tightened.

Automatic Loading and Unloading System (Optional)



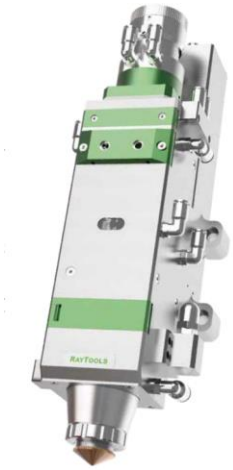
- The whole bundle of pipes, intelligent distribution, loading and unloading;
- Processed products and waste materials are automatically sorted, reducing labor costs.
- Loading bearing capacity 3000KG ;

Pneumatic Self-Centering Chuck



- High clamping accuracy and fast speed.
- Self-centering gear transmission, high efficiency.
- Intelligent pneumatic jaws, large clamping force, stable feeding, more precise cutting.

Automatic Focusing Fiber Laser Cutting Head



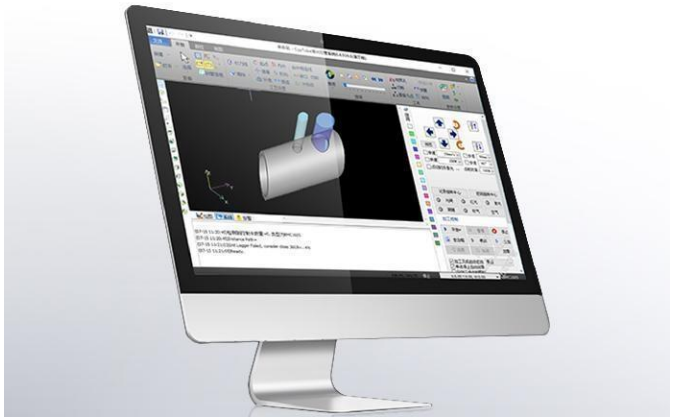
- Multiple protective lenses, efficient protection of collimating and focusing lenses
- Automatic focusing, reducing human intervention
- Highly dustproof, IP65 dustproof, patented protection lens holder cover, dustproof and no dead ends
- High-speed cutting

Raycus Laser Device

HS6020T fiber laser cutter adopts Raycus RFL-3000 new type fiber laser, which has the following characteristics:

- The minimum fiber core can reach 50nm
- 3 times mode output is optional
- New generation of intelligent control system
- Multi-level security and high anti-protection
- Electro-optical efficiency up to 35%

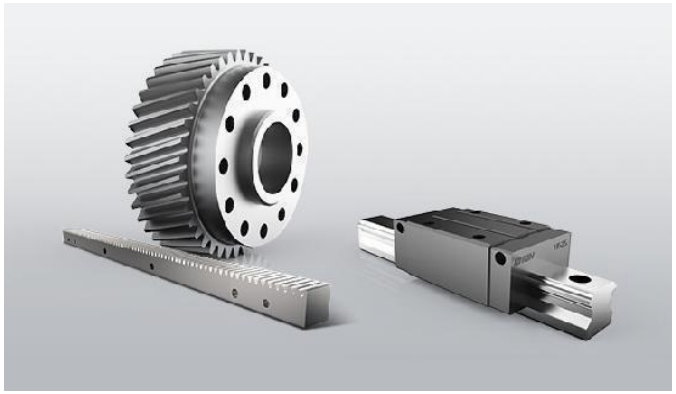
Professional Tube cutting Control System



SF6035T equipped with FSCUT5000B numerical control system is developed specifically for pipe processing control system.It supports high-precision and high-efficiency cutting of square tubes, round tubes, racetrack-shaped and oval-shaped stretching tubes, angle steel, channel steel, I-beam and other special-shaped steels. The adaptation software is TubePro special pipe cutting software and Tubest nesting software, and its performance characteristics are as follows:

- The utility model has the functions of automatic centering, supporting the real-time
- deviation compensation of the pipe center, reducing the requirement for the clamping of the pipe material, and greatly improving the piercing precision
- The automatic centering function supports real-time deviation compensation of the tube core, reduces the clamping requirements for the tube, and greatly improves the perforation accuracy.
- Support setting a separate corner process to improve the cutting quality of pipe corners
- Support fast frog leap, intelligent judgment of elevation on the table, shorten the time of air movement, improve cutting efficiency;

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.

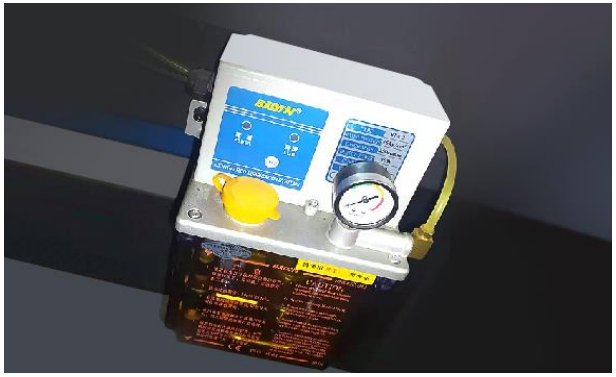
Circuit board

Height Controller

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

Water Cooling System

Automatic Lubrication System

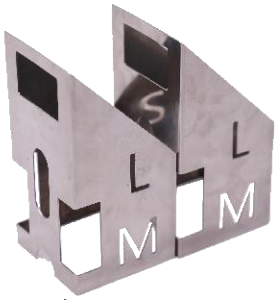


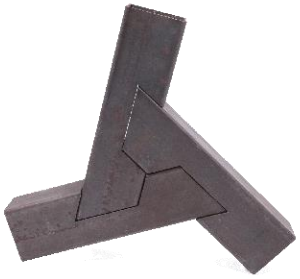
- Lubricating the guide rails of X axis, Y axis, Z axis automatically, which could reduce maintenance cost and save time significantly.
- Oiling time can be adjusted according to processing amount, which is more humanized.

V.Cutting Capability

Cutting Materials

carbon steel,
stainless steel,
aluminum alloy,
galvanized
sheet, titanium
alloy,
manganese
alloy,
brass,
etc.





Cutting Thickness

Materal	Thickness (MM)	1KW	1.5kw	2KW	3KW	4KW	6KW
		Cutting Speed (m/min) (gas)					
Carbon Steel	1	9—11	10—13	13—15	20-25	20-25	20-25
	2	3.0—4.2	4.8—5.5	4.2—4.8	7-10	13-17	13-17
	3	2.2—3	3.5—4	4.1—4.5	4.5-5	7-9	7-9
	4	/	2.4-3	3.1—3.5	3.5-4	3.5-4	3.5-4
	5	/	1.7-2	1.7-2	3.0-3.2	3.0-3.2	3.0-3.2
	6	/	1.5-1.8	1.6-1.9	2-2.5	2-2.5	2-2.5
	8	/	/	1.5-1.7	1.8-2.2	2-2.3	2-2.3
	10	/	/	/	0.8-1	1.8-2.2	1.8-2.2
	12	/	/	/	/	0.9-1.2	0.9-1.2
	14	/	/	/	/	/	0.8
Stainless Steel	1	12—14	15—18	18—20	20-25	20-25	20-25
	2	3.5—4	6—7	8—9	10-12	12-18	16-20
	3	1.5—2	2.5—3	4.1—4.5	5-6	8-10	12-18
	4	0.8—1.1	1.3—1.7	2.1—2.5	4-5	5-7	9-12
	5	0.4—0.6	0.8—1.1	1.7—2	3-4	4-5	7-9
	6	/	0.3—0.6	0.6—1	2-3	3-4	4.5-6
	8	/	/	/	1	2-3	2.5-3.5
	10	/	/	/	/		1.2-2
	12	/	/	/	/	/	1-1.5
Brass	1	/	/	18—20	20-25	20-25	20-25
	2	/	/	8—9	10-12	12-18	16-20
	3	/	/	/	5-6	8-10	12-18
	4	/	/	/	/	5-7	9-12
	5	/	/	/	/	/	7-9
	6	/	/	/	/	/	4.5-6
Aluminum	1	/	/	10-15	15-20	15-22	20-25
	2	/	/	/)	12-14	16-20	16-20
	3	/	/	/	5-7	10-13	10-13
	4	/	/	/	4-5	5-7	6-8
	5	/	/	/	/	3.5-5	4-6
	6	/	/	/	/	/	3-4
	8		/	/	/	/	2-2.5

Note:
1. It is not recommended to use oxygen as an auxiliary gas for processing when the thickness of the carbon steel pipe is more than 5mm and the diameter or side length is less than 50mm.
2. The cutting head has two types: ordinary and customized.
Ordinary cutting head: cutting conventional pipes such as square pipes, round pipes, oval pipes, triangular pipes, etc., pipes without concave angles.
The PC cutting head will have obvious differences in speed and cutting effect in the cutting of carbon steel pipes with a thickness of 6mm and above. The speed is reduced by 20%-40%, but it can process pipes of any shape.
3. Parameters are for reference only! The above numerical value belongs to the theory numerical value, pipe size, equipment speed can affect the cutting speed!

VI.Cost

Mode		1500W			2000W			3000W			4000W			6000W		
		Air compress	O2	N2	Air compress	O2	N2	Air compress	O2	N2	Air compress	O2	N2	Air compress	O2	N2
Electricity Consumption	Laser Device	5.5KW			6.5KW			10KW			12.5KW			18.5KW		
	Chiller power	2.5KW			3KW			3.5KW			5KW			8.4KW		
	Air Compressor Power	22KW	/	/	22KW	/	/	22KW	/	/	22KW	/	/	22KW	/	/
	Main Body	21.6KW														
	Dust Exhausting Equipment	11KW														
	Feeding	15KW														
Gas Consumption	RMB/H	0.5	4.5	60.5	0.5	4.5	60.5	0.5	4.5	60.5	0.5	4.5	60.5	0.5	4.5	60.5
	USD/H(1USD≈6.6558RMB)	0.08	0.67	9.09	0.08	0.67	9.09	0.08	0.67	9.09	0.08	0.67	9.09	0.08	0.67	9.09
Total Power (KW)		77.6	55.6	55.6	79.1	57.1	57.1	83.1	61.1	61.1	87.1	65.1	65.1	96.5	74.5	74.5
Total Power Consumption(KW/H)		46.6	33.4	33.4	47.5	34.3	34.26	49.86	36.7	36.7	52.3	39.1	39.1	57.9	44.7	44.7
Total Operation Cost(RMB)1RMB/KW/H		47.1	37.9	93.9	48	38.8	94.76	50.36	41.2	97.2	52.8	43.6	99.6	58.4	49.2	105
Total Operation Cost(USD)		7.07	5.69	14.1	7.2	5.83	14.23	7.57	6.19	14.6	7.9	6.55	15	8.77	7.39	15.8