3+1 TWIN-CHUCK HEAVY-DUTY TUBE LASER CUTTING MACHINE

3000-6000W

TX 3+1

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DEVELOPMENT HISTORY

2021:
TM65 upgraded to TM65 II
Add R3 PLUS, R5 Pro, TS65 II
Launch TX12036 series "3+1" twin-chuck heavy-duty machine
Launch TL300 zero-tailing heavy-duty tube machine

2020:
TXPLUS-heavy-duty machine
TH65 upgraded to R5

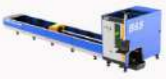
2019:
TX65-the domestic first intelligent multifunctional machine
TL500-the domestic first ultra-heavy-duty machine
TP65 upgraded to TP65S

2018:
TS65-the domestic first high-speed machine
TM65- the domestic first machine for tiny tube

2017:
TP65-1st generation
3D machine

2016:
T60-2nd generation
TH65-3rd generation

2015:
B60-1st generation



HSG
Intelligent Manufacturing Changes Future

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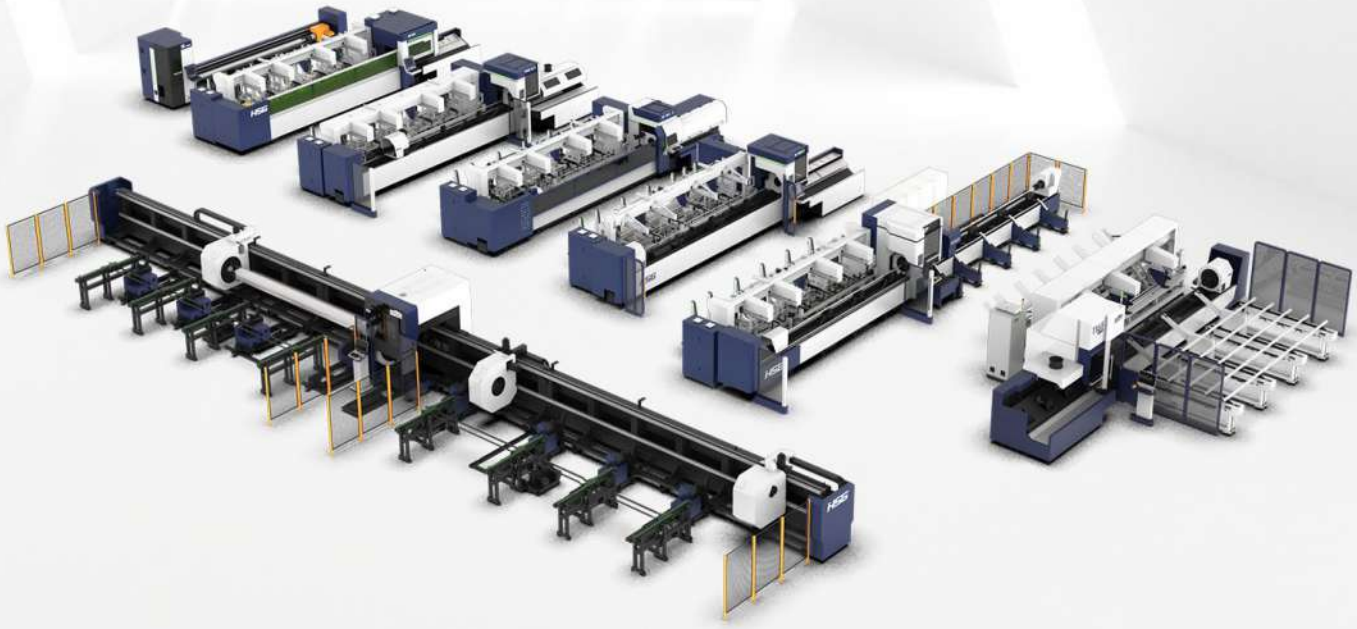
OUR CURRENT TUBE LASER CUTTING MACHINES



Many different models

High degree of automation

0

Real 0 tailing

Balance tiny tubes (50kg) and ultra-heavy (1000kg+) tubes well

	Name	Max. Range of Chucks	Max. Weight of Single Tube	Min. Tailing Length	Bevel Cutting	Special-shaped Tube Cutting
Economical	R3/R3 PLUS	R3: Φ20-219mm R3 PLUS: Φ20-325mm	R3: 100kg R3 PLUS: 200kg	R3: 85mm R3 PLUS: 110mm	×	×
	R5/R5 Pro	Φ20-254mm	200kg	R5: 190mm R5 Pro: 50mm	×	×
Professional	TM65/TM65 II	TM65: Φ10-100mm TM65 II: Φ10-160mm	50kg	TM65: 125mm TM65 II: 50mm	×	×
	TS	Φ12-273mm	200kg	130mm	×	√
	TPS	Φ20-273mm	200kg	220mm	√	√
	TX PLUS	Φ20-325mm	600kg	80mm	×	√
	TX PLUS II	Φ20-350mm	500kg	130mm	×	√
Special Applications	TX 3+1	Φ20-360mm	1200kg	0	Optional	√
	TL300	Φ20-254mm	300kg	0	×	×
	TL500 II	Φ120-500mm	1200kg	0	×	×

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WHY CHOOSE TX3+1?

- Unique 3+1 chucks, covering the shortage of traditional three chucks
- 30% smaller than four-chuck machines, with high workshop utilization
- Real 0 tailing and 100% material utilization
- Fit for engineering machinery, bridge & tunnel, construction machinery, steelwork industry, etc.

Technical Parameter	TX12036	TX9036	TX7026
Power	6000W	3000W-6000W	3000W-6000W
X/Y-axis Positioning Accuracy	±0.05mm/m	±0.05mm/m	±0.03mm/m
X/Y-axis Repositioning Accuracy	±0.05mm	±0.05mm	±0.03mm
Max. No-load Speed	60m/min	60m/min	100m/min
Max. Rotating Speed of Chucks	60r/min	60r/min	100r/min
Max. Acceleration	0.6G	0.6G	1.0G
Cutting Capacity	Round tube Φ20-360mm square tube □20*20-250*250mm rectangular diagonal≤360mm	Round tube Φ20-360mm square tube □20*20-250*250mm rectangular diagonal≤360mm	Round tube Φ15-260mm square tube □15*15-180*180mm rectangular diagonal≤260mm
Max. Weight of Single Tube Loaded	1200kg	600kg	400kg
Tailing Length	0	0	0
Overall Dimensions (without. Loading Racks)	20500*3500*2500mm	17500*3500*2500mm	12500*3500*3100mm

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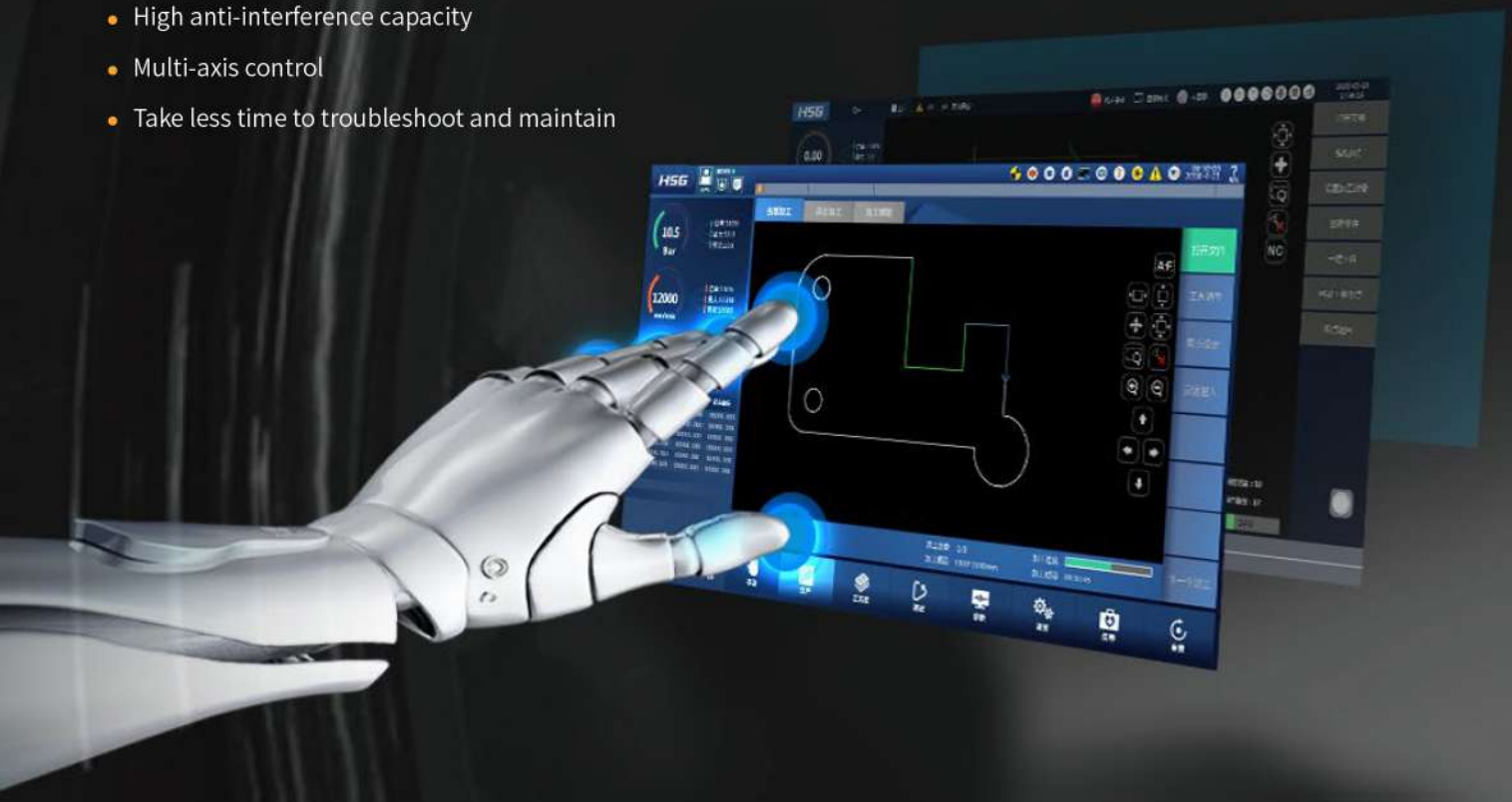
OUR FAMILY OF CONTROL SYSTEMS

Year	Generation	Name	Features	Applicable Models
2015	I	HSG-X8800	Stable and reliable	TH65
2016	II	HSG-X8900	Allow functional customization	TS65
2017	III	HSG-X9000 bus CNC system	Upgrade from automation to intellectualization	R3/R3 PLUS, R5/R5 Pro, TM65 II, TX PLUS/TX PLUS II
2018	IV	HSG-X9500	Serve subdivided areas	TPS
2019	V	HSG-X9800	Special for four chucks and 0 tailing	TL300, TL500 II, TX 3+1
2020	VI	HSG-XMT	First multi-touch operating system in China	TS (TS65 II, TS80)

HSG-X9800 MULTI-CHUCK BUS TUBE CUTTING SYSTEM

- Simple lines, low failure rate
- Rapid and stable data transmission
- High anti-interference capacity
- Multi-axis control
- Take less time to troubleshoot and maintain



X9800 is specially developed for machines with four chucks. Cutting position and energy are accurately controlled to help users with easy operation, high efficiency and low costs.

- Simply-designed UI, touch control but rich functions
- Show machine running message in real time
- Powerful cutting process library, no manual programming
- Show graphs of special-shaped tubes
- Automatic creation of cutting report
- SigmaTube nesting software

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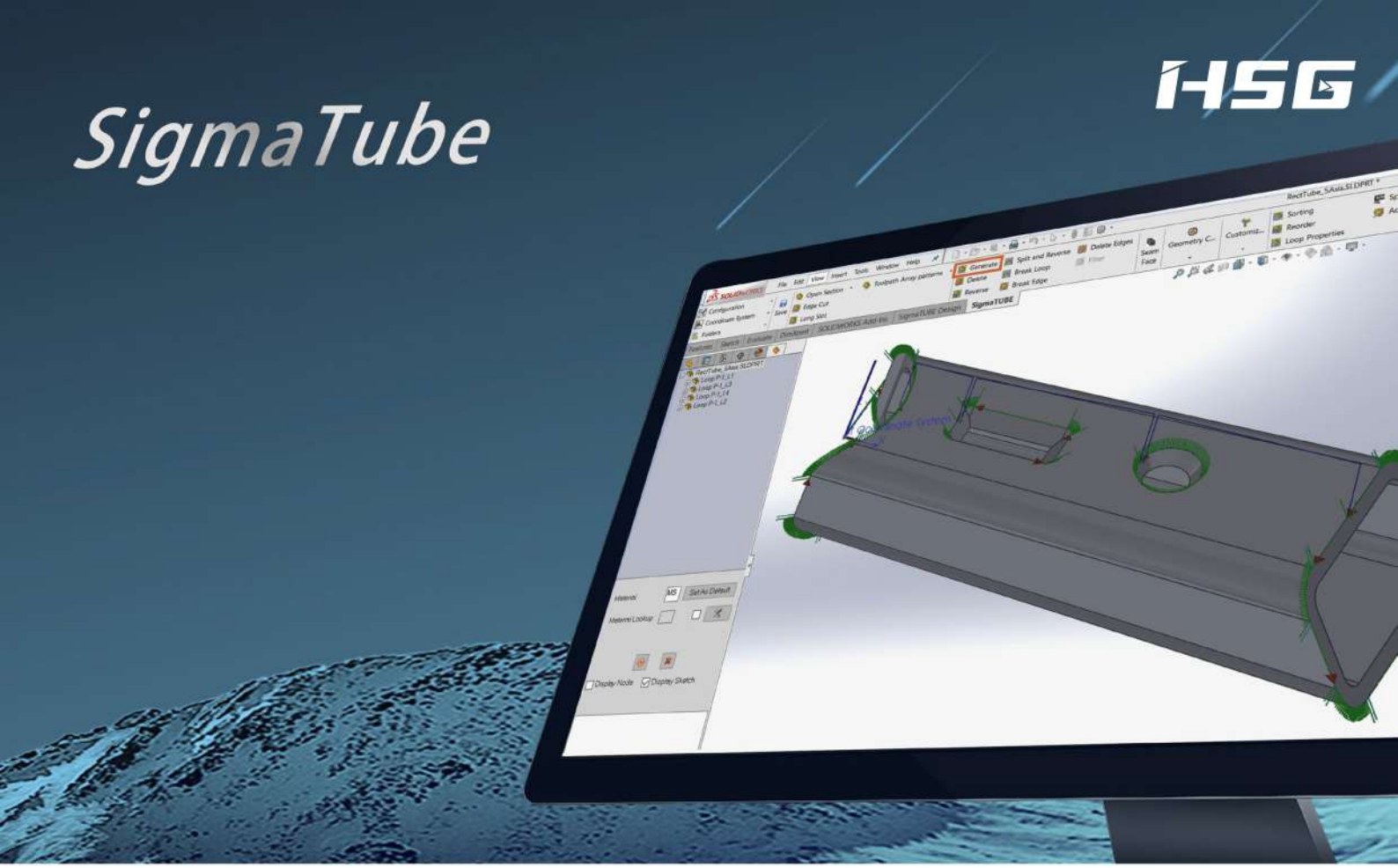
SigmaTube



Simple programming

Wide range of application

Minimize material waste

Improve cutting efficiency

SIGMATUBE NESTING SOFTWARE

- Automatic programming and nesting for conventional tubes and profiles
- In support of bevel cutting and analysis of bevel features
- Build cutting path from model
- Create production reports automatically

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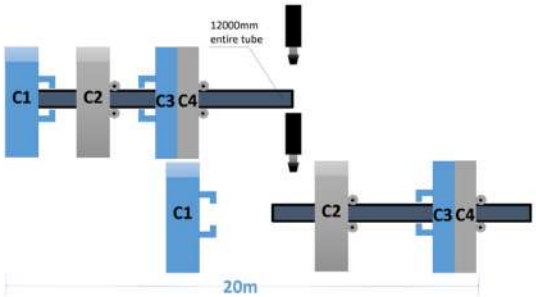
- Cut 12000mm entire tube at most
- Max. weight of single tube 1200kg
- Real 0 tailing

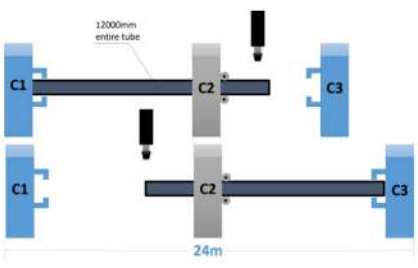
“3+1” TWIN-CHUCK CLAMPING TECHNOLOGY

The chucks are full-stroke, and tubes can be flexibly relocated to break through technical barrier usually faced by traditional machines, that is, tubes loaded must be as long as machine body.

- The first and unique “3+1” chucks clamping technology in the industry
- Combine C3 and C4 as one for synchronous rotation & moving but independent control
- Clamp tubes from front, middle and rear point, keep fast no-load speed during cutting
- Both tube clamping and supporting



“3+1” chucks



3 chucks

HIGH-PRECISION CUTTING HEAD

- Fully-sealed structure with no dust pollution
- Motor-driven autofocus, striking increase in piercing speed
- LED display of running status, bluetooth control of machine data and connected devices
- Drawer-type protective lens and module-based design with high precision and easy maintenance

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MULTI-POINT SUPPORTING FOR HEAVY TUBES

- Tubes are clamped and supported by 3+1 chucks concurrently
- Automatic correction of tube deformation
- Keep cutting precision high
- Make sure of cutting products of uniform size

Multi-point tube support

Tube correction

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①

②

REAL 0 TAILING

- Cut with 0 tailing, automatic unloading available
- Maximize material utilization to 100%
- Save costs of purchase

High-quality carbon steel

20-year high precision and stability

Much safer in cutting

Keep operators safe

REINFORCED WELDING MACHINE BED

- High-quality carbon steel, with less impurity, less heat absorption and good rigidity
- Not be out of shape even after 20-year using






Main rack welding → Stress relieving → Rough machining →Vibration aging → Natural aging → Finish machining

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INTELLIGENT PRODUCTION SYSTEM

- Semi-automatic Loading Device (Optional)

  Users can choose our semi-automatic loading devices according to their tube size and actual demands

- Two Automatic Unloading Plates (Standard)

  Pneumatic mechanical turning plates used for unloading

  Automatic unloading for ⩽6000mm heavy tubes

Reduce labor intensity

Save labor costs

Improve production efficiency

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Meet ocean shipping criteria

$1500 higher than other peers in packaging expenses



HIGH-STANDARD PACKAGE

To keep entire machine safe during long-distance sea transport, we adopt high-standard package, incl. aluminum foil, metal framework, fumigation wooden case, anti-rust oil+oilpaper, moisture-barrier bag, waterproof plastic film and filling foam.

STANDARD WIRING

CE

CE-compliant electrical cabinet

No worry about wiring error

Much safer in operation

- The integrated electrical cabinet caters to EU CE standards and separates weak current from strong current area to prevent electromagnetic interference, dust entry and possible ignition.
- External control elements are equipped with Phoenix pluggable fail-safe wiring terminal.
- Every line matches with its own code. The optical fiber line, gas hose, water hose, strong current line and weak current line in wiring duct are arranged in different zones to prevent signal interference and frictional loss among lines.

WORLD-FAMOUS COMPONENTS

IPG PHOTONICS

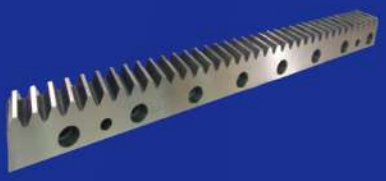
Raycus Lasers

JAPANESE/FRENCH BRAND

Speed reducer (incl, gear wheels)

TAIWAN BRANDS

High-precision racks and linear guides



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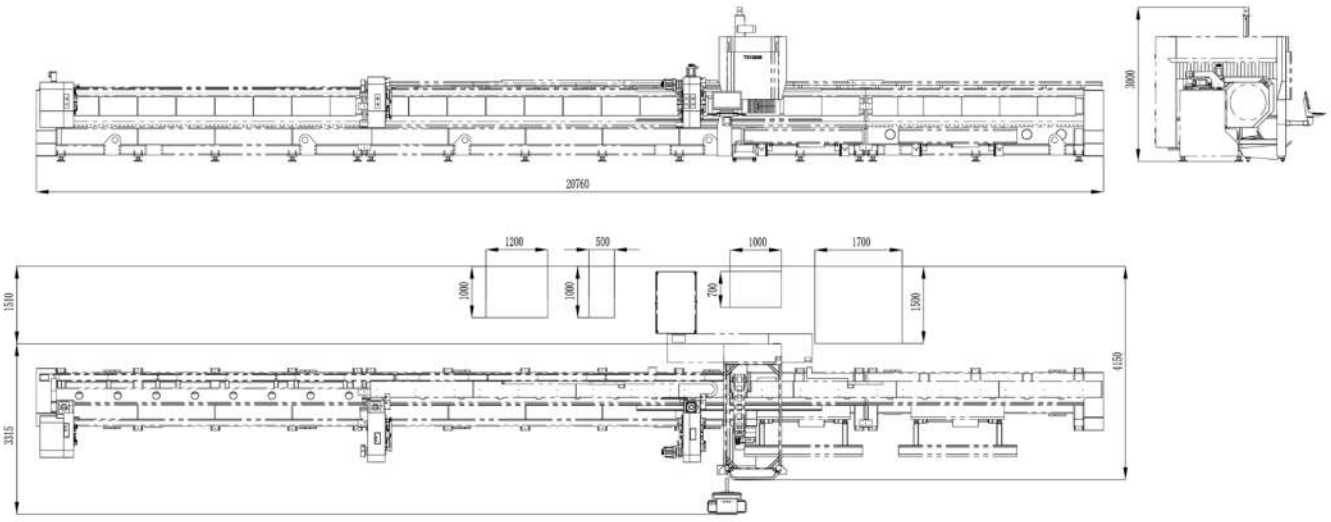
CUTTING SAMPLES








MACHINE FOUNDATION



A HI-TECH ENTERPRISE IN CHINA

HSG Laser, founded in 2006 as a hi-tech enterprise focusing on R&D, production and sales of laser equipment, is dedicated to serve global customers with intelligent metal forming solutions.

33 patents for invention

316 patents in total

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MACHINES AVAILABLE FOR SALE

- Sheet metal laser cutting machines
- Sheet & tube laser cutting machines
- Tube metal laser cutting machines
- Bending machines
- Welding machine
- Automation devices

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SERVE 100+ COUNTRIES AND REGIONS

4
Standardized manufacturing bases in China

80000m² +
Total area of production factories

5000+Sets
Annual productivity

3000+Sets
Global sales in 2020

1500+
Employees

170+
R&D personnel

10
Branches/subsidiaries/ sub-subsidiaries

30+
Service outlets overseas

R&D ACHIEVEMENTS

* 3D five-axis bevel cutting technology
* P30 ultra-high-power intelligent laser cutting head
* Intelligent digital four chucks
* Alpha T bus system
* HSG-XMT multi-touch operating system

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STRICT IN QUALITY CONTROL FLOW

IN PURSUIT OF QUALITY EXCELLENCE

STEP1
COLORIMETER

STEP2
FILM THICKNESS GAUGE

STEP5
COLLIMATOR
(beam)

STEP4
HARDNESS TESTER

STEP3
2D CATHETOMETER

STEP6
COLLIMATOR
(bed)

STEP7
INTERFEROMETER

PROFESSIONAL AFTER-SALES SERVICE

One-year Warranty

All unit components are warranted for 1-year, except items listed in the Exclusions section below. Our after-sales engineer or local agent will supply new or remanufactured component of equal or better quality to replace the failed one.

Exclusions

Unit components subjected to normal wear during the Warranty Period are not covered by warranty, including:

1. Nozzle 2. Protective lens 3. Ceramic ring

Machine breakdown caused by part handling/misuse or corrosion due to exposure to caustic materials, voids the warranty.

Component failure caused by customer misuse/abuse of the unit (e.g. using incompatible materials or wrong axial position settings), voids the warranty.

OUR
HEADQUARTERS

SUZHOU
SUBSIDIARY

GERMAN
SUBSIDIARY

JINAN
SUBSIDIARY

JAPANESE
SUBSIDIARY

TABLE OF TUBE THICKNESS AND CUTTING SPEED

Material name	Thickness (mm)	CUTTING SPEED (m/min)		
		3000W	4000W	6000W
Carbon steel (O_2)	1	7.0-12.0	7.0-12.0	7.0-12.0
	2	5.0-7.0	5.0-7.2	5.0-7.2
	3	3.5-5.0	3.5-5.3	3.5-5.3
	4	3.0-4.2	3.0-4.4	3.0-4.4
	5	2.5-3.6	2.5-3.8	2.5-3.8
	6	2.4-3.0	2.4-3.2	2.4-3.2
	8	1.8-2.4	1.8-2.6	1.8-2.6
	10	1.2-1.8	1.2-1.9	1.2-1.9
Stainless steel (N_2)	1	6.0-20.0	6.0-22.0	6.0-28.0
	2	5.5-17.0	5.5-27.0	5.5-28.0
	3	5.0-11.0	5.0-15.0	5.0-17.0
	4	3.0-6.0	3.0-7.5	3.0-8.5
	5	2.0-4.0	2.0-5.0	2.0-6.0
	6	1.0-3.2	1.0-4.0	1.0-5.0
	8	0.6-1.8	0.6-2.6	0.6-3.2
Aluminum alloy (N_2)	1	6.0-20.0	6.0-22.0	6.0-24.0
	2	4.5-16.0	4.5-21.0	4.5-23.0
	3	3.0-6.0	3.0-9.0	3.0-10.0
	4	1.0-3.6	1.0-4.5	1.0-5.5
	5	1.0-2.4	1.0-3.0	1.0-4.0
	6	0.5-1.5	0.5-2.5	0.5-3.5
	8	0.3-0.7	0.3-0.7	0.3-1.2
Brass (N_2)	1	6.0-20.0	6.0-22.0	6.0-24.0
	2	2.0-11.0	2.0-13.0	2.0-15.0
	3	1.0-6.0	1.0-6.5	1.0-6.8
	4	1.0-4.5	1.0-5.2	1.0-5.7
	5	0.7-2.0	0.7-3.0	0.7-3.5
	6	0.5-1.6	0.5-2.0	0.5-2.5
Red copper (O_2)	1	6.0-20.0	6.0-22.0	6.0-23.0
	2	3.0-9.0	3.0-10.0	3.0-13.0
	3	1.0-3.0	1.0-3.5	1.0-4.5

Version No.:2021.12

The actual machines shall prevail and above data & pictures are only for reference.