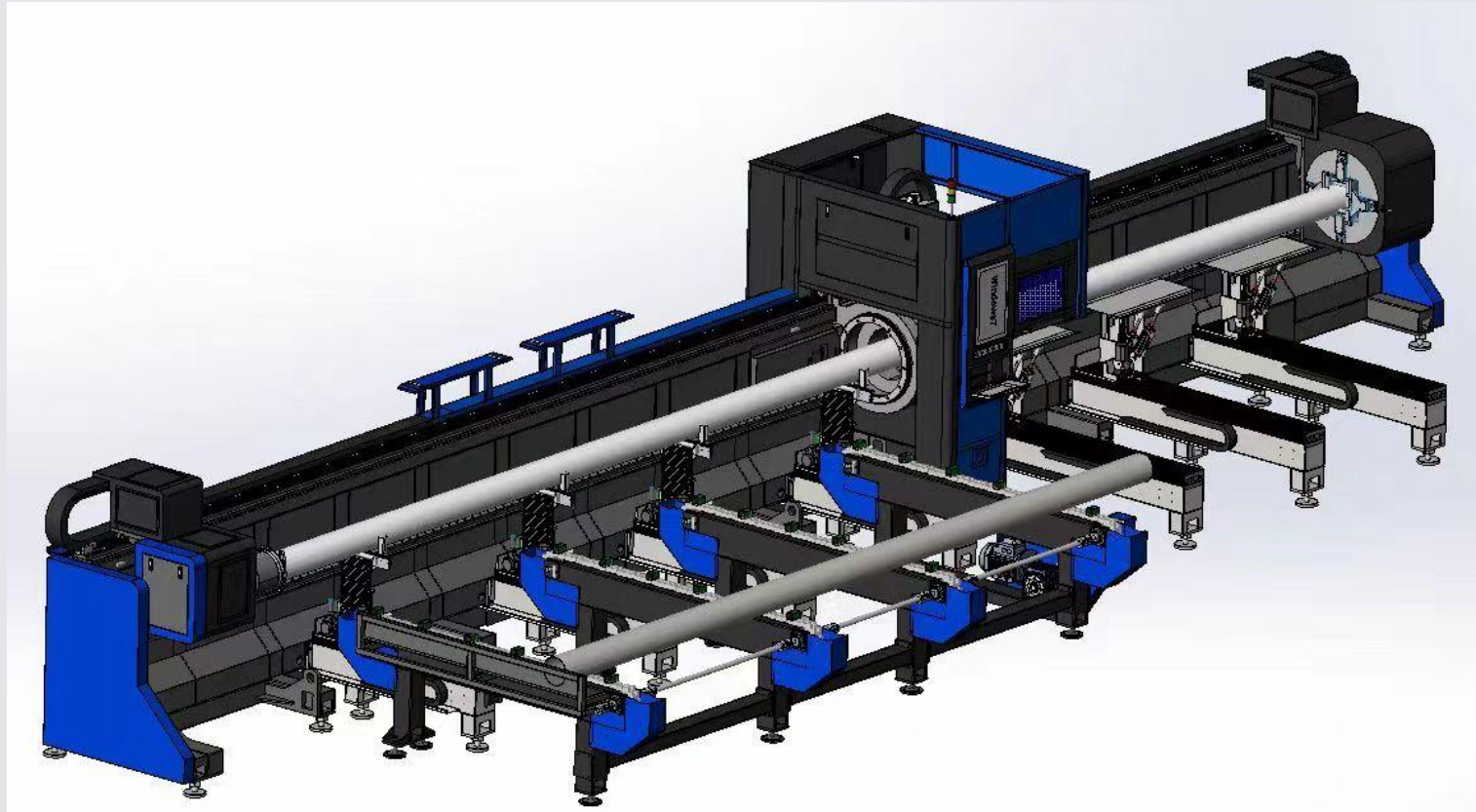


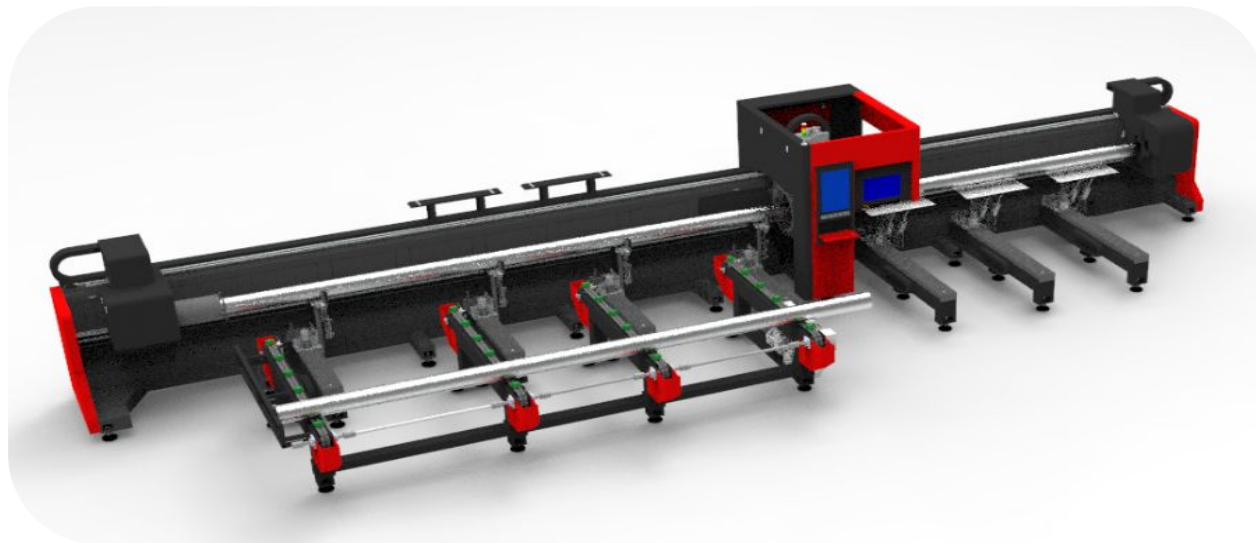
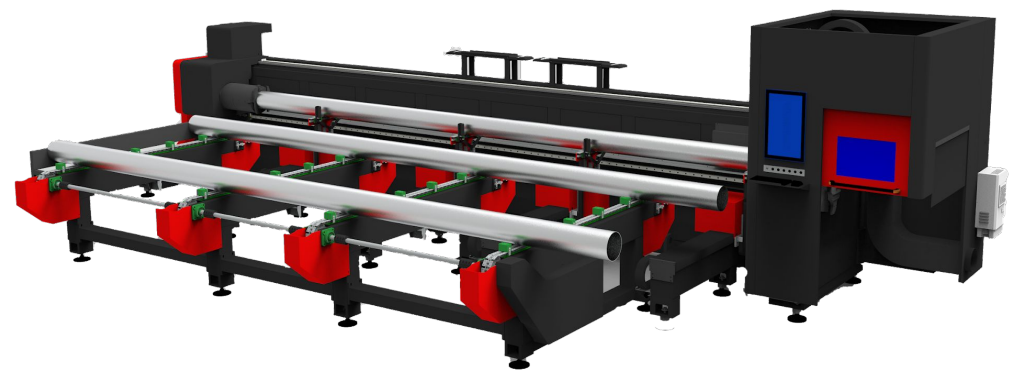


HEAVY TUBE LASER CUTTING MACHINE

Best Laser Cutting & Welding Solution For You!



➡ OVERVIEW DIAGRAM





--Equipment selection and configuration introduction

◆Support 12m full tube cutting

The longest support 12m whole pipe feeding and cutting, to meet the needs of long pipe cutting, farewell to the long pipe cutting secondary processing, efficient cutting, improve production capacity

◆Heavy duty pneumatic four chuck design

Strong clamping, convenient operation, heavy tube easy and stable clamping; Support the maximum pipe diameter 380mm, only one replacement chuck, simple and convenient

◆Tail cutting process

Four chuck reversing cutting, a variety of clamping ways to achieve zero tail cutting pipe, improve material utilization, save costs

◆Wide Cutting Applications

Applied in carbon steel, stainless steel, alloy steel and other metal types cutting.

◆ Special Profiles of Tubes

Applied in U-shaped, L-shaped, I-beam, rectangular, oval and other irregular profile and tube types cutting.

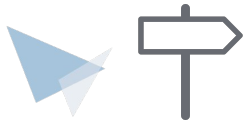
◆ Auto Pneumatic Chucks

The tube cutting machine is highlighted with excellent tightness and motional characteristics, the chucks can stably clamp a variety of tube materials as square, round, oval, flat, triangular, L-shaped, I-beam

◆ Powerful and User-friendly Nesting software

Professional tube cutting software and matching nesting software are implemented to draw graphics or text at random or instant processing, giving handy processing, simple and easy using experience.





Side hanging design

Flexible installation and conversion, specially for heavy tube cutting, good for feeding and unloading tubes

The Standard machining process work as follow

1. Splicing bed 6m/segment, can be extended as request
2. Three-chucks all can move
3. Can support 6-12m unloading
4. Auto following-up loading system, with clamping device,
can control separately with avoidance function

(We always believe that professional annealing and CNC processing are the basis for the accuracy and stability of fiber laser cutting machines, and we will stick to it to it)



—A necessary process of the machine table

- Each of our machine table will strictly comply with annealing process, machine table will be heat to 600°C and keep for 24 hours, the totally enclosed.
- The inner stress of mechanical connections will be eliminated as the following natural cooling

Note: Without annealing, the welding joint would break quickly as time goes, not to mention the high-strength even 7/24 working situation.

- High-Precision Milling

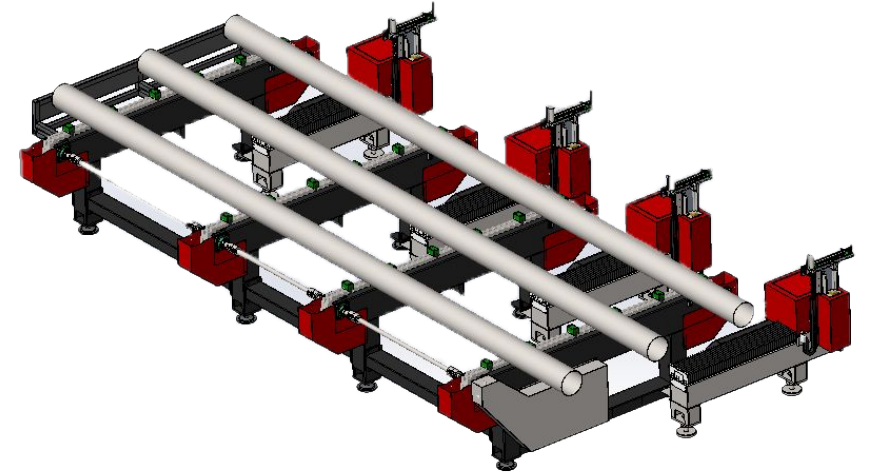
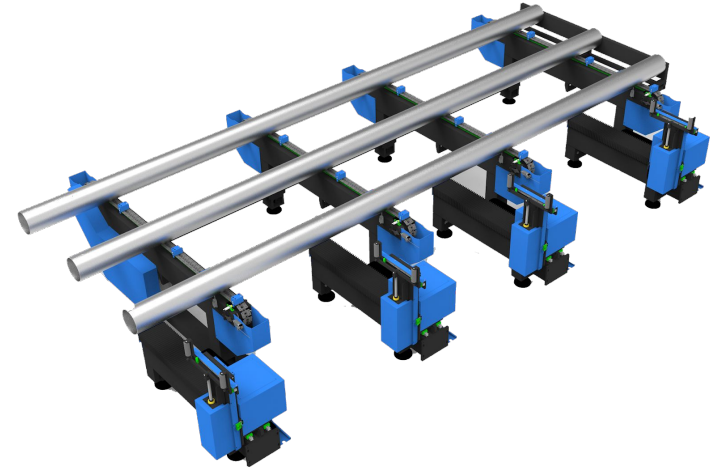
Datum Plane milling is vital for installation & running accuracy of motion parts, Lonwill adopt large gantry milling machine, error under 0.01mm/m, which comply with international standard ensuring parallelism and perpendicularity.



SEMI-AUTOMATIC FEEDING



The third-generation automatic feeding system adopts the servo motor control mode, which can better control all motional parts to control the speed & precision, accurately and stably feed the tubes into the chucks of cutting machine, for cutting. It can avoid the tubes slip and cause any crash problem, or other damages.



The product can be customized according to the needs of customers, including machine height requirements, pipe size, length requirements, up and down feeding

MACHINE PARTS INFORMATION



Machine parts list

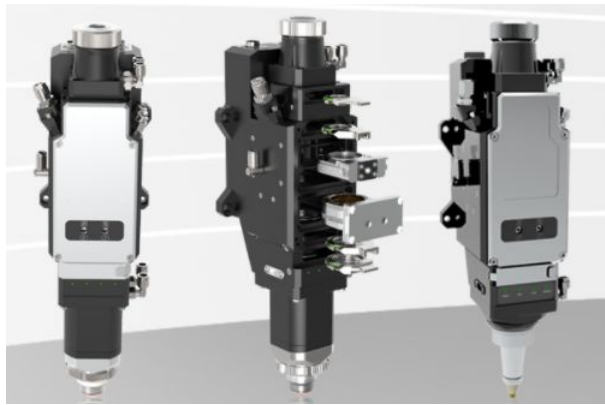
No	Item	Brand	Note
1	Machine cutting table	6.5m tube loading	China
2	laser power	Raycus 6kw	China
3	Laser head	BLT bevel head	China
4	Chiller	Hanli	China
5	CNC controller	FSCUT5000A	China
6	Auto height controller	BCS210E	China
7	Gear rack	SMAGIC	Japan
8	Rail guide	SMAGIC	Japan
9	X/Y Z axis Servo	YASKAWA	Japan
10	Loading system servo	Inovance	Italy
11	Proportional valve	SMC	Japan
12	Pressure valve	SMC	Japan
13	Relay	Schneider	France
14	Pneumatic chuck	Dairuike 360	China
Auto rail lubrication system / with Voltage stabilizer			



Technical parameters

Name	Cutting tube machine
Cutting range	Processing tube length 6500mm mm , round tube max diameter 360mm, square tube Diameter 250mm
Material type	Round , square , rectangular , shaped tube
Drive system	Servo, gear, rack
Machine tool structure	Steel frame welding
Original speed	80m/min
Max speed	0.8G
Max rotational speed	80r/min
Positional accuracy	±0.05mm
Repeated positioning accuracy	±0.05mm
Graphical format support	3D IGS
Work environment	0-40°C, Humidity≤80%
Power	380v-50hz
Working stroke (machine table)	Y axis- 0~6500mm
	X axis- 0~300mm
	Z axis- 0~180mm

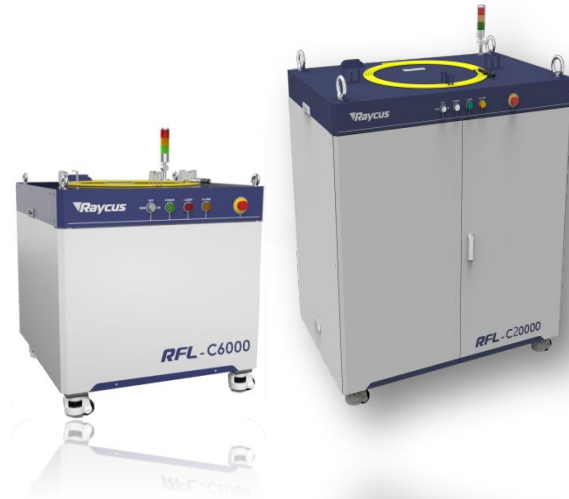
MAIN PARTS



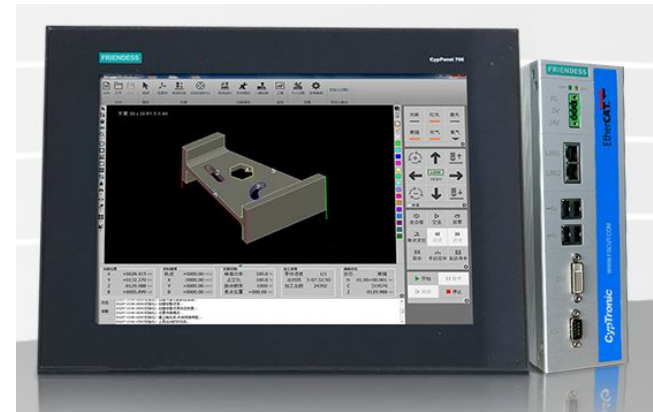
Bochi Cutting Head



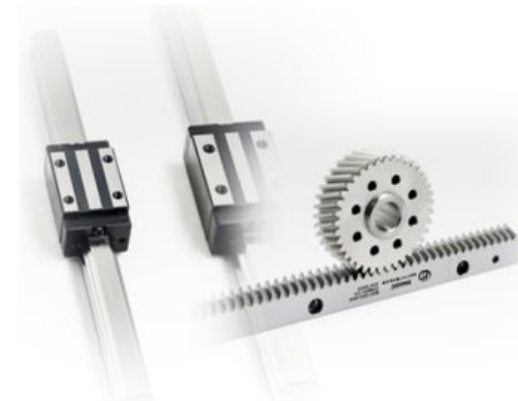
Inovance Servo Motor



Raycus / IPG Laser
Generator



Cypcut cutting
system



SMAGIC Guide Rail

BLT 5 Series

High-Power Smart Cutter

BLT 5 Series smart cutters are especially developed for high-power tube cutting. Right angle optical path ensures stable cutting performance by moderating fiber swings. New designed mechanical structure supports 400MM×400MM H beam cutting. Multiple sensors combine with Auto Recut and Smart Piercing function bring you a safe, effective, and stable production.



BLT5 Series Cutting Head Functionalities

Tube cutting/Slant		
Model	BLT520H	BLT540H
Power	≤8kw	≤15kw
Closed-loop monitoring	√	√
Protective lens temperature monitoring	√	√
Cutting- gas pressure monitoring	√	√
Built-in amplifier	√	√
Anti-collision Protection	√	√
Anti-explosion detection of protective lens	√	√
Smart piercing	√	√
Process monitoring	√	√

BLT 5 Series

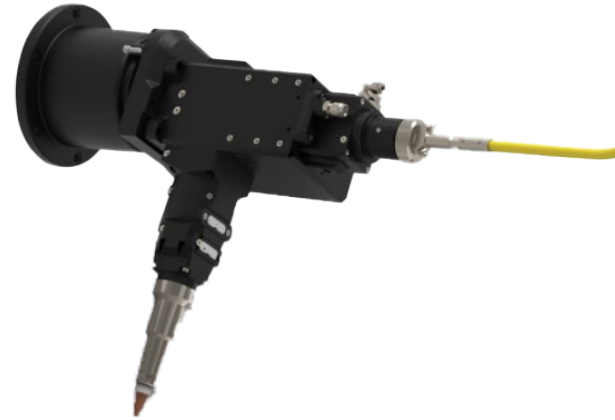
High-Power Smart Cutter



Bevel Cutting

One-Step Forming

One-Step forming, process streamlined, efficiency improved. Maximum ± 45 degrees bevel cutting and 400mmx400mm H beam supportable.



Right Angle Cutter

Effective Protection

Right angle cutter moderates optical fiber swings in machining, extending its lifespan.



Protective Screws

Simple Maintenance

- Protective screws keep cutting head from damage. No time wasting on Depot Repair.



Gas Pressure Monitor

Better Performance

- Real time monitor gas pressure brings you early warning for inadequate parameters.



Internal Amplifier

Stable Capacitance

- Superior immunity against interference stabilizes capacitance.

FSCUT5000

Tube Laser Cutting EtherCAT System



Three chuck cutting:

Support three chuck full travel moving models, can improve the processing accuracy of the pipe, to prevent the pipe swinging

Four chuck cutting:

Support four chuck pipe cutting machine, complete heavy pipe processing, as well as loading and unloading action

Seven axis pull material:

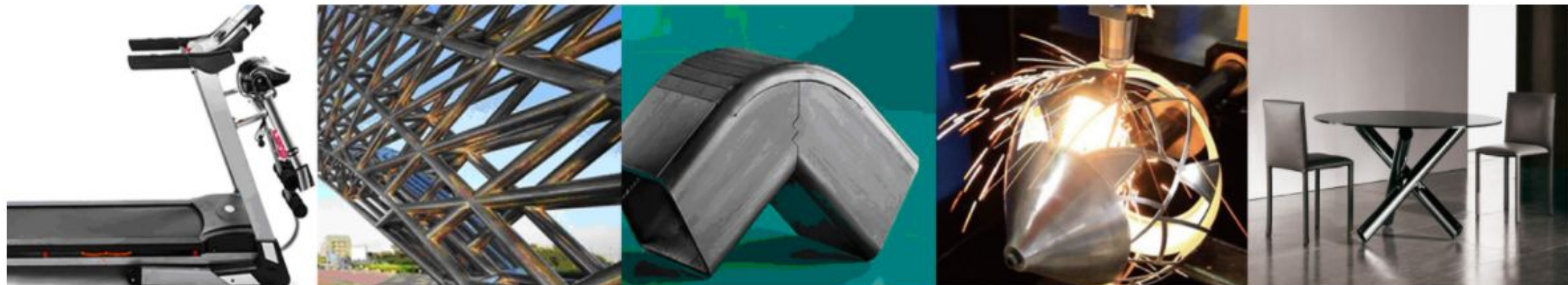
Support to pull type three chuck cutting machine, two card cutting machine to increase the cutting end of the main card to assist processing, convenient cutting

Groove cutting:

It can cooperate with the groove drawing generated by the nesting software to complete the processing of groove parts of the pipe

Zero tail cutting:

Effectively save cost and improve the utilization rate of pipe materials



FSCUT 5000

FSCUT5000 series is EtherCAT bus system specially designed for fiber laser tube cutting machine. FSCUT5000A applied to 3-chuck delivering structure, FSCUT5000B applied to 2-chuck structure, work with TubesT 3D nesting software, it will achieve most efficiency and minimum waste.

Benefits

Function performance



Detect and offset tube center error in production to guarantee high precision of through holes cutting.

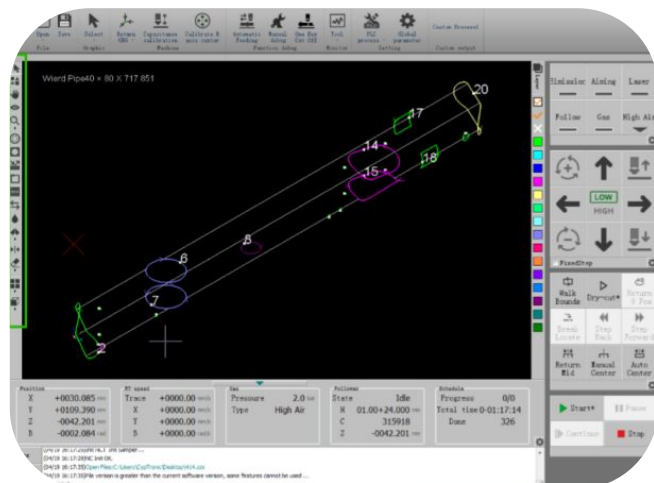
Active control based on ethercat bus technology, more faster and stable in tube corner following and cutting.

Support holders following up rotating tube actively to ensure the tube collimating center and improve workpiece quality.

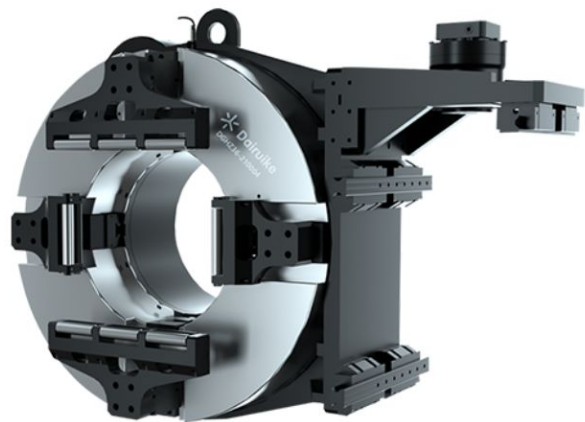
Support hollow chuck structure to allow longer tube production in shorter machine travel range.

Support 3-chuck delivering tube in production to guarantee the precision and minimize the waste.

TubesT 3D nesting software makes it easier in parts drawing and toolpath generation, also to expand your machine production capability.



Nesting software



1

High stability

Integral support base structure improves the stability of support load

2

Segmented clamping

Achieve a wide range of clamping to meet the requirements of multiple applications

3

Suitable for large pipe diameter and heavy pipe

The jaws are easy to debug, use the keyway to locate, easy to install and use

OD (mm)	Spindle Bore (mm)	Centre-height (mm)	Total Weight (Kg)	Inertia (K g.cm ²)	Repeatability (mm)	Rotary precision mm
Φ844	Φ365	470±0.1	700	300000	≤0.05	≤0.05

Single Claw trip (mm)	Single Claw thrust (Kg.f)	Processing Range (mm)	Permissible pressure (M pa)	Rated speed (rpm)	thickness of pipe (mm)	Holdup time (h)
90±0.5	650	15-360	0.2-0.8	150	≥2	12

Hollow Pneumatic Rear Chuck



1

Less Tailing

The rear chuck can be extended into the matching front chuck

2

Built-in dust extraction duct

Supporting dust extraction,improve the inner wall quality of pipe fittings during pipe cutting.

3

High Rigidity

Barrel structure design,High support rigidity,Stable and strong

4

Special-shaped Pipe Clamping

Optional clamping claw for various profiles to keep the pipe from slipping

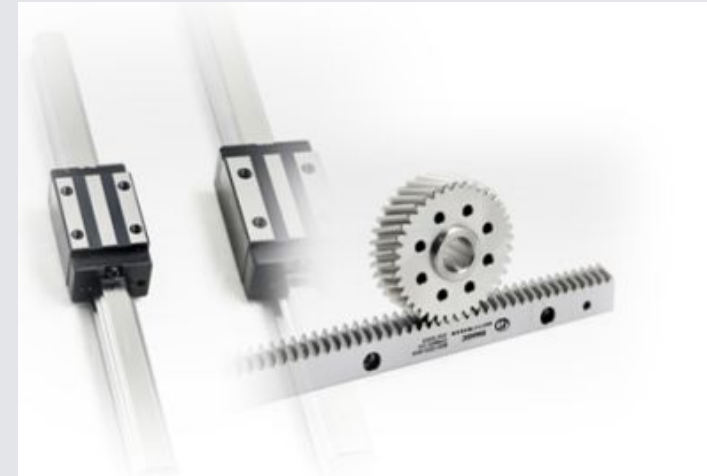
OD (mm)	Centre-height (mm)	Total Weight (Kg)	Inertia (K g.cm ²)	Repeatability (mm)	Rotary precision (mm)
Φ535	275±0.05	300	40000	≤0.1	≤0.15

Single Claw trip (mm)	Single Claw thrust (Kg.f)	Processing Range (mm)	Permissible pressure (M pa)	Rated speed (rpm)	thickness of pipe (mm)
60	780	15-360	0.2-0.8	100	≥2

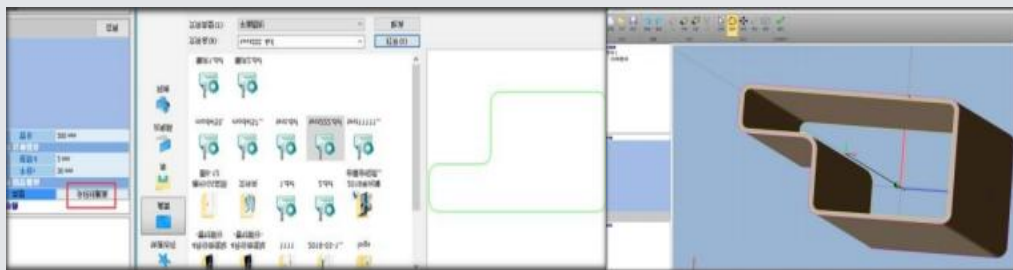


TRANSMISSION SYSTEM

Transmission system—The machine tool system is equipped with imported AC servo system and drive system, the machine tool feed transmission adopts imported rack and pinion transmission structure, linear guide rail guide, the beam and Z-axis feed transmission adopts imported grinding ball screw transmission structure, linear guide rail guide, to ensure the equipment's safety. High speed, high precision and high reliability. Rack and pinion, ball screw and linear guide adopt closed dust-proof device to prevent oil-free friction movement and dust pollution, improve the service life of transmission parts, and ensure the accuracy of machine tool movement. The machine tool is equipped with an automatic lubricating device, which regularly adds lubricating oil to the rack and pinion of the bed and the beam, and the ball screw to improve the service life; the X/Y/Z axis linear guide, rack and pinion, and the lead screw are all filled with grease nipples , which can be regularly filled with grease.



SOME OF THE FUNCTIONS DISPLAY



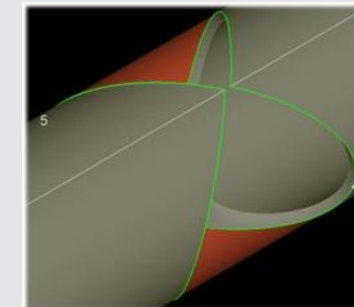
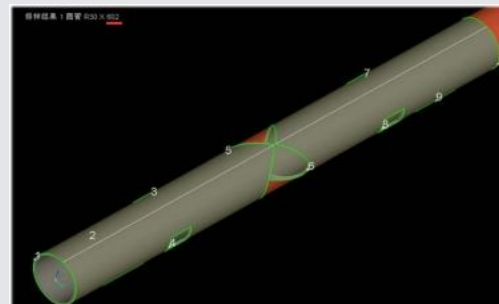
Drawing

Can quickly drawing, dragging the lines can change the break section to what you need



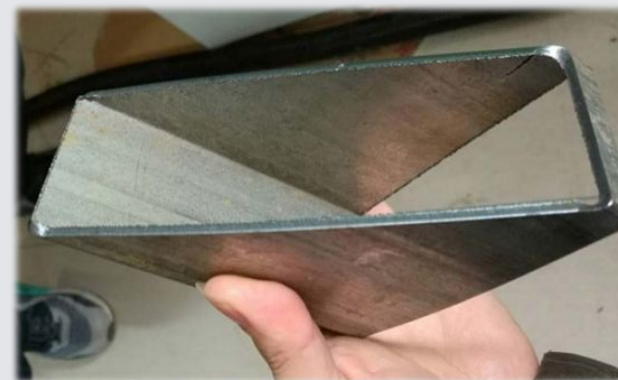
Zero tailings

Two moving chucks and one fixed chuck in between are able to deliver tube in production to realize zero tail save tube materials for customers.



Nesting

Precise Nesting with the best way to save tubes materials

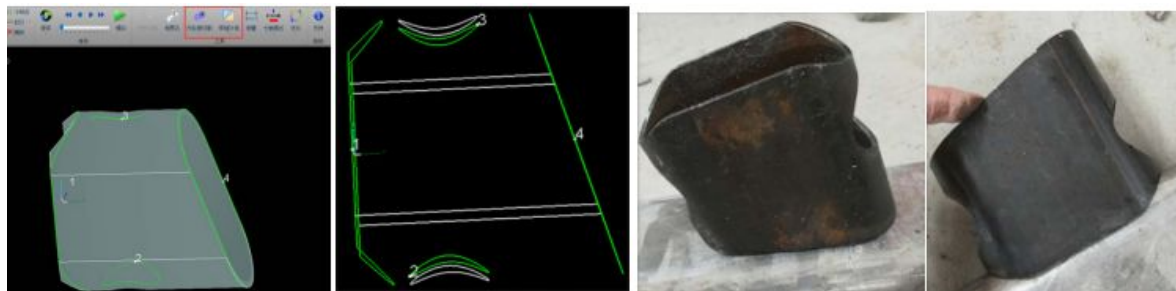


Corner Technique

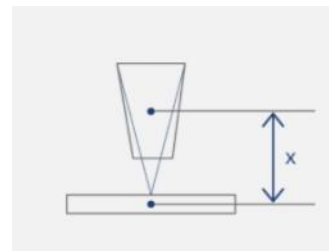
- Improve tube surface cutting efficiency and cutting quality
- Reduce corner follow too low jitter problem



SOME OF THE FUNCTIONS DISPLAY



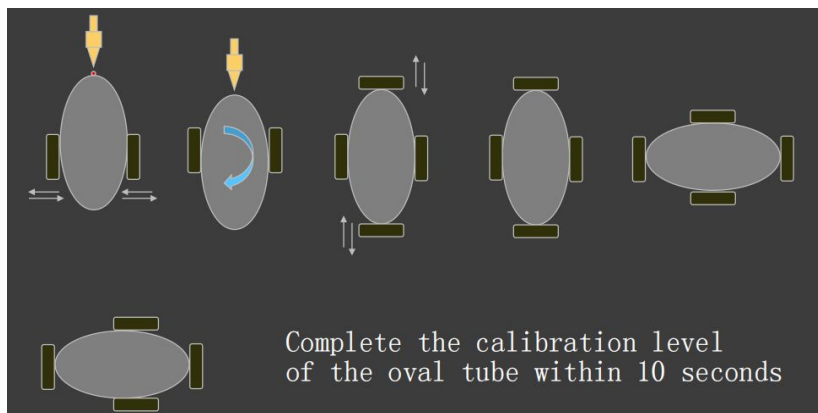
Internal Contour Cutting and Weld compensation



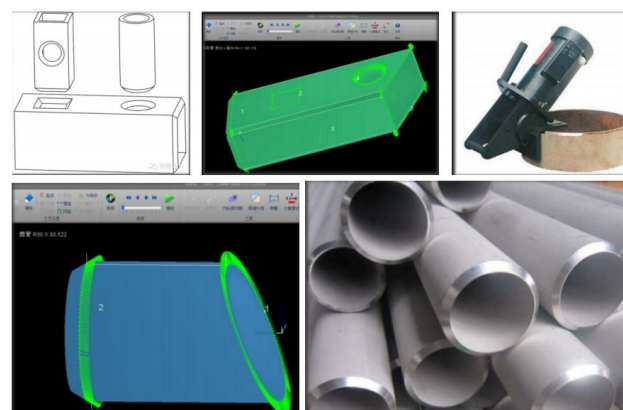
Seek center

Auto Find Tube Center in Production

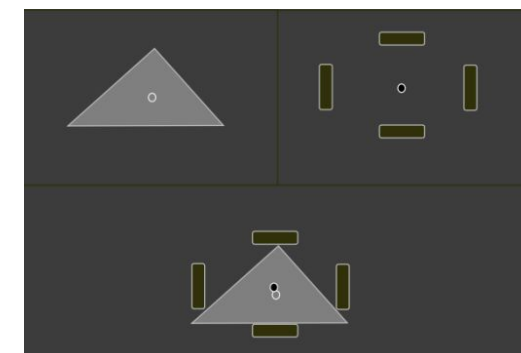
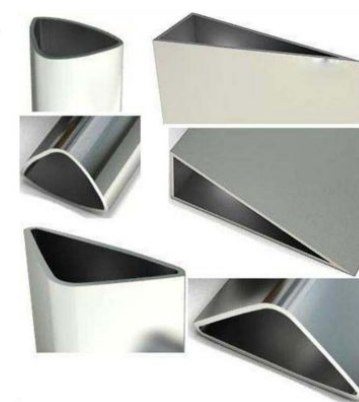
TubePro can locate and offset tube deviation from chuck rotation center in production to guarantee a high cutting precision.



Calibration level of oval tube



Bevel cutting



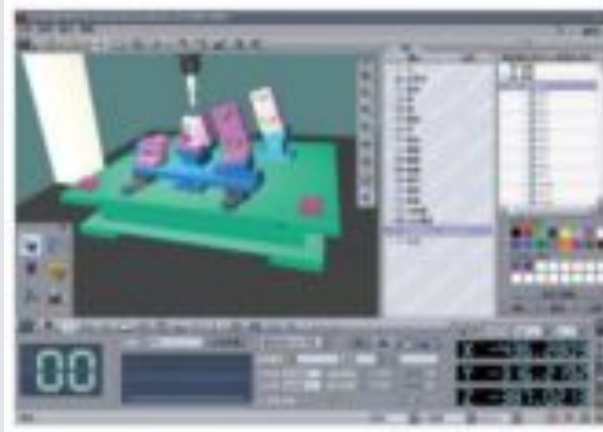
1. Clamping triangular tube
2. One-sided correction balance
3. Shaped tube centering
4. Cutting





MORE SAMPLE DISPLAY





1. Before assembly, detect and inspect whether the beam machining form and location tolerance falls into the design range to ensure the equipment quality.

Three-coordinate detection of beam

Three coordinates of three-coordinate measuring machine, it is in the range can be measured in 3D space, according to the return probe system data, through the software system of three coordinate calculation instrument with various geometric and size measurement ability, also known as the three dimension.

The precision workpiece is detected with a height indicator and inspect the linear dimension and form and location tolerance required by the drawing of the small precision workpiece to ensure that the equipment accuracy complies with the part and equipment quality.

Swiss Altimeter can be used to measure the internal dimensions, external dimensions, height, depth, or distance of plane, parallel and cylindrical geometry. At the same time, one-dimensional or two-dimensional measurements can be made. Automatically searches the apex of a hole or axis, and calculates the difference between the maximum, minimum, and maximum and minimum values in a dynamic survey.

QUALITY CONTROL



2. During Assembly

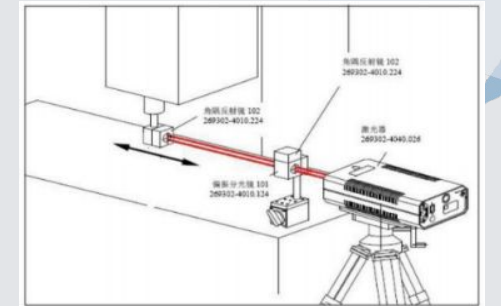
Installation detection and fixation of guide rail and rack. The professional technicians assemble such important precision parts such as guide rail and rack and adjust them with a dial indicator so as to ensure rack& pinion is assembled properly.



3. Assembly Completion Detection


Combined with different optical components and coordinated with related software, it can detect the dynamic performance of CNC machine tools. For example, it can measure the dynamic parameters of CNC machine tools such as positioning accuracy, repeat positioning accuracy and micro-displacement precision. Machine tool vibration test and analysis, dynamic characteristics analysis of rack transmission, analysis of response characteristics of drive system, analysis of dynamic characteristics of guide rail etc., can be fulfilled; with extremely high precision and efficiency, and timely processing of data, providing a basis for machine tool error correction.

Laser interferometer- Detect the rack accuracy, compensate and correct the error and ensure the machine tool accuracy






Pre-service

- 
- Free sample cutting,
For free sample cutting/testing, please send us your CAD file, we will do cutting here and make video to show you the cutting, or send sample to you check cutting quality.
 - Customized machine design
According to customer's application, we may revise our machine accordingly for customer's convenience and high production efficiency.

Service after sales

- 
- Machine will be supplied with training video and user's manual in English for installation, operation, maintenance and trouble-shooting, and shall give technical guide by e-mail, fax, telephone, skype... for fast solution.
 - Customer may come to our factory for training. We will offer training of installation, operation, machine trouble-shooting, and maintenance.
 - We offer technician to customer site for installation and training, customer covers travel cost and local living cost.

Warranty

Complete machine: 1 years warranty.

Free Warranty Service: We will send replacement parts on our cost first, keep customer's machine running is top concern.

If machine needs onsite service for quality issue, we send technician to anywhere on our cost. You may inquire any of our old international customers for reference!



PACKING AND SHIPPING



- We will pack the machine. The purpose of packing is to protect the products from damage during storage and transportation
- We determine the packing form according to the different characteristics of the products, such as weight and size, so as to ensure that the goods are not damaged when you receive them

