PENTA LASER

High Power Laser
Cutting & Welding Expert

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Create value for customers

PENTA LASER

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Penta Laser's second Wenzhou factory preview

ABOUT US

Penta-Chutian Laser (Wuhan) Co., Ltd is the subsidiary company of El.En. Group Italy; and devoted in designing and manufacturing high power laser cutting systems. Penta-Chutian has core technologies in both manufacturing advanced high power laser source and CNC machinery integration with high compatibility. All design, development, production and quality control strictly follow European standards, as final integration is done in China under the quality testing by Italian engineers.

To cover its fast growing Asian market, El.En. invested Penta Laser (Wenzhou) Co.,Ltd as its second Asian manufacture center in 2013 and starts production in September 2016.

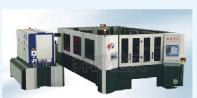
MILESTONES

1981 — Foundation of El.En.

1983 — Development of the first CO_2 laser source

1986 — Begin to manufacture laser equipment in medical and industrial sectors

1993 — Corporation of Cutlite Penta Laser



2000 — El.En. S.P.A is quoted on Italian stock market in Milan

2002 — Completion of the development of Compact Model 6000W CO_2 laser source

2007 — Corporation of Penta-Chutian Laser (Wuhan) for Asian market

2013 — Corporation of Penta Laser (Wenzhou)

Global Market

Penta Laser's machines are sold to many countries in Asia, Europe and America, and are renowned for its stability and efficiency among the users.

SERVICE & SUPPORT

Penta Laser has more than 30 technical support and service offices in China and Asian countries.

SWING
CNC Fiber Laser Cutting Machine

Application Range
High speed cutting solution for sheet metal industry including kitchenware, stainless steel decoration, cabinet, etc.

Technical specifications

Specifications	Model	
	FS3015	FS4020
Table Travel	3000mm×1500mm	4000mm×2000mm
Mechanical Accuracy(VDI 3441)	±0.05mm/m	±0.05mm/m
Mechanical Repeatability	±0.03mm	±0.03mm
Rapid Speed	120m/min	120m/min
Maximum Acceleration	1.1G	1.1G
Laser Power Option	IPG 1000W/2000W	
Dimension	8500×3100×2600mm	11200x4000x2600mm
Weight	8000KG	11000KG

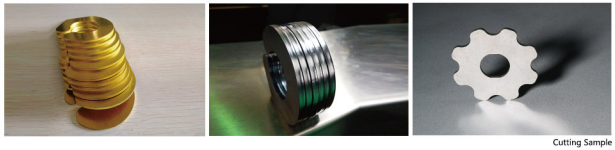
Cutting Sample

FIBER-PLUS

CNC Fiber Laser Cutting Machine

Application Range

Fiber-Plus offers flexible options on laser power and table dimensions, it's an idea choice for those require high efficiency, precisions and reliability.



Cutting Sample

Technical specifications

Specifications	Model			
	Fiber Plus 3015	Fiber Plus 4020/4025	Fiber Plus 6020/6025	Fiber Plus 8025
Table Travel	3000mm×1500mm	4000mm×2000mm	6000mm×2000mm	8000mm × 2500mm
	-------	4000mm×2500mm	6000mm×2500mm	-------
Mechanical Accuracy (VDI 3441)	±0.03mm/m			
Mechanical Repeatability	±0.01mm/m			
Rapid Speed	120m/min			
Maximum Acceleration	1.7G			
Z Travel	190mm			
Laser Power Option	2000W / 3000W / 4000W / 6000W / 8000W			
Laser Source Option	IPG Fiber Laser Source			
Dimension	9700×2900×2900mm	11400×3500×2900mm	15600×3500×2900mm	20500×4300×2900mm
	-----	12700×4300×2900mm	15600×4100×2900mm	-----
Weight	11000KG	13500 / 14500KG	17500 / 20000KG	27000KG

BOLT

CNC Fiber Laser Cutting Machine

The state-of-the-art laser cutting machine designed for both thin and thick metal.

Cutting Sample

Technical specifications

Specifications	Model	
	Bolt 4020	Bolt 6020
Table Travel	4000mm×2000mm	6000mm×2000mm
Mechanical Accuracy(VDI 3441)	±0.03mm/m	±0.03mm/m
Mechanical Repeatability	±0.01mm	±0.01mm
Rapid Speed	200m/min	200m/min
Maximum Acceleration	2.8G	2.8G
X Travel	4000mm	6000mm
Y Travel	2000mm	2000mm
Z Travel	100mm	100mm
Laser Power Option	2000W / 3000W / 4000W / 6000W / 8000W	
Laser Source Option	IPG Fiber Laser Source	
Dimension	11500×3700×2900mm	16500×3700×2900mm
Weight	13000KG	17000KG

Innovative design

1. High speed movement, quick start and stop
2. Equipped with smart cutting head imported from Europe
3. Pallet exchange at the same time to decrease the exchange time
4. Compact structure saves more space
5. Lower work table for easy loading and unloading

8000W
CNC Fiber Laser Cutting Machine

8000W power brings cutting capacity to a higher level and increases the efficiency on thick material cutting.

30mm Aluminum Alloy

30mm Stainless Steel

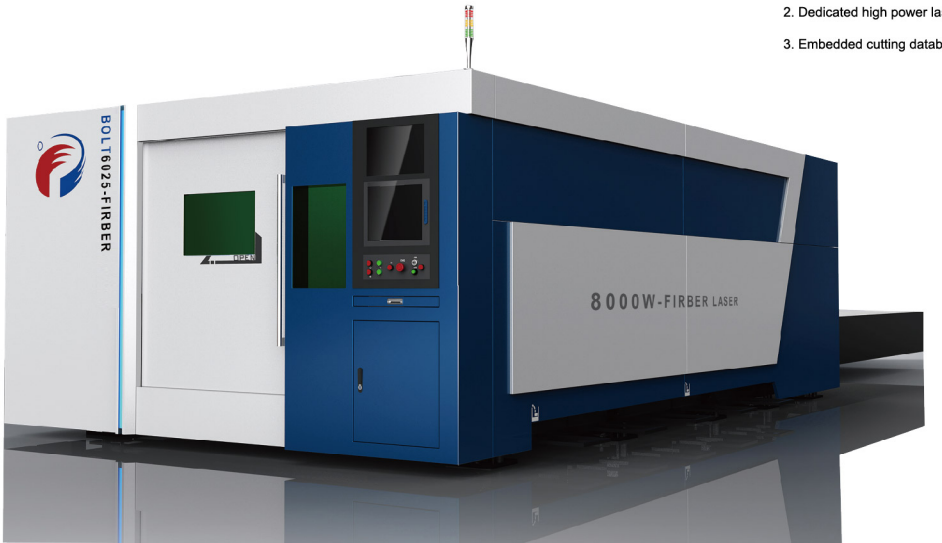
25mm Mild Steel

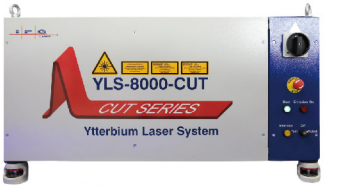
Technical specifications

Table Travel	4020 / 6020 / 6025 / 8025
Work Area	4000mm * 2000mm / 6000mm * 2000mm 6000mm * 2500mm / 8000mm * 2500mm
Rapid Speed/Acceleration	200m/min; 2.8G (BOLT)
Mechanical Accuracy(VDI 3441)	±0.03mm/m
Mechanical Repeatability	±0.01mm/m

Features

1. Machine body adopts thermal processing technology to guarantee its stability and precision in long run.
2. Dedicated high power laser cutting head support durable and stable cutting.
3. Embedded cutting database that supports fast piercing on thick material cutting.





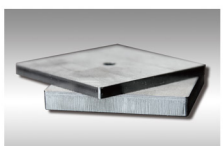
8000W Laser Source

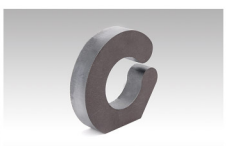
PLUS

Classic CO_2 Laser Cutting Machine

Range of application:

Suitable for thick metal cutting and widely used in aerospace, high-speed locomotive, ship-building and oil drilling equipment industries, etc. Leading beam compensation technology meets the demand of large-format sheet cutting.



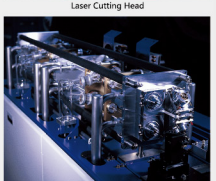


Cutting Sample

Technical specifications

Model	Plus 3015	Plus 4020	Plus 6020	Plus8025
Running Mode	CW / PW			
Work Area	3000mm×1500mm	4000mm×2000mm	6000mm×2000mm	8000mm×2500mm
X Travel	3000mm	4000mmm	6000mm	8000mm
Y Travel	1500mm	2000mm	2000mm	2500mm
Z Travel	190mm	190mm	190mm	190mm
Mechanical Repeatability	±0.01mm	±0.01mm	±0.01mm	±0.01mm
Mechanical Accuracy (VDI 3441)	±0.03mm/m		±0.05mm/m	
Rapid Speed	120m/min	120m/min	120m/min	120m/min
Maximum Acceleration	1.7G	1.7G	1.7G	1.7G
Laser Power	EL.EN. CO2 Laser 2200W/3000W/4000W/5000W/6000W			

Laser Cutting Head



CO2 Laser Source

WHIRL

Professional Fiber Laser Cutting Machine for Tubes

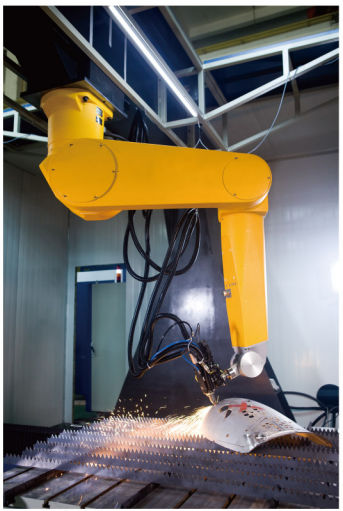
Whirl is a professional laser machine for cutting tubes of various shapes and metal material at high speed and high quality.

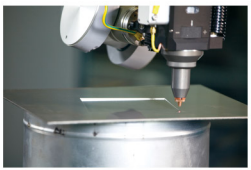
WHIRL Tube Fiber Laser Cutting Machine			
		Model	
	Unit	Whirl 0705/0707/0710/0720	Whirl 1005/1007/1010/1020
X Travel	mm	7000	10000
Y Travel	mm	400	
Z Travel	mm	400	
Rotatory Axis Travel	Degree	Infinite	
Cutting Head		RT-2D	
Max. Rapid Speed for Straight Axis	m/min	90m/min	
Position Accurancy for Straight Axis	mm/m	±0.05	
Repeatability for Straight Axis	mm	±0.03	
Max. Speed for Rotatory Axis	rpm	90	
Rotation Axis Re-positioning Accurancy	Arc-minute	8	
Chuck Number		2	
Chuck Control	--	Self-centering & clamping	
Max. Tube Processing Length	mm	7000	10000
Max. Tube Diameter	mm	20-200mm for round tubes, or tubes that fit in Φ 200mm circle	
Max. Unloading Length	mm	4000m	
Power Consumption	KVA	13.5/15.5/17/25	
Dimension	M	9 X 3 X 2.6	13 X 3 X 2.6
Options	3rd Chuck Axis	7M Travel	
	Semi-auto Loading Device	Available	
	Automatic Loading Device	Available	

Technical highlights

1. Zero waste cutting
2. Automatic centering and clamping
3. Nesting software can be layered

3D Robot-cut



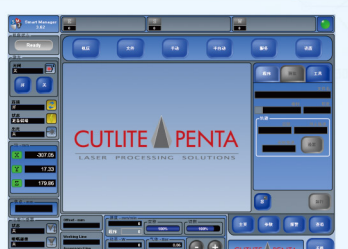


- This system is modular based with high flesiblility for cutting complex geometry parts in batch that requires high cutting quality and high consistency.
- This system is designed according to European standards and integrated with tooling,optical beam safety enclosure,and suction device,etc.
- Optional sensor system(for seam tracking and process sensor)is available to guarantee the online reliability and consistency.

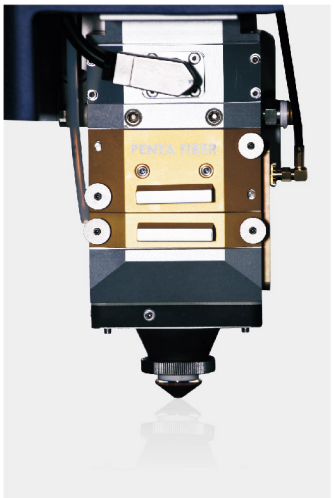
Advanced software system

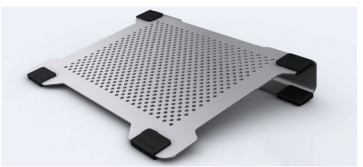
Operating System

Smart Manager is a dedicated laser cutting operation system that allows you to make the most and best use of your laser machine. It is Windows XP based with user-friendly interface, easy to learn and operate. The embedded powerful cutting parameter database and various handy functions help to improve the efficiency and make your daily job much easier. Thanks to Smart Manager's high compatibility with machine hardware, operator can make the real-time parameter adjustment according to the contour quality during cutting, and implement different piercing modes like continuous piercing, pulse piercing or blast piercing when needed; it also automatically turns off the assisting gas during rapid moving.



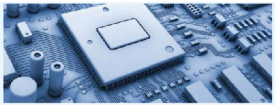
■ Advanced hardware system





■ INTELLIGENT CUTTING HEAD

- Orignially imported from Italy/Germany;
- Capacitive sensor, automatically align the sheet;
- Auto focus, no focus readjustment needed while changing sheet.
- Smart piercing, 2-3 times faster on thick material;
- Piercing detection function,thus cutting process can start immediately without any extra waiting time.



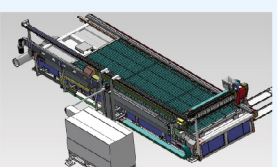
■ CNC Control

- New Z32 real time CNC system,with dynamic and geometric JERK control
- Using fiber communication for data exchange between CNC and machine drive system
- Remote assistance
- Power modulation for the ultimate cutting quality for sharp corners
- Z axis following
- Automatic gas and pressure selection (N2, O2, air)
- Auto job resume
- The 'CAN' bus motion control technology used for the high speed servo motors enhance its responding time and synchronicity to μS level.

■ High synchronous servo motors

MechatroLink is the world's leading dual-drive synchronization technology, whose control response time reaches nano-second level and synchronicity is 1000 times higher than conventional machine tools. Compared with conventional interface control methods, MechatroLink control mode responses faster and has stronger anti-jamming capability, which guarantees the synchronicity of machine tool and the stability of running at high speed and greatly improved the working life of machine tool and servo motors.

■ Machine design & manufacture



Machine tools adopts heat treatment and thermal protection and automatic lubricating device to reduce heat absorption of machine tools, guarantee machine precision in a long run.

Application Fields

Penta Laser's machines are widely used in textile machinery, mechanical engineering, elevator, automobile, machine tools and ship building, decoration, oil drilling equipment, kitchenware, household appliance and laser jobshops.

Customers