BESCUTTER
Powered by Laser

MACH SPEED

from **6,000W**
to **15,000W**

FIBER LASER
METAL SHEET CUTTER
Full Enclosure and Hydraulic
Exchanging Shuttle Table

Our **MACH SPEED** model includes:

Machine main body, gantry, direct drive system, Z-axis, laser cutting head, shuttle table, laser source, control system, software and water chilling system etc.

Machine Body

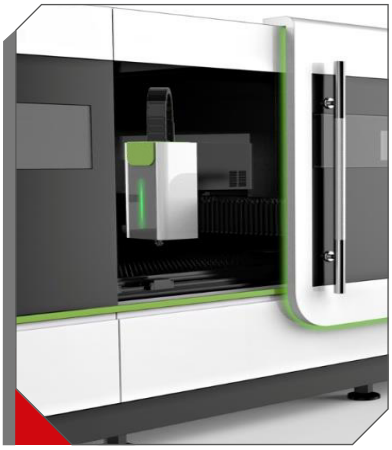
High-rigidity welded body, compact design and stable performance.

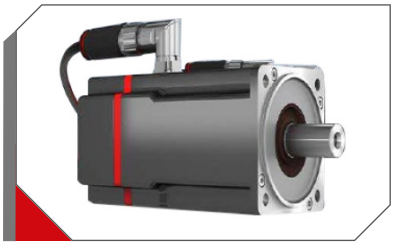
Gantry

Special molding technique made aviation aluminum gantry: light weight, strong rigidity, high precision, fast response and stable running.

Z-Axis System

Integral molding die-cast aviation aluminum Z-axis is equipped with high precision ball screw system, to achieving good rigidity, fast response and high precision.





Transmission System

Synchronous drive system on both side of cutting gantry, equipped with high torque direct driving system and perfect laser welded gear system. Ensure the powerful driving, high accuracy cutting and excellent dynamic response.

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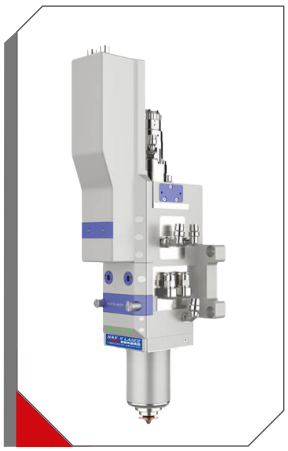
Optional Laser Heads:

HAN´S Laser Cutting Head



The Han's Laser offers a fully integrated sensor system that monitors the cutting process and provides the user with relevant information.

- **Auto Focus:** Reduce human intervention time, convenient and quick operation, and significantly improve the efficiency of thick plate perforation.
- **Lean Design:** Excellent optical configuration and smooth and stable airflow design significantly improve cutting efficiency and cutting quality.
- **High Sealing:** Dustproof grade IP6 grade, effective protection Internal optics are protected from external environmental contamination.
- **Optics Stabilization:** Using high-quality optical components, good processing quality, practical and more stable.

PRECITEC Laser Cutting Head

The **PRECITEC Pro-Cutter** offers a fully integrated sensor system that monitors the cutting process and provides the user with relevant information. The head ensures a processing with up to 15 kW and that each component can be reproducibly manufactured at a high standard of quality.

- Motorized focus position adjustment for automatic machine setup and piercing work.
- Lightweight and slim design created for fast acceleration and cutting speed.
- Drift-free, fast-reacting distance measurement.
- Permanent protective window monitoring.
- Straight and angled design versions adapted to the machine concept.
- Completely dustproof beam path with protective windows.
- LED operating status display.
- Display of operating parameters via Bluetooth® and interface for machine control.
- Pressure monitoring in the nozzle area (gas cutting) and in the head.

Optional Laser Souces:

Laser Source Coractive (Canadian brand)

This is a more compact medium-power CW fiber laser featuring an outstanding long-term stability at high-power and delivering excellent performances for cutting and welding applications. Its excellent back-reflection protection enables the safe processing of highly reflective material without any interruptions.

- Unique combination of innovative optical fibers and advanced laser technologies guarantee longterm stability
- High reliability – enables continuous cutting operations
- Excellent beam quality
- Outstanding back-reflection protection – safe processing of highly reflective materials
- High modulation rate – ensures fast piercing time for efficient metal processing

Laser Source IPG

This model equips with **IPG** advanced fiber laser source,
IPG laser source enjoy the following advantages:

- It has a super compact design with the laser housed in a hermetically sealed cabinet
- Maintenance-free Operation
- A dehumidifier is installed within the cabinet to ensure optimal internal humidity
- Industry-leading wall-plug efficiency our lasers are known for has reached over 40%
- The electrical cost savings add up to many tens of thousands of dollars over lifetime of a laser
- Record reliability and maintenance-free operation
- Hot redundancy ensures 100% up time with no change in power
- Compact Rugged Design

Optional Control Systems:

FSCUT8000 Control system

FSCUT8000 is EtherCAT bus system designed for ultra high power fiber laser, featured by out of box service, easy to install and adjust, full solution functions. It supports customization, automation and informatization solutions, is the leading edge EtherCAT laser cutting control system on the market.

- **Vision remnant reuse:** capture remnant sheet by your phone camera or machine camera to reuse the material with high efficiency.
  Find edge: up to 500mm/s high speed with precision find sheet edge, also provie optional find edge patterns to meet your production needs.

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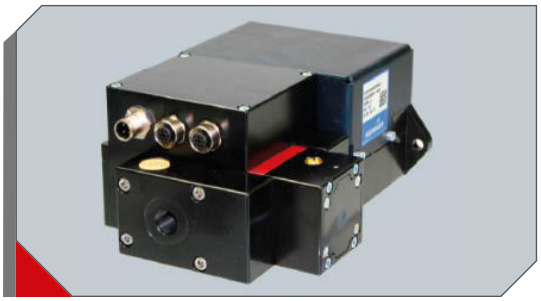
Beckhoff CNC Control system

The Beckhoff CNC system integrates PLC, vision system, motion control, robot technique, safety protection, measuring and monitoring technique into one platform to avoid the friction damage and response delay between the protocol of different system. With the Ether CAT real-time control protocol, reduce Machine down time and ensure fast response. Besides, the whole CNC system optimize the laser source ability to achieve fast and efficient cutting and welding performance.

- TwinCAT CNC system
- Dual CoreTM i3 CPU +3.1GHz
- RAM: 4G
- Hard Disk: 1TB
- Windows 10 (32 bits)
- 21.5" touch screen
- USB Network and DVI interface etc.

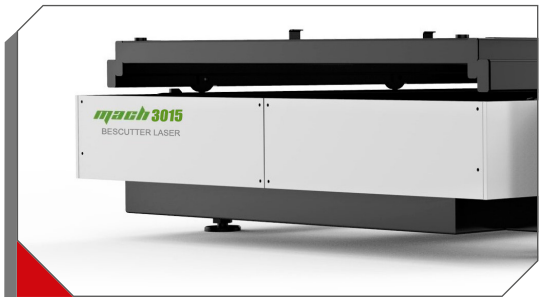


High Pressure Servo-control Valve

Programmable cutting gas control thanks to servo-control valve, it can switch the type of cutting gas automatically, and accurate control the gas pressure without user intervention, user friendly and reduce gas consumption.

Auto Exchanging Shuttle Tables

With parallel auto exchanging shuttle table system ensures synchronous running, good efficiency, and reliability.



MACH SPEED INTELLIGENT FIBER LASER CUTTER	
Standard working area	10' x 5' (3,050 mm x 1,550 mm)
Optional working area	13' x 6.5' (4,000 x 2,000 mm) / 20' x 6.5' (6100 x 2000 mm) 26' x 6.5' (8000 x 2000mm)
Optional Laser Wattage	**6000W / 8000W / 10,000W / 12,000W / 15,000W**
X, Y, Z axis distance	61" (3,050 mm) / 120" (1,550 mm) / 3.93" (100 mm)
X, Y Two-axis coordinated positioning speed (MAX)	**240 m/min**
Positioning acceleration (MAX)	**2.4 G**
Positioning accuracy	±0.05 mm/m
Re-positioning accuracy	±0.02 mm
Maximum load weight	1962 lbs. (890 kg)
Laser resonator	**Coractive** (Canadian Brand) - **IPG** (Optional)
Laser head	**Han´s** (Raytools optionals)
Controlling System	**FSCUT8000** (Shanghai) - **Beckhoff** (German Brand - Optional)
X-Y-Z Servo Motors	**X** (2×9,700W) – **Y** (1×6,880W) - **Z** (1×940W)
Machine Weight	28,200 lbs. (12,800 kg)
Dimensions	350" x 118" x 87" (8,900 x 3,000 x 2,200 mm)

Nesting Software

Adopts CutLeader laser cutting auto-nesting software, with Chinese-English version, easy operation. Software has the following functions:

- Text & image processing
- Share-edge cutting
- Auto-nesting
- Shape corner cutting without melting issue
- Multiple cutting applications
- Automatic report generation

Dust Collection System *(optional)*

The Machine body adopts zoning control design, equipped with high power filtration system, to sure no metallic dust in the filtered gas, it could meet indoor emission standard.

MACH SPEED MACHINE CONFIGURATION	
MACHINE BODY	
Driving System	**Beckhoff** (Germany)
Direct Drive Servo Motor	**Alpha** (Germany)
High Precision Gear Rack	**Alpha** (Germany)
High Precision Linear Guide Rail	**Rexroth** (Germany)
Cable Towline	**IGUS** (Germany)
Control System	**Beckhoff** (Germany)
Laser Source	IPG
Laser Cutting Head	**Precitec** (Germany)
Nesting Software	CutLeader
GAS CIRCUIT COMPONENTS	
Cylinder	SMC/Airtac
Throttle Valve, Check Valve, Solenoid Valve	**FESTO** (Germany), **NORGREN** (U.K.), **SMC** (Japan)
Oil Water Separator, Filter, Gas Pipe Joint	**FESTO** (Germany), **NORGREN** (U.K.), **SMC** (Japan)
High Pressure Servo-Control Valve	**HOERBIGER** (Germany)
ELECTRICAL COMPONENTS	
Contactor, Air Switch	**Schneider** (France)
Connection Terminal	**Weidmuller** (Germany)
Photoelectric Switch	**SICK** (Germany)
Frequency Converter	**OMRON** (Japan)

MACH SPEED AUXILIARY LIST:	
STANDARD AUXILIARY:	
Water Chiller	1 unit
Exhaust Fan Blower	1 unit
Transformer	1 unit
Stabilizer	1 unit
OPTIONAL ITEMS:	
Refrigerant Dryer and Filter	1 unit
Air Compressor	1 unit
Air Pressure Reducing Valve	4 units

- Customer arranges the pipe from gas source to the machine (O2/N2/Air).
- Customer arranges pipe for air compressor, refrigerant dryer and filter to machine.
- Pipes should be no oxidation or absolute clean cooper pipe

Safety Training

- Learn the safety knowledge of fiber laser, and pay attention to safety protection measures.
- Master the necessary safety skills in the operation.

Software Training

"The user is required to have the basic knowledge of the programming design"

- After training, the operator can install and use programming software independently.
- A single part drawing can be prepared; Input the part drawing; Make the part cutting plan and production plan.
- Able to input the cutting plan into the Machine;
- Calculate the cutting time; Make the production report.
- Master the data management.

Operation Training

- Properly independently turn on/off the Machine.
- Identify and determine the system information and troubleshooting.
- Learn the functions of different parts of fiber laser cutting Machine: such as CNC control, load and unload the material, precautions of fiber laser use, the operation manual, independent operation, etc.
- Master using the original basic parameters to cut the parts with oxygen or nitrogen.
- According to the condition of the cutting material, optimize the cutting parameters, replace the cutting nozzle.

Maintenance

- Check the Machine independently and complete the basic maintenance according to the maintenance requirement.
- Through training, the user can learn the basic safety procedures for maintenance.

After the machine is delivered, BESCUTTER will arrange technicians to conduct several days training for the machine operators. The training contents are as follow.