FIBER LASER
TUBE CUTTING MACHINE
With Automatic Tube Loading

BESCUTTER *hyTube* 6522

BESCUTTER HAN'S SONGU LASER
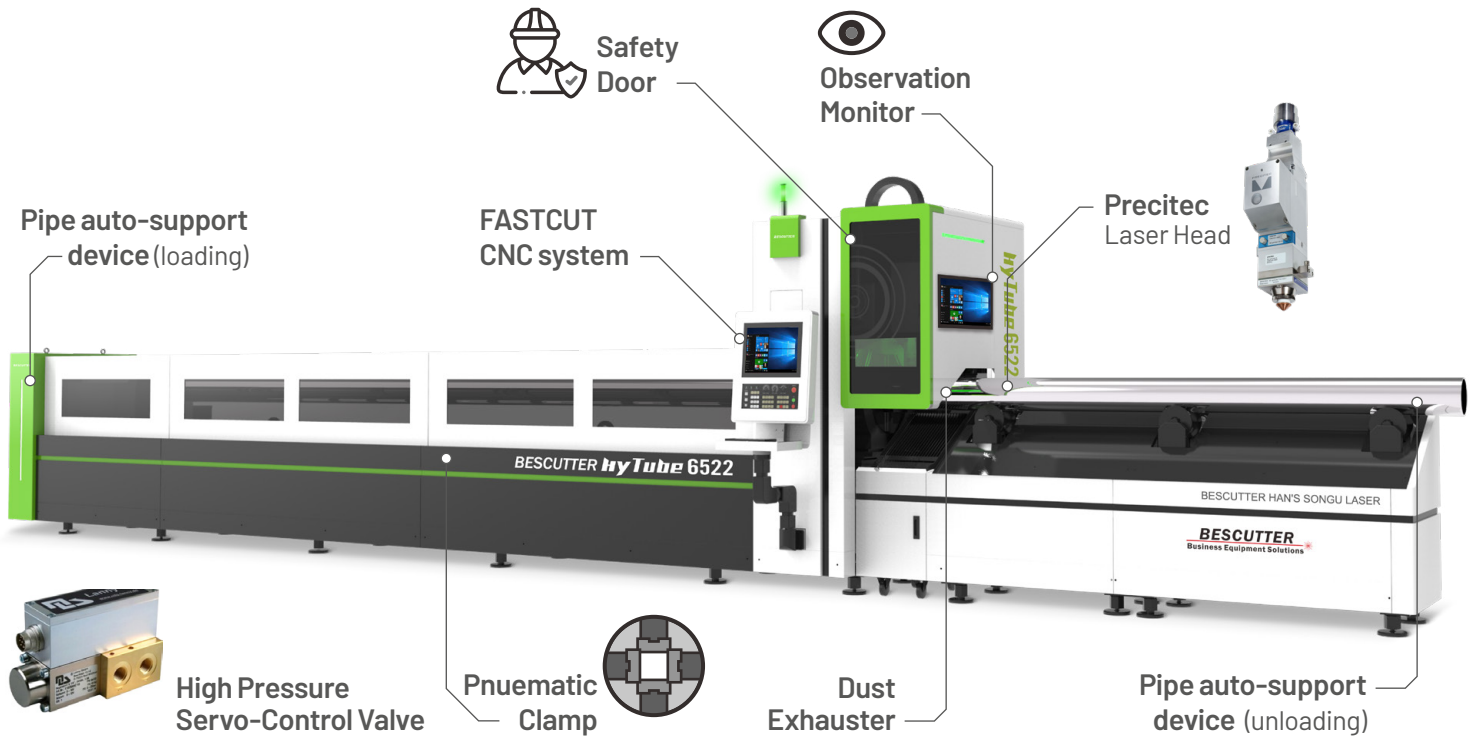
BESCUTTER
Business Equipment Solutions

Our **HYTUBE** is designed
for long-sized tube/section bar automatic laser cutting.

Suitable for special tubes and structural steel section: H/I/L sections, **Round, Square, Triangle, Retangular, Oval, Channel and L Shape.** This machine is equipped with auto-loading device and special designed precise pneumatic clamps
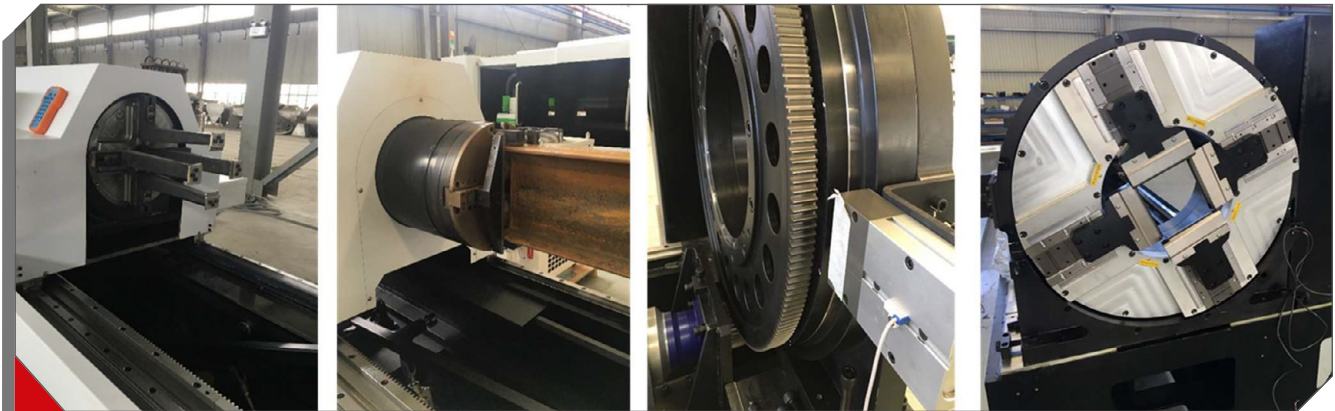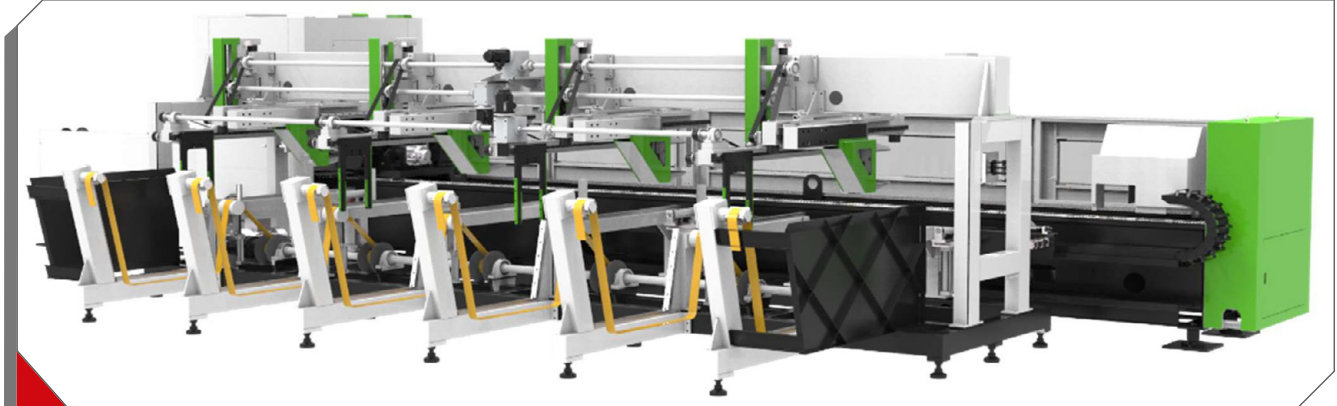

▶ Features

- Adopts **FASTCUT CNC system**, integrates professional tube cutting platform, powerful but simple for operation, with user-friendly HMI.
- Professional tube cutting software helps to achieve "all-time & high efficiency cutting", one of the core technologies to guarantee material saving and efficiency cutting.
- **Germany PRECITEC Light-Cutter**, high precision with autofocus and robust stability.
- Special designed flexible tube support device, to keep the device grip the tube tightly during the tube feeding and rotating. Support power is set according to tube size, ensure the tube would not droop, and minimize the axis swing during the rotation, improve the cutting accuracy.
- Automatically loading by whole package tube, reduce staff number and improve the processing efficiency.
- **Tube type auto-recognition system,** different types tubes can be mixed loading together, the system will select the proper parameter from the application library automatically.
- Tube cutting application library make operator enjoy the user-friendly HMI and "One-button setting parameter" function according to the tube type, the parameter can be modified in real-time.
- High precision & high-pressure servo-control valve can precisely control the cutting gas and pneumatic chuck, to achieve the best cutting quality.
- Linear positioning speed is 100m/min, rotation positioning speed is 120m/min.

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Safety Door

Observation Monitor

Pipe auto-support **device** (loading)

FASTCUT CNC system

Precitec Laser Head

High Pressure Servo-Control Valve

Pnuematic Clamp

Dust Exhauster

Pipe auto-support **device** (unloading)

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▶ Precise Pneumatic Clamps Design

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▶ **Auto-Loading System** *(optional)*

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▶ PRECITEC Laser Cutting Head

Precitec laser cutting head is most professional laser cutting head, stable performance, and simple to use.

Features:

- **Auto-adjust laser alignment system:** the laser cutting head can ensure the cutting quality within the working area.
- **Optics detection function:** to ensure the stability during the cutting process, avoid contamination to the head.
- **Auto-focus function:** Non-contact capacitive sensor is used to keep the same distance between the cutting nozzle and material, even for the surface with curves.
- **Special designed cutting nozzle:** to minimize the gas consumption during cutting.
- Protection lens is used to keep optic lens safe, and it is much easier for maintenance.
- **Edge detection function:** the laser head will automatically locate the material position, then adjust the coordinate system in software directly.

▶ Laser Source

Adopts **IPG** new laser source:

- Over 40% Wall-plug Efficiency
- Hot Redundancy & Good Stability
- Integrated Coupler or Beam Switch Option
- Excellent Beam Parameter Product
- Real-time running log monitoring
- Excellent Beam Parameter Product
- Maintenance-free Operation
- Constant BPP over Entire Power Range
- Compact, Rugged & Easy to Install
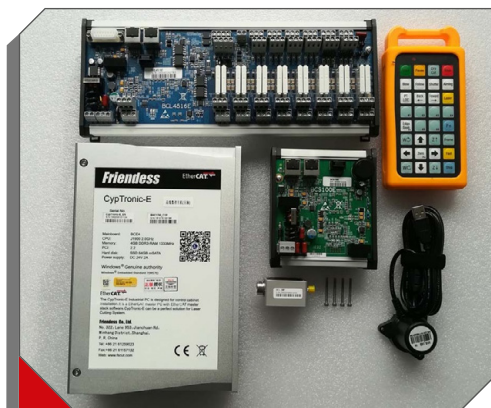
▶ Control System

- FSCUT5000 is a high-performance open loop laser control system.
- It is widely used in the field of metal and non-metal laser cutting. Because of its outstanding performance in the field of medium power fiber laser cutting, it is favored by many high-quality customers.
- Users can set the output port of following, rise (close following), stop (Hold), move up and down by clicking, and input port of following signal, by themselves. User friendly HMI, with status and the current position display function.
- 200G hard disk storage space

HYTUBE INTELLIGENT FIBER LASER CUTTER

Tube range (length)	244" (6,200 mm)
Tube diameter	**Standard:** 0.78" - 8.66" (20 mm - 220 mm) **Optional:** 0.78" - 12.60" (20 mm - 320 mm)
X, Y, Z axis distance	246"(6,250 mm) / 7.87"(200 mm) / 6.30"(160 mm)
A, B-axis	Infinite Rotation
X, Y-axis positioning accuracy	±0.03 mm/1000 mm
X, Y-axis re-positioning accuracy	±0.05 mm
A, B-axis positioning accuracy	±30"
A, B-axis re-positioning accuracy	±10"
X, Y-axis max positioning speed	100 m/min
Re-positioning accuracy	100 rpm
Maximum load weight	1,543 lbs
Laser resonator	IPG
Optional Laser Wattage	**IPG 1000W / 1500W / 3000W / 4000W**
Laser head	PRECITEC
Machine Weight (with auto loader)	26,455 lbs. (12,000 kg)
Dimensions (with auto loader)	496"x 175" x 85" (12,603 x 4,446 x 2,166 mm)

▶ Nesting Software

Adopts laser cutting auto-nesting software, easy operation. Functions are below:

- Text & image processing ability
- Share-edge cutting
- Auto-nesting
- Shape corner cutting without melting issue
- Multiple cutting applications
- Automatic report generation
- Provides different lasers configuration for YAG, CO2, and fiber lasers
- Supports input/output port to control height controller of other brands.

CCD Auto-Identification *(optional)* ◀

This device enhances tube type auto-identification and welding line search function. When tube type confirms signal send to control system, the proper cutting parameter will match the tube type. Meanwhile, after the welding line founded by the device, the tube will automatically rotate to ensure the cutting will not apply on the welding line

Water Cooling System ◀

This machine is equipped with intelligent dual-temperature control water-cooling system, this chiller integrates overtemperature alarm, flow protection and water protection alarm to ensure the machine can work well under ranges of high temperature and humidity conditions.

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HYTUBE MACHINE CONFIGURATION	
MACHINE BODY	
Driving System & Servo Motor	YASKAWA (Japan)
High Precision Gear & Reducer	Alpha (Germany)
High Precision Rack	Gambini (Italy)
High Precision Linear Guide Rail	Rexroth (Germany)
Control System	FASTCUT
Laser Source	IPG 2000W
Laser Cutting Head	PRECITEC LightCutter
Nesting Software	TubesT
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)

HYTUBE 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 arrange the pipe from gas source to the machine (O2/N2/Air).

● Customer arrange pipe for air compressor, refrigerant dryer and filter to machine.

● Pipes should be no oxidation or absolute clean cooper pipe

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

▶ Safety Training

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

▶ 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.

▶ 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.

▶ 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.