

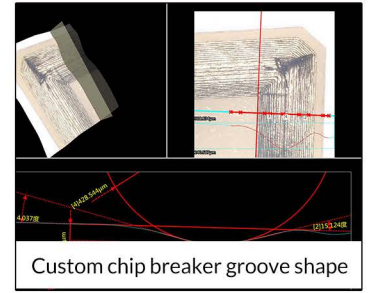
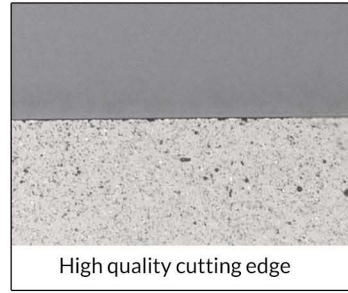
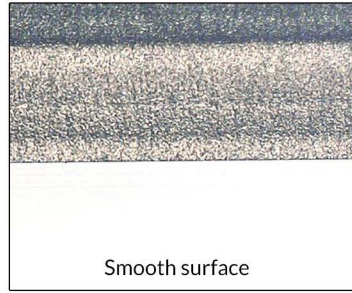
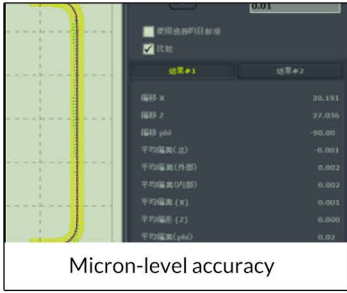
# 5- Axis Laser Machine For Precision Tool

Designed for PCD, PCBN tools



▶▶▶ **GIVEALASER 3100L**

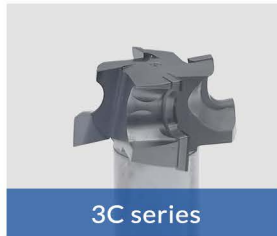
## Efficiency & Quality



- Industrial Fiber pulse laser with BOOST mode achieves amazing roughing efficiency, EDM for roughing pre-cutting is no longer necessary
- Sharp cutting edge, which can be control and achieved micron-level tip arc radius, and maintain good chipping state
- Smooth relief face with roughness lower than Ra 0.2

## Wide Application

- Design to work on PCDs and CBNs for special cutting tools, suitable for cutting edge and chip-breaking groove
- Work for superhard materials like PCDs, MCDs and PCBNs of various brands on the market
- Maximal tool diameter is about 300 mm, Maximal tool length is about 450 mm
- Flexible interface, change with HSK, CAPTO, BT, BBT or straight shank quick and easy



## Stability

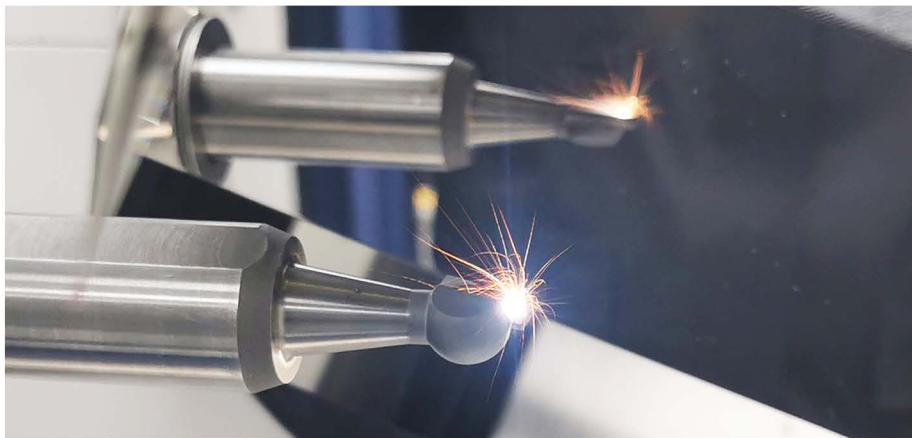
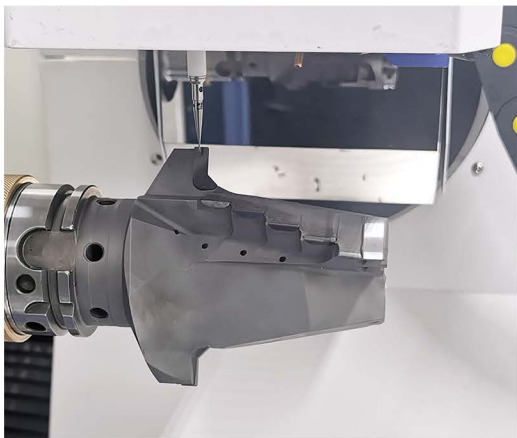
- Machine body is made of cast marble, compared with cast iron, which has obvious advantages in thermal stability and vibration elimination
- Active thermal manage system, can precisely senses and controls the temperature rising of mechanical components during processing
- Using optical feedback control elements, helps to maintain high positioning accuracy and repeated repeatability for a long time

## Safe Measures in Production

- Equipped with dual safety door lock and anti-laser inspection window to ensure personal and equipment safety
- Auto-monitoring of air supply, cooling system and power supply to reduce the adverse effects of external faults on equipment and workpiece
- Solutions can be provided to cover the unstable factors in the customer's factory (for compressed air, water and electricity)

## Accuracy

- Horizontal layout based on center rotation, five-axis machining accuracy will hardly lose with the increase of tool diameter and length
- Closed-loop control enhances the dynamic accuracy



## Low consumables, Environmentally friendly

- Dry processing, equipment can be kept clean for a long time, almost no additional maintenance \*
- Enclosed processing space, relatively quiet processing environment, automatic dust extraction in processing, no unpleasant dust
- Almost no industrial waste during the processing process except for cutting leftover materials and dust

\* The filter needs to be replaced manually

## Automation

- Supports both in-machine and out-machine Robot Tool Loader systems, enabling fully automated production for a wide range from round tools to HSK100 tools
- Features such as run-out compensation, automatic tool length setting, automatic calibration, and online measurement, significantly enhance production efficiency
- Compatible with various pallet solutions, supporting multiple production modes, including quantity continuous production of simple tools and mixed continuous production of complex tools



# Technical specifications

## Machinery:

X-axis: 460mm  
Y-axis: 320mm  
Z-axis: 280mm  
Maximal feed rate: 15m/min  
A-axis:  $\infty$   
B-axis: 125°  
Control mode: 5-Axis Linear motor

## Optical System:

Galvo scanning system

## Air Cleaning:

Air Volume:  $>400\text{m}^3/\text{H}$   
Air Pressure:  $>5000\text{Pa}$   
Filter Grade: HEPA level

## Laser Source:

Industrial Fiber pulse laser: 100W\*(High power available)  
Wavelength: 1064nm  
Pulse Width:  $<500\text{ns}$   
Frequency:  $<1\text{MHz}$

## Options:

Robot Tool Loader/ Robot Tool Loader Station  
Replaceable interface with HSK, CAPTO, BT, BBT or straight shank Additional Expandable Platform

## Accuracy:

Linear Axis Resolution: 0.0001mm  
Rotary Axis Resolution: 0.0001°

## Range of Machinable Tools:

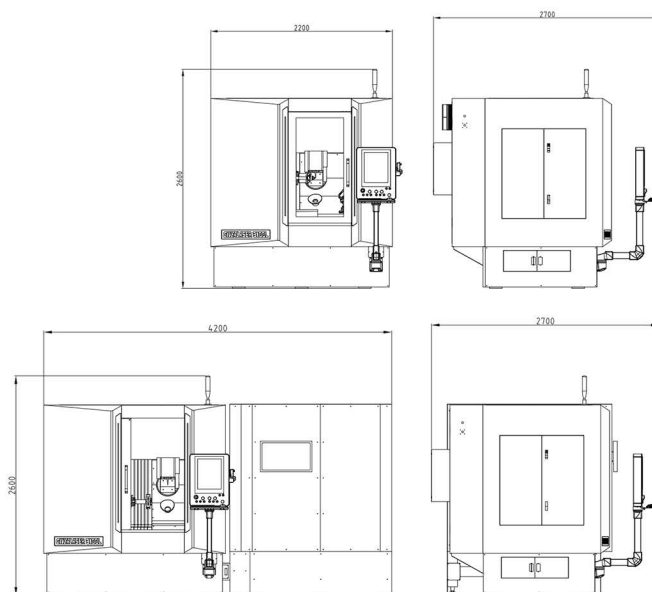
For Round Tools  
Diameter\*\*: 0.2~300mm  
Length\*\*\*: 0~440mm

## Others:

Total Power: 18KVA @ 380V( $\pm 5\%$ ) / 50 $\pm 1\text{Hz}$   
Voltage: AC 220V and DC 24V  
Current: 63A  
Weight: 6000kg  
Dimensions: 2200mm $\times$ 2700mm $\times$ 2600mm

## Service:

Operation and Maintenance Training  
Provide Tool Program to Customer



\*Option

\*\*According to the processing settings (technology and geometry) and model changes, here refers to the maximum diameter for milling cutter and maximum length for reamer.

\*\*\*Always ask our staffs for the information about newest upgrade.

