

# Laser Drilling 4-Axis Compact Workcell

## Laser Drilling for Small Parts

### COMPACT DRILLING WORKCELL



## Applications

- ▶ Engine Components
- ▶ Automotive Parts
- ▶ Turbine Blades
- ▶ Medical Sensors and Components
- ▶ Electronic Device Packaging
- ▶ Printed Circuit Boards



## Features

- ▶ 4-Axis Part Movement
- ▶ Choice of IPG's Lasers: CW and QCW
- ▶ 300 x 300 x 300 mm Work Envelope
- ▶ Rotation about X-Axis
- ▶ CDRH Class 1 Laser Safety Enclosure



IPG's Laser Drilling 4-Axis Compact Workcell is a highly cost-efficient tool for drilling smaller sized metal components and enclosures. The high pulse energy and high peak power of the QCW laser enables penetration of a wide range of material types including steels, copper, aluminum and alloys.

With an internally mounted laser to minimize footprint, the rugged industrial construction includes a granite base and superstructure for thermal and mechanical stability. The tool is easily programmed with standard G/M-code. The Laser Drilling Workcell and fiber laser are **designed, manufactured and supported by IPG**—your partner for precision laser drilling systems.



## Optional System Features

- ▶ Fume Extraction System
- ▶ Automatic Door Mechanism
- ▶ Laser Power Meter
- ▶ Beam Expansion for High Power Drilling

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## Laser Options

- CW: 300, 500 W
- QCW: 150/1500, 300/3000
- Laser is Internally Mounted Saving Space

## System Enclosure

- CDRH Class 1 Enclosure with Laser-safe Viewing Windows
- Front Doors Available as Manual or Automatic Operation from HMI or G-code Programmable
- Access Panels on Front and Sides of Cell for Easy Access and Maintenance



## Modular Work Area

- 300 mm X Travel , 300 mm Y Travel, 300 mm Z Travel
- Aluminum T-slot Tooling Table
- Rotary Stages Available for X-axis

## User Interface

- Intuitive HMI for Machine Control
- Multiple Screens for Programming All Process Parameters
- G/M-code Programming
- CAD/CAM Software (Optional)

## Up to 4-Axes of Coordinated Motion for 2D, Tube and 3D Materials Processing

- Ball-screw Driven Stages with 300 mm Travel
- Stages are Sealed to Protect against Damage, Contamination and Debris

## Compact Footprint

- 1170 D x 813 W x 2005 H mm (46 x 32 x 79")
- Minimizes Floor Space Requirements
- Easy to Install
- Ergonomic Work Height- Easy Part Loading and Unloading

# Laser Drilling 4-Axis Compact Workcell

## Laser Drilling for Small Parts

### System Specifications

Laser Power Options	CW: 300, 500 W QCW: 150/1500, 300/3000 and 450/4500 Watt
Work Envelope	X: 300 mm (12 in.); Y: 300 mm (12 in.); Z: 300 mm (12 in.)
X-Y Stages Option	Travel: 300 mm, Accuracy $\pm 25 \mu\text{m}$ , Repeatability $\pm 3 \mu\text{m}$ , Velocity 400 mm/sec
Z-Stage Options	Ball-screw Drive: Travel: 300 mm, Accuracy $\pm 25 \mu\text{m}$ , Repeatability $\pm 3 \mu\text{m}$ , Velocity 100 mm/sec
Tooling	Aluminum T-slot Table
Rotation Stage Options (about X-axis)	Gear Drive: Travel: 360° Continuous, Speed: 30 rpm max Accuracy $\pm 180 \text{ arc-sec}$ Repeatability $\pm 45 \text{ arc-sec}$ 5C Collet, 3 Jaw Chuck
Controls/ Interface	Industrial Motion Controller, Full Look-ahead Contouring Capability Laser Power Proportional to Velocity, Windows-based CNC Interface G/M-code Programming, Editable Materials and Laser Parameter Database
Process Gas	Manually Adjustable Pressure Regulator and Computer Controlled Solenoid Valve for Process Gas up to 250 psi
Exhaust	4" Blast Gate with Exhaust Plenum for Optional Table
Safety	CDRH Class I Laser System (Complies with 21 CFR Chapter 1, Subchapter J)
Dimensions, LxWxH, mm in.	1170 x 810 x 2005 46 x 32 x 79

*Please consult IPG for custom-designed laser drilling solutions.*

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