

Laser Cladding Machine with Robot Arm

This laser cladding machine integrates optical, mechanical, and electrical technologies for material processing. It utilizes a fiber-coupled laser, robotic arm, and integrated control systems for repair, quenching, cladding, and alloying applications.



ADDITIONAL IMAGES



Overview

High-Performance Robotic Laser Cladding System

This fiber-coupled semiconductor laser robot represents a flexible manufacturing solution that integrates optical, mechanical, electrical, and cooling technologies. Designed for industrial-grade repair and surface enhancement, the system supports laser quenching, cladding, and alloying functions. The six-axis linkage robot ensures high precision and stability, making it an ideal choice for complex three-dimensional processing in demanding sectors like aerospace and automotive manufacturing.

Technical Specifications

| | |
|----------------------------|----------|
| Model | GS-LS3DA |
| Max. Outside Diameter | 70 mm |
| Laser Power Configurations | 4KW, 6KW |

System Components



The six-axis robotic arm provides the flexibility and precision required for complex 3D laser cladding and surface treatment tasks.

System Composition

- Six-axis linkage robot
- Fiber coupled laser diode
- Laser light guiding system (feeding fiber & laser head)
- Laser chiller
- Coaxial powder feeding system
- Integrated control systems
- Seven-station rotary indexing table
- Mobile workstations

Performance & Efficiency

Performance Metrics

15 degrees/hour

Energy Consumption (4000W)

6 Axis

Robot Axis Linkage

Applications

Weldable Materials

Carbon Steel • Stainless Steel • Aluminum • Various Metals

Target Industries

- Aerospace
- Locomotive Manufacturing
- Engineering & Agricultural Machinery
- Automobile Manufacturing
- Elevator & Textile Machinery
- Electrical Hardware & IT

Operational Features

Key Features

- 3D welding capability via specialized software
- Low consumable cost (protection lens)
- High welding speed and efficiency
- Smooth, beautiful finish without deformation
- Stable performance for industrial environments