

# Automatic Laser Welder for Sealing and Battery Box Fabrication

This automatic laser welding machine is designed for precise and efficient welding of stainless steel sealing parts and aluminum battery boxes. It features a robust construction and advanced CNC control system for optimal welding performance.



## ADDITIONAL IMAGES



## Overview



The integrated CNC laser welding system featuring a high-power laser source and automated control cabinet.

### High-Performance CNC Laser Welding System

The HC03 high-power laser welding machine is a specialized CNC system designed for the precision fabrication of transmission gears and battery box sealing. By utilizing a split-type design for gears and shafts, this machine helps reduce component weight and volume while saving raw materials. The integrated system features a robotic hand for automated loading and unloading, ensuring high efficiency and consistent weld quality for demanding automotive and industrial applications.

## Key Performance Metrics

### Performance Highlights

**3000 W**

Rated Power

**2 m/min**

Max Welding Speed

**6.3 mm**

Max Welding Depth

## Laser Source Specifications

Power Rating	3000 W
Power Dynamic Range	300-3000W (Adjustable)
Power Stability	<±2%

## Beam Quality

Beam Mode	Fundamental mode (00 mode)
Divergence Angle	<0.15 mrad (Full-shaped)
Beam Diameter	20mm-25mm (<10m)

## System Advantages

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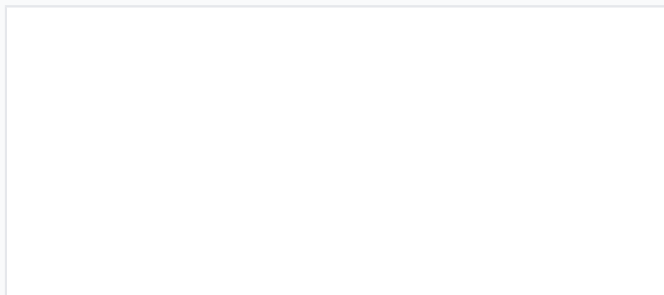


The machine setup includes a safety enclosure and automated material handling for high-volume production.

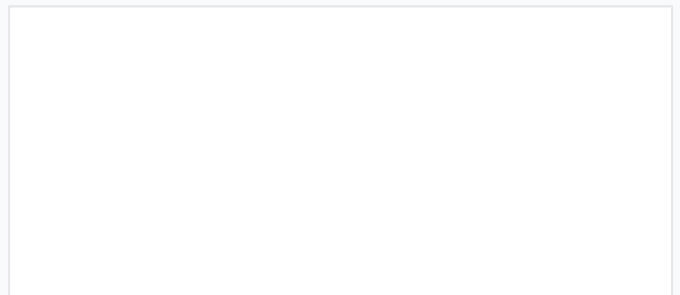
### Automation & Integration

- Robotic hand for automated loading and unloading
- Four-station automatic turn plate
- Integrated auto-preheat machine
- CNC control system for synchronized operation
- Automatic pressing device to reduce deformation

## Application Examples



Detailed cross-sections showing deep penetration and high-quality fusion in welded components.



Examples of high-power laser welding on complex automotive components like turbochargers and mufflers.

### Welding Performance by Application

Application	Material	Power (W)	Speed (m/min)	Depth (mm)
Transmission Gear	Steel	2500	2.0	3.5
Pulsor (High Power)	Metal	3800	1.6	6.3
Sealing Parts	304SS	700	2.0	0.7
Heat Exchanger	Stainless Steel	800	2.0	1.5
SS Pipe (3D Curve)	Stainless Steel	800	1.5	1.0

## Safety & Control

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Ergonomic design with integrated CNC interface for real-time monitoring of welding parameters.

### Safety Features

Laser Fence, Centralized Display, Anti-interference Control, Water Chiller Integration, Protective Air Unit

## Material Compatibility

### Weldable Materials

Stainless Steel (304SS) • Aluminum • Dissimilar Metals • Transmission Steel