

LASER SEAM STEPPER

Overlap Welding System



FEATURES

- ▶ Optimized for Welding Aluminum, Stainless Steel, Coated or Hot-formed Steel
- ▶ Integrated Part Clamping Simplifies Tooling
- ▶ Repeatable Processing with Multi-Layer Sheet Joining
- ▶ Linear and Wobble Welds for Maximum Strength
- ▶ Multiple Spot Option for Welding Hot-dipped Steel
- ▶ Compact, Single-cabinet Controller



BENEFITS

- ▶ Approx. 2x Faster than RSW for Reduced Cycle Time
- ▶ High Part Yield
- ▶ Turnkey Proven Process – Fast Time to Production
- ▶ Programmable & Monitored Clamping Ensures Reliable Joining
- ▶ Elimination of Electrodes Improves Weld Consistency & Reduces Costs

IPG Laser Seam Stepper is an automated laser welding system that is faster and lower-in-cost than traditional resistance spot welding, while producing higher strength weld joints. It is designed for welding of car body parts and flat panels such as consumer appliances. IPG's LSS-5M welding head includes linear and wobble scanning optics, together with a programmable and monitored pressure piece. The LSS-Picker is configured for single-side part access, while the LSS C-Gun includes a lower arm to provide a clamping force of up to 3 kN (675 lbs). The associated LSS Controller is a single-cabinet design that includes the fiber laser, chiller, mobile panel and integrated safety controller.

Having a laser power of 3 kW, the LSS can be configured for either single-beam operation or with a tri-focal output, having two side-beams enabling welding of hot-dipped car body panels without pores and with minimal spatter. The Seam Stepper can weld a laser wobble seam up to 40 mm in length in half the cycle time of traditional technology, the higher-strength joint potentially allowing reduction in flange width and part lightweighting.

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Technical Specifications: Controller	YLS-15000-SM3	YLS-20000-SM4
Mode of Operation	CW/ Modulated	
Wavelength, nm	1070	
Output Power Main Beam, kW	up to 3.5	up to 3.0
Output Power Side Beam, kW	N/A	2 x 0.25*
Spot Size (Depends on Fiber & Optics), mm	0.250 - 0.6	
Power Consumption 3500 W Power, Laser Duty Cycle 30% (with chiller), kW	3.5	
Dimensions, Controller L x W x H, mm	608 x 808 x 1335	
Cooling	Water-water with Integrated Chiller or Water-air without Integrated Chiller	
Weight, kg	250	

Technical Specifications: C-Gun & Picker	C-Gun	Picker
Adjustable Clamping Force (Z-hub), kN	0.8-3.0	0.3-1.0
Max. Traversing (Z-hub), mm	140	N/A
Max. Welding Seam Length, mm	40	
Wobble Amplitude, mm	±1	
Wobble Frequency, Hz	0-30	
Welding Speed, mm/s	up to 60	
Compressed Air Consumption (Welding), l/min. @ 6bar	250	
Weight, kg	63	47

The LSS-5M is available as a C-Gun, qualified class 1 laser device* or as a Picker configuration**

*Integrator must provide an interlocking guard to create the necessary NOHD distance

**Class 1 can be realized with additional measures

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