



Profile Welding System

The Turnkey Solution for Tube and Profile Welding

Robust and reliable laser welding of tubes and profiles – the Profile Welding System (PWS) offered by Coherent | ROFIN is a complete laser welding system with an integrated process sensor for welding gap detection and tracking. The “Weld Sensor” allows the operator to monitor the welding process while the integrated controller corrects the welding position automatically. The in-real-time working sensors and the fast and precise linear actuators ensure the highest production reliability by positioning the laser beam within a few μm of the seam gap while achieving welding speeds of up to 60 m/min.

The operator control panel offers clear and easy operation of all important system features. System parameters and functions, like laser power, moving axes or gap monitoring at the work piece, can be centrally set and controlled. The modular design of the PWS system allows simple integration into an existing machine setup and can be adapted to meet specific customer needs. Thanks to the new motorized axes (Z/X/Y), the operation becomes even more user-friendly and, depending on customer requirements, a connection to product databases can be realized.

In cases where flexible operation at different welding stations is required, ROFIN | Coherent offers a mobile system, the PWSflex.

FEATURES & BENEFITS

- Together with either CO₂ Slab lasers of the DC Series or fiber lasers of the HighLight™ FL Series, the PWS is the all-in-one solution for tube and profile welding
- Standardized interfaces and compact dimensions provide easy integration into new or already existing machines
- Easy implementation of customer-specific or system-dependent features
- The PWS is virtually maintenance-free and is not sensitive to oil, dirt, dust, damp and electrical interference – the best prerequisites for use in tough industrial environments
- Intelligent seam tracking sensors – automatic adjustment of the laser beam to the welding gap. Process safe welding with the “Weld Sensor”
- Reliable and precise welding thanks to the high positioning accuracy of the laser beam, even at process speeds of up to 60 m/min

COMPONENTS OF THE SYSTEM

Laser Sources

The PWS can be combined with different laser beam sources from Coherent|ROFIN, such as DC Series diffusion-cooled CO₂ lasers (up to 8 kW output power) or HighLight™ FL Series fiber lasers (up to 10 kW), to optimally match customers' specific requirements. Both laser technologies are ideally suited to accomplish all assigned tasks with high quality and high speed when welding stainless steel tubes and profiles. However, they are characterized by different core advantages.

The well-proven combination of the PWS with DC Series CO₂ lasers has stood for many years as a well-established and industry-proven CO₂ process technology. CO₂ laser technology is for example the method of choice if the utmost weld quality is an important process criteria. However, recent developments have shown that similar results can now be realized with HighLight fiber lasers, achieving state-of-the-art process quality, reliability and yield with the high wall plug efficiency of fiber laser technology. As is well-known, fiber lasers offer process advantages with non-ferrous metals such as composite pipes or thin-walled steel materials.

Weld Sensor

The intelligent seam tracking sensor ensures process safe welding and automatically adjusts the laser beam to the welding gap.

Beam and Process Analysis

The integration of a beam and process analysis tool is optional available.



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Coherent follows a policy of continuous product improvement. Specifications are subject to change without notice.

Coherent offers a limited warranty for all HighLight Lasers. For full details of this warranty coverage, please refer to the Service section at www.Coherent.com or contact your local Sales or Service Representative.

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