PWS

Profile Welding System
The Turnkey Solution for Tube and Profile Welding
**Laser Sources**

As laser sources, either the CO\(_2\) Lasers of the DC Series or the fiber lasers of the FL Series – both available with output powers up to 8 kW – can be used. The fiber lasers are the ideal tool when thin-walled tubes have to be welded with high quality and high processing speeds. Also, when welding non-ferrous metals that can be found, for example, in composite tubes, the short wavelength is the right choice. The CO\(_2\) lasers play out their advantages when it comes to welding material thicknesses typ. > 1 mm, with a low-spatter welding process when a high-quality weld is required.

**Robust and reliable laser welding of tubes and profiles – the Profile Welding System (PWS) offered by Coherent-ROFIN**

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, Coherent-ROFIN offers a mobile system, the PWSflex.

**THE PRODUCT**

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.

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**COMPONENTS OF THE ALL-IN-ONE SYSTEM**

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**Weld Sensor**

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

**Seam Inspector, Beam and Process Analysis**

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

**THE BENEFIT**

- Together with either CO\(_2\) Slab lasers of the DC Series or fiber lasers of the 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

**WE THINK LASER**