



PERMANOVA
Lasersystem ab



LASER WELDING PROVIDES INCREASED TORSIONAL RIGIDITY IN METAL PROFILES

"We can now offer lighter, less space-consuming and stronger profiles, at very competitive prices."

Bendiro Profile Tech AB supplies various industries with metal profiles, for example the furniture, telecommunications, automotive and building industries. Materials include cold and hot rolled steel, aluminium, nickel and titanium.

Bendiro's roll forming technology means that sheet metal can be successively folded together into advanced profiles in up to 48 roll forming steps, even in high-strength materials. This gives high repeat accuracy and efficient and economical production of large and small series with specialised cross sections, in advanced profile shapes. Even surface treated materials can be roll formed.

What were Bendiro's requirements for improvements and what challenges did they face?

They were looking for a method to give profiles, made on an existing roll forming line, greater torsional rigidity and strength by effectively "sealing" the profile without increasing the weight by folded flange joints or similar.

What solution did Permanova suggest?

After testing at Permanova, laser welding was chosen; a non-intrusive method that works with high power density allowing high welding speeds. Permanova supplied a profile line package with one laser with two outputs and one optic fiber with welding tool, cooling system and laser safety enclosure.

Benefits for Bendiro and their customers

Material-efficient joint types and cross sections could be designed and very strong welds could be obtained at high welding speeds.

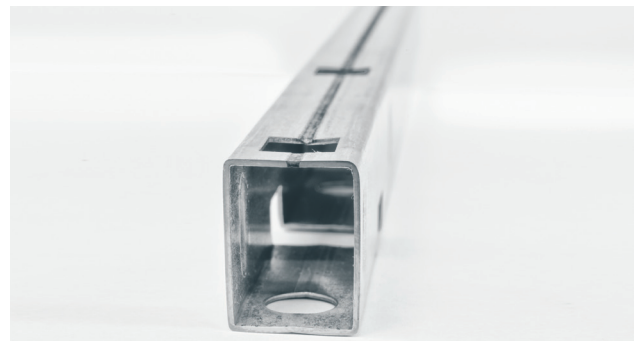
Bendiro's customers got lighter, less space-consuming and stronger profiles, at very competitive prices.

For Bendiro itself, the laser welding solution also had to cover the following:

- Minimal need for more floor space near to existing profile line. Fiber transfer of the laser beam gave the freedom to position the laser with the cooling system.
- To be able to reach more than one profiling line (10's of metres away) in the future. This could be easily realised with an additional fiber output for a future laser welding tool.
- To be able to handle different materials and surface treatments
- To be able to adjust the laser efficiency for speeds from 8 to 12 m/min (optimises a limited investment budget)
- Requirement for a short delivery time, to satisfy important forthcoming customer delivery to the automotive industry.



Profile line for roll forming.



Example of laser welded steel profile.

No process or production is too great or too small for laser.

Permanova has supplied turn-key laser robot systems for the sheet metal industry for over 25 years. Each system is optimally designed to make the customer's production more efficient and profitable. Our goal is to always find long-term solutions that enable you to develop your business according to new demands. To assist us with this, we have more laser experts than most of our colleagues in the industry. As a customer you get access to accumulated experience and deep knowledge of the technology.

With Permanova as a complete supplier within laser solutions you have everything in one place. From the drawing board to installation and service. It does not get easier than that.

Are you curious to find out how our laser solutions can raise your production to new heights? Contact Permanova! We will happily share our knowledge and experience.

Permanova Lasersystem AB

Krokslättis Fabriker 30, SE-431 37 Mölndal, Tel: +46 31 706 19 80, Fax: +46 31 86 46 12
E-mail: info@permanova.se, www.permanova.se

