

Plastic laser welding systems: state of the art, limitations, and future trends

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Quasi-simultaneous Welding

- The laser beam is moved very fast across the work piece several times with scanner mirrors
- The welding path is heated up gradually (low thermal conductivity)
- A quasi-simultaneous melting of the entire welding track occurs
- Very short processing times
- Welding area depends on focal length
- High laser power and a scanner needed
- Typical product
 - Visible joint >>> High visual quality needed
 - Strong and waterproof joint



Machine Integration

- Part handling
 - Welding fixture: single jig, multipart jig
 - Operator or robot
 - Turn table, hatch (servo motor driven or manual), in-line workstation
- Production type: stand alone, production line, loop
- Space between machines
- Footprint
- Quality control
- Machine-to-machine interface
- Electrical connections, compressed air, fume extraction
- Intranet

Laser Marking

Cencorp 300 LM table top laser marking cell includes:

- Safety enclosures according to Laser Class 1
- Window for viewing the marking process
- Manual slide for loading and unloading of products
- Manual Z-axis
- Connection for fume extraction

Optional:

- Bar code quality check
- Automated slide
- Programmable Z-axis
- R-movement
- Fume extraction unit



		300 LM
Width	[mm]	300
Length	[mm]	600
Height	[mm]	600
Weight	[kg]	65

Laser Marking

- Removal of Coatings (Ablation)
- Color change / foaming
- Engraving
- Annealing

