



LASER PLASTIC WELDING

Basic S

Compact, efficient,
user-friendly
and economical



Laser Plastic Welding

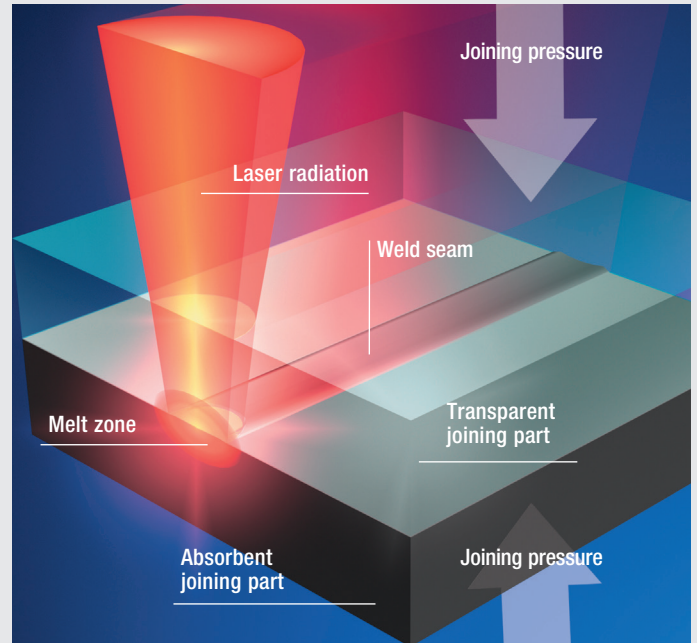
Established in 1998, the Leister Business Line has many years of experience in laser welding of plastics. Leister is the owner of a number of patents (such as Mask or GLOBO welding) and the only company with expertise in all standard laser plastic welding techniques.

The principle of laser welding

In laser welding of thermoplastics, sometimes referred to as “laser transmission welding” or “through transmission IR welding” (TTIr), transparent and absorbent parts are bonded together.

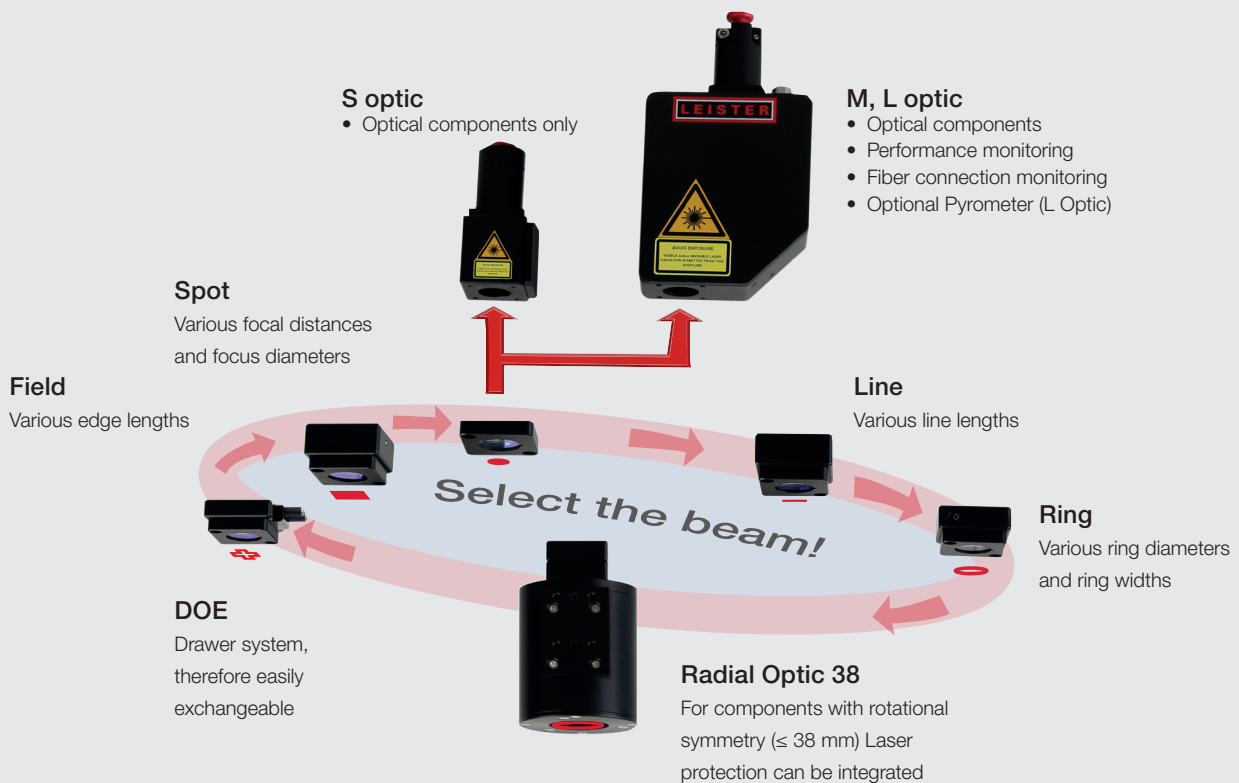
The laser beam penetrates the transparent plastic and is converted to heat in the absorbing plastic. Since both parts are pressed together during the welding process, heat is conducted from the absorbent to the transparent plastic, allowing both materials to melt and create a bond. In addition to the externally applied clamping force an internal joining pressure is also generated through the thermal expansion of the laser-heated plastic parts. The internal and external joining pressures ensure strong welding of both parts.

Almost all thermoplastic and thermoplastic elastomers can be welded with the laser beam – including ABS, PA, PC, PP, PMMA, PS, PBT as well as glass fiber reinforced plastic types. The achieved weld seam strength remains within the area of basic material strength.



Optic concept S, M, L

The Basic S can be operated with the innovative, modular LEISTER laser optics. In contrast to the S line, the M optics offer fiber connection monitoring and laser power measurement while the L optics additionally offer pyrometer functionality.



Basic S

The new Basic S product line from LEISTER (in combination with the LEISTER optics) offers numerous possibilities for laser welding of plastics. Incorporating a unique, state-of-the-art cooling system that was developed in-house, the Basic S is set to redefine the market. To simplify integration into the production line, the Basic S now offers a web-based HMI.

Basic S

LEISTER Basic S is optimized for the integration into production lines and manufacturing cells. The laser systems easily can be configured for various requirements, due to their consequent modular design. Almost any welding concept can be realized with the different lasers and optic modules. The mutually matched components provide high process stability as well as cost-efficient production.

The Basic S is coupled with powerful software that can record and output all welding-process data and parameters in a single file. Via the TCP/IP network connection, the log file is written to the Basic S and retrieved from there by the server. Alternatively, the file can be written to the server directly. Thus, the process data is always stored securely, protected from access and archived. Newly developed management profiles divide users into operator, expert and service categories. This critical feature secures parameters from alteration and accidental loss. Furthermore this feature makes it possible to track who accessed information, and where and when data for process modifications were initiated.

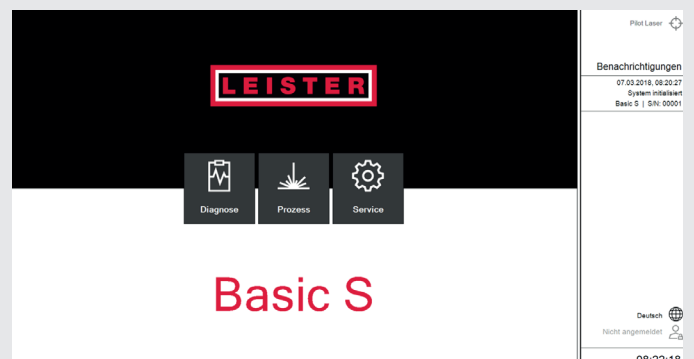
- Flexible and cost-effective; suitable for diverse applications
- Individual control via customer supplied guidance system
- Operated with web-based human machine interface
- LCD-display on front to set system parameters
- Audit-trail for process documentation and traceability
- User management for access control
- Simplified integration through graphical representation of analog and digital signals
- Industry 4.0 ready
- Predictive maintenance

Technical Data

Laser type		Diode laser, aircooled
Wavelength	nm	800 - 1100
Beam shape		Fiber coupled laser
Laser power	W	< 300
Pilot laser / aiming laser	mW	< 1 (Laser class 2)
User interface		Leister WEB-HMI
Data interface		TCP / IP
Line voltage	V~	100 – 240 in air-cooled lasers
Frequency	Hz	50 / 60
Max. current consumption	A	6.2 / 230 V 14.25 / 100 V
Environmental conditions	°C	15 – 35
Weight	Kg	< 45 (depending on configuration)
Size (L x W x H)	mm	483 x 489 x 6 HE
Laser class		4



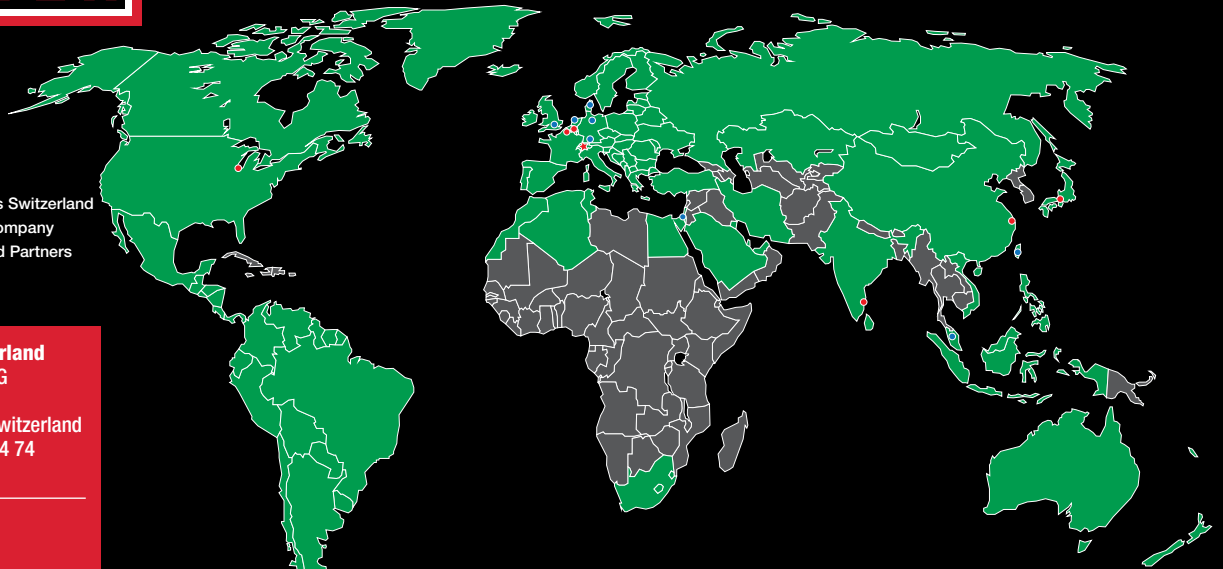
Basic S



Basic S, web-based HMI

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