Specifications

Laser source	diode-pumped
Wavelength	between 940 nm – 2.500 nm, depending on the application
Max. mean power (cw)	up to 300W
Focus diameter	0,8 – 5 mm
Processing field	up to 560 mm x 560 mm
Load capacity turning table (optional)	100 kg per side
Traversing distance	Δz = 200 mm
Cooling	air cooling
Dimensions (d/h/w)	1.200 mm/2.200 mm/1.160 mm
Weight	800 kg

Optional equipment

Turning table	with optional ports for sensors and optical pressure device
Up to 2 rotating axes	for radial welding applications
Process control	customized solutions on request
Automatic clamping pressure unit	for homogeneous force input over the entire clamping process
Multi-clamping-system	to increase the cycle frequency

Highlights at a glance

- scanner technology permits outline and simultaneous welding
- 24/7 operation
- workpieces up to 100 kg
- local heat input
- no pre- or post-processing required
- online process control
- variable spot diameter

✓ Short cycle times
✓ High productivity
✓ Precise welding

wORld of LASER

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ORLASER

Your Engineering Quality is always on our focus

Laser plastic welding

The system satisfies in welding of thermoplastics and automated scanner welding through its efficiency and versatility.

Fields of application

- Automotive
- Medical technology
- Electronic industry
- Consumer goods industry

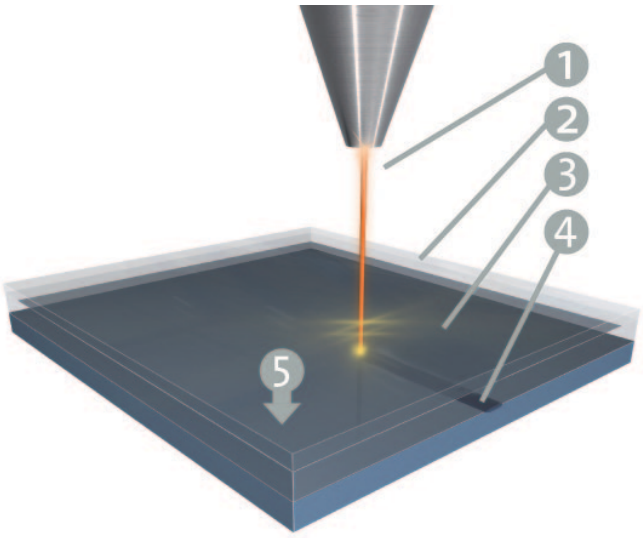
ORLASER

Laser plastic welding defined by efficiency

Laser plastic welding is considerably more effective in comparison with conventional gluing or ultrasonic welding methods and guarantees high-strength joints without markings and surface damage.

The process allows contact-free processing of a wide range of materials in different material thicknesses. Characteristic process properties are the absence of particles and low thermal influence.

Through high welding speeds and a stable process without pre- and post-processing a high level of automization is ensured.



1: laser beam • 2: transparent plastic • 3: absorbed plastic • 4: welding seam • 5: clamping pressure

Strong and flexible: The ORLAS STATION laser plastic welding system

With the plane-field lens with long focal length and two galvanometer mirrors (scanner optics), which guide the laser beam accurately over the component, the ORLAS STATION offers a processing field of up to 560 x 560 mm.

The spot size of the laser can be varied by a beam expander.

Implementing a scanner technology, the system is the ideal solution for contour welding and quasi simultaneous welding tasks.

Easy integration

The turn key solution system characterizes itself through its compact measurements which allow this system to be easily integrated into diverse production environments.
This robust stand-alone system is developed to be operational 24/7. Productions from small series to mass production are possible with this system.

Process monitoring through a laser-proof bulkhead

The equipment of the system with plastic parts that are about to be welded are mounted through a laser secured bulkhead and locked with the integrated clamping device.

Optionally the machine can be equipped with a turning table which allows the system to be fed during a welding operation. Cycle times can be further reduced and production costs can be minimized at the same time as raising your productivity.

The process control is carried out via an automatic clamping pressure controller and the way-time monitoring of the whole welding process.

Intuitive operation

The ORLAS STATION is operated via an intuitive touchscreen display that provides access to all parameters and set data.

The joint contour is created precisely in the control software or is scanned in via a DXF file, and an easily visible pilot laser visualizes the welding contour onto the workpiece.

Touchscreen display „Lilly Board“

Application examples

Typical serial application in laser plastic welding

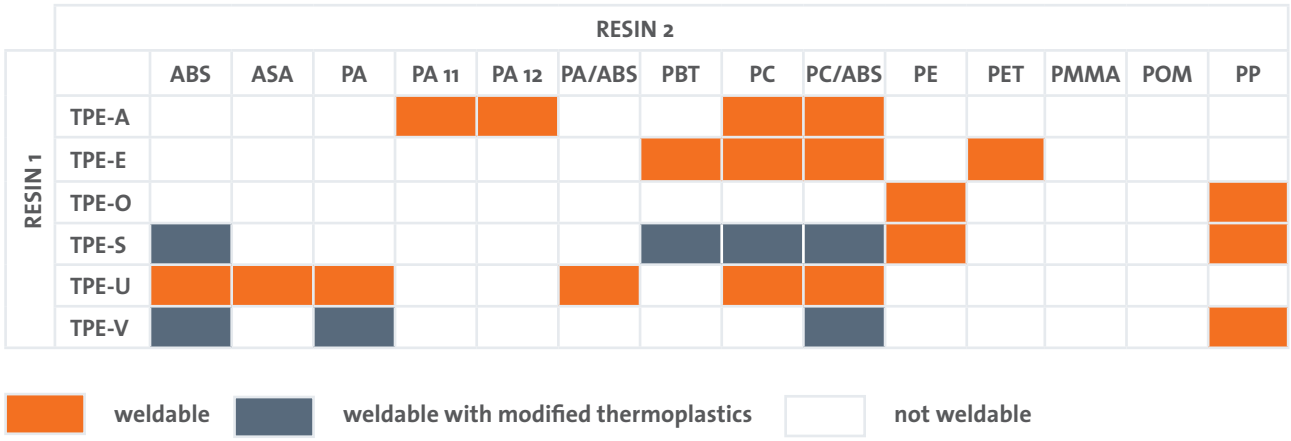
Automotive sector: Distributor

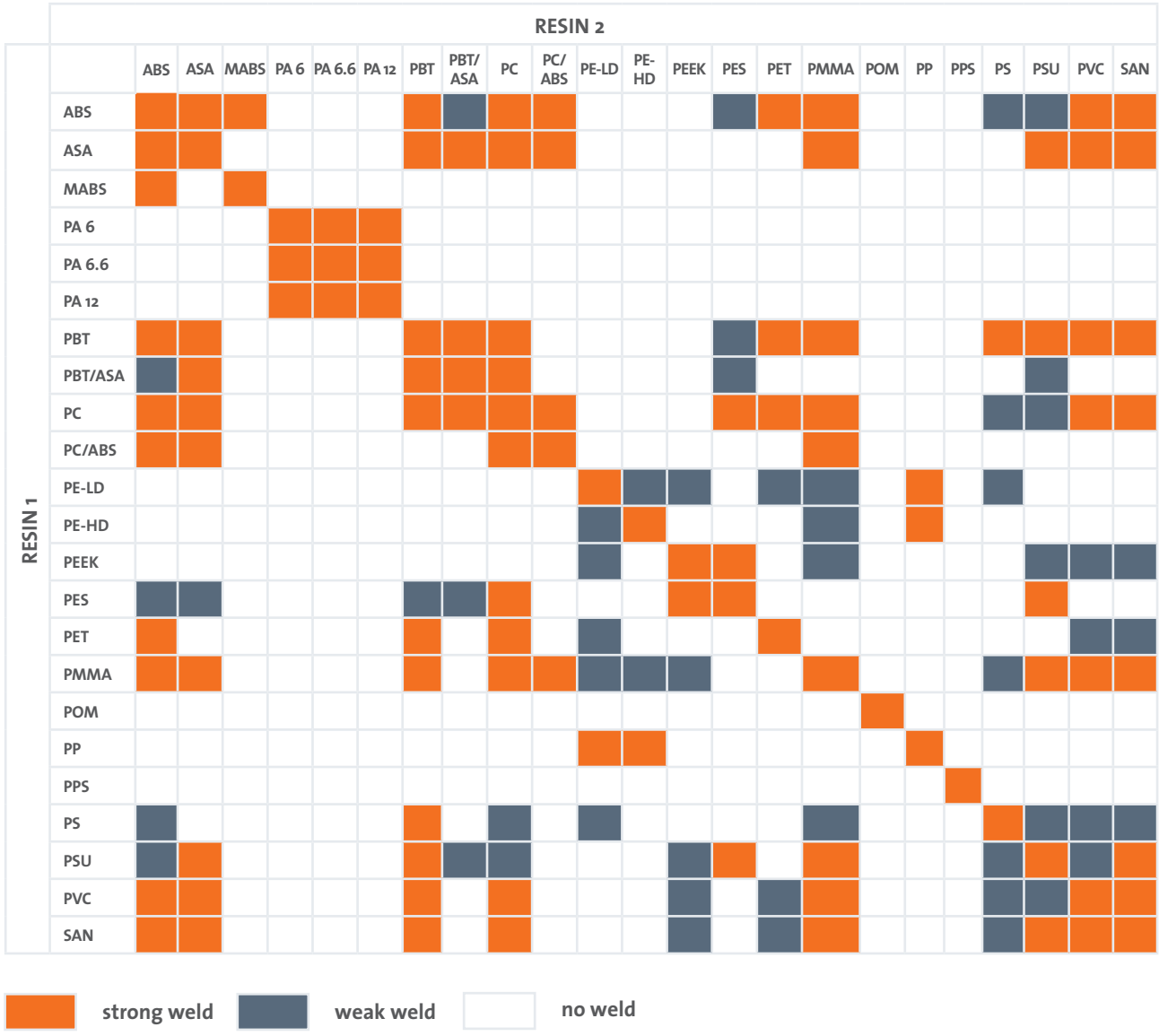
Automotive sector: Recessed valve caps

Consumer sector: Drinking cup

Compatibility matrix

Overview of weldable plastics





Source: Prof. Dr. Rolf Klein, Laser Welding of Plastics, Wiley-VCH, 2011