

Efficient with substance

Intuitive laser technology for small to medium sized molds



The highest form of security



Ideal for high material load

The aviation industry utilizes the benefits of laser technology for joining respectively welding complex parts without distorting the material. Other pros are the marginal danger of cracking the material while keeping its ductility, the stability of the welding seam, the construction's minimal deformation compared to other welding techniques and the very small heat affected zone.

Example: Turbine stator and rotor blades are components exposed to the highest thermal, chemical and dynamic loads and to temperatures of up to 1400° Celsius. Parts damaged by erosion, thermal fatigue or wear and tear, can be put back into mint condition with a Nd-YAG laser, in order to guarantee the highest level of safety.

Achieves a lot and asks for little

Inspirations of our customers and several years of development led to a complete redevelopment of this laser welding system. The result is a mobile laser welding system that sets new standards for open laser workstations.

In addition to the comfortable operating features, designed with practical use in mind, a wide range of innovations support semiautomatic processing. Continue reading to learn about all the new developments and form your own opinion.



Technical specifications

LASER

- Newly developed resonator
- Modular components reduce maintenance times

QUALITY ASSURANCE

- Recording of video for analysis and monitoring
- USB/Ethernet connection for saving data for quality assurance and verification
- Optional memory expansion
- Additional history log of the welding parameters used

CONTROL

- Intuitive operation
- 10" touchscreen color display
- Relevant welding parameters and data at a glance
- Multi-lingual/multi-user (German, English and many more)
- Freely programmable pulse shapes (up to 4 shapes per pulse sequence – meaning optimal adaptation of the pulse to the material being processed)
- Saving of data via USB
- Removable operating element

Industries

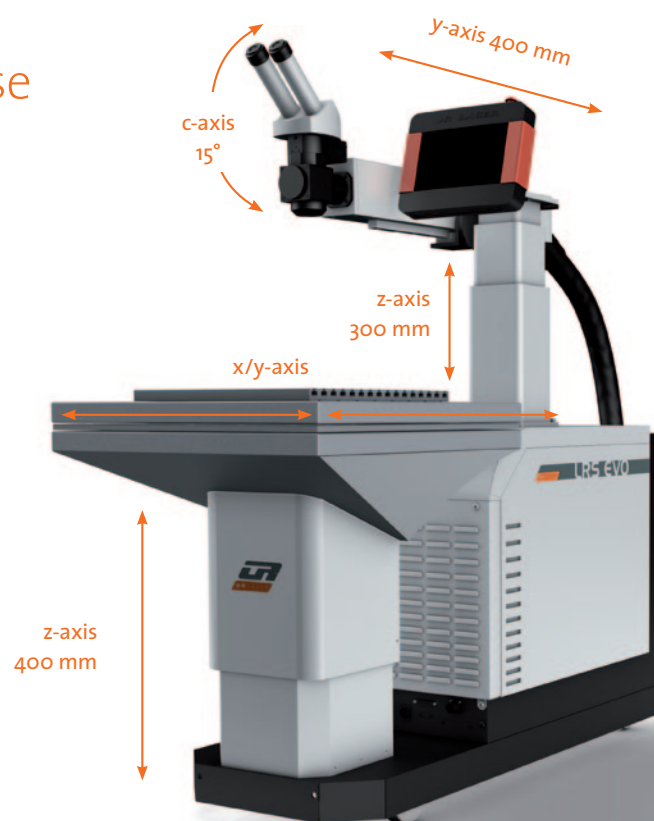
The LRS EVO is in use in virtually every industry sector: Automotive, mold and die production, machine construction, tool making, aviation, medical sector, sensor technology and many more.



Ergonomics without compromise

We have enhanced the LRS EVO laser system to satisfy versatile requirements in tool and die making and in other industries as well. Intuitive operation – fast and efficient.

With this system no wishes are left unfilled in the processing of small to medium die sizes since extensive accessories can expand your welding capabilities for both simple and complex laser welding tasks. In designing this system, we placed great importance on user-friendliness, ergonomics and cost-effectiveness.



Useful accessories

For the LRS EVO laser system we offer a whole range of accessories to facilitate your work.



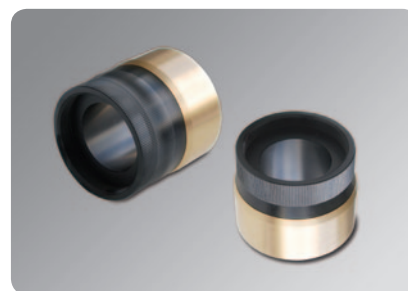
Magnetic ball

The ideal accessory for simple handling of your welding parts.



Rotating device

Rotating device with fully adjustable 3-Jaw chuck, 90° tilting and 360° swivel makes working on tools quick and easy.



Telescope optics

The telescopic extension allows continuous real time changes in focal positions up to 20 mm.

Not enough? We will be happy to send you the current accessories catalogue by e-mail or post.

Control via touchscreen

Via the 10" touch display all parameters are accessible and there are reams of possibilities to adjust important settings which can also be stored directly. Saved data can be accessed anytime.



EXAMPLES:



Laser parameters
Configured easily and accurately.



Pulse shaping
Program the ideal setting.



Video
1:1 tracking of the welding process and saved along with all technical parameters.

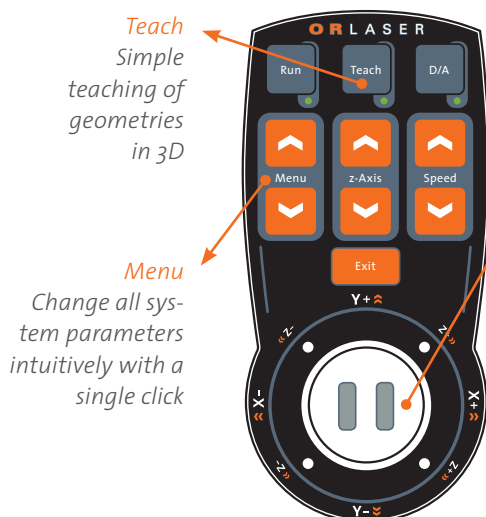


Motion
Welding line determination, r-axis.

One-hand operation via joystick

Along with the display, the joystick functions are the central operating element. Traverse speed, axis direction and more can be controlled and executed with the joystick directly. This increases efficiency

during welding since modifications can be made directly during the welding process rather than only via the display. Path data can also be programmed directly with the joystick.



Move
Move in the x, y, z-axes or navigate with the laser menu control



Compressor cooling System–COR-22

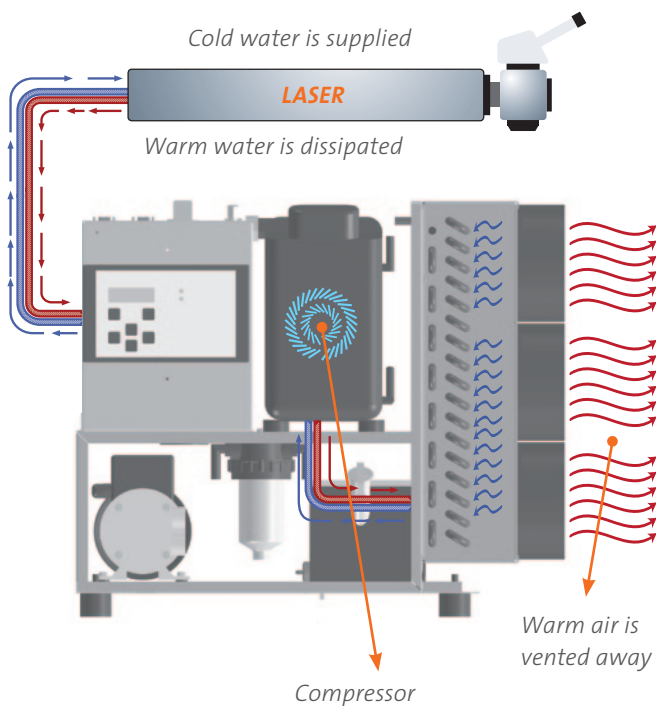
The external compressor cooling system guarantees prolonged operation – without overheating! A temperature stability of $\pm 1^\circ\text{C}$ ensures constant pulse/pulse stability and increases the service life of the laser lamp.

The external compressor laser cooling guarantees a constant water temperature. This means consistently constant laser output and a longer lifetime for the optical components.



Twenty four seven

After one hour already, overheating can result with standard cooling systems. With the COR-22, you can weld practically around the clock.



Highlights

- Consistently constant water temperature
- Extends the service life of all optical components
- Low-maintenance
- Temperature stability of $\pm 1^\circ\text{C}$
- Reliable and quiet operation



Laser welding with COR-22 cooling system

Technical data

POWER

	Typ: 120 W	Typ: 160 W	Typ: 200 W	Typ: 300 W
Lasertype	Nd: YAG	Nd: YAG	Nd: YAG	Nd: YAG
Max. mean power	120 W	160 W	200 W	300 W
Pulse peak power	6 kW	7,5 kW	9 kW	13 kW
Max. pulse energy	60 J	80 J	100 J	150 J
Pulse duration	0,4 - 20 ms	0,4 - 20 ms	0,4 - 20 ms	0,4 - 20 ms
Pulse frequency	1 - 20 Hz (100 Hz)	1 - 20 Hz (100 Hz)	1 - 20 Hz (100 Hz)	1 - 20 Hz (100 Hz)
Focus diameter	0,2 - 2,0 mm	0,2 - 2,0 mm	0,2 - 2,0 mm	0,2 - 2,0 mm
Line voltage (V/Ph/Hz)	400/3/50	400/3/50	400/3/50	400/3/50

SYSTEM EQUIPMENT

Laser system

- Laser resonator inclusive resonator mechanics
- Laser rod
- Cavity
- Resonator mirror
- Safety shutter
- Beam expansion
- Mains supply including mains fuse
- Mains isolator
- Emergency stop
- Motor circuit breaker
- Low voltage power supply 24 VDC
- Interface with hardware monitoring function
- Lamp switch
- Industry controller for setting and display of power, pulse duration, pulse repetition frequency with external trigger via footswitch
- C-bank
- Cooling systems according to performance class: water/air, compressor cooling, water/water

Processing optics

- Variable beam expansion
- Beam deflection
- Safety glass
- LCD anti-glare
- Binoculars 10x
- Focussing lens

Operating unit

- Integrated control with 10" TFT display
- One-hand operation of all functions via joystick/touchpad
- Simple coordinates transformation
- Teach-in and synchronisation for forward feed and laser
- Circle and continuous path control with pulse synchronisation

Linear system

- z-axis for mounting the processing table, motor-controlled, lift 220 mm
- x-y processing table with motor
- Working plate x = 500 mm / y = 400 mm
- 350 kg load capacity
- Operation via manual controller
- Laser z-axis rise: 200 mm
- LED illumination
- Inert gas supply directly controlled via magnetic valve
- Stable welded frame construction for holding components
- Powder-coated sheet steel casing

Dimensions and weight

Dimensions: width 700 mm x height 1350 mm x length 1600 mm
Weight: 210 kg net

wORLD of LASER



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YOUR ENGINEERING QUALITY IS ALWAYS ON OUR FOCUS