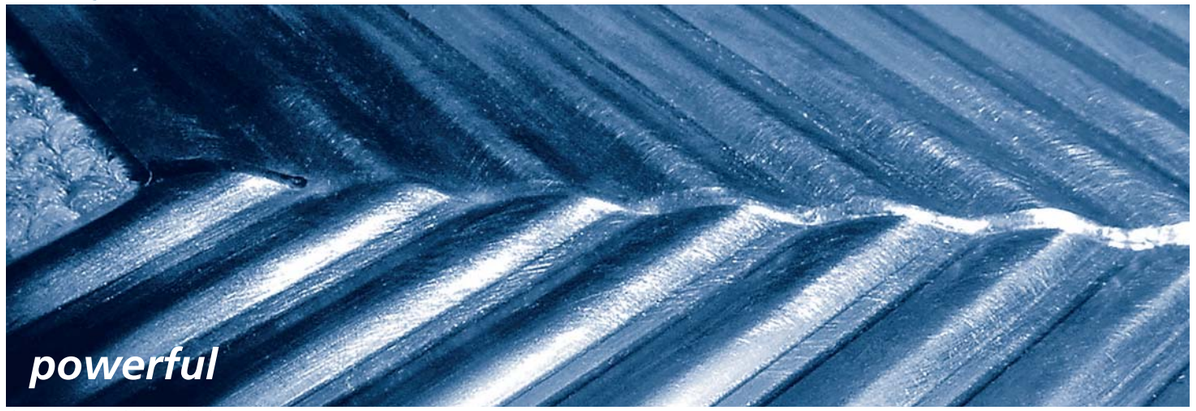


Photo: L&A Lasertechnik, Radebeul

Closed Systems

Photo: D-Sensors GmbH, Stahnsdorf

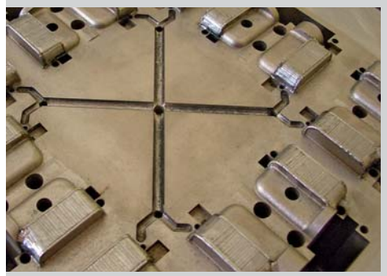
ALW

The spacious working chamber of the ALW allows workpieces of up to 350 kg to be processed, e.g. in tool and mould construction. With the 4-axis-motion system, the parts get precisely positioned underneath the laser beam, either with the joystick or automatically. With the tiltable optics, workpieces can be welded at a variable angle whereby the laser beam remains optimally aligned to the joint

Untill now the ALW has been used mainly for repair and deposit welding on tools and moulds. The new ALW 200/300 meets the increased demands of industries and trades-people to carry out ambitious welding jobs on materials such as Aluminium, precious metals, Titanium and sensitive alloys. Such jobs are in increasing demand, and in such areas the advantages of Alpha Laser's new resonator concept are becoming visible.

The new, stable steel construction of the ALW allows for high precision of the motion system, thus for extremely exact movement of the work-piece. The ALW is predestined for automatic applications. If several weldings of the same type are to be carried out in series, then programming by means of the WINLaserNC software realizes exact repetition with simplicity. We have placed great value, with the ALW, on creating a seated workstation with plenty of legroom, allowing the user to work in a relaxed and ergonomic position. This means that work can be carried out over longer periods of time without the user becoming tired, providing thus for full concentration on the welding task at hand.

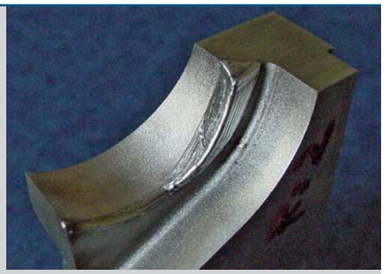
Repair of damaged contours on turbine flaps
(Photo: L&A Lasertechnik, Radebeul)



Multi-layer welding to re-shape an 8-cavity mould
(Photo: Jutz Lasertechnik GmbH, Wien)

Technical data	ALW 100	ALW 150
Laser		
Average power	100 W	150 W
Pulse energy	75 J	100 J
Peak pulse power	9 kW	10 kW
Pulse duration	0,5 – 20 ms	
Pulse frequency	Single pulse –15 Hz	
Welding spot diameter	0,2 – 2,0 mm, can be continuously set	
Focusing optics	150 mm	
Pulse shaping	Adjustable power-shaping within a laser pulse	
Control	User-specific operation with up to 128 data records	
Viewing system	Leica Trinocular with ocular for wearers of glasses, connection for CCD-camera	
Working chamber		
LxWxH in mm	800 x 850 x 500	
Working surface (WxD) in mm	600 x 600	
Max. workpiece weight	350 kg, centrally positioned	
Workpiece motion	motorized via joystick	
Scope of motion	X, Y: 180 x 180 mm, Z: 380 mm	
Mechanical dimensions		
LxWxH in mm	1220 x 920 x 1570	
Weight	380 kg	
Electrical connection	3 x 400 V / 50–60 Hz / 3 x 16 A	3 x 400 V / 50–60 Hz / 3 x 16 A
Options	> CNC control with CAD data input for automatic operation for manufacturing serial parts (*WINLaserNC*) > Micro-welding aperture for welding spot-Ø < 100µm > Tiltable turntable with chuck for horizontal to vertical rotation > Coaxial lighting for optimal illumination of cavities in the workpiece > Magnetic workpiece bracket for free positioning of workpieces > TV system for demonstrating and observing the welding process	

Technical data	ALW 200	ALW 300
Laser		
Average power	200 W	300 W
Pulse energy	90 J (max. pulse energy limited by the software)	90 J (max. pulse energy ltd. by the software)
Peak pulse power	9 KW	9 kW
Pulse duration	0,5 – 20 ms	
Pulse frequency	Single pulse –100 Hz (in automatic mode and under observation)	
Welding spot diameter	0,2 – 2,0 mm, can be continuously set	
Focusing optics	150 mm	
Pulse shaping	Adjustable power-shaping within the laser pulse	
Control	User specific operation with up to 39 parameter sets	
Viewing system	Leica Trinocular with ocular for wearers of glasses, connection for CCD-camera	
Working chamber		
LxWxH in mm	850 x 1080 x 450	
Working surface (WxD) in mm	600 x 475	
Max. workpiece weight	400 kg, centrally positioned	
Workpiece motion	motorized via joystick	
Scope of motion	X, Y: 490 x 400 mm, Z: 350 mm	
Mechanical dimensions		
LxWxH in mm	approx. 1400 x 1190 x 1500	
Weight	approx. 870	
Electrical connection	3 x 400 V / 50/60 Hz / 3 x 16 A	
Options	> Turn-and-tilt optics > Micro-welding aperture for welding spot-Ø < 100µm > Tiltable turntable with chuck for horizontal to vertical rotation > Magnetic workpiece bracket for free positioning of workpieces > Ergo Wedge > TV system for demonstrating and observing the welding process > Connection for regulated external cooling	



Changing a contour 1.2767
(Photo: L&A Lasertechnik, Radebeul)

Repairing a water cooled cylinder head of Aluminium
(Photo: L&A Lasertechnik, Radebeul)