AL-CROSS

MOBILE FIBER LASER SYSTEM FOR WELDING

The values of the AL-CROSS: Robust, user-oriented, mobile and powerful

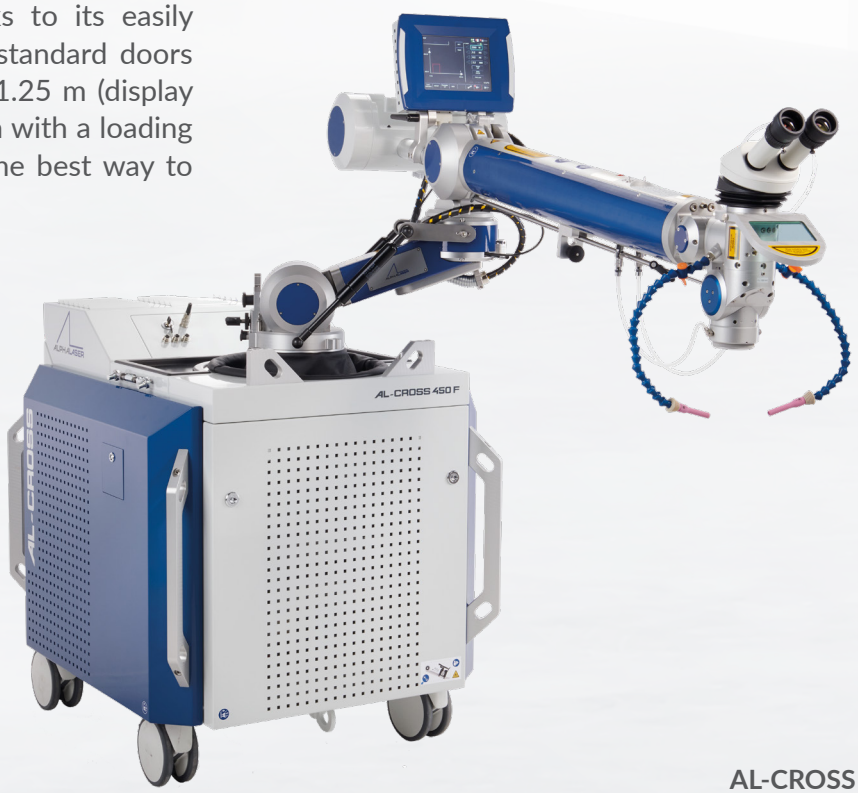
Its housing is **robust** with sturdy aluminum handles that provide shock protection for edges and housing and supports the easy movement of the system. There are integrated eyelets for loading and stowing, plus a hook for a winch.

User-oriented are the generous storage areas for this and that, as well as the specially designed holders that can be fixed to the hole pattern on the sides of the welding laser to accommodate welding wire, joystick, the foot pedal, safety glasses and tools. The 5th wheel on the laser enables the direct transport of the gas bottle, which is extremely practical.

The AL-CROSS is **mobile** thanks to its easily movable wheels. It fits through standard doors and with its transport height of 1.25 m (display can be tilted) into every small van with a loading height of at least 1.40 m. And the best way to experience the mobility of the arm, the lenses and the laser head is to try it out!

The fiber laser is **powerful**, because 450 W/600 W constant laser power are waiting for use. Welding is either pulsed or in CW mode. The welding behaviour can be influenced via integrated pulse shapes. The parameters are set either via the colour display or via the multifunction footswitch or the new AL-DRIVE control unit.

The display is titlable (orientable) in order to always have an optimal view and an integrated keyboard is within easy reach of the operator.



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And best of all: the "senior mode" which allows the operator to set or read the laser parameters without reading glasses.

With the new control unit AL-DRIVE, you steer the axes of the AL-CROSS, set them in semi-automatic mode and adjust the laser parameters. The pulse trigger, the R axis and the fast gear are located in the joystick. And whether you are left-handed or right-handed doesn't matter, because the buttons can be freely programmed.

Joystick AL-DRIVE

Technical data

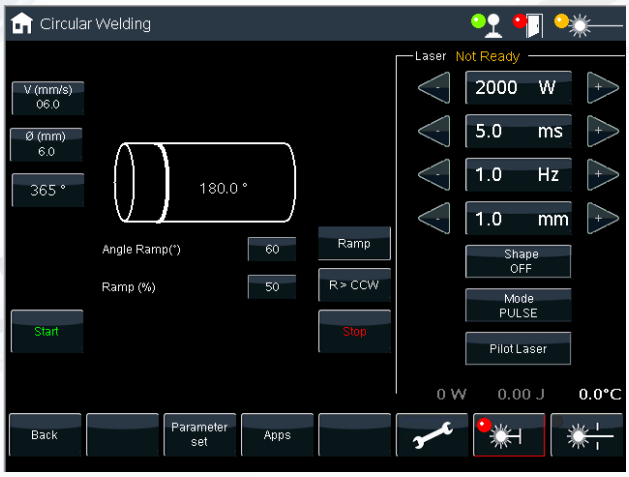
	AL-CROSS 450 F	AL-CROSS 600 F
LASER		
Laser type/wave length	*Fiber laser, 1,070 nm*	
Average power	*450 W*	*600 W*
CW power	*450 W*	*600 W*
Peak pulse power	*4.5 kW*	*6 kW*
Pulse energy	*45 J*	*60 J*
Pulse duration	*0.2 ms - CW*	
Pulse frequency	*Single pulse - 100 Hz*	
Beam parameter product at 50 µm	*2-3 mm * mrad*	
Operating modes	*Pulsed/CW*	
Welding spot Ø	*0.2-3.0 mm, optional 0.1-4.0 mm*	
Focusing objective	*150 mm, further according to lens data sheet*	
Pulse shaping	*Adjustability of power curve within a laser pulse*	
Display and operation	*Laser parameters set through touchscreen, multifunctional footswitch keyboard or/and AL-Drive*	
OBSERVATION LENS	*Leica microscope attachment with eyepieces for glasses wearers, 10 ×, optional 16 ×.*	
WORK AREA	*The processing head can be freely positioned anywhere in the room and can also be moved by a motor using the joystick*	
Movement speed (X, Y, Z)	*0-25 mm/s*	
Movement range (X, Y, Z)	*120 × 110 × 800 mm*	
lowest working point	*400 mm*	
highest working point	*1,900 mm*	
Arm deflection	*1,300 mm*	
EXTERNAL DIMENSIONS		
W × D × H	*790 × 1,590 × 1,250 mm*	
Weight	*480 kg*	
EXTERNAL CONNECTIONS		
Electrical connection	*3 × 400 V / 50-60 Hz / 3 × 16 A / 16 A*	
Option for optics cooling	*Internal water circuit for optics cooling, including connection possibility for an external cooler to support the cooling of the laser module.*	
OPTIONEN	*Turn and tilt objective | Rotary axis module with chuck, tiltable, for horizontal to vertical rotation | Crossjet | Camera system for demonstrating and observing the welding process | Ergo wedge*	

A software feature is a rotatable coordinate system to adapt to the workpiece surface. And then there are a few fine apps for...

Circular welding

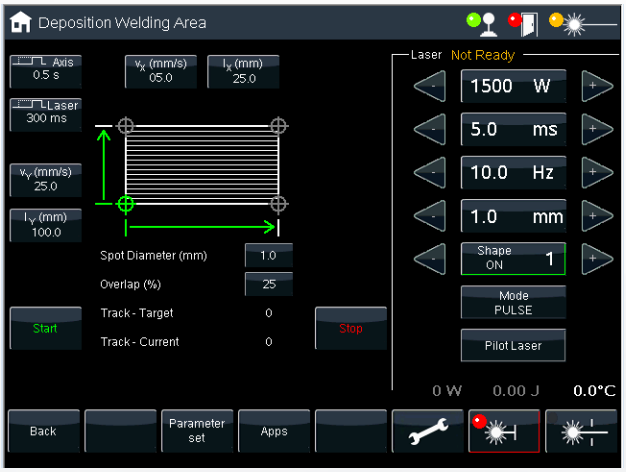
This allows two tubes to be butt welded together or, for example, a lid to be welded onto a sensor housing.

Another feature here is the ramp function, with which the power can be reduced over the pulse width at the end of the weld.



Welding a plane

With this app a square or rectangular area can be defined and then be welded on automatically.



Shaft welding

Here, a shaft (e.g. bearing seat) can be automaticlly welded on.

It is easy to enter the parameters for shaft diameter and length of the surface to be welded.

V2.0