

# Laser Welding Device AL-ARM 450F

MOBILE AND FLEXIBLE REPAIR WELDING FOR THE  
REWORK OF BODY COMPONENTS

The AL-ARM 450 F is very compact but equipped with a powerful 450 W fiber laser. It comes with a hand piece with an integrated wire feed (wire thickness 0.6 mm) with automatic feed, with which homogeneous welding can be carried out. A new feature is that the system can now be operated with the ALPHA LASER wire feed AL-DV. This allows you to feed wire endlessly from the wire spool. During the welding process, the welding seam width can be adjusted manually. The hand piece is attached to a 3.5 m long energy chain (optionally 9 m) and weighs no more than 1.5 kg. Thus, it is very easy to handle and flexible to use.

The AL-ARM welding system is completed by a 2D visualization. This is realized by means of (pass-through) 2D laser protection goggles, which show the surrounding and the welding task simultaneously. The welding area is enlarged and the process-relevant data, e. g. the crosshair, is superimposed.

Laser safety is of great importance: The integrated material recognition allows the welding process only when the hand piece is placed on the workpiece. This avoids direct laser radiation being emitted uncontrolled. The built-in laser safety circuit is approved by TÜV Süd.

By using the laser system AL-ARM, laser welding of pores, ripples and offset seams can be carried out in a mobile, fast and extremely flexible manner.



AL-ARM 450 F

## Technical data

LASER	
Laser type/Wave length	Fiber laser, 1070 nm
Average power	450 W
CW-power	450 W
Peak pulse power	4,500 W
Pulse energy	45 J
Pulse duration	0.2 ms - CW
Pulse frequency	Single pulse -100 Hz
Electrical connection	1-phase, 16 A
Operating modes	Pulsed/CW
Focal spot Ø	0.2-3.0 mm
Focal distance	120 mm
Pulse shaping	adjustable
Energy chain length	3.5 m, optional 9 m
Weight hand piece	1.5 kg
Weight AL 450 F	120 kg
External Dimensions W × D × H	550 × 600 × 1200 mm (height with swivel arm: 2000 mm)



Attachment M



Attachment A



Attachment A2



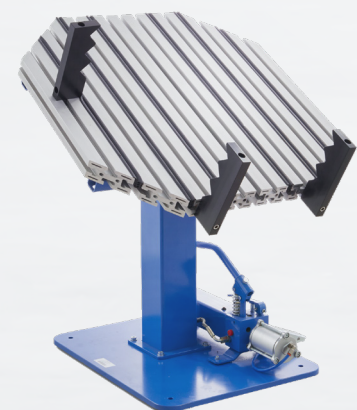
Attachment A3

## Scope of delivery

- Supply unit AL-450 OEM with fiber source, control and touchscreen
- Hand piece AL-AKO H
- Attachment M – for manual wire feed
- Attachment A – automatic wire feeder
- 2D visualization with Pass-Through
- Two cases for equipment

## Options

- Attachment A2 - automatic wire feeder  
bevel-gear drive with carriage for working on planes
- Attachment A3 - automatic wire feeder  
bevel-gear drive with tail wheel for welding in grooves
- Manipulator table with ALPHA LASER-rapid clamping system  
for quick and save fixing of work pieces for welding.
- Monitor + HDMI-cable  
for two-dimensional-representation of welding processes  
2D-visualization and monitor can be used simultaneously.



Manipulator table

V1.5