



## ALFLAK

### *Flexible Laser for deposit- and contour welding*

With the welding laser ALFlak deposit welding and welding of contours can be accomplished safely and efficiently on big machine components, design parts and injection- and forming dies. The new semi-automatic „User-Coordinate-Controller“ makes three-dimensional motions very easy.

The ALFlak is for combination with the laser MACO CL4 which offers a flexible adaption to the particular welding job.

Up to 300 Watts average power permits the use of filler metals with bigger diameters and offers a continuously homogeneous fusion with the base material.

The digital control allows finest positioning of the processing head over the work piece in 4-axis x, y, z and r (rotary axis is optional either in manual operation (by joystick) or semi automatically with preselected speed of the motion axes or in automatic mode with the unique WIN-Laser „UCC“-software which adapts the motion system to the work piece geometry.

From the vertical working position the processing head with binocular can be pivoted sideways up to 120° to the left and right allowing the laser beam to be deflected in nearly every position.

## OPTION

By using the turn and tilt optics the beam deflection can be increased by up to 45° from the vertical position. At the same time this beam optic can be turned continuously 360° in any desired position. The integrated LED-ring illumination provides best visibility in the working area.



## Technical Data

## ALFLAK mobil

### Supply Unit

(W x D x H)  
 Floor space (W x D x H)  
 Weight  
 Electrical supply

approx. 1050 x 1050 x 1200 mm  
 approx. 1500 x 2500 x 2000 mm  
 approx. 500 kg  
 3 x 400 V, 50/60 Hz, 3 x 16 A

### Laser MACO 200 / MACO 300 -CL 4

Laser crystal  
 Wavelength  
 Average power  
 Peak pulse power  
 Pulse energy  
 Pulse frequency  
 Pulse duration  
 Welding spot - $\varnothing$   
 Pulse shaping  
 Protection class  
 Cooling

Nd:YAG,  
 1064 nm  
 200 W / 300 W  
 9 kW / 10 kW  
 150 mJ - 90 J / 80 J  
 single-/continuous pulse - 100 Hz (automatic operation)  
 - 25 Hz (under observation)  
 0,5 ms - 20 ms  
 0,2 mm - 2,0 mm  
 adjustable power-shaping within the laser pulse  
 laser class 4  
 air cooled

### Motion system, motorized

Machine axes  
 Working area (X, Y, Z)  
 Travel (X, Y, Z)  
 Arm movement  
 Distance  
 Lowest working point  
 Highest working point

3 or 4  
 approx. 1500 x 1000 x 1000 mm  
 approx. 500 x 450 x 350 mm  
 1500 mm  
 200 mm  
 1500 mm

### The system consists of (standard equipment):

- Travel unit
- Laser MACO CL 4 with processing head and binocular Leica
- UV-Protection
- Multifunctional foot control
- Illumination
- WIN Laser „UCC“ software
- Remote control

### Options

- Turn- and tilt optics
- Tilt able turntable
- TV system

### Weldable Materials

- Highly alloyed cold and hot work steels
- Bronzes, copper alloys
- High grade steels
- Steel- and grey cast iron alloys
- High tensile aluminium alloys
- Titanium alloys
- Nickel
- Precious metals such as platinum, gold

### Repairs and changes on:

- Plastic injection die-cast tools
- Aluminium die-casting moulds
- Pressing, cutting and stamping tools
- Large size mechanical parts
- Laminator moulds and flasks for casting
- Sculpture and design objects