



MACO

The spacious one

The large working chamber of the MACO offers lots of space. Workpieces up to 350 kg in weight can be handled by the MACO, e.g. for toolmaking and mould-making. With the 4-axis motion system the workpieces can be positioned precisely under the laser beam by joystick or in automatic mode. With the tiltable optics, workpieces can be welded at a variable angle with the laser beam aligned optimally to the joint. The innovative CPC (Constant Power Control) technology makes welding of aluminium and nitrated steels easier and yields better quality. With CPC, the initial-pulse and consecutive-pulse behaviour of the Nd:YAG welding laser is optimised so the laser energy is coupled efficiently into the material. The advantages: no material splashes due to strong initial pulses. No gas bubbles or inclusions and improved welding performance.

Technical Data

MACO 100

MACO 150

Laser

Laser crystal	Nd: YAG	Nd: YAG
Wavelength	1064 nm	1064 nm
Average power	100 W	150 W
Pulse energy	100 mJ - 75J	100 mJ - 100J
Peak pulse power	9 kW	10 kW
Pulse duration	0.5 - 20 ms	0.5 - 20 ms
Pulse frequency	single pulse - 20/30 Hz	
Welding spot Ø	0,2 - 2,0 mm, continuously variable	
Focussing lens	150 mm	150 mm
Pulse shaping	adjustable power-shaping within the laser pulse	
Control	user-specific operation with up to 128 parameter sets	

Viewing optics

Leica trinocular with eyepieces for spectacle wearers, tiltable, connection for CCD camera

Working compartment

Working compartment L x W x H	800 x 850 x 500 mm	800 x 850 x 500 mm
Working plate W x L	600 x 600 mm	600 x 600 mm
Workpiece weight	350 kg max., central	350 kg max., central
Workpiece motion	motorised, via joystick	motorised, via joystick
Positioning path	z: 400 mm	z: 400 mm

Mechanical dimensions

L x W x D	920 x 1220 x 1570 mm	920 x 1220 x 1570 mm
Weight	approx. 380 kg	approx. 380 kg

Electrical supply

3 x 400 V, 50-60 Hz, 3 x 16 A

Cooling

air cooled with internal cooling water circuit

Options

- > CNC control with CAD data input for automatic operation for manufacturing serial parts (WIN Laser SW)
- > Micro-welding
- > Coaxial lighting for optimal illumination of cavities in the workpiece
- > tiltable turntable with chuck for horizontal to vertical turning
- > Magnetic workpiece, clamping for free positioning of workpiece
- > TV-system for demonstrating and observing the welding process