

THE NEXT GENERATION

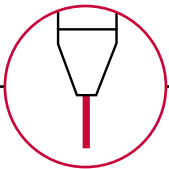
OF LASER WELDING AND BRAZING WITH
TACTILE SEAM TRACKING



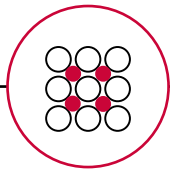
ALO4 BASIC

HOW IT WORKS

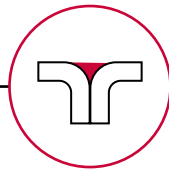
The filler wire required for the seam during joining also serves as a mechanical sensor. The filler wire is continuously pressed into the joint by the swivel axis and melted in the laser focal point; it positions and guides the processing head precisely over the seam. The additional wire thus forms a wear-free, self-renewing guide tip - directly at the focus of the laser and with consistently high accuracy.



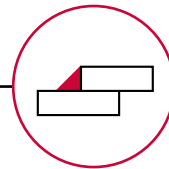
Laser brazing and
laser welding



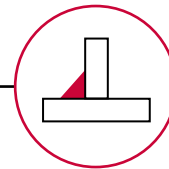
Steel and
aluminium alloys



Y-seam at
flare joint



Fillet welds at
lap joint



Fillet welds at
T-joint

PRODUCT BENEFITS

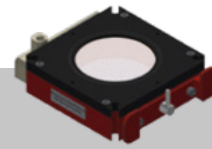
- ✓ **Stable process control** and highest seam quality through automatic compensation of component tolerances by tactile seam tracking with filler wire.
- ✓ **Industry 4.0** as the new standard for connectivity and intuitive user interfaces with recipes for operating and configuring the optics.
- ✓ **Lateral tolerance compensation** in the process by motor-current controlled swivel axis based on the proven principle of the ALO1 for simple brazing and welding applications.
- ✓ **Easy handling** thanks to the optional integration of external functions such as wire feeder, media control, QA systems and direct control of the laser source.
- ✓ **Shortened start-up times**, faster optics change-overs and more efficient service thanks to plug & play in the hardware and interface architecture.
- ✓ **Individual device configuration** thanks to the modular scapacs® building block system and expandability over the entire product life cycle.

SCAPACS®-MODULES



SWIVEL AXIS BASIC

- Motor current-controlled, powerful swivel axis with reduced sampling position clearance
- Optimised for continuous use even under high mechanical loads



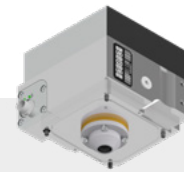
PROTECTIVE GLASS MONITORING

- Continuous monitoring of the protective glass on the process side
- Based on the patented temperature evaluation algorithms



TELESCOPIC ARM BASIC

- Height tolerance compensation with defined spring force
- Variants: basic, basic-fix (with brakes)



DIGICAM

- Digital setup & monitoring camera
- Integrated crosshair

TECHNICAL DATA

Wavelength	900 – 1080 nm
Laser power	< 6 kW up to 10 kW *
Laser protection class	4
Image scales	1:1.0 up to 1:5.3
Total angle of acceptance	up to 485 mrad*
Focal lengths	141 - 250 mm
IP class	Processing optics: IP60 (up to IP64 possible by sealing the laser light cable receiver) Switch cabinets: IP54
Voltage supply	24 V / 10 A provided by the customer or 230 / 400V 4 A using the controller power-supply box
Dimensions (L x W x H) in mm	approx. 350x 250x 580*
Weight	Processing optics: approx. 15 kg Controller power-supply box: approx. 25 kg

* depending on the configuration