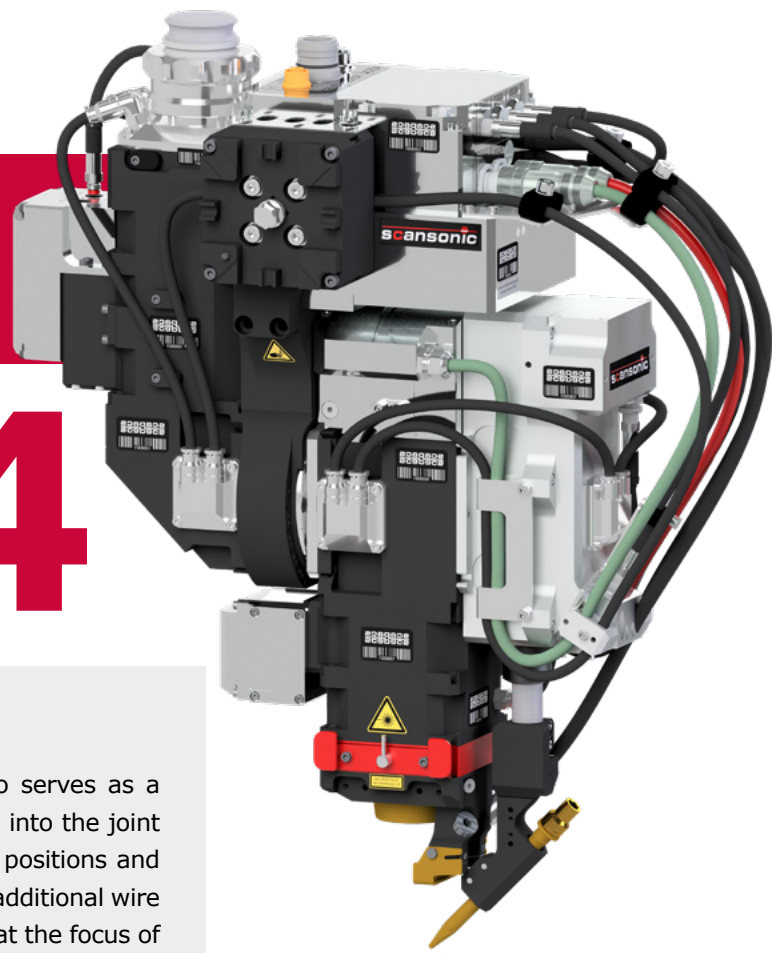


THE NEXT GENERATION

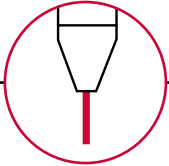
OF LASER WELDING AND BRAZING WITH
TACTILE SEAM TRACKING



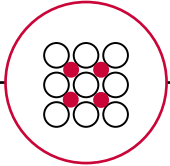
ALO 4

HOW IT WORKS

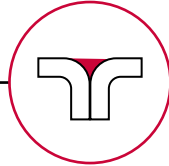
The filler wire required for the seam during joining also serves as a mechanical sensor. The filler wire is continuously pressed into the joint by the swivel axis and melted in the laser focal point; it positions and guides the processing head precisely over the seam. The additional wire thus forms a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



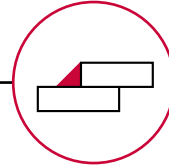
Laser brazing and
laser welding



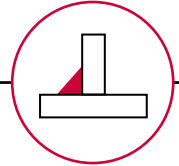
Steel and
aluminium alloys



Y-seam at
flare joint



Fillet welds at
lap joint



Fillet welds at
T-joint

PRODUCT BENEFITS

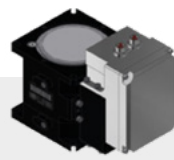
- ✓ **Stable process control** and highest seam quality through automatic compensation of component tolerances by tactile seam tracking with filler wire.
- ✓ **Integrated 3D weight compensation** and force control guarantee high-precision control of the wire pressure forces and enable a processing space of 360°.
- ✓ **Various sampling positions** (left / right applications) and different seam geometries are possible in one station thanks to the parametrisable motorised lateral adjustment.
- ✓ **Shortened start-up times**, faster optics changeovers and more efficient service thanks to plug & play in the hardware and interface architecture.
- ✓ **Industry 4.0** as the new standard for connectivity and intuitive user interfaces with recipes for operating and configuring the optics.
- ✓ **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.
- ✓ **SCeye® system** for highly automated and intelligent process monitoring, as well as for recording all videos and data from the process.
- ✓ **Individual device configuration** thanks to the modular scapacs® building block system and expandability over the entire product life cycle.

SCAPACS®-MODULES



SWIVEL AXIS

- Increased drive dynamics and more torque offer the possibility of 90 ° angles of the swivel axis during processing
- Optimised for continuous use even under high mechanical loads



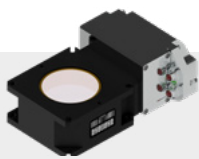
AUTOFOCUS

- Automatic tracking of the horizontal focus position
- Increased operational readiness thanks to temperature monitoring and position control



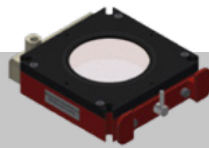
TELESCOPIC ARM

- Height tolerance compensation with improved integrated force sensors
- Variants: Standard, Fix (with brakes), Motion (motorised)



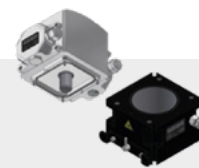
FOM-MOTION

- Motorised lateral beam adjustment
- Parametrisable using recipes and fieldbus



PROTECTIVE GLASS MONITORING

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



SCEYE®

- Based on the patented temperature evaluation algorithms
- Quality assurance: Envelopes, pore detection and beam-wire-position

TECHNICAL DATA

| | |
|---|--|
| Wavelength | 900 – 1080 nm |
| Laser power | < 6 kW up to 10 kW* |
| Laser protection class | 4 |
| Image scales | 1:0.9 up to 1:5.4 |
| 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. 20 kg Controller power-supply box: approx. 25 kg |

*depending on the configuration