

II-VI

Laser Processing Heads

RSK

FORCE FOR PRECISION

For high-quality welding connections of sheet metal packages one hundred percent reliability in focus guidance is an absolute must. This is ensured by the II-VI HIGHYAG RSK laser processing head. An integrated pressure roller or pressure finger clamps the workpiece and thereby simultaneously takes over the guidance of the focus position on the workpiece.

With an infinitely variable pneumatically controlled force (max. 100 daN), the roller or finger runs over the sheet metal package, thereby precisely following the shapes of the workpiece. Direct coupling of the pressure finger with the focus achieves an "auto-focus control", which significantly simplifies the process set-up.

Laser Processing Head RSK

System Features:

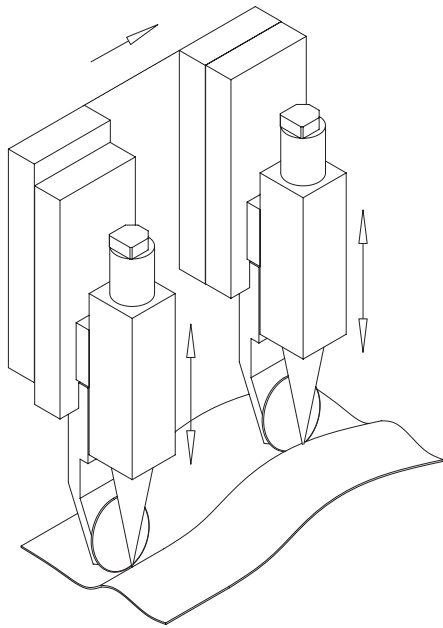
- Optimized optical system in modular design with straight or angled beam delivery system
- Integrated clamping system with linear pressure unit and clamping modules pressure wheel, contact finger, double pressure wheel or double pressure finger
- Simple replacement of the cover slide via a cover slide drawer with plug-in monitoring Cross jet for a long cover slide service life
- Interface to PLC

Applications:

- Laser welding multiple sheets (overlap joint)
- A wide range of product-specific joint and component geometries

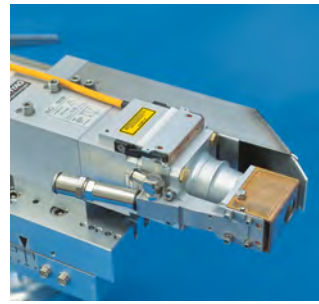
Modules

RSK in Action



During the welding process with the RSK the pressure roller follows the contour of the workpiece. In doing so it pneumatically presses down with a constant force. As roller and optics are mechanically connected by the linear motion unit an exact Z position of the focus is thereby guaranteed.

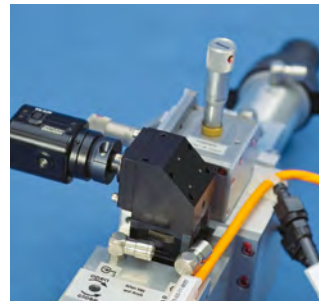
With a constant linear robot movement the linear motion unit compensates for larger tolerances of the workpiece and inaccuracies of the robot.



Laser focus heads BIO and BIMO: best imaging quality for heavy-duty applications



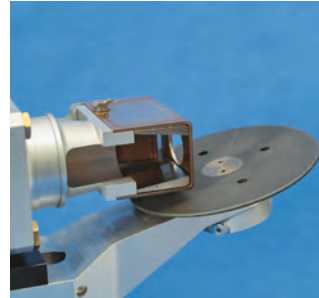
Cover slide drawer and cover slide monitoring: quick and easy cover slide exchange



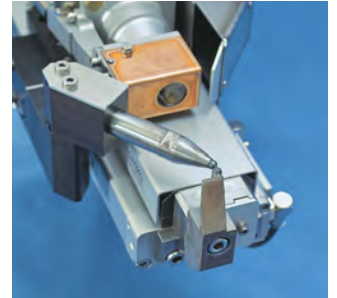
CCD camera with viewing system: visualizing the process in set-up and production



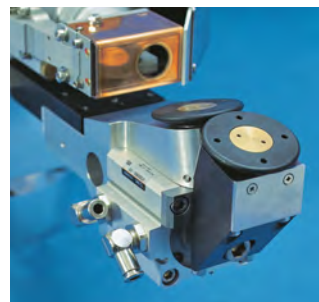
Shielding gas nozzle: for welding sensitive materials



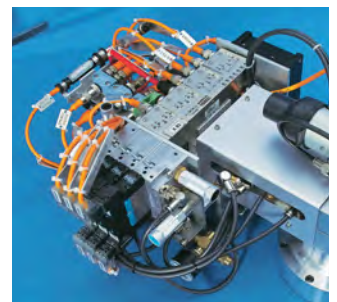
Cross jet: for an extended cover slide life time



Double pressure finger clamping module: best weld quality using ZINCWELD technology



Double pressure wheel

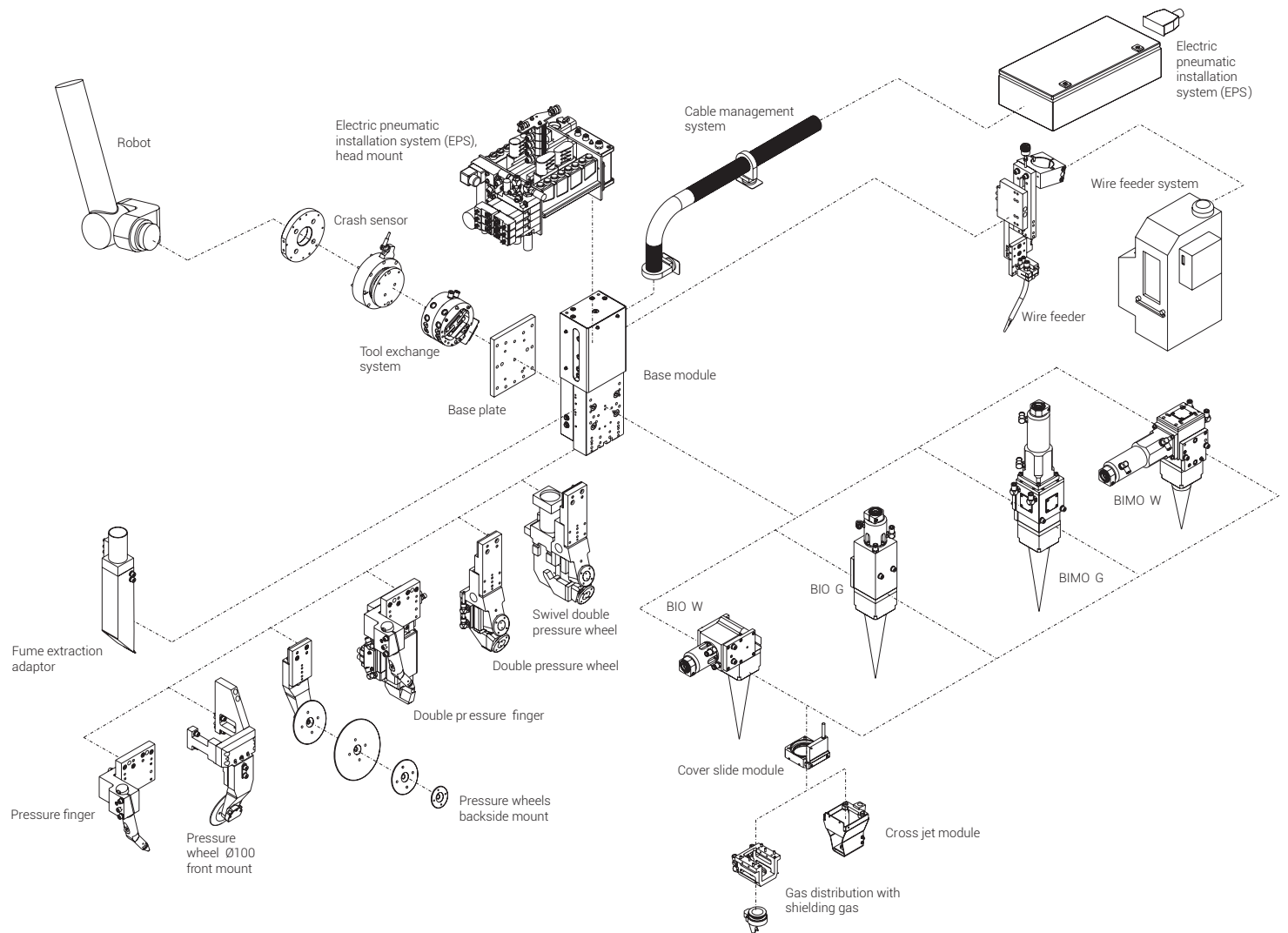


Electric pneumatic installation system EPS: comprehensive PLC and supply media interface

Laser Processing Head RSK

Modular Design

Integrated Clamping Technology



Laser Processing Head RSK

Technical Data

Optical System

Focusing system (magnification @ focal length)	0.75 @ 150 mm, 1.0 @ 200 mm*
Collimation system (magnification @ focal length)	1.5 @ 200 mm, 1.8 @ 160 mm, 2.0 @ 130 mm*
Max. average laser power	6 kW
Max. beam parameter acceptance (half angle) of laser light exiting fiber	97% power content within 125 or 210 mrad
Wavelength	800 - 950 nm, 1020 - 1080 nm
Transmission	> 95%
Core diameter laser light cable	300 - 1000 µm (typical)
Laser light cable receiver	HIGHYAG LLK, LLK-Auto, Trumpf LLK-B, Optoskand QBH*

Linear Motion Unit

Max. clamping force	1000 N
Max. stroke	30 mm

Dimensions

WxDxH, examples:

RSK 0° DR (double pressure wheel)	Approx. 321 x 315 x 889 mm ³
RSK 0° DF (double pressure finger)	Approx. 337 x 315 x 872 mm ³
RSK 0° R (pressure wheel)	Approx. 321 x 315 x 775 mm ³
RSK 90° F left (pressure finger)	Approx. 321 x 321 x 775 mm ³

Weight:

RSK DR	Approx. 28 kg
RSK DF	Approx. 31 kg
RSK R	Approx. 33 kg
RSK F	Approx. 38 kg

Supply

Electrics	DC 24 V, 2.5 A*
Pneumatics	≤1.0 MPa Cross jet: ≤1.0 MPa, approx. 500 l/min @ 0.6 MPa
Cooling	Flow rate 2 l/min, temperature 15 – 35 °C (avoiding condensation)
PLC / field bus system	Hard wired *

*Others on request