LSK05-10

Laser welding head - Integrated beam modulation

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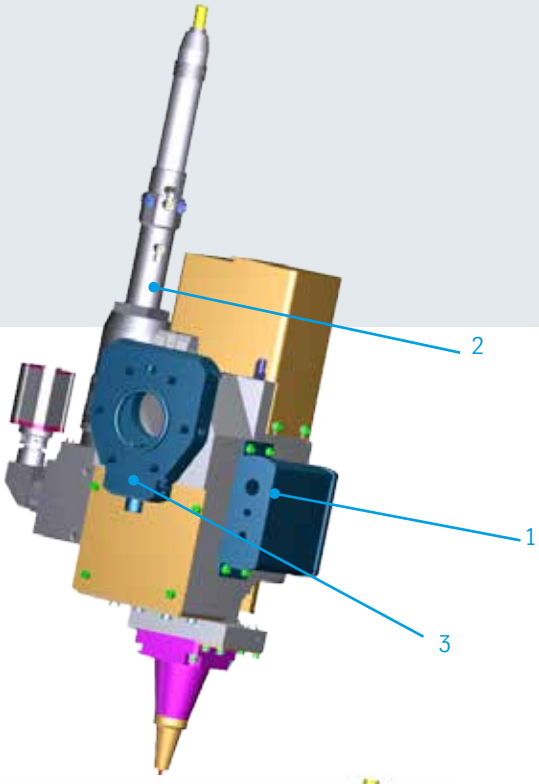
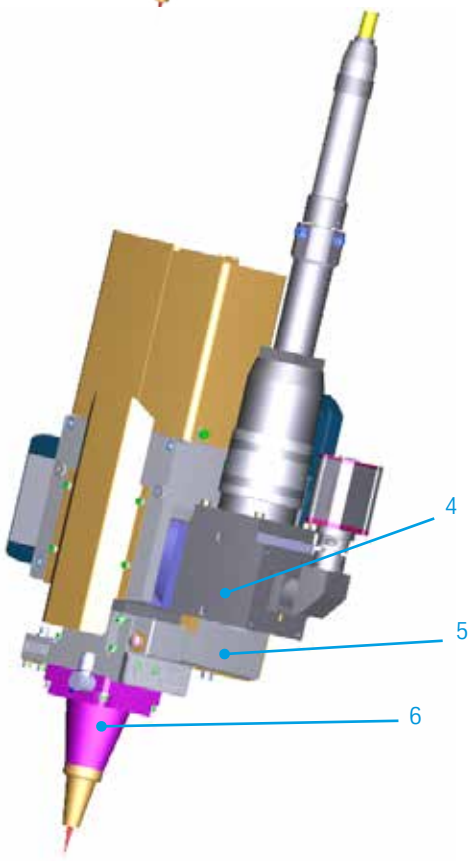


Description

- use of functions and innovations of the LSK05 in combination with modern beam guiding
- high flexibility by a multitude of seam shapes
- a pointed heat input at ultra-high strength steels (weldability)
- minimisation of distortion, at once increasing of seam lenght
- essential improving of zinc degasification at galvanized sheet metals
- welding of aluminium alloys (weldability)
- high accessibility through
  - optional clamping system with different tools
  - slim design
- use of diode, disc or fiber laser
- realisation of very small flange widths



1 – monitoring for protection glass
2 – plug for laser light cable (standard: LLK-D)
3 – connection to robot or machine
4 – laser-optic incl. scan unit and C-mount adaption
5 – drawer for protection glass
6 – circular-jet
Options: clamping system - camera for seam tracking
exhaust system - camera for process observing

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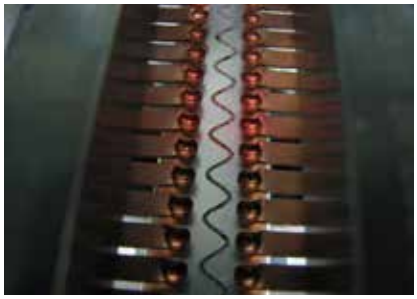
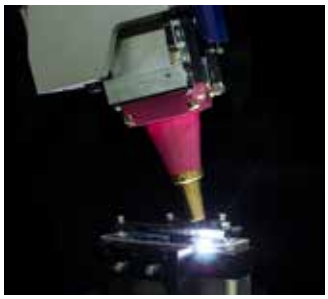
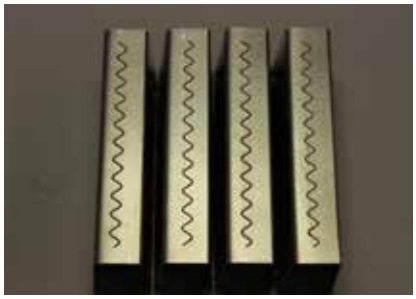
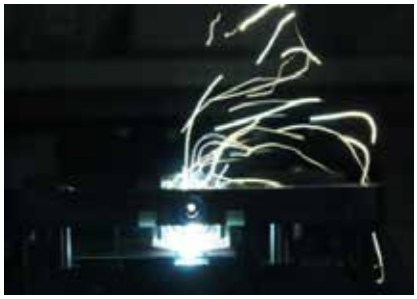
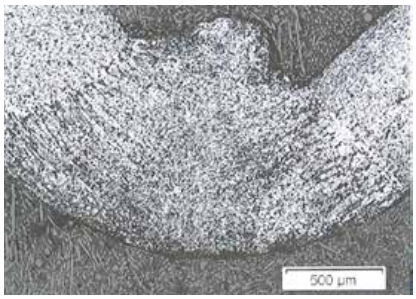
Examples

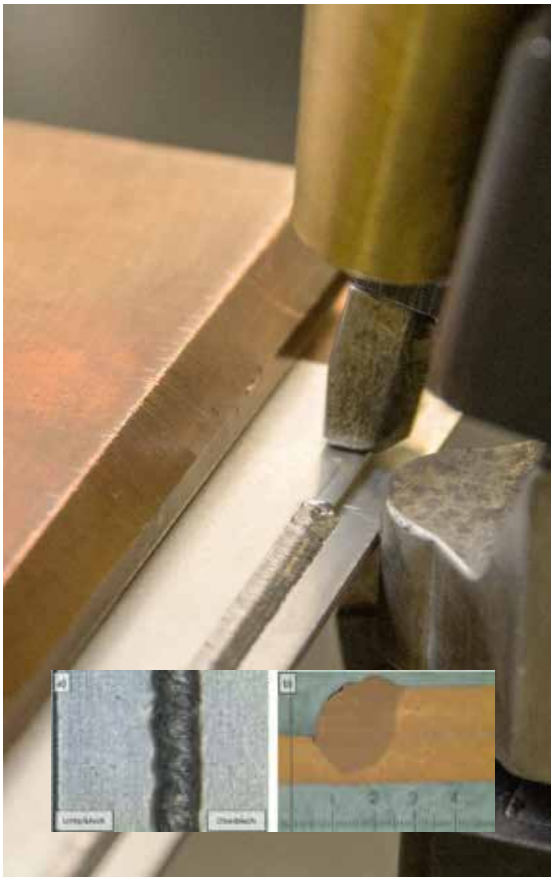
Example for process parameter (beam guiding)

Laser power	4 kw
Robot speed	30 - 70 mm/s
Frequency	3 - 15 Hz
Scan width	1 - 4 mm*

Example for process parameter (beam shaping)

Laser power	4 kw
Robot speed	20 - 80 mm/s
Frequency	100 - 600 Hz
Scan width	0,1 - 4 mm*

*depending from frequency and scan width
(more at request)



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Technical data

General data

Dimension (L x W x H)	[mm]	300 x 225 x 710
Mass base module for diode laser	[kg]	ca. 23
Mass base module for disc and fiber laser	[kg]	ca. 15
Mass tool	[kg]	-
Environmental temperature	[°C]	+15 bis +35
Relative air moisture at production site (no condensation)	[%]	to 85
Optic for laser power (other at request) Laser beam class 4	[kW]	≤ 4
Focal distance	[mm]	200
Optic for diode laser		Co. Laserline
Optic for disc and fiber laser		Co. Trumpf
Wave length laser light (diode laser)	[nm]	880 - 1080
Wave length laser light (disk and fiber laser)	[nm]	1030 - 1080
Core diameter of used laser light cable	[µm]	≤ 600
Diameter of focus at 600 µm laser light cable	[mm]	0,6
Diameter of focus at 100 µm laser light cable	[mm]	0,1
Reproduction scale		1:1

Beam modulation with 1D scan unit

Frequency (depending from amplitude)	[Hz]	3 - 600
Amplitude (up to 15 mm on request)	[mm]	0 - 4
Only on request: laser power regulation	[V]	0 - 10

Pneumatically interface

Supply of compressed air 1 plug in	for Tube	[mm]	6
Air pressure		[MPa]	0,6
Compressed air unoiled, dry	filtered to	µ	0,1
Usage of compressed air at 0,6 MPa max.		[l/min]	ca. 350

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Technical data

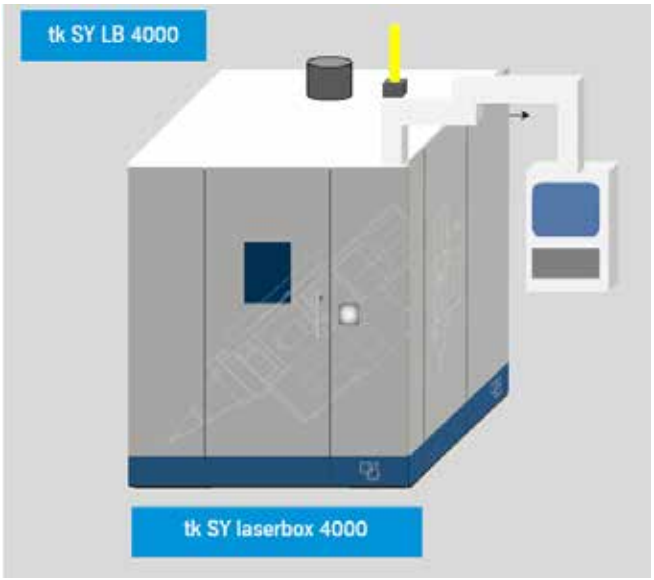
Cooling water interface

Plug in for cooling water	2x Tube	[mm]	6
Connection at LSK	Fa. Rectus		21SBTF04DPX
Quality of cooling water	deionized water	µS	ca. 1 - 200
Temperature of cooling water **Avoid of condensation !**		[°C]	+15 to +30
Min. cooling power for each system		[W]	>750

Electrical interface

Fieldbus plug		
Power supply for digital in/output - modules at valve block	[V]	24 DC
Control voltage	[V]	24 DC
Power Input	[W]	30
Degree of protection		IP 54

Option



thyssenkrupp System Engineering (tk SY) Laser welding machine for CAN welding

Contact

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