

Laser Surface Engineering LSE 4Nd:YAG-Laser System

Sulzer Innotec

A pulsed Nd:YAG-Laser with 150 W average output power is available at Sulzer Innotec beside the CO₂-Laser and the Fiber-Laser, both operating in the kilowatt range, The hand-operated Nd:YAG-Laser system is a sensible extension to the CNC-controlled large-scale equipment and makes on-site operation possible.

Handling System

Handling system

- 3 axes X-Y-Z with programmable feed rate
- Range of laser arm 1200 mm
- Freely turnable and tiltable processing head and sight

Laser

Pulsed Nd:YAG-Laser

- 150 W average output power
- Max. puls power 10 kW
- Max. puls frequency 20 Hz
- Wavelength 1064 nm



Applications

Technology based

- Hand-operated laser welding
- Conduction welding
- Keyhole welding up to 2 mm weld depth
- Laser metal forming i.e. build-up welding or cladding with wire as filler material
- Fe- and Ni-based filler material available

- On-site operation possible for repair of large molds and other machinery which is difficult to move

Geometry related

- Surface coating as well as weld build-up of edges on complex part geometries
- Welding of small-sized sheet metal structures
- Welding of small-sized pipe joints
- Laser application on small-sized as well as large-sized parts with any part orientation in the work space

Market based

- Mold tool and forging die manufacturing
- Special machine manufacturing
- Turbine refurbishment

Our Partners

Highly qualified experts at Innotec are our partners for

- One-stop-shop manufacturing solutions, manufacturing and welding engineering and consulting
- Mechanical precision workshop and prototyping
- Conventional welding processes and heat treatment
- Testing and metrology
- Material and surface technology
- Corrosion and corrosion protection, friction and abrasion
- Material and failure analysis

Equipment



1.5 kW Fiber-Laser system
5+2 CNC-axes
X-Y-Z 0.5 x 0.5 x 0.7 m
B,C,D,E ±180°,360°,360°,±90°
On-site operation possible



2 kW CO₂-Laser system
Gantry robot, 6 CNC-axes
X-Y-Z 2.7 x 1.8 x 0.9 m
A,B,C 360°,±90°,360°
Integrated digitizing system



150 W Nd:YAG-Laser system
Peak pulse power 10 kW
Boom range 1.2 m
Hand operated
On-site operation possible

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