

Laser Surface Engineering LSE

CO₂-Laser System

Sulzer Innotec

The CO₂-Laser operates with gas as active laser medium and is still most frequently used in industrial applications. Due to its very good beam quality it is well suited for keyhole welding applications as well as laser metal forming i.e. build-up welding and laser cladding applications. Sulzer Innotec is doing business with its CO₂-Laser system since 1988 assuring the state of technology by periodic refits.

Handling System

Gantry robot

- 6 CNC-axes:
 - 3 axes translative X-Y-Z
2.7 x 1.8 x 0.9 m
 - 3 axes rotatory A-B-C
360°, ±90°, 360°
- A-axis stepless tiltable by 90° between horizontal and vertical operation
- Round table for up to 1.8 m part-Ø
- CNC-control with 5-axes simultaneous welding ability
- Offline programming ability
- Integrated digitizing system



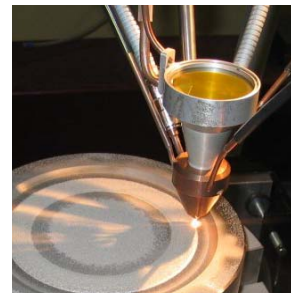
Laser

CO₂-Laser

- 200 W - 2.2 kW output power
- Wave length 10600 nm
- CW or pulse operation

Applications

- Conduction welding
- Keyhole welding up to 4 mm weld depth
- Laser metal forming i.e build-up welding
- Laser cladding
- 5-axes simultaneous welding
- Laser applications on Fe-, Ni-, Co-based materials
- Particularly suitable for large part handling



Stellite™-cladding of an annulus area



Keyhole welding on large sheet metal parts

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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