



ALOttec Dresden

Technology for laser wire cladding

ALOwire

CLADDING AND REPAIR

ALOwire

ALOtwin



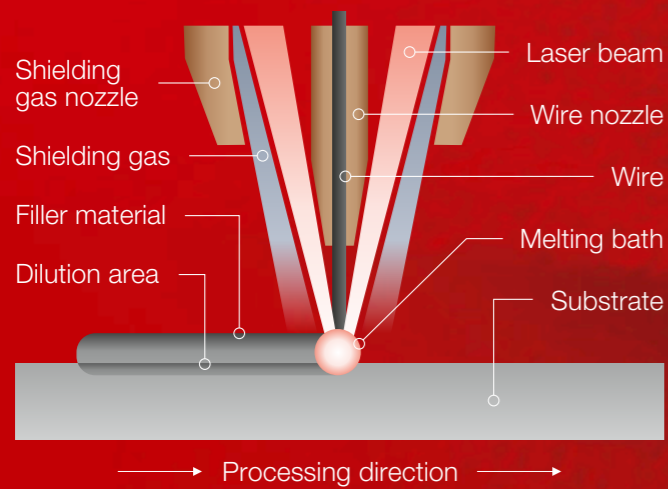
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ALOWire

In laser cladding by wire **ALOWire**, the laser beam is split into individual beams with the help of optical elements. These create a local melt pool on the surface of the base material. A wire is fed concentrically into the melt pool.

Due to the lower energy input compared to conventional arc welding processes, the components experience less distortion and minimal structural transformation.

Cladding with **ALOWire** enables direction-independent process control and convinces with 100% material utilisation, high productivity, processing of large components, cleanliness of the process and the possibility of cladding in all positions.



ALOWire

ALOTwin

Roll it – laser on:

The laser wire cladding process on our Youtube channel clearly documented.



Technology for all component shapes

Depending on the function and application of the component, different laser optics ensure the optimum cladding results.

ALOWire

ALOWire is a processing optic for laser wire cladding for large components and convinces with a high build-up performance. Due to the coaxial wire feed, a direction-independent process is achieved. A variety of filler materials and the hot wire process enable a wide range of applications.

Application: Coating of 3D surfaces for corrosion and wear protection, repair of worn parts, design modification or correction of production failures and additive manufacturing of 3D parts.

ALOWin

Two technologies – laser powder cladding and laser wire cladding – with a direct-diode laser and without any tool change.

The hybrid optic for wire and powder scores with very good shielding gas coverage, high application rate due to the hot wire process and ensures near-net-shape production due to clean seams and fine structures.

Application: Additive manufacturing of 3D parts and demand-driven production of spare parts.



Advantages of laser wire cladding

The advantages are convincing: high precision and firmly adhering connection through metallurgical bonding at high application rates.



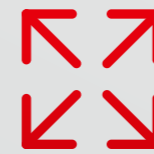
Quality assurance during the processes



Hardness up to 66 HRC



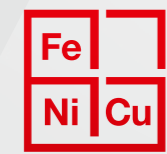
Minimal distortion due to small heat input



Direction-independent process control



Energy efficient and environmentally friendly



Optimum filler materials



Deposition rate up to 1.5 kg/h



User-friendly due to high working safety

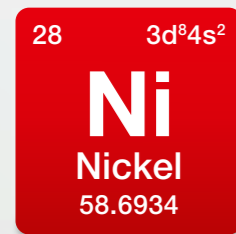


Small batches and single pieces

100% material exploitation · clean process · good surface quality

Wire materials for all applications

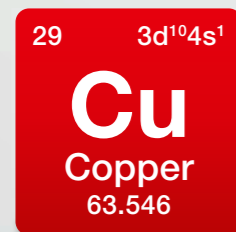
Wide range of versatile solid and cored wires, which are also used in arc welding.



- / High toughness
- / High corrosion resistance
- / Ideal as buffer and filler material

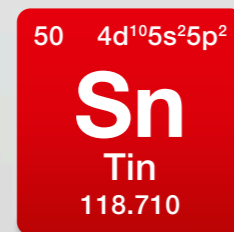


- / Flexible and economical
- / Hardness up to 65 HRC
- / Wear resistance due to W, V
- / High corrosion resistance due to Cr, Ni



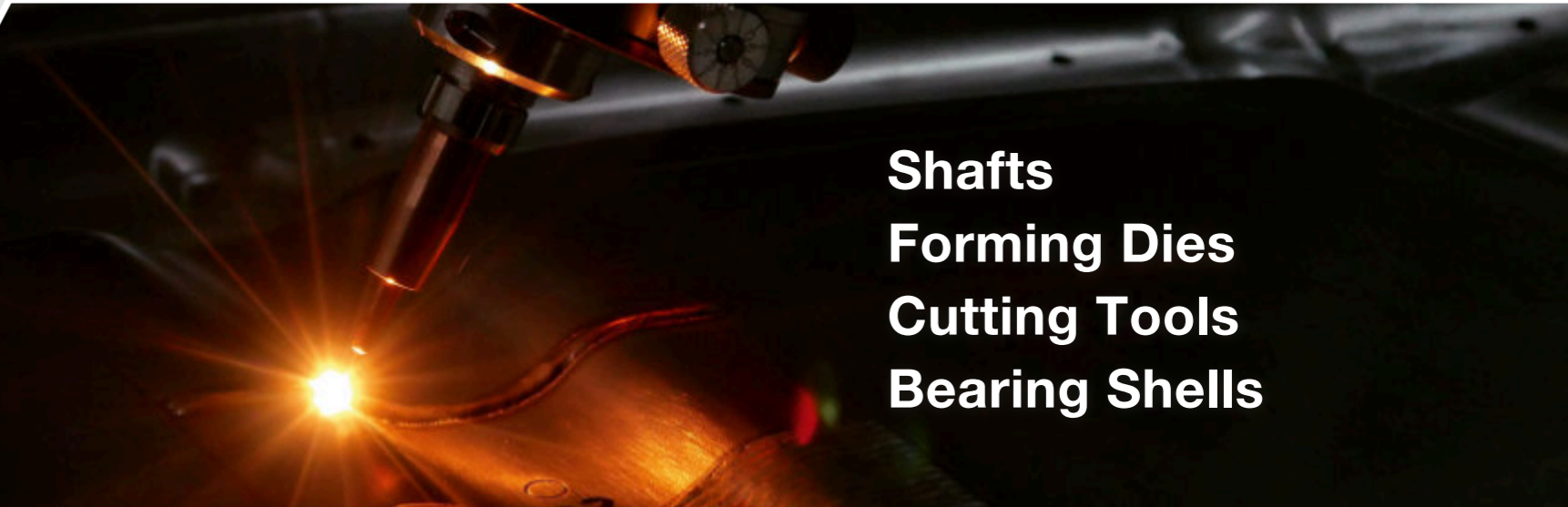
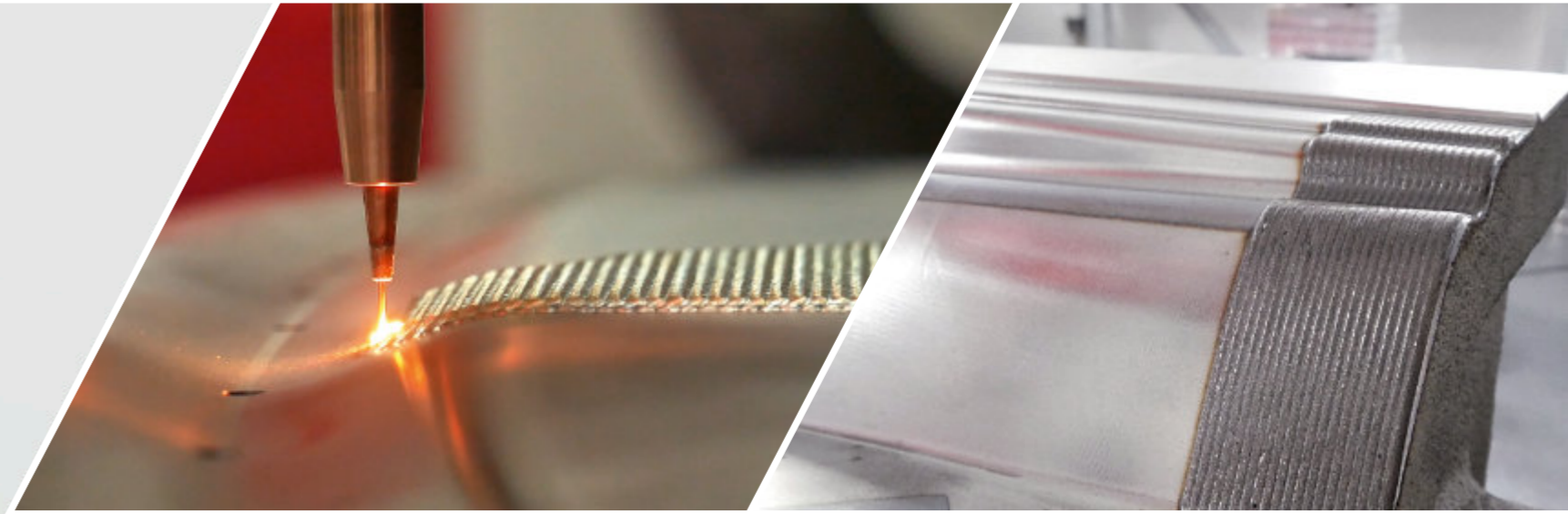
- / Good sliding properties
- / High corrosion resistance
- / High resistance to cavitation

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Applications with ALOWire

The application options are numerous: corrosion and wear protection, repair, design modification or even additive manufacturing of 3D components.



Shafts
Forming Dies
Cutting Tools
Bearing Shells

/ Wire as filler material

Different types of laser cladding wires – including nickel-based, copper-based and iron-based alloys – ensure optimal cladding according to the desired requirements, such as wear resistance, corrosion resistance and temperature resistance.

/ Applications

Laser wire cladding is used for the application of wear protection layers on heavily stressed components. Furthermore, it is used for the repair of components or for the simple and fast modification of component geometries in machine, tool and mould industry as well as for the additive manufacturing of 3D components.

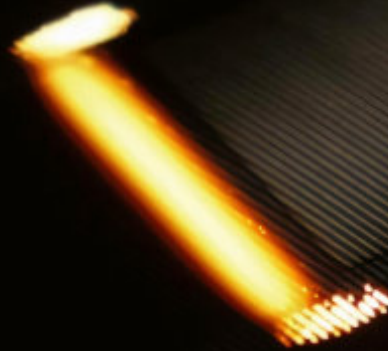
System engineering

Laser systems for use in tool, mould and machine making



Contract manufacturing

Laser hardening, repair and coating as well as additive manufacturing



ALOtec Dresden is a high-performance technology partner for the metalworking industry specialised in the manufacture of customized and turnkey robotic systems for laser hardening and laser cladding for over 25 years.



In addition, **ALOtec Dresden GmbH** offers services in the fields of laser hardening and laser cladding with powder or wire (Job-Shop-Production). These laser material processes can also be carried out – through the innovative **ALOflex** system – on-site at the customer's premises.

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25 YEARS
ALOtec Dresden