

***LASERVORM***

*Laser Machines • Laser Processing • Wear Protection*

# LIGHT-BASED INNOVATIONS



Our business is precision and our passion is innovation. This is why we have been working with laser technology for more than 15 years. Whether laser job order production or laser machine construction, we are specialists capable of advancing your company at light speed. Modern machinery, in-depth expertise, experience and creativity are the recipe for our success. Why not take advantage of customised solutions for your company.

#### Our services:

- technology consulting
- laser welding
- laser surface treatment
- construction of laser machines
- job order production from single parts up to large-volume production

#### The company

##### Quality through competence

Collective expertise is the formula for success. The Laservorm GmbH company was founded in 1994 by professionals from the fields of laser technology, engineering and production technology. The year 1995 marked the delivery of the first laser machine developed and produced by Laservorm, and many more special and general-purpose laser machines were to follow. Currently, the Laservorm GmbH company employs around 40 skilled personnel as well as 10 trainees at its company headquarters in Altmittweida. They work on custom-made solutions with extensive specialised knowledge, commitment and creativity. The new decade has also seen the Laservorm success story go from strength to strength: Laservorm today is a competent partner for customers from the automotive industry, vehicle construction, electronics, medical technology and many other industries.

#### Consulting & development

##### The path to a successful product

Is there a suitable solution to my production task? Can I use the laser technique for my products? Is the purchase of a standalone laser machine worthwhile? The customers' requirements come first at Laservorm. We develop individual solutions to ensure the success of your products. Regardless of whether you approach us with an initial idea, a drawing or a product requiring optimisation, we will be there for you with our know-how. Our experts will introduce you to the latest advances in laser material processing and support you in selecting the right method and the laser-optimised construction of your components. With the aid of sample parts, we will try out the optimal solution on your behalf. Benefit from our specialist knowledge, we will advise you in detail.



#### Quality

##### Everlasting attributes

For many years, the Laservorm name has been synonymous with individual customer service and reliable production. One important cornerstone of our success is a comprehensive quality management. Each of our production steps is closely planned and supervised, meaning you can rely on superb results and uniform product quality. Would you like to know how your component has been processed? We document the production yield using various methods, including metallography, micro-hardness measurement, image processing or pyrometer transcripts through IT-supported process monitoring.

#### Service

##### A competent partner

Do you have any questions about laser material processing? Would you like an orientation price? Leave it to our employees – customer service is paramount at Laservorm. Certainly we will also take care of the customer service or any repairs required for the machines we deliver. Simply make an appointment with any one of our specialists.

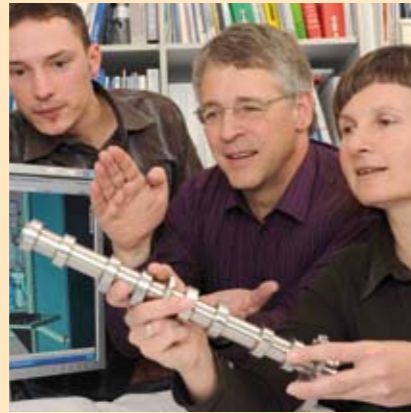




# LASER MACHINE CONSTRUCTION

**Progress through innovation**

A laser machine from Laservorm gives you a decisive competitive advantage in allowing you to produce swiftly, with high repeat accuracy and optimal quality. Exploit our advantage in laser job order production and laser engineering.



We develop and construct precisely the machines required for your production on your behalf. Whether universally applicable laser units for welding, hardening, cladding or special machines used to produce larger quantities, we provide you with individually tailored solutions as a total technology and machine solution. And rest assured that you can depend on the know-how of our experts: During the stages of investment decisions, implementation and throughout the entire service life, we remain right alongside you with our specialist knowledge. It goes without saying that our service also includes training for your employees on the machines, maintenance and repair of the same and answers to any questions you may have at any time.

## How you benefit

- Special laser machines
- Flexible general-purpose machines
- Optimal machining results
- Short development and delivery times
- Comprehensive support provided from our laser technologists



Installation of a special concrete base frame of a laser machine



FUNCTIONAL WITH CUSTOM-MADE LASER TECHNOLOGY





# LASER JOB ORDER PRODUCTION

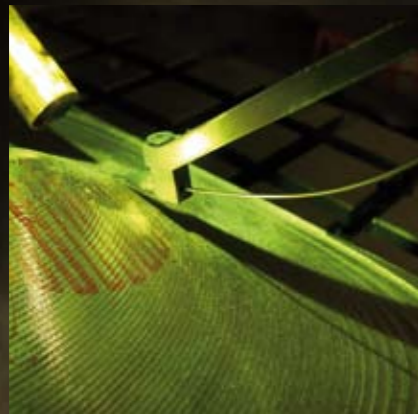
Harnessing the key technology



Setup of handling optics



Laser cladding with powder for modification of an injection molding



Automated 3d-laser cladding with fine wire

Today, laser technology plays a key role in material processing, in facilitating the swift and precise processing of products with optimal quality. The Laservorm GmbH company is your partner for all laser welding and laser surface machining (deposition welding, hardening, remelting). Whether on a macro- or nanoscale, with 15 modern laser units at our disposal, we produce precisely in the way you specify – from individual items to large batch production. On request, we also offer you laser technology for niche applications, e.g. cutting of plastics, stripping, perforating or drilling.

### Laser welding

We create durable joints and the use of laser welding allows precision seams at high speeds. The advantages of this innovative technology are minimal distortion or the tightness of welds. Weldable materials are steel, stainless steel, aluminium, titanium, copper alloys, platinum in various formulations, plastics and in certain forms, even glasses and ceramics.



Pyrometer adjusted laser hardening



## FROM SINGLE PIECES UP TO SERIES MANUFACTURING

### Laser hardening

This process achieves components of unrivalled quality. The innovative technology being particularly suited to the hardening of steel and cast iron materials. We also conduct surface hardening (depths ranging from 0.1 mm to 2 mm at most) to finish-machined (e.g. polished) tools with Nd:YAG, diode and fibre lasers with almost zero distortion. We use various NC units with three to six axles, automatic component feeds and beam shaping optics.



### Laser deposition welding, laser alloying, laser remelting

Laser deposition welding is used for the production of partial wear protection areas made of various metals or alloys, the production of functional layers for sliding bearings, the heat protection as well as the creation of new component areas. With this technique, we can achieve wall thicknesses as low as 0.1 mm (e.g. for medical devices) up to applied areas of several square decimetres and layer thicknesses of several millimetres.



Laser welding of aluminum with fiber laser



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We are ISO 9001:2008 certified and use a modern, cross-sector production planning, resource planning and maintenance management system.



### Drive

We are located in the Saxon city triangle Chemnitz-Dresden-Leipzig. You can either use the Chemnitz East motorway exit (A4) or that of Leisnig (A14). The nearest airports are Leipzig or Dresden.

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