

Laser Device for cladding and hardening tasks to integrate in Machine Tools or for utilization in conventional Laser Machines



A special laser device consisting of hardware, software and technology was developed by LASERVORM GmbH for integration in machine tools, the re-fitting of existing laser machines or even for the sole purpose of working in different kinds of laser machines. More than 11 years of expert knowledge and operating experiences in the above named laser surface processings like hardening and cladding influenced the development of this unit. The laser device can be integrated in present machines by using standardized hardware and software interfaces and the integration of laser surface technologies in the manufacturing process demands only low specialist knowledge.

The laser device consists of components as follows:

- processing head
- image processing and operating mode by pyrometer (inside of the processing head you'll find the required readings recorders)
- technological unit (with central control, powder and inert gas supply)
- laser (applicable types of lasers are e.g. Nd:YAG laser, diode laser und fiber laser with output between 200 Watt und 2 kW) and extraction system

The control connection to the superior machine is realized by standardized systems like e.g. Profibus or DP. The required communication is limited to a variety of predefined parameter kits, the sending and reception of status informations, as well as the transfer of collected quality parameters (optional).

The developments for this modular laser unit were aided by the Federal Ministry of Education and Research of the FRG in line with the project InnoRegio-InnoSachs laser surface technology.

The prototype of this laser device is run on a 6-axis industrial robot. In this connection it is possible to get a three-dimensional-laser cladding unit incl. laser e.g. for applications in the tool and die making sector, on the base of a europallet.

