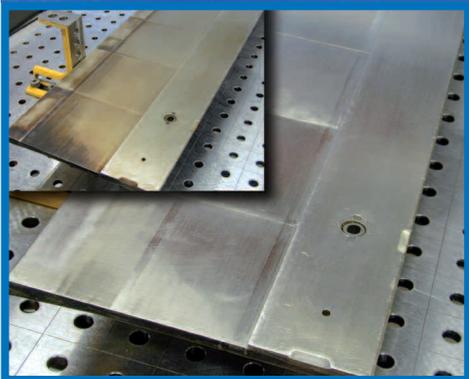
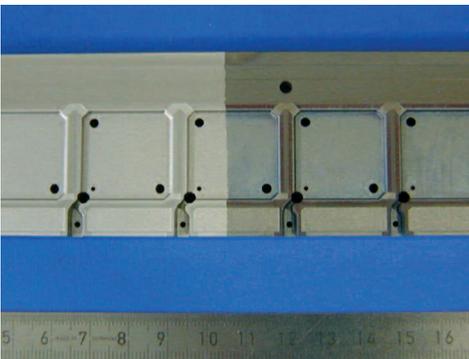


## SURFACE TREATMENT FOR SENSITIVE MOLDS



- **Mold cleaning rates up to 22 m<sup>2</sup>/h**
- **Precise consistent cleaning results**
- **Safely cleans without abrasion**
- **Extends the service life of molds**
- **Easy to automate**
- **Molds can be cleaned while hot**

Precision mold cleaning using laser technology is an economical alternative to traditional methods. Laser mold cleaning is also a “green” process that quickly removes difficult residues without producing chemical or abrasive waste. This remarkable technique extends the service life of valuable molds that are used to form critical parts in a wide range of industries.

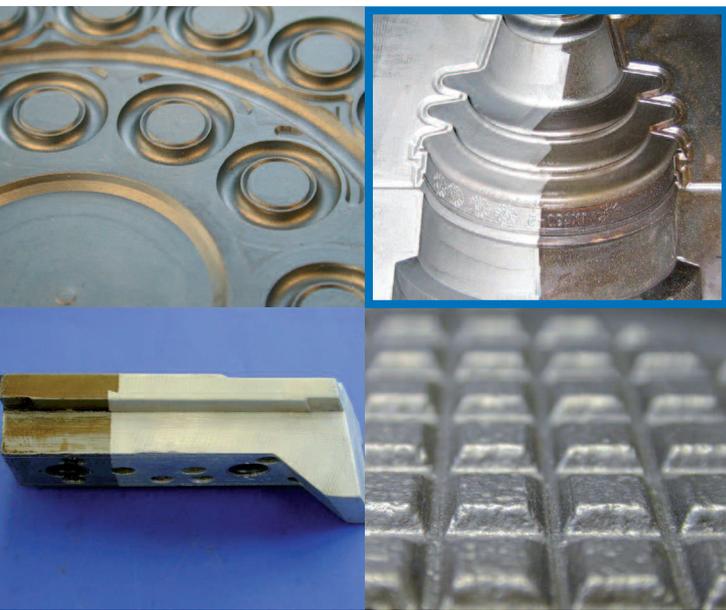
Clean-Lasersysteme GmbH has engineered unique laser systems that use the power of pulsed laser energy to eliminate stubborn release agents and process residues while being gentle enough to avoid surface damage. Through careful testing, the laser beam is precisely adjusted to optimize cleaning effectiveness in the safest manner possible for each application. Extensive research has proven laser cleaning can consistently and safely clean delicate molds, again and again. The result is significantly extended tool life.

With laser cleaning rates up to 22 m<sup>2</sup>/hour, manufacturers can increase production by minimizing the downtime required for mold cleaning. Further, the laser process is designed to clean hot molds at ambient air temperatures up to 70°C, thereby eliminating cleaning delays during cool down. Laser mold cleaning is technology that’s designed to be safe, fast and versatile.

Let Clean-Lasersysteme show you how laser cleaning can save time, get more life out of your molds and save money!



## MOLD CLEANING IN PRACTICE



### Application examples

- Cleaning of metallic plastics and vulcanization tools
- Cleaning of large-area molds for production of fiber reinforced composites (e.g. CFRP, GFRP)
- In-line baking plate cleaning
- Cleaning of sensitive molds in the semiconductor industry
- Removes parting agents
- Removes production residues and oxides
- Removes drawing oil and grease
- Cleaning of work-piece carriers off PVD coating machines

For mold cleaning CleanLASER offers special hand-guided or fully-automated laser cleaning systems. From 20 Watt low power to 1000 Watt high performance lasers, customers' requirements will be met for nearly any application.

Different flexible machining optics are available. CleanLASER units can be easily integrated into a production line. In addition, customized solutions

can be provided, e.g. "moldWIPER" for in-line cleaning of vertical or horizontal injection molding machines. Our laser systems are configured individually for the customer's application in order to optimize the processing as efficiently as possible.

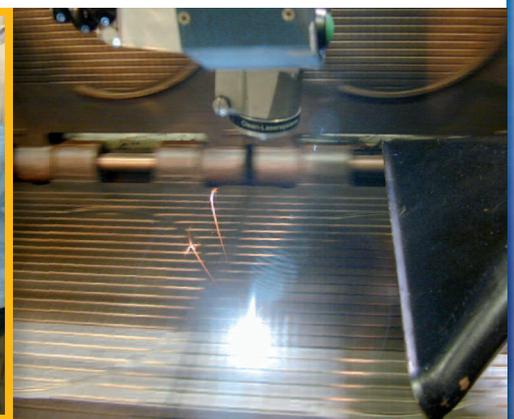
Cleaning with laser light – environmentally friendly, precise and profitable. Please contact us to discuss your application and discover what's possible when you clean with light and CleanLASER Systems.



*Laser optics OS H 50 for manual application*



*Fully automated mobile „moldWIPER“ cleaning system*



*Fully automated cleaning of baking plates by integrating the laser in the baking machine*