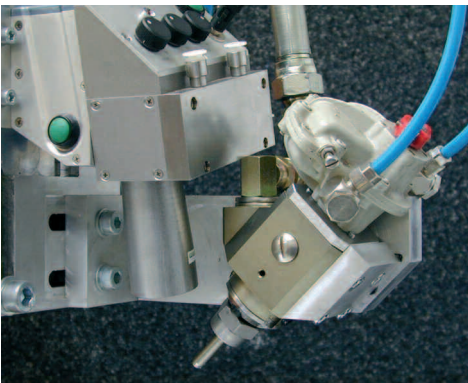
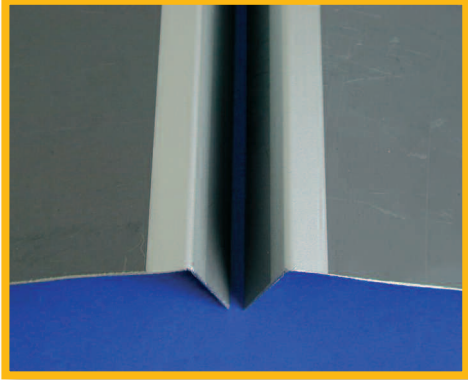


FOR ADHESIVE BONDING, BRAZING, WELDING AND PAINTING



- Excellent results on metallic substrates, especially on aluminum and magnesium
- Weld seam preparation – up to 5 m/minute
- Adhesive bonding preparation – up to 15 cm²/second
- Long-term stability for adhesive bonding
- Cleaning method free of blast media
- Process monitoring makes results highly repeatable

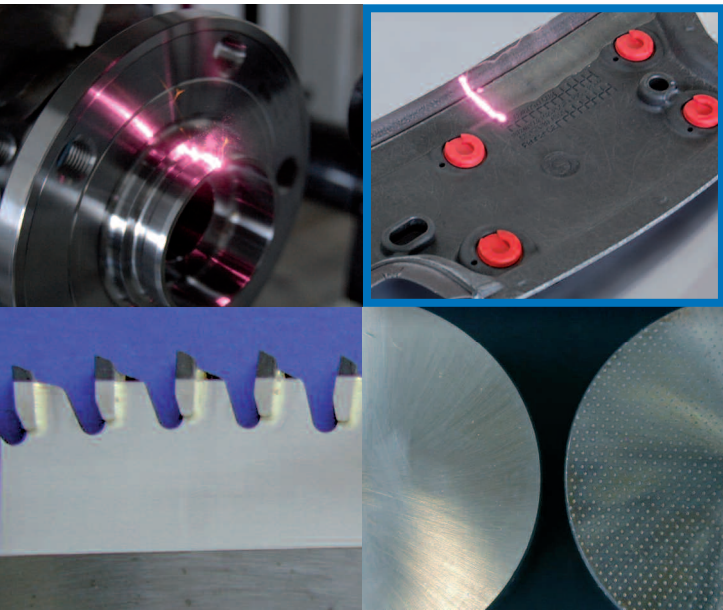
The CleanLASER System emits ultra short laser pulses and removes soil and contamination layers without degrading or thermally damaging the substrate. Laser and beam deflection parameters are adjustable and can be easily adapted to the part's geometry. You can choose to clean either large areas or specific portions of a part. The precise laser process offers an efficient method for state of the art ecological and economical industrial cleaning of metal substrates.

Depending on the laser appliance's average power, aluminum pre-treatment can be achieved with up to 15 cm²/minute. Aluminum and magnesium parts are excellent candidates for laser pretreatment for adhesive bonding. Other metals can also easily be cleaned and de-oiled for painting, bonding as well as other processes.

When cleaning a metal surface the oxide layer is removed, enabling a direct bond to the substrate to be achieved, which is imperative for long-term durability. The laser provides a benchmark in technology in terms of quality and cost, with excellent and scientifically proven long-term bonding stability.



SURFACE CLEANING IN PRACTICE



Application examples

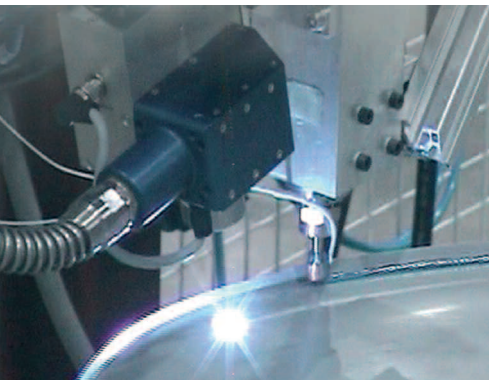
- Pre-coating surface preparation
- De-oiling of steel for bonding pre-treatment
- Cleaning and pre-treating of aluminum to promote long-term bonding
- Cleaning of aluminum for braze and weld preparation
- Selective removal of anticorrosive layers for weld preparation
- Finishing treatment of weld seams, e.g. removal of tarnishes
- Structuring and modification of metallic surfaces
- Removal of release agents from plastics and fiber composites for bonding and painting preparation

CleanLASER offers a wide range of laser systems with 20 Watt up to 1000 Watt. Whether hand-guided backpack laser or fully automated robot-guided laser cell - the possibilities are boundless. The basic appliances are exactly tailored to the needs of the customer's application. Running costs are surprisingly low while the techniques

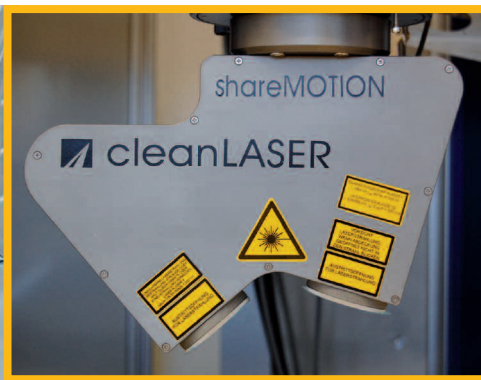
are virtually maintenance-free and highly available at the same time.

Each CleanLASER can easily be handheld and integrated into the production line after a short briefing. Since there is no need for abrasives and detergents, the process is quiet, clean, and above all, also environmentally friendly.

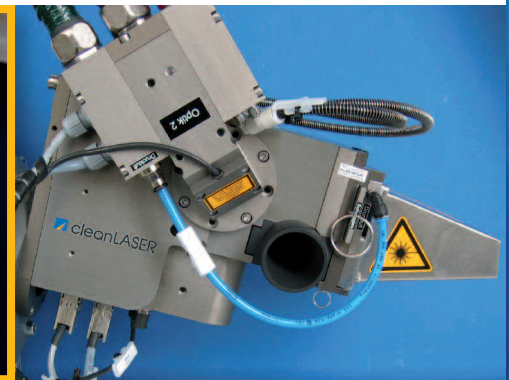
Cleaning with laser light – environmentally friendly, precise and profitable. Please contact us to discuss your application and discover what's possible when you clean with light and CleanLASER Systems.



Optic for simultaneous bonding pre-treatment with integrated adhesive application



The shareMOTION optic employs an integrated beam splitter that enables both sides of a joint to be cleaned as preparation for adhesive bonding



Machining optic OS A 70 for robot-guided weld preparation