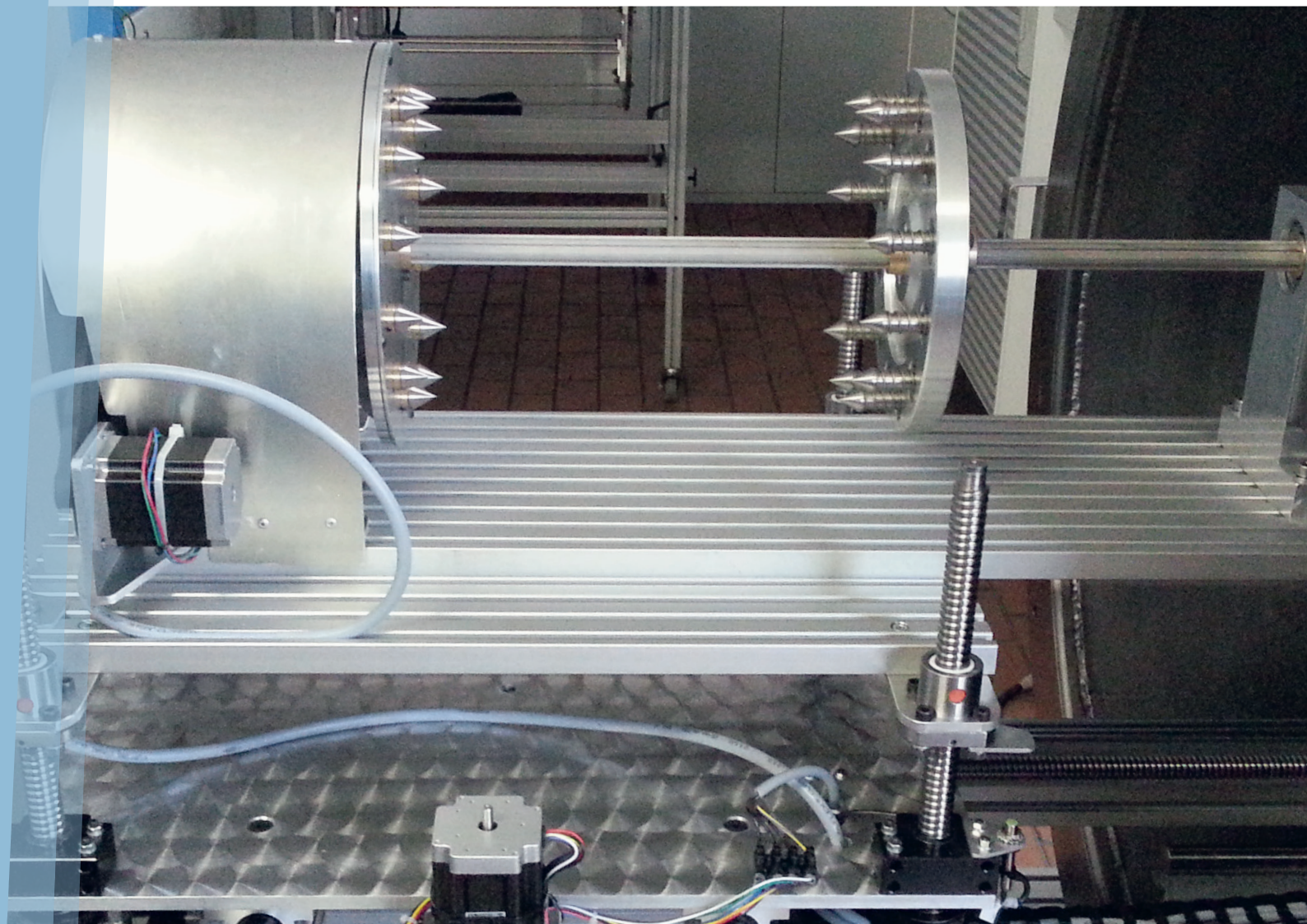


High Vacuum Laser Welder – Vacuum is not equal to vacuum

Business Division of KTW Technology



Welcome

KTW Technology is proud to introduce the revolution in the welding industry. The only Laser Welder which welds in a High Vacuum. In addition the technology can be used for welding apps in low pressure, normal vacuum and outside the chamber.

Wherever the technology has reached a high level of development and high-quality welding results are necessary, a welding process in a high vacuum (< 0.003 mbar) is required in most cases.

Welding in a high vacuum takes place in the past with electron beam welders.

Our Vacuum Laser Welder fulfills the requirements of high quality welding results (E Beam Welders) at reasonable costs, without big efforts and very flexible in the dimension of the device.

Vacuum Laser Welder by KTW is a real „Vacuum“ Laser Welder. The device weld in a vacuum of 0,00005 mbar.

Customer and Markets

Mobility

Whether you fly, drive or float! More safety with welding technology in a high vacuum. Typical Applications:

Automotive: Axles, torsional vibration dampers, gears and shafts, turbochargers

Aerospace: Turbine blades, injectors, vane rings

Medical Tech

The high requirements in the medical sector for cleanness, quality and high precision are solved by our device. Due to the contactless processing under high vacuum contamination can be avoided or reduced to a minimum.

Typical Applications: Welding of hip implants made of titanium

R&D

The Vacuum Laser Welder from KTW Technology is the perfect device for research and development. The reasons are multifaceted and range from: flexible size scaling of chamber, flexible laser system, ability to watch all processes through the inspection glass, very flexible in terms of workpiece through the 6 axis technology, low maintenance cost

Wherever technology has reached a high level of development and high-quality – there is a market for the High Vacuum Laser Welder.

Main areas of application are:

- Automotive
- Aerospace
- Machinery and plant construction
- Electrical industry
- Defense technology
- Railway engineering
- Petrochemistry
- Medical Tech
- Research and Development
- Optical industry
- Power engineering / wind energy / power plant construction
- Mining
- Nuclear Protection

The best solutions to your needs

Our clients always get a specific solution, tailored to their needs! All in one solutions, like welding in different vacuum types, with gas (argon etc.) and outside the chamber are possible.

The device for laser welding under high vacuum is suitable for welding a wide range of components, especially where high welding depths, process reliability and high-quality welding results are required.

Due to the very pure and oxidation-free weld seam, gas-sensitive materials such as titanium, zirconium, molybdenum, tantalum, tungsten, vanadium, niobium and nickel can be welded excellently.

Up to a welding depth of 20 mm our device has the same advantages as an electronic beam welder, but not the disadvantages. Our devices are ideally suited for the use in a cost-effective mass production.

TRUMPF is one of the world leader in laser technology. For the benefit of our customers, we combine the know-how of Trumpf in laser technology with our know-how in the field of vacuum, vapor deposition and control technology

TRUMPF



Bundling competences: TRUMPF
is our cooperation partner.



Vacuum chamber by KTW Technology

Contract manufacturing and welding consultation

You need welding results of the highest quality, because you sell and/or process high-quality products?

We would be pleased to advise you how these welding results can be achieved optimally and cost-effectively. We offer you the entire spectrum of laser welding, under atmosphere, with inert gas, in vacuum up to our patented laser beam welding in high vacuum (0.00005 mbar).

Our high-vacuum laser welding systems enable you to achieve a wide range of welding quality, which you will only find at KTW Technology. Regardless of whether it concerns standard metals, sophisticated materials or heavy-duty components.

Even materials that are usually regarded as difficult or only partially weldable can generally be welded with the laser in a high vacuum. With some materials (e.g. titanium), the vacuum during the welding process is the key to quality. We successfully combine the well-known advantages of electron beam and flexible laser technology.

We stand for high quality Welding seams with punctual delivery.

Product features/USPs

- cheap acquisition and maintenance costs compared to electron beam welders
- flexible in the size scaling of the chamber, making series production possible
- with 6 axis technology all geometries are weldable
- no x-rays arise, therefore no shielding is necessary
- electric fields cannot deflect the laser beam, in contrast to the e beam welder, which can be deflected
- also suitable for welding with gas and in normal vacuum and applications outside of the chamber
- no tendency to spatter and no porosity in reactive metals
- highly flexible number of laser beam heads, which reduces the necessary chamber volume
- standard is 0,00005 mbar
- patented vaporization protection

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