



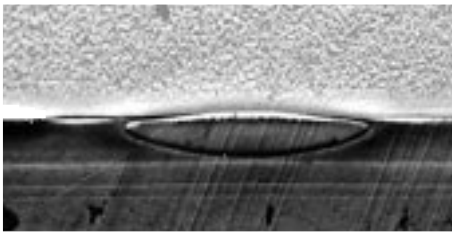
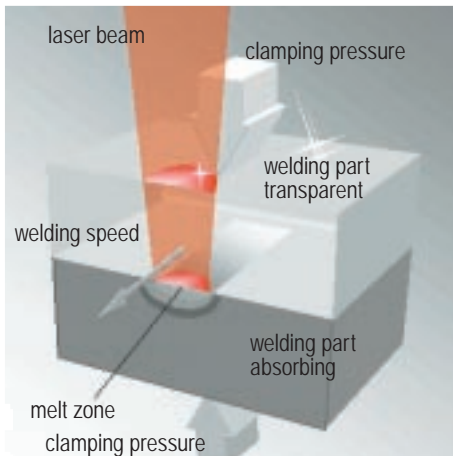
NOVOLAS

laser welding

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Principle



With the **Transmission Welding** process, a laser light penetrates the upper of two thermoplastic layers while a second, dark layer completely absorbs the energy. The energy transforms into heat and selectively melts the plastic in the predetermined areas. With the two pieces being clamped together, the heat is transferred from the absorbing material to the transparent layer, melting both parts, and producing a firm weld or joint.

Nearly all **Thermoplastic Materials** and **Elastomers** can be welded with transmission welding. With this technology, the welding seam strength approaches the strength of the base material. Preferably, the material combination should be of one transparent component and one dark or carbon-containing component. Recent developments, utilizing special pigments, now allow for dark-to-dark and transparent-to-transparent combinations.

A cross section of a typical weld will reveal an oval melting zone. The selection of materials will determine the percentage of actual melt occurring in the transparent and absorbing component. With transmission welding, a precise, optically flawless, joint can be obtained.

Advantages

- Non-contact
- Minimal thermal stress for welded parts
- No particle emission
- No shrinkage
- Perfect appearance of the weld lines
- High precision welding
- High strength
- Programming is easy and flexible
- Low maintenance



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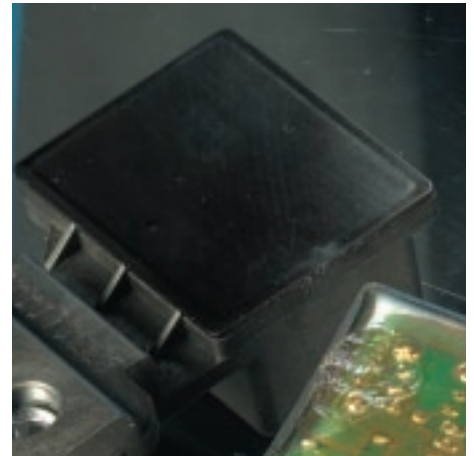
ISO 9001:2000

Applications

Automotive



Transmission welding with NOVOLAS enables new opportunities within the automotive field. For instance, it is now possible to hermetically seal a housing without damaging sensitive electrical or other components. In addition, due to the precise control and small volume of melt, plastic parts for interior or exterior use can be welded with no deformation or visual defect. The optional available in-process control software guarantees state-of-the-art process reliability.



Medical



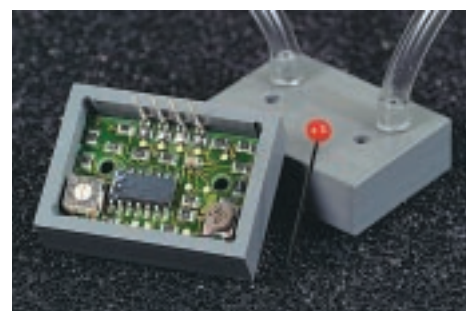
For Medical applications, NOVOLAS has the solution for welding intricate assemblies or films. The laser welding process does not produce particulate or contaminants. This allows for the assembly of parts without introducing material that can hinder the functionality of the part. Very short process cycles can be achieved with the NOVOLAS simultaneous welding process, and, with the introduction of the OEM version, the step into mass production has been made.



Sensor/Electronics



For sensors, the NOVOLAS laser welding system allows for the stress free, precise welding of parts. As an example, sensor housings can be hermetically welded with no thermal or vibration damage to sensitive components.



Micro Technology



The NOVOLAS laser welding system is also well suited for applications where micro manufactured components are welded to create parts for micro-fluidic systems. Line and area welding are possible with a resolution as low as 100µm. These welds are accomplished fast and reliable in only one cycle. Thermal stress for any components welded with the NOVOLAS mask welding system is minimal.





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LEISTER Process Technologies has over 50 years of experience in development, manufacturing, and worldwide distribution of technical products for hot air application. LEISTER is an innovative, independent, and dynamic privately held company that manufactures high-tech products according to customer requirements.

LEISTER Lasersystems offers systems for soldering and plastic welding. With the support of an application laboratory in Switzerland and the United States, LEISTER Lasersystems is working with customers to identify a laser process for every application. All members of the LEISTER Lasersystems team are highly experienced specialists to assist you in material selection, process validation, and integration of the laser system and process into your production.

LEISTER complies with the ISO9001:2000 standard. Quality control is integrated into all production and laboratory processes. Complete confidentiality is guaranteed for whatever we do for you.

LEISTER Lasersystems offers you total customer-oriented service. This philosophy is carried throughout the initial discussions and process development and continues with after-sales service and support. The NOVOLAS system is designed and built for years of reliable service.

Please do not hesitate to contact us with your applications and requirements!



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