Laser Plastics Welding

Fast and flexible plastics welding

Laser welding of plastics uses a near IR laser wavelength to join two optically different plastic materials together with a high energy density laser beam. In the welding process the laser beam penetrates through the transparent top plastic and absorbs on the surface of the absorbing bottom plastic. The absorbed laser light generates heating and melting of the bottom layer. Heat is then transferred via thermal conduction from the absorbing partner to the transparent top partner, which starts to melt at the joint interface. Polymer chains are combined by mixing or diffusion. After cooling and solidification a laser transmission joint is formed.

Cencorp XPRS Welding® Produces High - Quality Welds for Plastic Components

High quality laser welding for plastic components is achieved in a process known as Cencorp XPRS Welding® where the laser beam is guided along the welding path by a high speed scanner. Cencorp incorporates state of the art specific needs. Further, custombuilt systems can be delivered based on scanner technology or industrial robots and linear axes for the contour welding applications. laser and scanning components into both stand-alone and in-line platforms. These easy to use systems are designed to handle the demands of high volume industrial applications. All workstations can be equipped with fiber laser sources of different power levels depending on the application requirements. Monitoring of the welding process and quality assurance features are included in Cencorp's laser welding systems, further enhancing the reliability of the laser welding process. The modular concept of Cencorp workstations combined with multiple laser options makes it easy to configure solutions based on customer specific needs. Further, custombuilt systems can be delivered based on scanner technology or industrial robots and linear axes for the contour welding applications.

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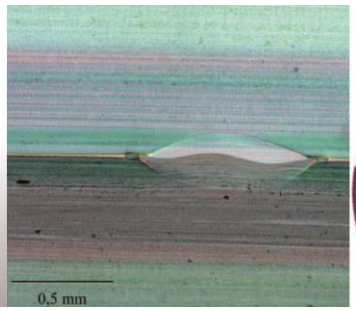

Laser welding of plastics

The stand-alone 800 QS is a versatile workstation for various laser plastics welding applications. The wide front door allows loading of large parts and the progress of the welding can be observed through a window. The 800 QSR is well suited for high production volumes. The 2-station rotary index table minimizes idle time for the laser as the operator can change material on one station while the other station is being processed. The 800 QSI is an in-line workstation for fully automated high volume production. The workstation is integrated to a production line where products on palettes are moved by conveyor into the workstation for welding. A universal clamping device minimizes the requirements for product specific tooling. The product specific fixtures can be easily changed including the product specific part of the clamping device. This enables fast change-over times from known products to another. The system can be equipped with various laser powers and optical configurations in order to achieve the required setup for the application.

Our company at a glance

Cencorp is a proven global supplier of production automation for the electronic assembly and other related industries. We have delivered thousands of solutions globally over our more than thirty year history. Our core focus is on automated production cells for depaneling, odd-form assembly, laser applications, test handling and customized solutions for integrated production lines. Cencorp's solutions are widely used in automotive, telecom, medical, industrial and other market areas. Cencorp Automation headquarter is in Salo, Finland.

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