TELSONIC
ULTRASONICS

Application example

Welding glass with metals or breaking with ultrasonic technology
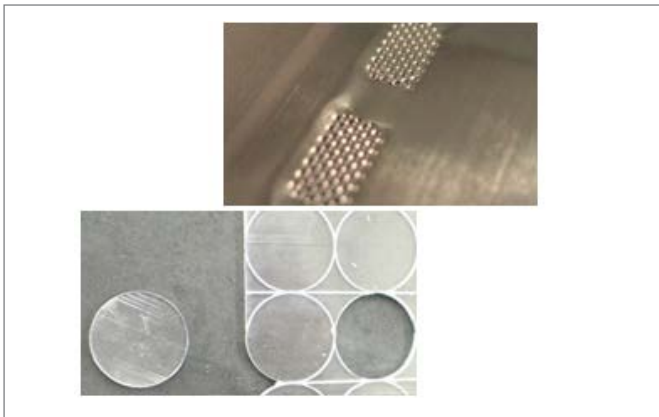
PLASTIC WELDING	METAL WELDING	CUTTING	CLEANING	SIEVING

Task

For various applications, such as solar cells, containers, electronic components, etc., parts made of glass or ceramic materials, with or without coating, are to be reliably connected in an electrically conductive or sealed manner to metallic molded parts, such as current conductors made of aluminum (Al) or a lid.
As an additional application, defined molded parts are to be cut out of thin glass or ceramic plates, e.g., watch glasses or viewing windows for medical or electronic devices with special requirements.

Solution

Glass or ceramic parts can be welded very well with aluminum using ultrasonic technology. Aluminum current conductors are welded onto solar cells, e.g., with an MPX metal welding system. Control and monitoring of the welding process is handled by the Telso®Flex control unit with convenient touchscreen operation.
To cut out shaped parts from thin plates, the outlines must first be scribed onto the surface in a suitable manner. By introducing ultrasonic vibrations, the parts are reliably separated as a result of the notch effect.

Advantages of this configuration

The ultrasonic metal welding process can be used to reliably create an electrical connection with low contact resistance between Al and conductive glass. In the case of metals that cannot be welded to glass, such as nickel, an intermediate foil made of Al can be used, which in turn is readily weldable to both glass and nickel. For round parts, SONIQTWIST® technology offers ideal advantages. The targeted separation of molds with ultrasonic support is reliable, fast and therefore allows the molded parts to be supplied economically in high quantities.
The ultrasonic method in general offers various possibilities for process monitoring.

The applications were created with an MPX metal welding system and a USP750/35 kHz ultrasonic press and integrated with the Telso®Flex control software or with corresponding components in a special-purpose system.

www.telsonic.com

THE POWERHOUSE OF ULTRASONICS