

Ultrasonics Assemble Automotive Sensors & Switches

The flexibility and reliability of ultrasonic welding has seen the process being adopted for a wide range of applications within the automotive industry to produce a variety of different component parts and sub assemblies.

The latest suite of ultrasonic welding systems from Telsonic UK draw on the precision characteristics of the process to produce a series of exterior and interior components, including sensor housings and switch bezels, for a number of current JLR models.

When assembling interior trim components it is essential that the high quality of the “A” surface is maintained at all times. This of course requires attention to detail when considering materials and finishes for the component fixtures to maintain “A” surface integrity. Equally important however is the selection of the joining technology to be used to ensure that the welding process itself does not distort, discolour or otherwise damage these critical surfaces and finishes.

Ultrasonic welding offers precise and repeatable control of the joining process and these characteristics were instrumental in the selection of the technology to produce complete car sets of interior window control housing bezels for the X760 Jaguar. Each bezel comprises of a chrome surround and a painted facia which has the apertures for the window switches. These two individual parts are joined with six (passenger side) or nine (drivers master unit) staking tabs depending upon variant.

(Window control housing bezels for the X760 Jaguar are produced using Telsonic’s USP2000 ultrasonic presses)

Telsonic’s solution for this application is based upon dual USP2000 20kHz 3kW presses, each of which uses titanium multi-tip tooling. The product nests comprise of poured resin cavities which are also spring loaded to protect the product “A” surfaces and ensure good collapse control on the delicate staking tabs. All of the tooling is interchangeable across both machines to support flexibility in production and also provide high levels of future-proofing for next generation variants.

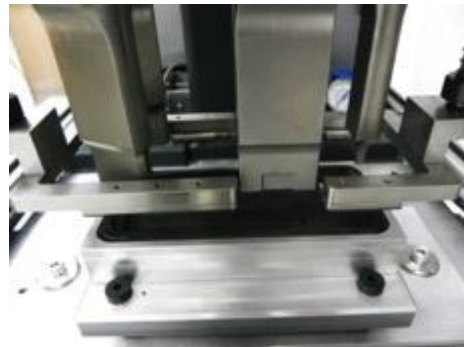


Continued /

Continued /

Component loading / unloading and machine operation are kept simple with the use of a pull down door with a safety interlock which initiates the welding cycle. This configuration provides good ergonomics for the operator and optimises the cycle time.

(Precision component location nests and titanium multi-tip tooling are used to ultrasonically weld the Jaguar window control housing bezels)



Parking sensors are fast becoming standard fitment to many vehicles and Telsonic ultrasonic systems have been selected to assemble the PDC holder bezels to the front grille vents for the Range Rover Evoque 2016 model year. The vents each require a PDC holder bezel to be welded at three stake points. In this application Telsonic AC450 actuators with titanium multi-tip tooling are powered using a switched MAG3512E 1200W 35kHz generator. The ultrasonic modules are configured within a bespoke machine which processes a LH and RH pair of components in a single cycle.

(Telsonic's machine ultrasonically welds the parking sensor bezels to the front grille housings in pairs)

The generator is housed in a separate panel together with a touchscreen, which displays weld configurations, limits and set up menu's etc. The component nests incorporate 3D profiled features to protect the grained finished exterior "A" surface and also ensure accurate and concentric location of the bezel within the grille vent throughout the welding process. In this instance, the operator loads component parts into an interlocked sliding table which initiates the welding cycle when in the closed position.



(Each PDC Bezel is secured with three ultrasonic welds)

In both applications Telsonic's expertise, the ability to perform pre-production trials and a proven track record of supporting the automotive supply chain, were key factors in Telsonic being selected by the manufacturers of these parts.

Telsonic offer a comprehensive range of ultrasonic modules and systems for a variety of plastic welding, sealing, food cutting, textile cutting, metal welding and cleaning applications.

Continued/

Continued/

For more information please contact:

Telsonic AG
Industriestrasse 6b
9552 Bronschhofen
Switzerland

Telephone +41 71 913 98 88
Telefax +41 71 913 98 77

E-Mail info@telsonic.com
Web www.telsonic.com

