

## Telsonic's Automotive Partnership Drives Forward

PLASTIC WELDING

METAL WELDING

CUTTING

CLEANING

SCREENING



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Partnership is a term synonymous with the automotive sector, however the true test of this is a successful long-term relationship between customer and supplier on multiple projects.

This is certainly the case with Telsonic UK and one of their valued Tier 1 automotive suppliers, in a partnership that to date spans over 5 years, and continues with Telsonic being selected yet again as their chosen partner for their latest component assembly application.

This latest project between the two companies required ultrasonic welding of two full-length clip bracket strips to the rear of PC/ABS "Gill" shaped exterior side panels. The process is applied to both RH and LH parts and requires 8 twin weld points at each clip point. These new panels are part of an overall face-lift from a previous model and include a modified welding joint preparation to ensure a stronger, more controllable and consistent weld. The latest machine also checks for the presence of clips on each hand using a camera system. Following welding, the panels are finished in various highly decorative metallic and plain vehicle colour matched sprayed finishes.

As for previous collaborations between the two companies, this latest machine was designed and built by the 1st tier suppliers own engineering team, with technical and process support provided by Telsonic's engineers at all stages of the project. The machine is now in production within the company's Midlands plant where the parts are both welded, and subsequently painted. The machine is extremely compact with a light-guarded loading area. All welding heads have full individual machine PLC control of amplitude and weld delivery time.

### Joined Up Thinking

Integrated within the machine are four Telsonic MAG3512E 35kHz generators, panel mounted, complete with Telsonic solid state switch boxes, and sixteen



- 01 At the heart of this machine are 16 sequenced Telsonic AC450 compact actuators and 4 MAG3512E 35 kHz generators
- 02 Telsonic's ultrasonic welding technology is used to produce LH & RH pairs of side panels

sequenced Telsonic AC450 compact actuators with twin mother/daughter Titanium sonotrodes. The Telsonic AC450 actuator modules are also extremely compact with guided cylinders and a dedicated converter mount, making it possible to access the densely populated weld positions on these parts. The new Telsonic MAG generator range, prepared for panel mount as standard, also help to reduce the overall footprint of the machine, and interface easily with the machine PLC and HMI system.

Telsonic's contribution to the project also included supporting the customer in the development of a new weld joint preparation, to change from traditional tab staking to interfacial energy director (ED) welds. During this exercise, particular attention was paid to a number of factors including: horn footprint size, optimised energy director arrays around the clip fix points, "A" surface marking and minimum "B" surface disruption, to ensure panel body seal/gapping was not infringed.

Having taken all of these factors into account, and as a result of extensive welding trials by Telsonic UK covering weld recipe development, force and speed, the new weld process delivers the high aesthetic finish required on the product together with a robust and consistent weld process. The machine was commissioned during September 2017 and is now in full production.

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