

Telsonic Match Technology to Volumes

Having already supplied an ultrasonic welding system to produce cup holders for the mainstream and higher volume variants of the latest generation Range Rover, Telsonic UK were asked to develop a system for a more complex cup holder arrangement, fitted to higher specification vehicles.



The original system, currently in full production, manufactures a cup holder assembly comprising of 2 components, base moulding & bezel, that are joined using the company's ultrasonic technology. This variant of cup holder, produced at the rate of one every 12 seconds, is fitted to the majority of vehicles in the range.

(Telsonic UK has now supplied 2 Systems to produce Range Rover Cup Holder Assemblies)

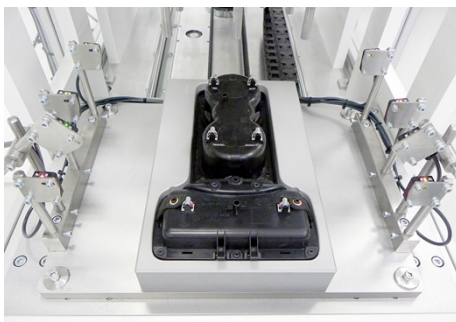
The challenge was to provide a cost effective solution for the assembly of the 4 individual component parts that make up this higher specification version of cup holder, allowing for lower volume and cycle rates, and enabling one part to be made every 45 seconds.

An ultrasonic joining system could be used to successfully join the components of the new cup holder, however the fast cycle times associated with the technology are not required. The solution offered by Telsonic was therefore based upon Hot Air Cold Staking (HACS) technology.



(Cup holder Hot Air/Cold Stake (HACS) assembly system designed and manufactured by Telsonic UK)

The machine, designed and manufactured by Telsonic at their Poole facility, uses a motorised fixture table to transfer the components between the operator load / unload position, heating area and staking station. The assembly comprises of 3 ABS moulded components, an elasticated mesh pocket and retaining clips. The presence of each component is confirmed using sensors before each cycle begins. There are a total of 15 staking points on the assembly, 2 of which are used to secure the elasticated strap of the mesh pocket to the "B" surface of the component.



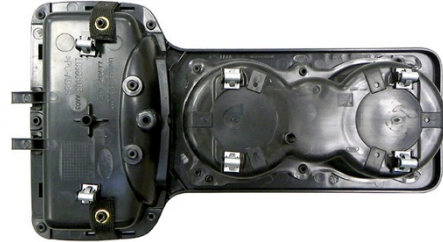
(A motorised fixture table with resident part sensing is used to transfer the component between the 3 stations within the machine)

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Individual controllers are used to monitor and maintain the correct temperature profile within the system to ensure consistent results for each weld staking point and for each machine cycle. Operator safety is assured by the use of light guards at the load / unload station.

As for all systems and solutions from Telsonic UK, prototype trials were conducted at the concept stage. In this instance the trials were used to ensure no negative effects of heat on the soft flock material used on the “A” surface of the part or on the elasticated mesh strap staked into position on the B side.



(“B” surface of the finished component showing the various stake points)

Now in full production at Lear, this compact machine is providing an efficient and cost effective solution to the application. The decision by Lear to use Telsonic UK for this project was based upon a number of factors including: Telsonics’ proven track record on the previous Cup Holder assembly system, customer references and a partnership approach to determining the optimum solution.

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

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