ASTRA SEAT FRAME ARC WELDED BY ROBOT

When automotive component manufacturer, Wild Springs & Wireforms, won the contract to manufacture the frame supporting the rear seat cushion in the latest Astra saloon cars, Vauxhall specified that the wire frame should be arc- rather than spot-welded. Full-volume production quantities of over 4,000 per week for delivery to the foaming plant, which in turn supplies line-side to the OEM at Ellesmere Port, dictated the use of robotic welding at Wild's Redditch factory.

The company chose Motoman to supply a twin-robot MIG welding cell with powered turntable with the assistance of Malvern-based integrator, Bauromat UK. Wild Springs had used spot welding cells from Motoman since the 1980s. According to Tim Clews, project manager at the Redditch factory, the ongoing reliability of these early cells and the good service back-up over the years gave Wild every reason to return to the same supplier for this project.

The Astra seat frame comprises eleven formed components made from round, mild steel wire of 5 mm diameter, which are placed by an operator into a bespoke jig. During this time, 20 welds are deposited by the two robots to produce the previous frame. The turntable then swings through 180 degrees in a matter of seconds to present the unwelded assembly to the robots and the welded frame to the operator for unloading, ensuring virtually uninterrupted production. TAKT time is one minute, around 25 per cent less than for an equivalent spot welding cycle.

Most of Wild's experience of seat frame manufacture had involved spot welding in robot cells, including for Jaguar, Land Rover, Range Rover, Nissan, Honda, Toyota and for the BMW Mini convertible. It does, however, have long experience in large volume, robotic arc welding of automotive products from 0.5 mm to 13 mm diameter wire, such as seat parts, exhaust hangers and various components requiring sub assembly. Other products produced at the Redditch factory include float rods, trim wires and springs for doors, throttles and thermostats.

In addition to the Redditch site, the Wild Group has manufacturing facilities in Birmingham and Hungary with significant pressing and assembly capabilities. The former site has recently relocated to a new, purpose-built facility.

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Three photographs herewith, captioned:

1. Wild Springs & Wireforms operator, Ewelina Dobrzeniecka, fixturing a Vauxhall Astra rear seat cushion frame for welding in the Motoman EA1400N twin-robot welding cell.

2. Alan Palmer, weld technician at Wild Springs & Wireforms, makes adjustments to the Astra seat frame weld cycle, which is completed by two Motoman 6-axis robots.

3. Eleven wire components are clamped in a bespoke fixture prior to robotic welding of an Astra seat frame.

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