

CASE STUDIES

Automotive Welding Assembly

Assembly

The Application

The OEM Corporation was preparing production for a major OEM model line, welding inner metal components such as trim and framing to a wheelhouse. The complexity of the weld locations and component layout required precise positioning and access across multiple surfaces within the work cell.

The Challenge

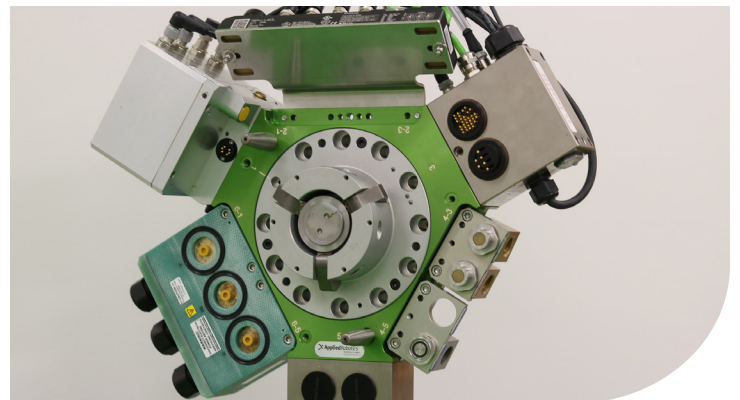
A single robot with a fixed weld gun could not reach all required weld points due to geometric limitations. The initial solution required two robots, each with a dedicated weld gun, which increased both space requirements and overall system cost. The OEM needed a more efficient approach that could reduce equipment while maintaining cycle time and production output.

The Solution

EFFECTO provided a solution using the Epsilon **XCHANGE®** Automatic Tool Changer, enabling a single robot to perform the work of two. The Epsilon's cam latching mechanism coupling

design allowed flexible mounting of the weld gun, with adaptors positioned on opposing sides. This allowed the robot to pick-up the weld gun from different orientations, ensuring full access to all weld points.

Integrated into a two-station dial table system, the process allowed continuous operation, with loading and welding occurring simultaneously. The robot would automatically uncouple, reposition, and re-couple the weld gun as the table rotated, maintaining efficiency without increasing cycle time. This solution reduced the number of robots required, optimized workspace utilization, and delivered a more cost-effective and flexible manufacturing system. ●



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