



Case Study:
AUTOMOTIVE
MULTI FUNCTION
SWITCH

Introduction

During a tour of a Tier 1 manufacturing plant supplying Ford Automotive, the Plant Manager complained about variety of their multifunction lever arms. The difficulty stemmed from assembling one of the components known as a rotary contact assembly. The assembly consisted of two beryllium copper contacts heat staked to a Plastic Rotor.



Michael Tucci,
CEO and President

Micro in Action

After several weeks of studying the contact part geometry, the Micro Innovation Engineering Team developed a single piece component that functioned identically to the combined two individual parts. The idea was presented to the customer, who enthusiastically embraced the concept. Micro still needed to prototype the solution to ensure its functionality was acceptable.

Prototype parts were presented to the customer who required life cycle testing in 3 months' time. While waiting for those results, the Innovation Team developed a concept of stamping the one piece contact construction, partially formed, in continuous coil, and wound on spools. Those coils would be fed into a linear assembly line and placed inside a track. A bowl feeder would introduce the housing to the track where the contacts would be heat staked, moved to another station for final forming. Then each part would be 100% force checked, moved, singulated, and loaded into a tube for final packaging.

The difference

Traditionally, the manufacturer relied on static process control methodology and a small percentage of parts fail to meet specifications. With our approach,

the 100% force checking feature guaranteed 100% acceptable assemblies on the line. This made the offer too good to pass up and Micro was awarded a substantial tooling package to bring the concept to fruition.

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Requirements led to over 5,000,000 parts delivered annually with zero defects.

The challenges

The problems encountered centered on the two contacts, purchased from a sub-supplier, and supplied in bulk packaging. Because of the geometry of each contact when delivered, the parts were tangled and required sorting, which resulted in additional time (cost) and a defect percentage frequently > 5%.

Additionally, because of the contact geometry, full automation to attach the contacts to the housing was difficult to achieve, inefficient and costly. To combat this, we asked the Plant Manager if he was amenable to give us drawings of the individual

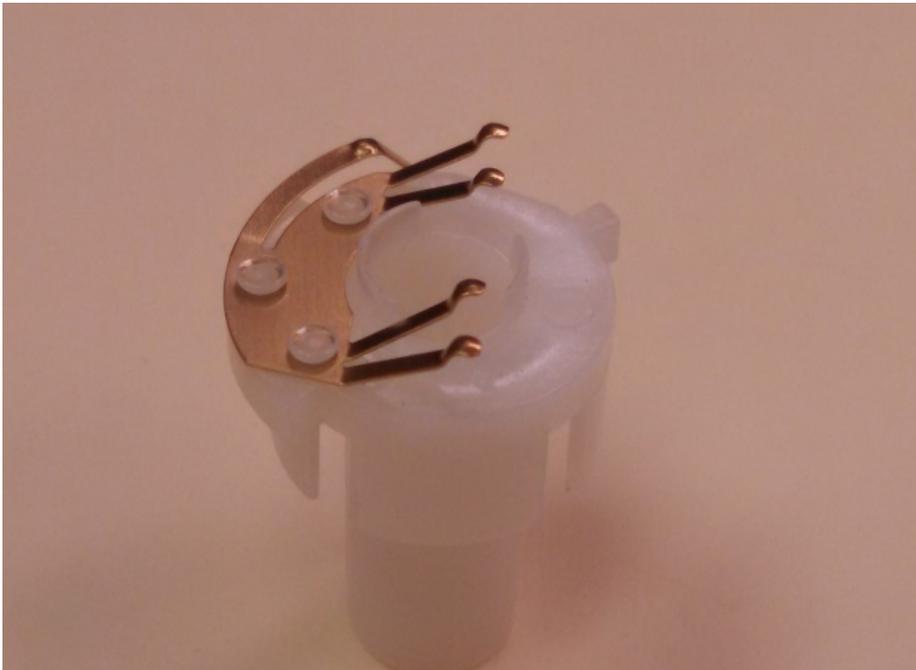
components and the finally assembly for our review

The outcome

PPAP quality sample assemblies were delivered 24 weeks after order receipt. After 3 months of testing the samples were approved and full Production ramp up commenced. Requirements led to over 5,000,000 parts delivered annually with zero defects.

Micro's reputation spread throughout the Tier 1 community as an innovative, solution driven company offering cost competitive and cost saving solutions for stamped, molded, and assembled products.





Contact us today

Every innovated solution is backed by the uncompromising pursuit of excellence at every phase of our manufacturing process.

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