



KEY METRICS ACHIEVED

50%

reduction in operator training

30%

reduction in rework costs

1

vendor supplying the full solution



ABOUT THE CUSTOMER

ZF Friedrichshafen AG, one of the top three Tier 1 automotive manufacturers in the world, has been a partner and key customer of Jendamar for more than 25 years. Founded in 1915 in Friedrichshafen, Germany, the company is famous for developing innovations like the synchro-mesh transmission in the 1950s and the first fully automatic transmission for passenger cars in the 1960s. Since then, ZF has expanded worldwide, and diversified its product range to include powertrain components and steering systems, and made significant strides in electric and hybrid vehicle technology. Jendamar has delivered multiple semi-automated, automated and hybrid assembly lines for differential assemblies over the past quarter century.

KEY CHALLENGES

The customer required a complex differential assembly line that was capable of multi-variant production. The complexity of the requirements created the following challenges.

Challenge 1: The complex assembly line necessitated a mix of manual, semi-automated and automated stations. Some of the stations required high-precision measurement and gauging to ensure the quality, integrity and safety of the differential. Additionally, high staff turnover resulted in a lack of skilled operators to handle these complex assembly processes, which was a big problem.

Challenge 2: The customer wanted to build one system that would be able to manage operators, collect production line data, ensure a high-quality assembly process, and help operators carry out their 5S checks and verification steps, as well as coordinate preventative maintenance tasks. Ordinarily, this would require multiple vendors to try to integrate many disparate solutions and systems. This would be a far too costly and almost impossible task, trying to integrate physical devices, tools and machines to the manual and automated stations, and with the MES and data collection systems.

Challenge 3: Maintaining this line, with its multiple systems, and resolving breakdowns quickly would be a huge challenge, exacerbated by the high turnover of experienced technicians.

Challenge 4: Using multiple vendors would further place a huge organising burden on various ZF departments, from IT to process planning and maintenance.

Challenge 5: With any assembly line, there are always teething problems at the outset. The ramp-up phase of production also brings various technical and other challenges.



OUR SOLUTION

Jendamark worked closely with the ZF team and was able to provide the customer with a one-stop shop offering everything from operator guidance to 5S implementation, high-level data acquisition and traceability solutions.

Our solution encompassed a full turnkey process:

- Concept and design
- Process planning
- Manufacturing and assembly
- Software engineering
- Delivery of physical assembly line
- After-sales service
- Installation, training and commissioning

CUSTOMER BENEFITS

Enhanced product quality: Putting guided assembly processes and high-precision measurement in place resulted in improved quality and integrity of the differential.

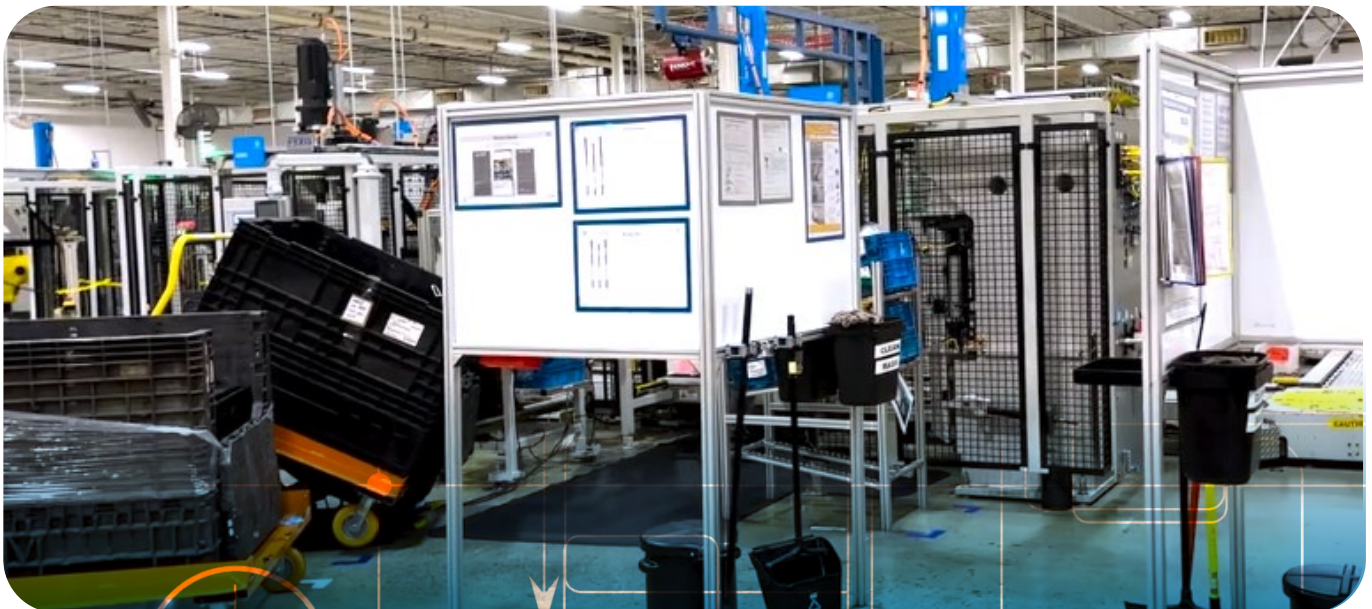
Streamlined operations: The one-stop solution eliminates the need for multiple vendors and disparate systems.

Efficient maintenance: The unified system made it easier for new and inexperienced technicians to address complex maintenance challenges.

Reduced organisational burden: By using a single vendor, the customer avoids the burden of coordinating multiple suppliers and involving various internal departments.

Supported ramp-up process: Jendamark's on-site support offering saw a dedicated technician supporting the customer throughout the six-month ramp-up journey. This ensured that any problems were quickly addressed, minimising disruptions and allowing the customer to achieve optimal production levels.

The original production line that Jendamark supplied has since been adapted to cater for even more additional variants.



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