Automotive industry applications

The Project:
Design a configuration that insures high-quality spot weld in relation with size, shape and characteristics of metal sheets that will be assembled. The configuration can be a robotics application, fixture or portable hand held.

Required resources:
This type of projects are leaded by experienced engineers with extended knowledge about all the components integrated in welding equipment, able to use FEA and to read the analyze results. CAD Resources: Pro / E Wildfire 2 Flex Eng module, SIEMENS NX8. FEA Resources: Pro / Mechanica.

The action:
Based on the 3D models and related information about the metal sheets that will be spot welded, transferred by the customer, a concept welding gun design is generated. This virtual assembly is designed to insure the requested weld force and adapted to spot weld in the required areas, with a limited deflection. The weld gun components that insures the welding force are validated at this early stage by FEA. This way of action allows a fast development of the project in engineering and detail stages after the welding gun concept was approved by the customer.
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Features:
The project requires several stages. Concept stage involves electric calculation, actuator selection, main parts dimensioning, s.o. In this stage new components are validated through FEA. During the engineering stage, final CAD models for new components are created based on those dimensioned in the concept stage and top level assemblies are generated and checked to fulfill all the requested parameters. In the last stage, detail drawings and assembly drawings are generated and checked.

Final validation:
Newly designed spot welding guns are validated by subjecting them to tests of endurance that includes several million cycles. Equipment is approved and final validated after the test is passed.

Feature development:
It aims constantly generating solutions to help customers in developing their products, increasing productivity and exclusion of errors during operation. Compaction equipment and increased service life are also areas of our future development.

Pinch gun pivot FEA

Our way of action based on work procedures, our engineers expertise and the state of the art design technology working to achieve the most ambitious goals. The fast project development is supported by our optimal configured and secured network. We are proud that our projects are key factors in customers success.