Leiter des Lehrstuhls: Prof. Dr.-Ing. Günther Schuh
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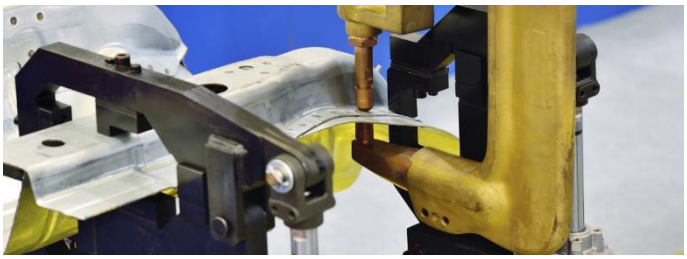
Bachelor- or Masterthesis

Analysis of the degrees of freedom in joining technologies for fixtureless body shops

Freiheitsgrade und Einschränkungen bei der Gestaltung



Bildquelle: Simufact Engineering GmbH

Initial situation:

Due to inflexible and cost-intensive fixture systems, body shops in particular is affected by the increasing variety of variants and shorter innovation cycles in the automotive industry.
One approach to counter this development is to reduce the number of fixtures through intelligent component design. The fixtures are replaced by component-integrated geometric features.
The joining processes used in car body shops play an important role in the design of these geometric features, since they both enable new degrees of freedom (e.g. tightness) and impose certain restrictions (e.g. accessibility).

Your task:

Within the scope of this work, you will develop a method for describing the design restrictions and degrees of freedom resulting from the consideration of the relevant joining processes for jigless body construction.
For this purpose, the understanding of the joining processes as well as the jigless car body shops is first built up. Then the logic for the description of the joining processes is created in order to finally evaluate their influence on the component design.
The aim is to uncover, logically describe and quantify the degrees of freedom of joining technologies in a jigless car body shops.

Prerequisites:

- Motivation and commitment
- Independent work
- Ideally experience in car body shops or automobile production

Offer:

– Comprehensive support
– Delimited tasks
– Fast processing
– Collaboration on a promising research and industry topic
– Validation using a demonstrator

Interested?

Please send a current excerpt of your grades as well as your curriculum vitae and certificates to the e-mail address below.

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