Product Data Sheet *FlexFalz* – Adjustable Hemming Die for Dimensionally Accurate Car Body Hang-On Parts

Challenge and Aim:

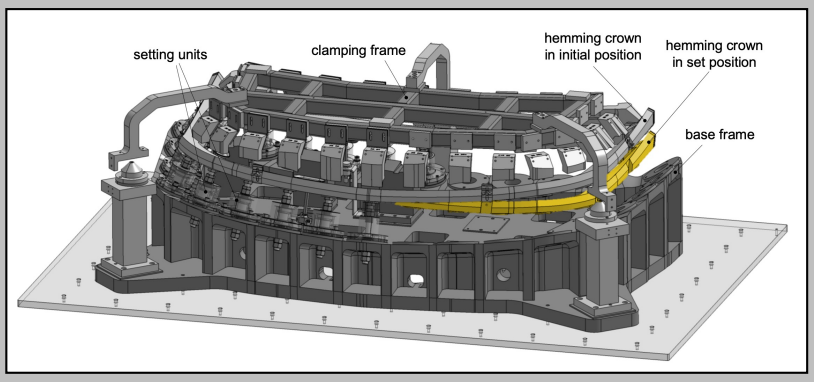
- The quality requirements for optically relevant hang-on parts of the car body are very high
- There is a need to optimize the geometry of hang-on parts, both during production start-up and in series production
- Component changes through a change of the stamping tools are very time-consuming and expensive
- It would be desirable to change the component geometry through simple fixture settings only, as known from joining fixtures used for the car body structure

Approach:

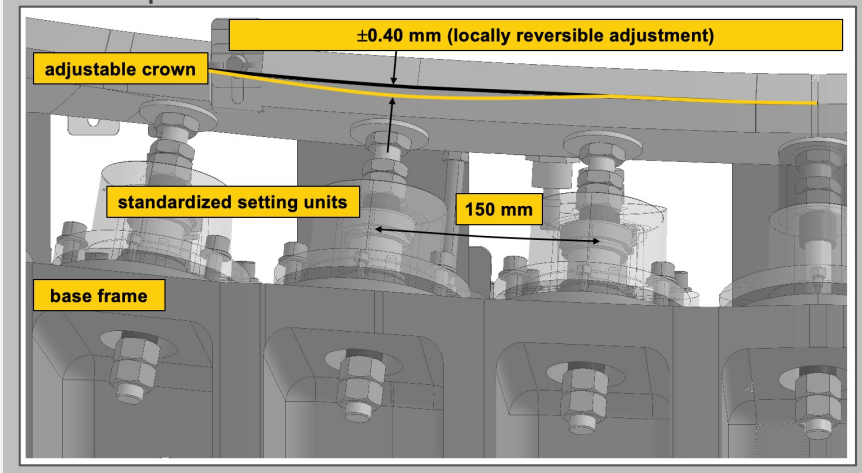
The adjustable hemming die from *inigence* allows to carry out geometry changes of hang-on parts which are joined by roll-hemming through the modification of the active die surfaces.

Design Layout and Functionality:

- Rigid base frame, adjustable hemming crown, adjustable clamping frame
- Setting through standardized setting units
- Die setting without plastic deformations of the crown



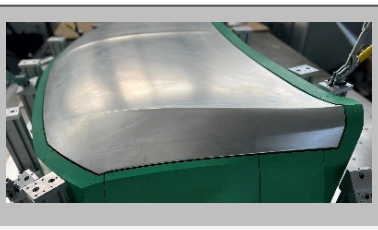
Practical Implementation:

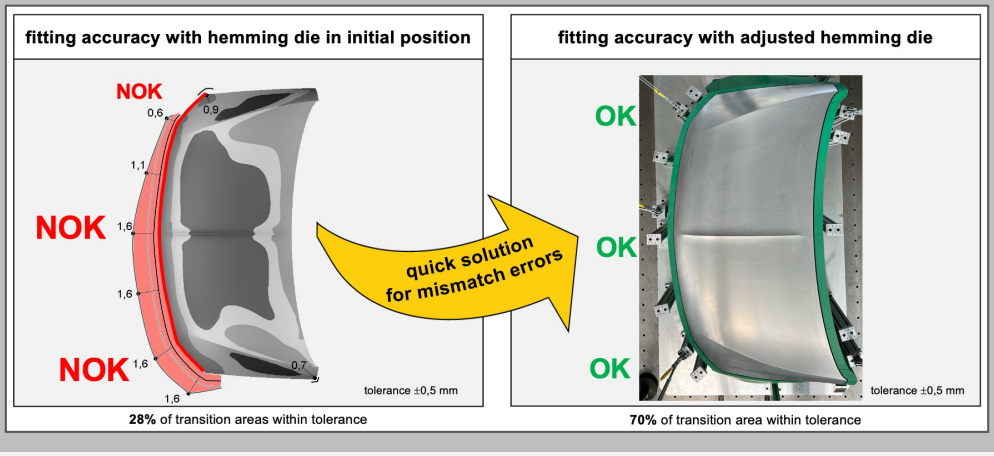


- Adjustment of the hemming die crown in a few hours (manual setting) or in a few minutes (electromechanical setting)
- Continuous adjustment with an accuracy of 0.05 mm
- Adjustment without special tools
- Reversible setting range of locally ±0,4 mm, globally ±10-20 mm (example: hood)
- Resulting die surface is constant in curvature
- Sufficient stiffness for perfect hemming
- Automatic adaption of the robot hemming curve by using the *inigence FlexFalz-App*

Results:

- ➢ Accurate optimization of selected component areas
- ➢ Reduction of mismatch errors from nearly 2 mm to less than 0,5 mm in two iterations only





28% of transition areas within tolerance

70% of transition area within tolerance

Unique Selling Points:

- ➢ Reversible adaptability of the hemming die
- ➢ Extended setting options in the body shop
- ➢ Ability to use out of tolerance components
- ➢ Manageability of batch variations
- ➢ Reduced quality loop

Partners:

FIBRO

FMF WWF WERKZEUG- UND PROTOTYPENBAU