

# Accepted Manuscript

Deformation mechanics and failure mode in stretch and shrink flanging by double-sided incremental forming

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PII: S0020-7403(18)30792-6  
DOI: [10.1016/j.ijmecsci.2018.06.002](https://doi.org/10.1016/j.ijmecsci.2018.06.002)  
Reference: MS 4370



To appear in: *International Journal of Mechanical Sciences*

Received date: 13 March 2018  
Revised date: 20 May 2018  
Accepted date: 1 June 2018

Please cite this article as: Huan Zhang , Zixuan Zhang , Huaqing Ren , Jian Cao , Jun Chen , Deformation mechanics and failure mode in stretch and shrink flanging by double-sided incremental forming, *International Journal of Mechanical Sciences* (2018), doi: [10.1016/j.ijmecsci.2018.06.002](https://doi.org/10.1016/j.ijmecsci.2018.06.002)

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## Highlights

- Developed a flexible process for double-sided incremental flanging of a clover feature.
- Achieved higher formability of the clover feature flanging by the new method.
- Validated different failure modes for stretch flanging based on the strain evolution.
- Revealed the formability of shrink flanging is enhanced by meridional tension.
- Reducing meridional tension is helpful in increasing the formability of stretch flanging.

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