

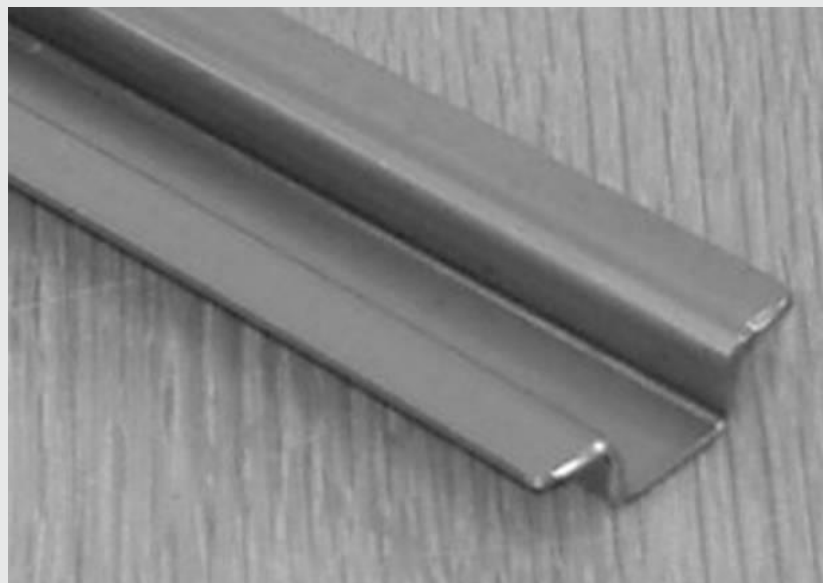
# Roll Forming of Ultra High strength steel

Gustav Olsson

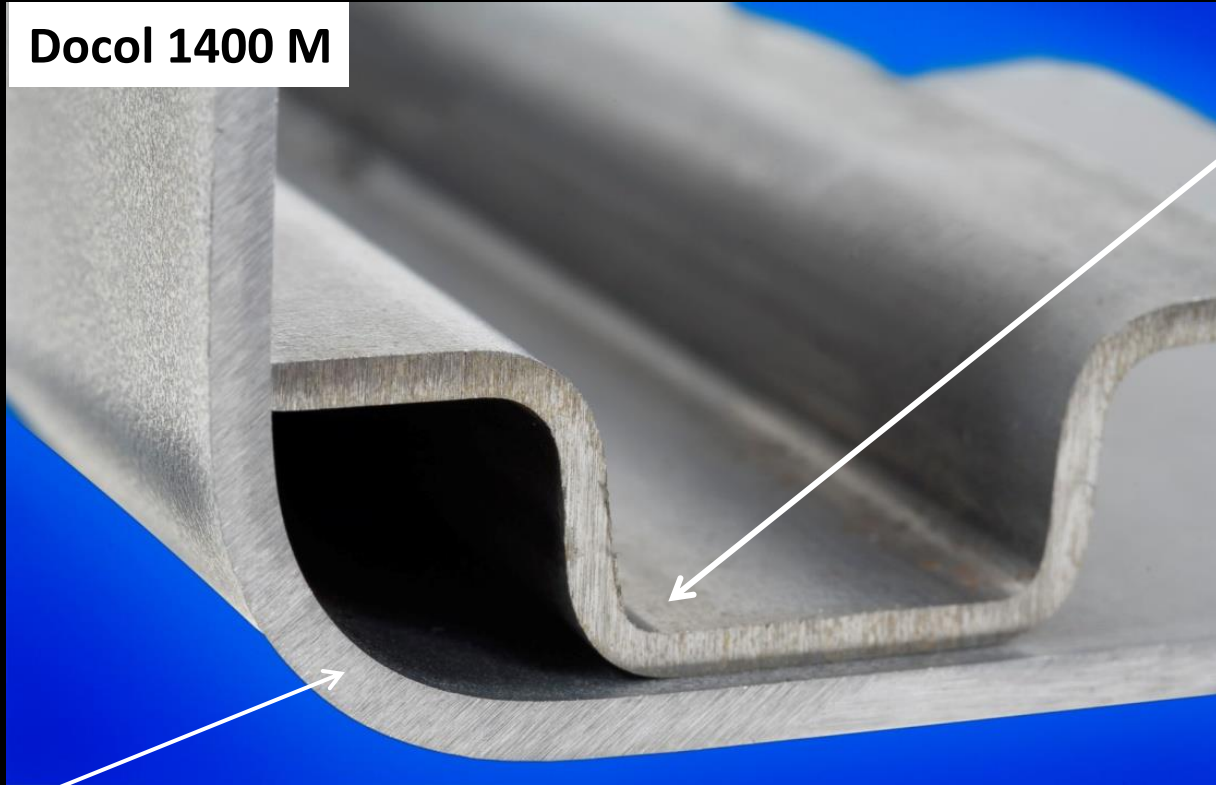




SWEDISH  
STEEL PRIZE



**Docol 1400 M**

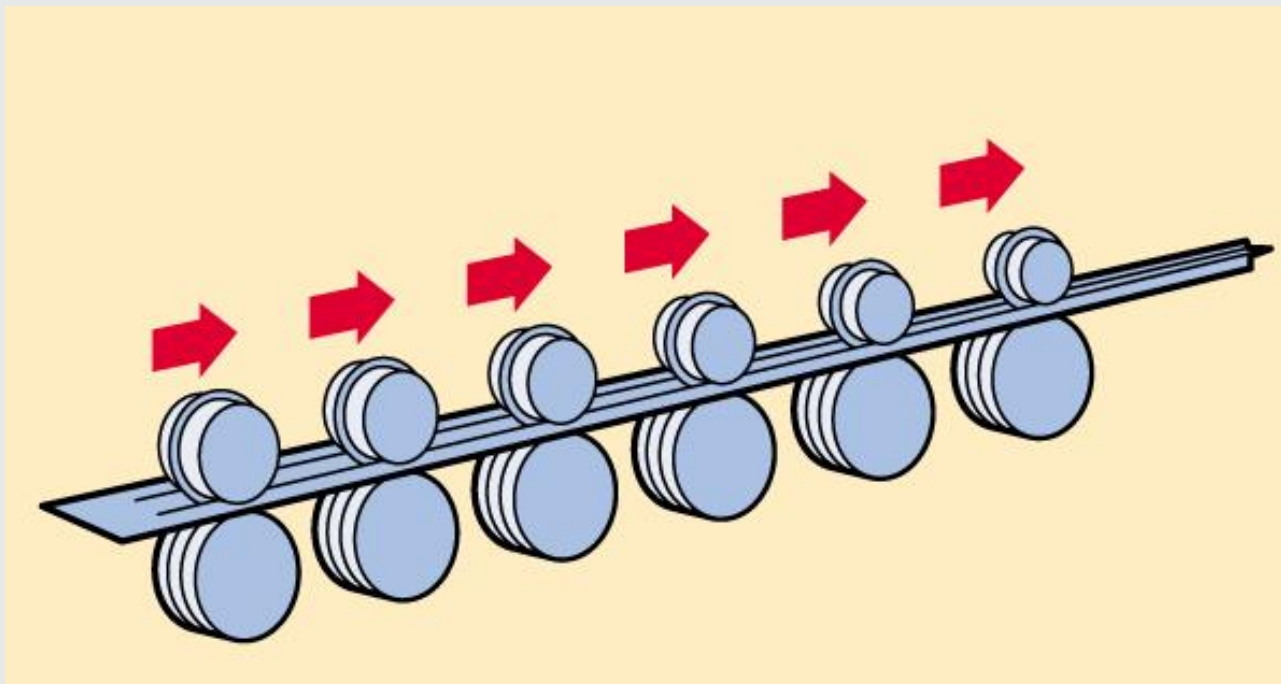


INNER RADIUS  
OBTAINED  
IN ROLL FORMING

MINIMUM INNER RADIUS  
IN BENDING 4XT



SWEDISH  
STEEL PRIZE





SWEDISH  
STEEL PRIZE

# *Cost*

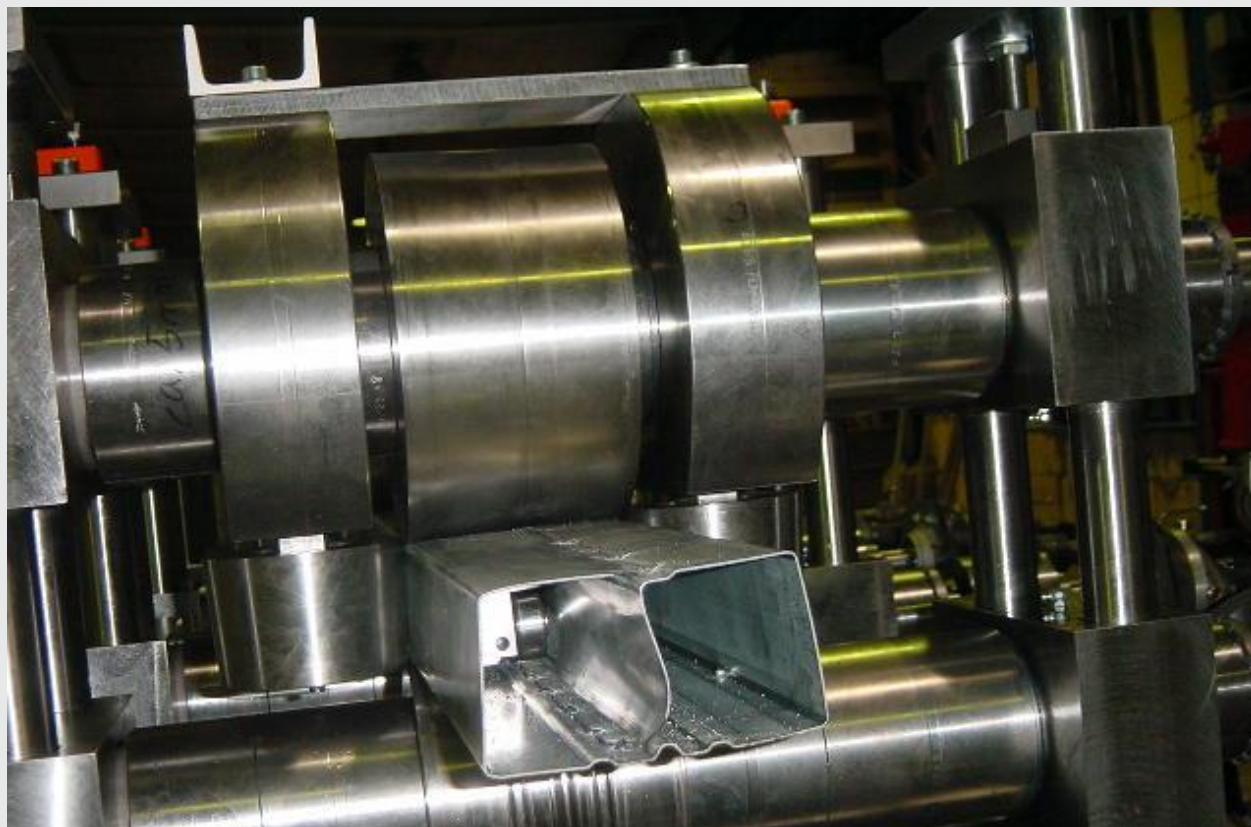
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# *Part*



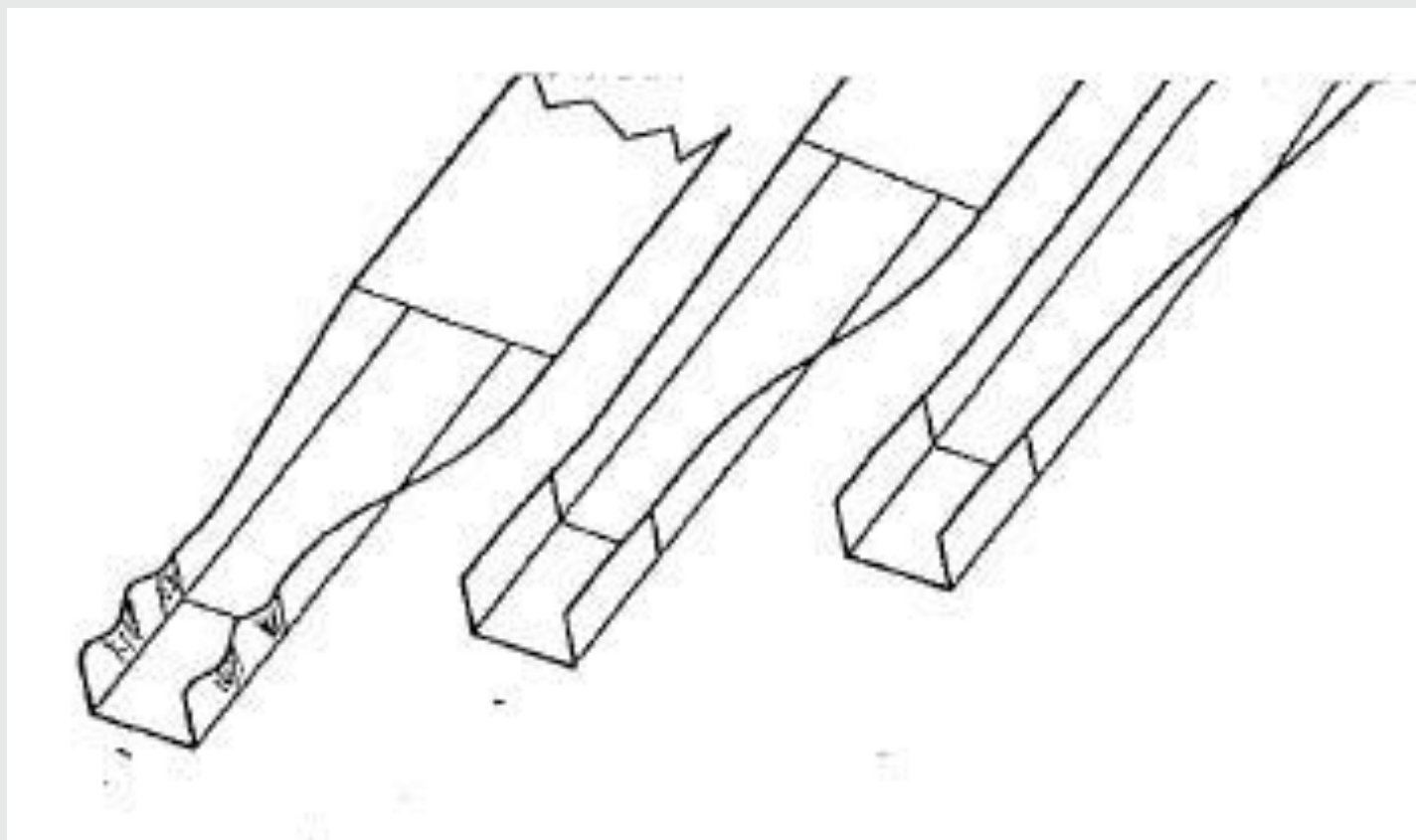


SWEDISH  
STEEL PRIZE



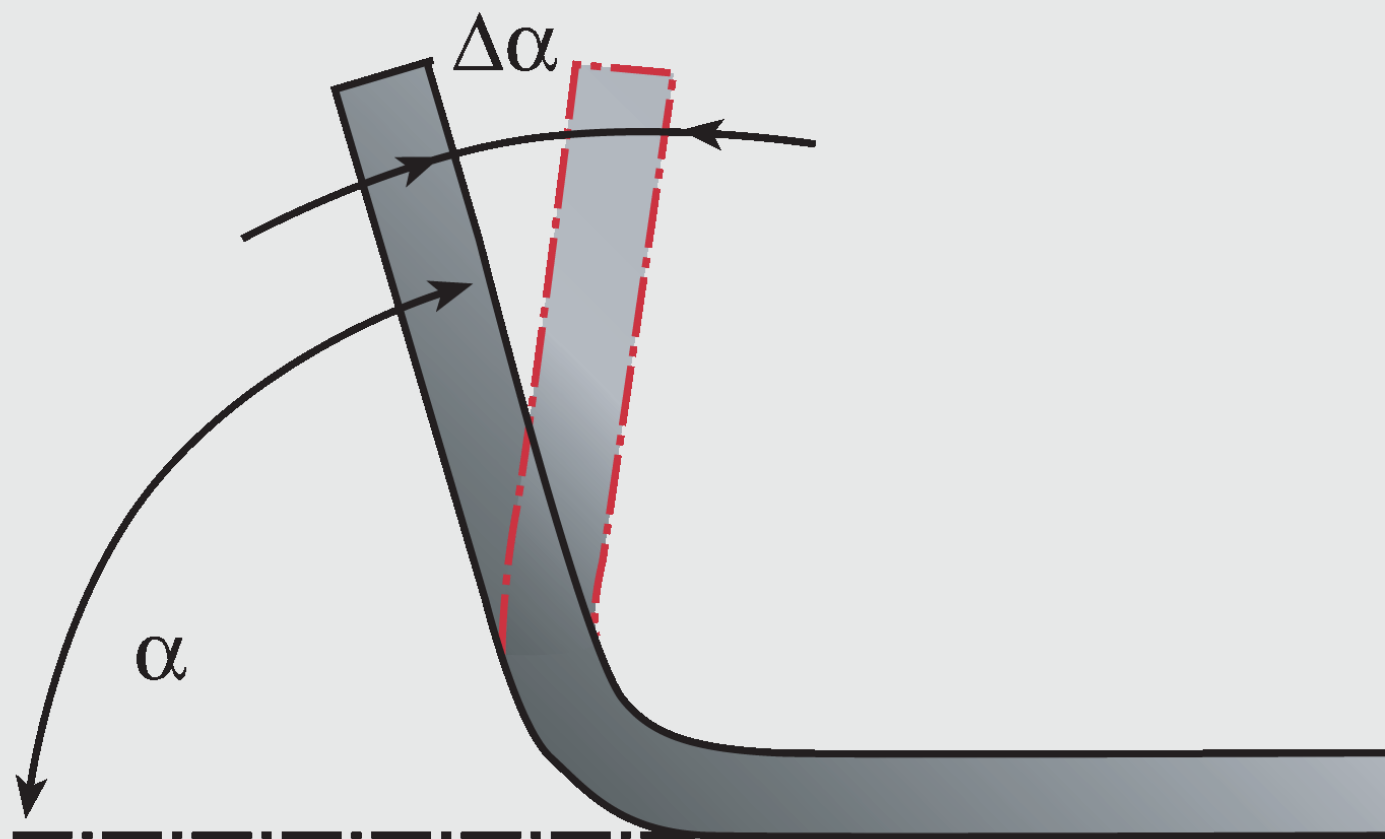


SWEDISH  
STEEL PRIZE





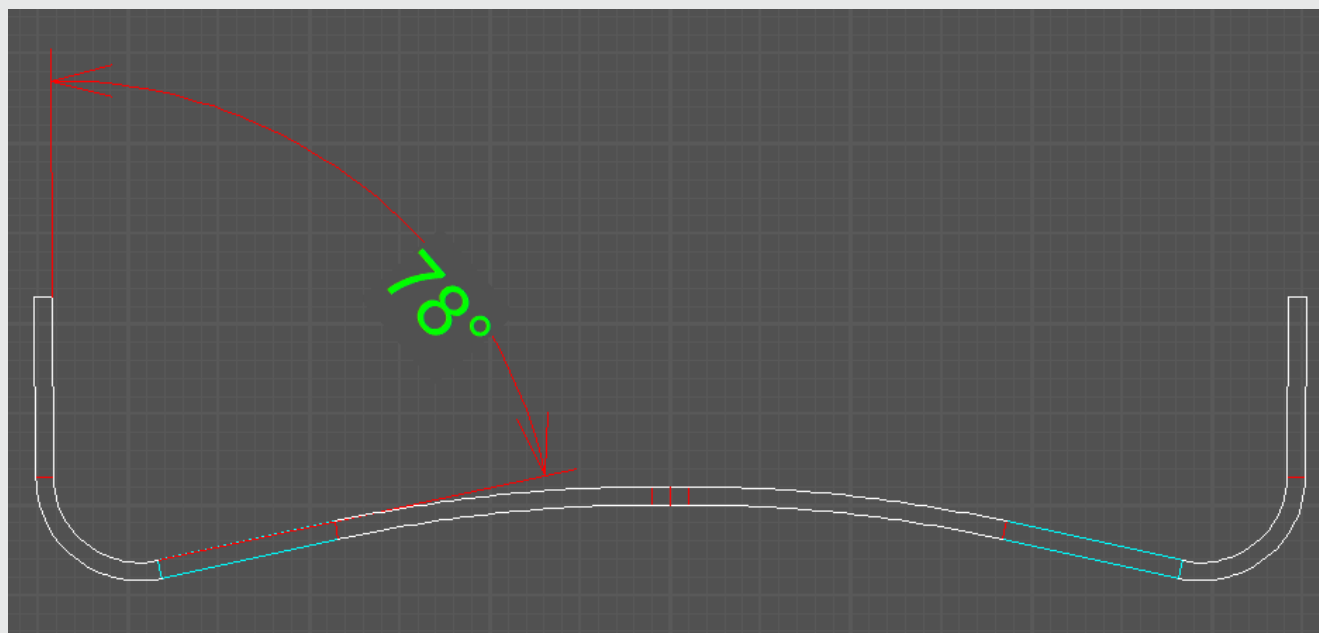
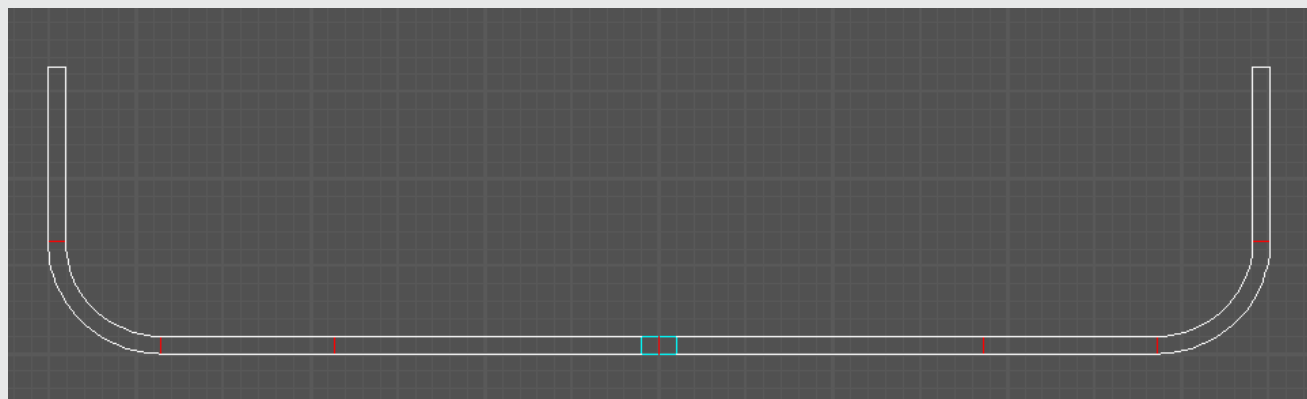
SWEDISH  
STEEL PRIZE





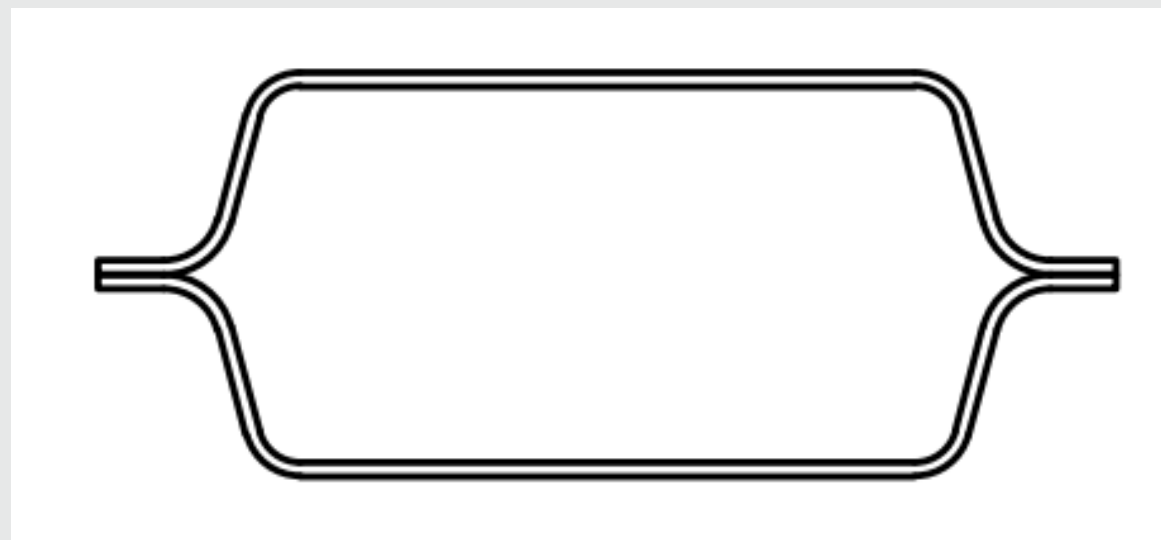
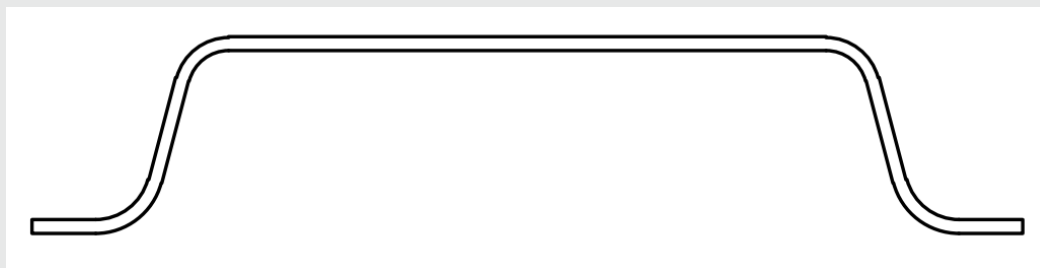


SWEDISH  
STEEL PRIZE





SWEDISH  
STEEL PRIZE





SWEDISH  
STEEL PRIZE







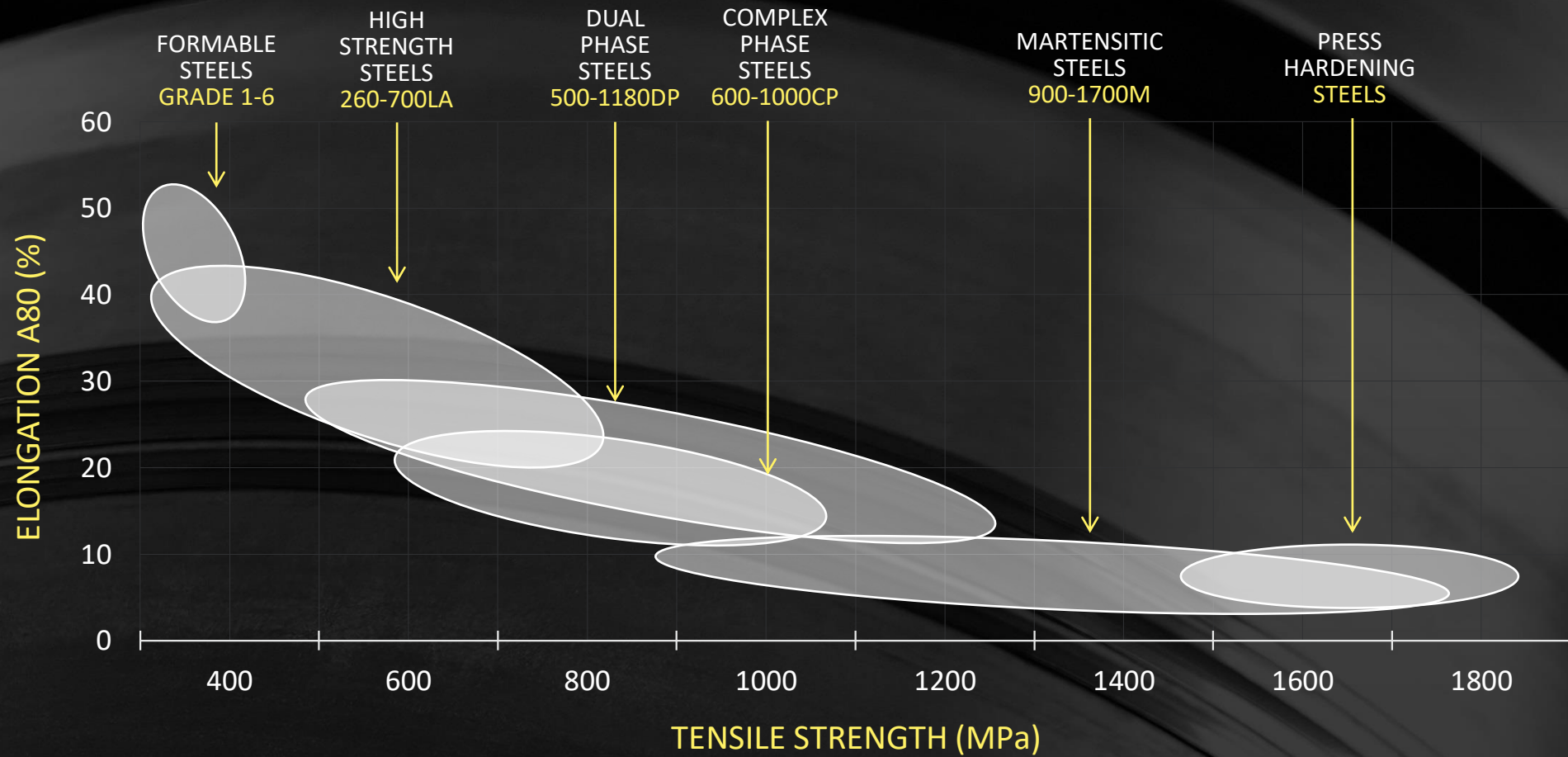
# Stamping of HR1000CP

Peter Alm

Knowledge Service Center

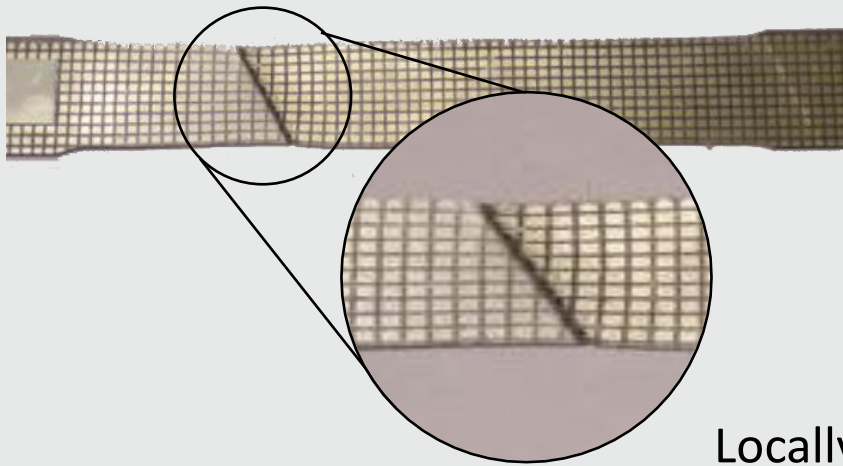




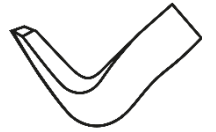


# TENSILE TEST

Measuring Length original tensile specimen 80mm  
After tensile test 88mm → Elongation  $A_{80}$  10%



Locally 20% strain



SWEDISH  
STEEL PRIZE

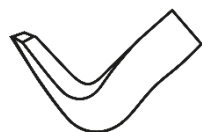
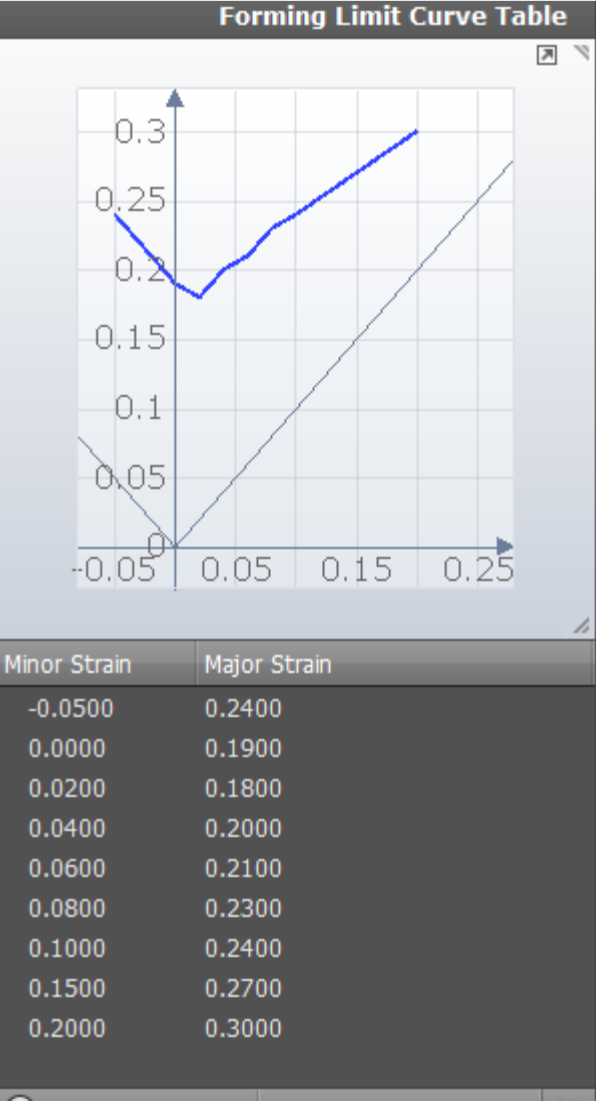


# FORMING LIMIT CURVE

The figure indicates the width of specimen  
Diameter = 200mm

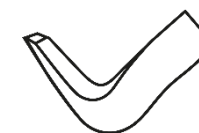


Surface compon	
eps1Value	+0.0
eps2Value	+0.0

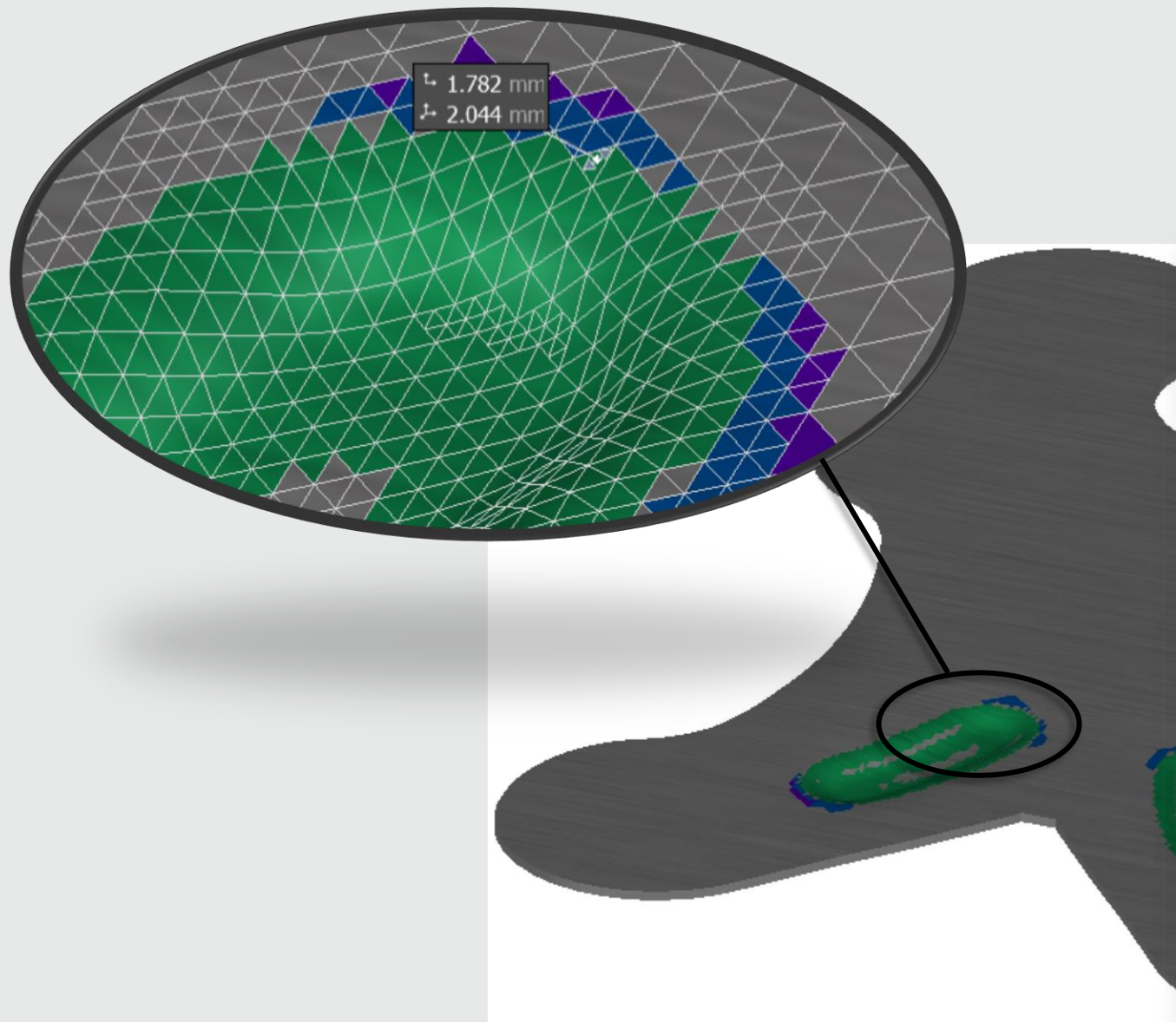


SWEDISH  
STEEL PRIZE

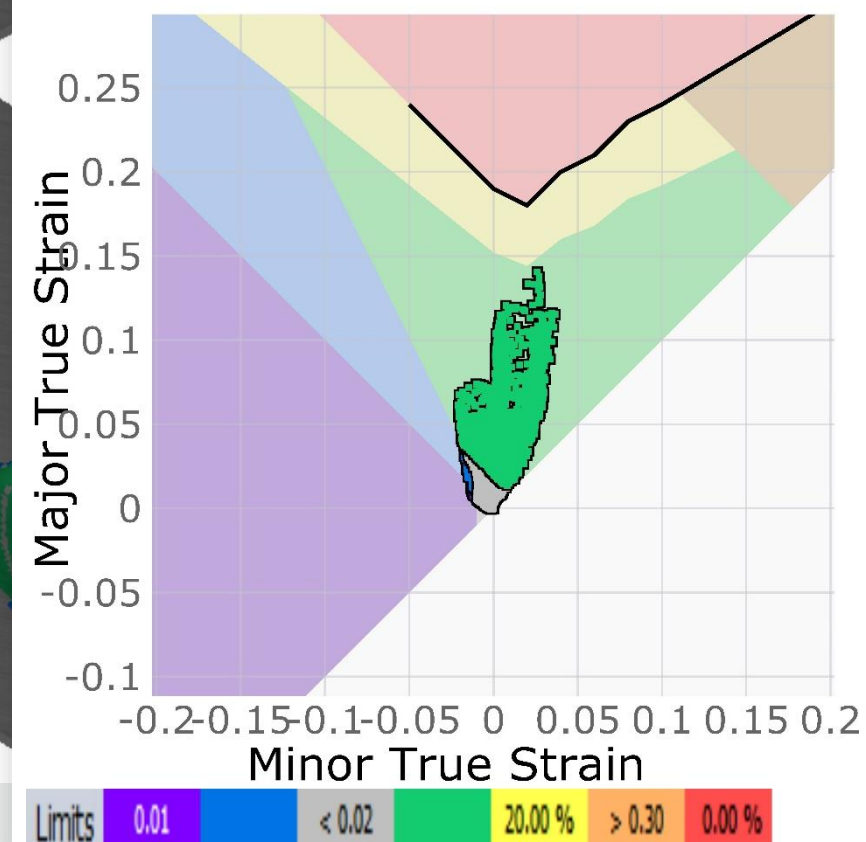
neck  
necking zone.eps1Value)  
necking zone.eps2Value)



SWEDISH  
STEEL PRIZE

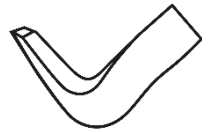


Advanced Forming Limit Diagram

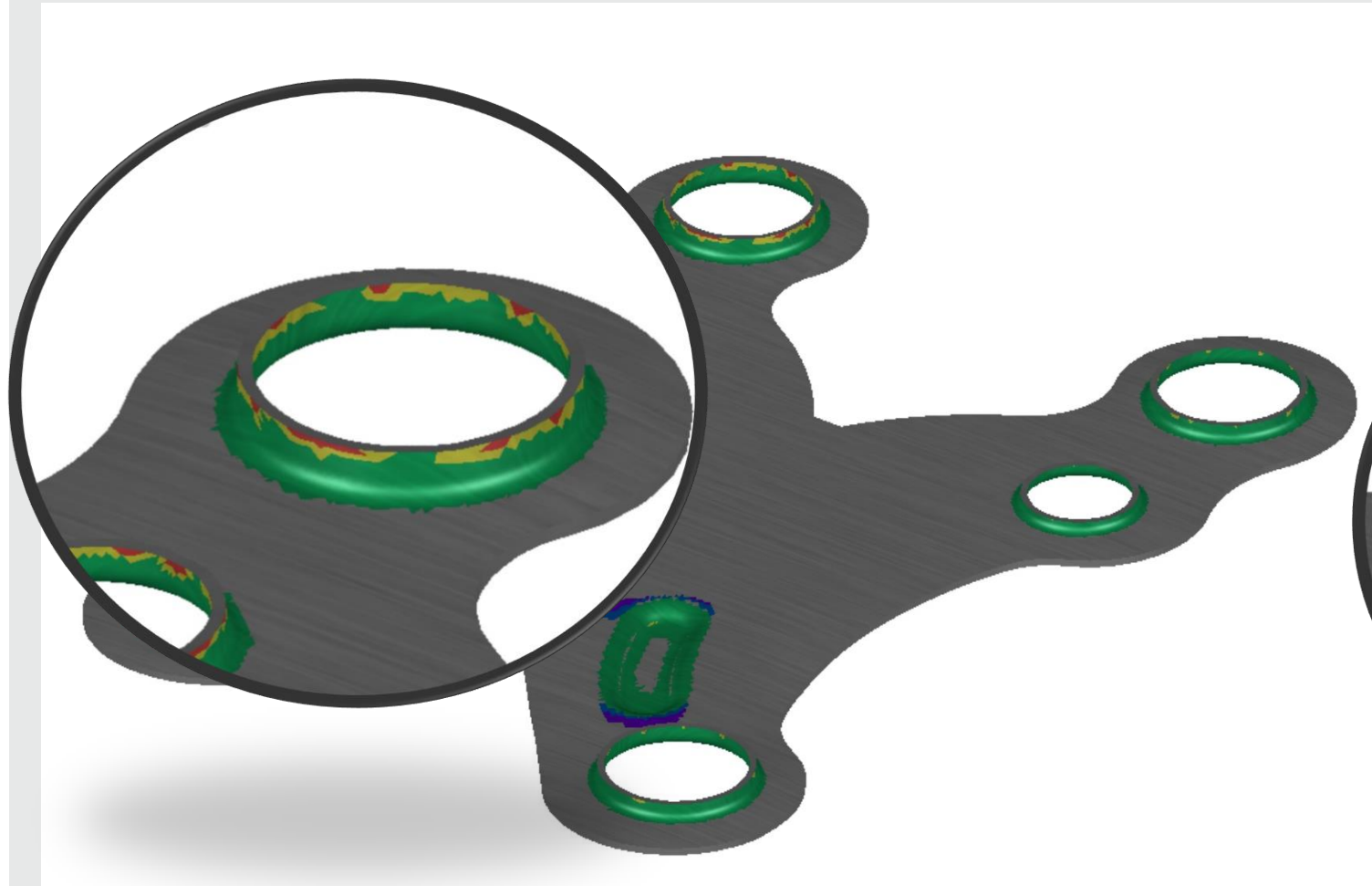




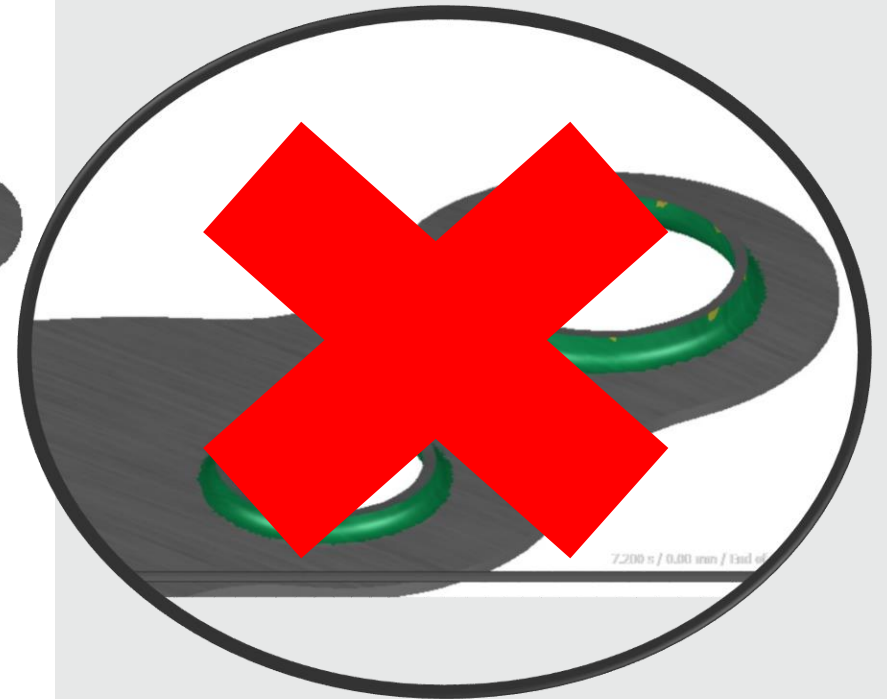
# STRETCHED EDGES



SWEDISH  
STEEL PRIZE



Reduce height





# STRETCHED EDGES PRE-PIERCING

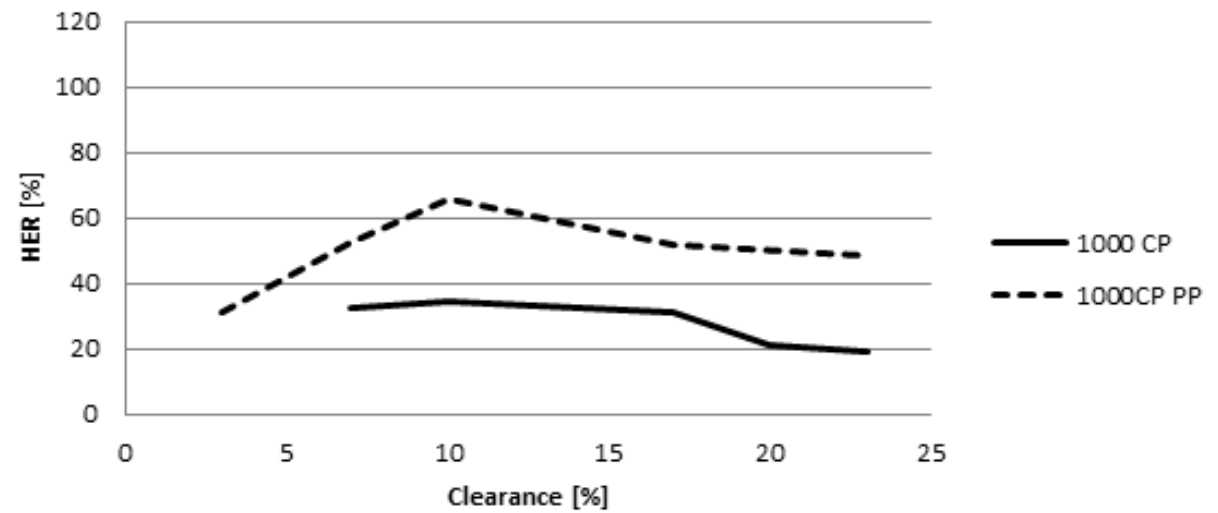
Punched



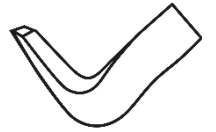
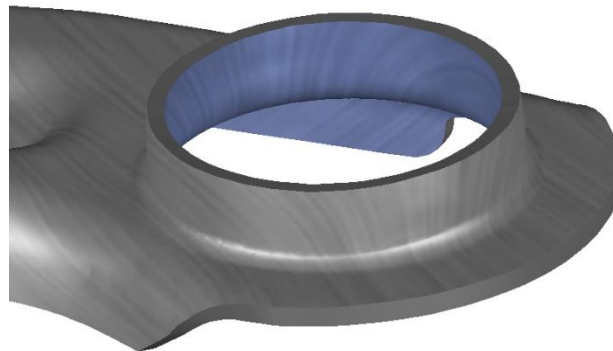
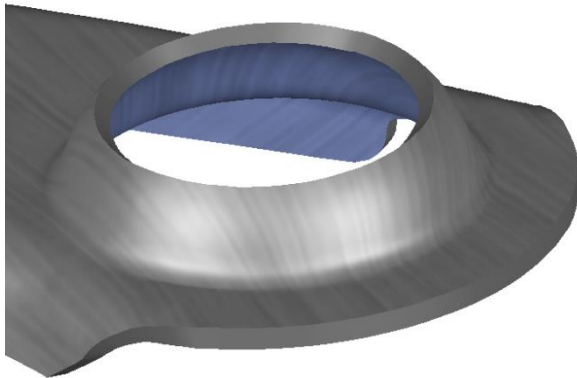
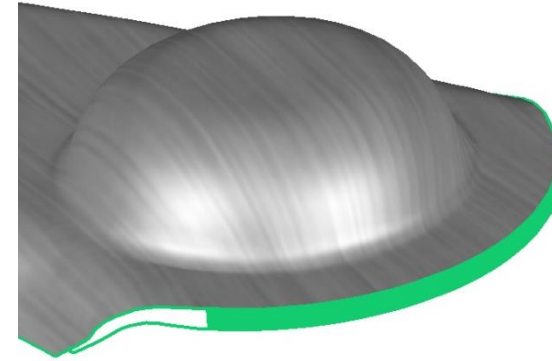
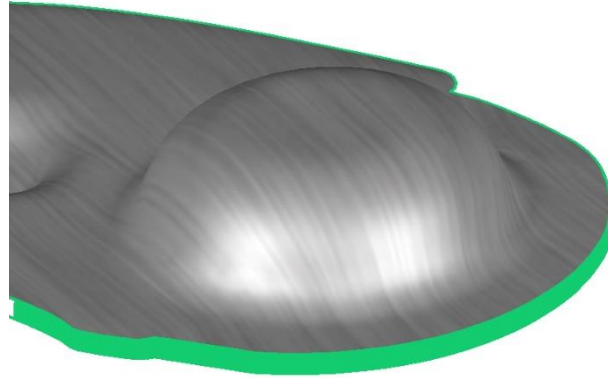
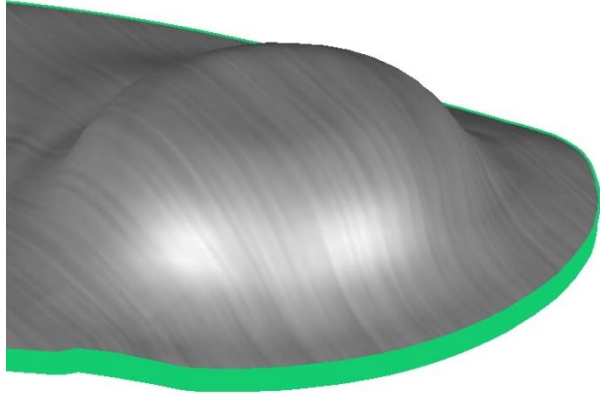
Pre-pierced



1000 CP

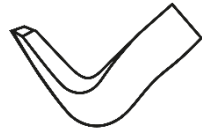


# STRETCHED EDGES MULTISTEP



SWEDISH  
STEEL PRIZE

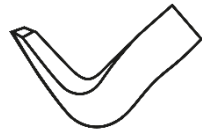
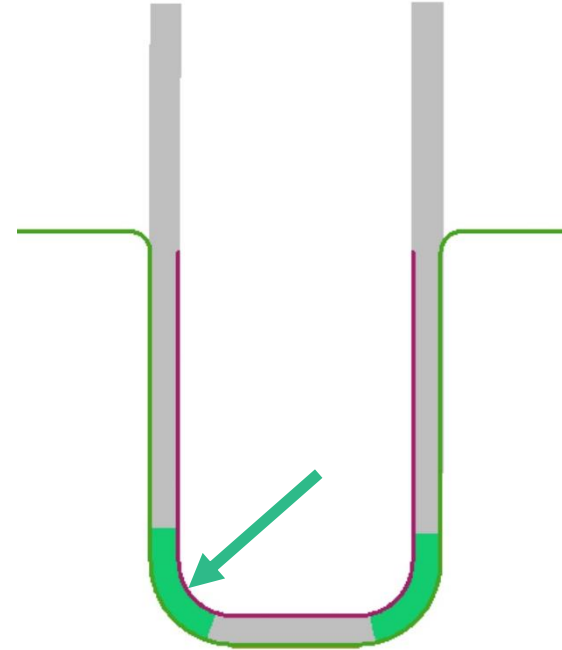
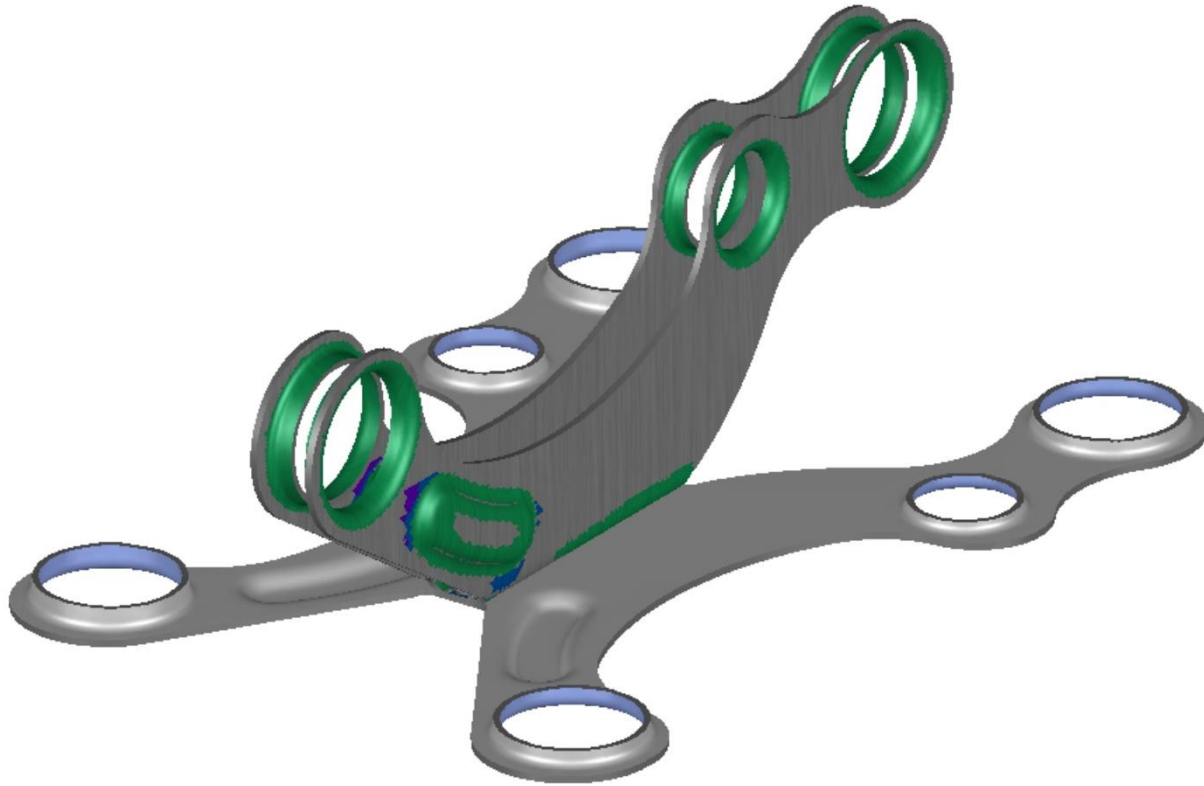
# STRETCHED EDGES MULTISTEP



SWEDISH  
STEEL PRIZE

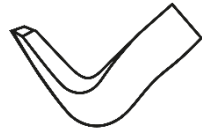


# BENDING

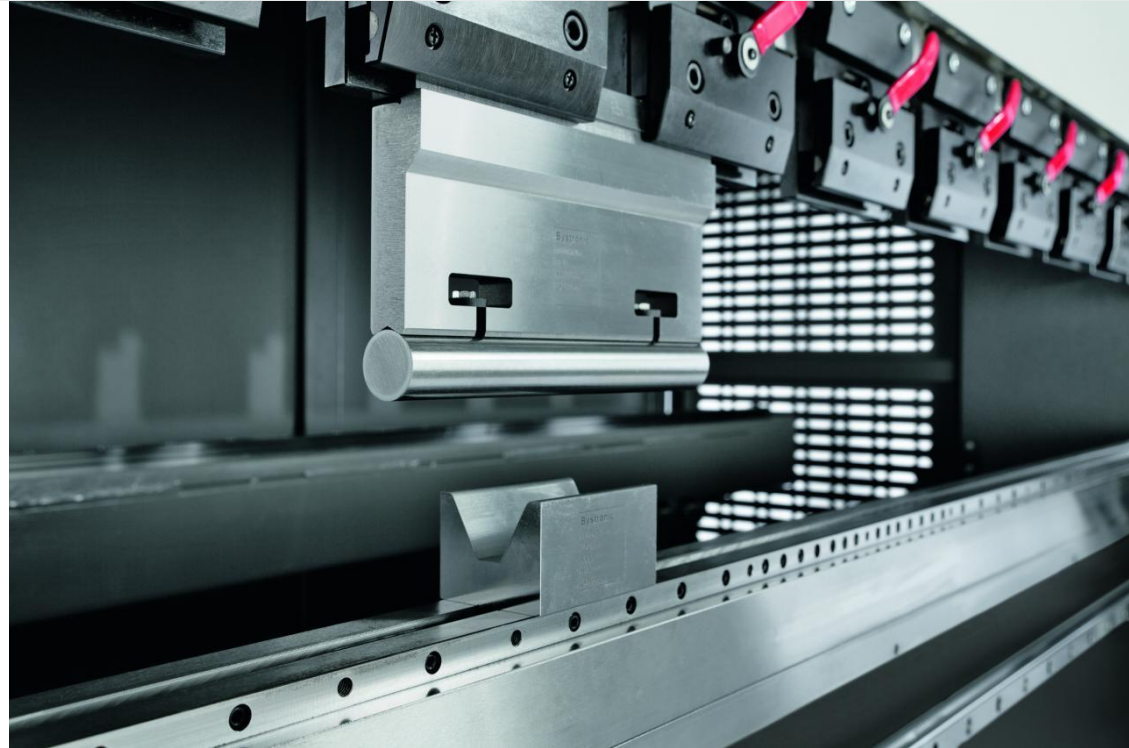
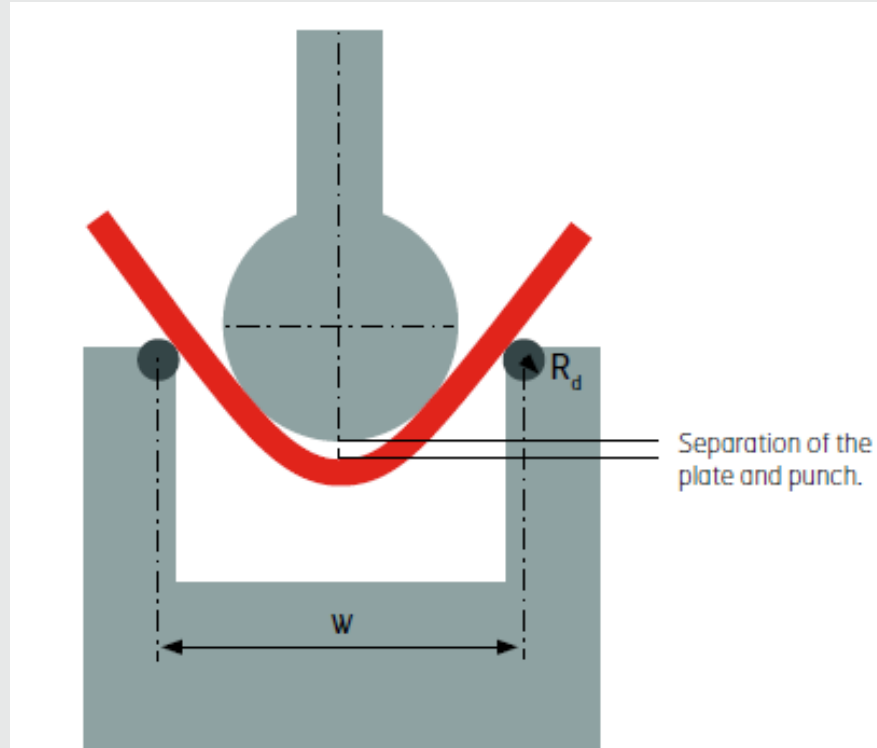


SWEDISH  
STEEL PRIZE

# BENDING TEST PRESSBRAKE

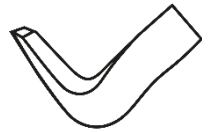
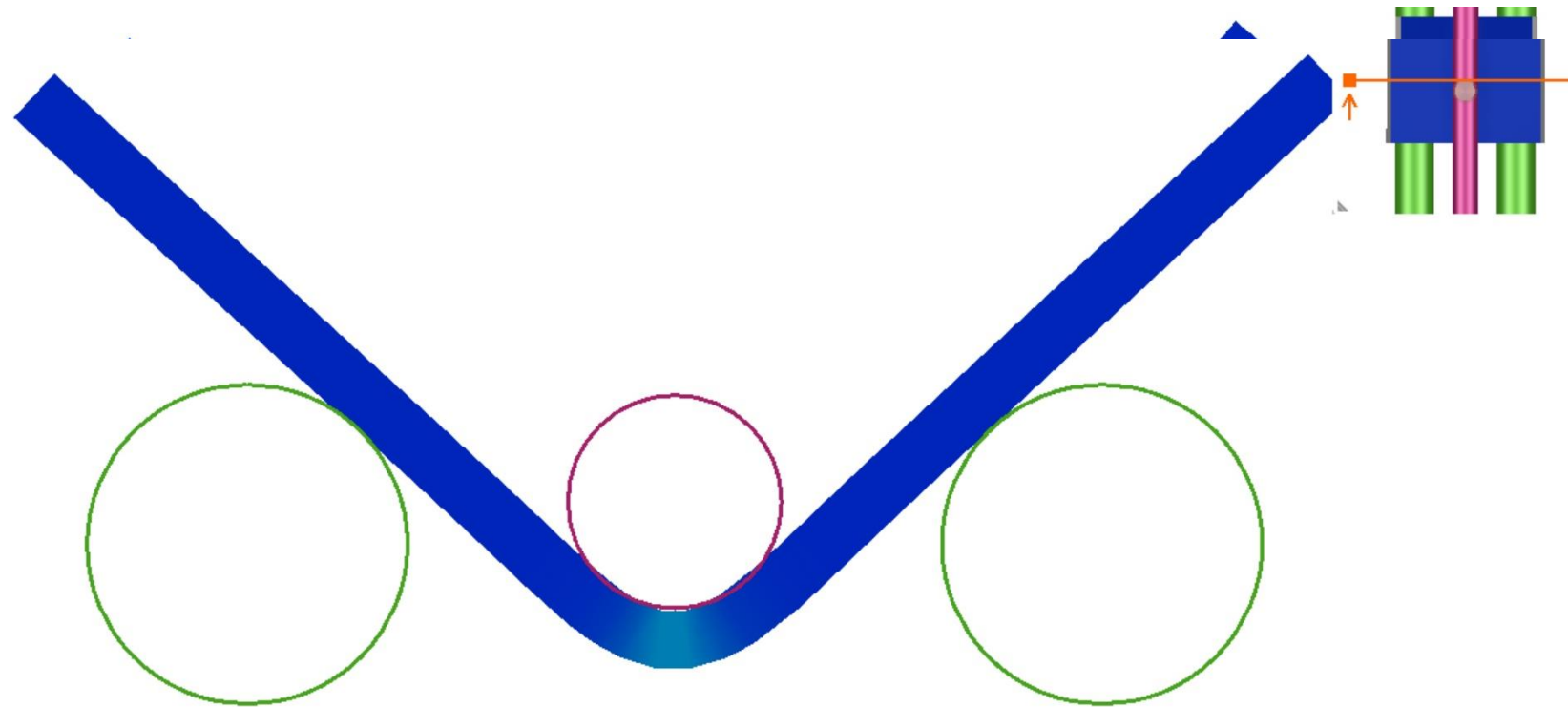


SWEDISH  
STEEL PRIZE



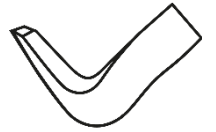
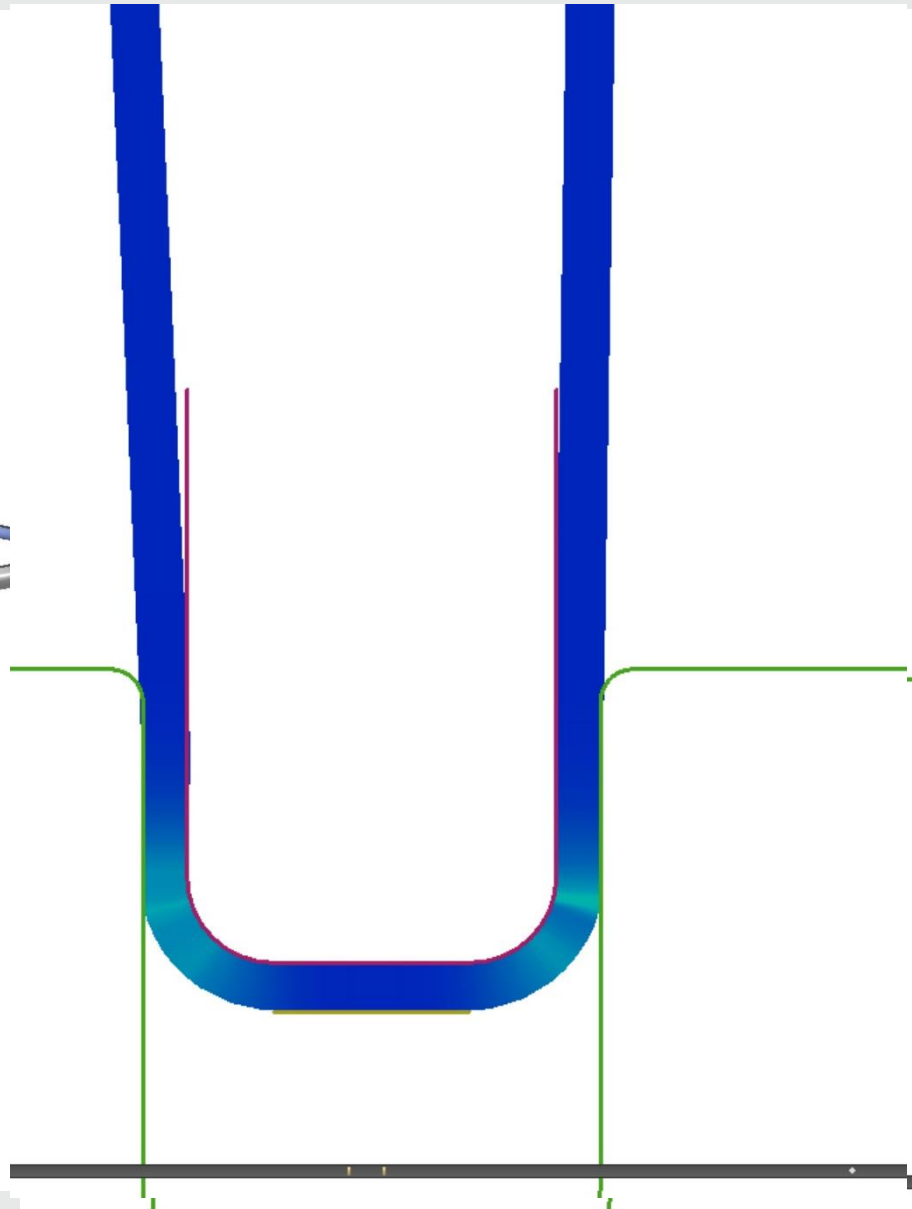
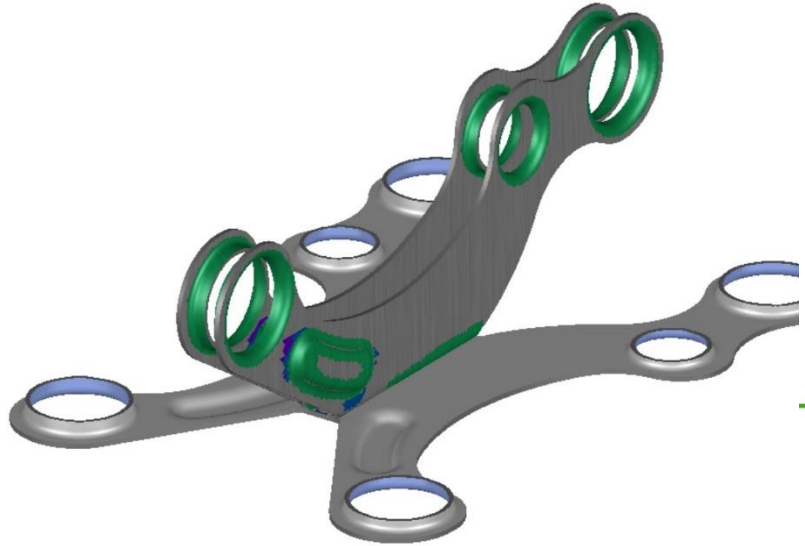


# BENDING TEST PRESSBRAKE



SWEDISH  
STEEL PRIZE

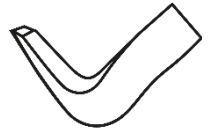
# BENDING



SWEDISH  
STEEL PRIZE

# Conclusions

- Use forming limit curve not elongation.
- Stretch flanges with high deformation can be solved.
- Bending recommendations is conservative.
- We can help you to get out the full potential of the material.



SWEDISH  
STEEL PRIZE

