



STAMPACK
Xpress

Update Stampack Xpress 2024.0

Overview

- Highlights of 2024.0
- Outlook for upcoming year
- New features in detail
- Main feature improvements in detail
- Miscellaneous improvements
- Hardware recommendation

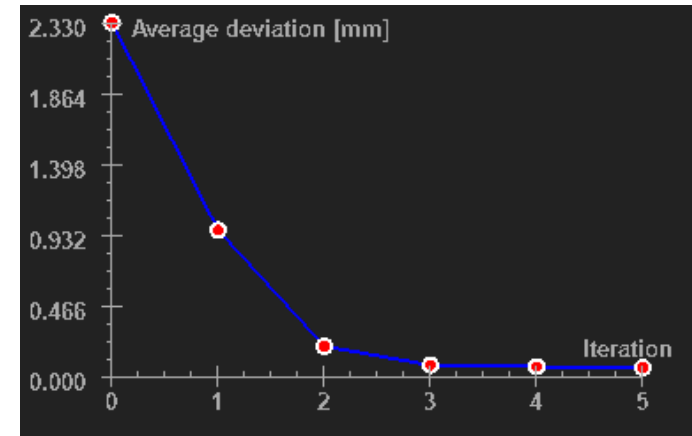
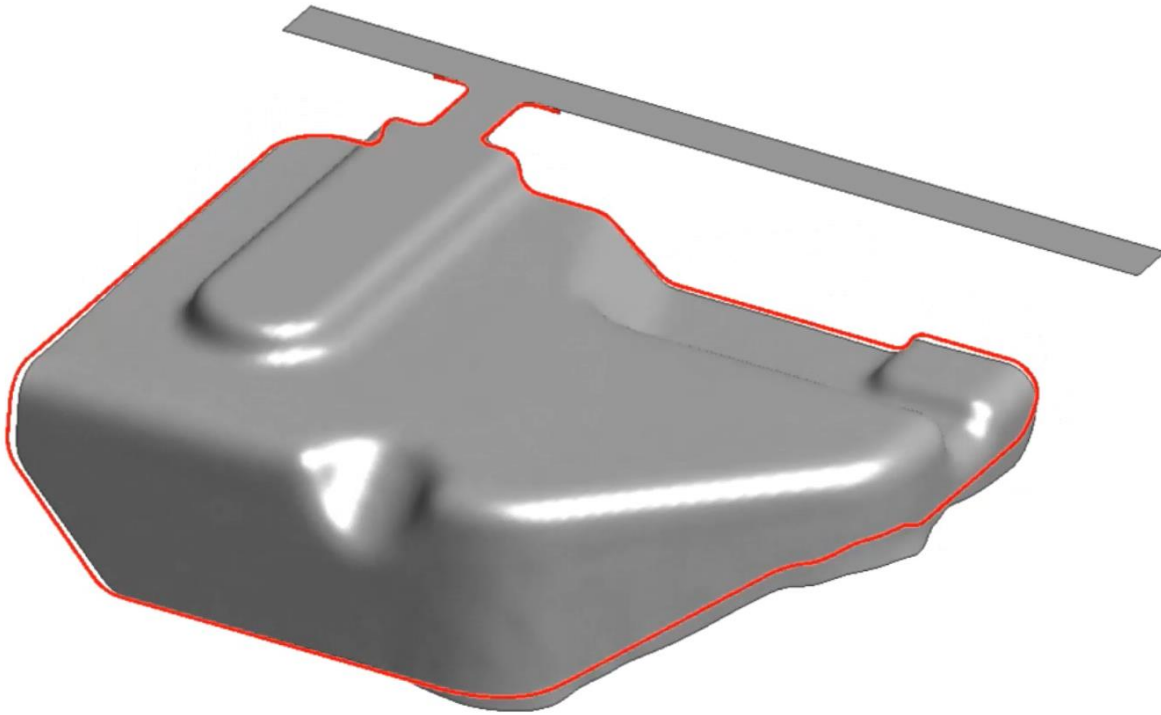




STAMPAACK
Xpress

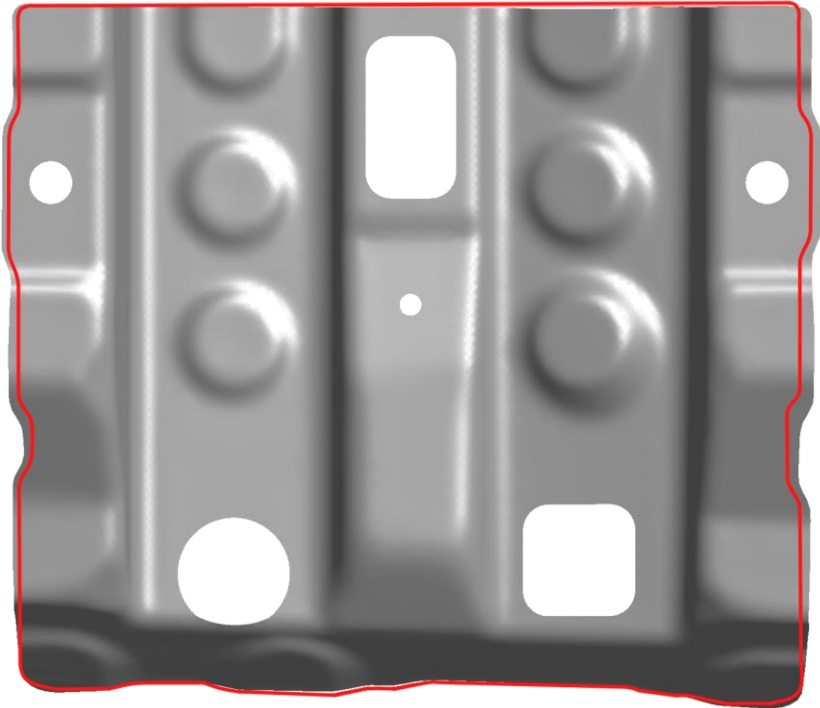
Highlights 2024.0

Trim Optimizer for solid elements



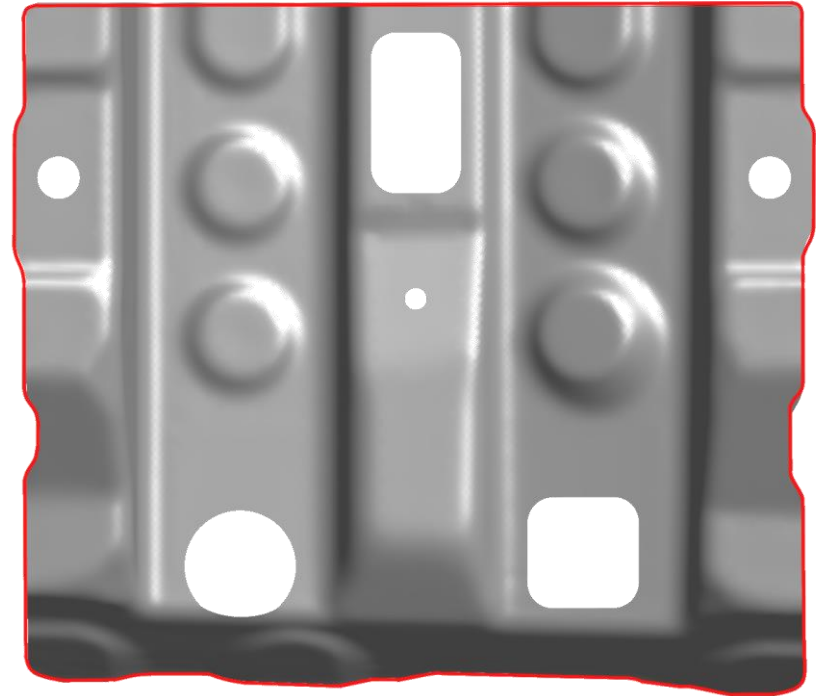
Average deviation: 0.06mm

Trim Optimizer

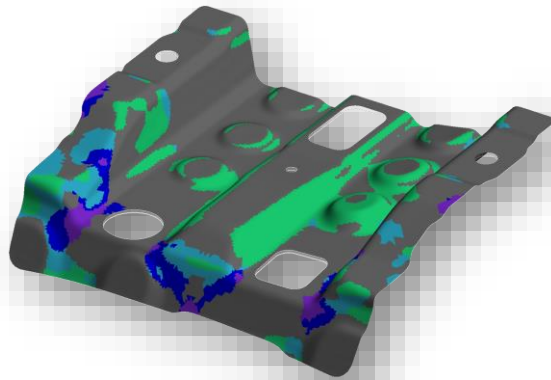


Deviation
3.2 mm

4
iterations

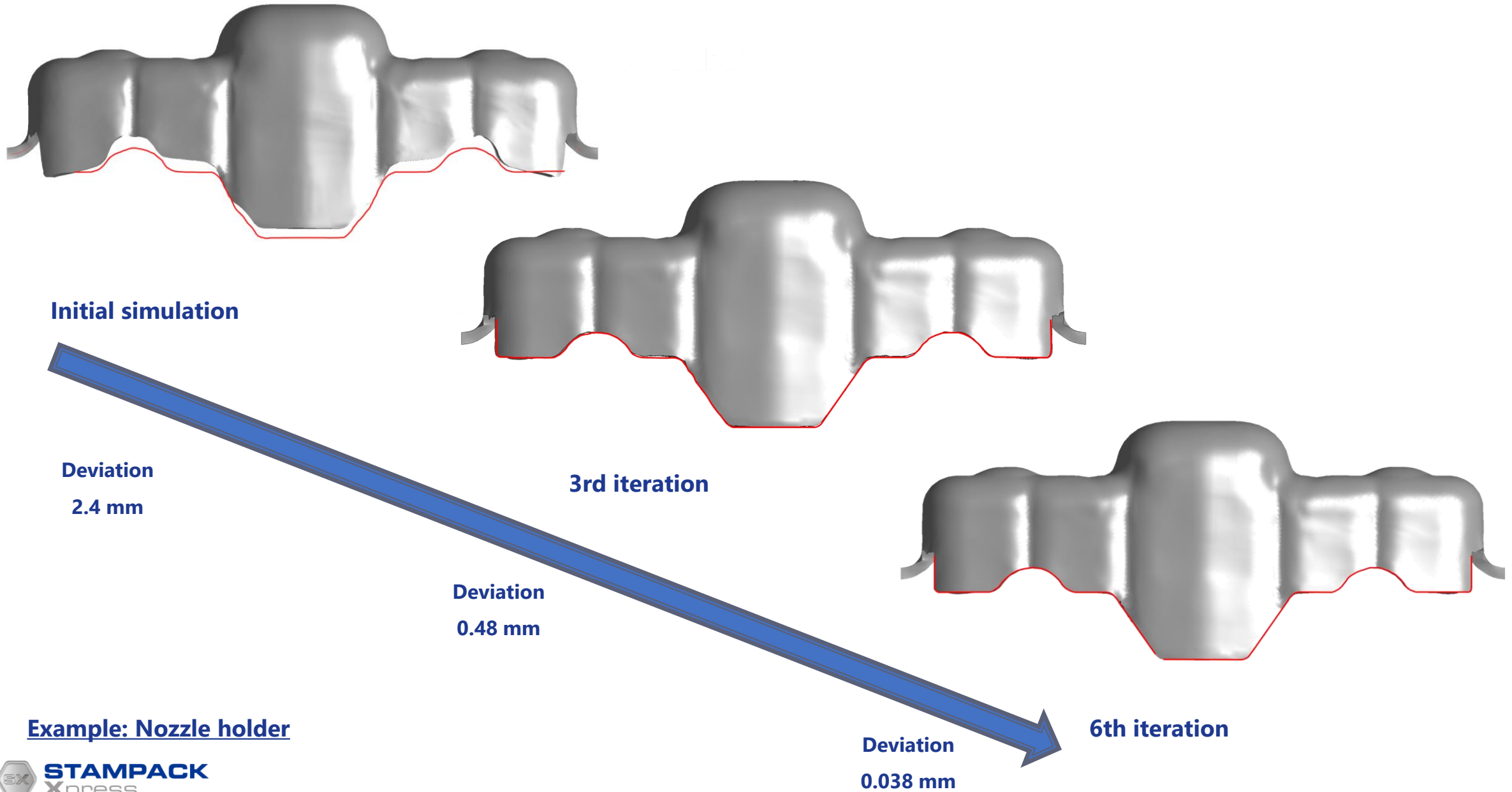


Deviation
0.15 mm



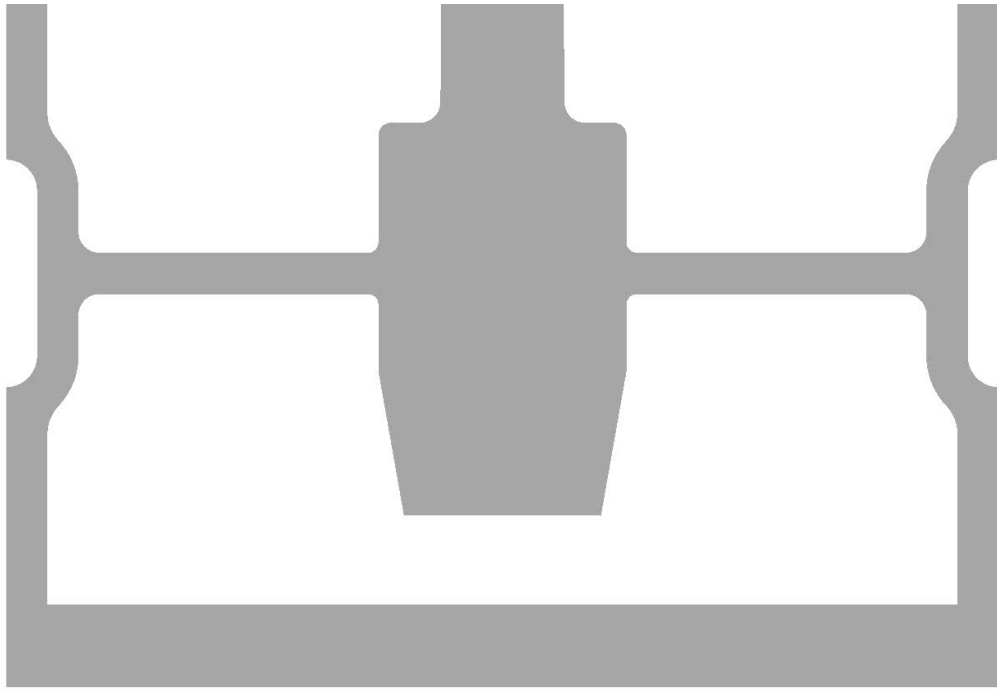
Example: insert frame

Trim Optimizer



Trim Optimizer

STAMPACK Xpress



Initial simulation

Deviation
1.73 mm



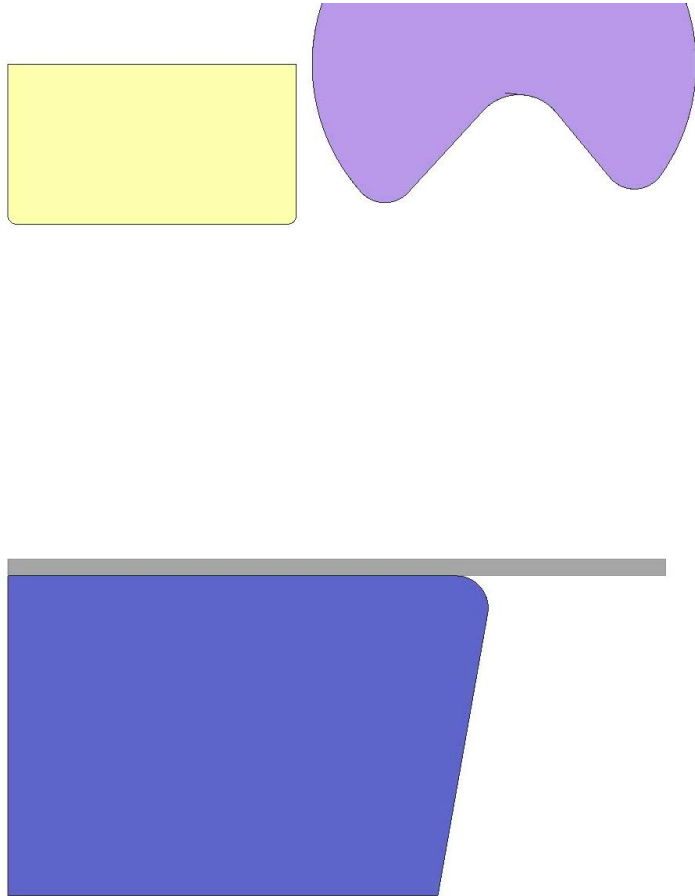
5th iteration

Deviation
0.02 mm

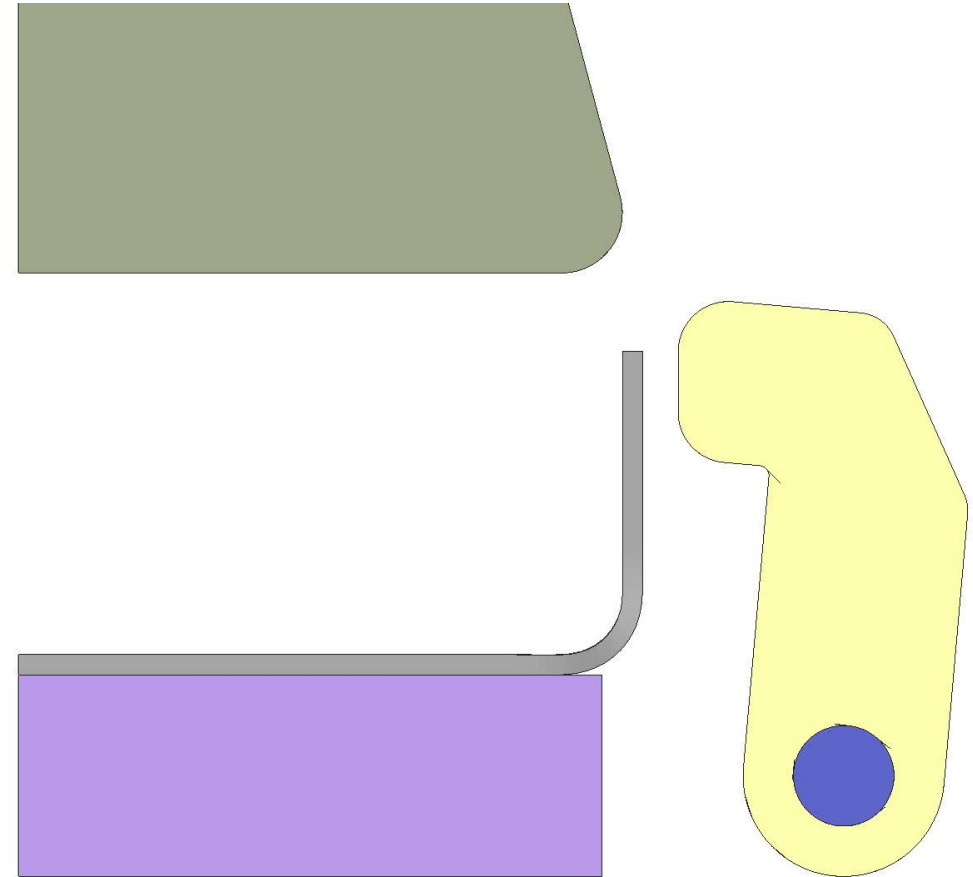
Example: Coining

New application: Rotary

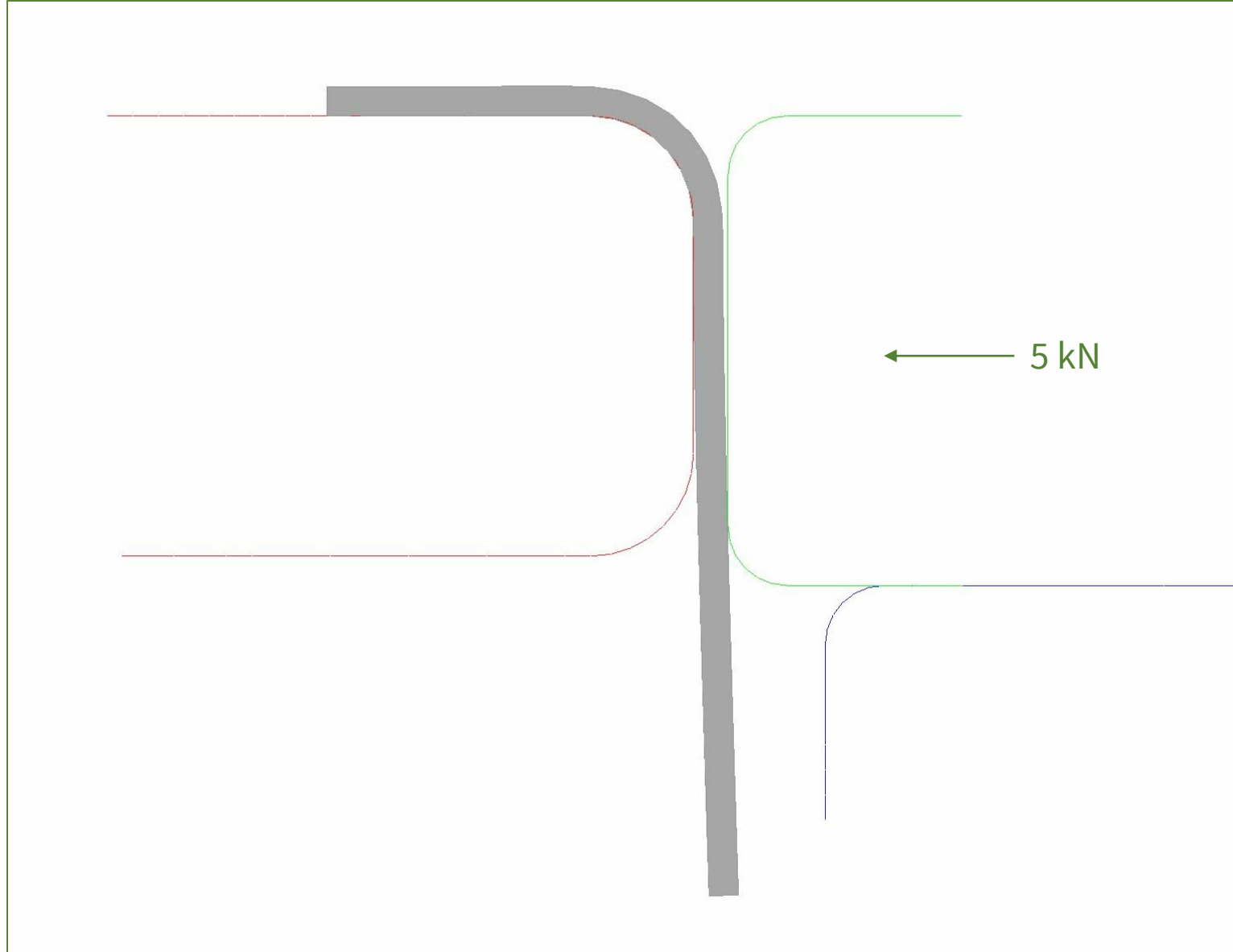
Rotary bender



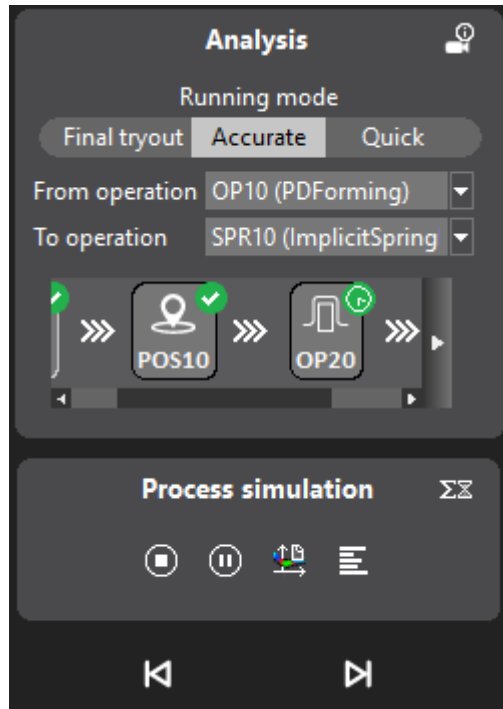
Rocker bender



New application: Cam-Pad

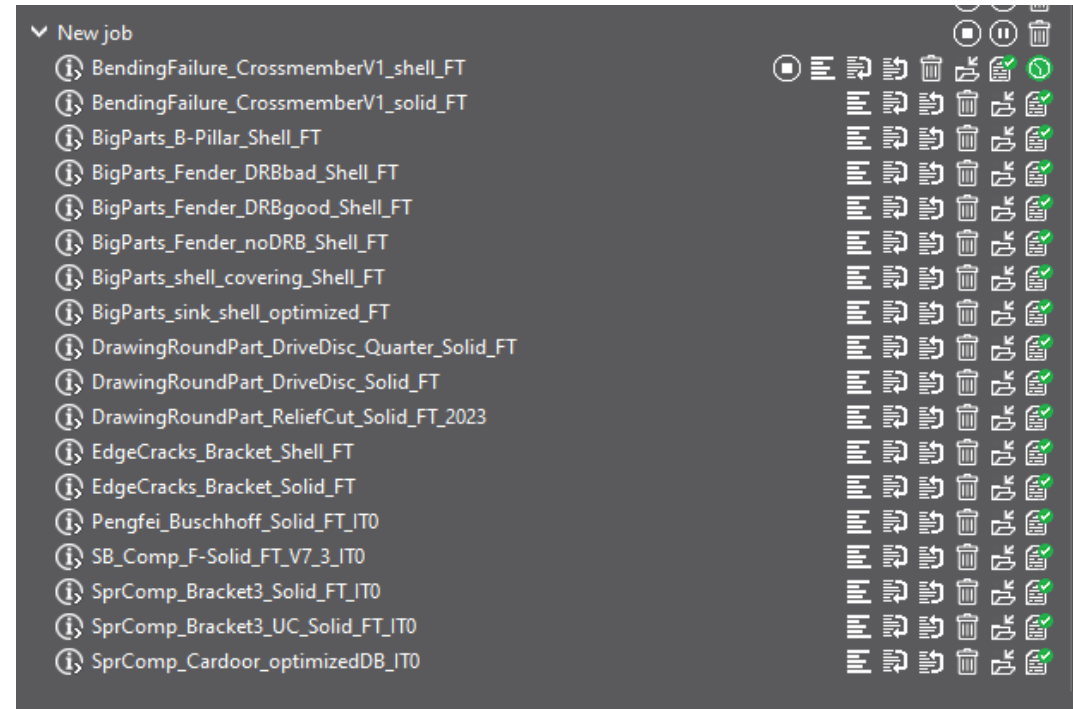


Job manager



Improved handling:

- Stop
- Pause
- Enforce a result snapshot

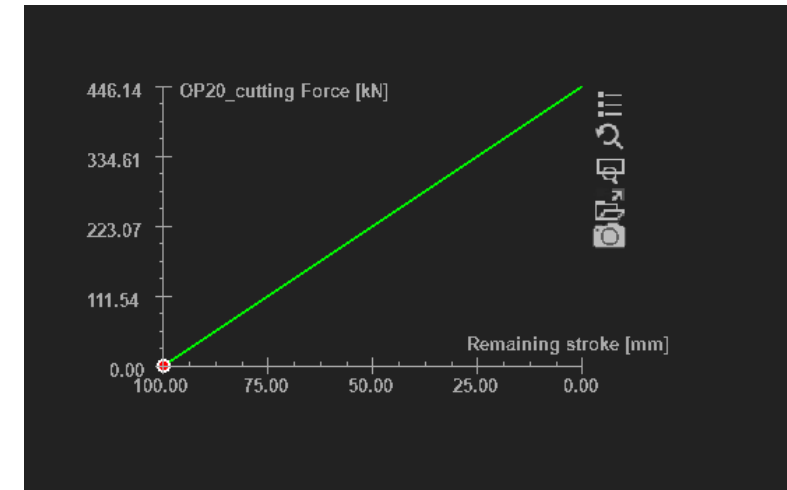
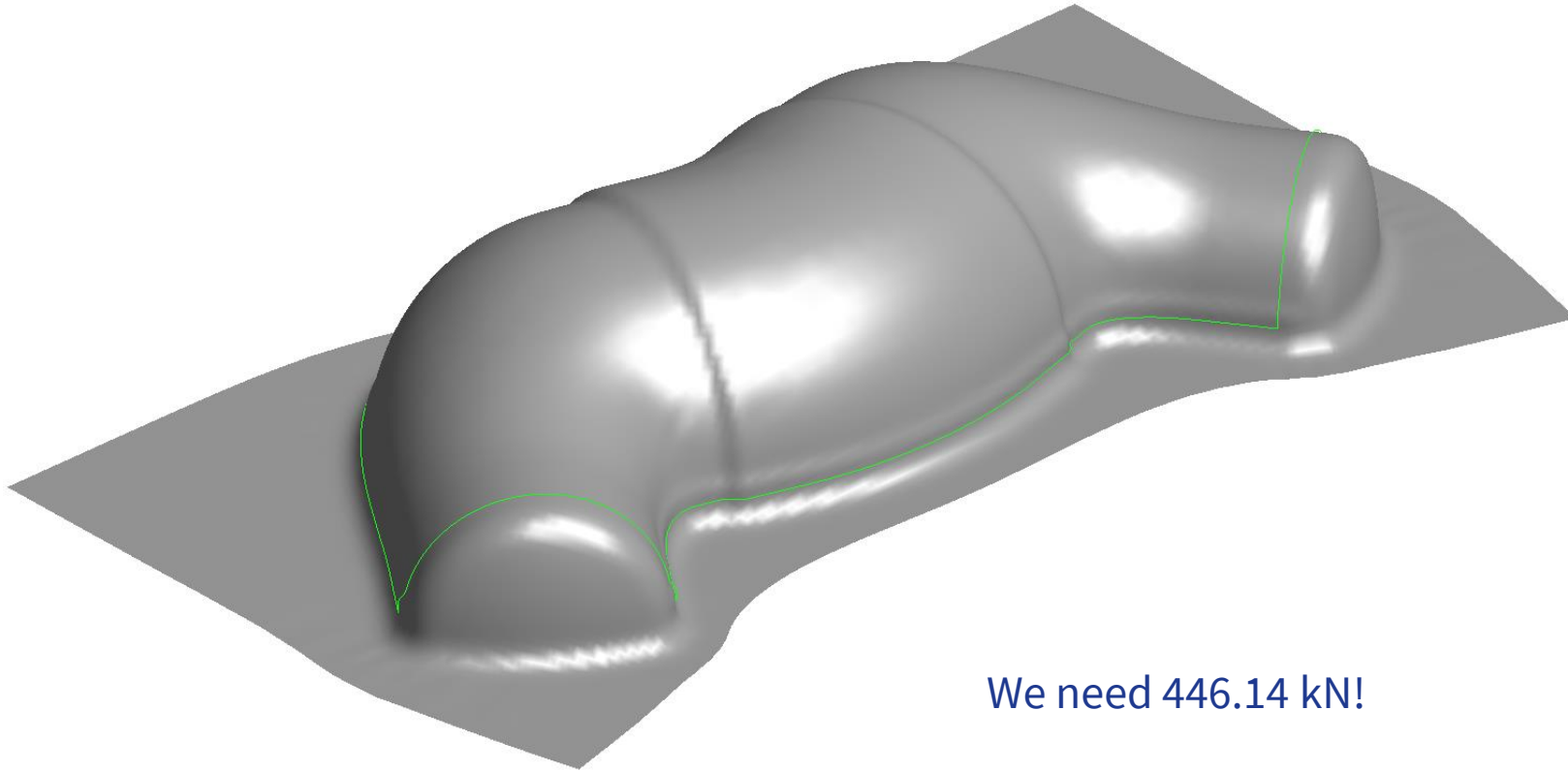


Queuing system:

- Add jobs to queue
- Change priorities

Cutting Force

For each cutting, we calculate automatically the required force!



We need 446.14 kN!

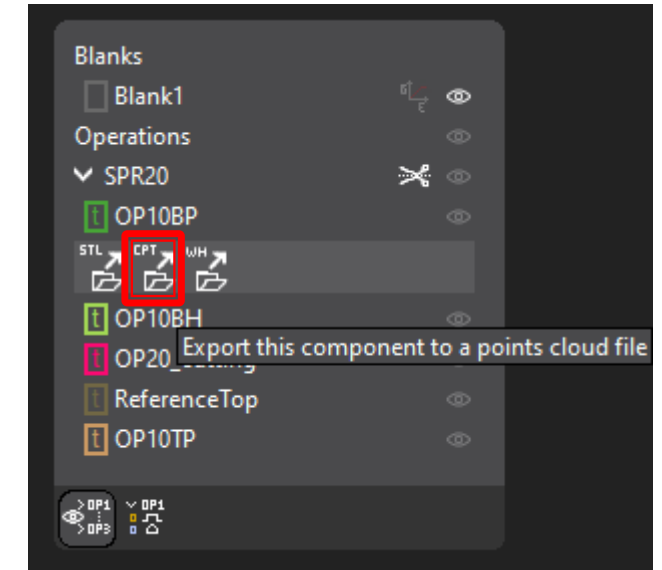
Export vector-fields

Export Springback/Compensation vector fields as .txt.:

- CATIA Realistic Shape Optimizer 2
- NX Global Deformation

Idea:

- Make compensation in Stampack on mesh level
- Adapt the surfaces accordingly in NX/CATIA



Datei	Bearbeiten	Ansicht
-117.17473408579826354980 22.24631959199905395508 -5.13435866683721542358 0.11269184947013854980 -0.03733330965042114258 0.12169434875249862671		
-116.10189494490623474121 23.46442680060863494873 -5.13435879349708557129 0.11417827010154724121 -0.04155425727367401123 0.12254515290260314941		
-118.26112359762191772461 20.98955161869525909424 -5.13435871899127960205 0.11250299215316772461 -0.03423126041889190674 0.12092907726764678955		
-115.04142751544713973999 24.64580311626195907593 -5.13435900956392288208 0.11568441241979598999 -0.04598584026098251343 0.12328828126192092896		
-117.17473980411887168884 22.24631926091387867928 -9.99999966472387313843 0.05962749943137168884 0.00422051874920725822 0.12207760661840438843		
-116.10189681500196456909 23.46442652255063876510 -9.99999979883432388306 0.06098800152540206909 0.00059842556947842240 0.12290743738412857056		
-118.26112532243132591248 20.98955150227993726730 -9.99999982118606567383 0.05893110856413841248 0.00724033731967210770 0.12115842103958129883		
-115.04142519831657409668 24.64580424781888723373 -9.99999983608722686768 0.06224581599235534668 -0.0030067772611379623 0.12363798916339874268		
-119.36246296018362045288 19.69191068410873413086 -5.13435894995927810669 0.11295887082815170288 -0.03163617849349975586 0.11987120658159255981		
-117.17473496496677398682 22.24631809815764427185 -0.26871728897094726562 0.18140305578708648682 -0.05982327088713645935 0.12240938842296600342		
-116.10190024971961975098 23.46442661434412002563 -0.26871728897094726562 0.18241325020790100098 -0.06478557735681533813 0.12293705344200134277		
-113.99227038770914077759 25.79214998334646224976 -5.13435907661914825439 0.11670581251382827759 -0.05015131086111068726 0.12393923103809356689		
118.261123567810505033601 20.9895515513706707775 0.26871728897094726562 0.18241325020790100098 0.06478557735681533813 0.12293705344200134277		

270 new material cards for Copper and Bras

Material database manager

Select material database: Stampack GmbH

Search material: CuS

Available materials in DB

- CuSn8_H02
- CuSn8_H03
- CuSn8_H04
- CuSn8_H06
- CuSn8_H08
- CuSn8_H10
- CuSn8_R590
- CuSn8_R685
- CuSn8_R735
- CuSn8_R800
- C50715_R500
- C50715_R540
- C50715_R600
- High strength steel
- Low carbon steel
- Stainless steel
- Titanium
- Other materials

Name	Supplier	EU	Numerical	US	Yield (MPa)	Strength (MPa)
CuSn8_R800	Stampack GmbH	CW453...	-	C52100_R800	808.5	850.0
C50715_R500	Stampack GmbH	CuSn2F...	-	C50715_R500	486.5	540.0
C50715_R540	Stampack GmbH	CuSn2F...	-	C50715_R540	526.5	580.0
C50715_R600	Stampack GmbH	CuSn2F...	-	C50715_R600	586.5	640.0
C50715_R500	Stampack GmbH	CuSn2F...	-	C50715_R500	486.5	540.0
C50715_R540	Stampack GmbH	CuSn2F...	-	C50715_R540	526.5	580.0
C50715_R600	Stampack GmbH	CuSn2F...	-	C50715_R600	586.5	640.0
C50715_R500	Stampack GmbH	CuSn2F...	-	C50715_R500	486.5	540.0
C50715_R540	Stampack GmbH	CuSn2F...	-	C50715_R540	526.5	580.0
C50715_R600	Stampack GmbH	CuSn2F...	-	C50715_R600	586.5	640.0
C50715_R500	Stampack GmbH	CuSn2F...	-	C50715_R500	486.5	540.0
C50715_R540	Stampack GmbH	CuSn2F...	-	C50715_R540	526.5	580.0
C50715_R600	Stampack GmbH	CuSn2F...	-	C50715_R600	586.5	640.0

Close



STAMPAK
Xpress

Outlook upcoming year

New application: Robustness - Analysis

i'm
not
done
yet...

Input parameters

Thinning

Friction	<input type="range"/>	0.1
Young's modulus (GPa)	<input type="range"/>	208.262
Hardening-Index (Ludwik-Nadai)	<input type="range"/>	0.223
rm	<input type="range"/>	1.579
Thickness (mm)	<input type="range"/>	1.009
Blank displacement in X (mm)	<input type="range"/>	-1.241
Blank displacement in Y (mm)	<input type="range"/>	1.8
Force of Low_Pad (kN)	<input type="range"/>	14.891

Production parameters are varying:

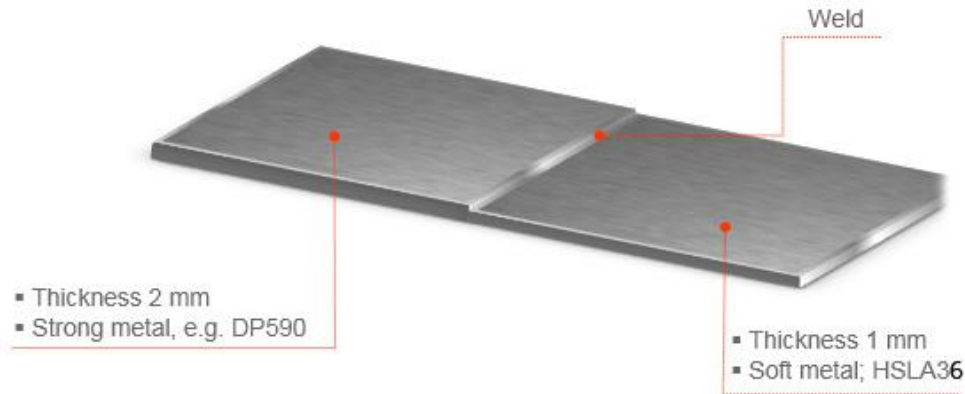
- Thickness: $\pm 5\%$
- Tensile Strength: $\pm 10\%$
- Yield Strength: $\pm 10\%$
- Elongation at break: $\pm 10\%$

Our goal:

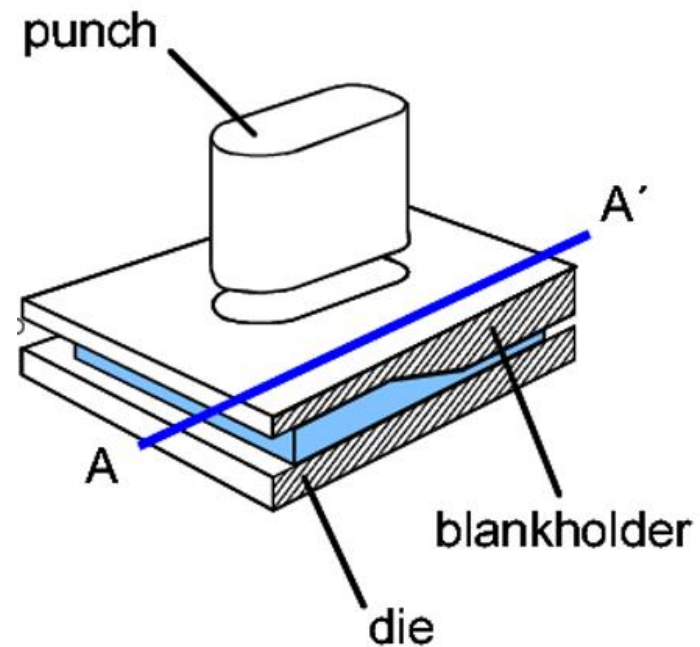
- Simulate range of parameters
- Predict “Scrap rate”

New application: Tailored blank

i'm
**not
done**
yet...



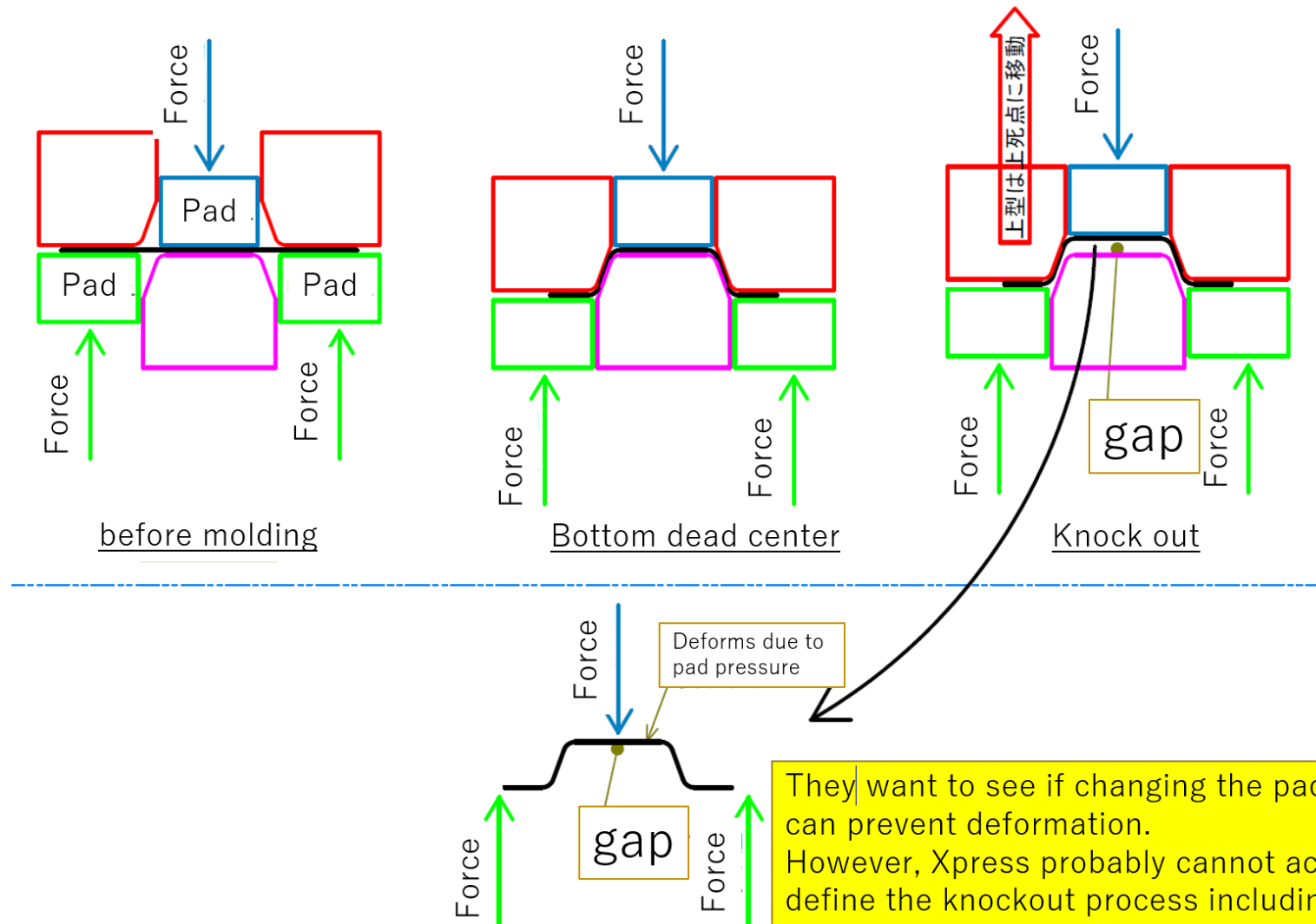
Tailored welded blank



Tailored rolled blank

New application: Simulate Opening

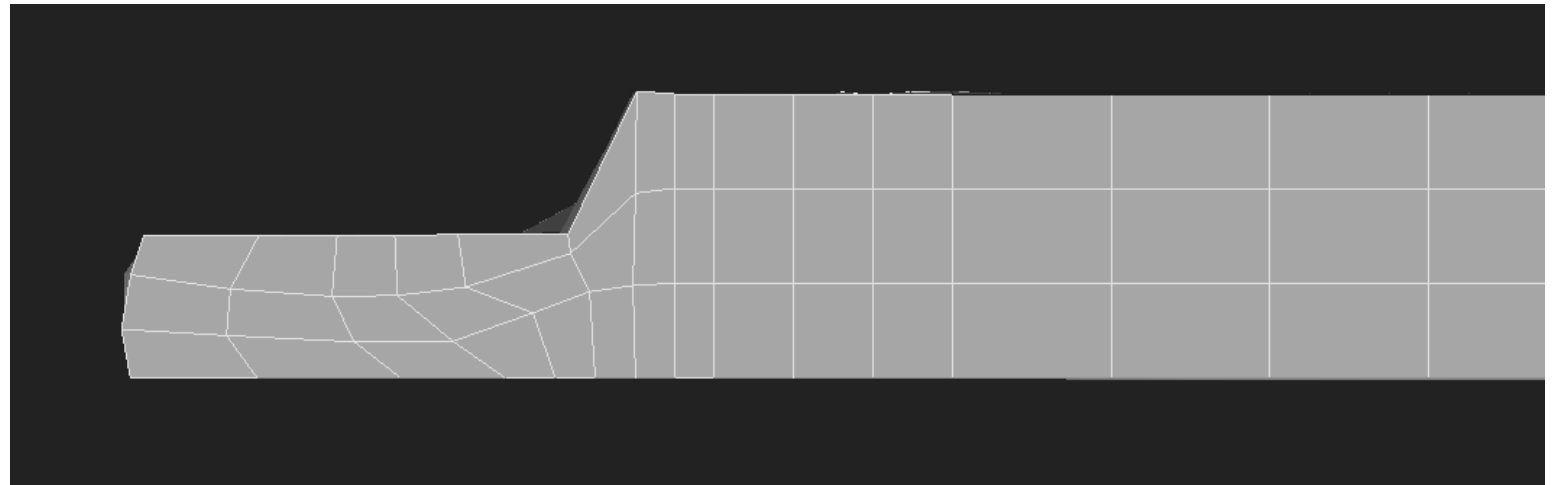
i'm
**not
done**
yet...



Consolidate solver improvements

Solver stability improvement for massive coining

i'm
not
done
yet...



CAD - Interoperability



creo®



i'm
**not
done**
yet...

- Improve CAD-Interoperability
- Import lines in native format
- Allow part tipping
- Make interfaces to the latest technology in the CAD-World
- ...

Improve GUI

i'm
**not
done**
yet...





What's new?

What's new?

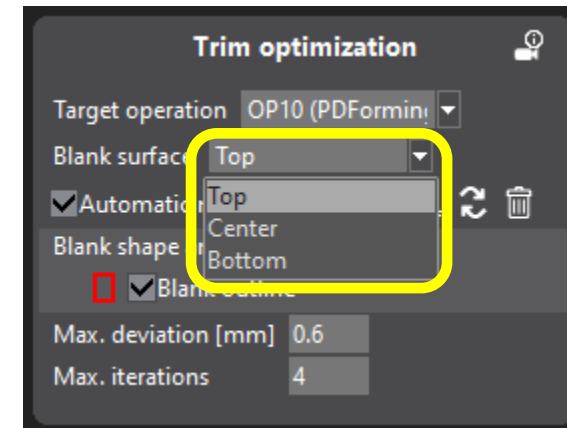
- **New Features**
- **Feature Improvements**
- **Miscellaneous**
- **Modified License System**
- **Videos**
- **Hardware Recommendations**



New Features

Solid Trim Optimizer

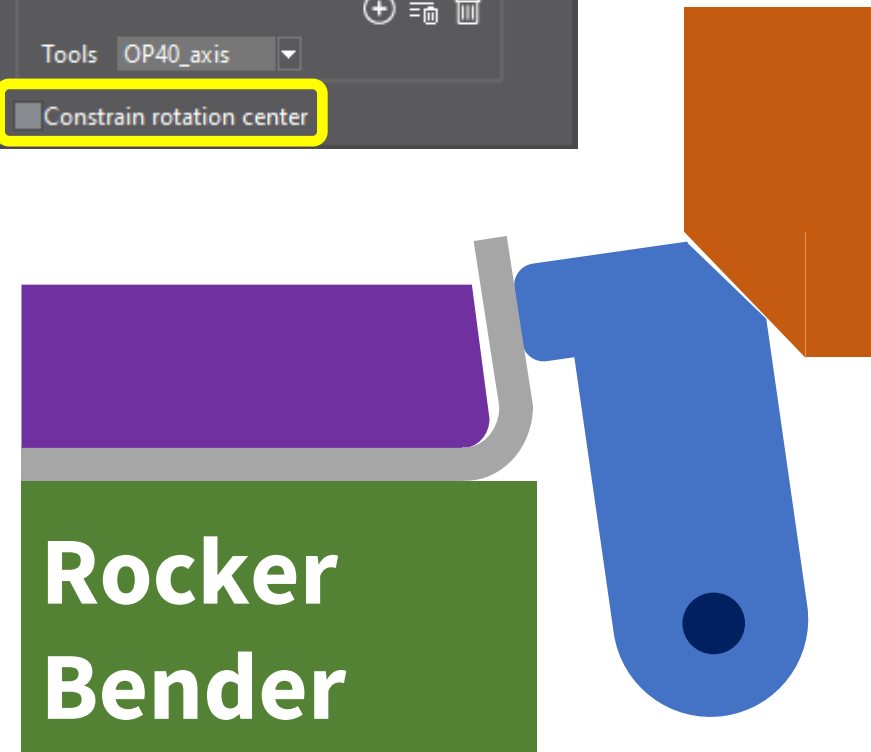
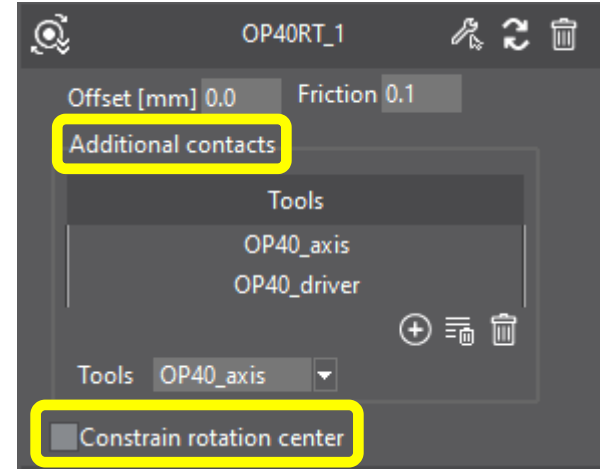
- Available for Solid-Simulations
- Additional options
 - Top/ Center/ Bottom
 - Target line creation accordingly
- Otherwise setup is the same



→ Big improvement for Simulations with strong thickening and coining

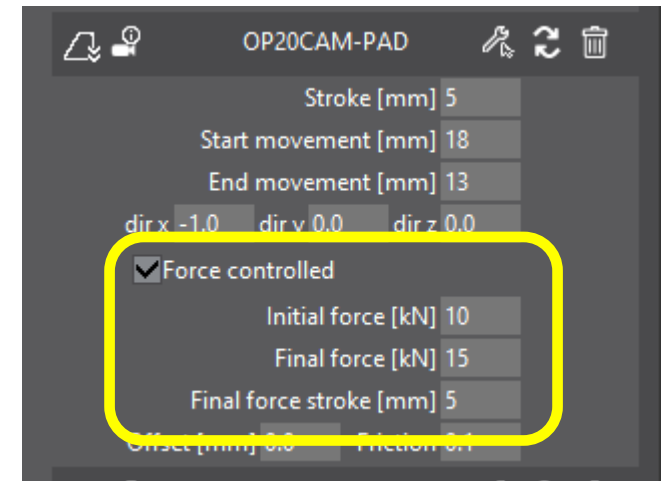
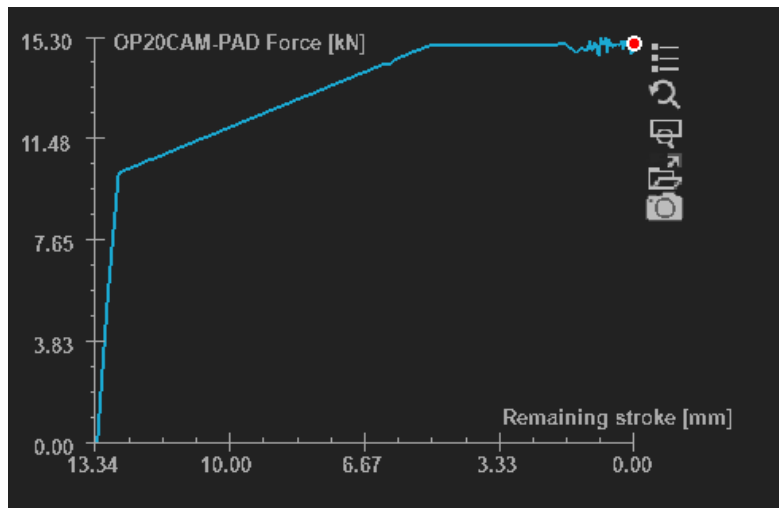
Rotary Tool

New tool option for
rotatory tool movements



Cam with force

Additional option in CAM Tools
→ CAM behaves like Pad



Calculation Options

1. Stop & Pause

- Resume

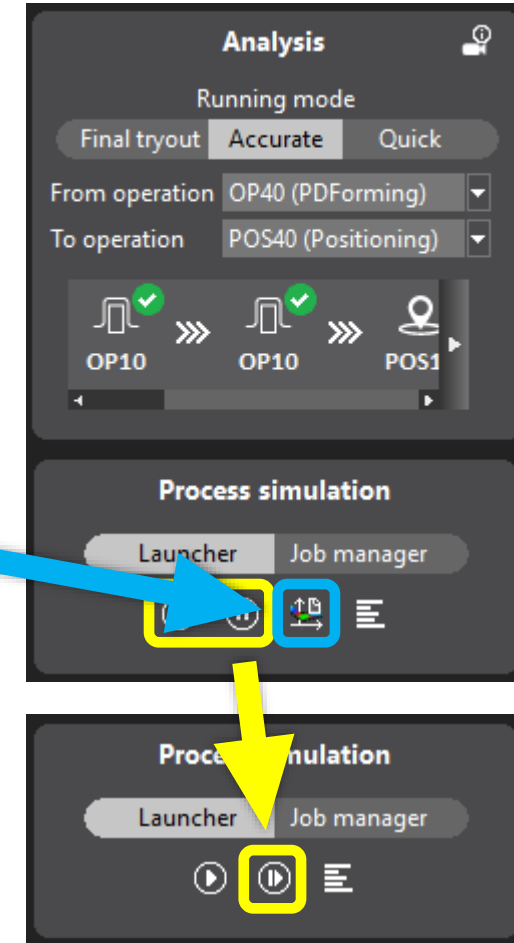
2. Write additional result

3. New optics

- Check / Cross / Clock

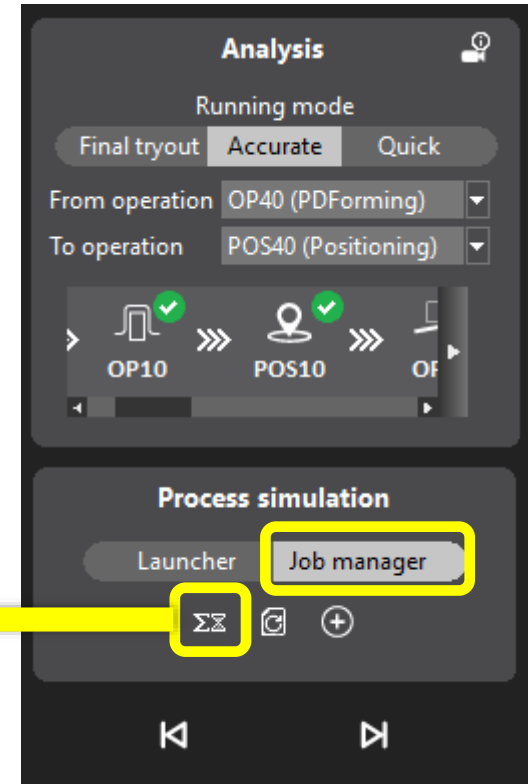
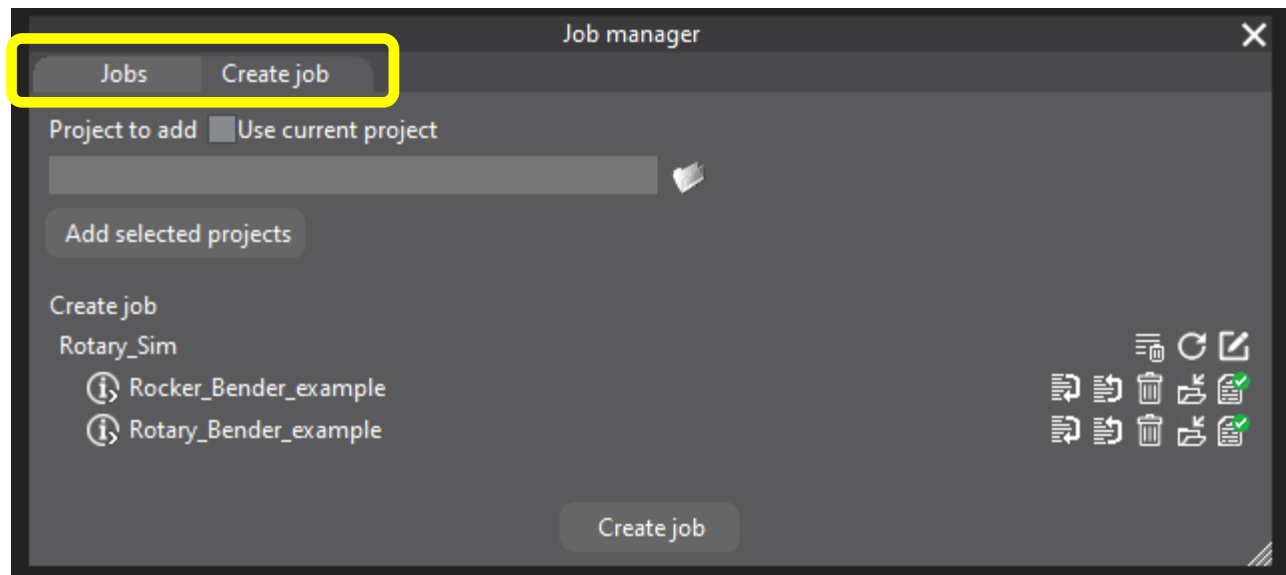


DT= 0.3927E-06 Elapsed: 0:03:13 Stroke: 12.463 mm
Results reported
DT= 0.3938E-06 Elapsed: 0:03:23 Stroke: 10.581 mm
Results reported



Job Manager

Batch mode!



Virtual Press Ram

2023.1 and older

→ Press ram Punch/ Die tool needed

2024.0

→ Works without Punch/ Die tool

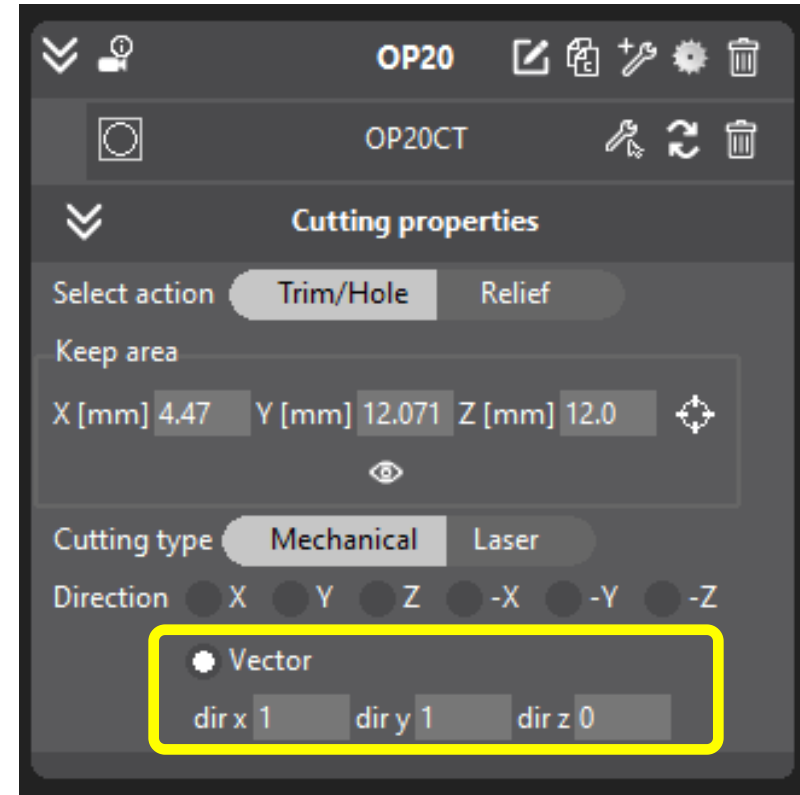
→ Virtual Punch automatically created



Mechanical cutting

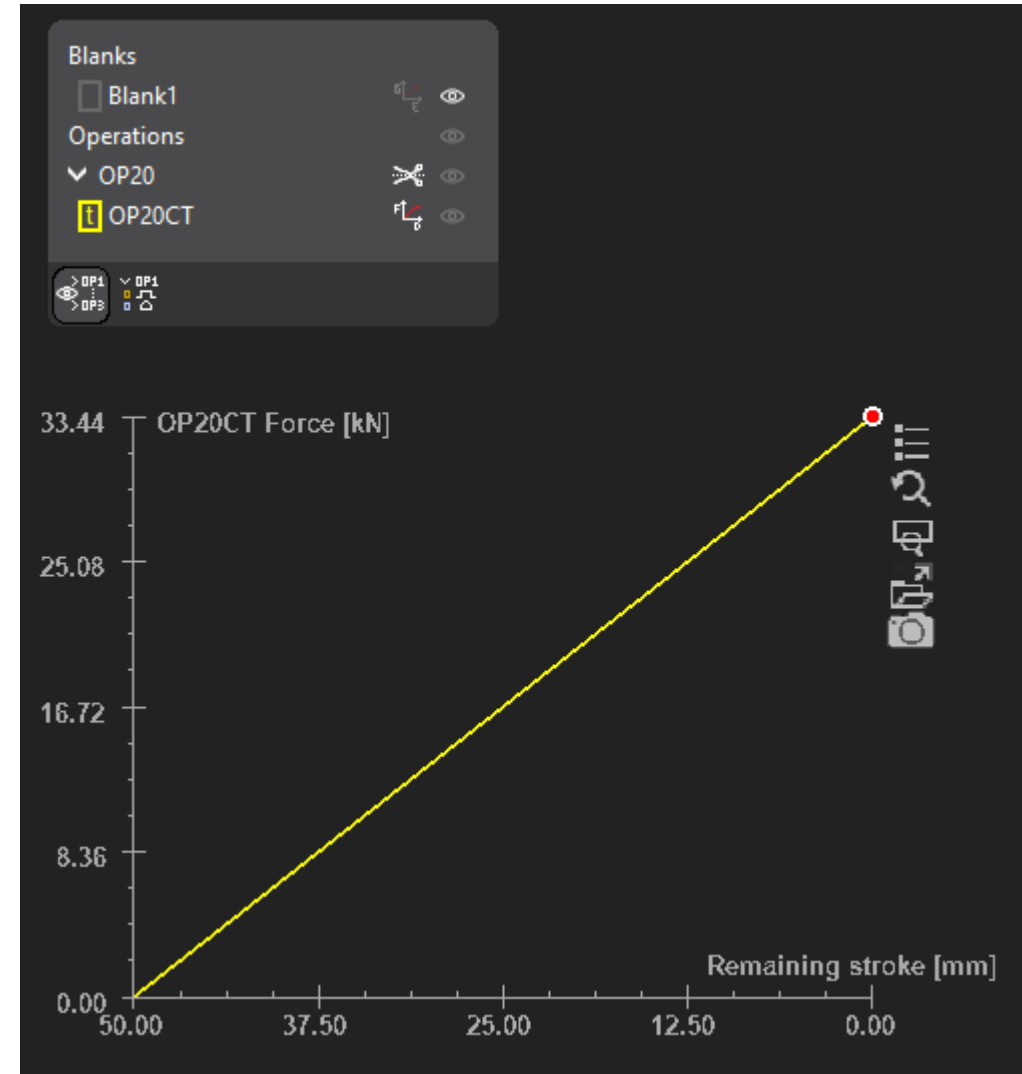
Cutting direction
via vector

→ More complex cuts
possible



Cutting Force

- New result option
- Calculated with:
 - Material thickness
 - Material properties
 - Cut “length”

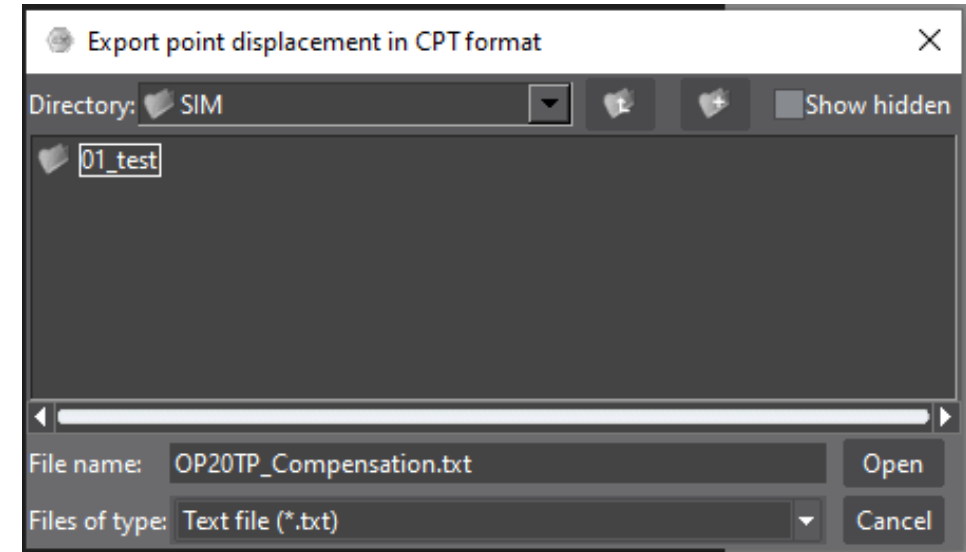


CAD Export

Point cloud as *.txt

→ Coordinates of nodes

→ Displacement vector of nodes (Springback)



What are the advantages?

Springback Compensation in CAD

- Catia – Realistic Shape optimizer
 - Initial tool nodes
- NX – Global Deformation
 - Initial tool nodes
- VISI – Advanced Modelling (Springback with FTI tool)
 - Initial and final tool nodes



STAMPACK
Xpress

Feature Improvements

Trim Optimizer

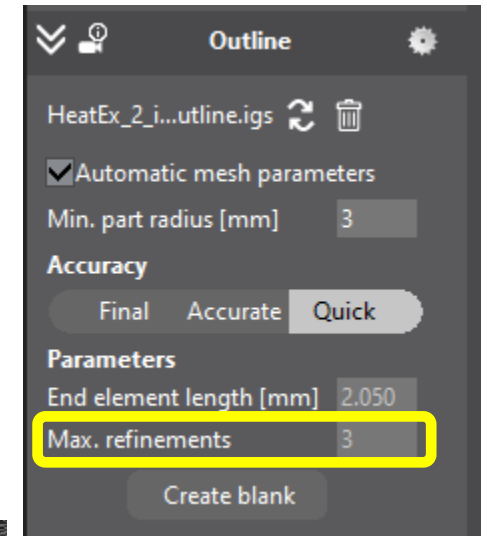
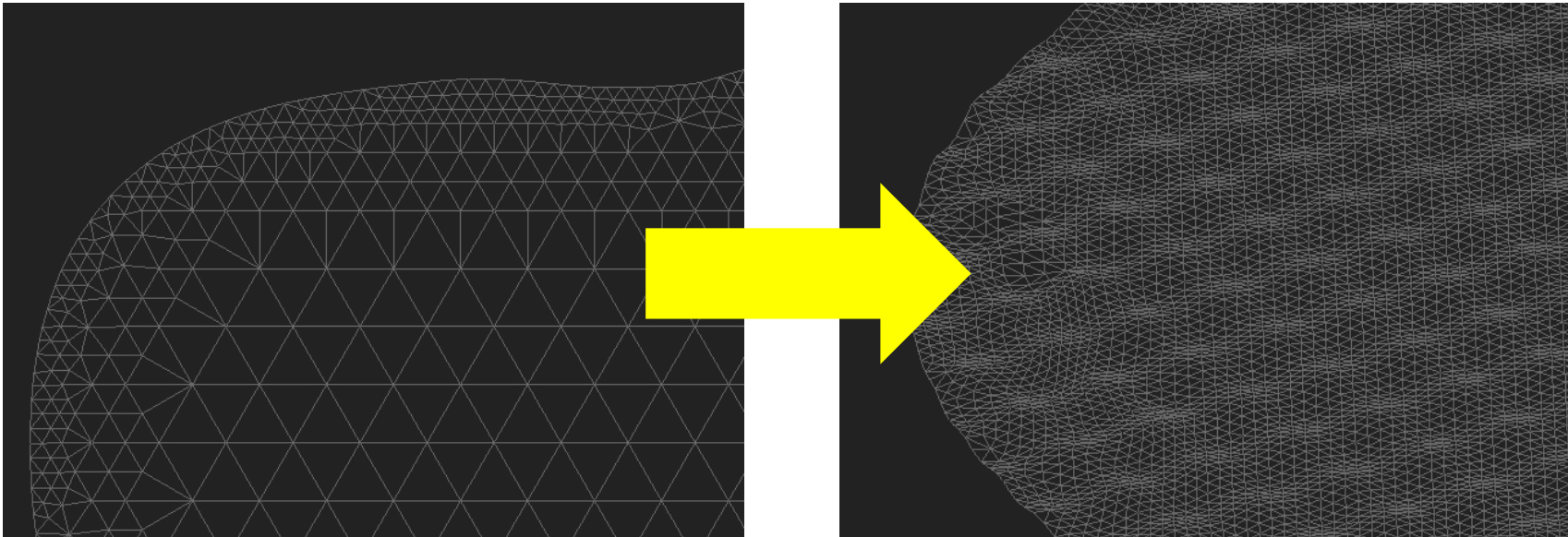
1. Solver improved
 - Better assignment to target
 - More stable
2. Better result availability
 - As soon as first result is written!

Feature Improvements

Embossed Blank

- Refinements in blank allowed

→ Embossed feature refines automatically

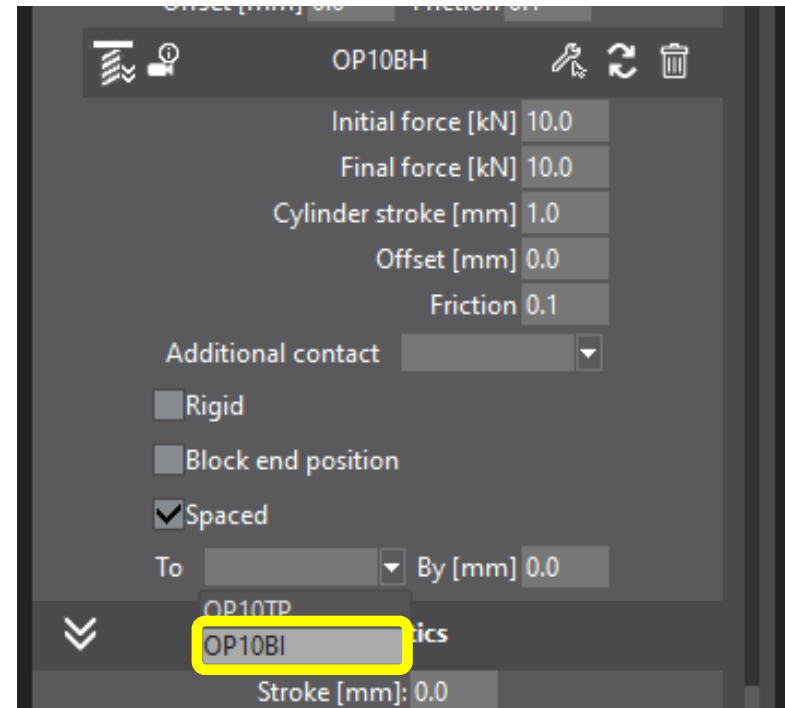


Feature Improvements

Spaced Functionality

Pads can be selected as “Spaced” tool

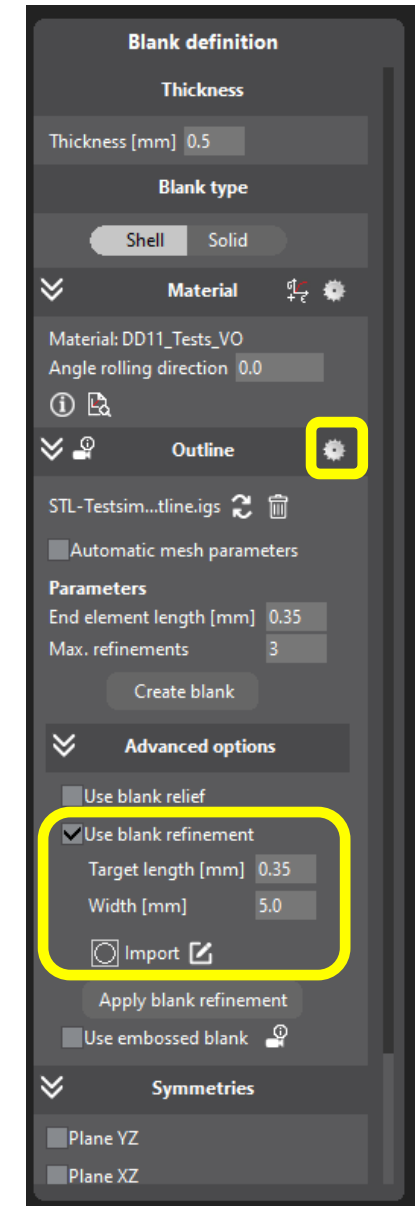
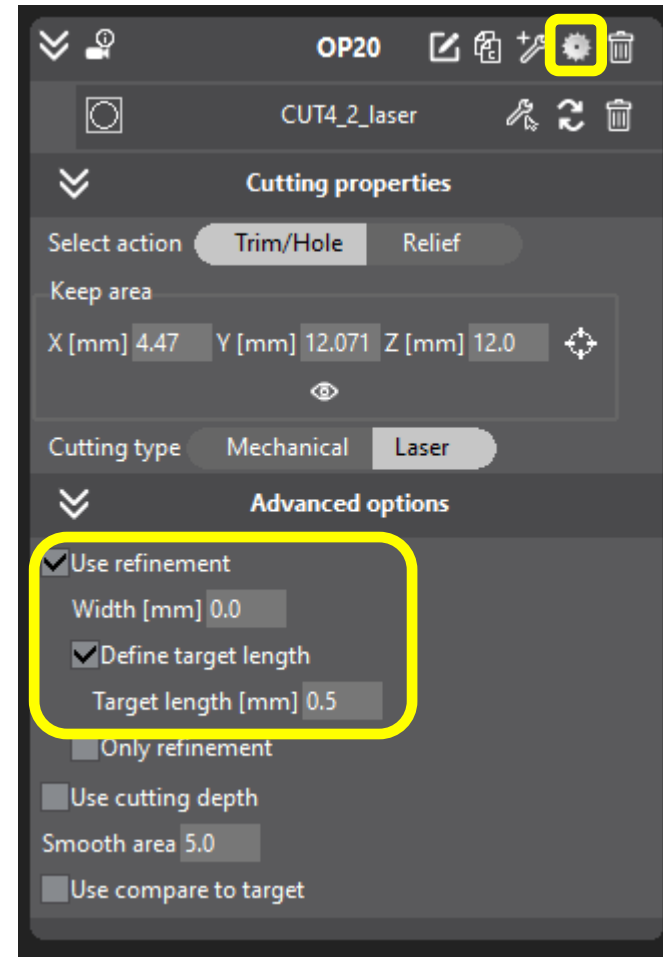
→ Pad to Pad spaced



Refinement in cut & blank

- Target length

→ All refinement options added for shell



STL import speed

Test for 17 step process with 62 tools:

- 2023.1 → ~ 6:55 min
- 2024.0 → ~ 2:30 min

→ Only ~1/3 of time

Interface Numbers

No need for “zero”

→ Just “.8” is sufficient

→ “zero” is automatically added

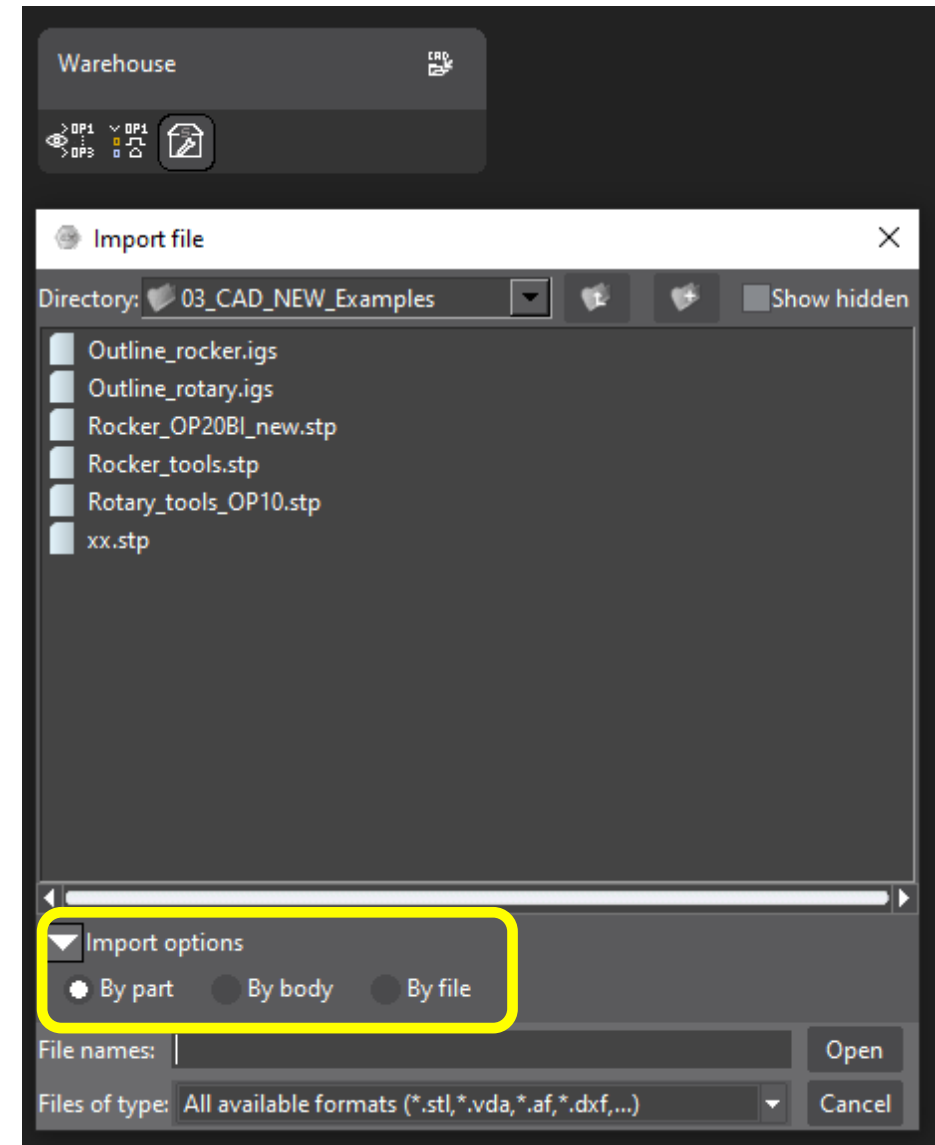


Feature Improvements

CAD import naming

Different import options

- By part
- By body
- By file



CAD import naming

1. By part
 - Import geometry as it is
 - Take the PART name
2. By body
 - Import geometry as it is
 - Take the BODY name
3. By file
 - All bodies are put on one layer
 - The layer uses the name of the file

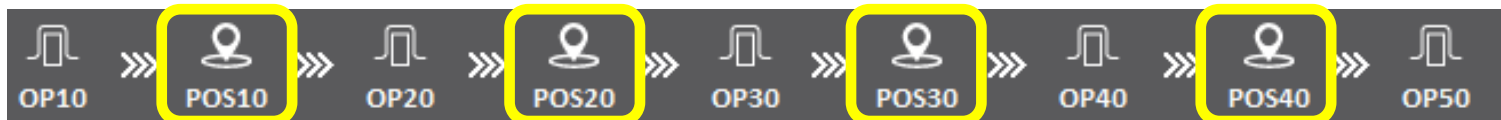
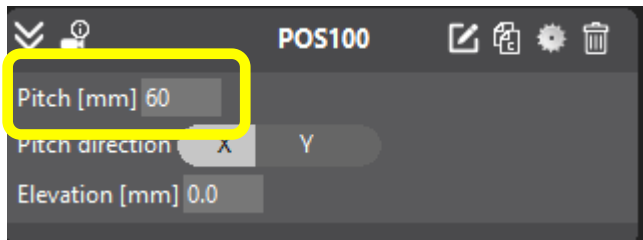


STAMPAK
Xpress

Miscellaneous

Improved Positioning

Pitch is automatically applied to following positionings



Improved Accurate mode

Calculation speedup in solid

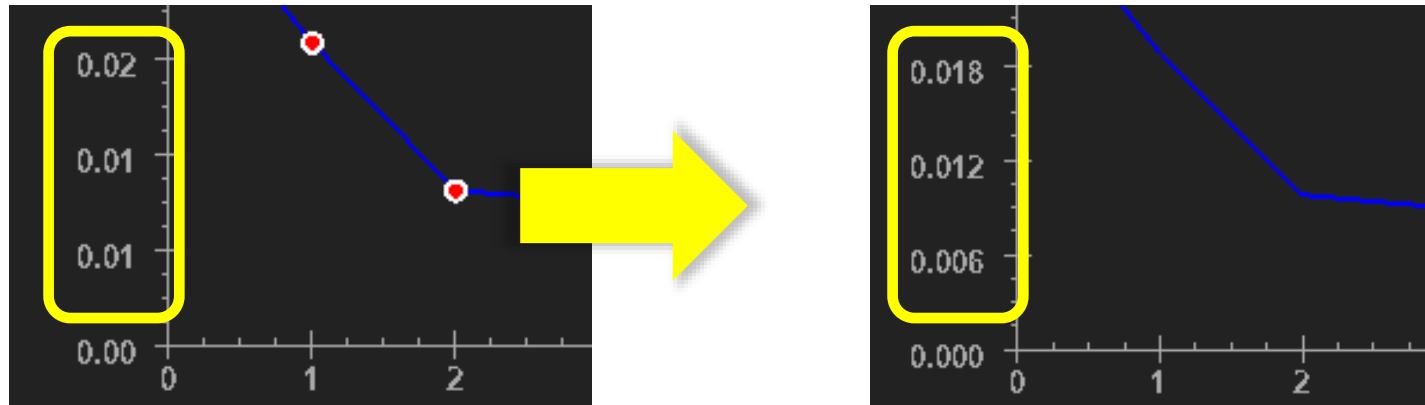
Test: Medium solid simulation

- 2023.1 – 38:35min
- 2024.0 – 29:47min

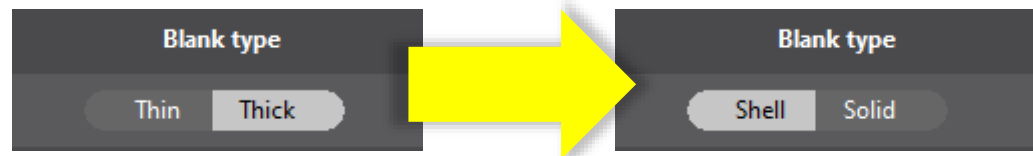
→ ~23% faster

Interface Improvements

1. Inch interface improvements



2. “Thin / Thick” to “Shell / Solid”

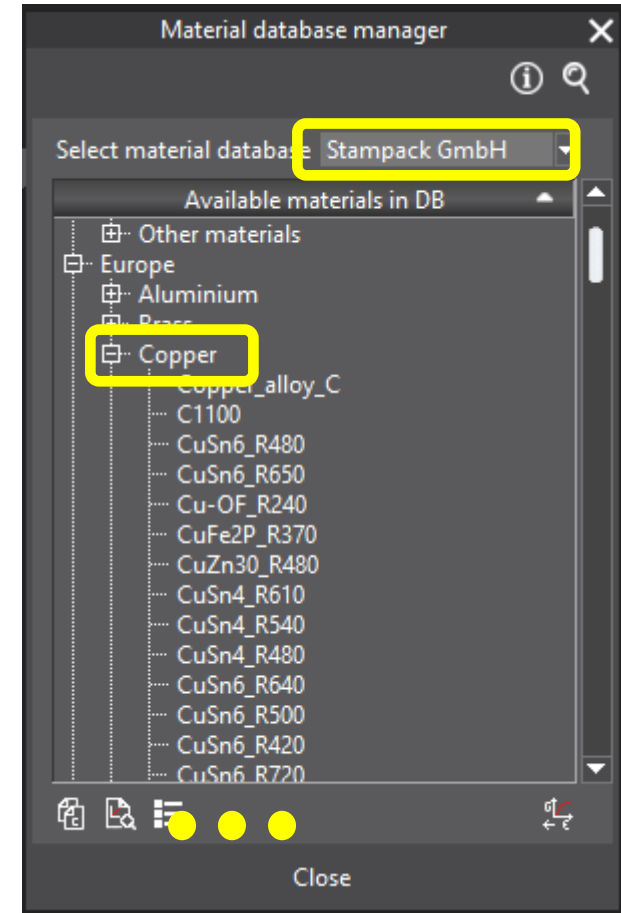


Materials

1. New Materials

- ~270 new, mainly Copper & Brass

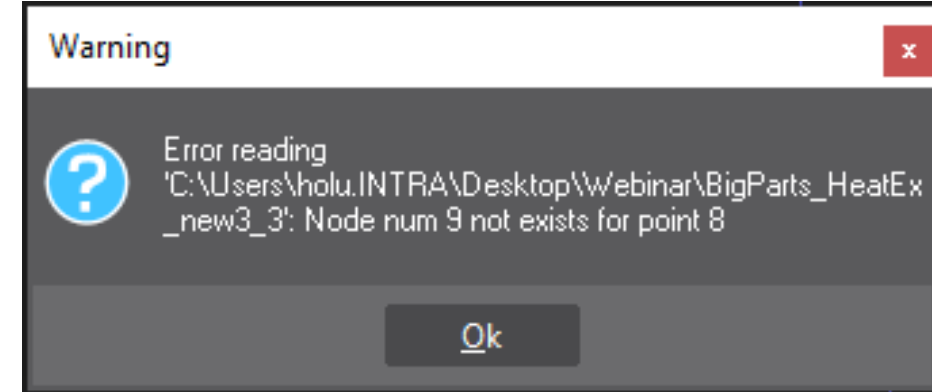
2. ASTM Naming convention for US material names updated



Bugfix Example 1

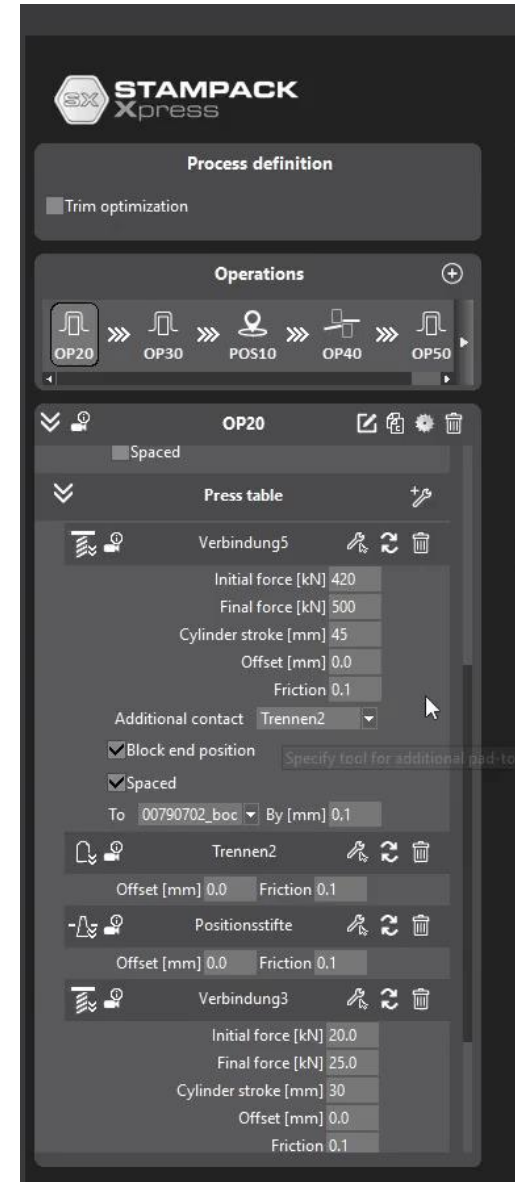
Start warning:

“Node num X does not exist for point Y”



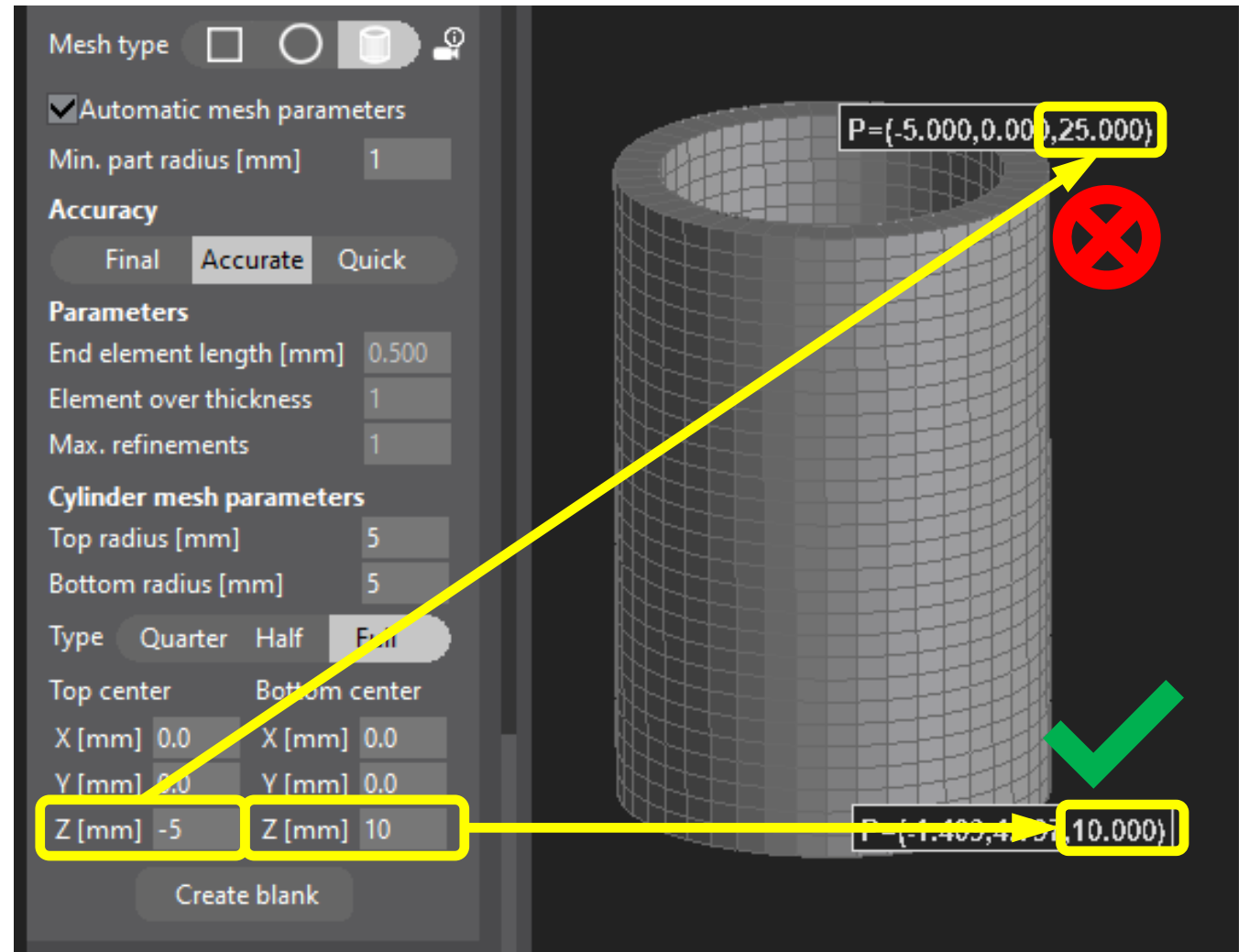
Bugfix Example 2

Scrolling over additional contacts



Bugfix Example 3

Cylinder creation
Z-position

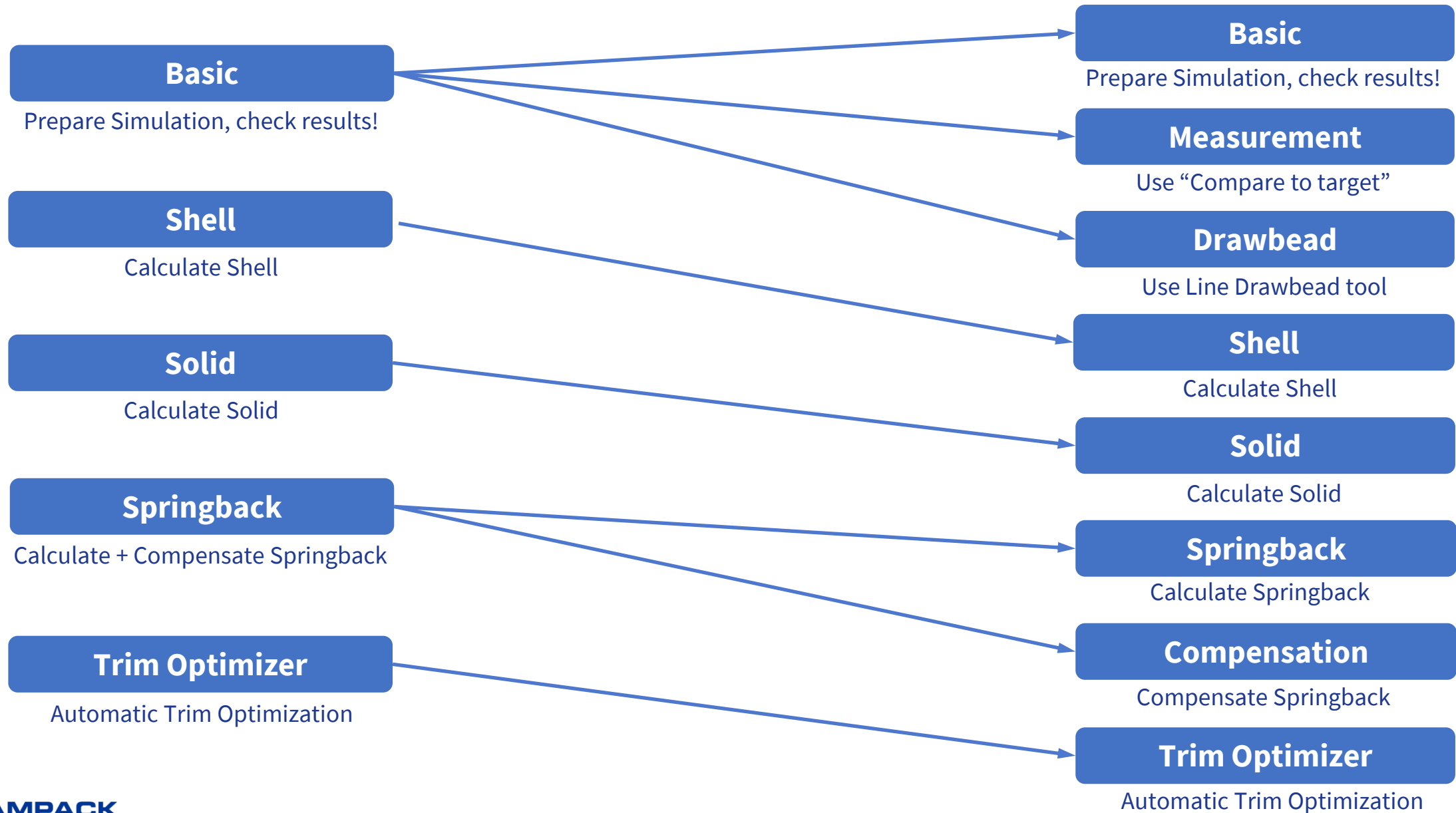




STAMPACK
Xpress

Modified License System

Modified License System



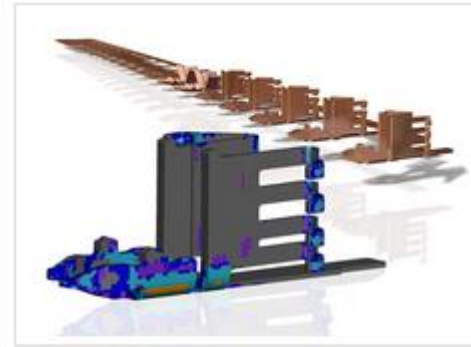


STAMPAK
Xpress

Videos

Videos

- Homepage Videos
 - Transfer Clip
 - Grill Tray



Transfer Clip



Grill Tray



- New Help Video - Rotary Tool
- Updated Help Videos
 - Embossed
 - Trim Optimizer - Preprocess



Hardware Recommendations

Hardware Recommendations

Tested Hardware:

- Intel i9 9900K + 64Gb Ram with 8 cores from 2019
- Intel i9 14900K with 24 cores from 2023 (Price: about 620€)
- AMD Ryzen Threadripper 3970X with 32 cores from 2020
- Intel i7 6820HQ + 32 Gb Ram with 4 cores, Laptop from 2018

Tested Models:

- Medium shell model
- Medium solid model
- Performance package: 2 big shell + 2 big solid simultaneously with equally distributed number of cores in each project

	Medium Shell	Medium Solid	Performance Package
Intel i9 9900K	19min 36s	4h 15min 16s	24h 57min 37s
Intel i9 14900K	6min 16s	2h 04min 27s	9h 52min 18s
AMD Threadripper 3970X	13min 32s	2h 31min 16s	12h 17min 14s
Intel i7 6820HQ	42min 4s	6h 57min 6s	66h 19min 5s

Hardware Recommendations

- Recommendation:
 - **Modern hardware** is mandatory
 - **Low budget recommendation:** We do not recommend low budget
→ You waste the possibilities of Stampack Xpress
 - **Normal budget:** Intel i9 14900K + 64Gb Ram
→ Best price/performance ratio

Hardware Recommendations

■ Microsoft Azure Cloud:

- Stampack can be easily installed on Microsoft Azure Virtual Desktop
- Single user license is compatible
- Graphical user interface is excellent to use even in large parts
- Performance is lower than in recommended workstations
- Data transfer depends massively on your internet connection upload

	Medium Shell	Cost per hour
Azure Cloud – FX24mds – 12 physical CPU	24min 30s	1,88€ per hour
Azure Cloud – F8s_v2– 4 physical CPU	43min	0,29€ per hour
Azure Cloud – F32s_v2– 16 physical CPU	26min	1,14€ per hour
Workstation - Intel i9 9900K	19min 36s	-
Workstation - Intel i9 14900KF	6min 16s	-



Additional Comments

Skype: Helpdesk Stampack



- Beginning from 01.03.2024 we will not support chat requests to the Skype - Account Helpdesk Stampack anymore!
- As before: helpdesk@stampack.com
- As before: +497245925349

My Recommendation:

- Write Mail to helpdesk@stampack.com
- Schedule a Teams meeting to check a simulation together!

Master Springback and Compensation (4h Training)

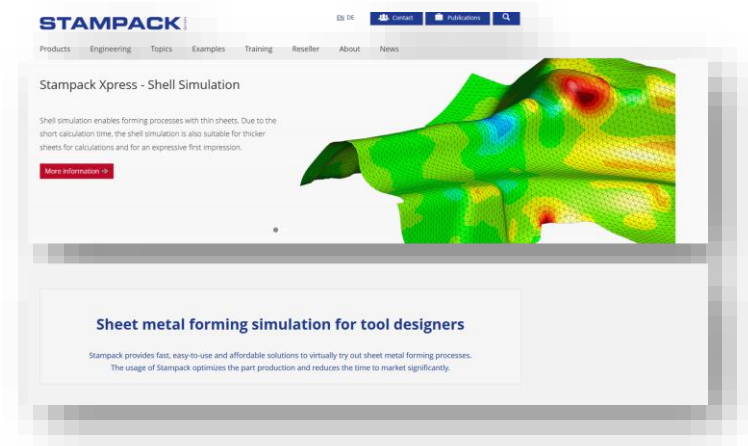
- What is Springback and Compensation?
- How to get best springback results?
- How to reduce springback by clever process design?
- How to apply real-world clamping concepts in Stampack?
- How to compensate the tools in Stampack?



Follow us in the web !



www.stampack.com



Stay tuned! Follow us on our platforms:

Video contents, development updates, fair reports and more...

