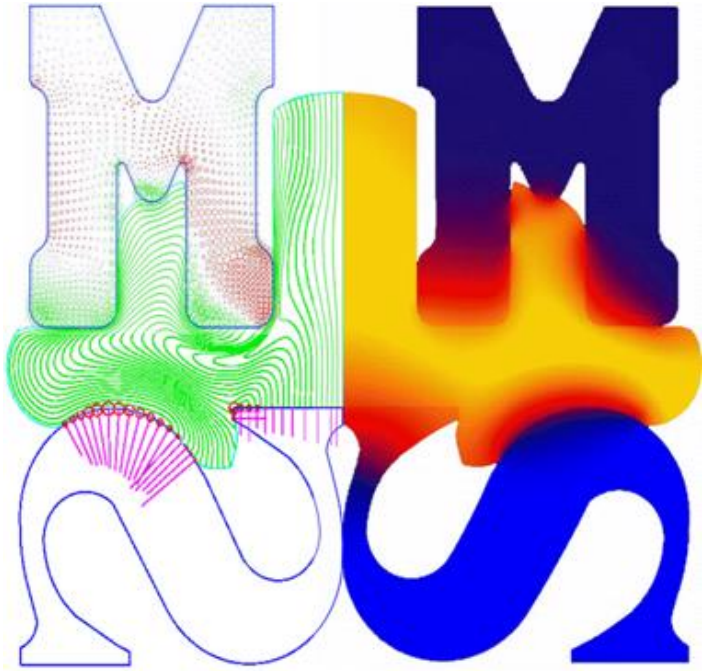
Intelligent Metal Forming Simulation

AFDEX V20R01 Release notes



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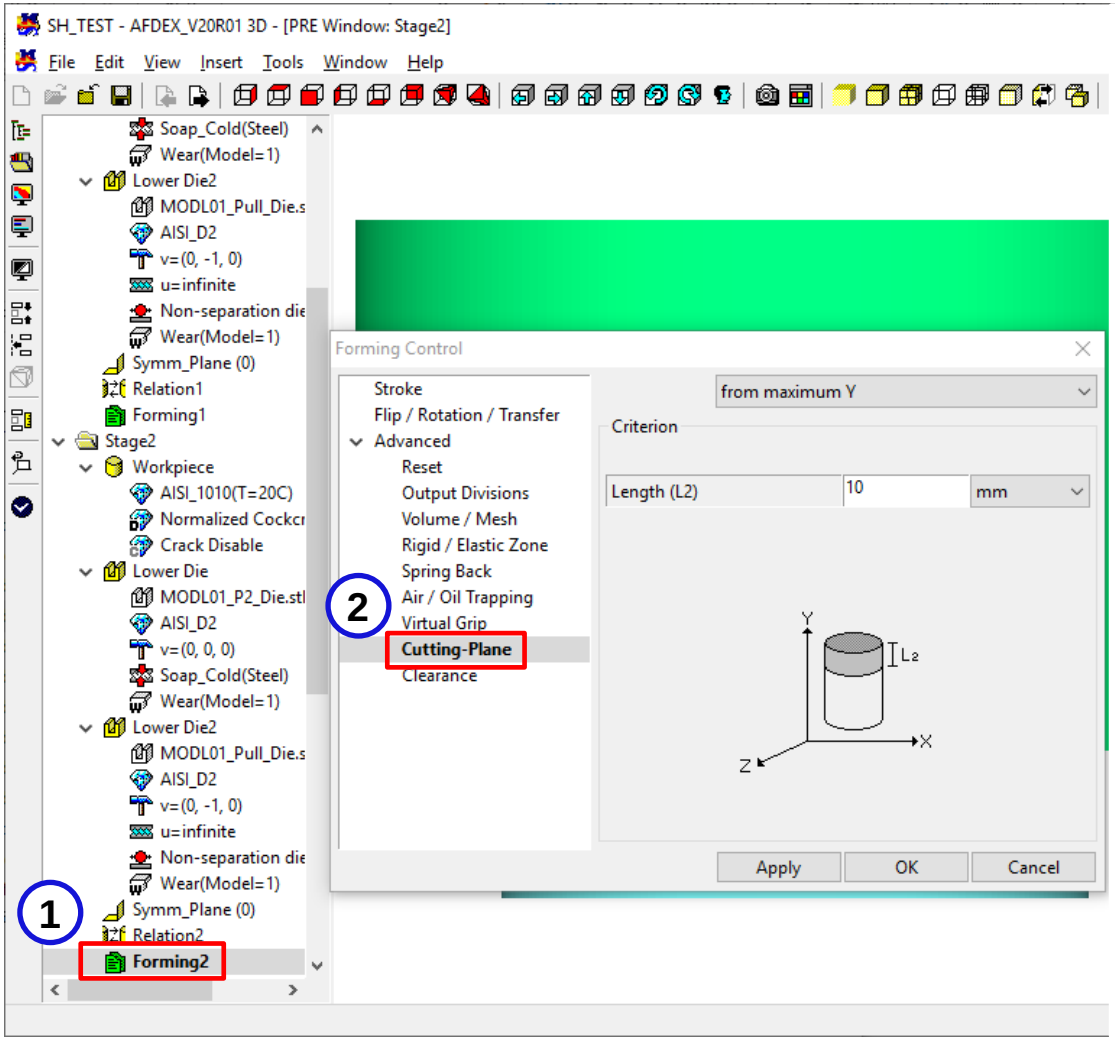
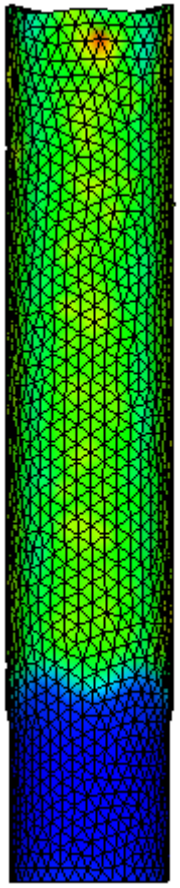
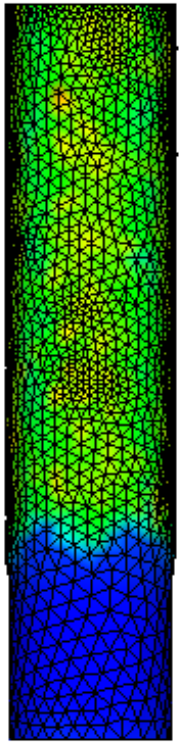
1. AFDEX 2D/3D Solver
2. AFDEX 2D Solver
3. AFDEX 3D Solver
4. GUI

1. Improved cutting-plane





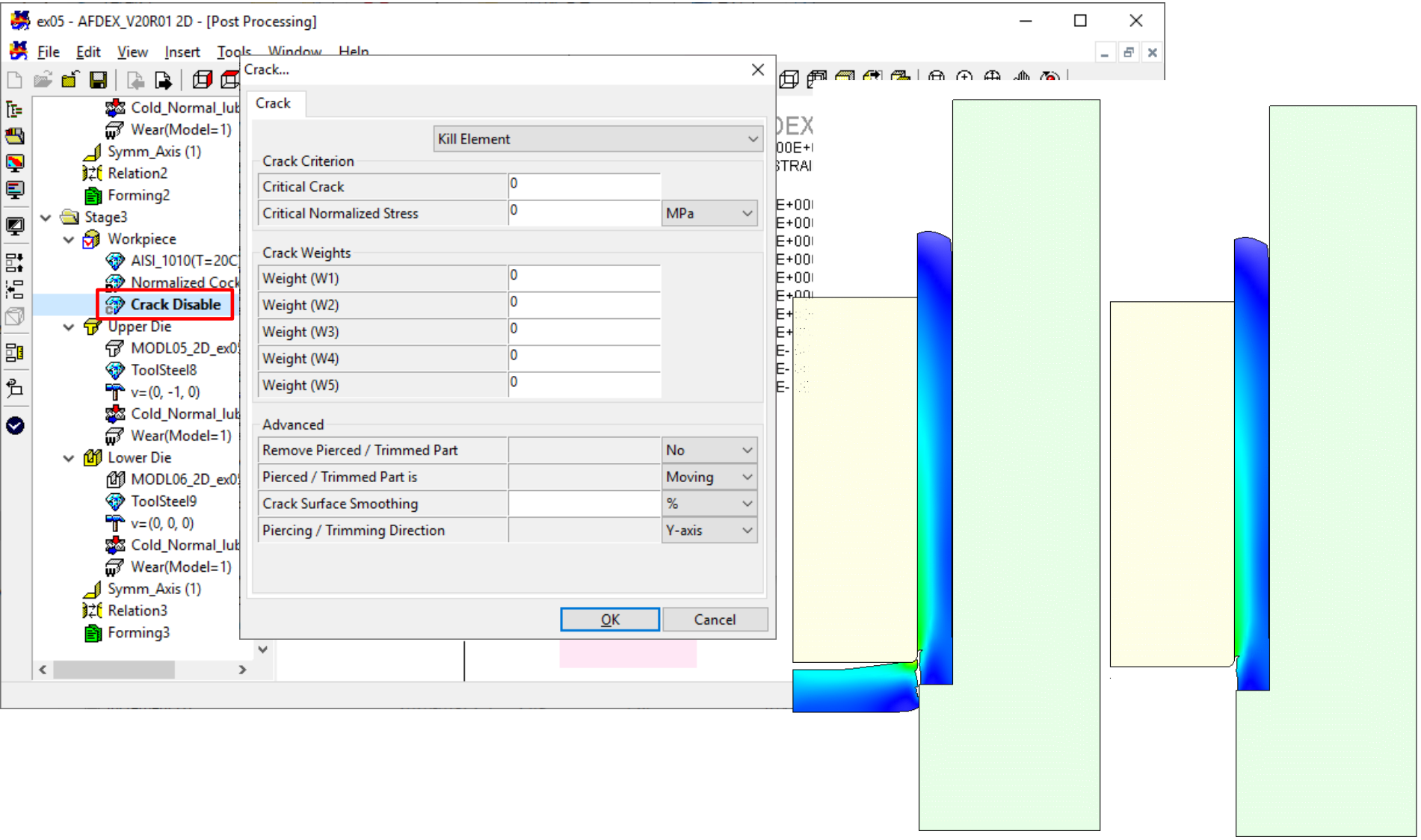
Stage 1 last step



Stage 2 first step

- 2D: Improved the feature and a change in terminology (Trimming -> Cutting-plane).
- 3D: Added

2. Improved crack analysis



- Check 2D tutorial part2 ex04

1. AFDEX 2D/3D Solver
2. AFDEX 2D Solver
3. AFDEX 3D Solver
4. GUI

1. Fix volume graph error in Piercing/Trimming

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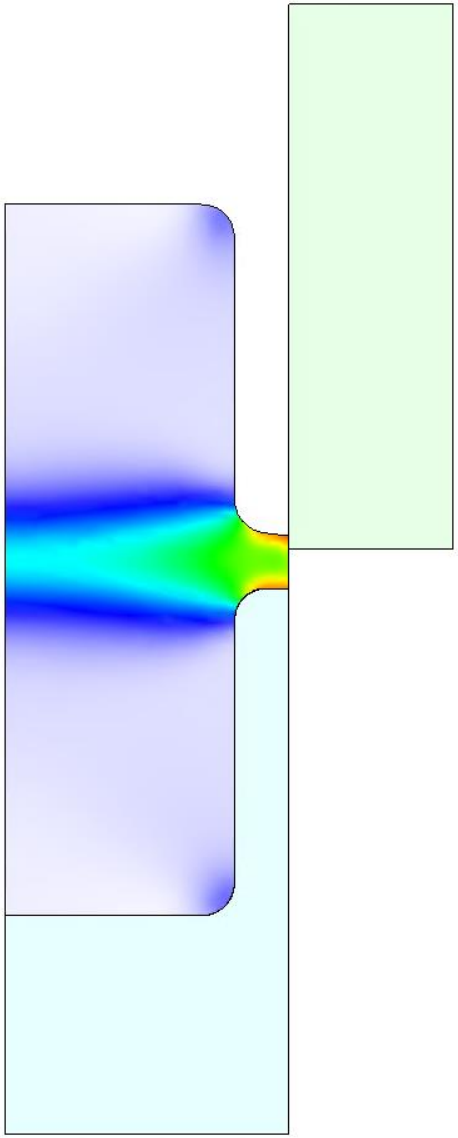
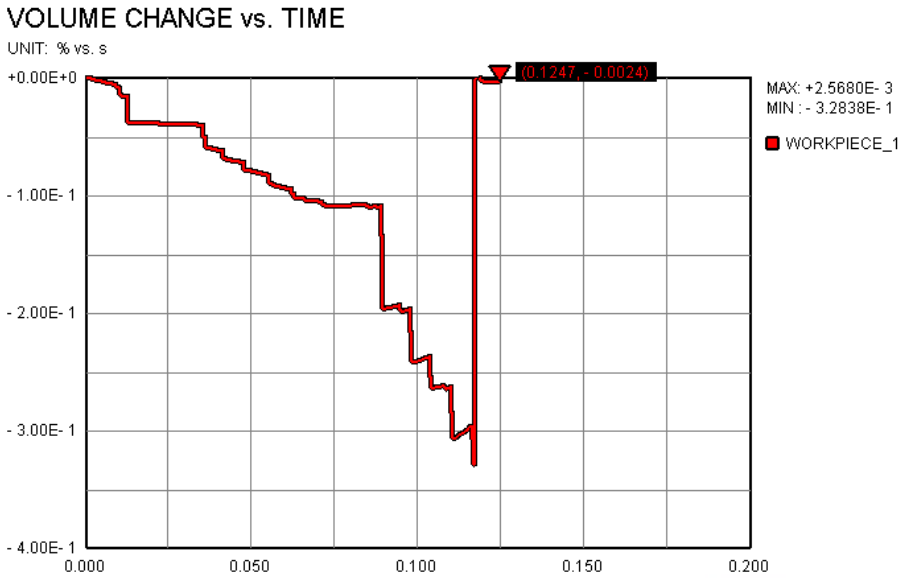
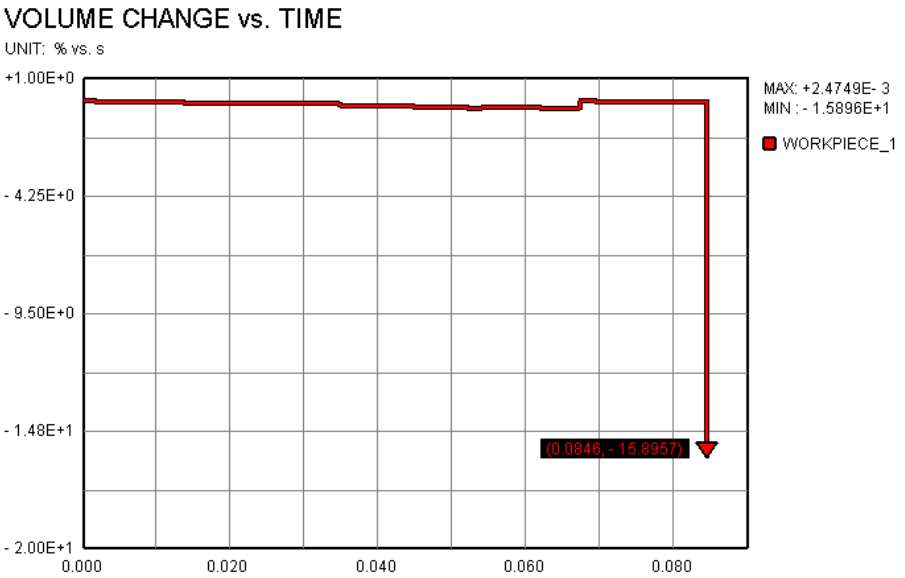
2D_Part1_ex04



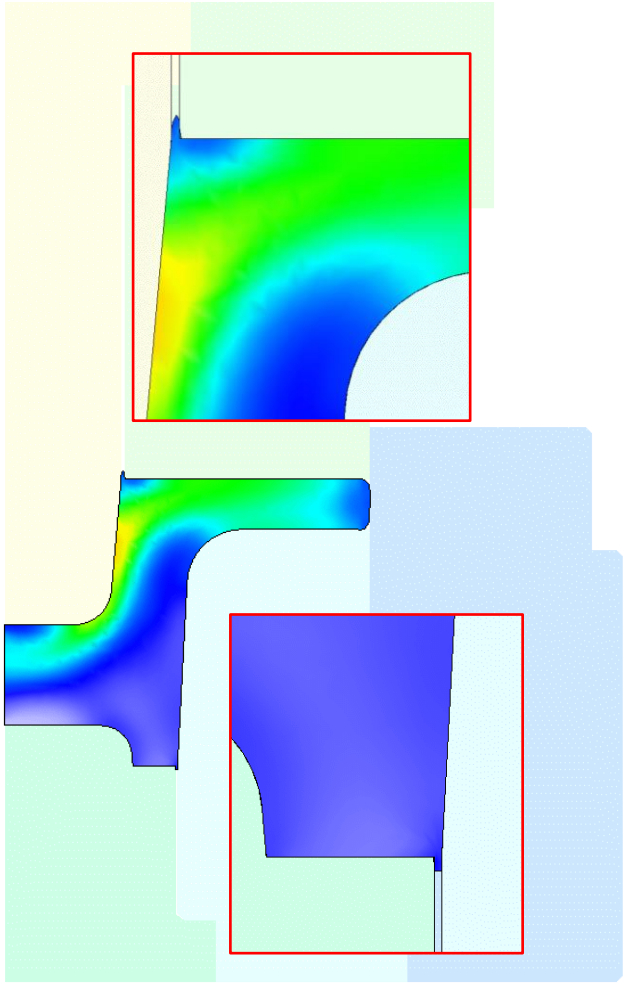
V19R02



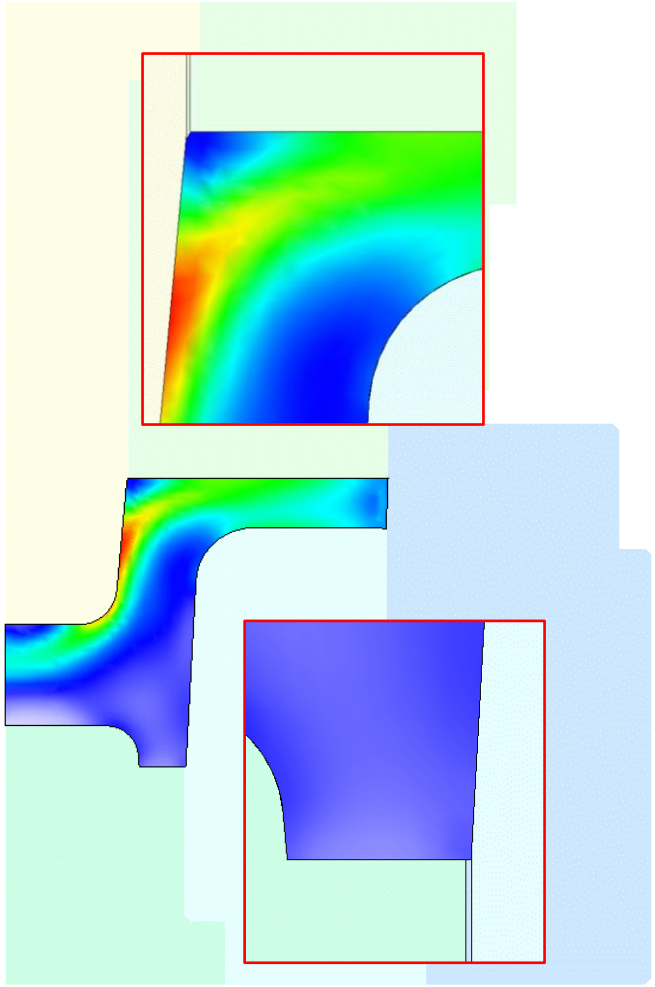
V20R01



2. Improve treatment of gap flow of material between die parts



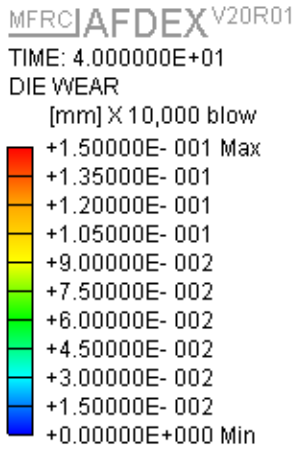
Allow gap flow
I default (56) = -1



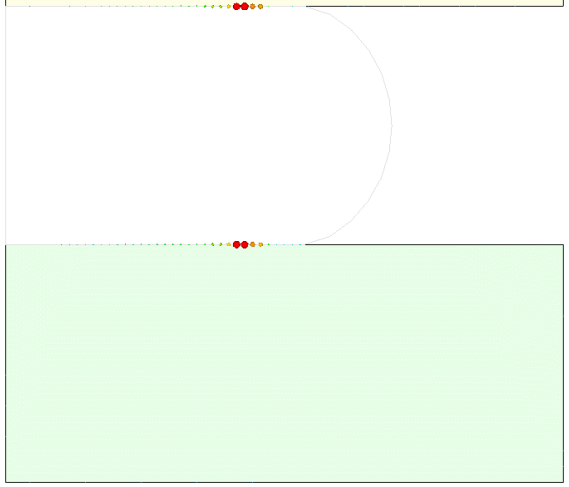
Allow gap flow
I default (56) = 1

- I default (55) for gap flow control in V19R02
- Improved gap flow control. Change to I default (56) in V20R01 the same as 3D

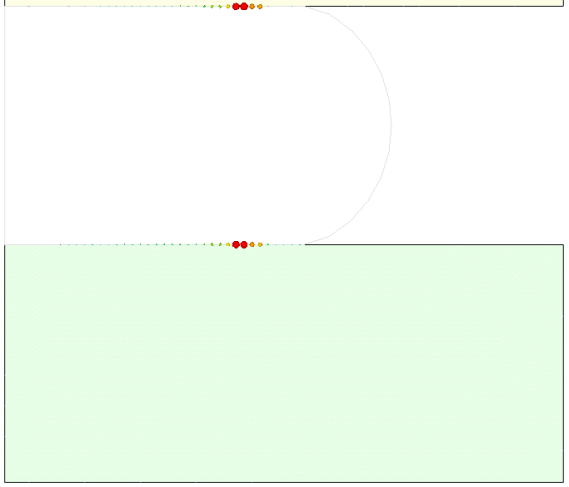
3. Improved die wear calculation



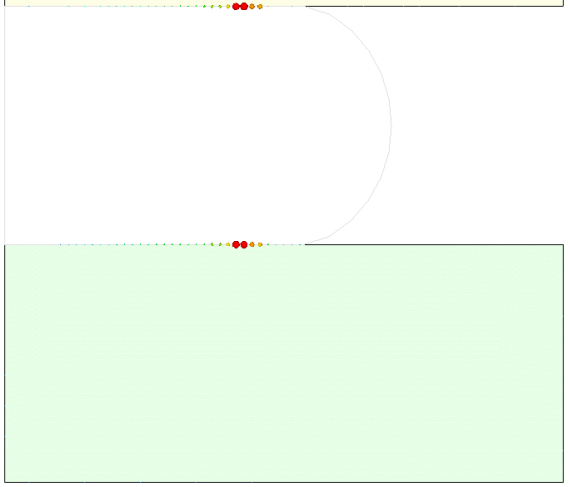
Non- isothermal



DSA_single die

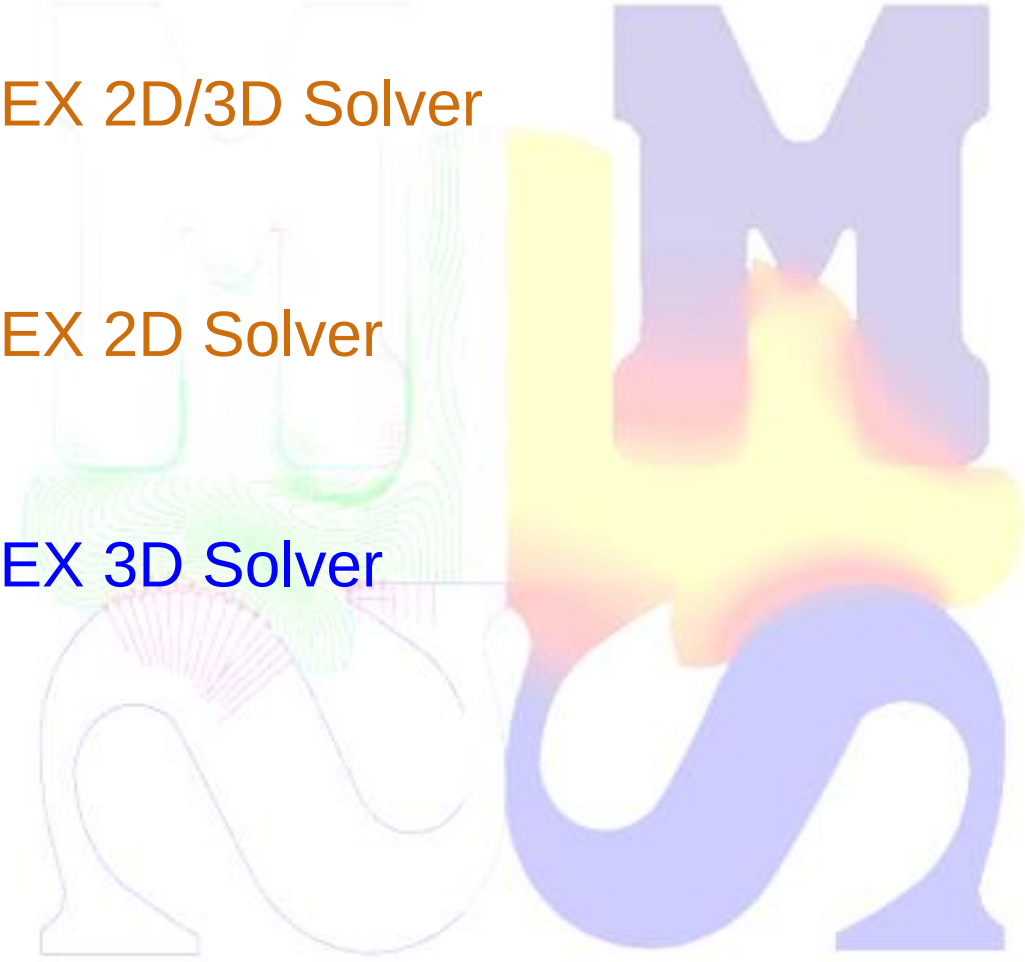


DSA_assembled die

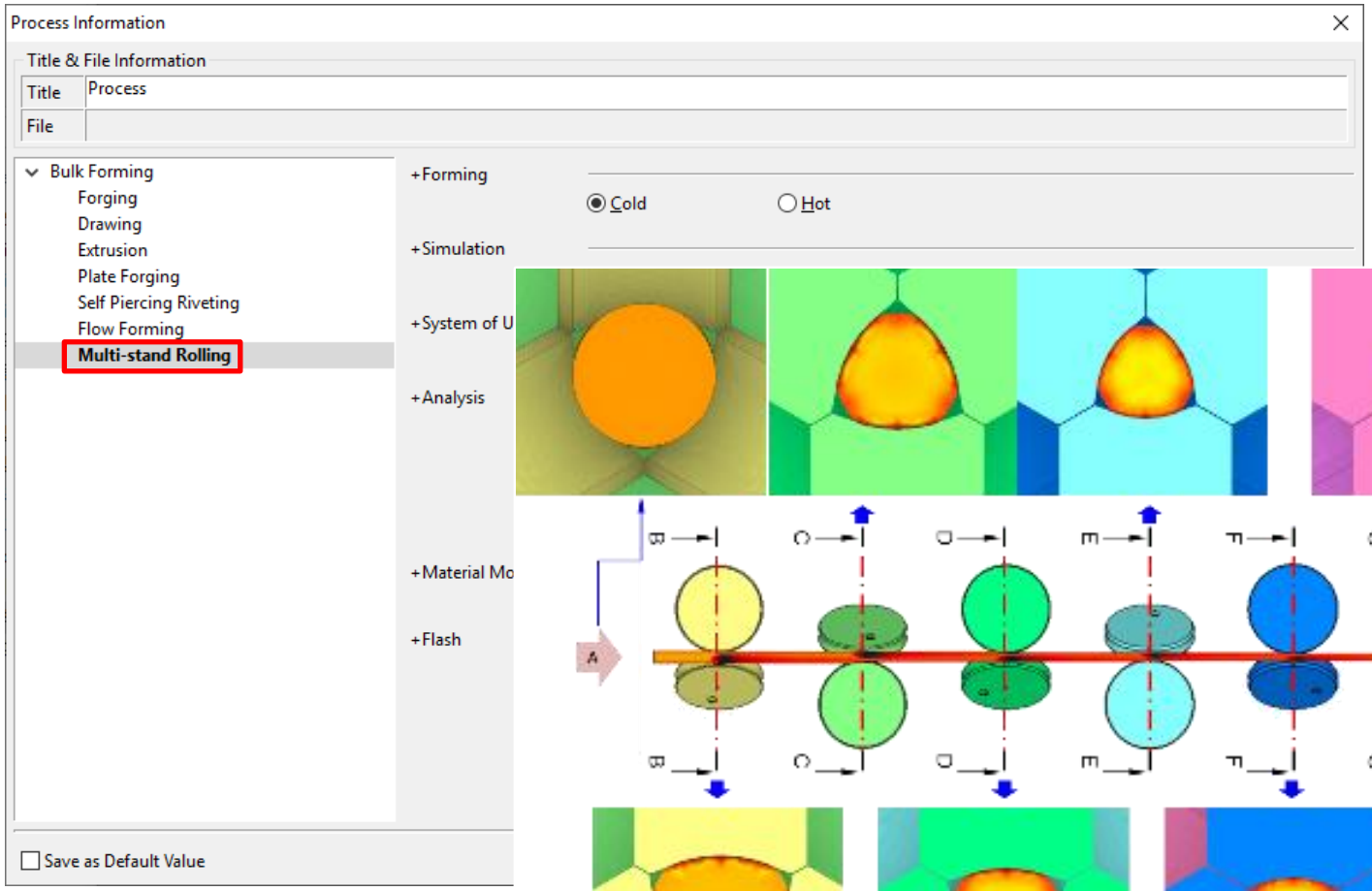


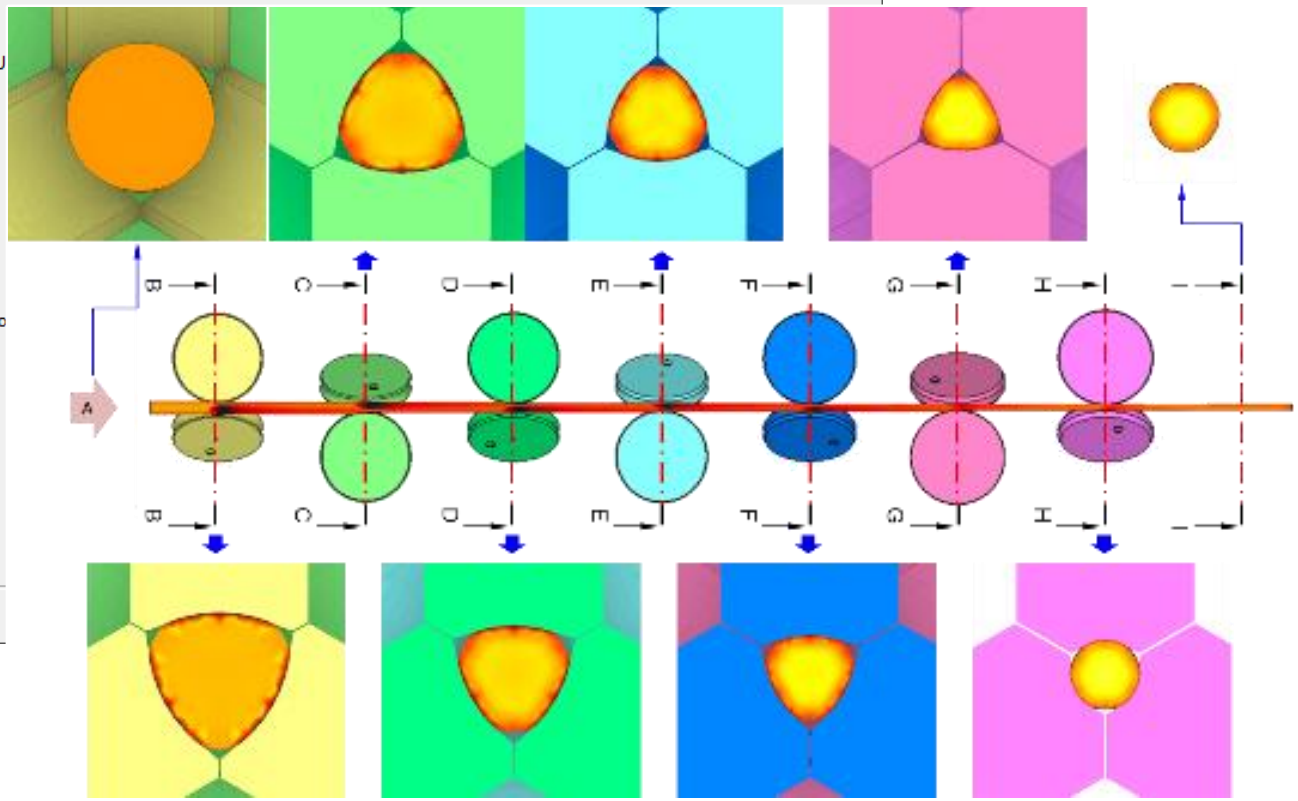
- Reduced the error having different results of non-isothermal and DSA in V19R02

1. AFDEX 2D/3D Solver
2. AFDEX 2D Solver
3. AFDEX 3D Solver
4. GUI

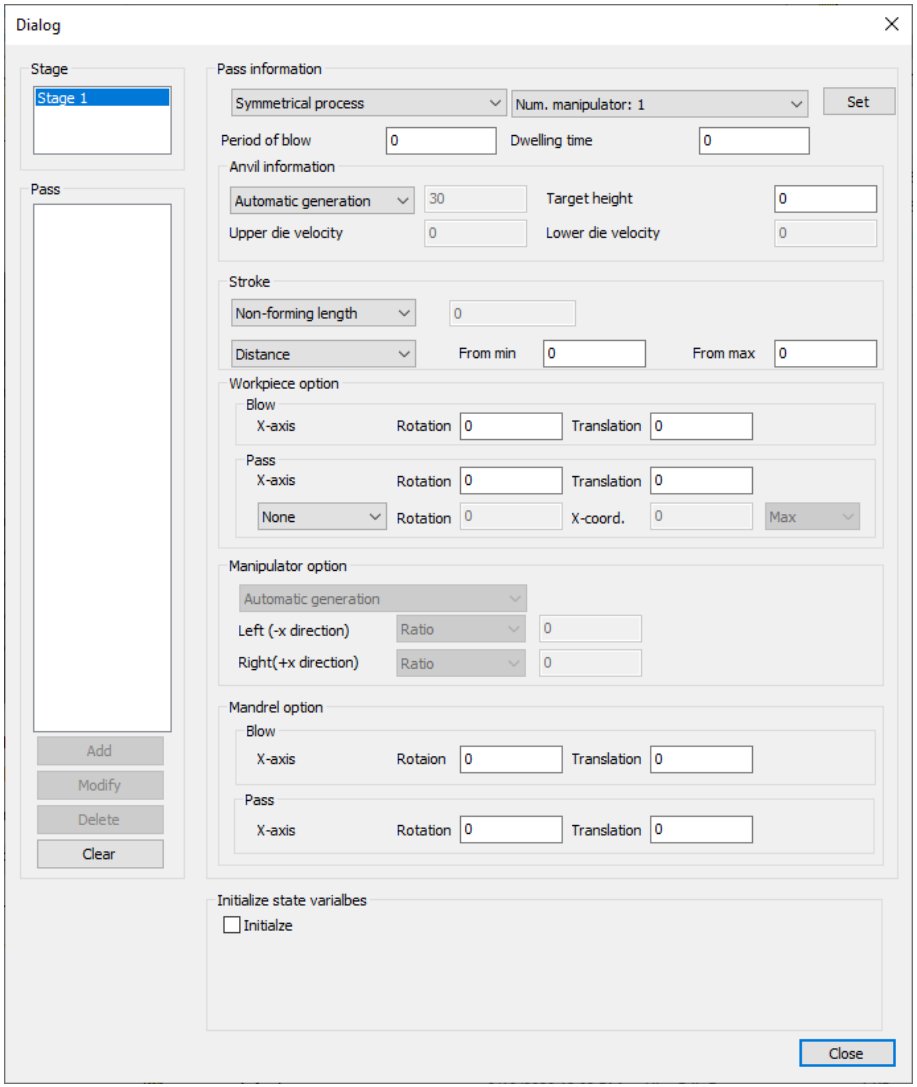


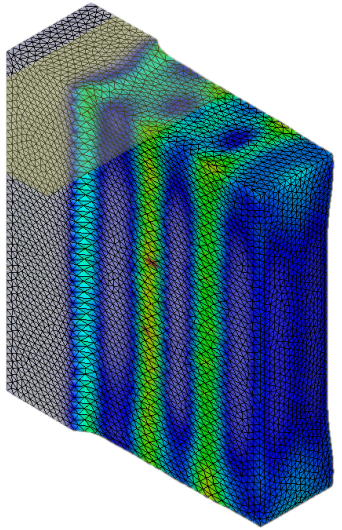
1. Added multi-stand rolling

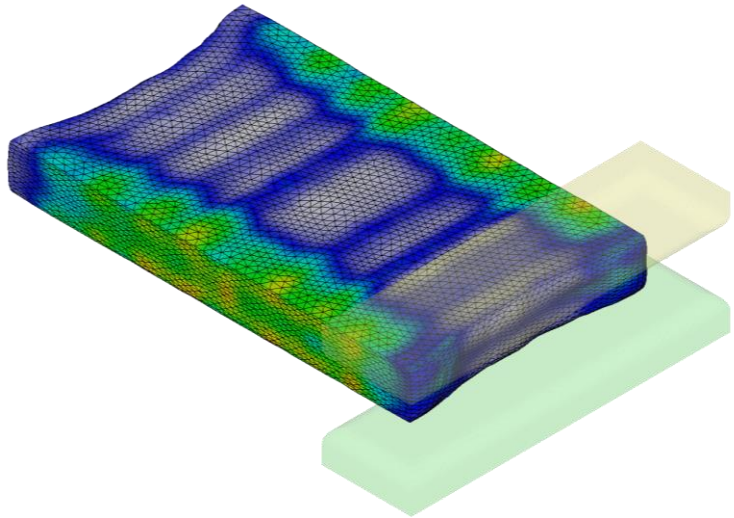




2. Improved automation of open-die forging

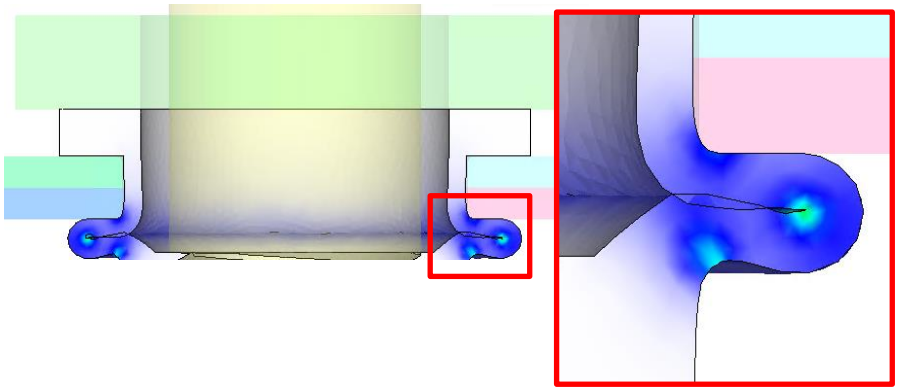




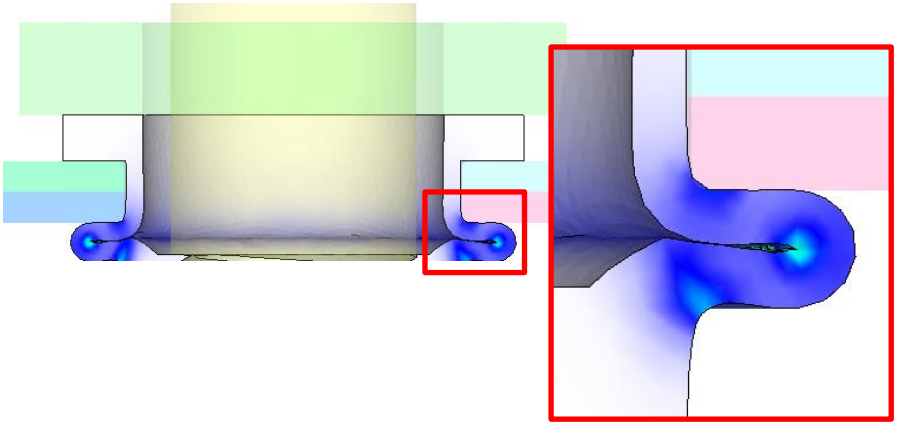


- Check 3D tutorial Part 2 ex16

3. Improved calculation for material-material contact



With material-material contact function

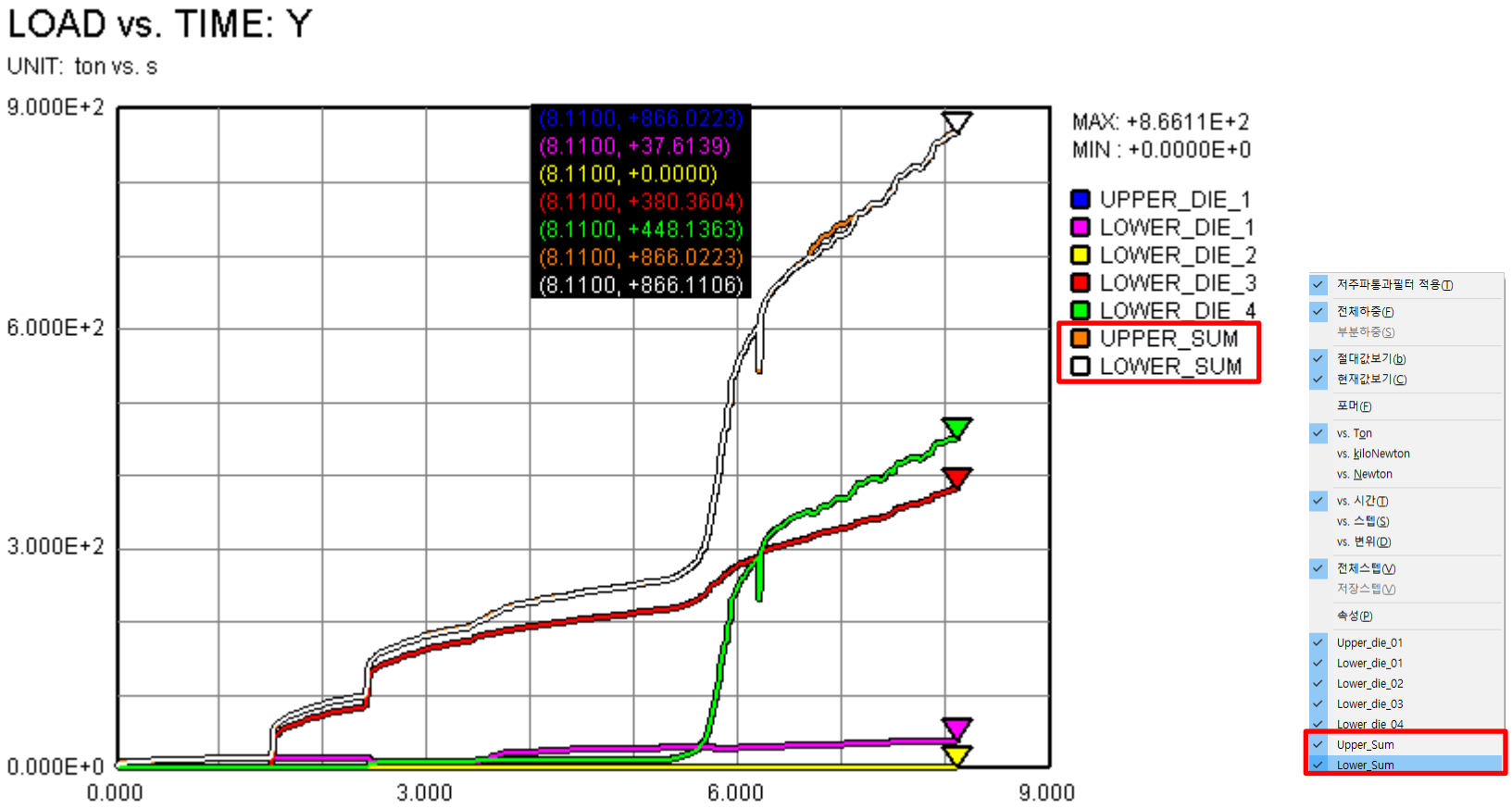


Without material-material contact function

- Check UI for checking 3D folding / self-intersection on p. 23

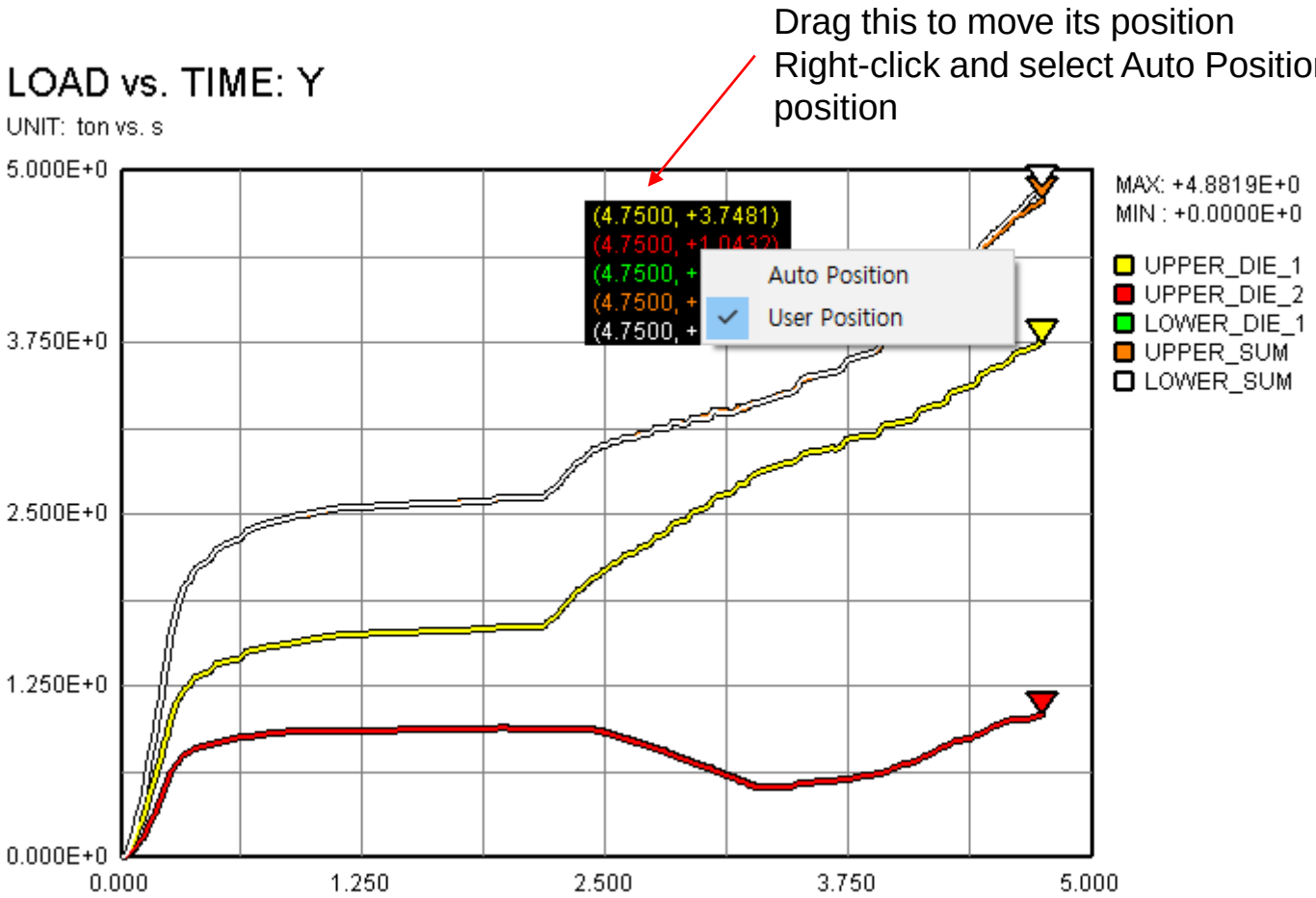
1. AFDEX 2D/3D Solver
2. AFDEX 2D Solver
3. AFDEX 3D Solver
4. GUI

1. Add accumulating feature of forming load of Upper/Lower dies



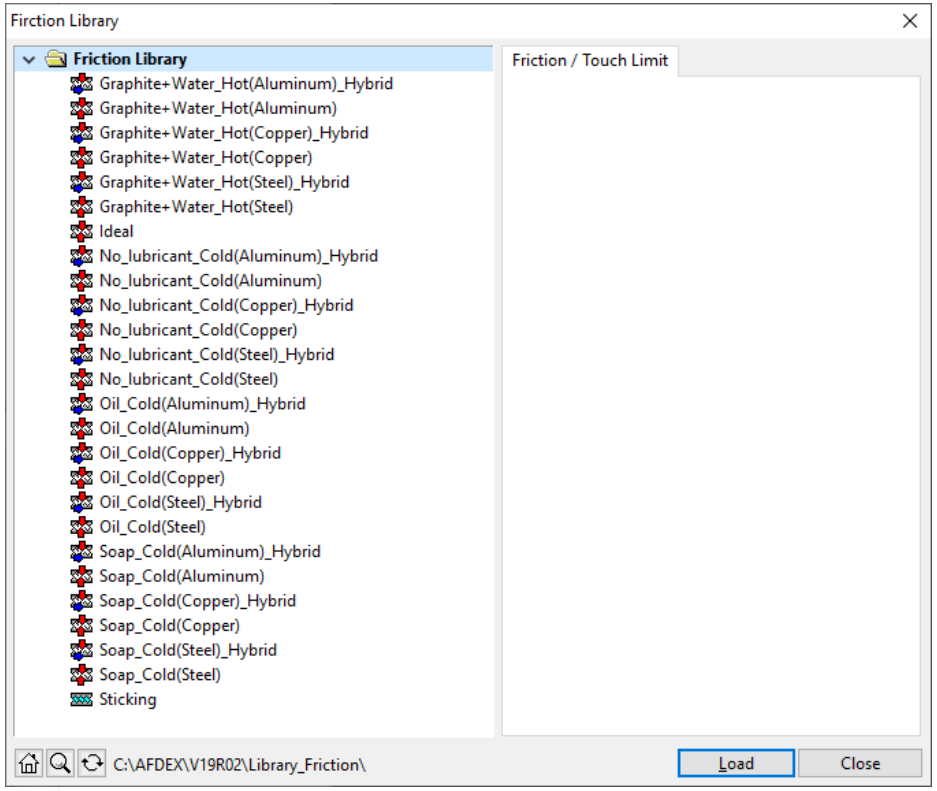
- Right-click on the graph and choose Upper_Sum / Lower_Sum

2. Add feature of moving current value in the display box

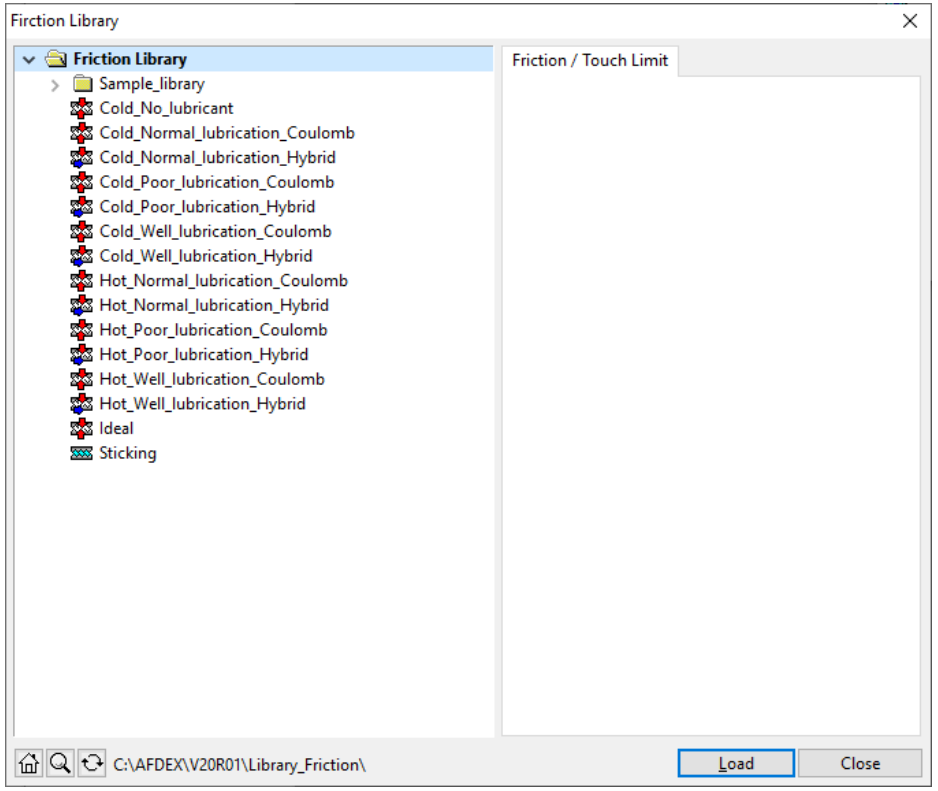


3. Modify friction input library

V19R02



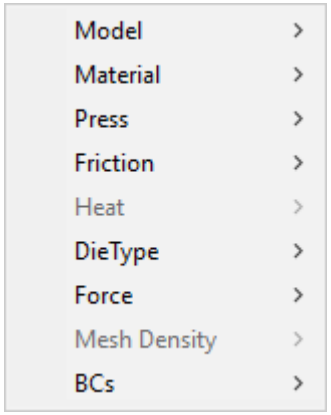
V20R01



- Friction inputs of V19R02 are in sample library folder in V20R01.

4. Add input library for Crack/Damage/Die wear analysis

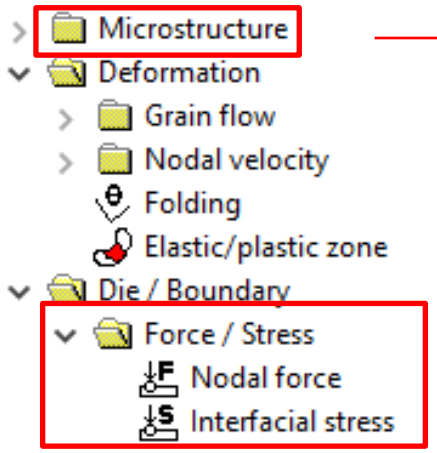
V19R02



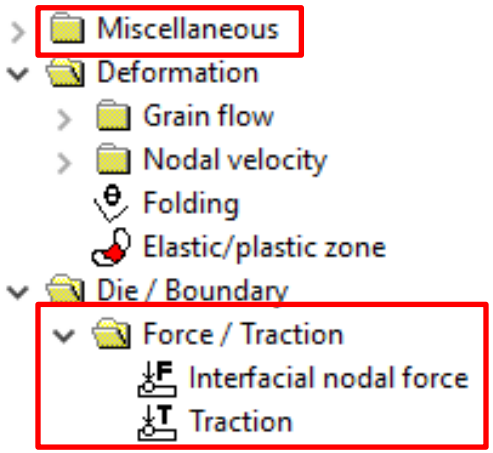
V20R01

5. Change the names of stage variables in post-processing menu

V19R02

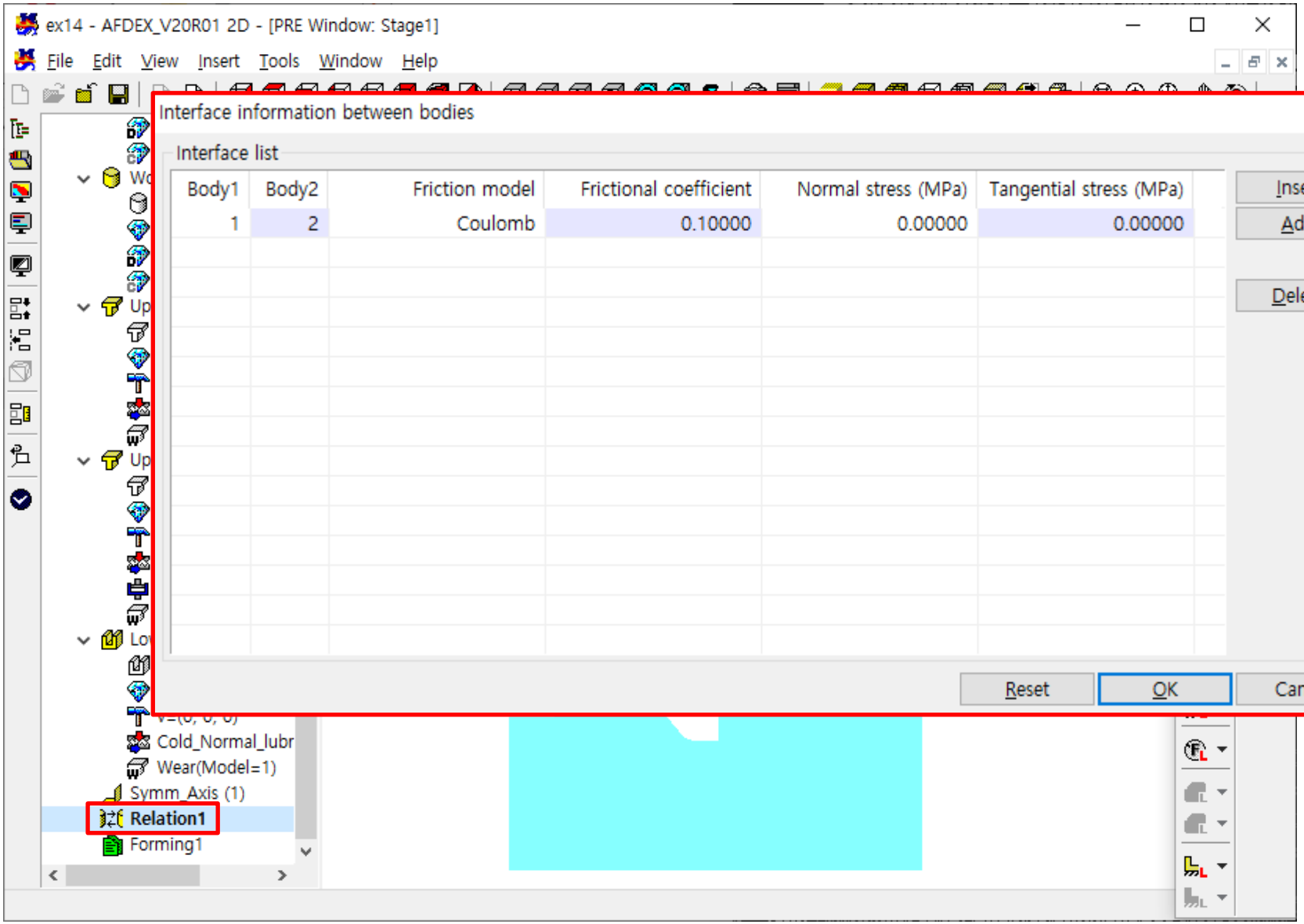


V20R01



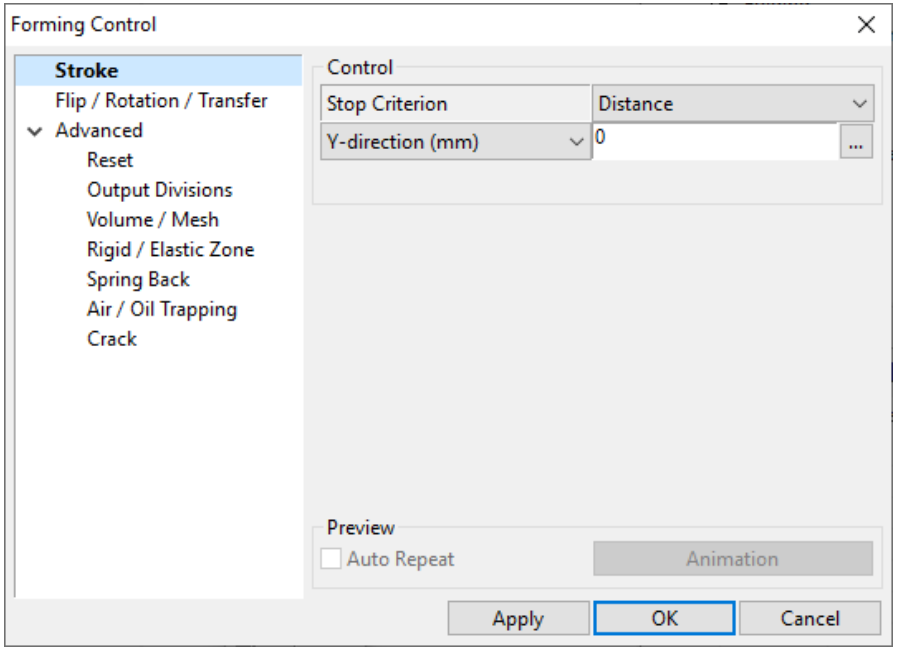
V19R02	V20R01
Microstructure	Miscellaneous
Force / Stress	Force / Traction
Nodal force	Interfacial nodal force
Interfacial stress	Traction

6. Add UI for materia-material contact (friction) in multi-body analysis

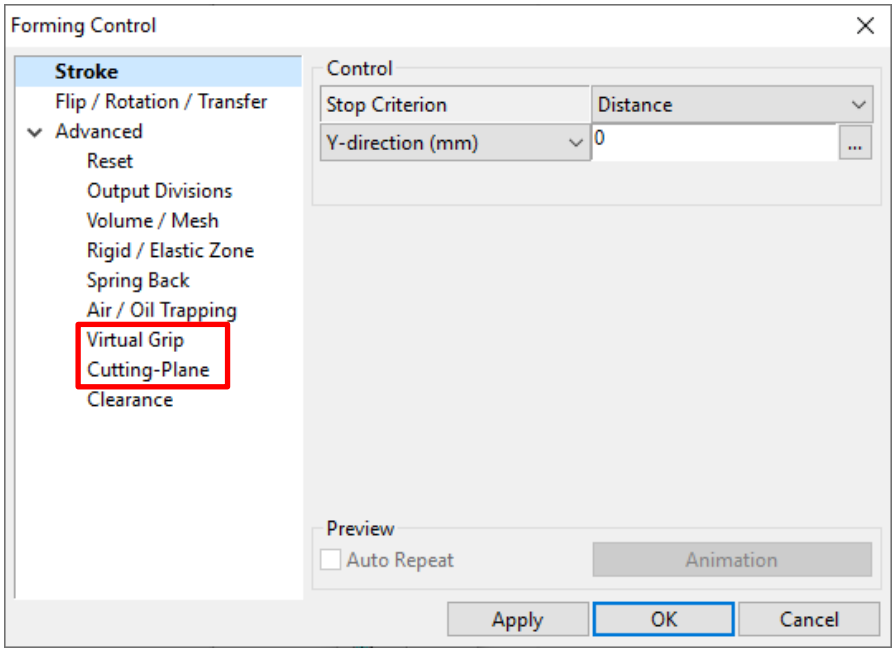


7. Add UI for virtual grip / cutting-plane

V19R02

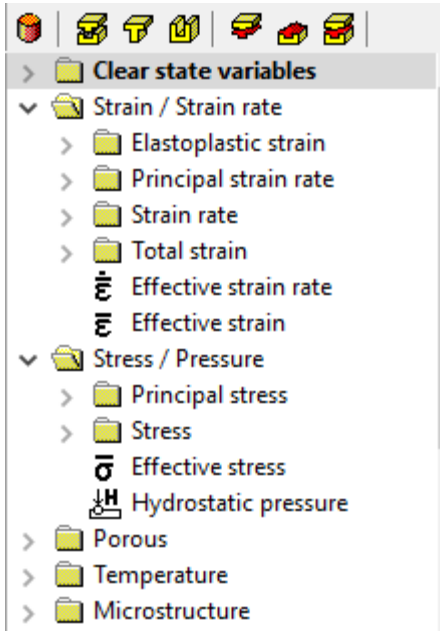


V20R01

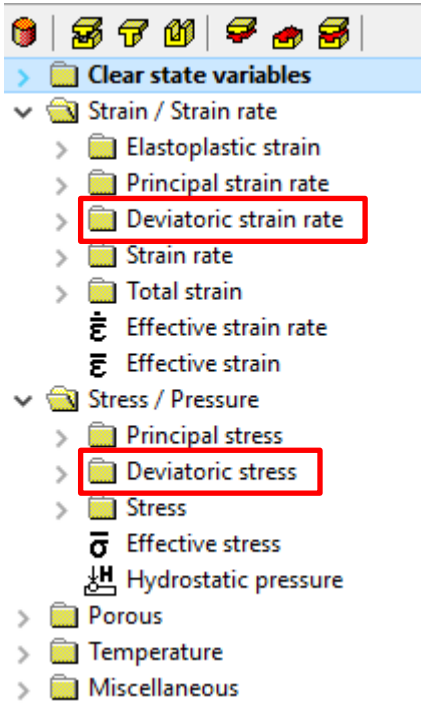


8. Add deviatoric strain rate / deviatoric stress view

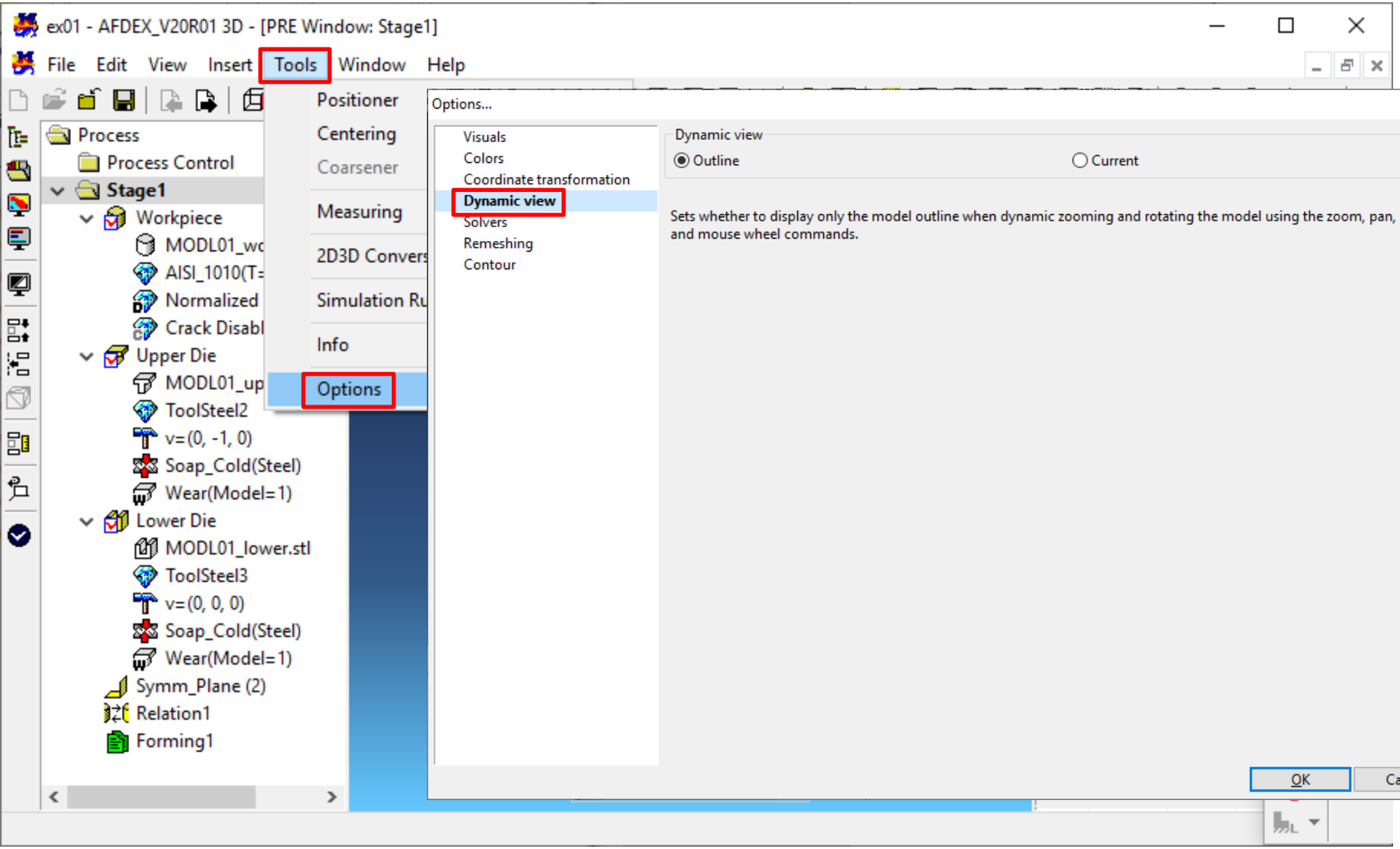
V19R02



V20R01

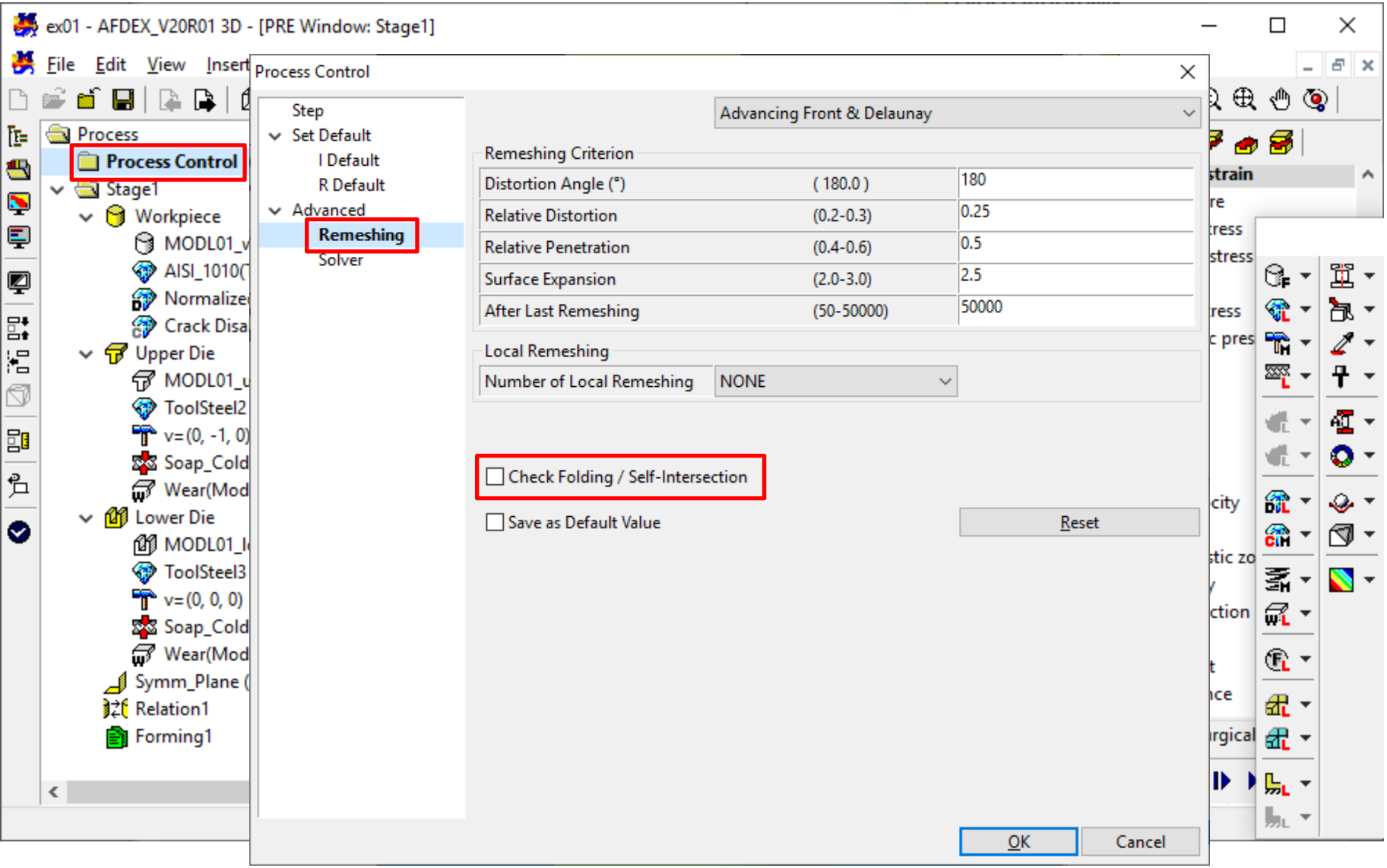


9. Add feature of dynamic view



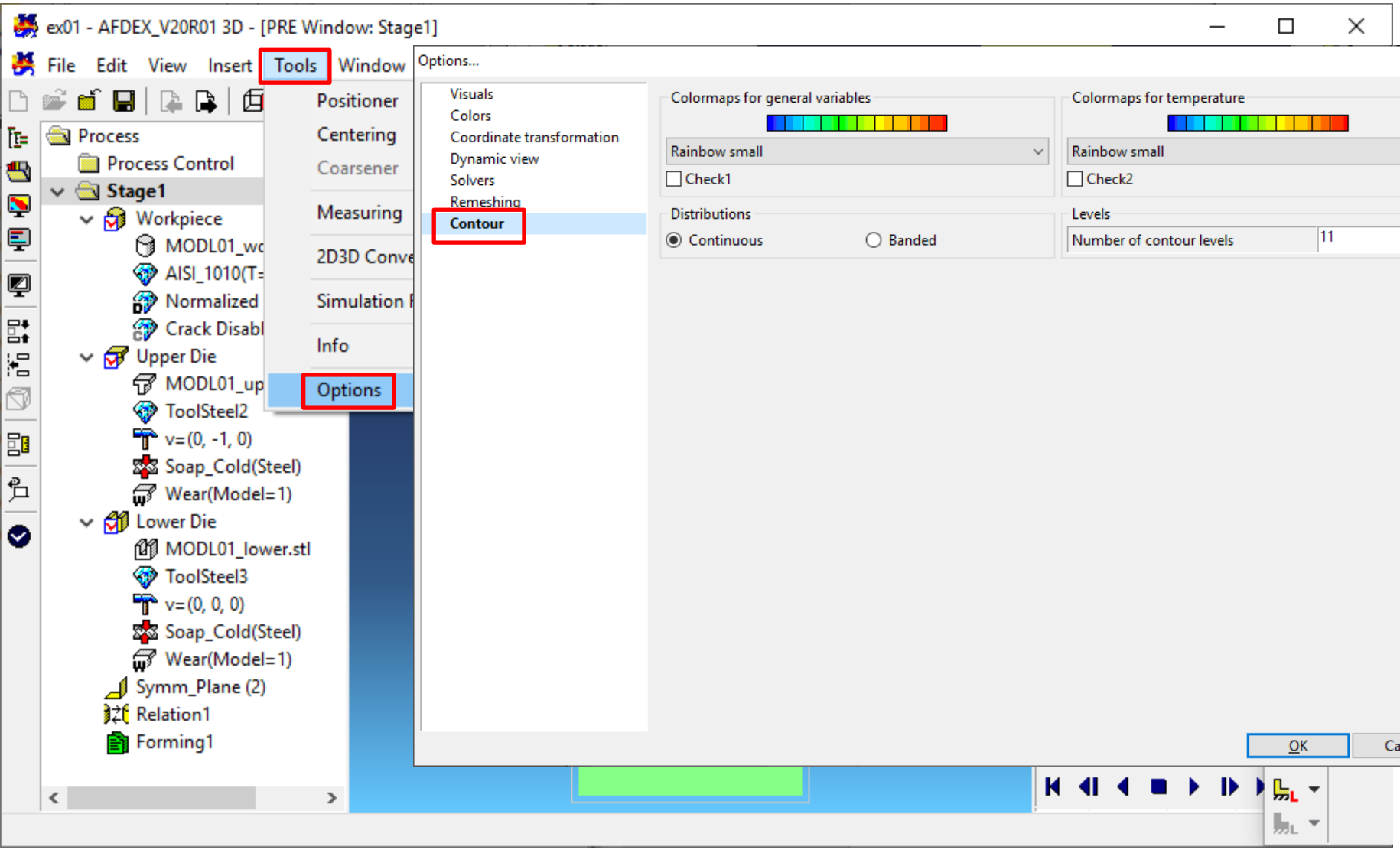
- Add function in Tools -> Options -> Dynamic view
- Choose Outline/Current to display only the model outline or current view when zooming, panning and rotating.

10. Add UI for checking 3D folding / self-intersection



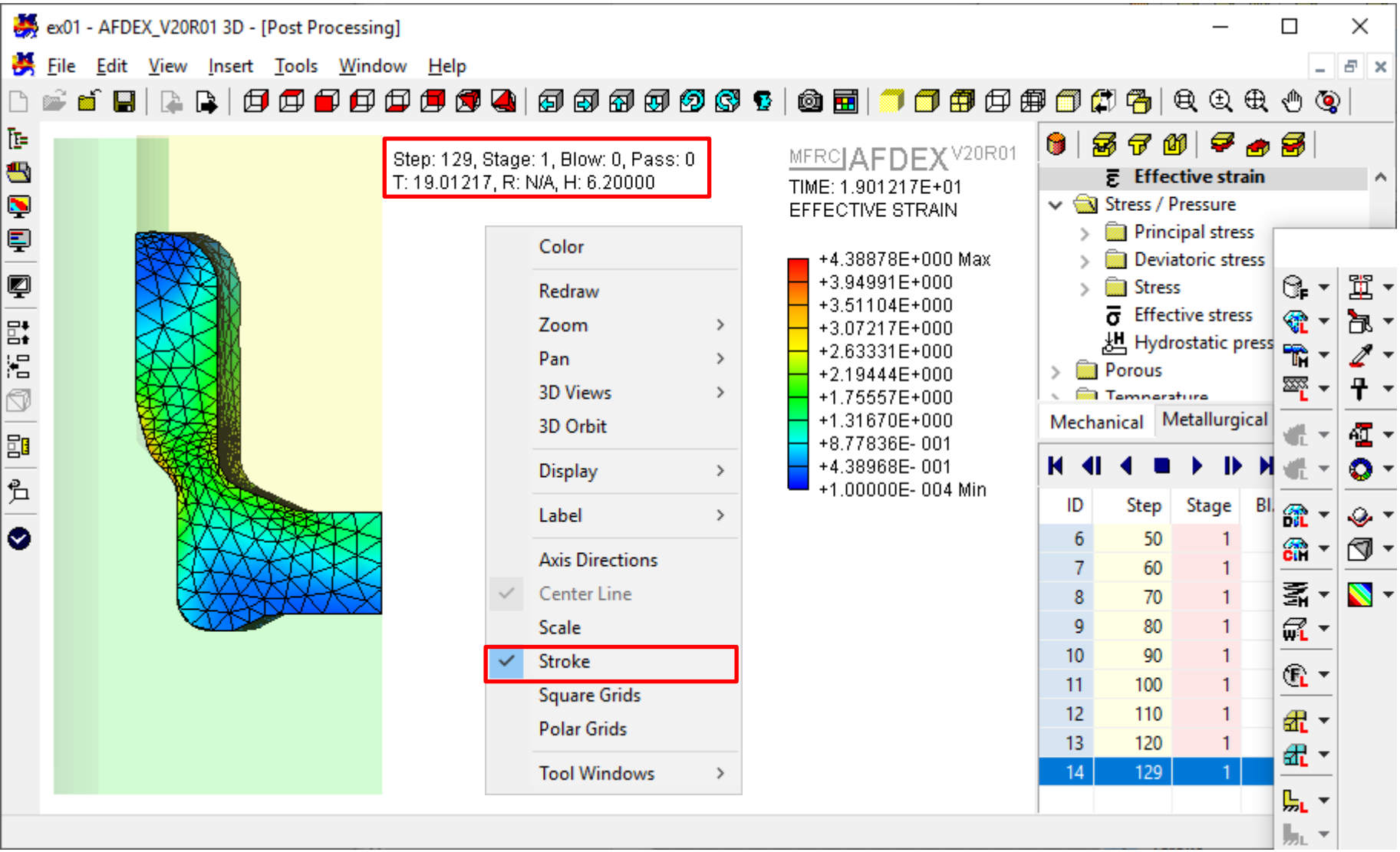
- Add UI “Check Folding / Self-Intersection” in Process Control -> Remeshing Tab

11. Add function of contour color change



- Add function in Tools -> Options -> Contour

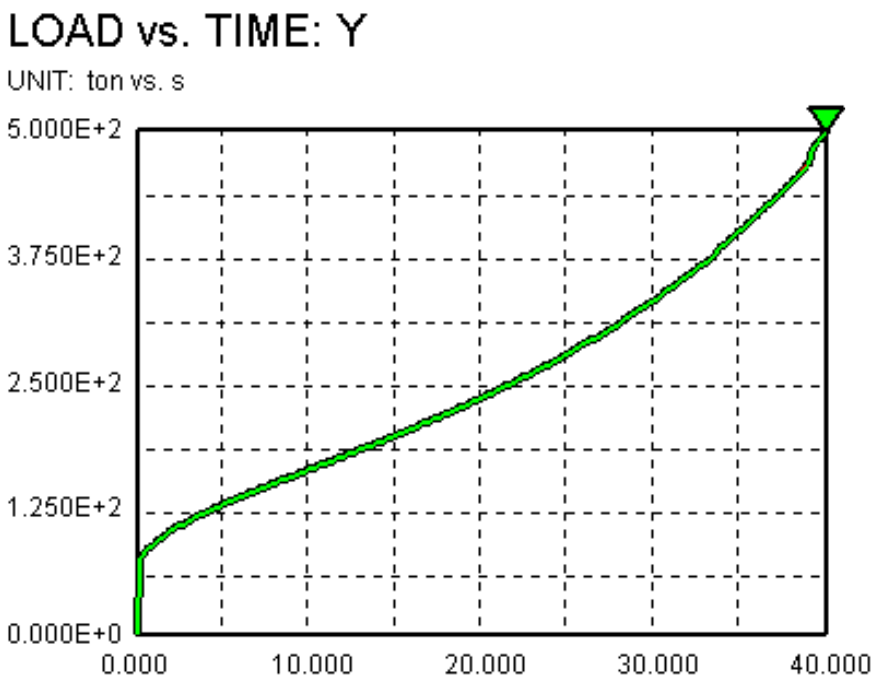
12. Add stroke information in post-processing



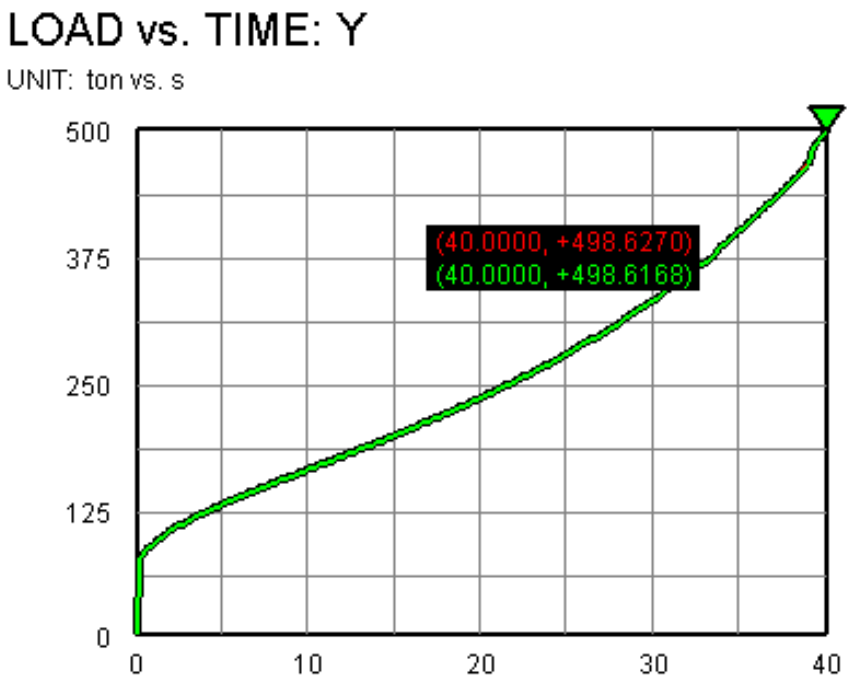
- T: Time
- R: Radius of material(available in 2D)
- H: Height(based on stroke point inserted by user. It shows N/A if the stop criterion is time.)

13. Modify graph display

V19R02

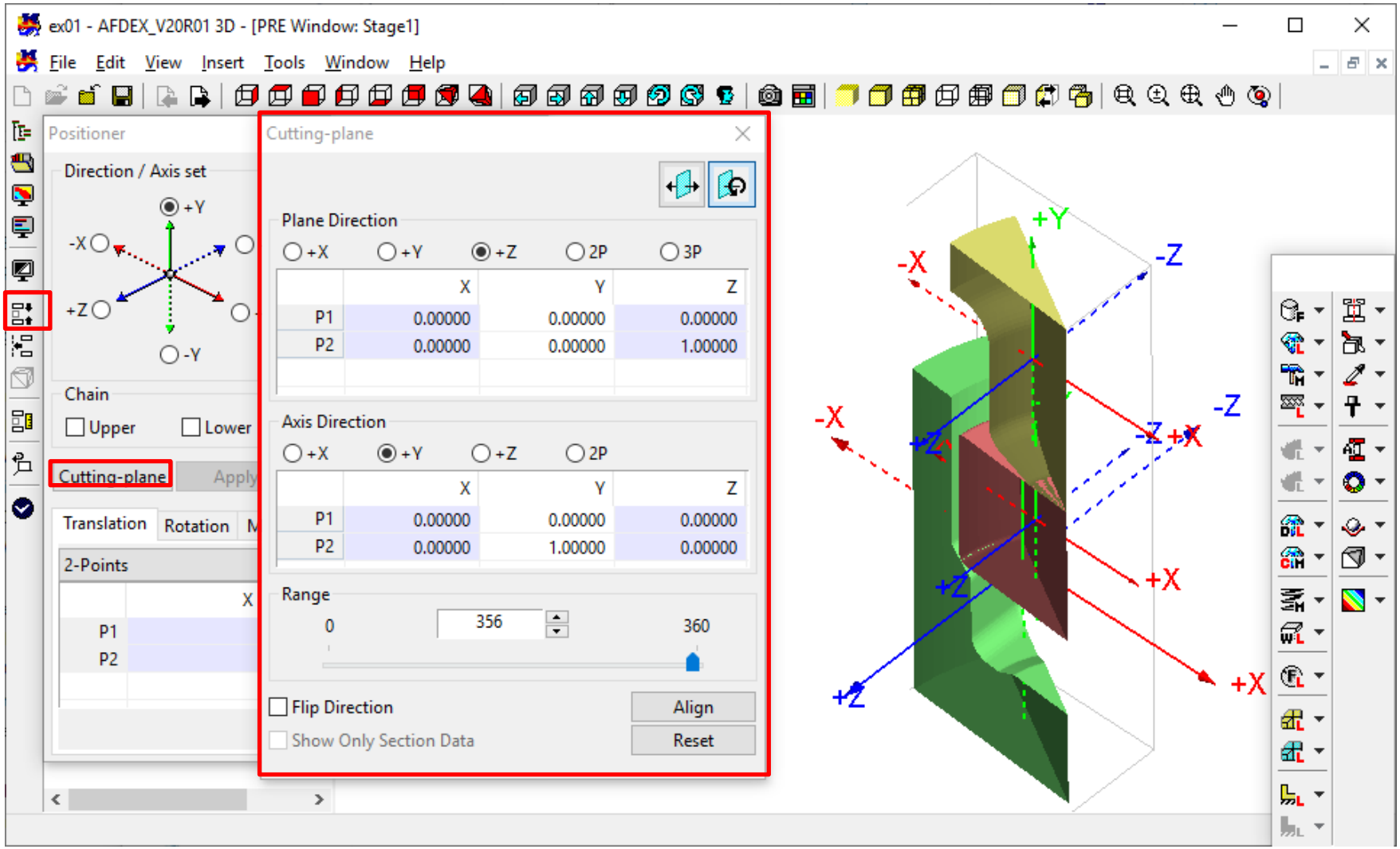


V20R01



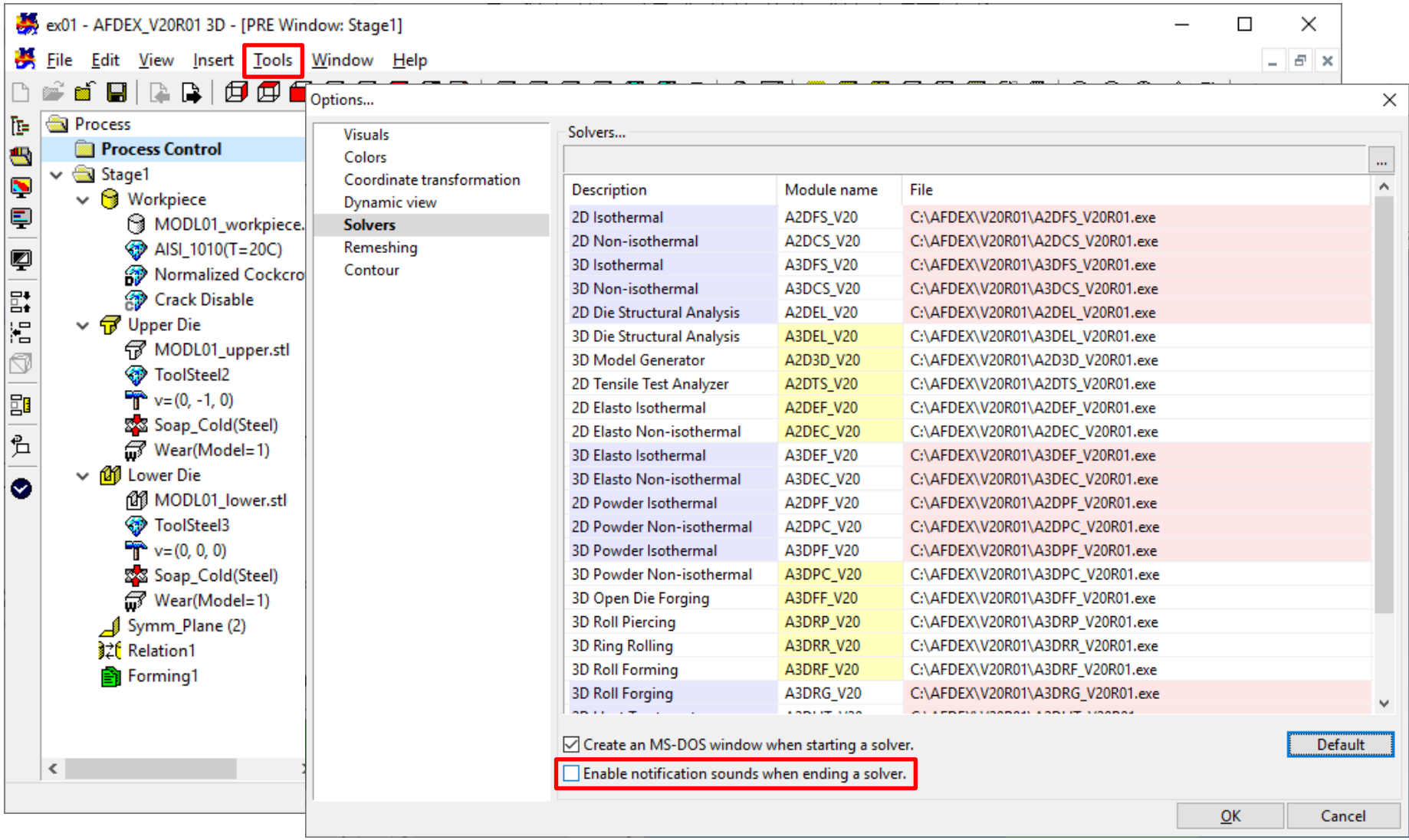
- modify real-> integer

14. Add display function of cutting-plane of modelling



-Add display function in Positioner -> Cutting-plane

15. Add function to notify the finish of the solver



-Add function to notify the finish of the solver on Tools -> Solvers tab (Only 3D)