LS-dyna and Prepost 4.3.13+ StepbyStep Training manual

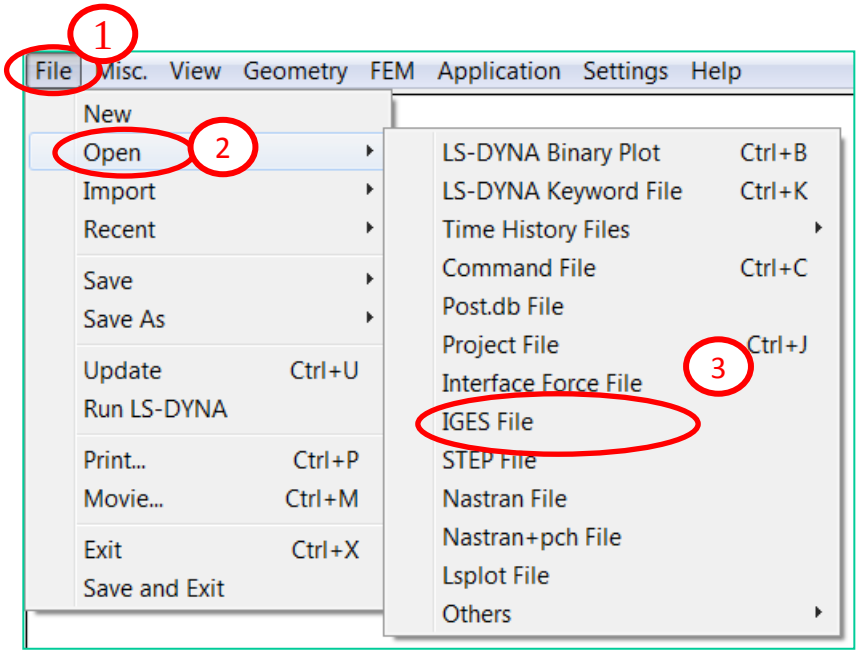
By Jeanne He

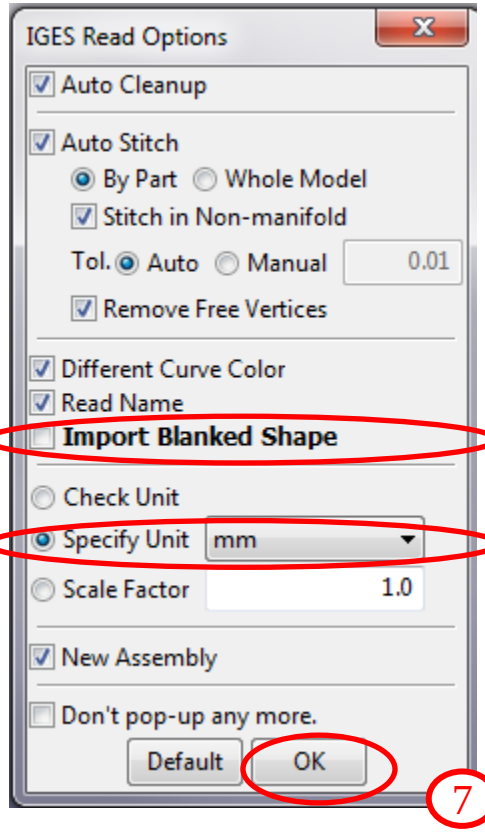
support@formingsimulation.com

October , 2017

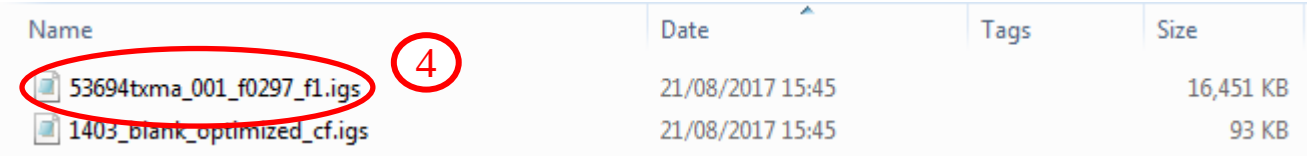
Input Designed Surfaces Iges file

Open an IGES file:

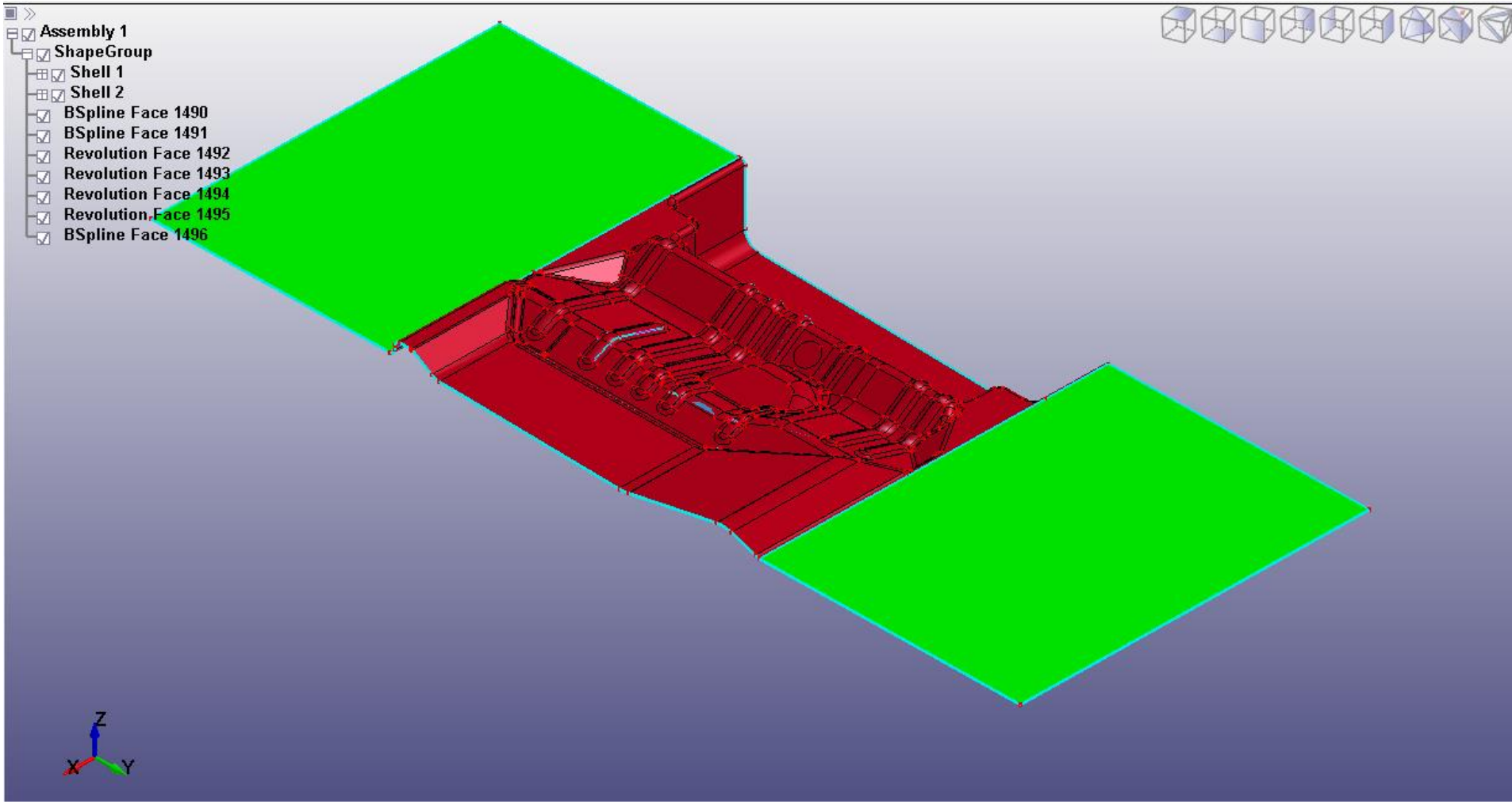




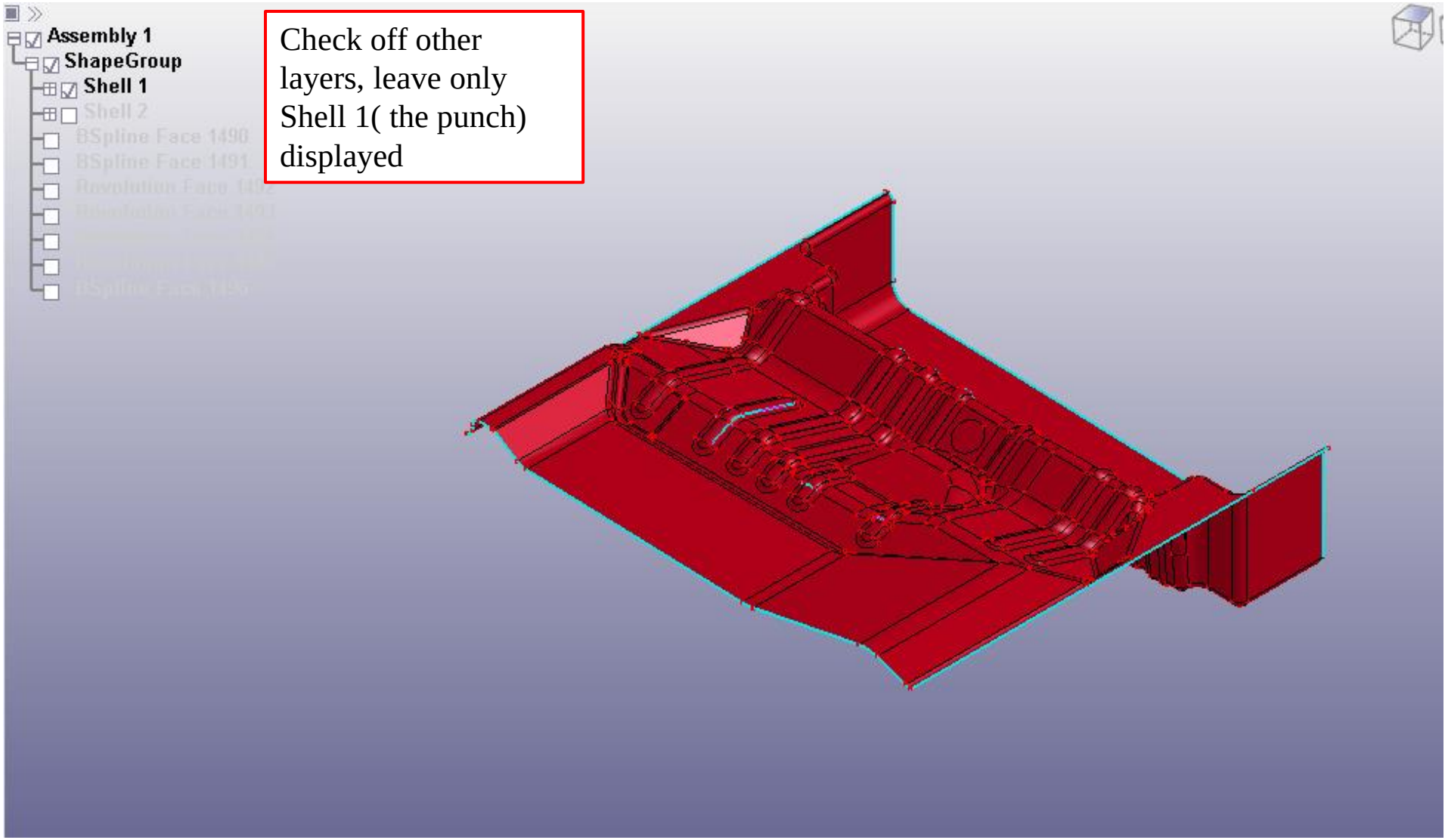
Directory: Workshop 1



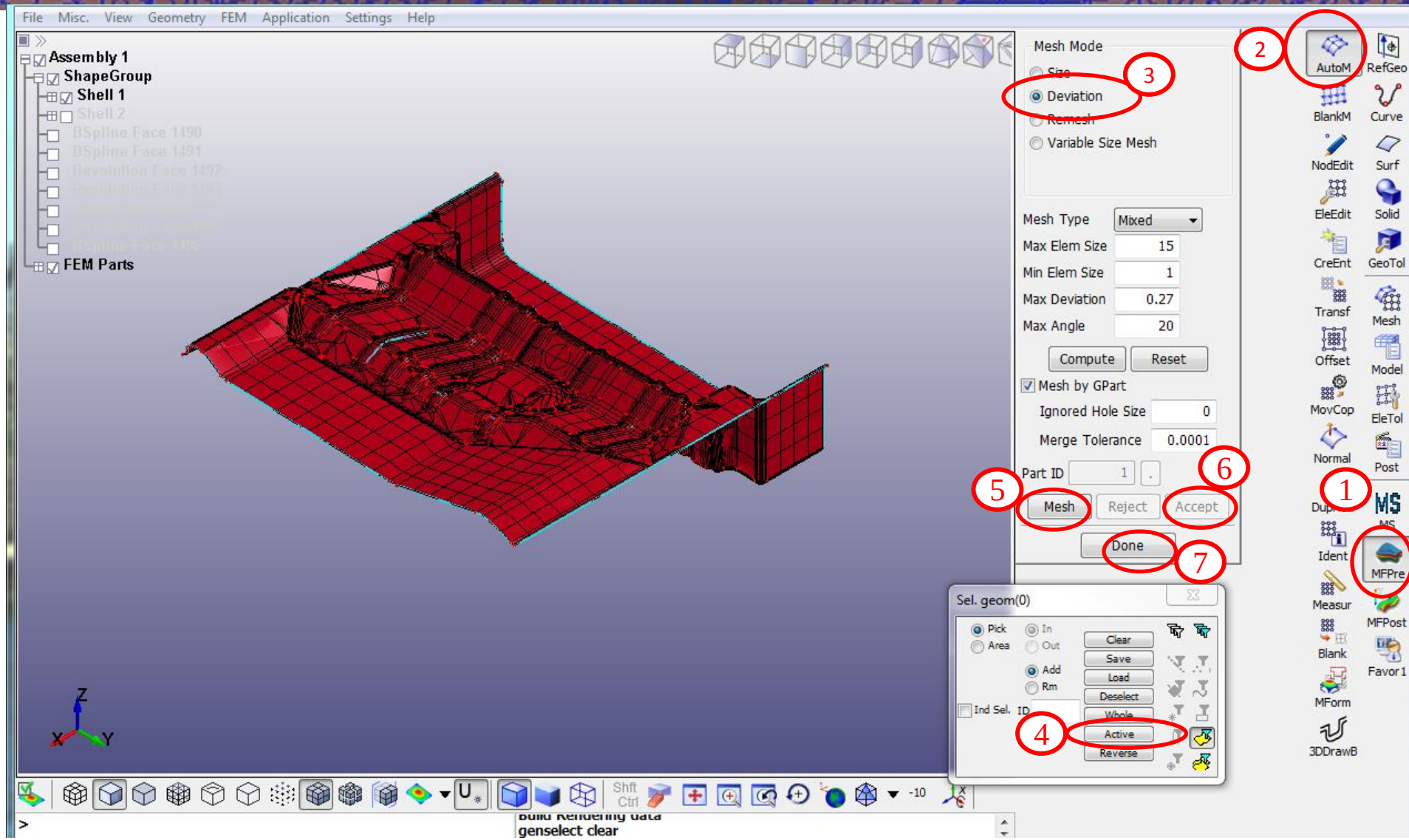
Input Surfaces



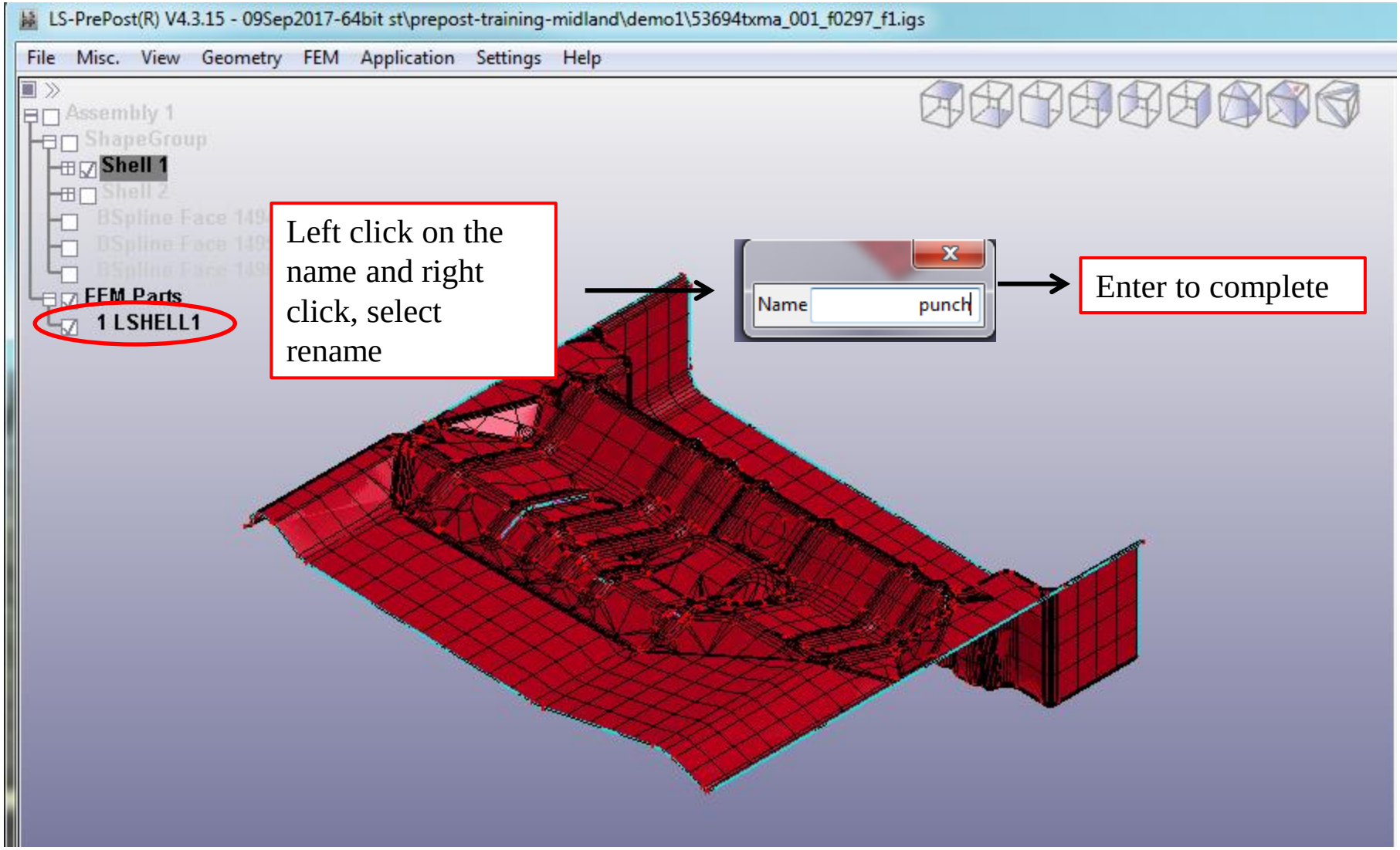
Turn Layers Off/On



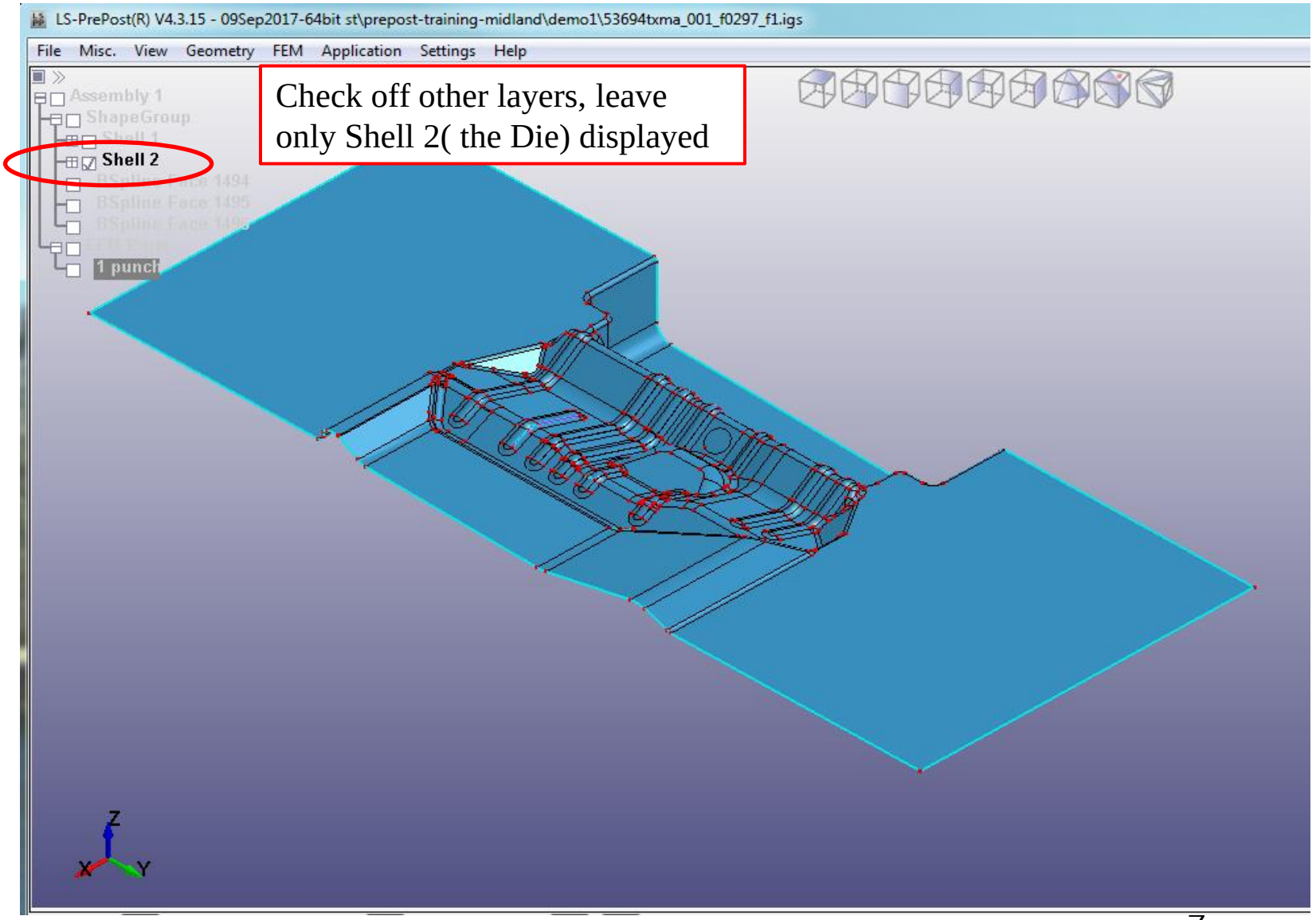
Mesh the Punch



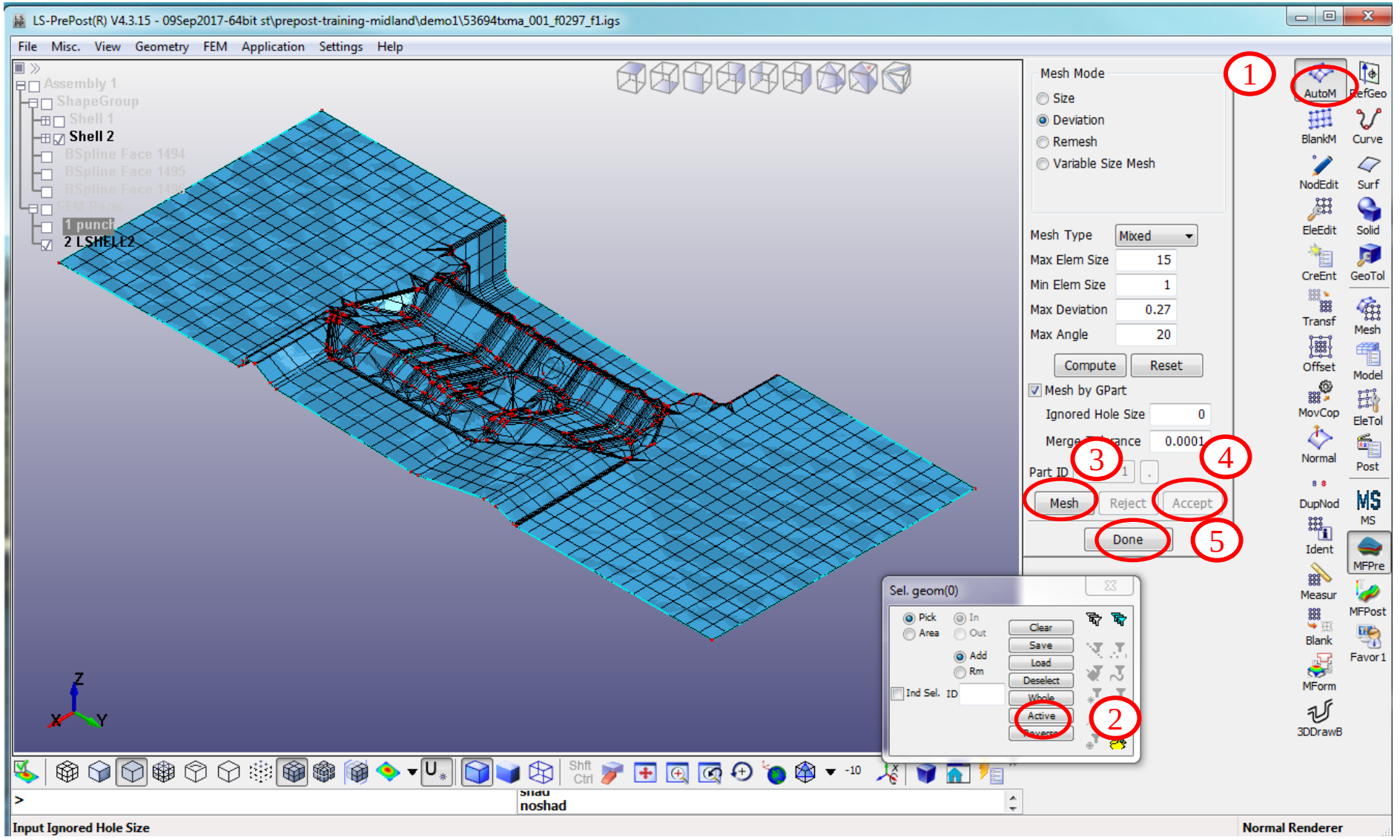
Rename Mesh Layer to Punch



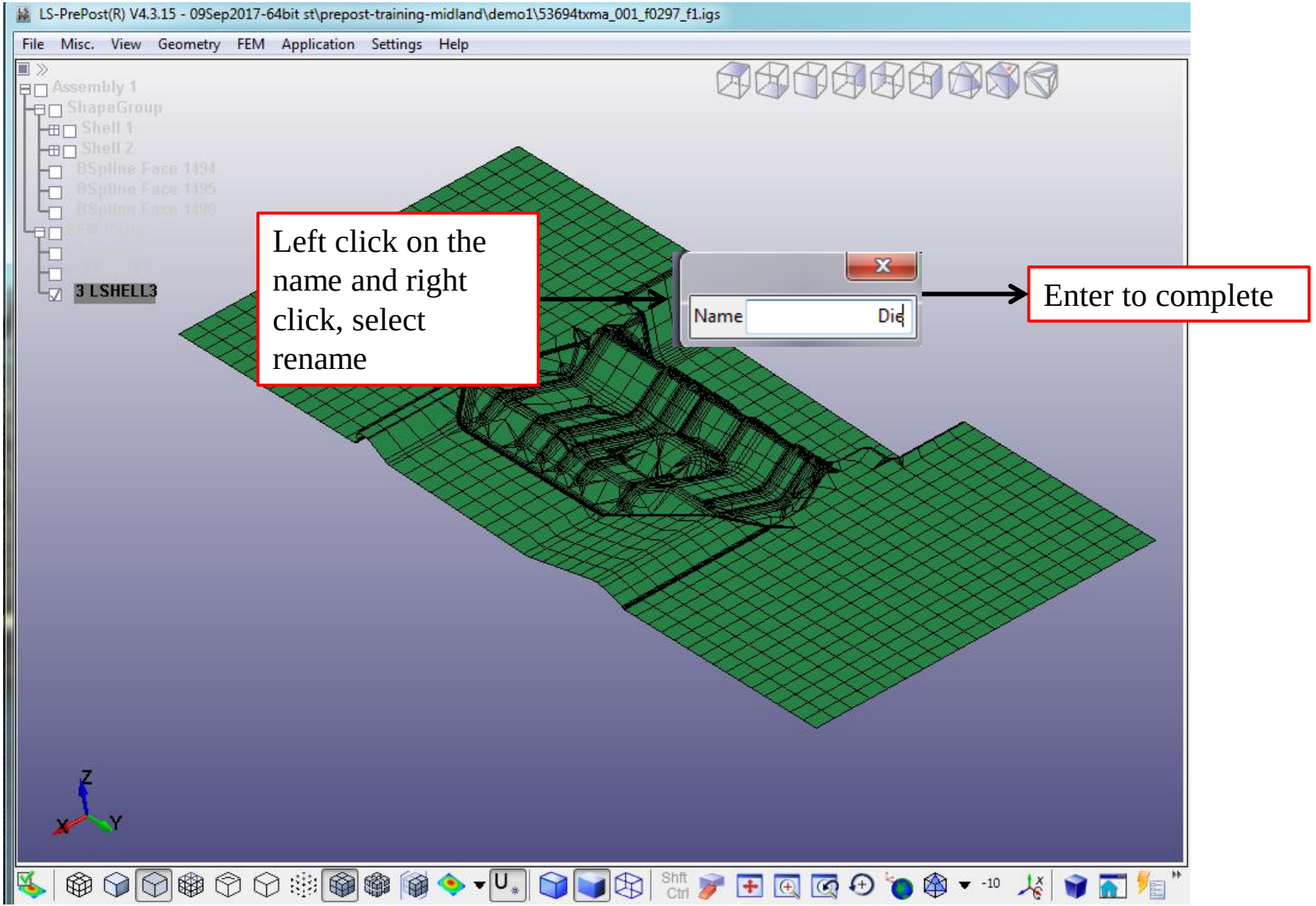
Turn Layers Off/On



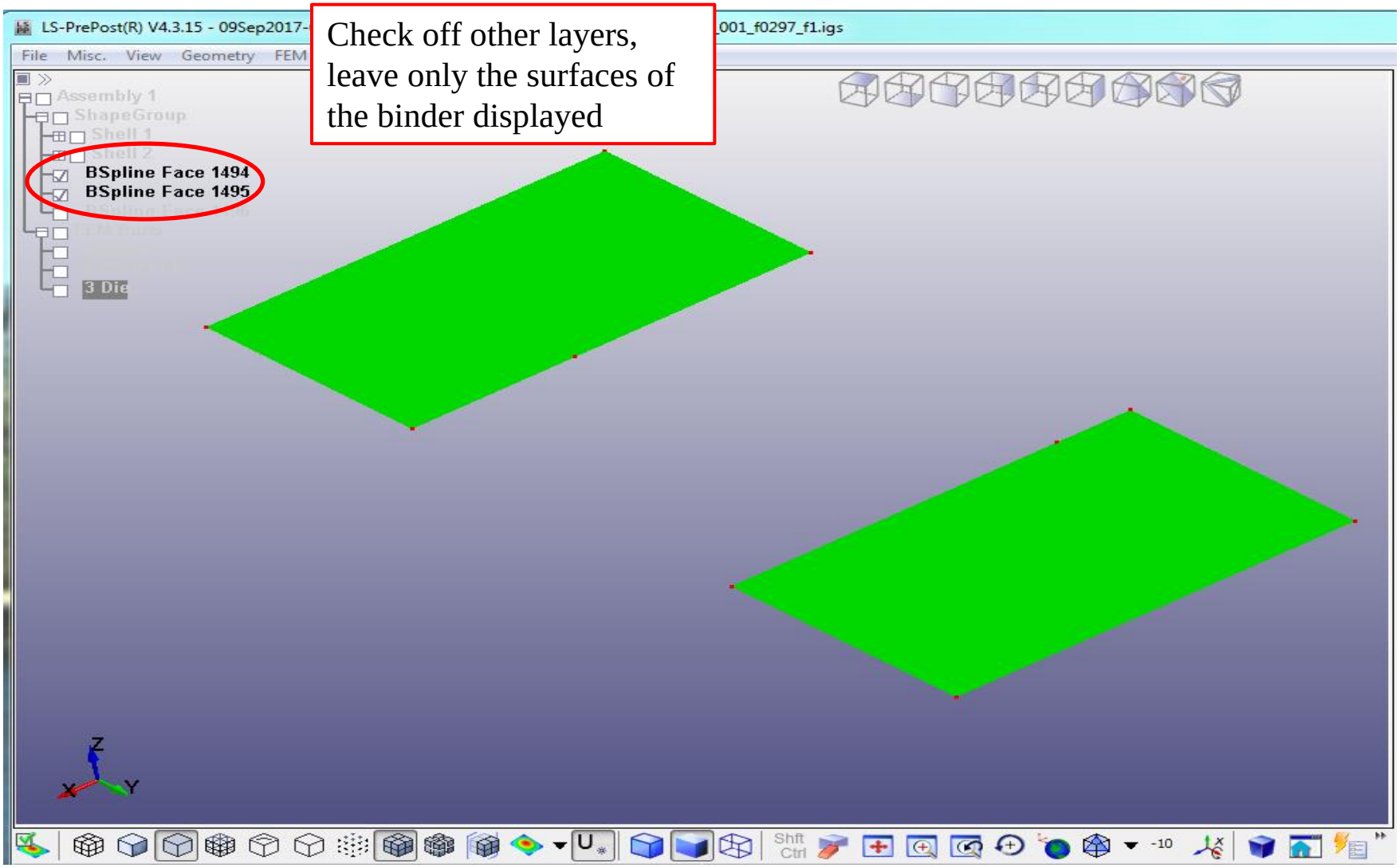
Mesh the Die


LS-PrePost(R) V4.3.15 - 09Sep2017-64bit st\prepost-training-midland\demo1\53694txma_001_f0297_f1.igs
File Misc. View Geometry FEM Application Settings Help
Assembly 1
ShapeGroup
Shell 1
Shell 2
BSpline Face 1494
BSpline Face 1495
1 punch
2 LSHELL2
Mesh Mode
Size
Deviation
Remesh
Variable Size Mesh
Mesh Type
Mixed
Max Elem Size
15
Min Elem Size
1
Max Deviation
0.27
Max Angle
20
Compute
Reset
Mesh by GPart
Ignored Hole Size
0
0.0001
Part ID
Mesh
Reject
Accept
Done
Sel. geom(0)
Pick
Area
In
Out
Add
Rm
Clear
Save
Load
Deselect
Whole
Active
Ind Sel. ID
AutoM
RefGeo
BlankM
Curve
NodEdit
Surf
EleEdit
Solid
CreEnt
GeoTol
Transf
Mesh
Offset
Model
MovCop
EleTol
Normal
Post
DupNod
MS
Ident
MFPre
Measur
MFPost
Blank
Favor1
MForm
3DDrawB
1
2
3
4
5
noshad
Input Ignored Hole Size
Normal Renderer

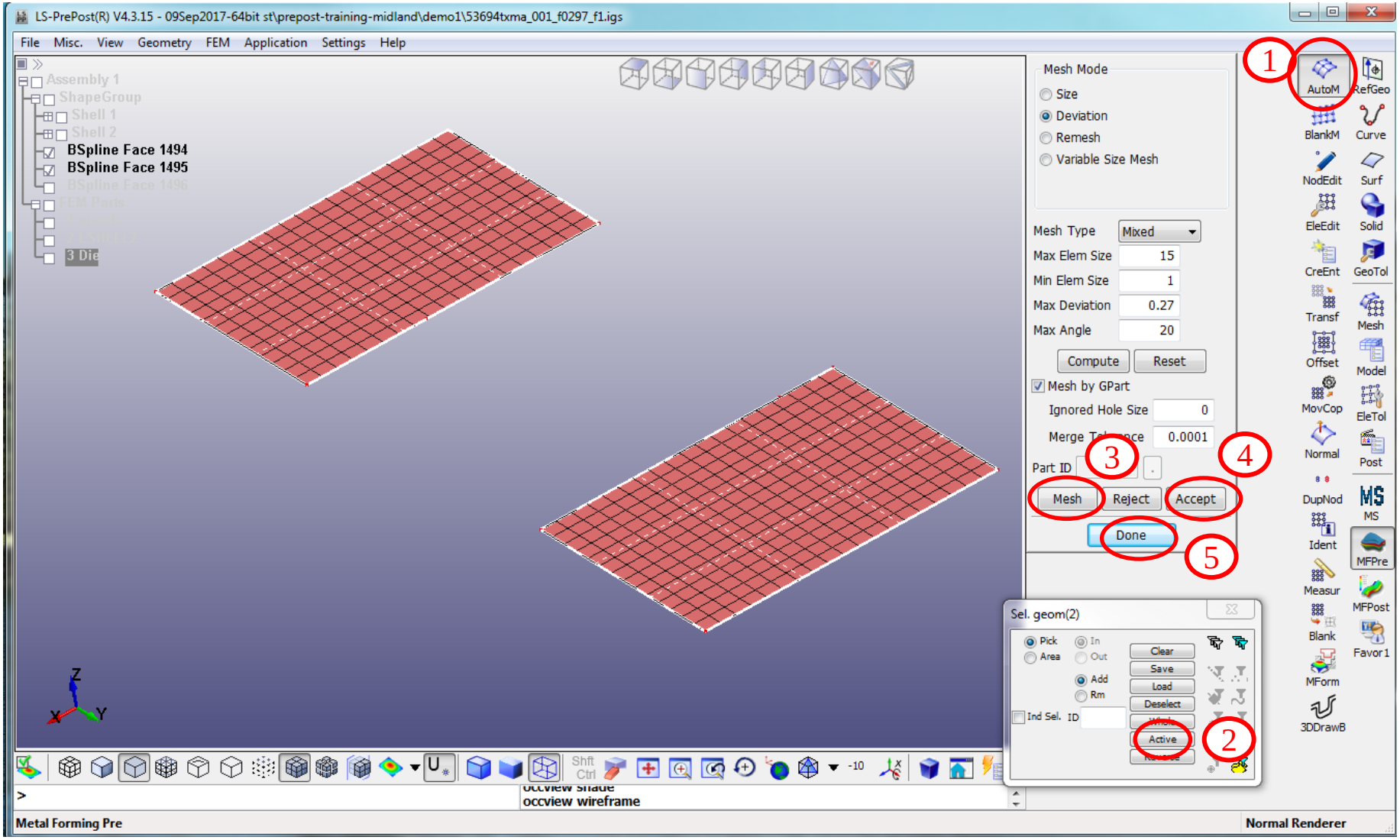
Rename Mesh Layer to Die



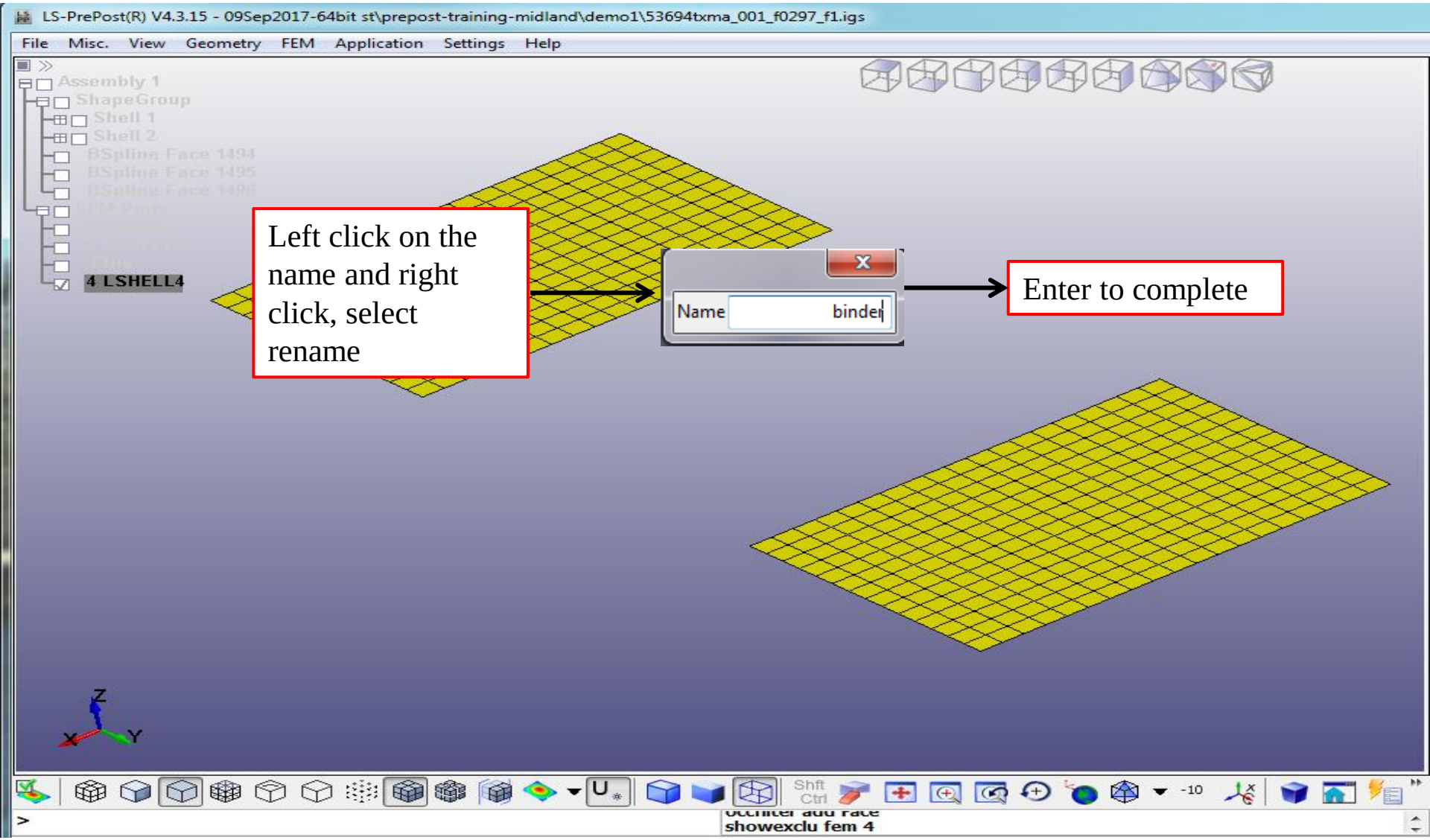
Turn Layers Off/On



Mesh the Die

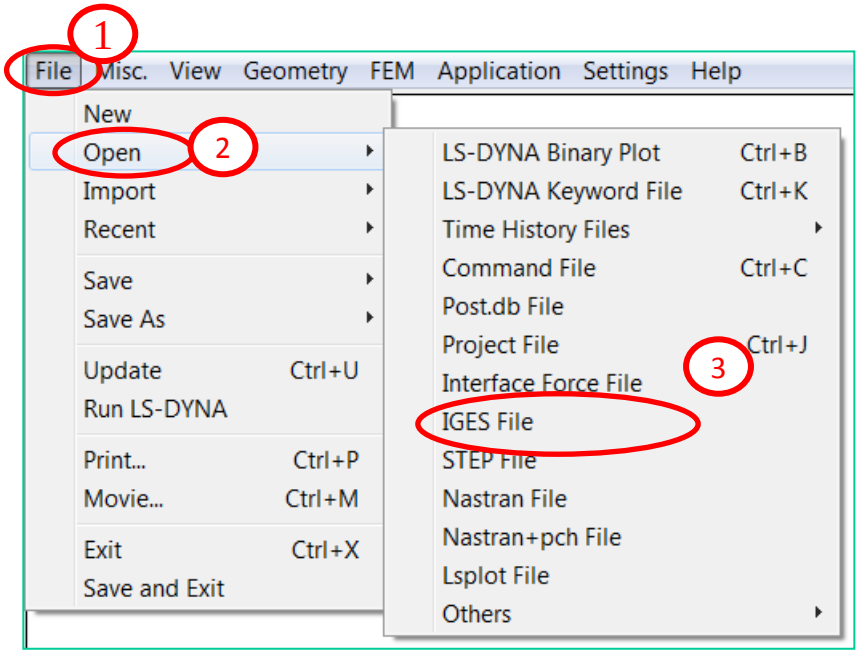

LS-PrePost(R) V4.3.15 - 09Sep2017-64bit st\prepost-training-midland\demo1\53694txma_001_f0297_f1.igs
File Misc. View Geometry FEM Application Settings Help
Assembly 1
ShapeGroup
Shell 1
Shell 2
BSpline Face 1494
BSpline Face 1495
BSpline Face 1496
FEM Parts
3 Die
Mesh Mode
Size
Deviation
Remesh
Variable Size Mesh
Mesh Type Mixed
Max Elem Size 15
Min Elem Size 1
Max Deviation 0.27
Max Angle 20
Compute Reset
Mesh by GPart
Ignored Hole Size 0
Merge Tolerance 0.0001
Part ID
Mesh Reject Accept
Done
1
2
3
4
5
Sel. geom(2)
Pick Area In Out Add Rm
Clear Save Load Deselect Active
Ind Sel. ID
AutoM RefGeo BlankM Curve NodEdit Surf EleEdit Solid CreEnt GeoTol Transf Mesh Offset Model MovCop EleTol Normal Post DupNod MS Ident MFPre Measur MFPost Blank Favor1 MForm 3DDrawB
occview shade
occview wireframe
Metal Forming Pre
Normal Renderer

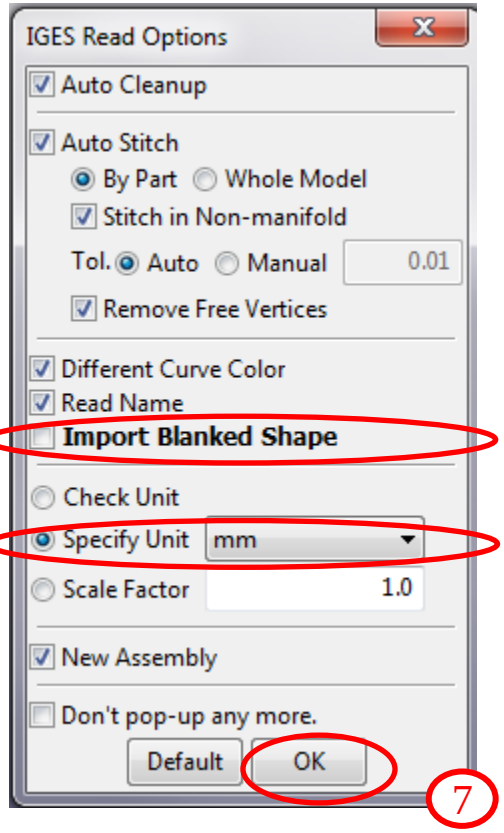
Rename Mesh Layer to Binder



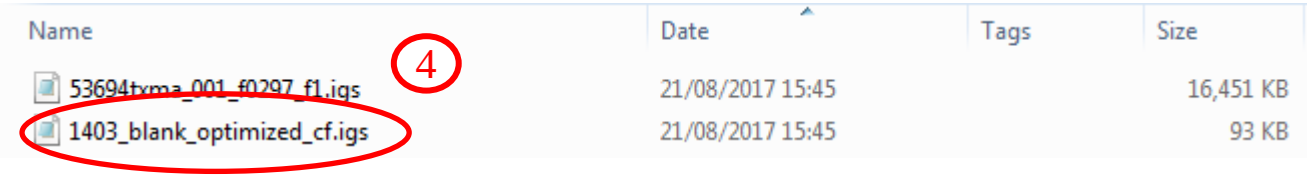
Input Blank Surfaces Iges file

Open an IGES file:

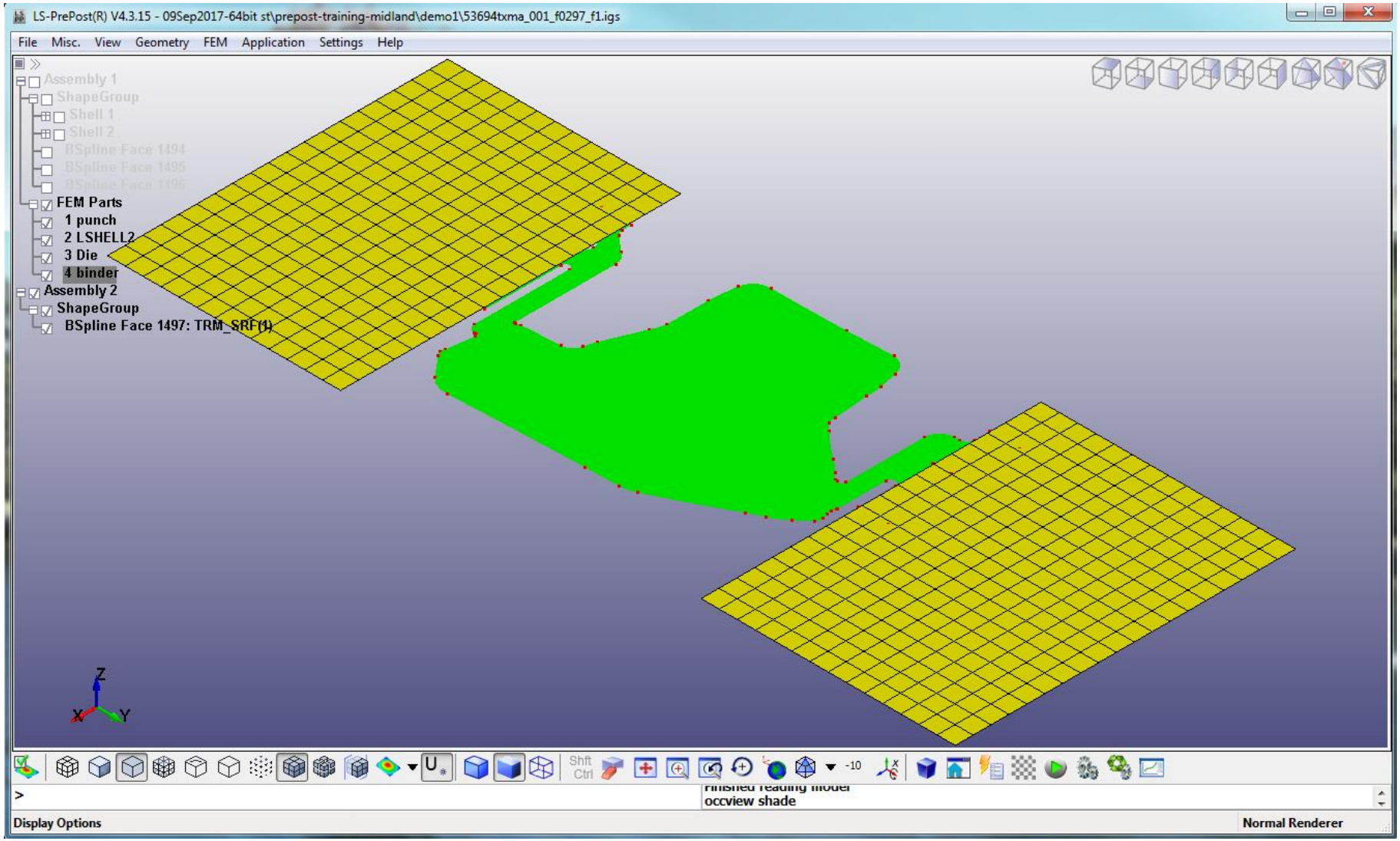




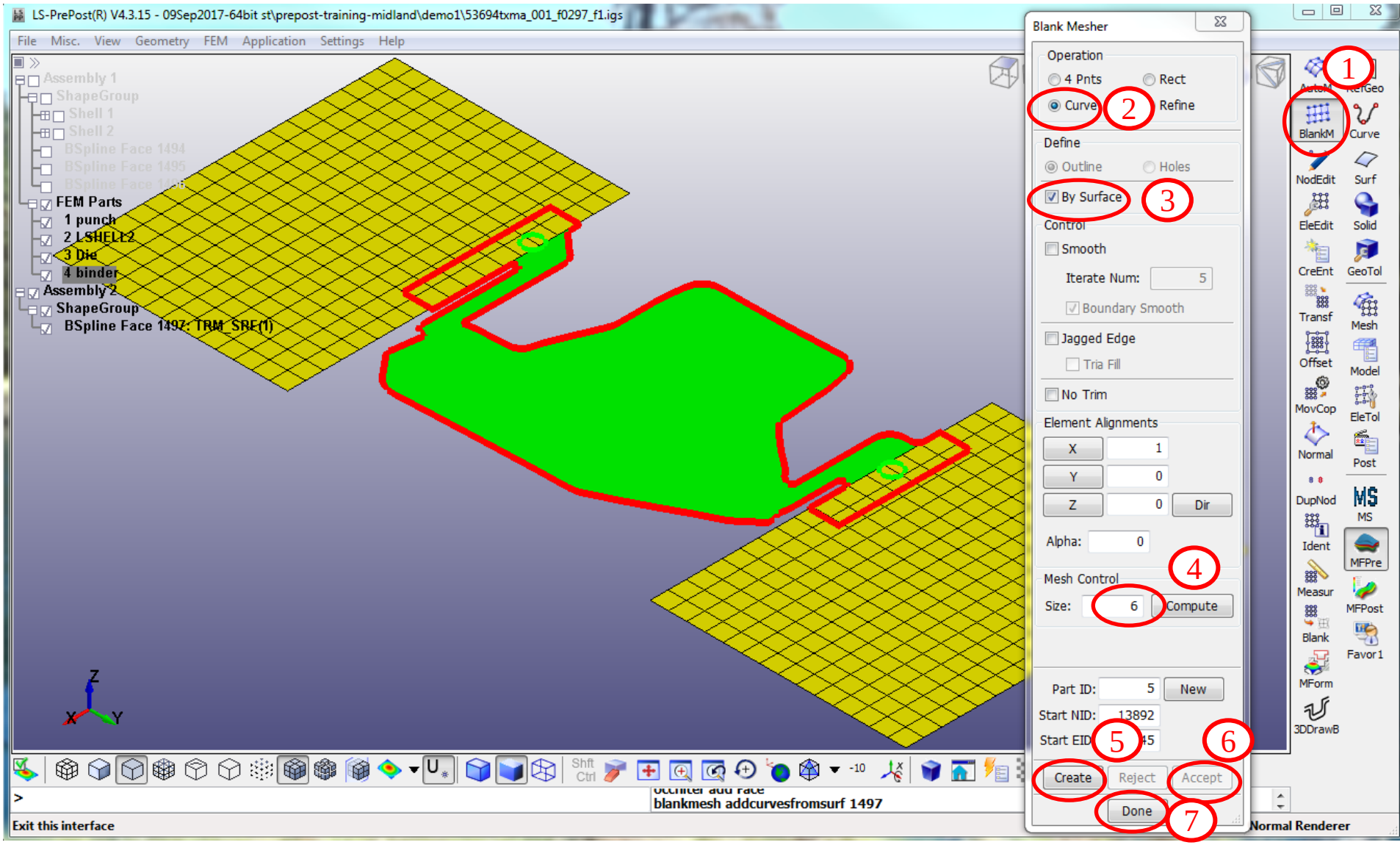
Directory: Workshop 1



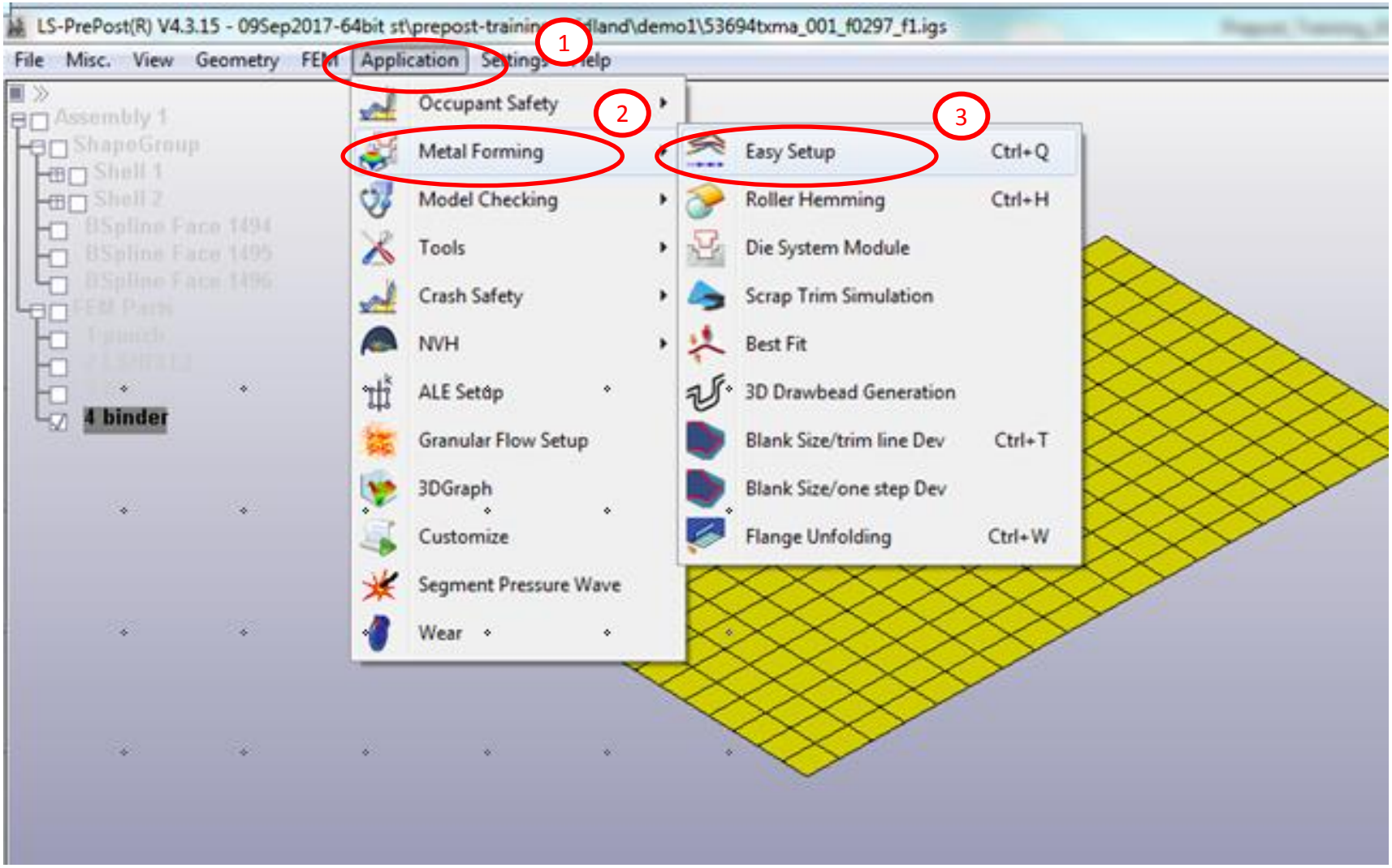
Import Bank Surfaces into the Model



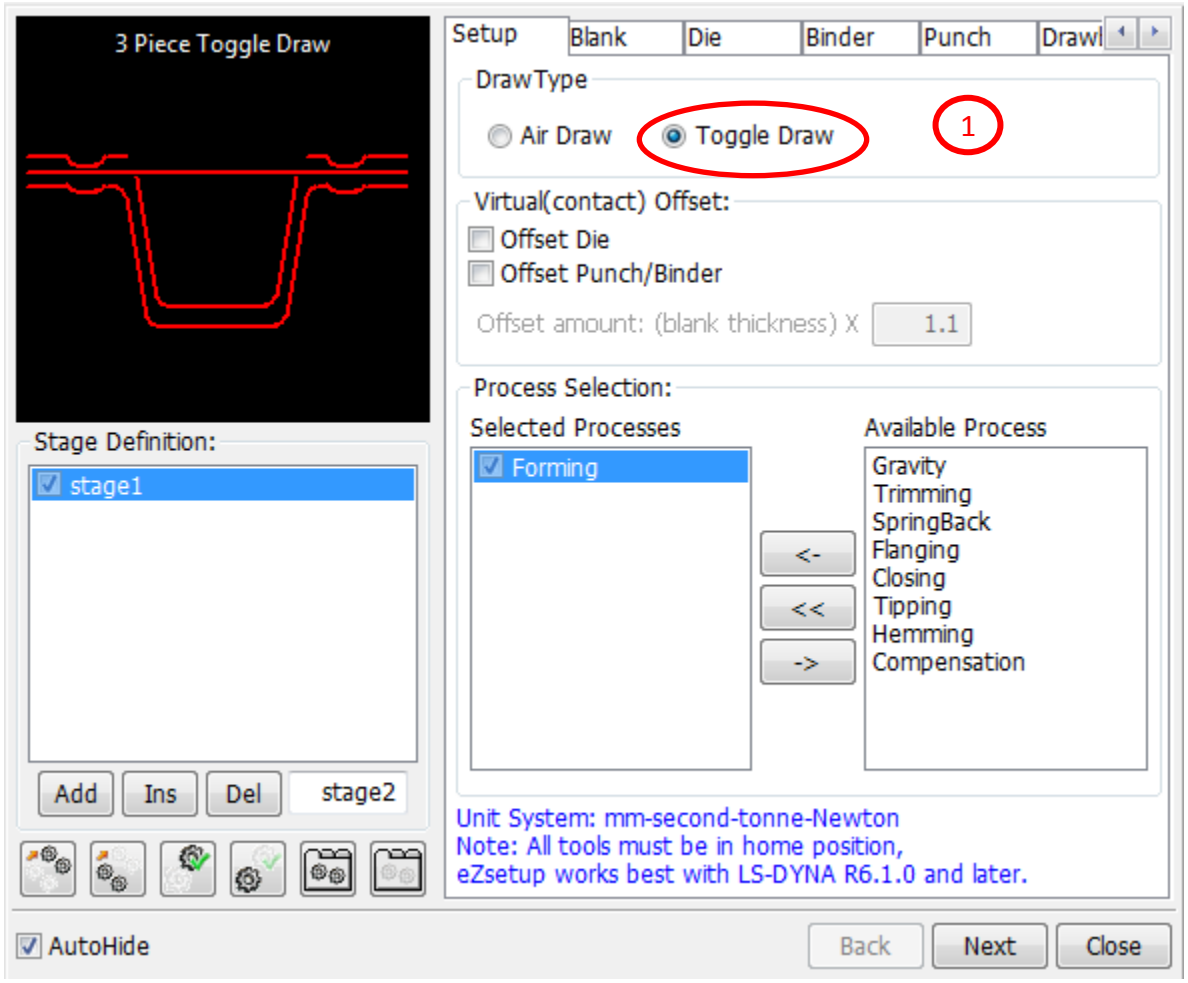
Mesh the Blank



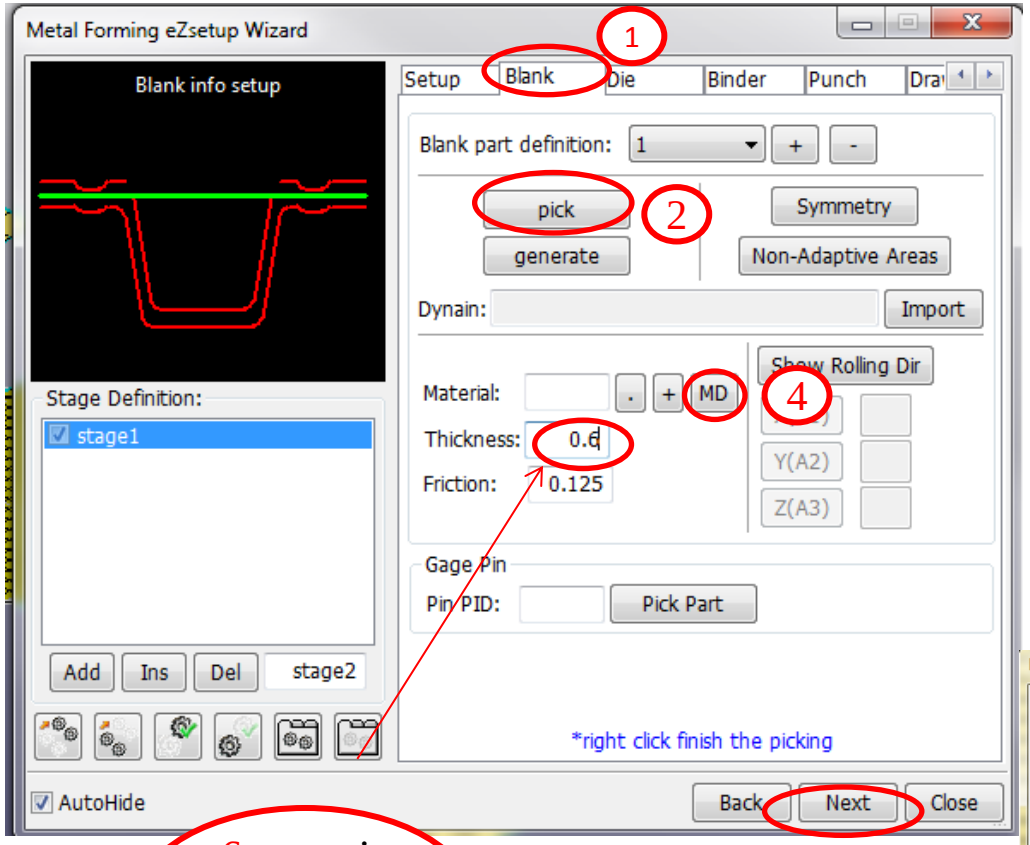
Easy Setup


LS-PrePost(R) V4.3.15 - 09Sep2017-64bit st\prepost-trainin
land\demo1\53694txma_001_f0297_f1.igs
File
Misc.
View
Geometry
FEM
Application
Settings
Help
1
2
3
Occupant Safety
Metal Forming
Model Checking
Tools
Crash Safety
NVH
ALE Setup
Granular Flow Setup
3DGraph
Customize
Segment Pressure Wave
Wear
Easy Setup Ctrl+Q
Roller Hemming Ctrl+H
Die System Module
Scrap Trim Simulation
Best Fit
3D Drawbead Generation
Blank Size/trim line Dev Ctrl+T
Blank Size/one step Dev
Flange Unfolding Ctrl+W
Assembly 1
ShapeGroup
Shell 1
Shell 2
BSpline Face 1494
BSpline Face 1495
BSpline Face 1496
FEM Parts
Punch
4 binder

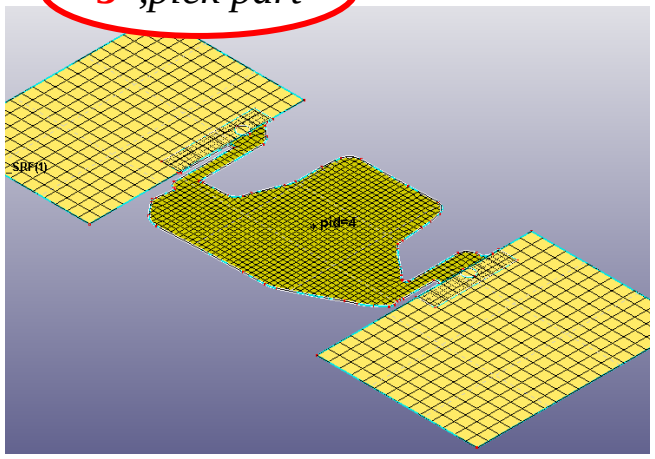
Select the Draw Type



Define Blank/Blank Material/Blank Thickness

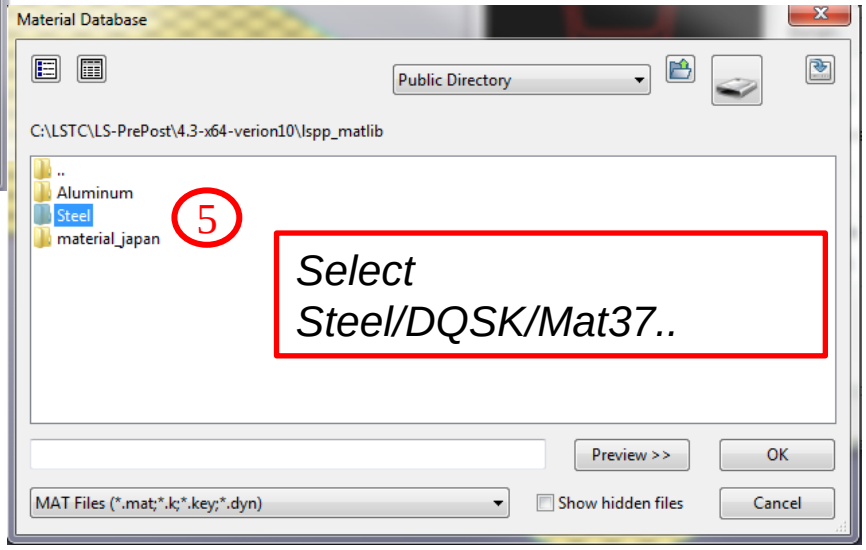


3 ,pick part

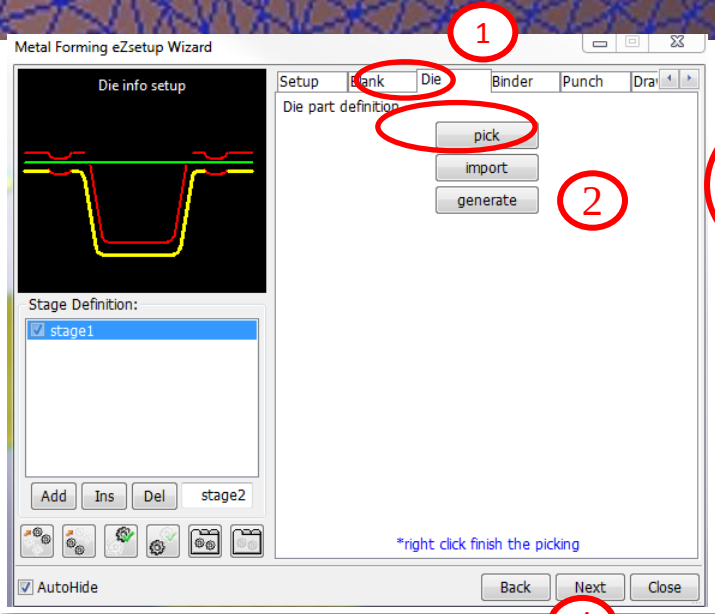


6 ,type in thickness and friction

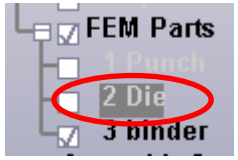
7



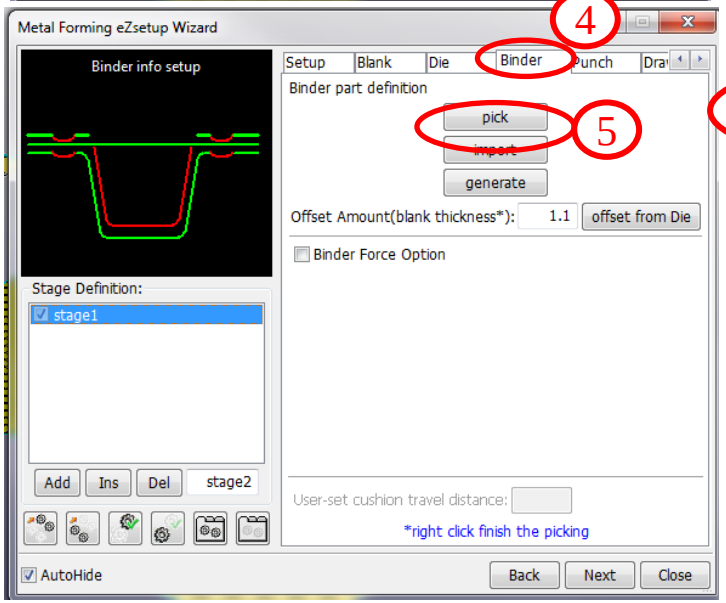
Define Tools/Die/Binder/Punch



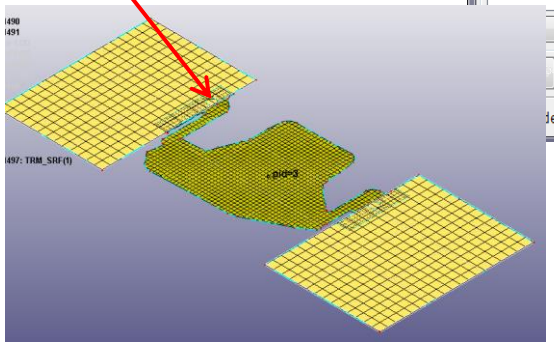
3, *left mouse pick Die from the name list, click right mouse button when finish*

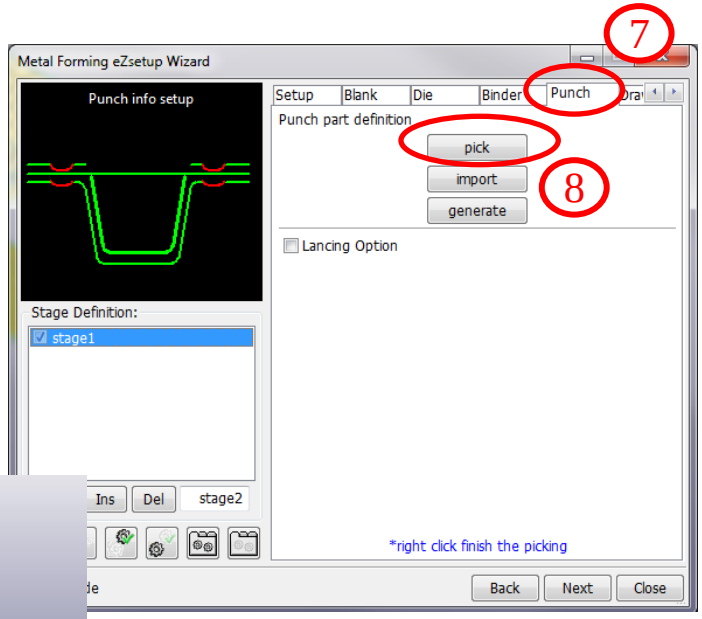


9, *pick part name and right click*

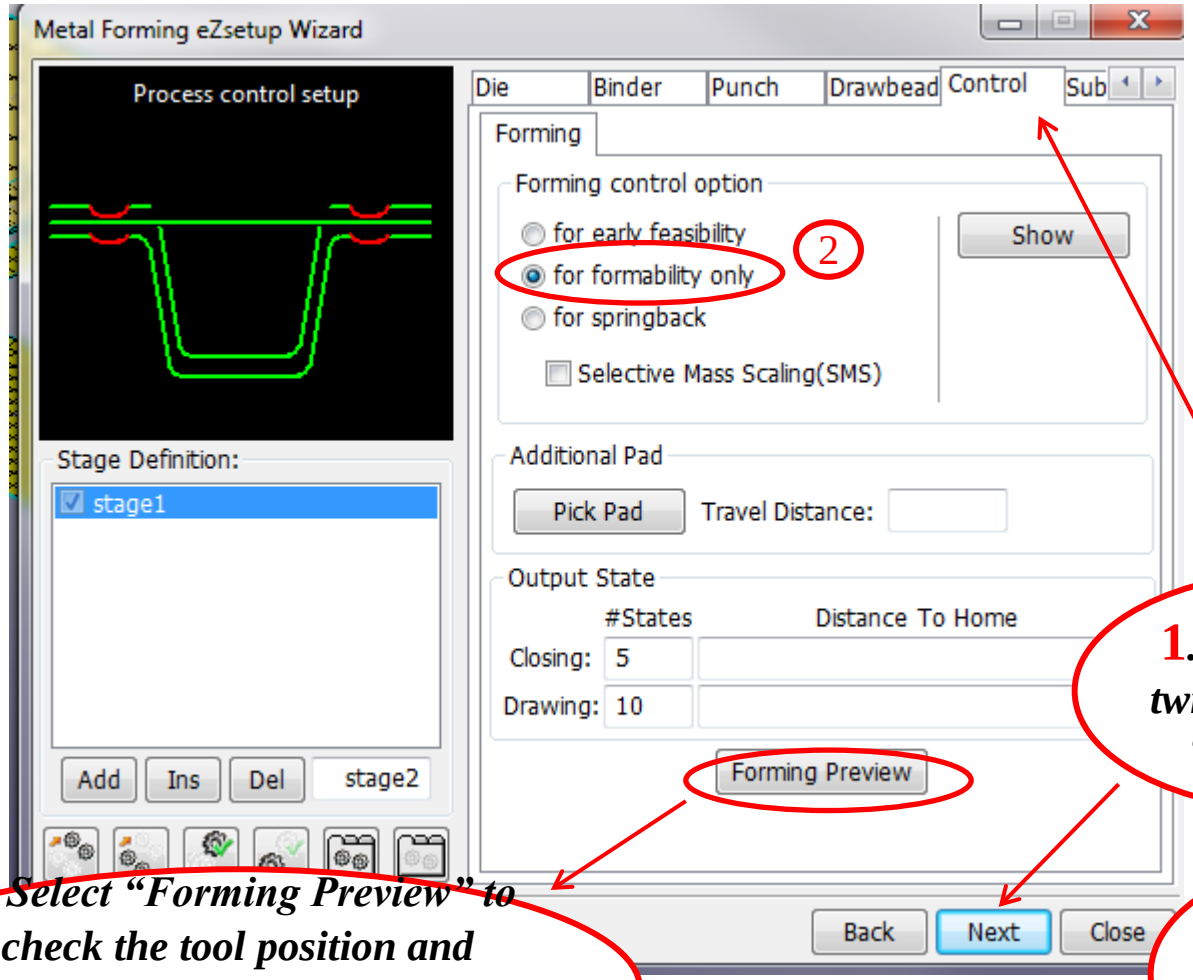


6 ,*pick part*





Select the Control Options and Preview Tool Motions

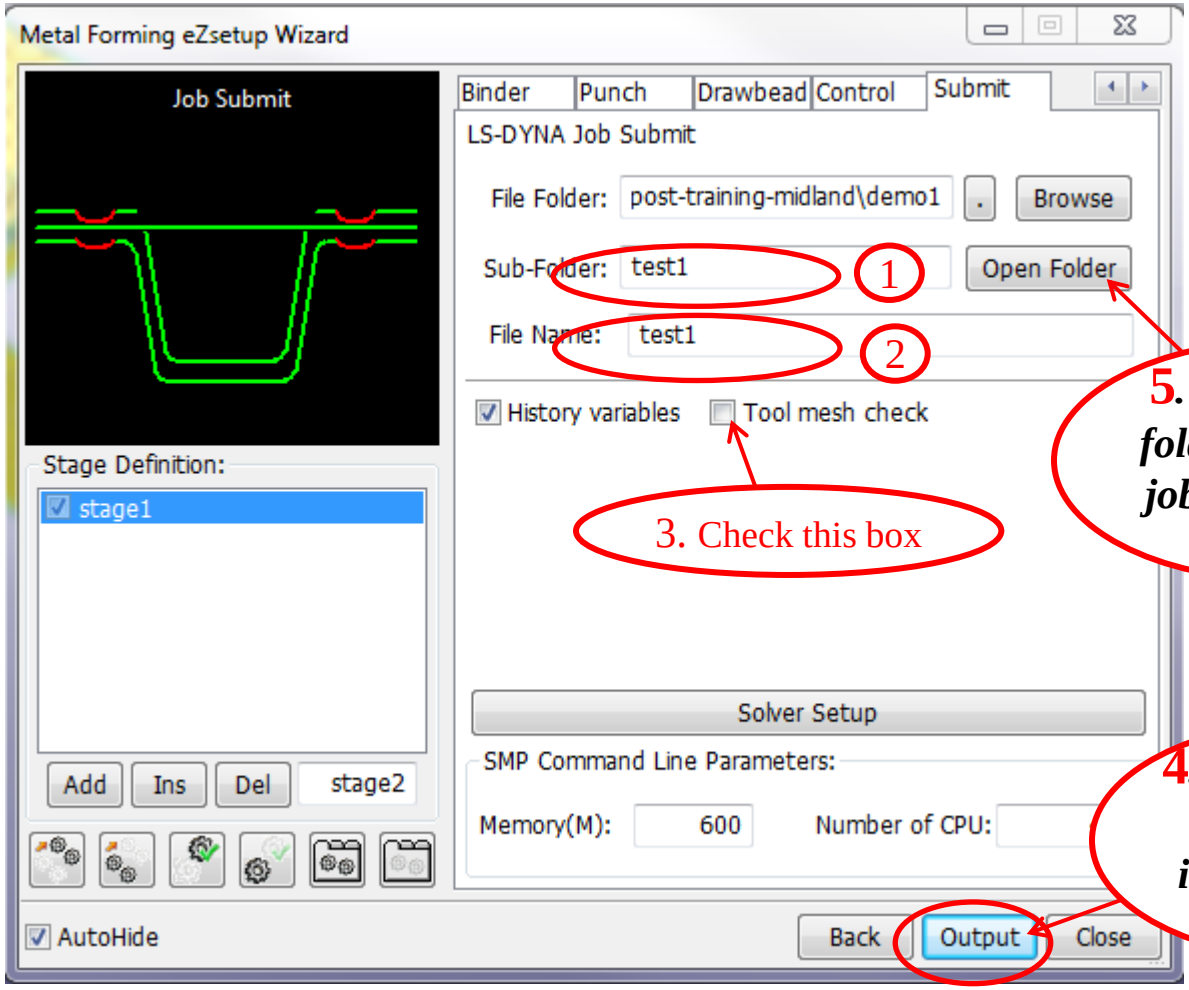


1. ***Select "Next" twice to reach the "control" tab***

3. ***Select "Next" to reach the "submit" tab***

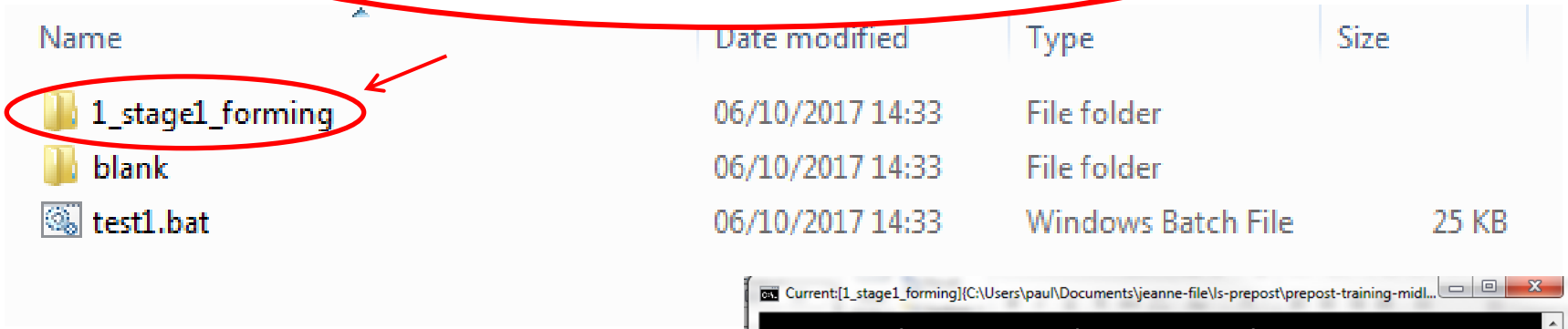
4. ***Select "Forming Preview" to check the tool position and motions. This function requires an additional exe files in your installation directory***

Output Files for the Calculation

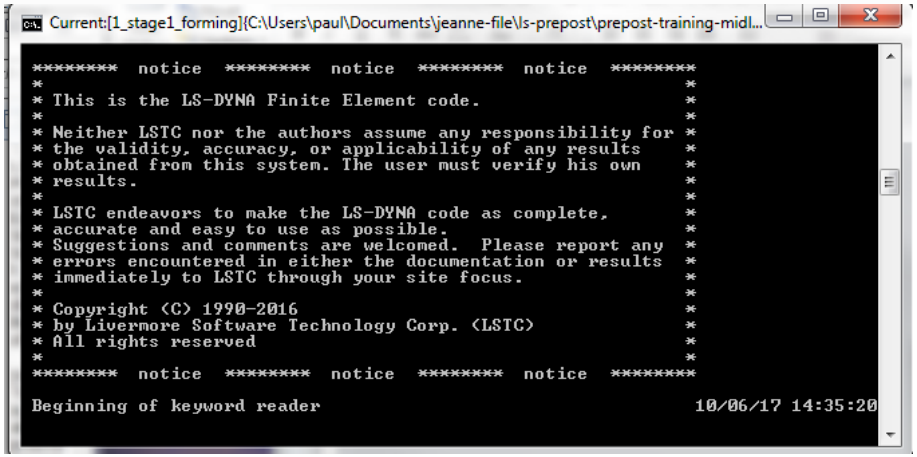


Run batch file and Results Folder

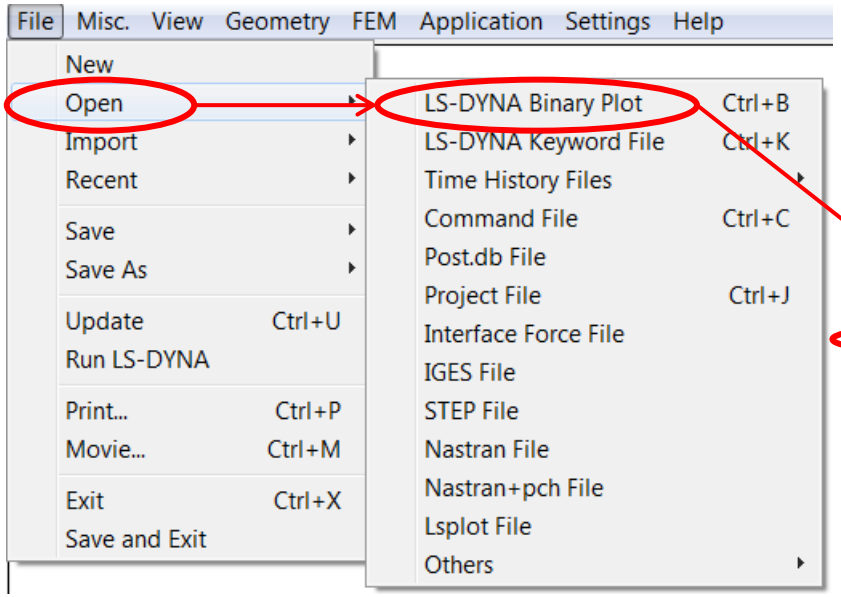
Forming Results will be in this folder

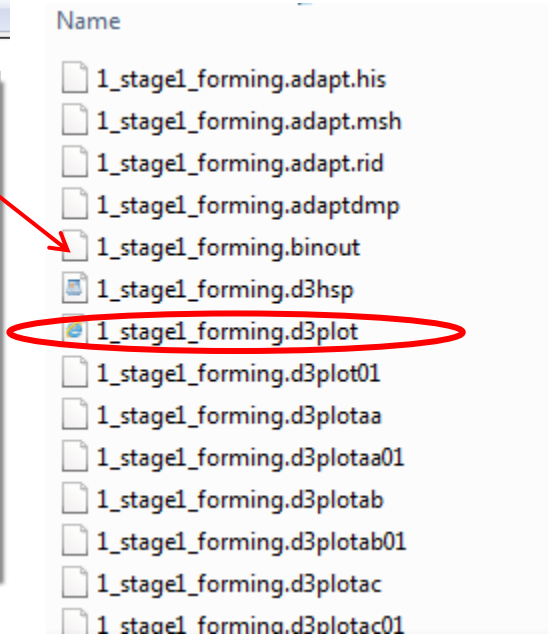


1. ***Click the batch file test1.bat, calculation will start.***



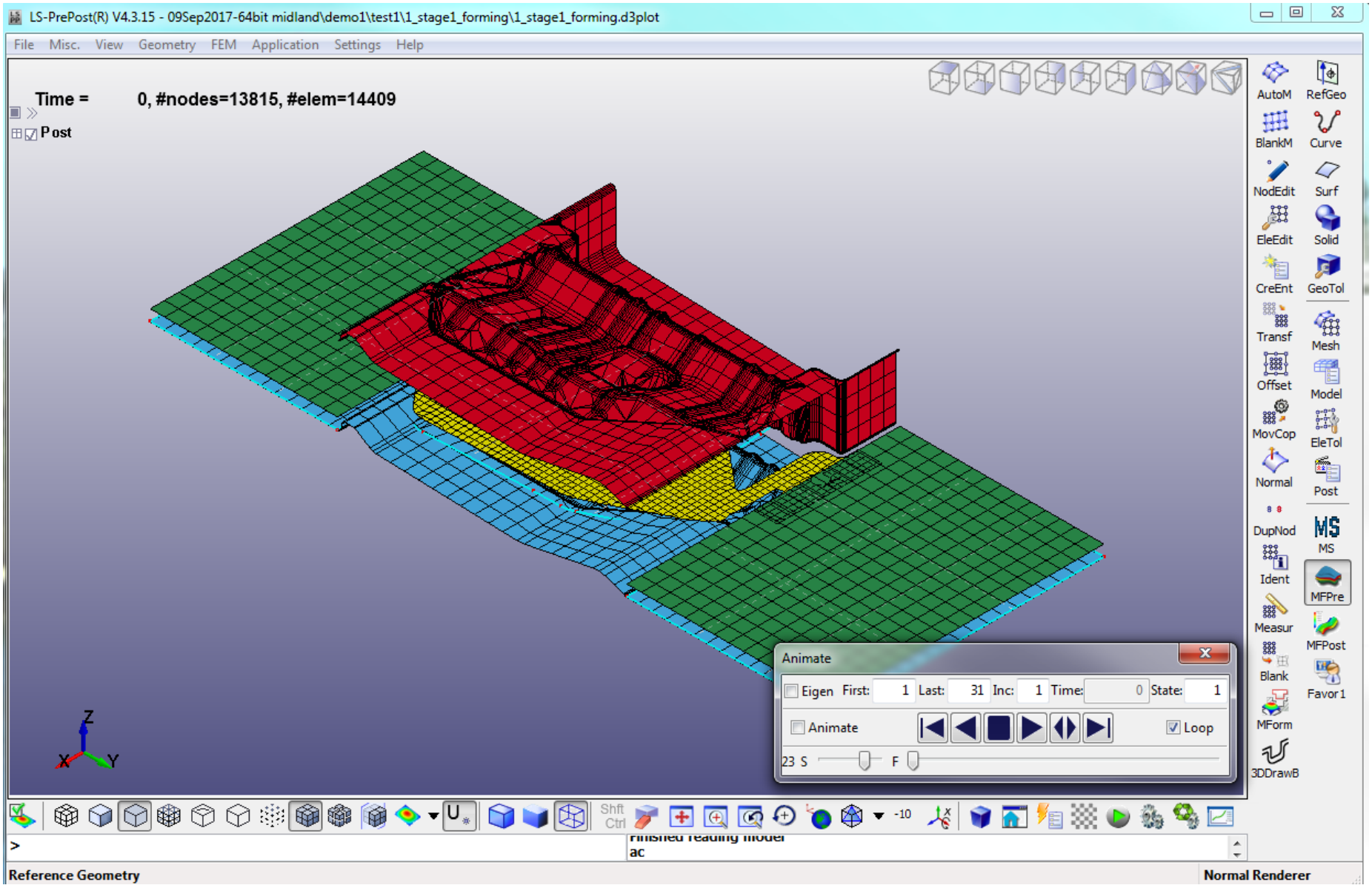
Open the Result files



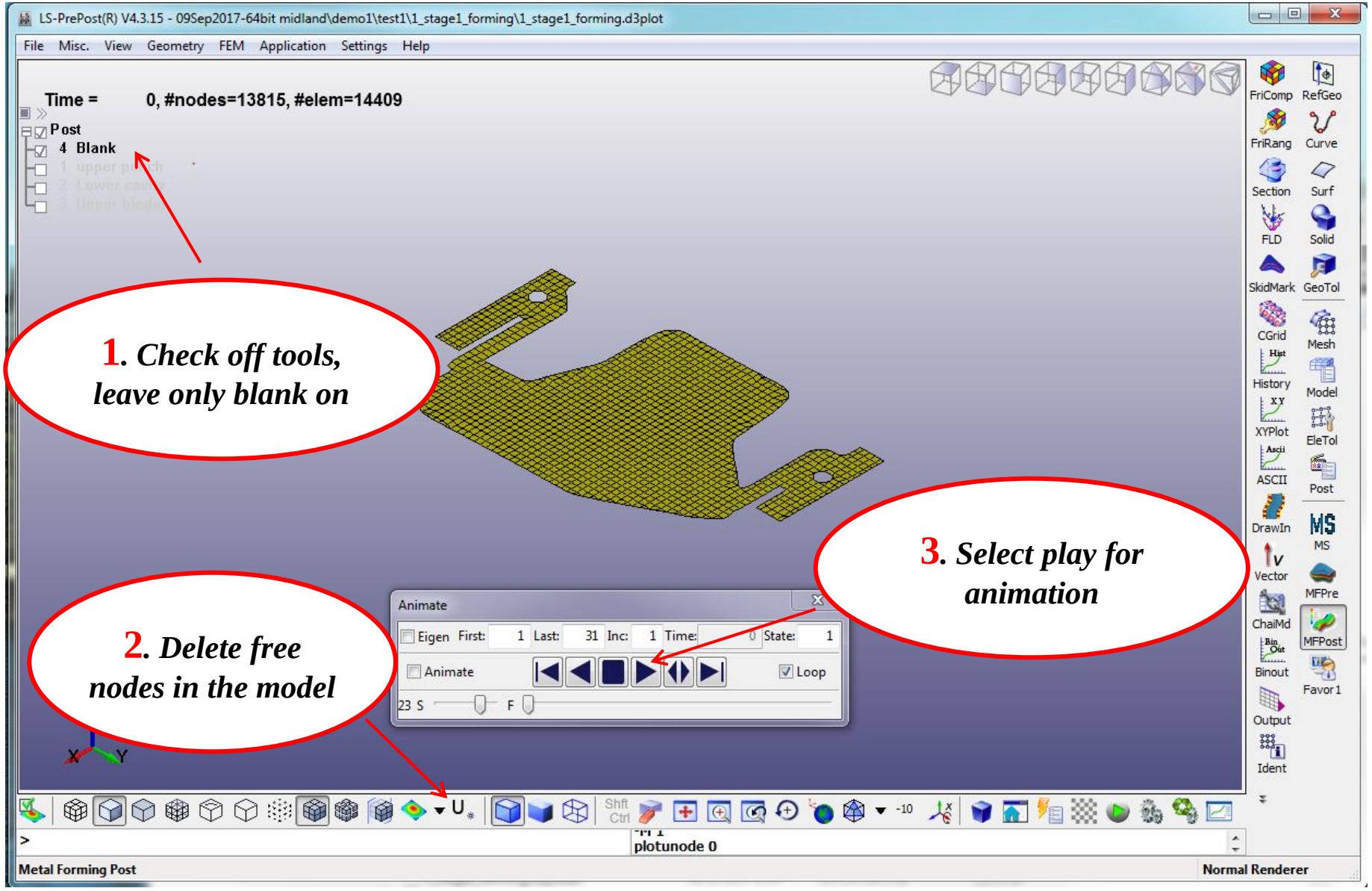


Or user can drag the *.d3plot file to  on the desktop

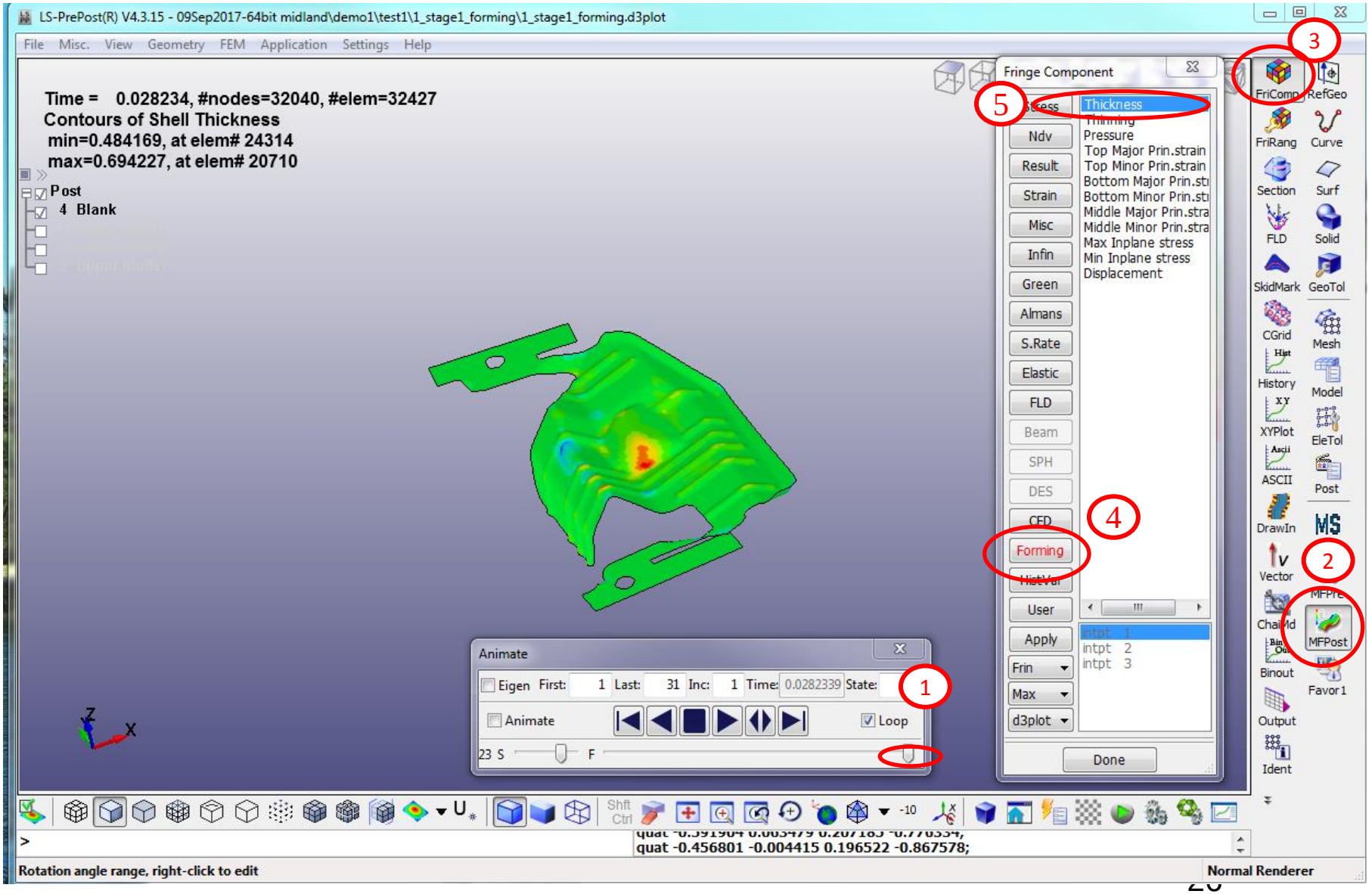
Open the Result files



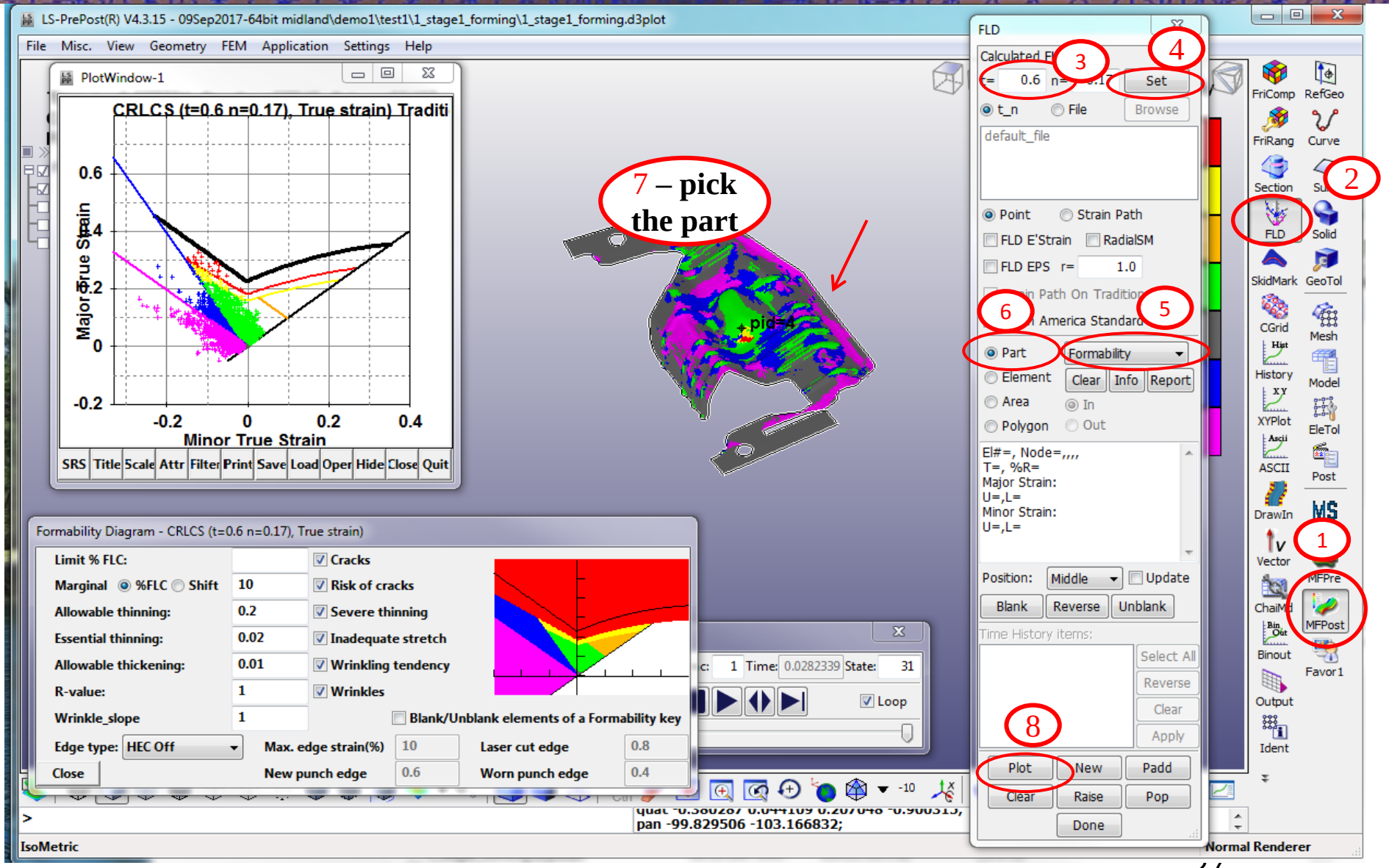
On/off Parts and Animations



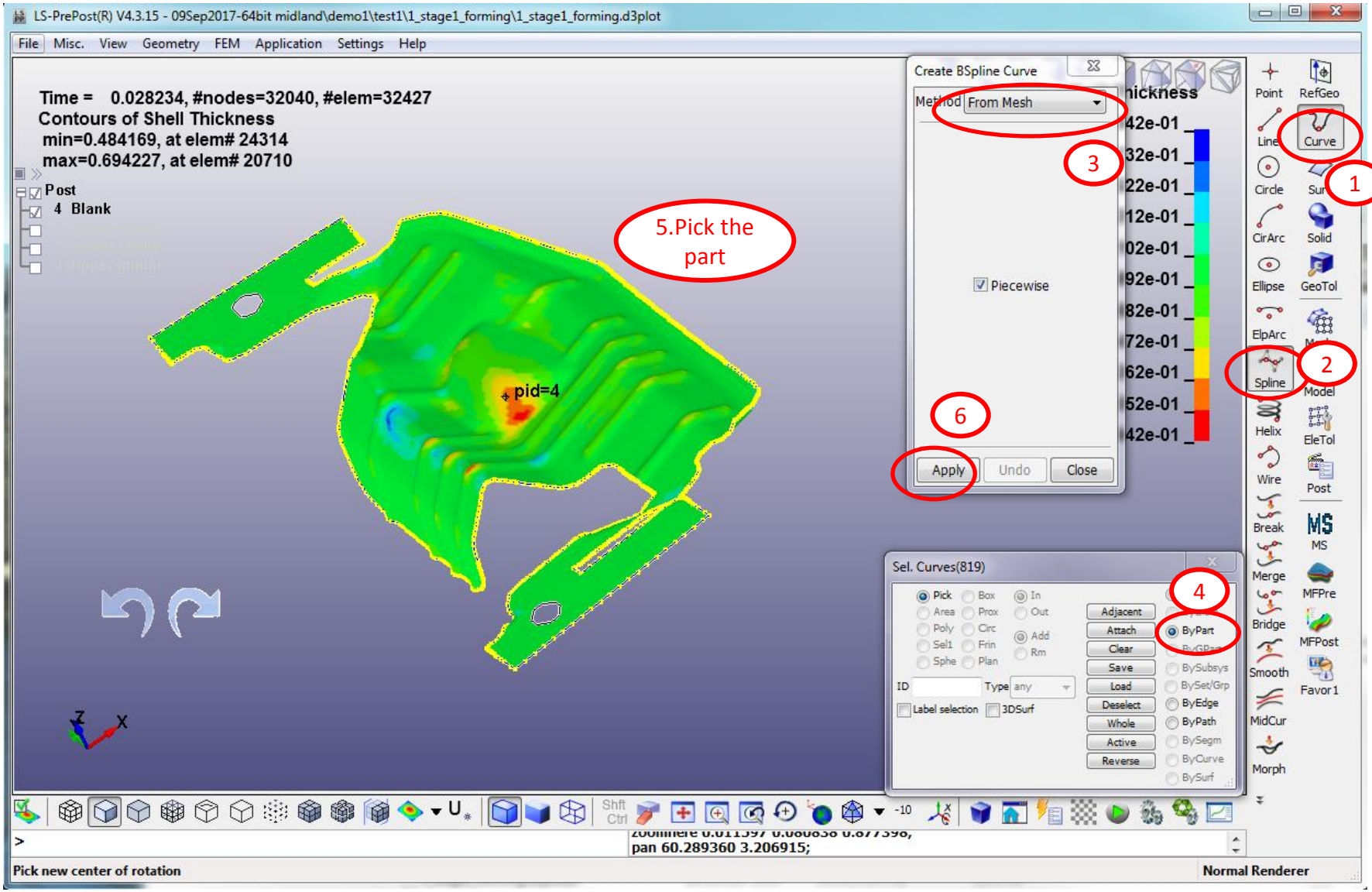
Plot the Thickness

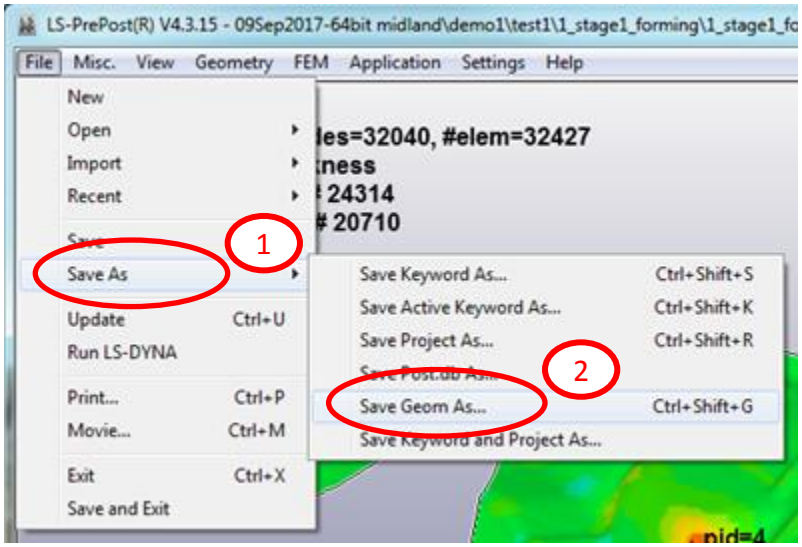


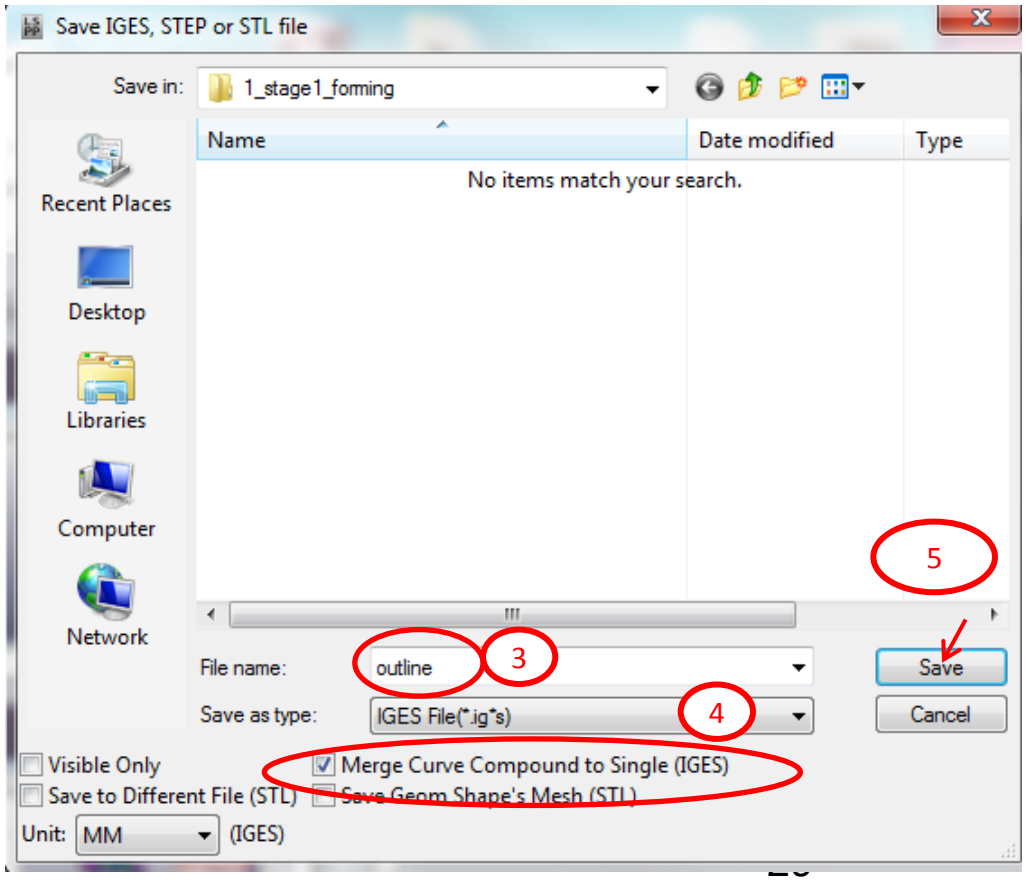
Plot FLD

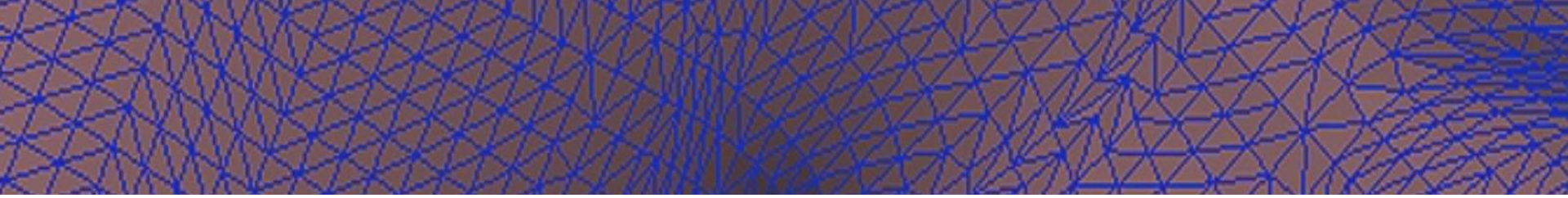

LS-PrePost(R) V4.3.15 - 09Sep2017-64bit midland\demo1\test1\1_stage1_forming\1_stage1_forming.d3plot
File Misc. View Geometry FEM Application Settings Help
PlotWindow-1
CRLCS (t=0.6 n=0.17), True strain) Traditi
Major True Strain
Minor True Strain
SRS Title Scale Attr Filter Print Save Load Oper Hide Close Quit
7 – pick the part
pid=4
FLD
Calculated FL
t= 0.6 n=
Set
t_n File Browse
default_file
Point Strain Path
FLD E'Strain RadialSM
FLD EPS r= 1.0
America Standard
Part Formability
Element Clear Info Report
Area In
Polygon Out
El#=, Node=,,,,
T=, %R=
Major Strain:
U=,L=
Minor Strain:
U=,L=
Position: Middle Update
Blank Reverse Unblank
Time History items:
Select All
Reverse
Clear
Apply
Plot New Padd
Clear Raise Pop
Done
Formability Diagram - CRLCS (t=0.6 n=0.17), True strain)
Limit % FLC:
Marginal %FLC Shift 10
Allowable thinning: 0.2
Essential thinning: 0.02
Allowable thickening: 0.01
R-value: 1
Wrinkle_slope 1
Cracks
Risk of cracks
Severe thinning
Inadequate stretch
Wrinkling tendency
Wrinkles
Blank/Unblank elements of a Formability key
Edge type: HEC Off
Max. edge strain(%) 10
Laser cut edge 0.8
New punch edge 0.6
Worn punch edge 0.4
Close
Time: 0.0282339 State: 31
Loop
pan -99.829506 -103.166832;
IsoMetric
Normal Renderer
FriComp RefGeo
FriRang Curve
Section
FLD
Solid
SkidMark GeoTol
CGrid Mesh
History Model
XYPlot EleTol
ASCII Post
DrawIn
Vector
MFPre
MFPost
Binout
Favor1
Output
Ident

Output Part Lines




LS-PrePost(R) V4.3.15 - 09Sep2017-64bit midland\demo1\test1\1_stage1_forming\1_stage1_fo
File
Misc.
View
Geometry
FEM
Application
Settings
Help
New
Open
Import
Recent
Save As
Update Ctrl+U
Run LS-DYNA
Print... Ctrl+P
Movie... Ctrl+M
Exit Ctrl+X
Save and Exit
Save Keyword As... Ctrl+Shift+S
Save Active Keyword As... Ctrl+Shift+K
Save Project As... Ctrl+Shift+R
Save Geom As... Ctrl+Shift+G
Save Keyword and Project As...
les=32040, #elem=32427
ness
24314
20710
1
2


Save IGES, STEP or STL file
Save in:
1_stage1_forming
Name
Date modified
Type
No items match your search.
Recent Places
Desktop
Libraries
Computer
Network
File name:
outline
Save as type:
IGES File(*.ig*s)
Save
Cancel
Visible Only
Save to Different File (STL)
Merge Curve Compound to Single (IGES)
Save Geom Shape's Mesh (STL)
Unit:
MM
(IGES)
3
4
5



*Email **qingjeanne@gmail.com** or qhe@formingsimulation.com for questions*