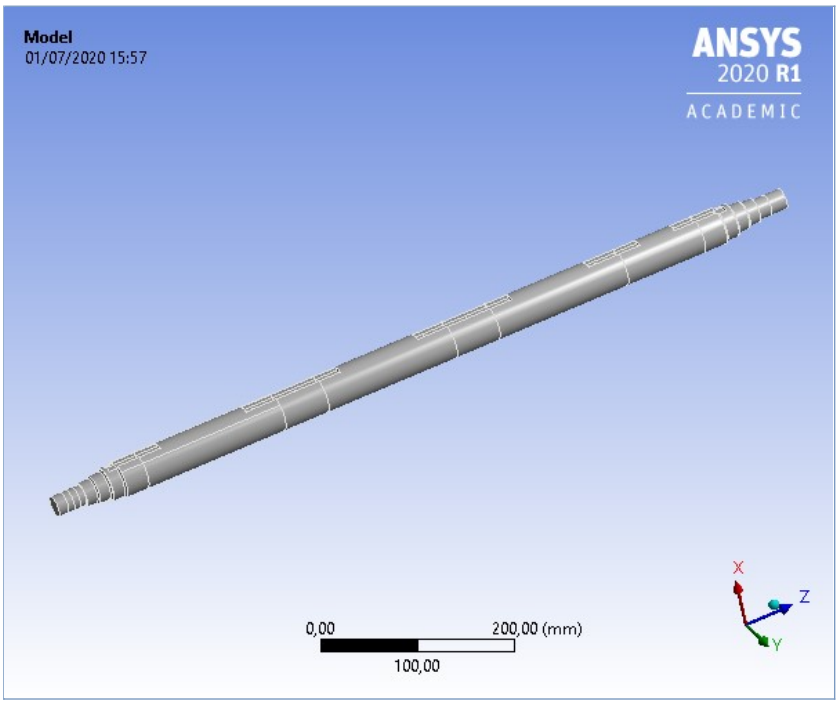
Lay_Shaft*

First Saved	Monday, June 29, 2020
Last Saved	Wednesday, July 1, 2020
Product Version	2020 R1
Save Project Before Solution	No
Save Project After Solution	No



Contents

Units

TABLE 1

Unit System	Metric (mm, kg, N, s, mV, mA) Degrees rad/s Celsius
Angle	Degrees
Rotational Velocity	rad/s
Temperature	Celsius

Model (B4)

Geometry

TABLE 2
Model (B4) > Geometry

Object Name	*Geometry*
State	Fully Defined
Definition	
Source	D:\Google Drive\Progetti\Formula 1000\Trasmission\FEM\Shafts\Lay_Shaft_files\dp0\Geom\DM\Geom.scdoc
Type	SpaceClaim
Length Unit	Meters
Element Control	Program Controlled
Display Style	Body Color
Bounding Box	
Length X	40, mm
Length Y	40, mm
Length Z	850, mm
Properties	
Volume	9,476e+005 mm³
Mass	7,3913 kg
Scale Factor Value	1,
Statistics	
Bodies	1
Active Bodies	1
Nodes	28036
Elements	17377
Mesh Metric	None
Update Options	
Assign Default Material	No
Basic Geometry Options	
Solid Bodies	Yes
Surface Bodies	Yes
Line Bodies	Yes
Parameters	Independent
Parameter Key	
Attributes	Yes
Attribute Key	
Named Selections	Yes
Named Selection Key	
Material Properties	Yes
Advanced Geometry Options	
Use Associativity	Yes
Coordinate Systems	Yes
Coordinate System Key	
Reader Mode Saves Updated File	No
Use Instances	Yes
Smart CAD Update	Yes
Compare Parts On Update	No

Analysis Type	3-D
Mixed Import Resolution	None
Clean Bodies On Import	No
Stitch Surfaces On Import	None
Decompose Disjoint Geometry	Yes
Enclosure and Symmetry Processing	Yes

TABLE 3
Model (B4) > Geometry > Parts

Object Name	*Geom\LAY_SHAFT*
State	Meshed
Graphics Properties	
Visible	Yes
Transparency	1
Definition	
Suppressed	No
Stiffness Behavior	Flexible
Coordinate System	Default Coordinate System
Reference Temperature	By Environment
Treatment	None
Material	
Assignment	Steel C60
Nonlinear Effects	Yes
Thermal Strain Effects	Yes
Bounding Box	
Length X	40, mm
Length Y	40, mm
Length Z	850, mm
Properties	
Volume	9,476e+005 mm³
Mass	7,3913 kg
Centroid X	-0,39801 mm
Centroid Y	-1,5049e-005 mm
Centroid Z	349,71 mm
Moment of Inertia Ip1	3,7241e+005 kg·mm²
Moment of Inertia Ip2	3,7236e+005 kg·mm²
Moment of Inertia Ip3	1380,6 kg·mm²
Statistics	
Nodes	28036
Elements	17377
Mesh Metric	None
CAD Attributes	
PartTolerance:	0,00000001
Color:175.143.175	

TABLE 4
Model (B4) > Materials

Object Name	*Materials*
State	Fully Defined
Statistics	
Materials	2
Material Assignments	0

Coordinate Systems

TABLE 5
Model (B4) > Coordinate Systems > Coordinate System

Object Name	*Global Coordinate System*
State	Fully Defined
Definition	
Type	Cartesian
Coordinate System ID	0,
Origin	
Origin X	0, mm
Origin Y	0, mm
Origin Z	0, mm
Directional Vectors	
X Axis Data	[1, 0, 0,]
Y Axis Data	[0, 1, 0,]
Z Axis Data	[0, 0, 1,]

Mesh

TABLE 6
Model (B4) > Mesh

Object Name	*Mesh*
State	Solved
Display	
Display Style	Use Geometry Setting
Defaults	
Physics Preference	Mechanical
Element Order	Program Controlled

Element Size	Default
Sizing	
Use Adaptive Sizing	Yes
Resolution	Default (2)
Mesh Defeaturing	Yes
Defeature Size	Default
Transition	Fast
Span Angle Center	Coarse
Initial Size Seed	Assembly
Bounding Box Diagonal	851,88 mm
Average Surface Area	1207, mm²
Minimum Edge Length	1,971 mm
Quality	
Check Mesh Quality	Yes, Errors
Error Limits	Aggressive Mechanical
Target Quality	Default (0.050000)
Smoothing	Medium
Mesh Metric	None
Inflation	
Use Automatic Inflation	None
Inflation Option	Smooth Transition
Transition Ratio	0,272
Maximum Layers	5
Growth Rate	1,2
Inflation Algorithm	Pre
View Advanced Options	No
Advanced	
Number of CPUs for Parallel Part Meshing	Program Controlled
Straight Sided Elements	No
Rigid Body Behavior	Dimensionally Reduced
Triangle Surface Mesher	Program Controlled
Topology Checking	Yes
Pinch Tolerance	Please Define
Generate Pinch on Refresh	No
Statistics	
Nodes	28036
Elements	17377

TABLE 7
Model (B4) > Mesh > Mesh Controls

Object Name	*Automatic Method*	*Body Sizing*
State	Fully Defined	
Scope		
Scoping Method	Geometry Selection	
Geometry	1 Body	
Definition		
Suppressed	No	
Method	Automatic	
Element Order	Use Global Setting	
Type		Element Size
Element Size		8, mm
Advanced		
Defeature Size		Default
Behavior		Soft

Named Selections

TABLE 8
Model (B4) > Named Selections > Named Selections

Object Name	*Bearing A*	*Bearing B*	*Gear 3*	*Gear 1*	*Gear 4*	*Gear 5*	*Gear 6*	*Gear 2*	*Input*
State	Fully Defined								
Scope									
Scoping Method	Geometry Selection								
Geometry	2 Faces	1 Face	2 Faces						
Definition									
Send to Solver	Yes								
Protected	Program Controlled								
Visible	Yes								
Program Controlled Inflation	Exclude								
Preserve During Solve (Beta)	No								
Statistics									
Type	Manual								
Total Selection	2 Faces	1 Face	2 Faces						
Surface Area	966,38 mm²	966,39 mm²	600, mm²						
Suppressed	0								
Used by Mesh Worksheet	No								

Static Structural (B5)

TABLE 9
Model (B4) > Analysis

Object Name	*Static Structural (B5)*
State	Solved
Definition	
Physics Type	Structural
Analysis Type	Static Structural
Solver Target	Mechanical APDL
Options	
Environment Temperature	22, °C
Generate Input Only	No

TABLE 10
Model (B4) > Static Structural (B5) > Analysis Settings

Object Name	*Analysis Settings*
State	Fully Defined
Step Controls	
Number Of Steps	6,
Current Step Number	6,
Step End Time	6, s
Auto Time Stepping	Program Controlled
Solver Controls	
Solver Type	Program Controlled
Weak Springs	Off
Solver Pivot Checking	Program Controlled
Large Deflection	Off
Inertia Relief	Off
Rotordynamics Controls	
Coriolis Effect	Off
Restart Controls	
Generate Restart Points	Program Controlled
Retain Files After Full Solve	No
Combine Restart Files	Program Controlled
Nonlinear Controls	
Newton-Raphson Option	Program Controlled
Force Convergence	Program Controlled
Moment Convergence	Program Controlled
Displacement Convergence	Program Controlled
Rotation Convergence	Program Controlled
Line Search	Program Controlled
Stabilization	Program Controlled
Advanced	
Inverse Option	No
Contact Split (DMP)	Off
Output Controls	
Stress	Yes
Surface Stress	No
Back Stress	No
Strain	Yes
Contact Data	Yes
Nonlinear Data	No
Nodal Forces	No
Volume and Energy	Yes
Euler Angles	Yes
Contact Miscellaneous	No
General Miscellaneous	No
Store Results At	All Time Points
Result File Compression	Program Controlled
Analysis Data Management	
Solver Files Directory	D:\Google Drive\Progetti\Formula 1000\Trasmission\FEM\Shafts\Lay_Shaft_files\dp0\SYS\MECH\
Future Analysis	None
Scratch Solver Files Directory	
Save MAPDL db	No
Contact Summary	Program Controlled
Delete Unneeded Files	Yes
Nonlinear Solution	No
Solver Units	Active System
Solver Unit System	nmm

TABLE 11
Model (B4) > Static Structural (B5) > Analysis Settings
Step-Specific "Step Controls"

Step	Step End Time
1	1, s
2	2, s
3	3, s
4	4, s
5	5, s
6	6, s

TABLE 12
Model (B4) > Static Structural (B5) > Loads

Object Name	*Input*	*Gear 1*	*Gear 2*	*Gear 3*	*Gear 4*	*Gear 5*	*Gear 6*	*Bearing A*	*Bearing B*	*Input*	*Gear 1*
State	Fully Defined										

Scope										
Scoping Method	Named Selection									Geometry Selection
Named Selection	Input	Gear 1	Gear 2	Gear 3	Gear 4	Gear 5	Gear 6	Bearing A	Bearing B	
Geometry										4 Edges
Definition										
Type	Force							Fixed Support		Moment
Define By	Vector									Vector
Applied By	Surface Effect									
Magnitude	Tabular Data									Tabular Data
Direction	Defined									Defined
Suppressed	No									
Behavior										Deformable
Tabular Data										
Independent Variable	Time									Time
Advanced										
Pinball Region										All

FIGURE 1
Model (B4) > Static Structural (B5) > Input

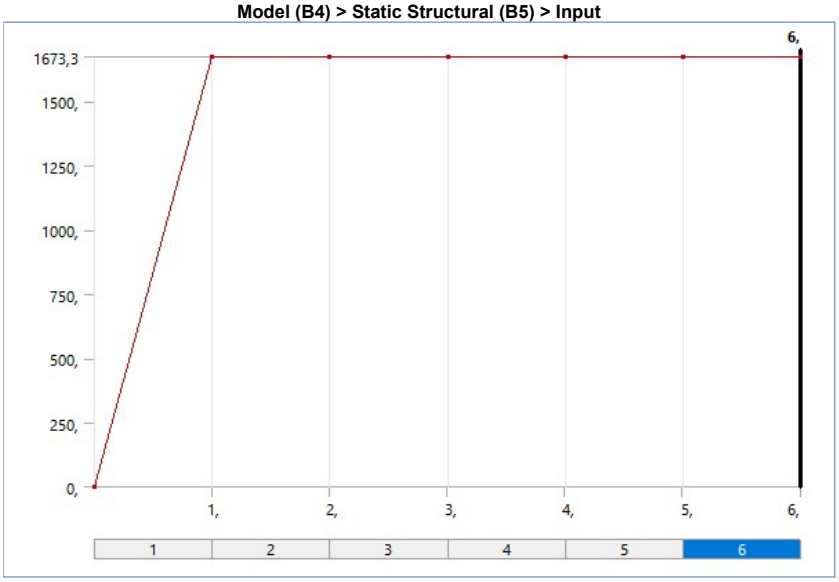


TABLE 13
Model (B4) > Static Structural (B5) > Input

Steps	Time [s]	Force [N]
1	0,	0,
	1,	1673,3
2	2,	
3	3,	
4	4,	
5	5,	
6	6,	

FIGURE 2
Model (B4) > Static Structural (B5) > Gear 1

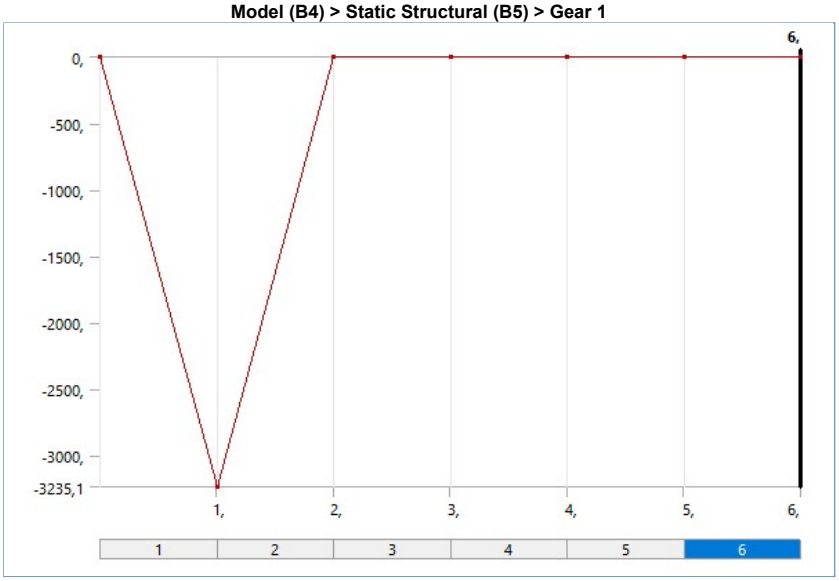


TABLE 14
Model (B4) > Static Structural (B5) > Gear 1

Steps	Time [s]	Force [N]
1	0,	0,
	1,	-3235,1
2	2,	0,
3	3,	
4	4,	
5	5,	
6	6,	

FIGURE 3
Model (B4) > Static Structural (B5) > Gear 2

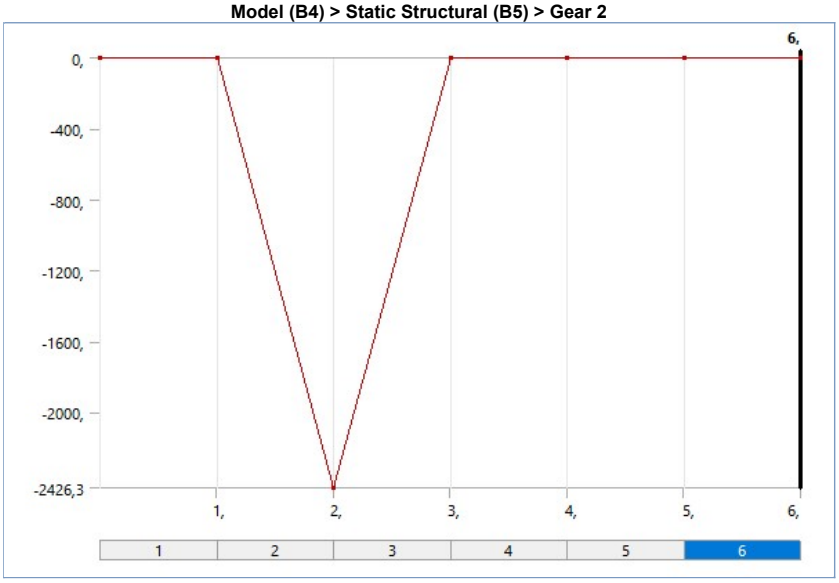


TABLE 15
Model (B4) > Static Structural (B5) > Gear 2

Steps	Time [s]	Force [N]
1	0,	0,
	1,	
2	2,	-2426,3
3	3,	0,
4	4,	
5	5,	
6	6,	

FIGURE 4
Model (B4) > Static Structural (B5) > Gear 3

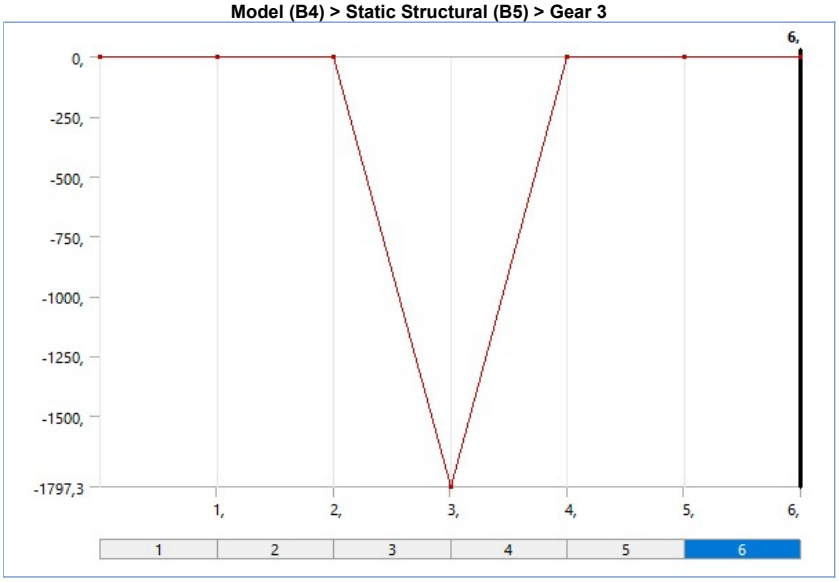


TABLE 16
Model (B4) > Static Structural (B5) > Gear 3

Steps	Time [s]	Force [N]
1	0,	0,
	1,	
2	2,	-1797,3
3	3,	0,
4	4,	
5	5,	
6	6,	

FIGURE 5
Model (B4) > Static Structural (B5) > Gear 4

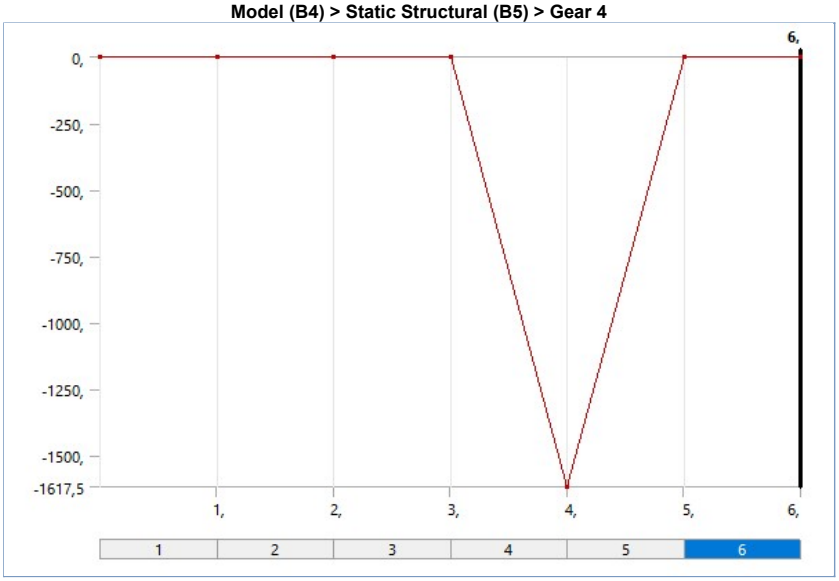


TABLE 17
Model (B4) > Static Structural (B5) > Gear 4

Steps	Time [s]	Force [N]
1	0,	0,
	1,	
2	2,	
3	3,	
4	4,	-1617,5
5	5,	0,
6	6,	

FIGURE 6
Model (B4) > Static Structural (B5) > Gear 5

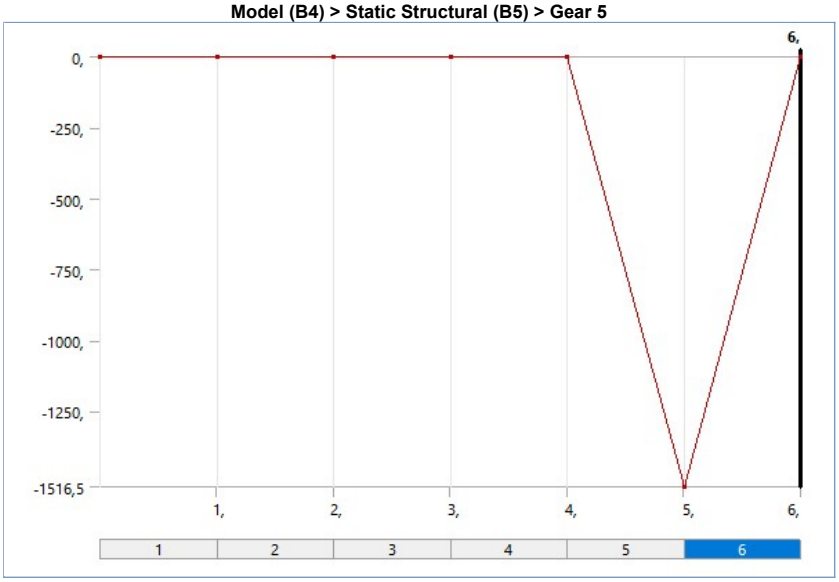


TABLE 18
Model (B4) > Static Structural (B5) > Gear 5

Steps	Time [s]	Force [N]
1	0,	0,
	1,	
2	2,	
3	3,	
4	4,	
5	5,	-1516,5
6	6,	0,

FIGURE 7
Model (B4) > Static Structural (B5) > Gear 6

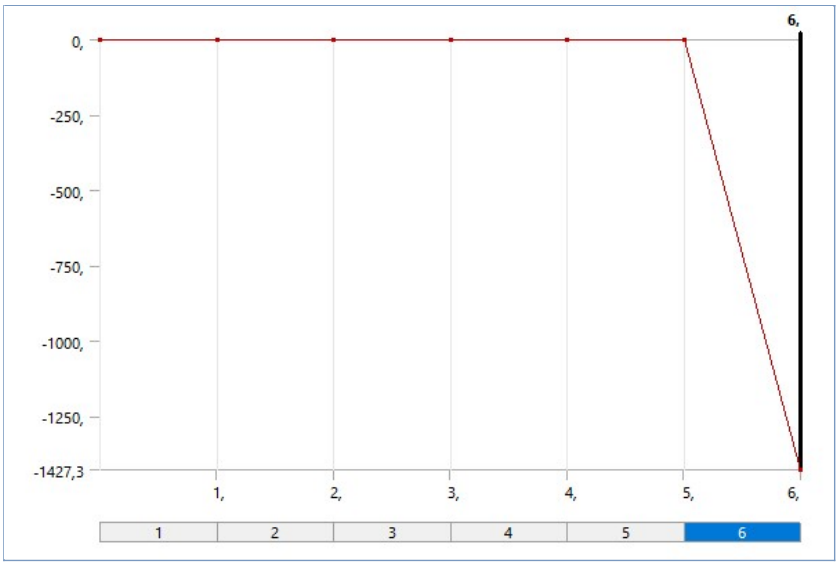


TABLE 19
Model (B4) > Static Structural (B5) > Gear 6

Steps	Time [s]	Force [N]
1	0,	0,
	1,	
2	2,	
3	3,	
4	4,	
5	5,	
6	6,	-1427,3

FIGURE 8
Model (B4) > Static Structural (B5) > Input

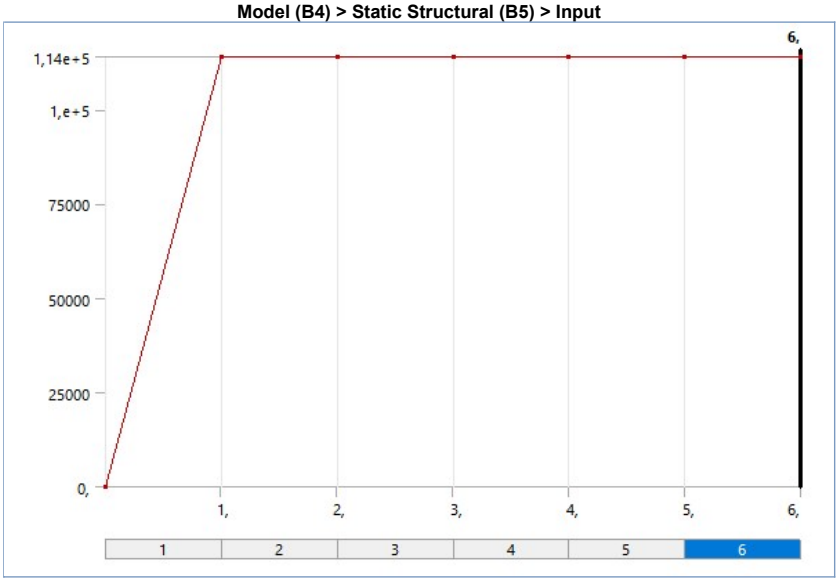


TABLE 20
Model (B4) > Static Structural (B5) > Input

Steps	Time [s]	Moment [N·mm]
1	0,	0,
	1,	1,14e+005
2	2,	
3	3,	
4	4,	
5	5,	
6	6,	

FIGURE 9
Model (B4) > Static Structural (B5) > Gear 1

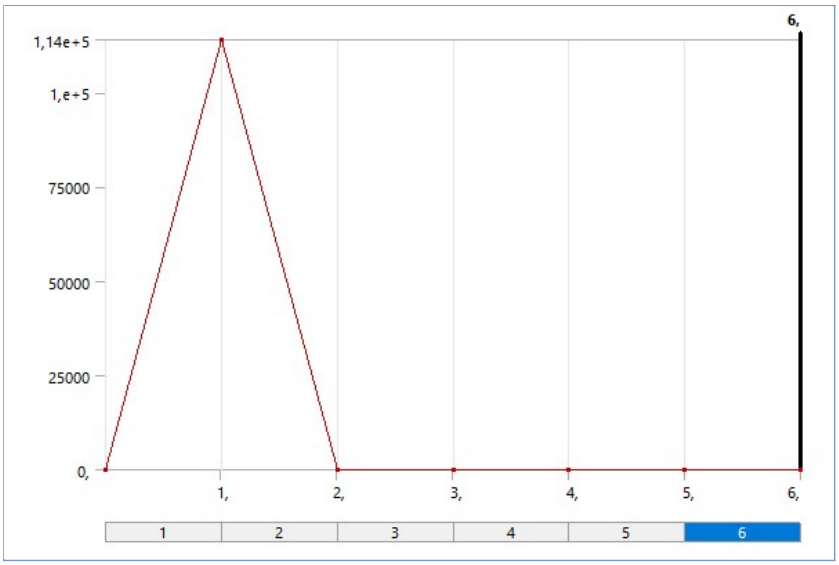


TABLE 21
Model (B4) > Static Structural (B5) > Gear 1

Steps	Time [s]	Moment [N·mm]
1	0,	0,
	1,	1,14e+005
2	2,	0,
3	3,	
4	4,	
5	5,	
6	6,	

TABLE 22
Model (B4) > Static Structural (B5) > Loads

Object Name	*Gear 2*	*Gear 3*	*Gear 4*	*Gear 5*	*Gear 6*
State	Fully Defined				
Scope					
Scoping Method	Geometry Selection				
Geometry	4 Edges	6 Edges		4 Edges	
Definition					
Type	Moment				
Define By	Vector				
Magnitude	Tabular Data				
Direction	Defined				
Suppressed	No				
Behavior	Deformable				
Tabular Data					
Independent Variable	Time				
Advanced					
Pinball Region	All				

FIGURE 10
Model (B4) > Static Structural (B5) > Gear 2

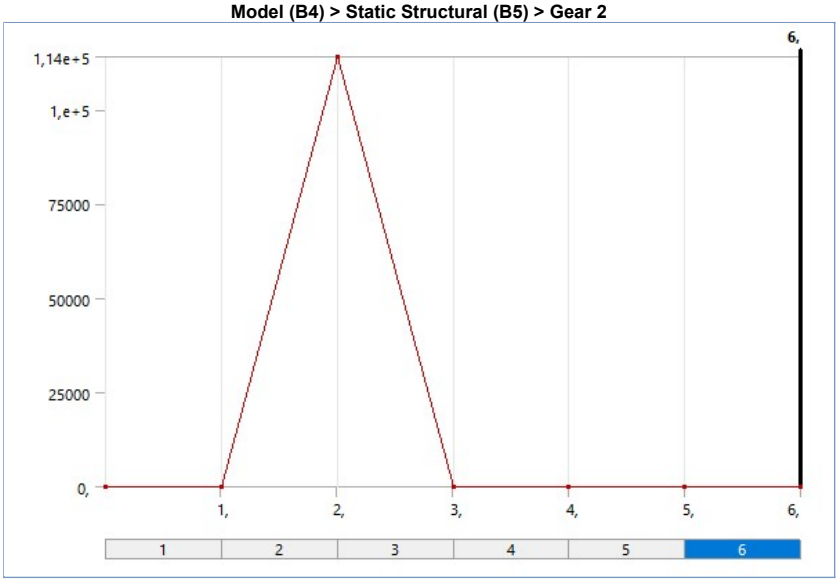


TABLE 23
Model (B4) > Static Structural (B5) > Gear 2

Steps	Time [s]	Moment [N·mm]
1	0,	0,
	1,	
2	2,	1,14e+005
3	3,	0,
4	4,	
5	5,	
6	6,	

FIGURE 11
Model (B4) > Static Structural (B5) > Gear 3

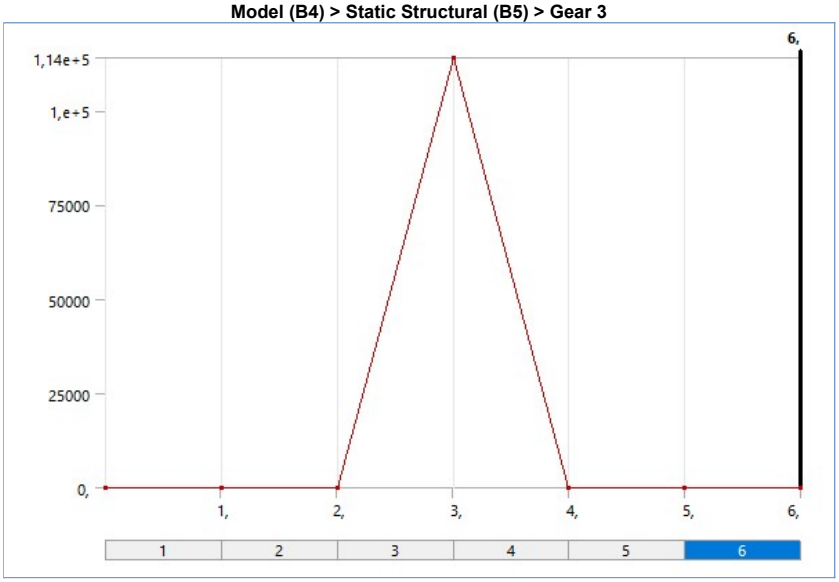


TABLE 24
Model (B4) > Static Structural (B5) > Gear 3

Steps	Time [s]	Moment [N·mm]
1	0,	0,
	1,	
2	2,	
3	3,	1,14e+005
4	4,	0,
5	5,	
6	6,	

FIGURE 12
Model (B4) > Static Structural (B5) > Gear 4

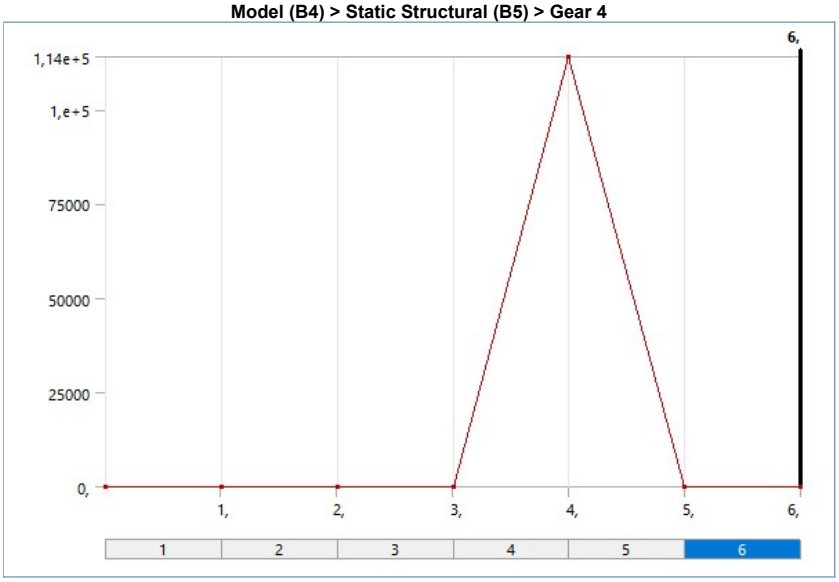


TABLE 25
Model (B4) > Static Structural (B5) > Gear 4

Steps	Time [s]	Moment [N·mm]
1	0,	0,
	1,	
2	2,	
3	3,	
4	4,	1,14e+005
5	5,	0,
6	6,	

FIGURE 13
Model (B4) > Static Structural (B5) > Gear 5

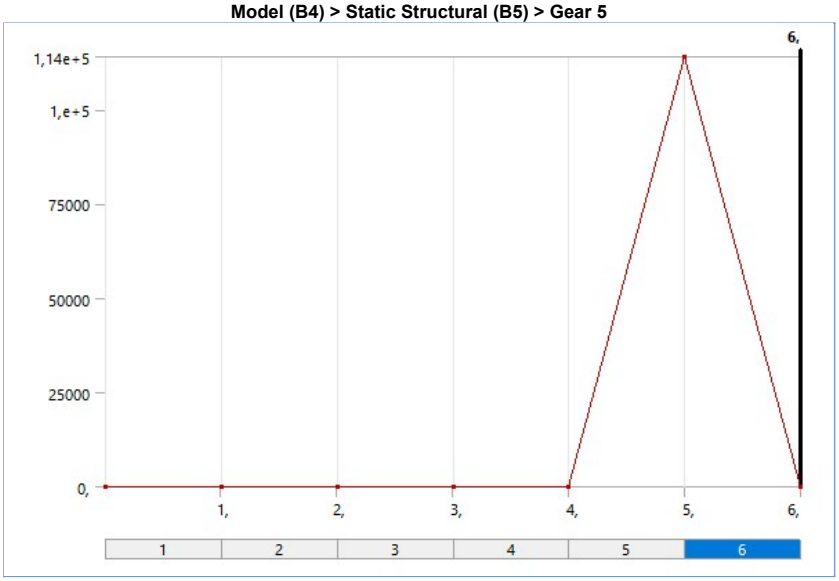


TABLE 26
Model (B4) > Static Structural (B5) > Gear 5

Steps	Time [s]	Moment [N·mm]
1	0,	0,
	1,	
2	2,	
3	3,	
4	4,	
5	5,	1,14e+005
6	6,	0,

FIGURE 14
Model (B4) > Static Structural (B5) > Gear 6

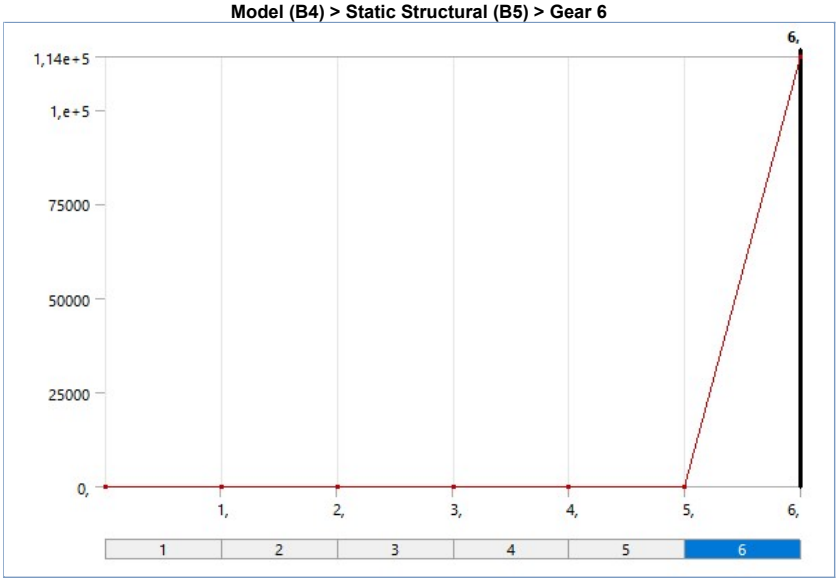


TABLE 27
Model (B4) > Static Structural (B5) > Gear 6

Steps	Time [s]	Moment [N·mm]
1	0,	0,
	1,	
2	2,	
3	3,	
4	4,	
5	5,	
6	6,	1,14e+005

Solution (B6)

TABLE 28
Model (B4) > Static Structural (B5) > Solution

Object Name	*Solution (B6)*
State	Solved
Adaptive Mesh Refinement	
Max Refinement Loops	1,

Refinement Depth	2,
Information	
Status	Done
MAPDL Elapsed Time	29, s
MAPDL Memory Used	210, MB
MAPDL Result File Size	47,75 MB
Post Processing	
Beam Section Results	No
On Demand Stress/Strain	No

TABLE 29
Model (B4) > Static Structural (B5) > Solution (B6) > Solution Information

Object Name	*Solution Information*
State	Solved
Solution Information	
Solution Output	Solver Output
Newton-Raphson Residuals	0
Identify Element Violations	0
Update Interval	2,5 s
Display Points	All
FE Connection Visibility	
Activate Visibility	Yes
Display	All FE Connectors
Draw Connections Attached To	All Nodes
Line Color	Connection Type
Visible on Results	No
Line Thickness	Single
Display Type	Lines

TABLE 30
Model (B4) > Static Structural (B5) > Solution (B6) > Results

Object Name	*Equivalent Stress 1*	*Equivalent Stress 2*	*Equivalent Stress 3*	*Equivalent Stress 4*	*Equivalent Stress 5*	*Equivalent Stress 6*	*Total Deformation*	*Total Deformation 2*	*Total Deformation 3*	*Total Deformation 4*	*Total Deformation 5*
State	Solved										
Scope											
Scoping Method	Geometry Selection										
Geometry	All Bodies										
Definition											
Type	Equivalent (von-Mises) Stress						Total Deformation				
By	Time										
Display Time	1, s	2, s	3, s	4, s	5, s	6, s	1, s	2, s	3, s	4, s	5, s
Calculate Time History	Yes										
Identifier											
Suppressed	No										
Integration Point Results											
Display Option	Averaged										
Average Across Bodies	No										
Results											
Minimum	2,0499e-003 MPa	5,3872e-004 MPa	1,1958e-003 MPa	3,3569e-004 MPa	3,8914e-004 MPa	7,0659e-004 MPa	0, mm				
Maximum	170,01 MPa	71,598 MPa	78,666 MPa	117,48 MPa	111,77 MPa	83,335 MPa	0,45402 mm	0,15047 mm	3,3492e-002 mm	0,16973 mm	0,19104 mm
Average	15,882 MPa	6,3235 MPa	6,7477 MPa	9,4638 MPa	9,6688 MPa	9,0242 MPa	0,22602 mm	7,7233e-002 mm	1,4362e-002 mm	7,5638e-002 mm	8,5582e-002 mm
Minimum Occurs On	Geom\LAY_SHAFT										
Maximum Occurs On	Geom\LAY_SHAFT										
Minimum Value Over Time											
Minimum	3,3569e-004 MPa						0, mm				
Maximum	2,0499e-003 MPa						0, mm				
Maximum Value Over Time											
Minimum	71,598 MPa						3,3492e-002 mm				
Maximum	170,01 MPa						0,45402 mm				
Information											
Time	1, s	2, s	3, s	4, s	5, s	6, s	1, s	2, s	3, s	4, s	5, s
Load Step	1	2	3	4	5	6	1	2	3	4	5
Substep	1										
Iteration Number	1	2	3	4	5	6	1	2	3	4	5

FIGURE 15
Model (B4) > Static Structural (B5) > Solution (B6) > Equivalent Stress 1

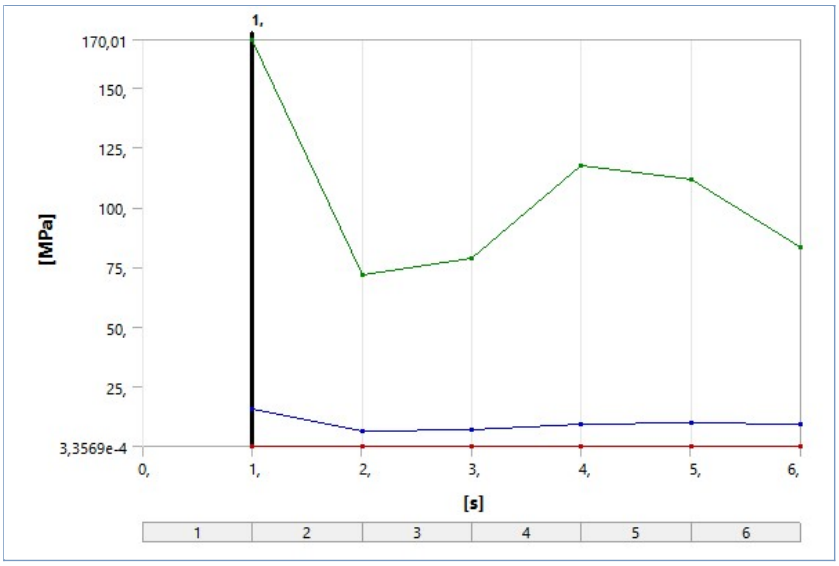


TABLE 31
Model (B4) > Static Structural (B5) > Solution (B6) > Equivalent Stress 1

Time [s]	Minimum [MPa]	Maximum [MPa]	Average [MPa]
1,	2,0499e-003	170,01	15,882
2,	5,3872e-004	71,598	6,3235
3,	1,1958e-003	78,666	6,7477
4,	3,3569e-004	117,48	9,4638
5,	3,8914e-004	111,77	9,6688
6,	7,0659e-004	83,335	9,0242

FIGURE 16
Model (B4) > Static Structural (B5) > Solution (B6) > Equivalent Stress 2

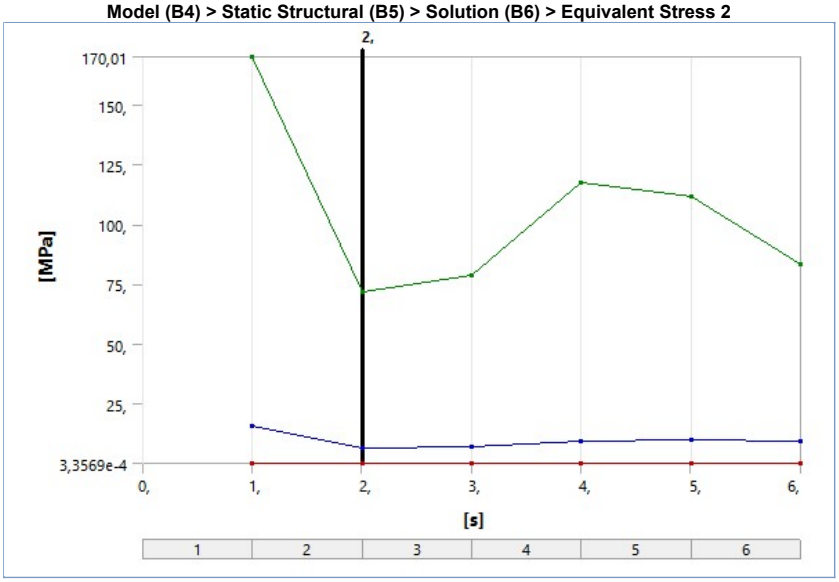


TABLE 32
Model (B4) > Static Structural (B5) > Solution (B6) > Equivalent Stress 2

Time [s]	Minimum [MPa]	Maximum [MPa]	Average [MPa]
1,	2,0499e-003	170,01	15,882
2,	5,3872e-004	71,598	6,3235
3,	1,1958e-003	78,666	6,7477
4,	3,3569e-004	117,48	9,4638
5,	3,8914e-004	111,77	9,6688
6,	7,0659e-004	83,335	9,0242

FIGURE 17
Model (B4) > Static Structural (B5) > Solution (B6) > Equivalent Stress 3

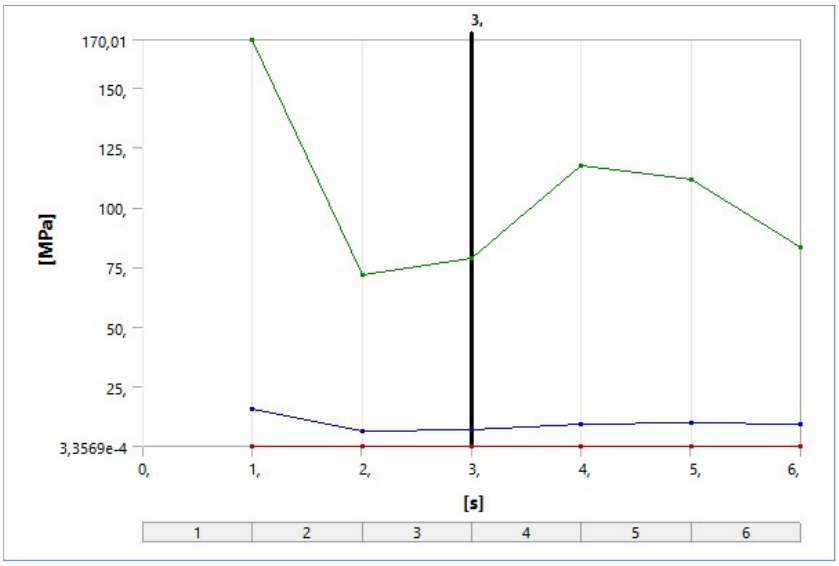


TABLE 33
Model (B4) > Static Structural (B5) > Solution (B6) > Equivalent Stress 3

Time [s]	Minimum [MPa]	Maximum [MPa]	Average [MPa]
1,	2,0499e-003	170,01	15,882
2,	5,3872e-004	71,598	6,3235
3,	1,1958e-003	78,666	6,7477
4,	3,3569e-004	117,48	9,4638
5,	3,8914e-004	111,77	9,6688
6,	7,0659e-004	83,335	9,0242

FIGURE 18
Model (B4) > Static Structural (B5) > Solution (B6) > Equivalent Stress 4

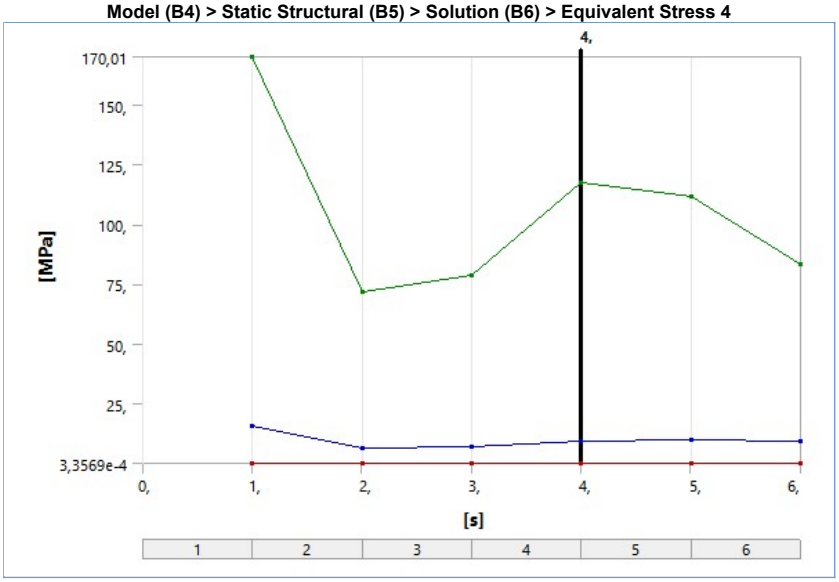


TABLE 34
Model (B4) > Static Structural (B5) > Solution (B6) > Equivalent Stress 4

Time [s]	Minimum [MPa]	Maximum [MPa]	Average [MPa]
1,	2,0499e-003	170,01	15,882
2,	5,3872e-004	71,598	6,3235
3,	1,1958e-003	78,666	6,7477
4,	3,3569e-004	117,48	9,4638
5,	3,8914e-004	111,77	9,6688
6,	7,0659e-004	83,335	9,0242

FIGURE 19
Model (B4) > Static Structural (B5) > Solution (B6) > Equivalent Stress 5

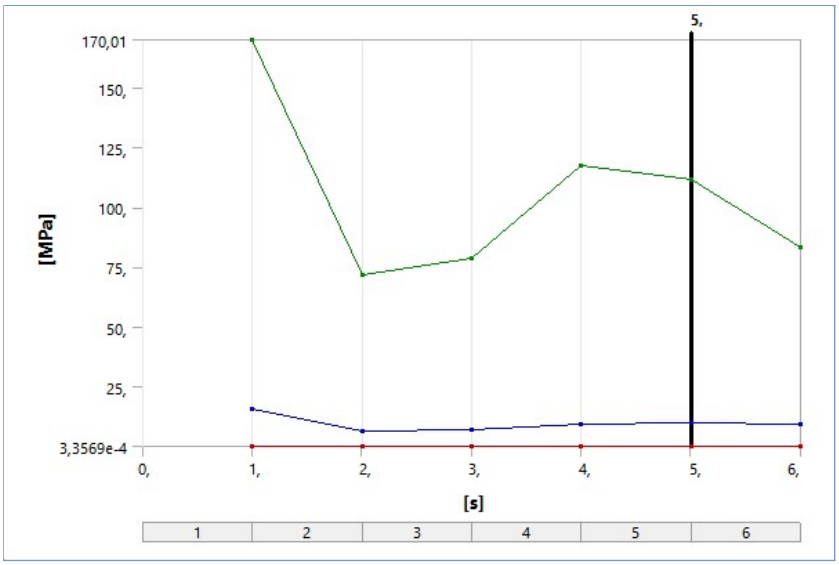


TABLE 35
Model (B4) > Static Structural (B5) > Solution (B6) > Equivalent Stress 5

Time [s]	Minimum [MPa]	Maximum [MPa]	Average [MPa]
1,	2,0499e-003	170,01	15,882
2,	5,3872e-004	71,598	6,3235
3,	1,1958e-003	78,666	6,7477
4,	3,3569e-004	117,48	9,4638
5,	3,8914e-004	111,77	9,6688
6,	7,0659e-004	83,335	9,0242

FIGURE 20
Model (B4) > Static Structural (B5) > Solution (B6) > Equivalent Stress 6

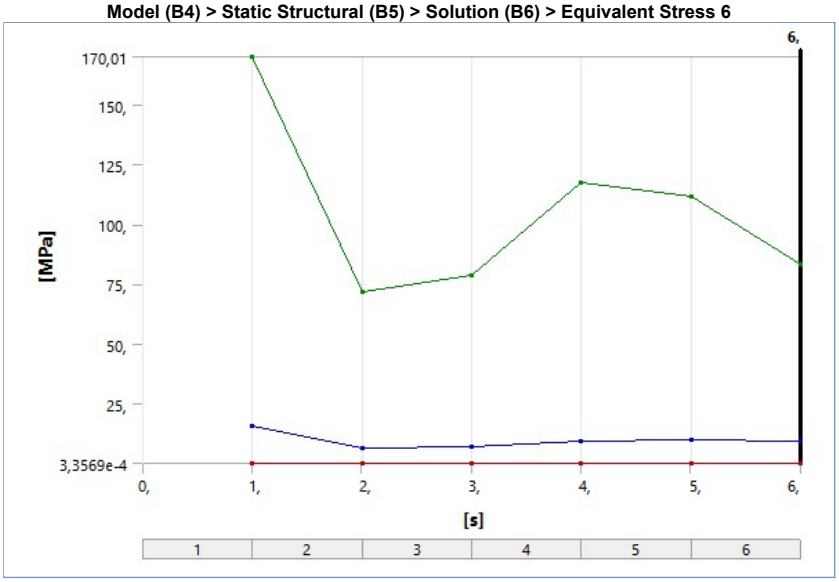


TABLE 36
Model (B4) > Static Structural (B5) > Solution (B6) > Equivalent Stress 6

Time [s]	Minimum [MPa]	Maximum [MPa]	Average [MPa]
1,	2,0499e-003	170,01	15,882
2,	5,3872e-004	71,598	6,3235
3,	1,1958e-003	78,666	6,7477
4,	3,3569e-004	117,48	9,4638
5,	3,8914e-004	111,77	9,6688
6,	7,0659e-004	83,335	9,0242

FIGURE 21
Model (B4) > Static Structural (B5) > Solution (B6) > Total Deformation

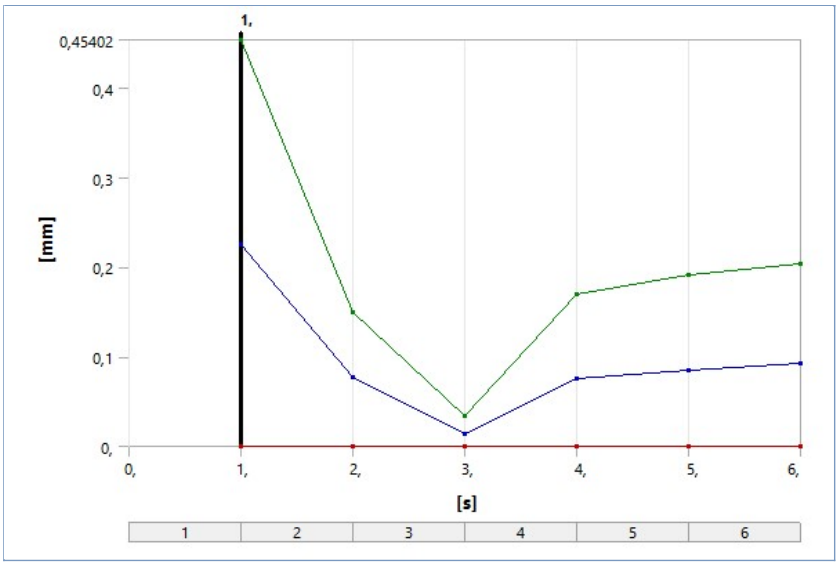


TABLE 37
Model (B4) > Static Structural (B5) > Solution (B6) > Total Deformation

Time [s]	Minimum [mm]	Maximum [mm]	Average [mm]
1,	0,	0,45402	0,22602
2,		0,15047	7,7233e-002
3,		3,3492e-002	1,4362e-002
4,		0,16973	7,5638e-002
5,		0,19104	8,5582e-002
6,		0,20324	9,3101e-002

FIGURE 22
Model (B4) > Static Structural (B5) > Solution (B6) > Total Deformation 2

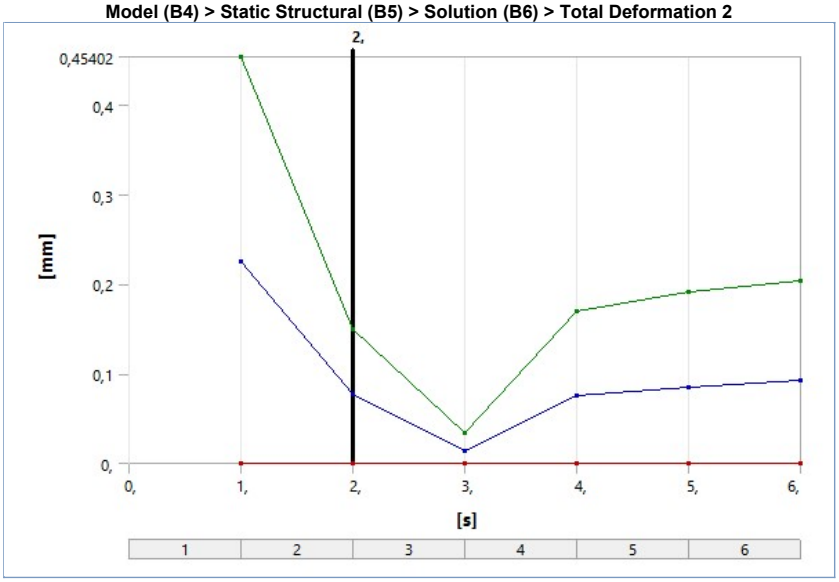


TABLE 38
Model (B4) > Static Structural (B5) > Solution (B6) > Total Deformation 2

Time [s]	Minimum [mm]	Maximum [mm]	Average [mm]
1,	0,	0,45402	0,22602
2,		0,15047	7,7233e-002
3,		3,3492e-002	1,4362e-002
4,		0,16973	7,5638e-002
5,		0,19104	8,5582e-002
6,		0,20324	9,3101e-002

FIGURE 23
Model (B4) > Static Structural (B5) > Solution (B6) > Total Deformation 3

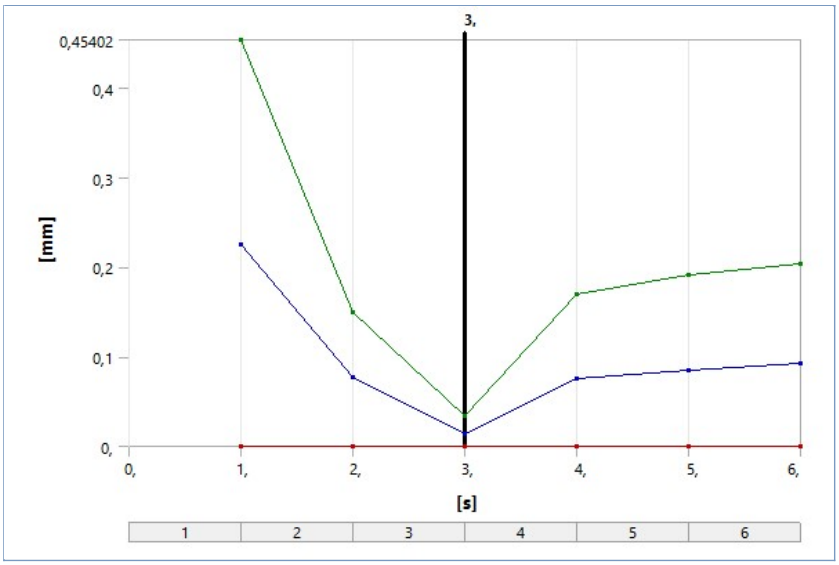


TABLE 39
Model (B4) > Static Structural (B5) > Solution (B6) > Total Deformation 3

Time [s]	Minimum [mm]	Maximum [mm]	Average [mm]
1,	0,	0,45402	0,22602
2,		0,15047	7,7233e-002
3,		3,3492e-002	1,4362e-002
4,		0,16973	7,5638e-002
5,		0,19104	8,5582e-002
6,		0,20324	9,3101e-002

FIGURE 24
Model (B4) > Static Structural (B5) > Solution (B6) > Total Deformation 4

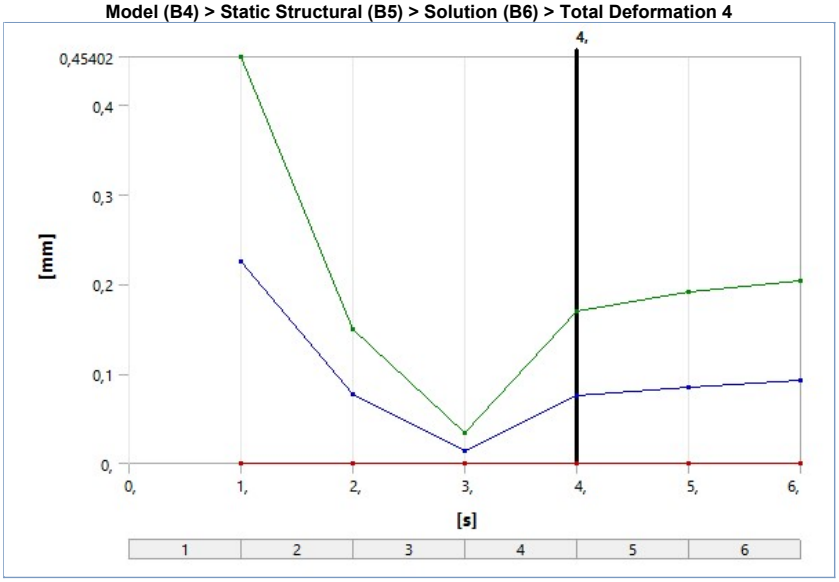


TABLE 40
Model (B4) > Static Structural (B5) > Solution (B6) > Total Deformation 4

Time [s]	Minimum [mm]	Maximum [mm]	Average [mm]
1,	0,	0,45402	0,22602
2,		0,15047	7,7233e-002
3,		3,3492e-002	1,4362e-002
4,		0,16973	7,5638e-002
5,		0,19104	8,5582e-002
6,		0,20324	9,3101e-002

FIGURE 25
Model (B4) > Static Structural (B5) > Solution (B6) > Total Deformation 5

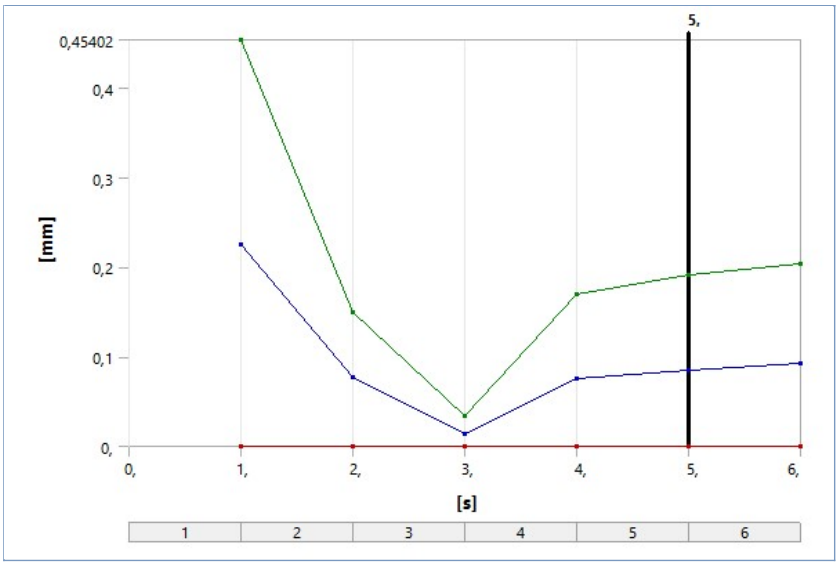


TABLE 41
Model (B4) > Static Structural (B5) > Solution (B6) > Total Deformation 5

Time [s]	Minimum [mm]	Maximum [mm]	Average [mm]
1,	0,	0,45402	0,22602
2,		0,15047	7,7233e-002
3,		3,3492e-002	1,4362e-002
4,		0,16973	7,5638e-002
5,		0,19104	8,5582e-002
6,		0,20324	9,3101e-002

TABLE 42
Model (B4) > Static Structural (B5) > Solution (B6) > Results

Object Name	*Total Deformation 6*
State	Solved
Scope	
Scoping Method	Geometry Selection
Geometry	All Bodies
Definition	
Type	Total Deformation
By	Time
Display Time	6, s
Calculate Time History	Yes
Identifier	
Suppressed	No
Results	
Minimum	0, mm
Maximum	0,20324 mm
Average	9,3101e-002 mm
Minimum Occurs On	Geom\LAY_SHAFT
Maximum Occurs On	Geom\LAY_SHAFT
Minimum Value Over Time	
Minimum	0, mm
Maximum	0, mm
Maximum Value Over Time	
Minimum	3,3492e-002 mm
Maximum	0,45402 mm
Information	
Time	6, s
Load Step	6
Substep	1
Iteration Number	6

FIGURE 26
Model (B4) > Static Structural (B5) > Solution (B6) > Total Deformation 6

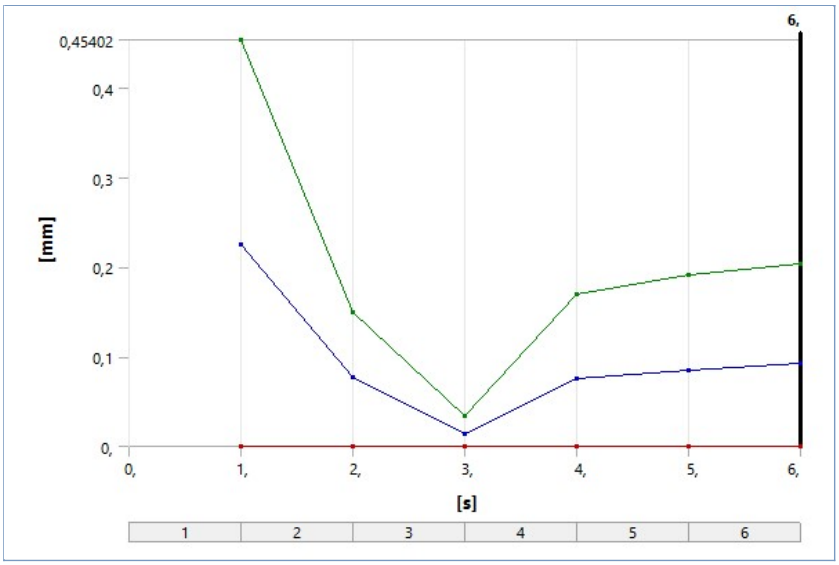


TABLE 43
Model (B4) > Static Structural (B5) > Solution (B6) > Total Deformation 6

Time [s]	Minimum [mm]	Maximum [mm]	Average [mm]
1,	0,	0,45402	0,22602
2,		0,15047	7,7233e-002
3,		3,3492e-002	1,4362e-002
4,		0,16973	7,5638e-002
5,		0,19104	8,5582e-002
6,		0,20324	9,3101e-002

Material Data

Steel C60

TABLE 44
Steel C60 > Constants

Coefficient of Thermal Expansion	1,08e-005 C^-1
Density	7,8e-006 kg mm^-3

TABLE 45
Steel C60 > Color

Red	Green	Blue
170,	170,	170,

TABLE 46
Steel C60 > Isotropic Elasticity

Young's Modulus MPa	Poisson's Ratio	Bulk Modulus MPa	Shear Modulus MPa	Temperature C
2,17e+005	0,29	1,7222e+005	84109	

TABLE 47
Steel C60 > Tensile Yield Strength

Tensile Yield Strength MPa
620,

TABLE 48
Steel C60 > Tensile Ultimate Strength

Tensile Ultimate Strength MPa
900,

TABLE 49
Steel C60 > Melting Temperature

Melting Temperature C
1350,