



Description

No Data

Simulation of spring

Date: 29 October 2020

Designer: Team FIJI

Study name: Static 1

Analysis type: Static



Table of Contents

Description	1
Assumptions	2
Model Information	2
Study Properties	3
Units	3
Material Properties	4
Loads and Fixtures	5
Connector Definitions	5
Contact Information	5
Mesh information	6
Sensor Details	7
Resultant Forces	7
Beams	7
Study Results	8
Conclusion	10



Assumptions

Model Information

 <p>Model name: spring Current Configuration: Default</p>			
Solid Bodies			
Document Name and Reference	Treated As	Volumetric Properties	Document Path/Date Modified
SurfaceCut3 	Solid Body	Mass:9.56497 kg Volume:0.00124219 m ³ Density:7700.08 kg/m ³ Weight:93.7367 N	E:\CAD Files\spring.SLDPRT Oct 16 21:22:09 2020

Study Properties


Study name	Static 1
Analysis type	Static
Mesh type	Solid Mesh
Thermal Effect:	On
Thermal option	Include temperature loads
Zero strain temperature	298 Kelvin
Include fluid pressure effects from SOLIDWORKS Flow Simulation	Off
Solver type	FFEPlus
Inplane Effect:	Off
Soft Spring:	Off
Inertial Relief:	Off
Incompatible bonding options	Automatic
Large displacement	On
Compute free body forces	On
Friction	Off
Use Adaptive Method:	Off
Result folder	SOLIDWORKS document (E:\CAD Files)

Units

Unit system:	SI (MKS)
Length/Displacement	mm
Temperature	Kelvin
Angular velocity	Rad/sec
Pressure/Stress	N/m ²

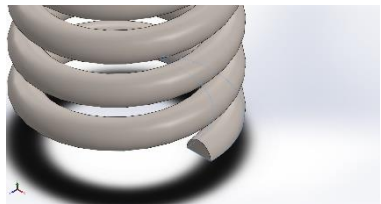
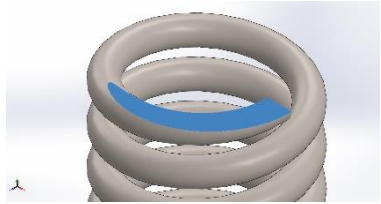


Material Properties

Model Reference	Properties	Components
	Name: Alloy Steel Model type: Linear Elastic Isotropic Default failure criterion: Unknown Yield strength: 6.20422e+008 N/m ² Tensile strength: 7.23826e+008 N/m ² Elastic modulus: 2.1e+011 N/m ² Poisson's ratio: 0.28 Mass density: 7700 kg/m ³ Shear modulus: 7.9e+010 N/m ² Thermal expansion coefficient: 1.3e-005 /Kelvin	SolidBody 1(SurfaceCut3)(spring)
Curve Data:N/A		



Loads and Fixtures

Fixture name	Fixture Image	Fixture Details		
Fixed-1		Entities: 1 face(s) Type: Fixed Geometry		
Resultant Forces				
Components	X	Y	Z	Resultant
Reaction force(N)	0.0747389	2903.79	-2.93063	2903.79
Reaction Moment(N.m)	0	0	0	0
On Flat Faces-1		Entities: 1 face(s) Type: On Flat Faces Translation: 0, 0, -100 Units: mm		
Resultant Forces				
Components	X	Y	Z	Resultant
Reaction force(N)	-0.931824	-2901.23	-0.421501	2901.23
Reaction Moment(N.m)	0	0	0	0

Connector Definitions

No Data

Contact Information

No Data



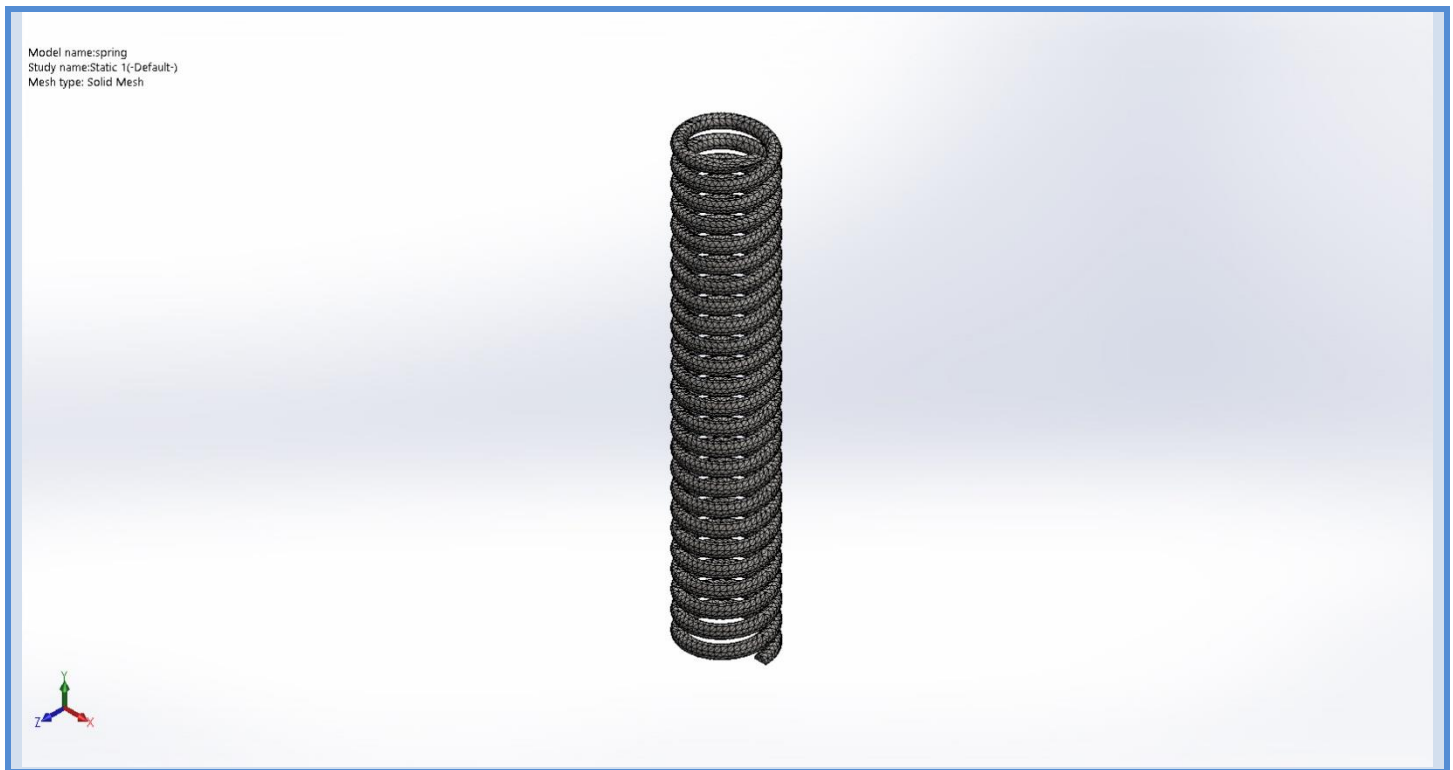
Mesh information

Mesh type	Solid Mesh
Mesher Used:	Standard mesh
Automatic Transition:	Off
Include Mesh Auto Loops:	Off
Jacobian points	4 Points
Element Size	6.49265 mm
Tolerance	0.324632 mm
Mesh Quality Plot	High

Mesh information - Details

Total Nodes	72300
Total Elements	38629
Maximum Aspect Ratio	24.674
% of elements with Aspect Ratio < 3	95.1
% of elements with Aspect Ratio > 10	0.0233
% of distorted elements(Jacobian)	0
Time to complete mesh(hh:mm:ss):	00:01:02
Computer name:	





Sensor Details

No Data

Resultant Forces

Reaction forces

Selection set	Units	Sum X	Sum Y	Sum Z	Resultant
Entire Model	N	-0.857605	2.56435	-3.35168	4.30641

Reaction Moments

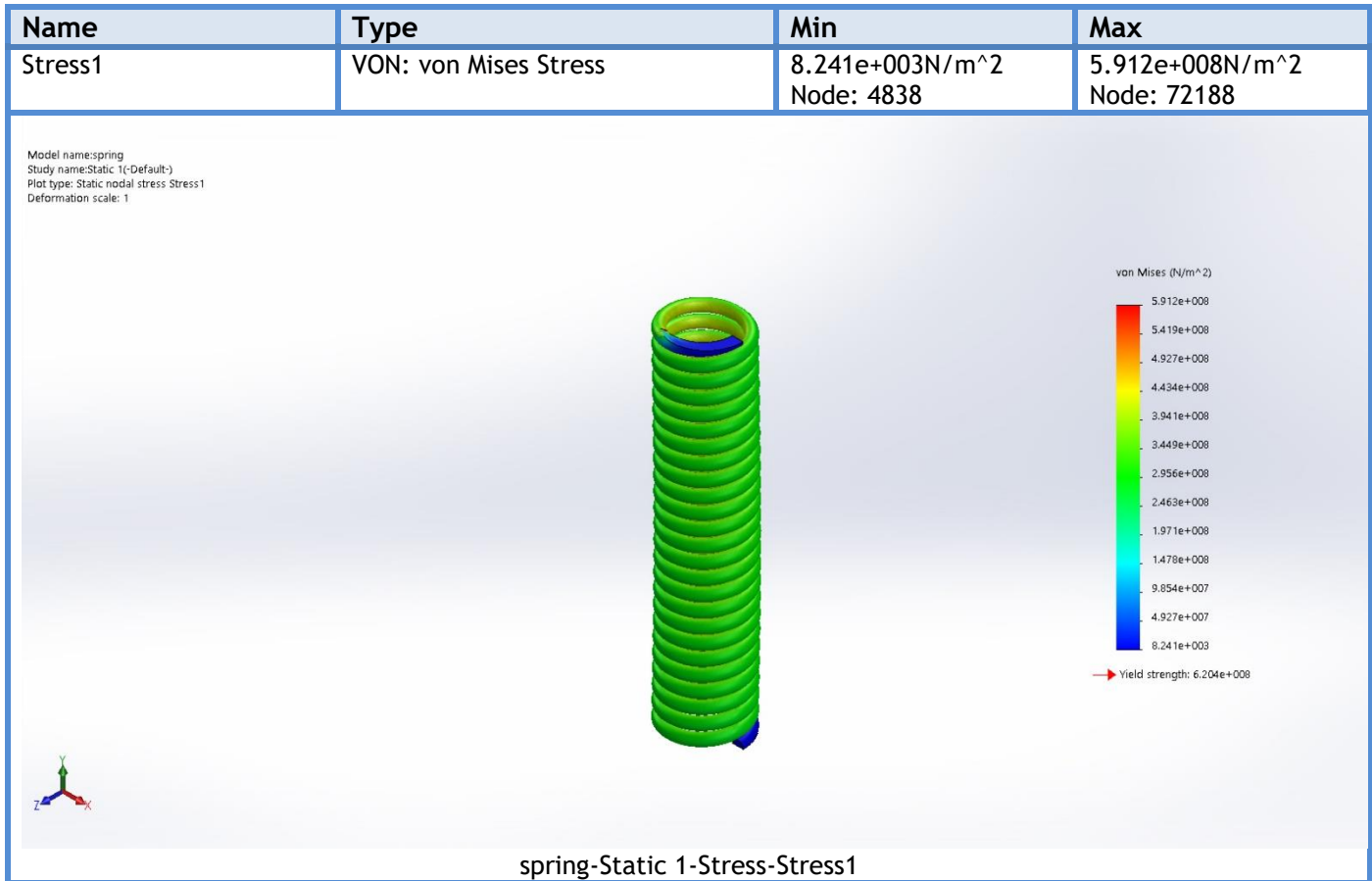
Selection set	Units	Sum X	Sum Y	Sum Z	Resultant
Entire Model	N.m	0	0	0	0

Beams

No Data



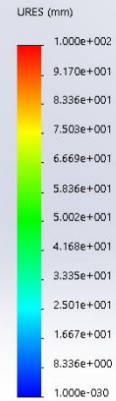
Study Results



Name	Type	Min	Max
Displacement1	URES: Resultant Displacement	0.000e+000mm Node: 4839	1.000e+002mm Node: 72017



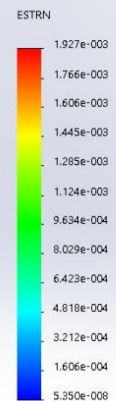
Model name:spring
Study name:Static 1(-Default-)
Plot type: Static displacement Displacement1
Deformation scale: 1



spring-Static 1-Displacement-Displacement1

Name	Type	Min	Max
Strain1	ESTRN: Equivalent Strain	5.350e-008 Element: 11519	1.927e-003 Element: 18349

Model name:spring
Study name:Static 1(-Default-)
Plot type: Static strain Strain1
Deformation scale: 1



spring-Static 1-Strain-Strain1



Conclusion

