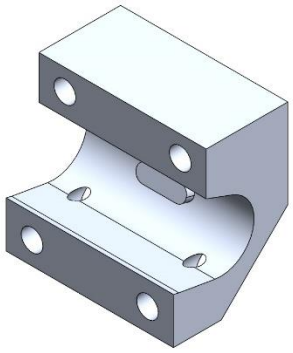

Simulation of Steer holder new 15 degrees

Date: woensdag 2 december 2020
Designer: Solidworks
Study name: static strength analysis
Analysis type: Static

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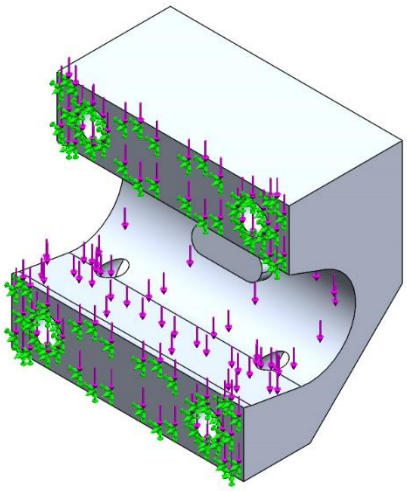
Description

No Data

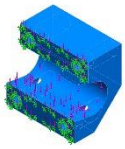
Assumptions

Model Information



Model name: Steer holder new 15 degrees
Current Configuration: Default

Solid Bodies

Document Name and Reference	Treated As	Volumetric Properties	Document Path/Date Modified
Fillet2 	Solid Body	**Mass:0,0949441 kg** **Volume:3,51645e-05 m^3** **Density:2.700 kg/m^3** **Weight:0,930452 N**	**C:\Users\Sjoerd Koudijs\Google Drive (sjoerd.koudijs@pon.com) \Afstuderen Sjoerd 2020_2021\Product files\Steer holder new 15 degrees.SLDPRT** Dec 2 15:44:13 2020

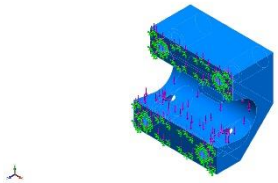
Study Properties

Study name	static strength analysis
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	Off
Compute free body forces	On
Friction	Off
Use Adaptive Method:	Off
Result folder	SOLIDWORKS document (C:\Users\Sjoerd Koudijs\Google Drive (sjoerd.koudijs@pon.com)\Afstuderen Sjoerd 2020_2021\Product files)

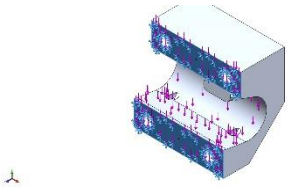
Units

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

Material Properties

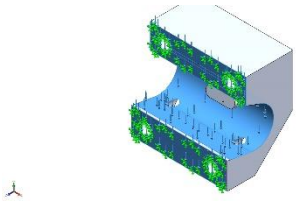
Model Reference	Properties	Components
	**Name:** 6061-T6 (SS) **Model type:** Linear Elastic Isotropic **Default failure criterion:** Unknown **Yield strength:** 2,75e+08 N/m^2 **Tensile strength:** 3,1e+08 N/m^2 **Elastic modulus:** 6,9e+10 N/m^2 **Poisson's ratio:** 0,33 **Mass density:** 2.700 kg/m^3 **Shear modulus:** 2,6e+10 N/m^2 **Thermal expansion coefficient:** 2,4e-05 /Kelvin	SolidBody 1(Fillet2)(Steer holder new 15 degrees)
Curve Data:N/A		

Loads and Fixtures

Fixture name	Fixture Image	Fixture Details
Fixed-1		**Entities:** 2 face(s) **Type:** Fixed Geometry

Resultant Forces

Components	X	Y	Z	Resultant
Reaction force(N)	0,00159304	4.000	0,00460231	4.000
Reaction Moment(N.m)	0	0	0	0

Load name	Load Image	Load Details
Force-1		**Entities:** 4 face(s) **Reference:** Edge< 1 > **Type:** Apply force **Values:** ---; ---; -1.000 N

Connector Definitions
No Data

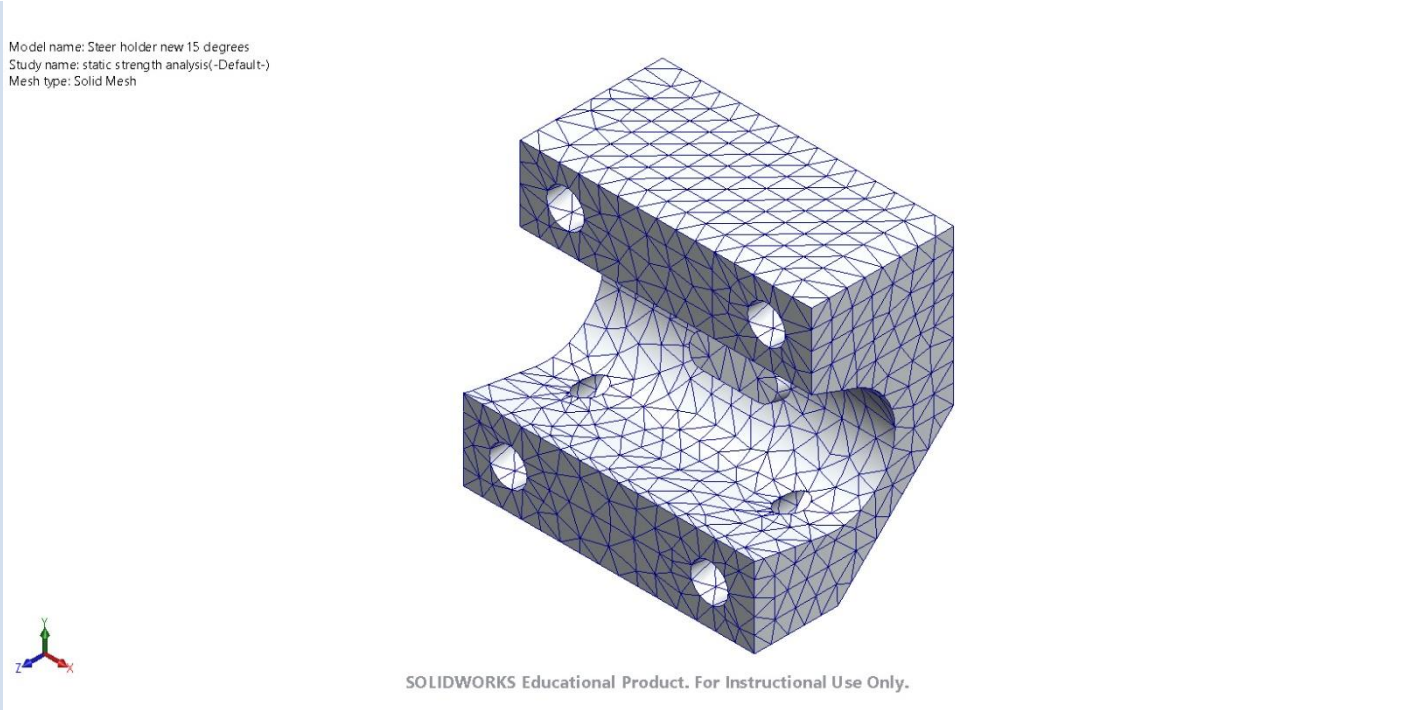
Contact Information
No Data

Mesh information

Mesh type	Solid Mesh
Mesher Used:	Standard mesh
Automatic Transition:	Off
Include Mesh Auto Loops:	Off
Jacobian points for High quality mesh	16 Points
Element Size	3,3565 mm
Tolerance	0,167825 mm
Mesh Quality	High

Mesh information - Details

Total Nodes	12491
Total Elements	7505
Maximum Aspect Ratio	9,5161
% of elements with Aspect Ratio < 3	98,1
Percentage of elements with Aspect Ratio > 10	0
Percentage of distorted elements	0
Time to complete mesh(hh;mm;ss):	00:00:01
Computer name:	SJOERD-KOUDIJS



Sensor Details

No Data

Resultant Forces

Reaction forces

Selection set	Units	Sum X	Sum Y	Sum Z	Resultant
Entire Model	N	0,00159304	4.000	0,00460231	4.000

Reaction Moments

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

Free body forces

Selection set	Units	Sum X	Sum Y	Sum Z	Resultant
Entire Model	N	0,0478268	-0,022317	-0,0327316	0,0621032

Free body moments

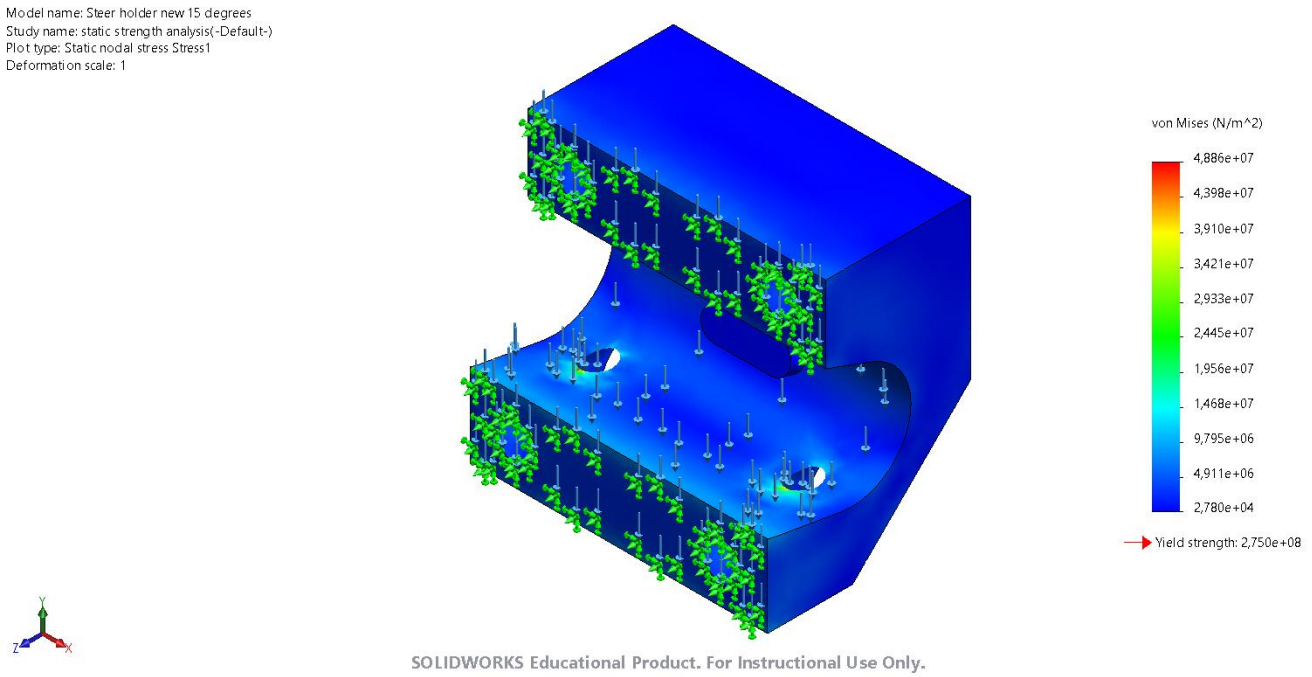
Selection set	Units	Sum X	Sum Y	Sum Z	Resultant
Entire Model	N.m	0	0	0	1e-33

Beams

No Data

Study Results

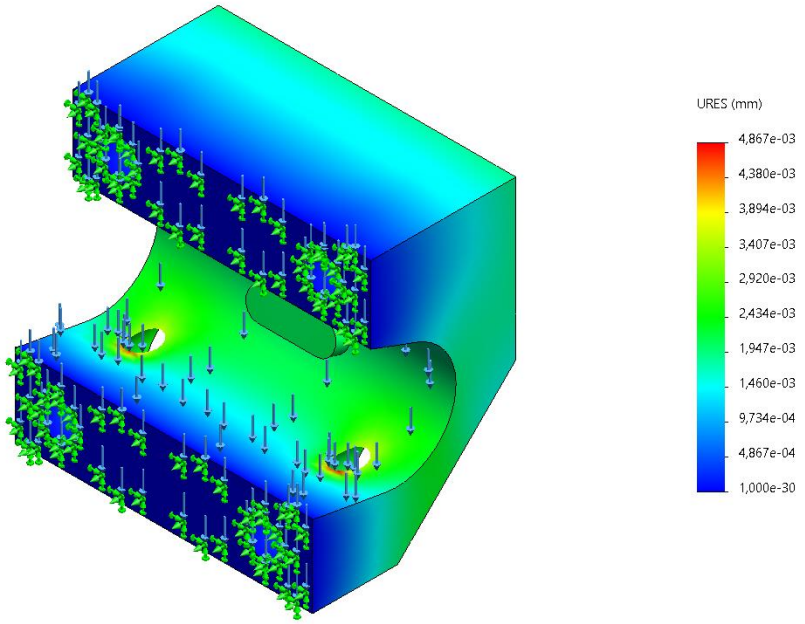
Name	Type	Min	Max
Stress1	VON: von Mises Stress	2,780e+04N/m^2 Node: 8028	4,886e+07N/m^2 Node: 8475



Steer holder new 15 degrees-static strength analysis-Stress-Stress1

Name	Type	Min	Max
Displacement1	URES: Resultant Displacement	0,000e+00mm Node: 169	4,867e-03mm Node: 575

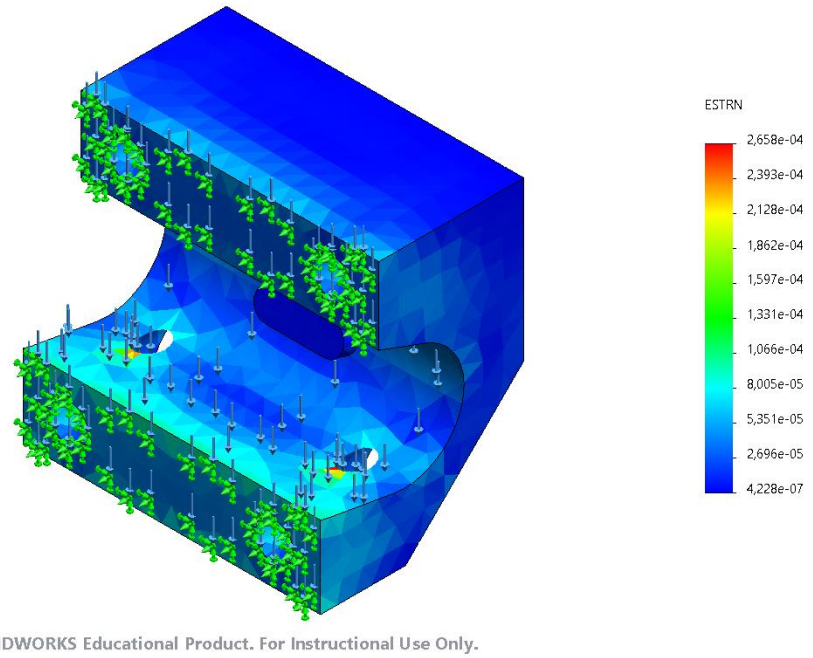
Model name: Steer holder new 15 degrees
Study name: static strength analysis(-Default-)
Plot type: Static displacement Displacement1
Deformation scale: 1



Steer holder new 15 degrees-static strength analysis-Displacement-Displacement1

Name	Type	Min	Max
Strain1	ESTRN: Equivalent Strain	4,228e-07 Element: 7198	2,658e-04 Element: 1931

Model name: Steer holder new 15 degrees
Study name: static strength analysis(-Default-)
Plot type: Static strain Strain1
Deformation scale: 1



Steer holder new 15 degrees-static strength analysis-Strain-Strain1

Conclusion