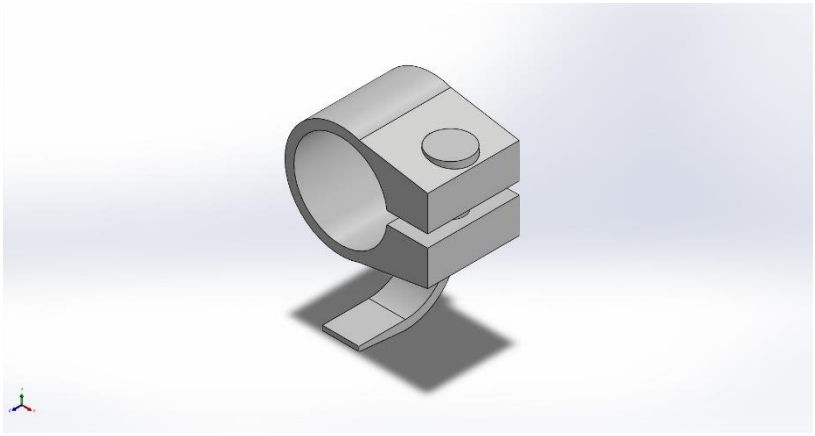


Simulation of subassem1

Date: 11 December 2023
Designer: Solidworks
Study name: Static 1
Analysis type: Static

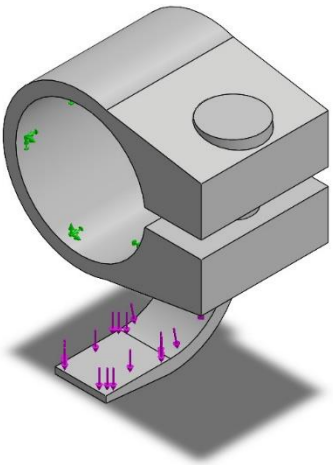
Table of Contents

Description

No Data

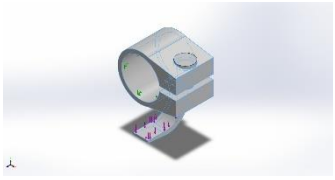
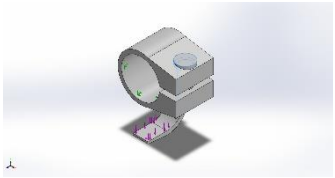
Assumptions

Model Information



Model name: subassem1
Current Configuration: Default

Solid Bodies

Document Name and Reference	Treated As	Volumetric Properties	Document Path/Date Modified
Chamfer4 	Solid Body	**Mass:0.00321255 kg** **Volume:7.10741e-07 m^3** **Density:4,520 kg/m^3** **Weight:0.031483 N**	**C:\Users\2450027\OneDrive - University of Dundee\Desktop\Research and devlopment skills\Prosthetics\Luke\Solidworks\Bottoomclip.SLDPRT** Dec 10 00:11:07 2023
Boss-Extrude2 	Solid Body	**Mass:0.000356278 kg** **Volume:7.88226e-08 m^3** **Density:4,520 kg/m^3** **Weight:0.00349152 N**	**C:\Users\2450027\OneDrive - University of Dundee\Desktop\Research and devlopment skills\Prosthetics\Luke\Solidworks\Screw.SLDPRT** Dec 10 00:11:43 2023

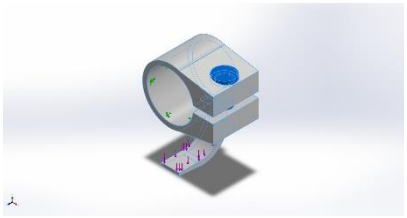
Study Properties

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	Automatic
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\2450027\OneDrive - University of Dundee\Desktop\Research and devlopment skills\Prosthetics\Luke\Solidworks)

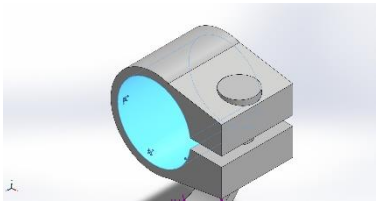
Units

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

Material Properties

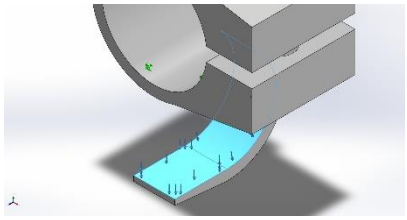
Model Reference	Properties	Components
	**Name:** Ti-6Al-7Nb **Model type:** Linear Elastic Isotropic **Default failure criterion:** Unknown **Yield strength:** 9e+08 N/m^2 **Elastic modulus:** 1.05e+11 N/m^2 **Poisson's ratio:** 0.34 **Mass density:** 4,520 kg/m^3 **Shear modulus:** 3.91791e+10 N/m^2	SolidBody 1(Chamfer4)(Bottoomclip-1), SolidBody 1(Boss-Extrude2)(Screw-2)
Curve Data:N/A		

Loads and Fixtures

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

Resultant Forces

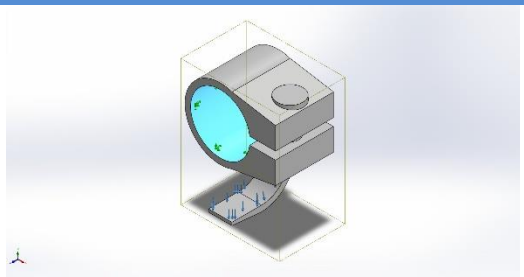
Components	X	Y	Z	Resultant
Reaction force(N)	-3.96263e-06	1.33855	0.724231	1.52191
Reaction Moment(N.m)	0	0	0	0

Load name	Load Image	Load Details
Force-1		**Entities:** 2 face(s) **Type:** Apply normal force **Value:** 1 N

Connector Definitions

No Data

Interaction Information

Interaction	Interaction Image	Interaction Properties
Global Interaction		**Type:** Bonded **Components:** 1 component(s) **Options:** Independent mesh

Mesh information

Mesh type	Solid Mesh
Mesher Used:	Blended curvature-based mesh
Jacobian points for High quality mesh	16 Points
Maximum element size	0.531719 mm
Minimum element size	0.531719 mm
Mesh Quality	High
Remesh failed parts independently	Off

Mesh information - Details

Total Nodes	68428
Total Elements	43023
Maximum Aspect Ratio	31.117
% of elements with Aspect Ratio < 3	99.8
Percentage of elements with Aspect Ratio > 10	0.0349
Percentage of distorted elements	0
Time to complete mesh(hh;mm;ss):	00:00:03
Computer name:	W-011323

Sensor Details

No Data

Resultant Forces

Reaction forces

Selection set	Units	Sum X	Sum Y	Sum Z	Resultant
Entire Model	N	-3.96263e-06	1.33855	0.724231	1.52191

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	-0.000817936	0.000818153	-0.000191296	0.0011726

Free body moments

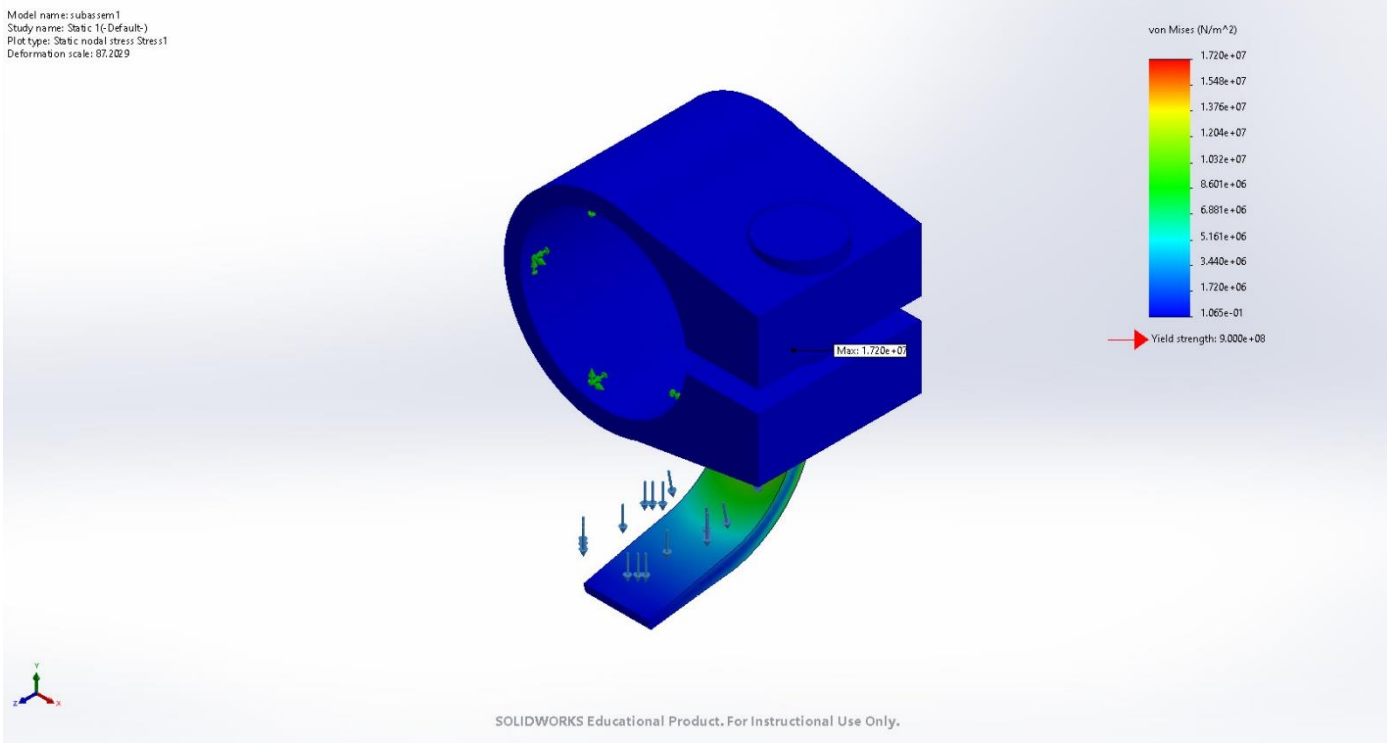
Selection set	Units	Sum X	Sum Y	Sum Z	Resultant
Entire Model	N.m	0	0	0	1e-33

Beams

No Data

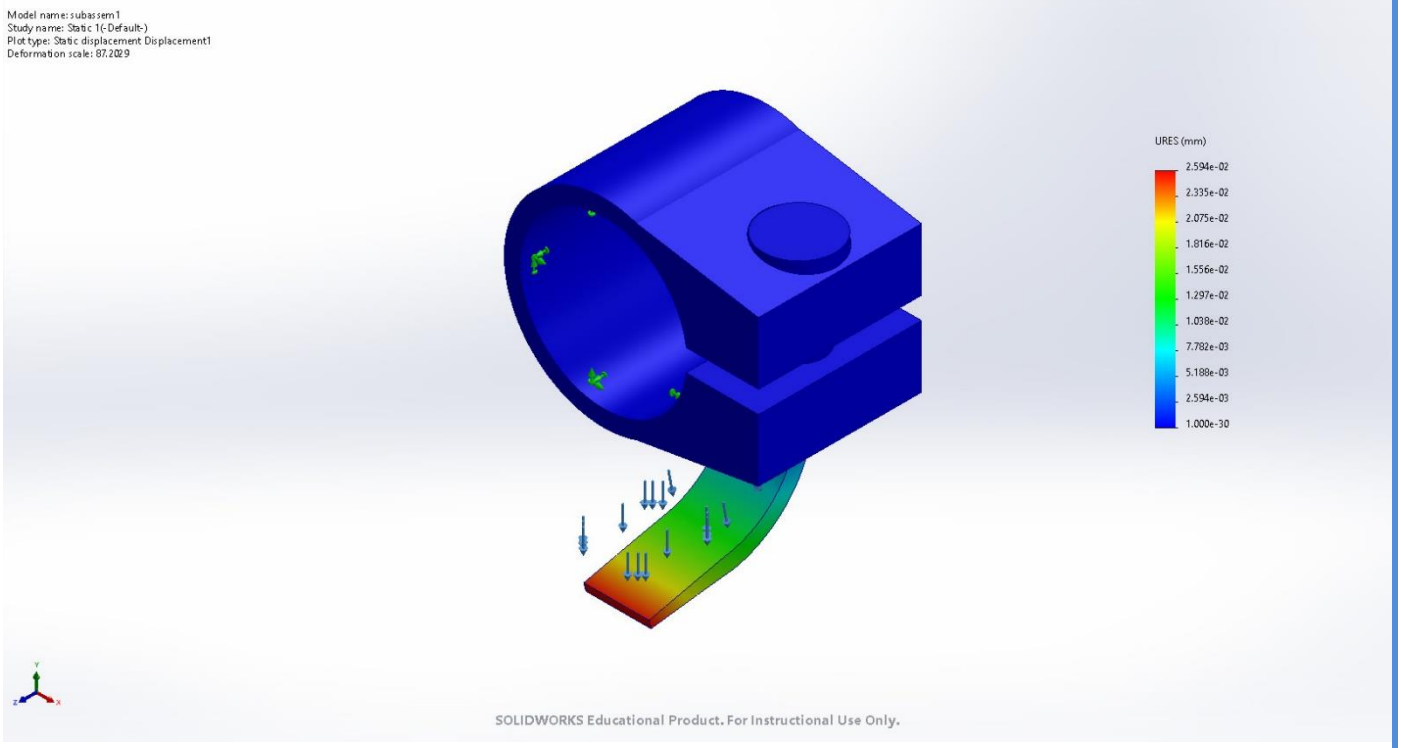
Study Results

Name	Type	Min	Max
Stress1	VON: von Mises Stress	1.065e-01N/m^2 Node: 58240	1.720e+07N/m^2 Node: 10870



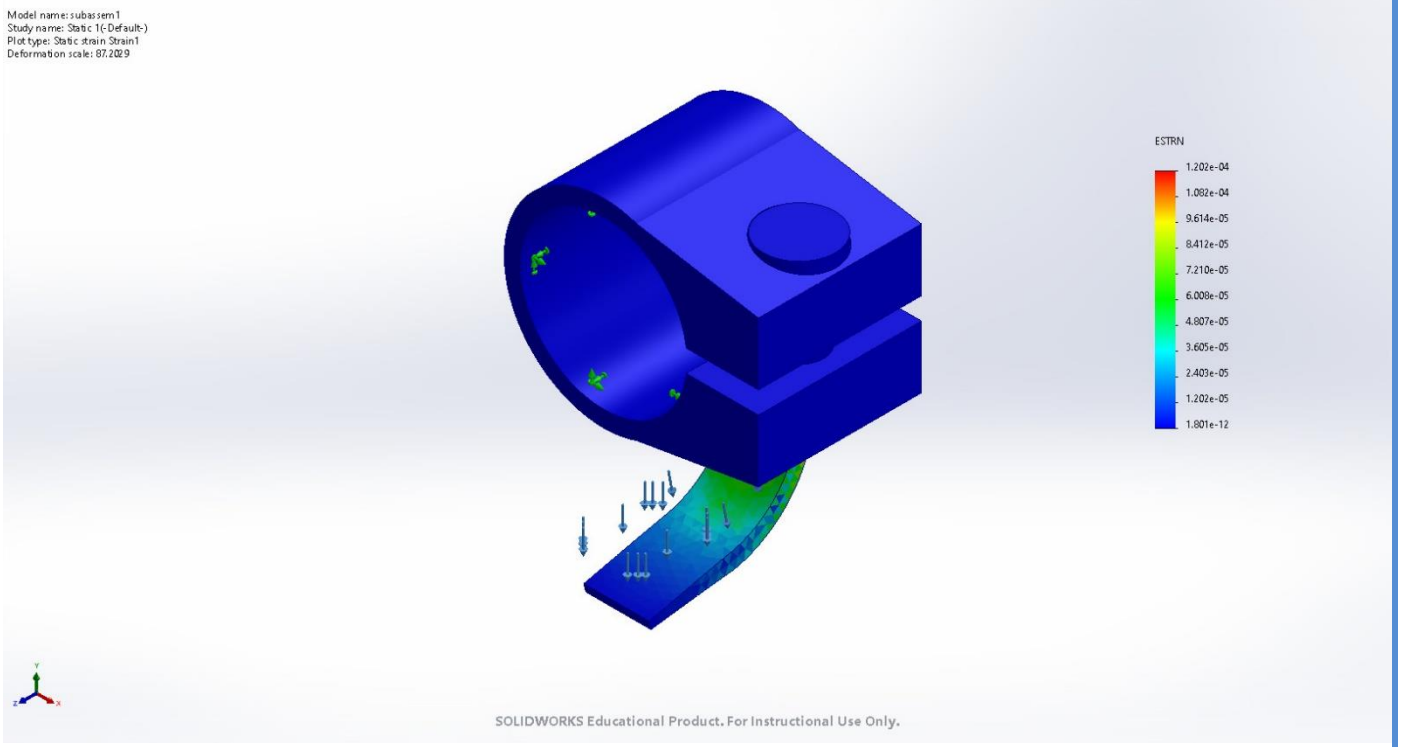
subassem1-Static 1-Stress-Stress1

Name	Type	Min	Max
Displacement1	URES: Resultant Displacement	0.000e+00mm Node: 14	2.594e-02mm Node: 4211



subassem1-Static 1-Displacement-Displacement1

Name	Type	Min	Max
Strain1	ESTRN: Equivalent Strain	1.801e-12 Element: 20894	1.202e-04 Element: 20918



subassem1-Static 1-Strain-Strain1

Conclusion