

Simulation of Loofah afwasborstel

Date: zondag 15 december 2024

Designer: Solidworks

Study name: Static 3

Analysis type: Static

Table of Contents

Description Fout! Bladwijzer niet gedefinieerd.

Assumptions Fout! Bladwijzer niet gedefinieerd.

Model Information 2

Study Properties 3

Units 3

Material Properties 4

Loads and Fixtures 5

Connector Definitions Fout! Bladwijzer niet gedefinieerd.

Interaction Information 6

Mesh information 6

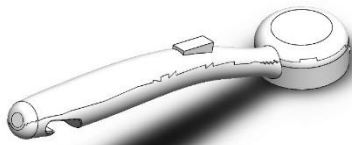
Sensor Details 6

Resultant Forces 7

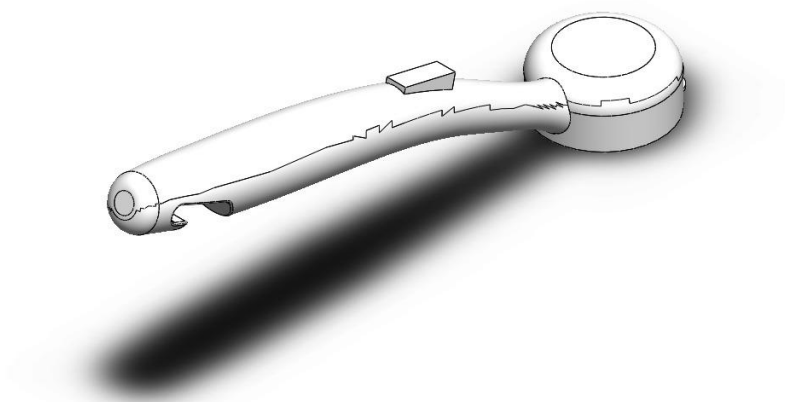
Beams 7

Study Results 8

Conclusion Fout! Bladwijzer niet gedefinieerd.



Model Information

 Model name: Ergonomische afwawsborstel 2 ribbels Current Configuration: Default			
Solid Bodies			
Document Name and Reference	Treated As	Volumetric Properties	Document Path/Date Modified
Boss-Extrude8 	Solid Body	Mass:0,00313627 kg Volume:3,07478e-06 m^3 Density:1.020 kg/m^3 Weight:0,0307355 N	Dec 15 18:48:33 2024
Boss-Extrude12 	Solid Body	Mass:0,0492542 kg Volume:4,82886e-05 m^3 Density:1.020 kg/m^3 Weight:0,482691 N	Dec 15 18:48:33 2024



Study Properties

Study name	Static 3
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	On
Compute free body forces	On
Friction	Off
Use Adaptive Method:	Off
Result folder	SOLIDWORKS document

Units

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

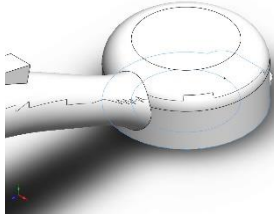


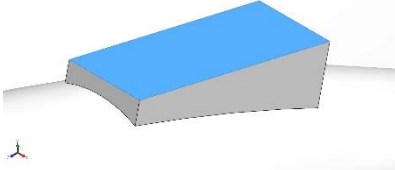
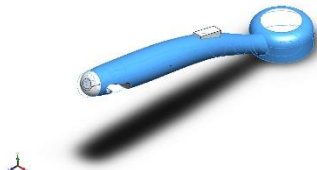
Material Properties

Model Reference	Properties	Components
	Name: Custom Plastic Model type: Linear Elastic Isotropic Default failure criterion: Max von Mises Stress Yield strength: 5e+07 N/m ² Tensile strength: 3e+07 N/m ² Elastic modulus: 2e+09 N/m ² Poisson's ratio: 0,394 Mass density: 1.020 kg/m ³ Shear modulus: 3,189e+08 N/m ² Thermal expansion coefficient: 0,0001 /Kelvin	SolidBody 1(Boss-Extrude8)(Loofah afwasborstel), SolidBody 2(Boss-Extrude12)(Loofah afwasborstel)
Curve Data:N/A		



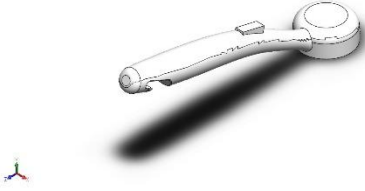
Loads and Fixtures

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)	-0,00127006	194,843	-45,1203	199,999
Reaction Moment(N.m)	0	0	0	0

Load name	Load Image	Load Details
Force-1		Entities: 1 face(s) Type: Apply normal force Value: 200 N
Temperature-1		Entities: 4 face(s) Temperature: 80 Celsius



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	7,43685 mm
Minimum element size	0,382683 mm
Mesh Quality	High

Sensor Details

No Data



Resultant Forces

Reaction forces

Selection set	Units	Sum X	Sum Y	Sum Z	Resultant
Entire Model	N	-0,00127006	194,843	-45,1203	199,999

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	0	0	0

Free body moments

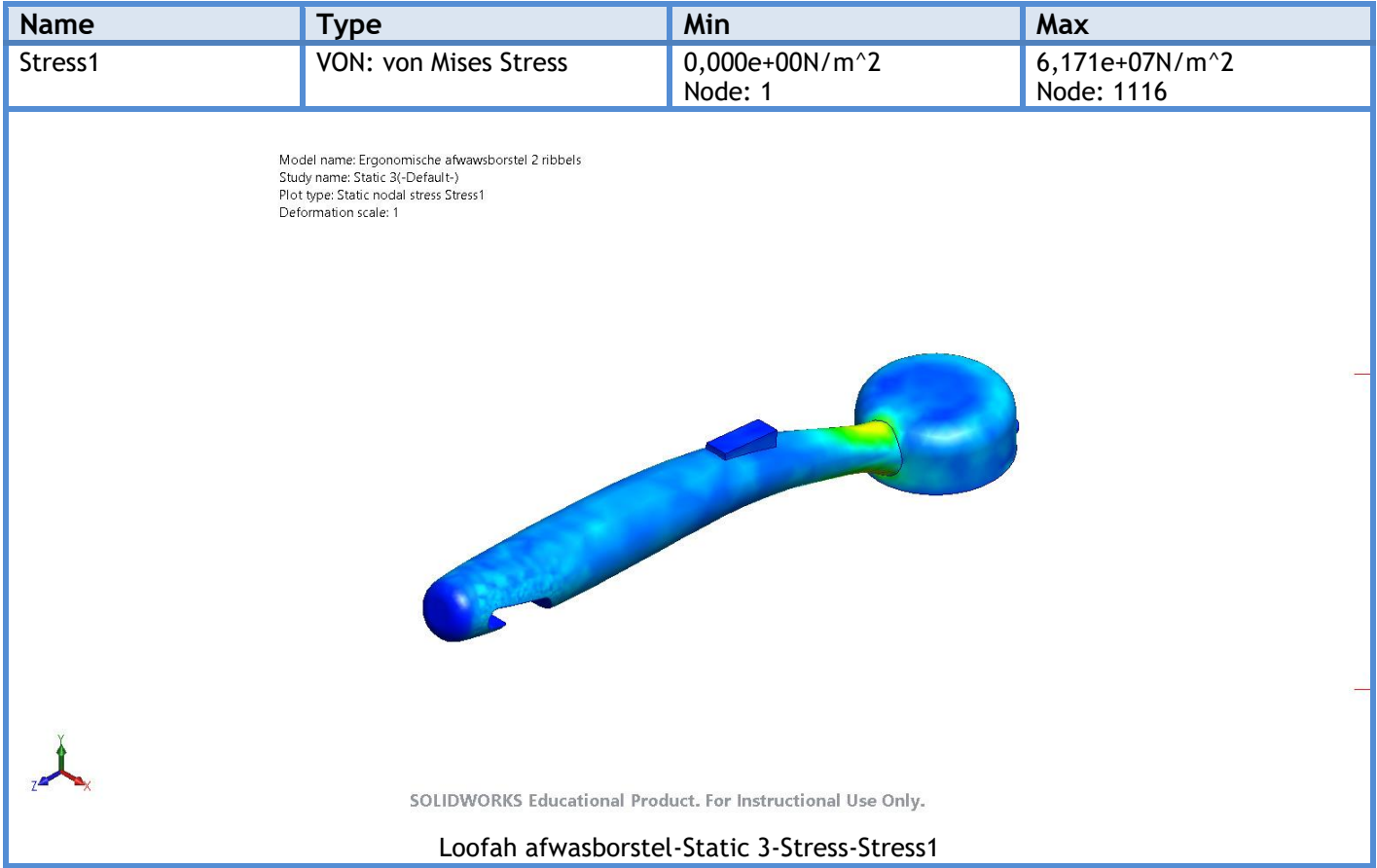
Selection set	Units	Sum X	Sum Y	Sum Z	Resultant
Entire Model	N.m	0	0	0	0

Beams

No Data



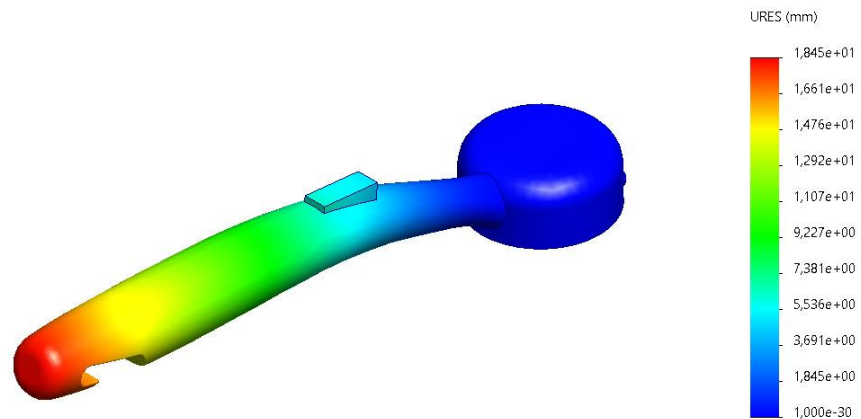
Study Results



Name	Type	Min	Max
Displacement1	URES: Resultant Displacement	0,000e+00mm Node: 1	1,845e+01mm Node: 21721



Model name: Ergonomische afwasborstel 2 ribbels
 Study name: Static 3(-Default-)
 Plot type: Static displacement: Displacement1
 Deformation scale: 1

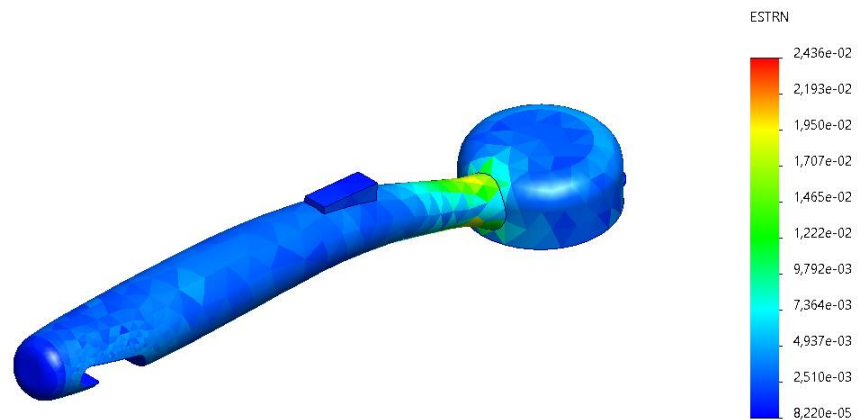


SOLIDWORKS Educational Product. For Instructional Use Only.

Loofah afwasborstel-Static 3-Displacement-Displacement1

Name	Type	Min	Max
Strain1	ESTRN: Equivalent Strain	0,000e+00 Element: 1	2,436e-02 Element: 6799

Model name: Ergonomische afwasborstel 2 ribbels
 Study name: Static 3(-Default-)
 Plot type: Static strain Strain1
 Deformation scale: 1



SOLIDWORKS Educational Product. For Instructional Use Only.

Loofah afwasborstel-Static 3-Strain-Strain1



SOLIDWORKS

Analyzed with SOLIDWORKS Simulation

Simulation of Loofah afwasborstel

