



Description

No Data

Simulation of carlift-test

Date: Wednesday, January 29, 2014

Designer: Solidworks

Study name: Study 2

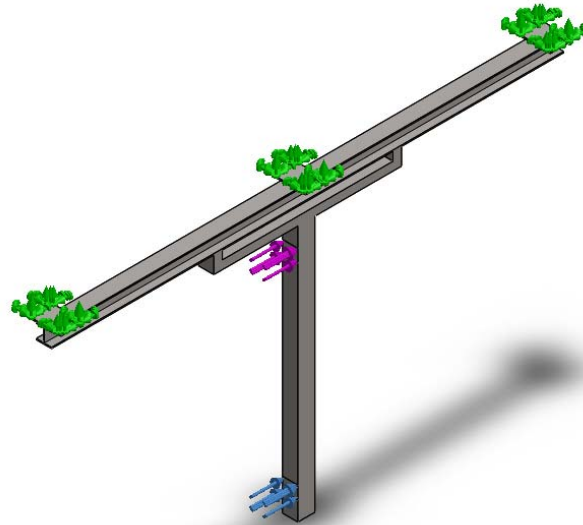
Analysis type: Static

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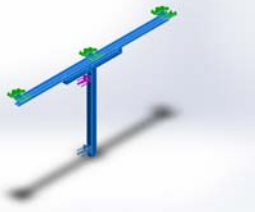
Assumptions

Model Information



Model name: carlift-test
Current Configuration: Default

Solid Bodies

Document Name and Reference	Treated As	Volumetric Properties	Document Path/Date Modified
 Cut-Extrude1	Solid Body	Mass: 1521.91 kg Volume: 0.195117 m ³ Density: 7800 kg/m ³ Weight: 14914.7 N	F:\MAIN\work\MIR\lajvard ei-neighbor\carlift- test.SLDPRT Jan 29 16:50:15 2014

Study Properties

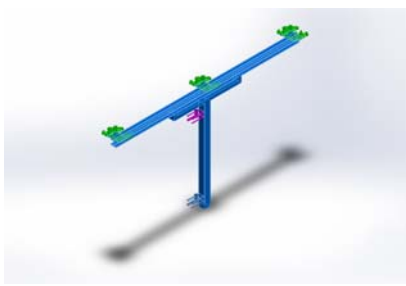
Study name	Study 2
Analysis type	Static
Mesh type	Solid Mesh
Thermal Effect:	On
Thermal option	Include temperature loads
Zero strain temperature	298 Kelvin
Include fluid pressure effects from SolidWorks Flow Simulation	Off
Solver type	FFEPlus
Inplane Effect:	Off
Soft Spring:	Off
Inertial Relief:	Off
Incompatible bonding options	Automatic
Large displacement	Off
Compute free body forces	On
Friction	Off
Use Adaptive Method:	Off
Result folder	SolidWorks document (F:\MAIN\work\MIR\lajvardei-neighbor)

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
	<p> Name: Plain Carbon Steel Model type: Linear Elastic Isotropic Default failure criterion: Unknown Yield strength: 2.20594e+008 N/m² Tensile strength: 3.99826e+008 N/m² Elastic modulus: 2.1e+011 N/m² Poisson's ratio: 0.28 Mass density: 7800 kg/m³ Shear modulus: 7.9e+010 N/m² Thermal expansion coefficient: 1.3e-005 /Kelvin </p>	<p>SolidBody 1(Cut-Extrude1)(carlift-test)</p>
Curve Data:N/A		

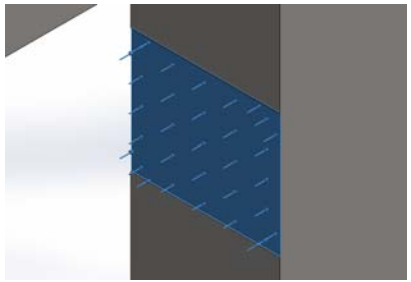
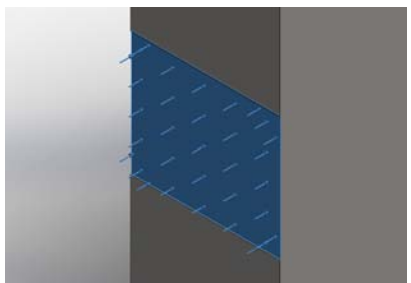


Loads and Fixtures

Fixture name	Fixture Image	Fixture Details
Fixed-1		Entities: 3 face(s) Type: Fixed Geometry

Resultant Forces

Components	X	Y	Z	Resultant
Reaction force(N)	1.29795	-20.6649	24994.7	24994.7
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: 12500 N
Force-2		Entities: 1 face(s) Type: Apply normal force Value: 12500 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	4 Points
Element Size	63.9944 mm
Tolerance	3.19972 mm
Mesh Quality	High

Mesh Information - Details

Total Nodes	21757
Total Elements	11221
Maximum Aspect Ratio	22.025
% of elements with Aspect Ratio < 3	45.5
% of elements with Aspect Ratio > 10	2.95
% of distorted elements(Jacobian)	0
Time to complete mesh(hh:mm:ss):	00:00:04
Computer name:	SAEID-PC



Model name: carlift-test
Study name: Study 2
Mesh type: Solid mesh



Sensor Details

No Data

Resultant Forces

Reaction Forces

Selection set	Units	Sum X	Sum Y	Sum Z	Resultant
Entire Model	N	1.29795	-20.6649	24994.7	24994.7

Reaction Moments

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

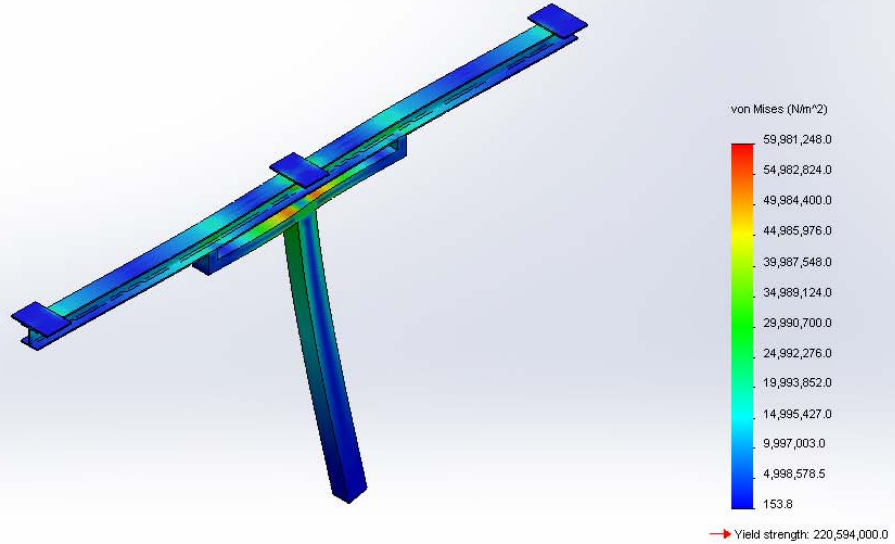
Beams
No Data



Study Results

Name	Type	Min	Max
Stress1	VON: von Mises Stress	153.832 N/m ² Node: 6921	5.99812e+007 N/m ² Node: 21484

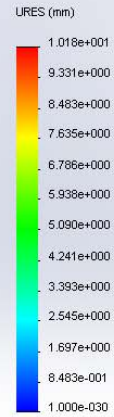
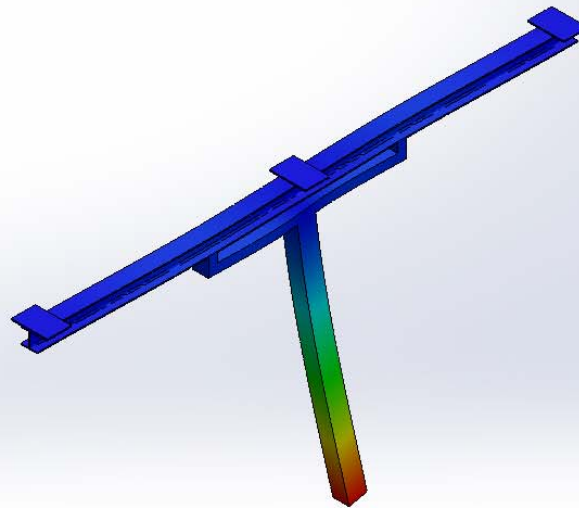
Model name: carlift-test
 Study name: Study 2
 Plot type: Static nodal stress Stress1
 Deformation scale: 59.0377



carlift-test-Study 2-Stress-Stress1

Name	Type	Min	Max
Displacement1	URES: Resultant Displacement	0 mm Node: 2739	10.1796 mm Node: 1465

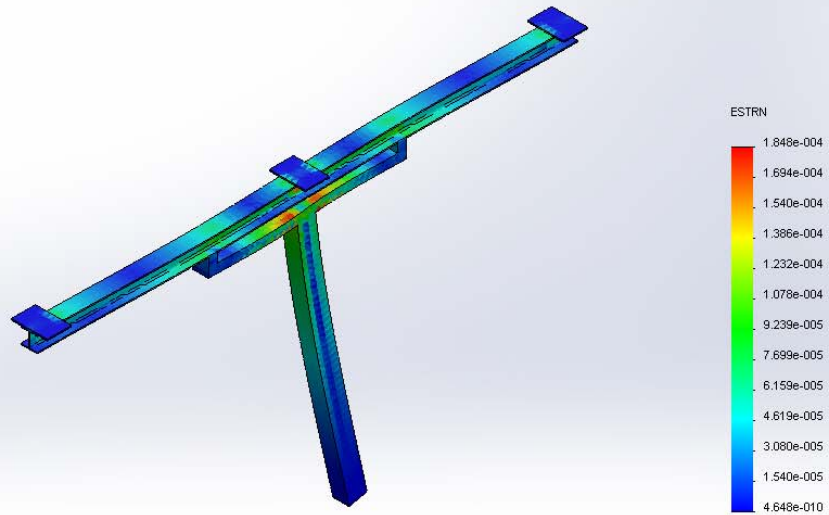
Model name: carlift-test
 Study name: Study 2
 Plot type: Static displacement Displacement1
 Deformation scale: 59.0377



carlift-test-Study 2-Displacement-Displacement1

Name	Type	Min	Max
Strain1	ESTRN: Equivalent Strain	4.64816e-010 Element: 8445	0.00018477 Element: 7050

Model name: carlift-test
Study name: Study 2
Plot type: Static strain Strain1
Deformation scale: 59.0377



carlift-test-Study 2-Strain-Strain1

Name	Type
Displacement1{1}	Deformed Shape

Model name: carlift-test
Study name: Study 2
Plot type: Deformed Shape Displacement1(1)
Deformation scale: 59.0377



carlift-test-Study 2-Displacement-Displacement1{1}



Model name: carlift-test
Study name: Study 2
Plot type: Deformed Shape Displacement1(1)
Deformation scale: 59.0377

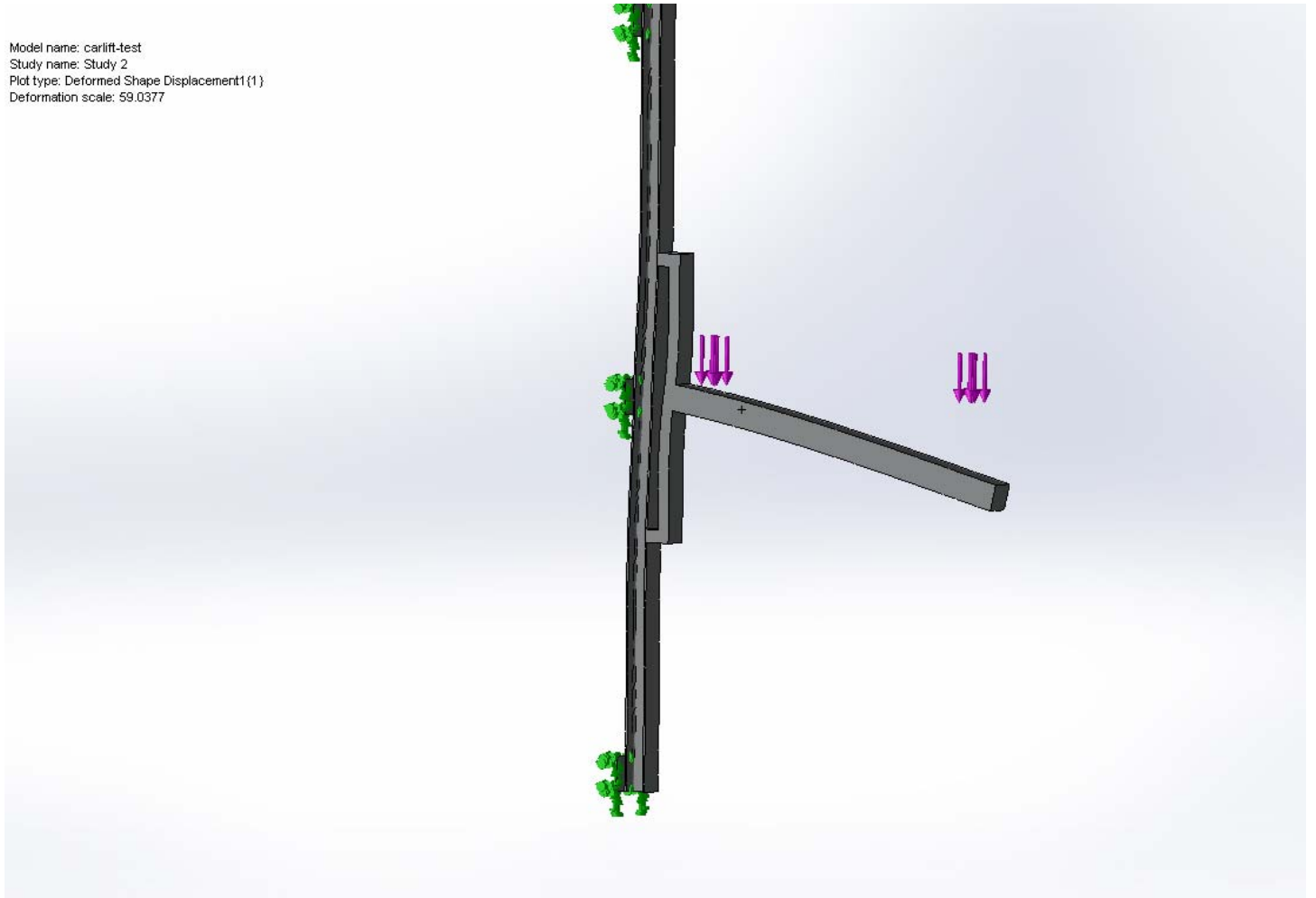


Image-1

Conclusion