

## Description

Parts for Lake Silver, Residence Oasis, Grand Promenade, i-home

# Simulation of Parts for Lake Silver, Residence Oasis, Grand Promenade, i-home

Date: 2016 年 1 月 13 日

Designer: MR LOCKSMITH

Study name: Static stress analysis

Analysis type: Buckling

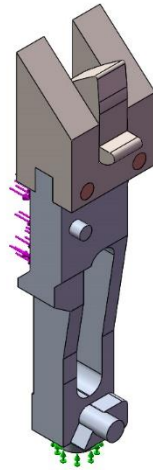
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# Assumptions




## Model Information



Model name: 裝配體 1  
Current Configuration: 默認

### Solid Bodies

Document Name and Reference	Treated As	Volumetric Properties	Document Path/Date Modified
凸台-拉伸 1 	Solid Body	Mass:0.0134039 kg Volume:1.74078e-006 m <sup>3</sup> Density:7699.93 kg/m <sup>3</sup> Weight:0.131358 N	
Boss-Extrude32 	Solid Body	Mass:0.0244435 kg Volume:9.05316e-006 m <sup>3</sup> Density:2700 kg/m <sup>3</sup> Weight:0.239547 N	

<p>凸台-拉伸 2</p> 	Solid Body	<p>Mass:0.00115592 kg Volume:1.29879e-007 m<sup>3</sup> Density:8900 kg/m<sup>3</sup> Weight:0.011328 N</p>	
<p>凸台-拉伸 2</p> 	Solid Body	<p>Mass:0.00115592 kg Volume:1.29879e-007 m<sup>3</sup> Density:8900 kg/m<sup>3</sup> Weight:0.011328 N</p>	
<p>切除-拉伸 4</p> 	Solid Body	<p>Mass:0.0495944 kg Volume:6.44083e-006 m<sup>3</sup> Density:7700 kg/m<sup>3</sup> Weight:0.486025 N</p>	

## Study Properties

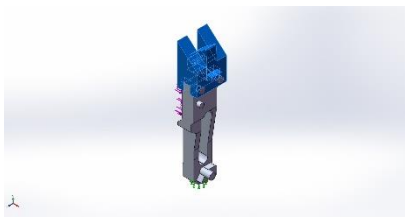
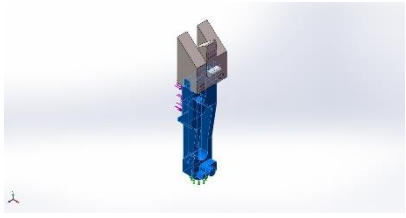
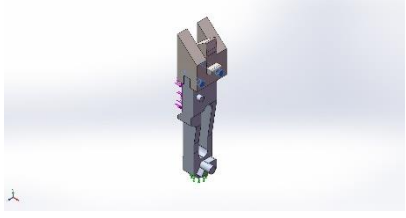
Study name	Buckling test
Analysis type	Buckling
Mesh type	Solid Mesh
Number of modes	1
Solver type	FFEPlus
Incompatible bonding options	Automatic
Thermal Effect:	On
Thermal option	Include temperature loads
Zero strain temperature	298 Kelvin
Include fluid pressure effects from SOLIDWORKS Flow Simulation	Off
Soft Spring:	Off
Result folder	

## Units

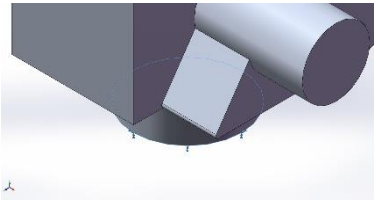
Unit system:	SI (MKS)
Length/Displacement	mm
Temperature	Kelvin
Angular velocity	Rad/sec
Pressure/Stress	N/m <sup>2</sup>



## Material Properties

Model Reference	Properties	Components
	<p> <b>Name:</b> 合金鋼  <b>Model type:</b> Linear Elastic Isotropic  <b>Default failure criterion:</b> Max von Mises Stress  <b>Yield strength:</b> 6.20422e+008 N/m<sup>2</sup>  <b>Tensile strength:</b> 7.23826e+008 N/m<sup>2</sup>  <b>Mass density:</b> 7700 kg/m<sup>3</sup>  <b>Elastic modulus:</b> 2.1e+011 N/m<sup>2</sup>  <b>Poisson's ratio:</b> 0.28  <b>Thermal expansion coefficient:</b> 1.3e-005 /Kelvin                 </p>	
Curve Data:N/A		
	<p> <b>Name:</b> 6061-T4 (SS)  <b>Model type:</b> Linear Elastic Isotropic  <b>Default failure criterion:</b> Unknown  <b>Yield strength:</b> 2.27527e+008 N/m<sup>2</sup>  <b>Tensile strength:</b> 2.4e+008 N/m<sup>2</sup>  <b>Mass density:</b> 2700 kg/m<sup>3</sup>  <b>Elastic modulus:</b> 6.9e+010 N/m<sup>2</sup>  <b>Poisson's ratio:</b> 0.33  <b>Thermal expansion coefficient:</b> 2.4e-005 /Kelvin                 </p>	
Curve Data:N/A		
	<p> <b>Name:</b> 銅  <b>Model type:</b> Linear Elastic Isotropic  <b>Default failure criterion:</b> Unknown  <b>Yield strength:</b> 2.58646e+008 N/m<sup>2</sup>  <b>Tensile strength:</b> 3.9438e+008 N/m<sup>2</sup>  <b>Mass density:</b> 8900 kg/m<sup>3</sup>  <b>Elastic modulus:</b> 1.1e+011 N/m<sup>2</sup>  <b>Poisson's ratio:</b> 0.37  <b>Thermal expansion coefficient:</b> 2.4e-005 /Kelvin                 </p>	
Curve Data:N/A		

## Loads and Fixtures

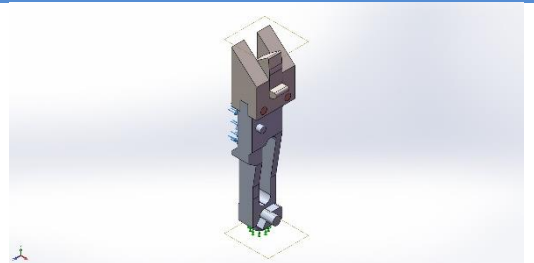
Fixture name	Fixture Image	Fixture Details
固定-1		<b>Entities:</b> 1 face(s) <b>Type:</b> Fixed Geometry

Load name	Load Image	Load Details
力-2		<b>Entities:</b> 1 face(s) <b>Type:</b> Apply normal force <b>Value:</b> 5000 N

## Connector Definitions

No Data

## Contact Information

Contact	Contact Image	Contact Properties
全域接觸		<b>Type:</b> Bonded <b>Components:</b> 1 component(s) <b>Options:</b> Compatible mesh



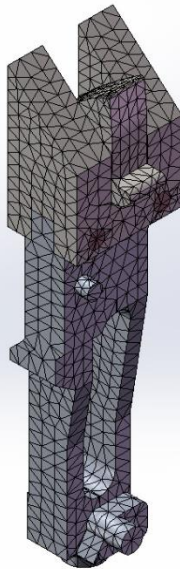
## Mesh information

Mesh type	Solid Mesh
Mesher Used:	Curvature based mesh
Jacobian points	4 Points
Maximum element size	0 mm
Minimum element size	0 mm
Mesh Quality	High
Remesh failed parts with incompatible mesh	Off

## Mesh information - Details

Total Nodes	19695
Total Elements	12007
Maximum Aspect Ratio	87.61
% of elements with Aspect Ratio < 3	92.7
% of elements with Aspect Ratio > 10	0.308
% of distorted elements(Jacobian)	0
Time to complete mesh(hh:mm:ss):	00:00:02
Computer name:	MR LOCKSMITH

Model name: 装配体1  
Study name: 装配体1 (默认)  
Mesh type: Solid Mesh



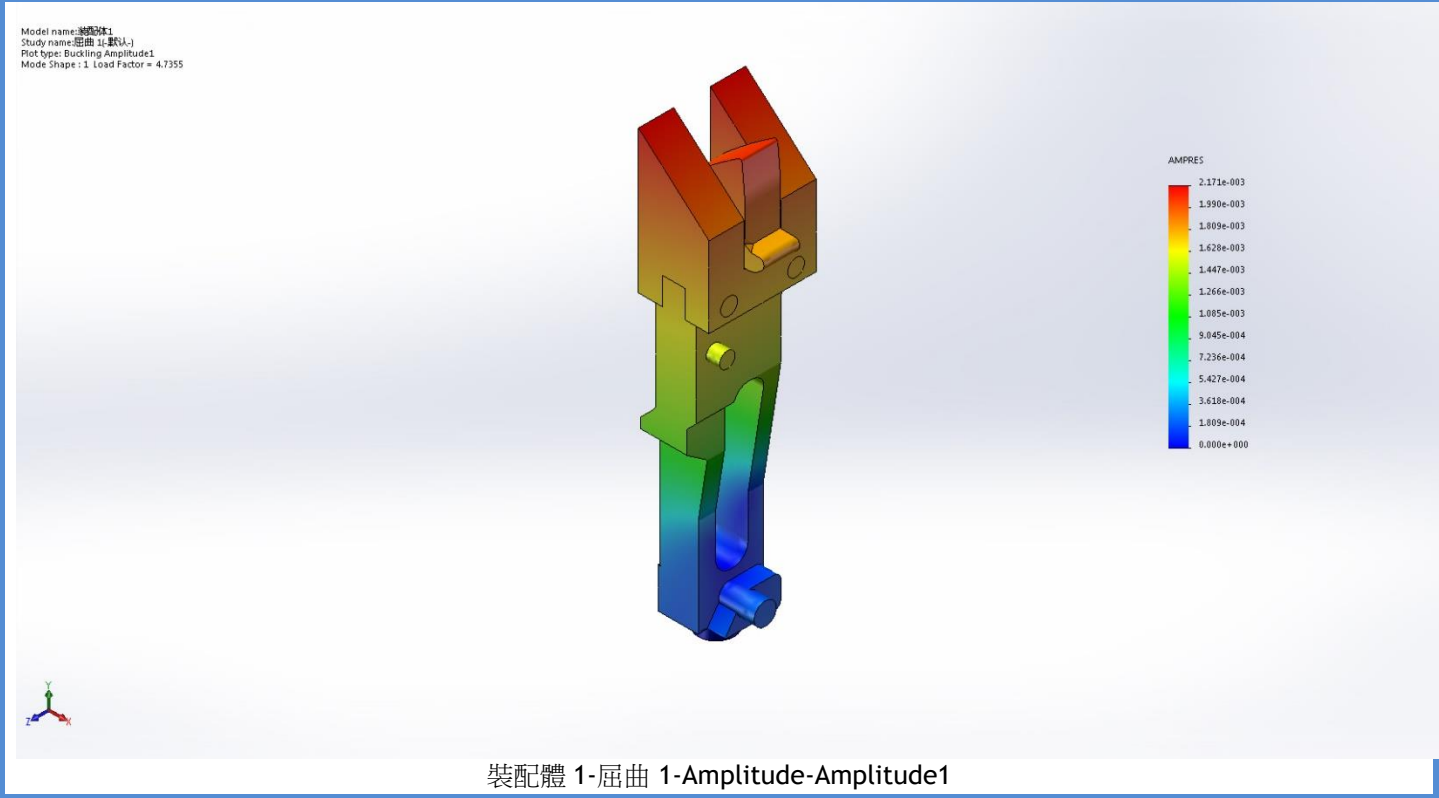
# Sensor Details

No Data



# Study Results

Name	Type	Min	Max
Amplitude1	AMPRES: Resultant Amplitude Plot for Mode Shape: 1(Load Factor = 4.7355)	0 Node: 2130	0.00217091 Node: 12693



## Mode List

Mode Number	Load Factor
1	4.7355

Model name: 裝配體1  
Study name: 靜應力分析 1 (默认)  
Plot type: Static nodal stress 应力1

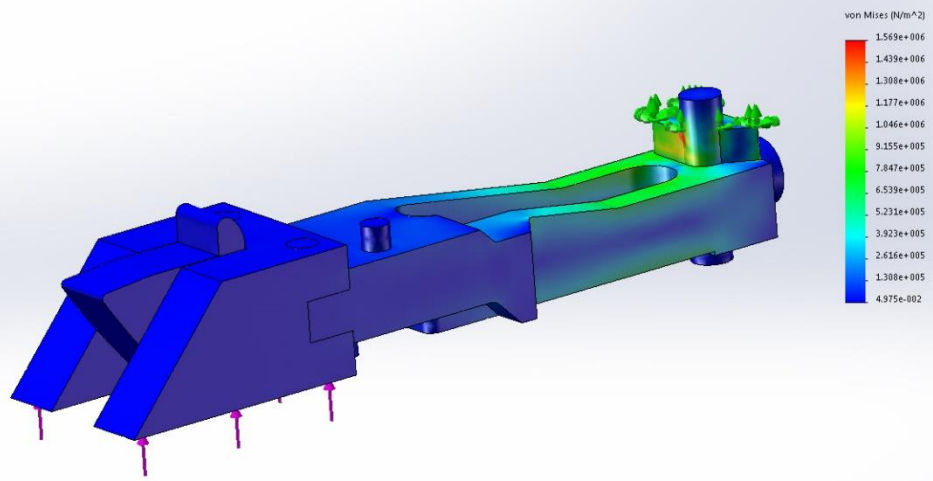


Image-1

Model name: 裝配體1  
Study name: 屈曲 1 (默认)  
Plot type: Buckling Amplitude1  
Mode Shape : 1 Load Factor = 23677

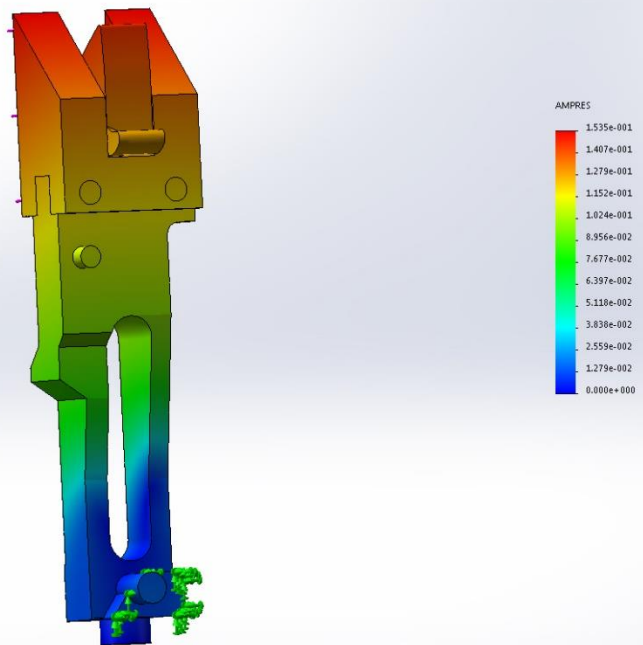


Image-2

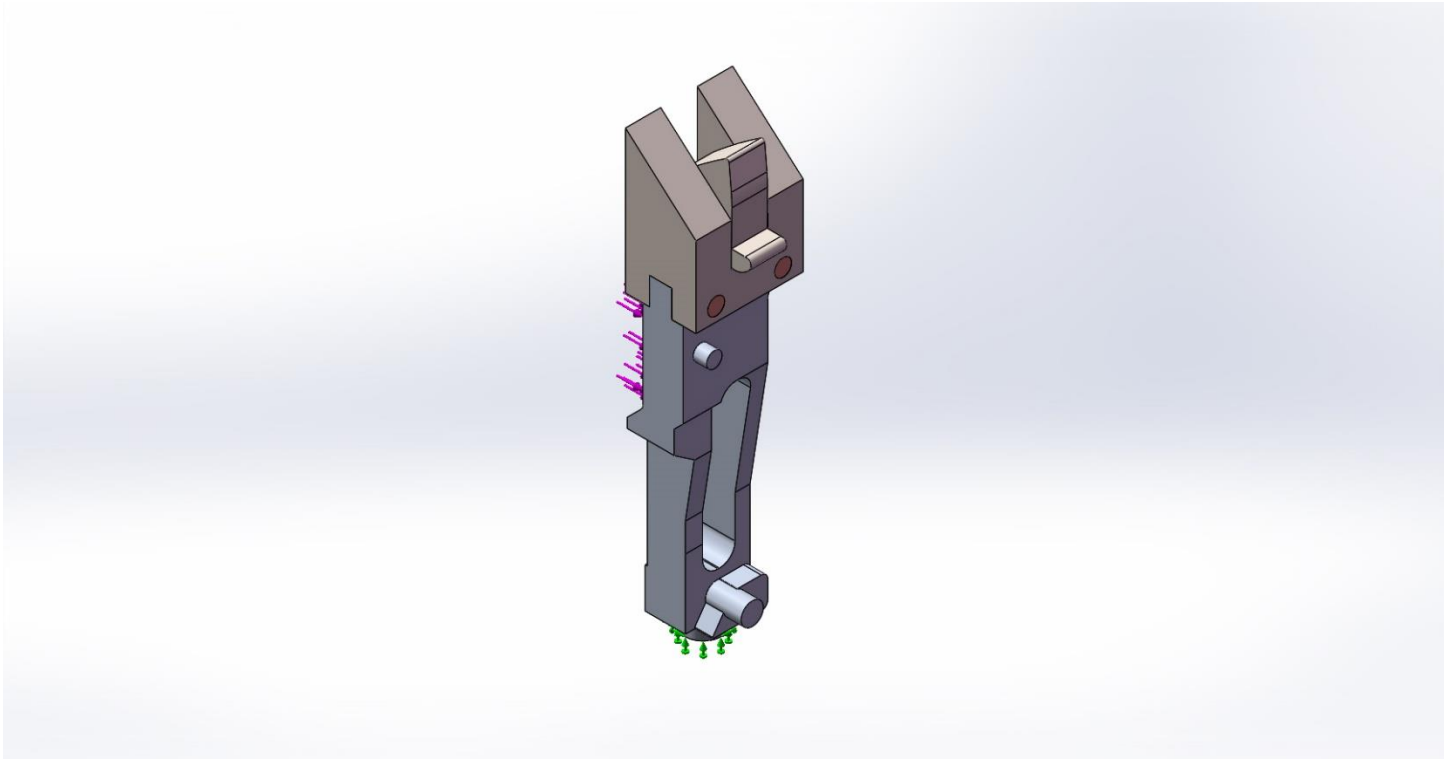


Image-3

## Conclusion