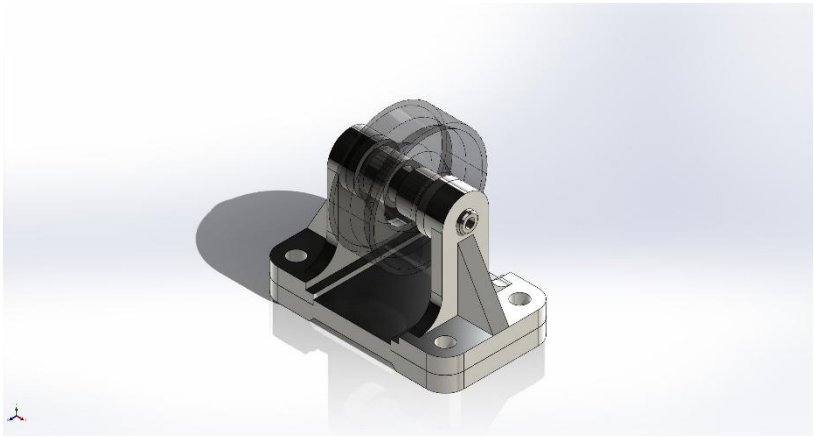


Simulation of Wheel_assembly

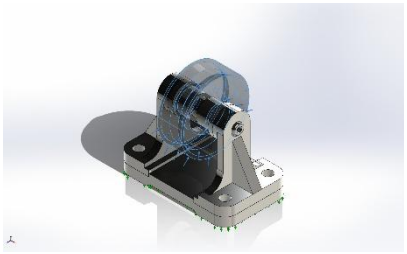
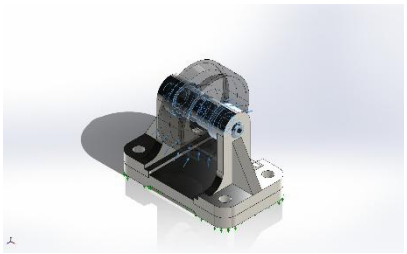
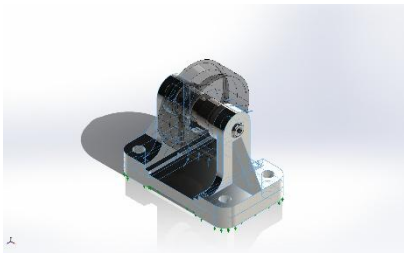
Date: miércoles, 5 de marzo de 2025
Designer: Solidworks
Study name: Static 3
Analysis type: Static

Table of Contents

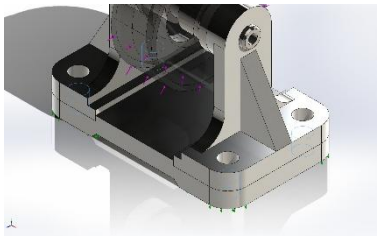
Units

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

Material Properties

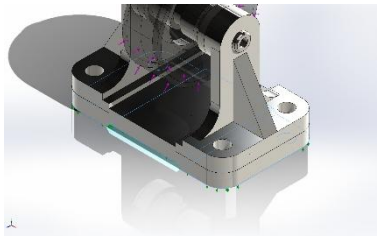
Model Reference	Properties	Components
	**Name:** 1.6657 (14NiCrMo13-4) **Model type:** Linear Elastic Isotropic **Default failure criterion:** Unknown **Yield strength:** 7.85594e+08 N/m^2 **Tensile strength:** 1.10083e+09 N/m^2 **Elastic modulus:** 2.1e+11 N/m^2 **Poisson's ratio:** 0.28 **Mass density:** 7,800 kg/m^3 **Shear modulus:** 7.9e+10 N/m^2 **Thermal expansion coefficient:** 1.1e-05 /Kelvin	SolidBody 1(Split Line1)(Wheel-1)
Curve Data:N/A		
	**Name:** 1.1191 (C45E) **Model type:** Linear Elastic Isotropic **Default failure criterion:** Unknown **Yield strength:** 5.65e+08 N/m^2 **Tensile strength:** 7.5e+08 N/m^2 **Elastic modulus:** 2.1e+11 N/m^2 **Poisson's ratio:** 0.28 **Mass density:** 7,800 kg/m^3 **Shear modulus:** 7.9e+10 N/m^2 **Thermal expansion coefficient:** 1.1e-05 /Kelvin	SolidBody 1(Chaflán3)(Wheel_1-1), SolidBody 1(Cortar-Extruir1)(Wheel_2-1), SolidBody 1(Cortar-Extruir1)(Wheel_2-2)
Curve Data:N/A		
	**Name:** 1.0044 (S275JR) **Model type:** Linear Elastic Isotropic **Default failure criterion:** Unknown **Yield strength:** 2.75e+08 N/m^2 **Tensile strength:** 4.1e+08 N/m^2 **Elastic modulus:** 2.1e+11 N/m^2 **Poisson's ratio:** 0.28 **Mass density:** 7,800 kg/m^3 **Shear modulus:** 7.9e+10 N/m^2 **Thermal expansion coefficient:** 1.1e-05 /Kelvin	SolidBody 1(Redondeo1)(Wheel_3-1), SolidBody 1(Nervio31)(Wheel_4-1), SolidBody 1(Nervio31)(Wheel_4-2)
Curve Data:N/A		

Loads and Fixtures

Fixture name	Fixture Image	Fixture Details
Fixed-1		**Entities:** 4 face(s) **Type:** Fixed Geometry

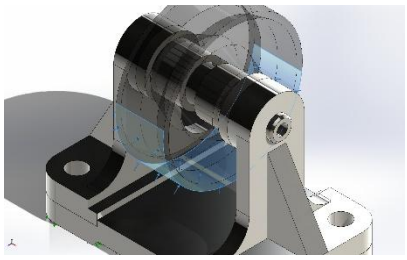
Resultant Forces

Components	X	Y	Z	Resultant
Reaction force(N)	-0.201877	-31.7126	47.7495	57.3214
Reaction Moment(N.m)	0	0	0	0

Roller/Slider-1		**Entities:** 5 face(s) **Type:** Roller/Slider

Resultant Forces

Components	X	Y	Z	Resultant
Reaction force(N)	0.396128	-340.475	1.80486	340.48
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:** 60 kgf

Resultant Forces

Reaction forces

Selection set	Units	Sum X	Sum Y	Sum Z	Resultant
Entire Model	N	2.66731e-06	-371.773	47.7495	374.827

Reaction Moments

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

Free body forces

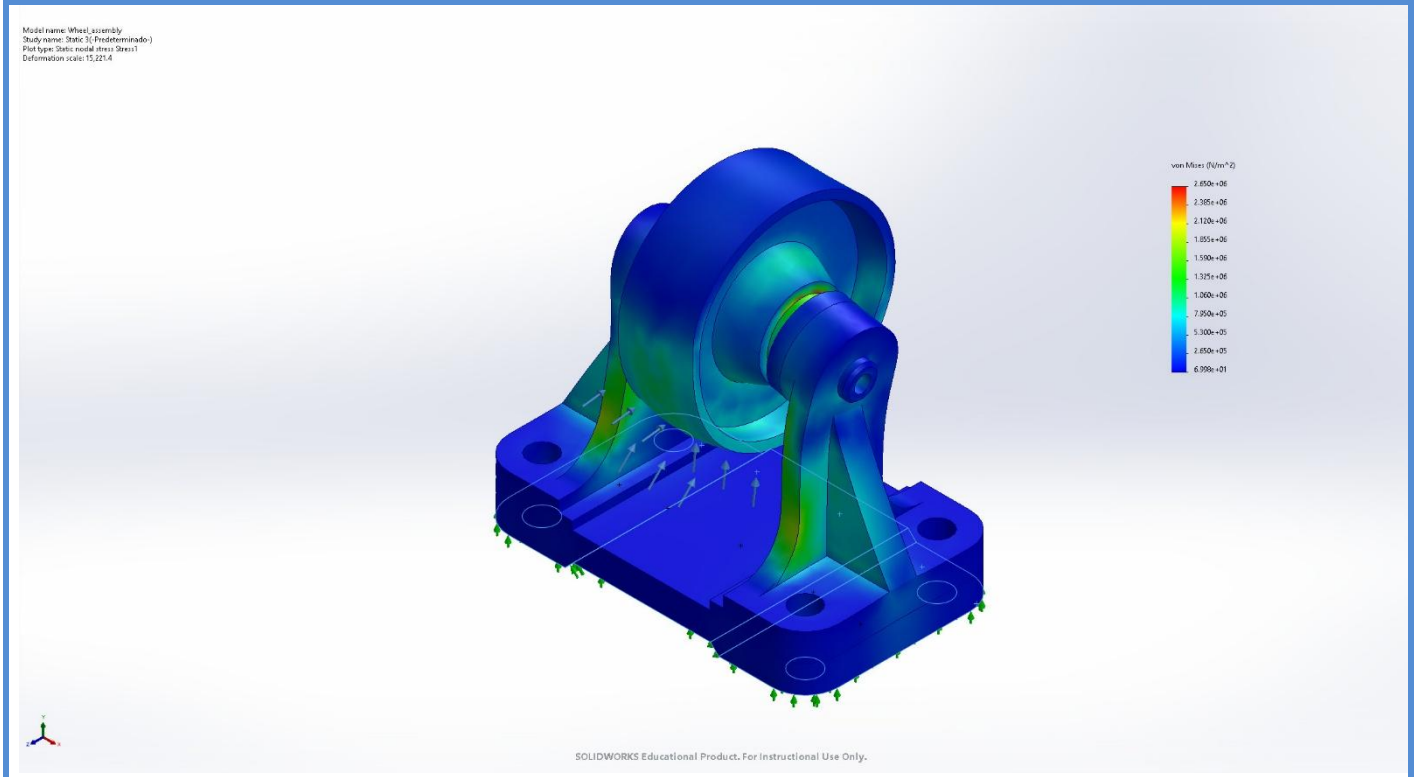
Selection set	Units	Sum X	Sum Y	Sum Z	Resultant
Entire Model	N	-2.65688e-05	-2.63453e-05	1.46627e-05	4.01867e-05

Free body moments

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

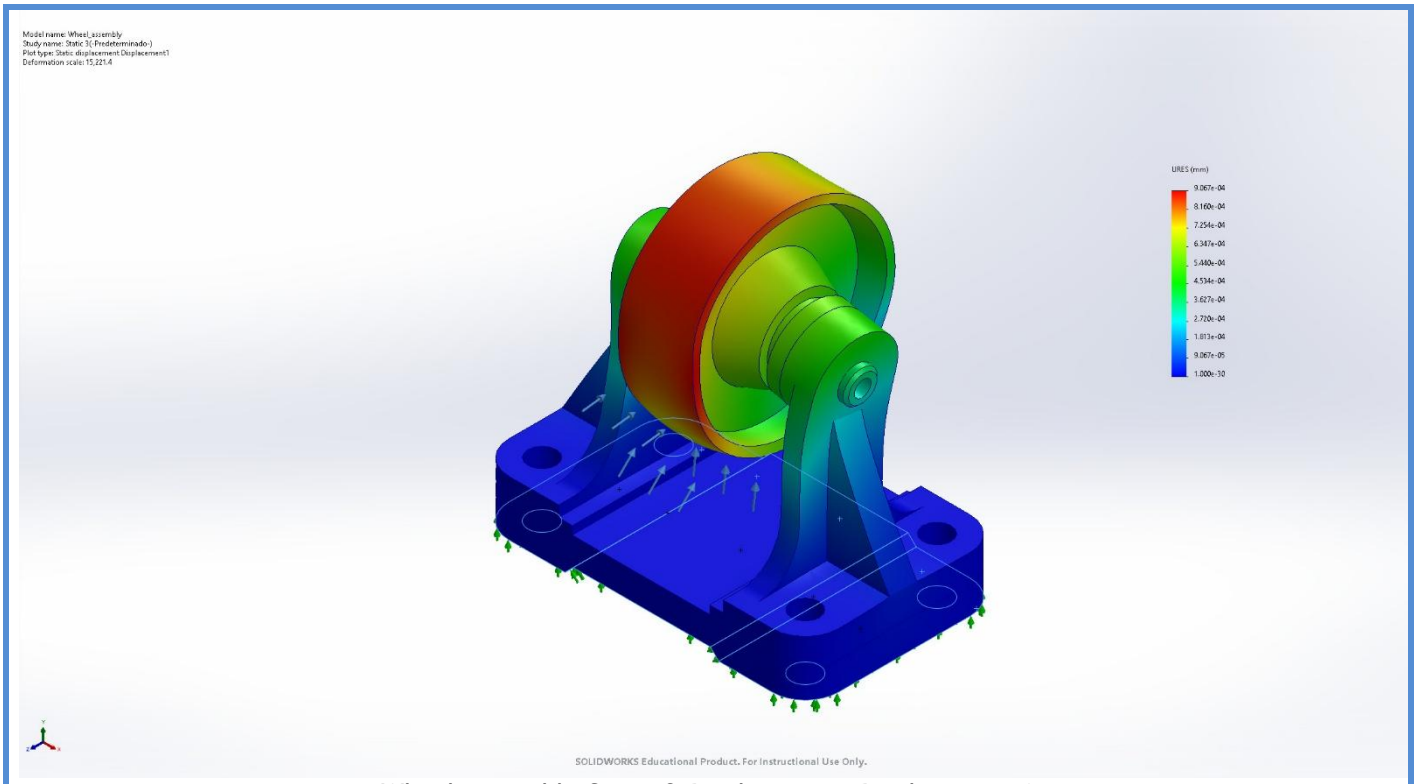
Study Results

Name	Type	Min	Max
Stress1	VON: von Mises Stress	6.998e+01N/m^2 Node: 9966	2.650e+06N/m^2 Node: 4236



Wheel_assembly-Static 3-Stress-Stress1

Name	Type	Min	Max
Displacement1	URES: Resultant Displacement	0.000e+00mm Node: 9531	9.067e-04mm Node: 4274



Wheel_assembly-Static 3-Displacement-Displacement1

Name	Type	Min	Max
Strain1	ESTRN: Equivalent Strain	5.546e-10 Element: 8099	7.957e-06 Element: 12581