



Simulation of 9C46-1125-A_DRUM-WHEEL BRAKE - 410 MM DIA

Date: 21 Mayıs 2012 Pazartesi
Designer: Solidworks
Study name: Study 1
Analysis type: Frequency

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Description

No Data

Assumptions

Model Information

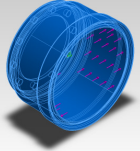


Model name: 9C46-1125-A_DRUM-WHEEL BRAKE - 410 MM DIA
Current Configuration: Default

Solid Bodies

Document Name and Reference	Treated As	Volumetric Properties	Document Path/Date Modified
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Split Line9 	Solid Body	Mass:67.5853 kg Volume:0.00932211 m ³ Density:7250 kg/m ³ Weight:662.336 N	C:\Users\barisyilmaz\Desktop\CAD-CAE\Kampana termal analiz\9C46-1125-A_DRUM-WHEEL BRAKE - 410 MM DIA.sldprt Nov 29 13:23:11 2011
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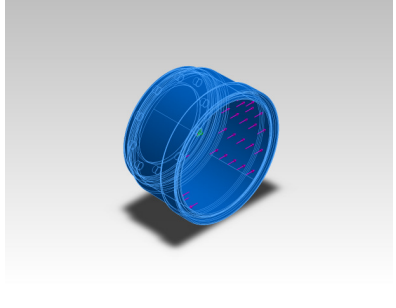
Study Properties

Study name	Study 1
Analysis type	Frequency
Mesh type	Solid Mesh
Number of frequencies	10
Solver type	Automatic
Soft Spring:	Off
Incompatible bonding options	Automatic
Thermal option	Include temperature loads
Zero strain temperature	298 Kelvin
Include fluid pressure effects from SolidWorks Flow Simulation	Off
Result folder	SolidWorks document (C:\Users\barisyilmaz\Desktop\CAD-CAE\Kampana termal analiz)

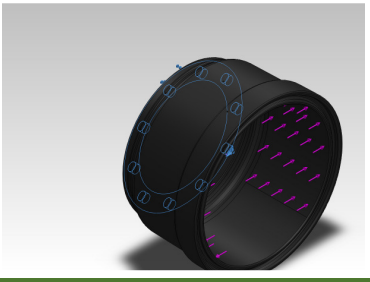
Units

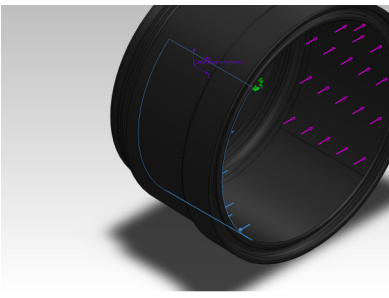
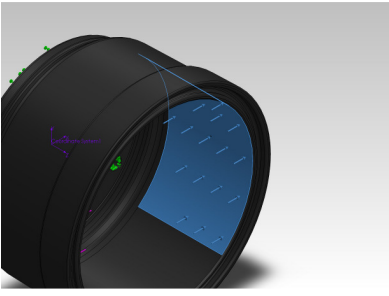
Unit system:	SI (MKS)
Length/Displacement	mm
Temperature	Kelvin
Angular velocity	Rad/sec
Pressure/Stress	N/m ²

Material Properties

Model Reference	Properties	Components
	<p> Name: 0.7050 (EN-GJS-500-7) Model type: Linear Elastic Isotropic Default failure criterion: Unknown Yield strength: 2.25e+008 N/m² Tensile strength: 3.5e+008 N/m² Mass density: 7250 kg/m³ Elastic modulus: 1.2e+011 N/m² Poisson's ratio: 0.26 Thermal expansion coefficient: 1.2e-005 /Kelvin </p>	SolidBody 1(Split Line9)(9C46-1125-A_DRUM-WHEEL BRAKE - 410 MM DIA)
Curve Data:N/A		

Loads and Fixtures

Fixture name	Fixture Image	Fixture Details
Fixed-1		Entities: 11 face(s) Type: Fixed Geometry

Load name	Load Image	Load Details
BearingLoads-1		Entities: 1 face(s) Coordinate System: Coordinate System1 Force Values: -28837 0 0 N
BearingLoads-2		Entities: 1 face(s) Coordinate System: Coordinate System1 Force Values: 28837 0 0 N

Connector Definitions

No Data

Contact Information

No Data

Mesh Information

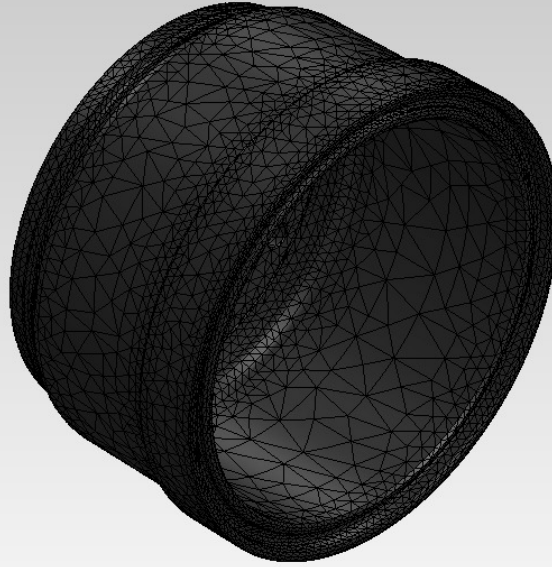
Mesh type	Solid Mesh
Mesher Used:	Curvature based mesh
Jacobian points	4 Points
Maximum element size	42.0987 mm
Minimum element size	8.41975 mm
Mesh Quality	High

Mesh Information - Details

Total Nodes	80648
Total Elements	46918
Maximum Aspect Ratio	31.011
% of elements with Aspect Ratio < 3	81.2
% of elements with Aspect Ratio > 10	1.79
% of distorted elements(Jacobian)	0
Time to complete mesh(hh:mm:ss):	00:00:04
Computer name:	BARISY



Model name: 9C46-1125-A_DRUM-WHEEL BRAKE - 410 MM DIA
Study name: Study1
Mesh type: Solid mesh



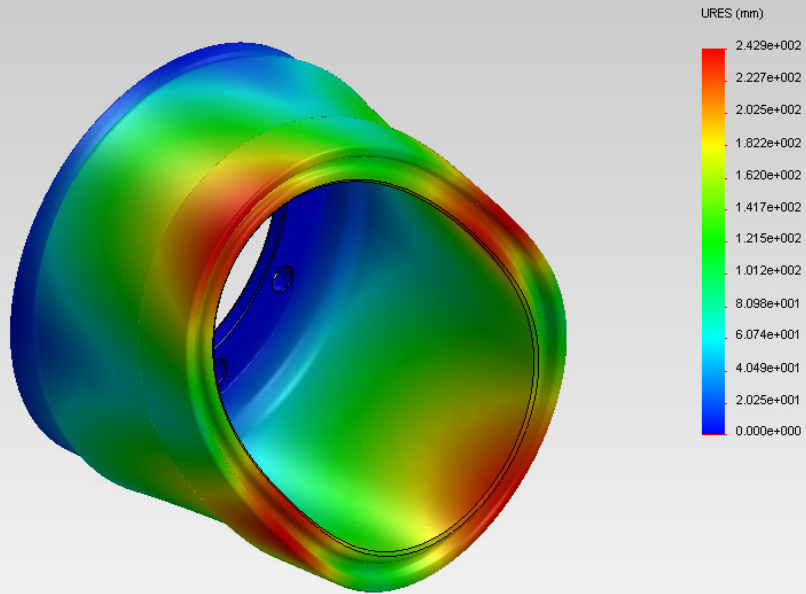
Sensor Details

No Data

Study Results

Name	Type	Min	Max
Displacement1	URES: Resultant Displacement Plot for Mode Shape: 1(Value = 566.645 Hz)	0 mm Node: 2594	242.949 mm Node: 29224

Model name: 9C46-1125-A_DRUM-WHEEL BRAKE - 410 MMDIA
Study name: Study 1
Plot type: Frequency Displacement1
Mode Shape : 1 Value = 566.65 Hz
Deformation scale: 0.256788

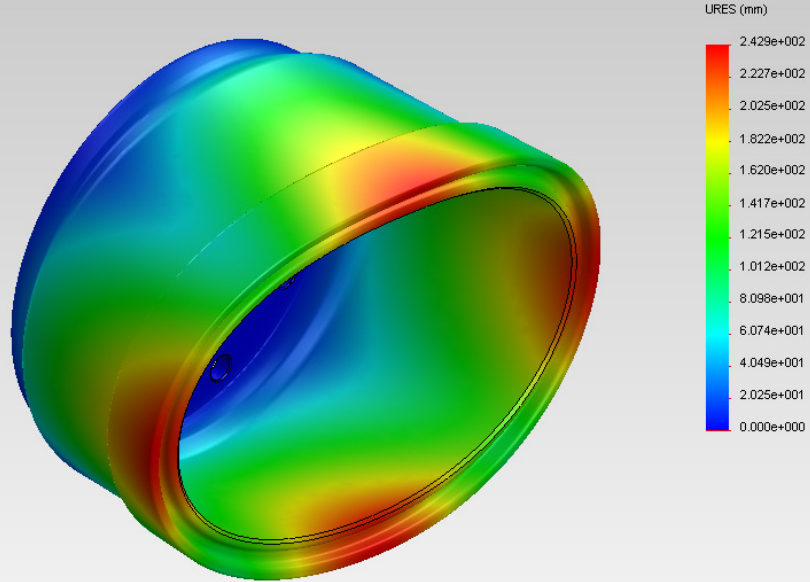


9C46-1125-A_DRUM-WHEEL BRAKE - 410 MM DIA-Study 1-Displacement-Displacement 1

Name	Type	Min	Max
Displacement2	URES: Resultant Displacement Plot for Mode Shape: 2(Value = 566.781 Hz)	0 mm Node: 2594	242.941 mm Node: 15485



Model name: 9C46-1125-A_DRUM-WHEEL BRAKE - 410 MMDIA
Study name: Study1
Plot type: Frequency Displacement2
Mode Shape : 2 Value = 566.78 Hz
Deformation scale: 0.20698

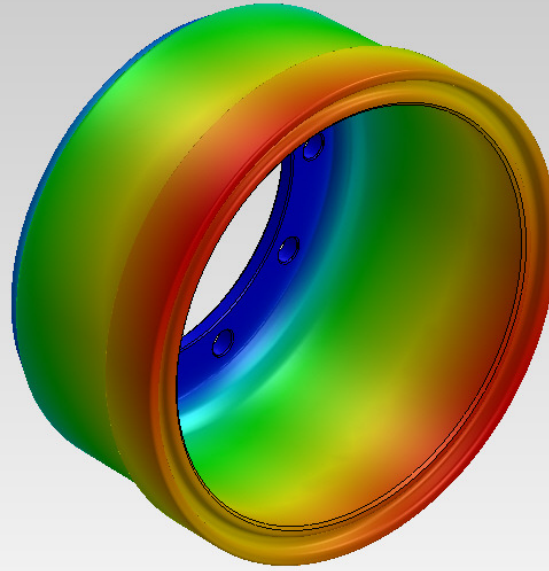


9C46-1125-A_DRUM-WHEEL BRAKE - 410 MM DIA-Study 1-Displacement-Displacement2

Name	Type	Min	Max
Displacement3	URES: Resultant Displacement Plot for Mode Shape: 3(Value = 938.376 Hz)	0 mm Node: 2594	193.406 mm Node: 29289



Model name: 9C46-1125-A_DRUM-WHEEL BRAKE - 410 MMDIA
Study name: Study1
Plot type: Frequency Displacement3
Mode Shape : 3 Value = 938.38 Hz
Deformation scale: 0.359809

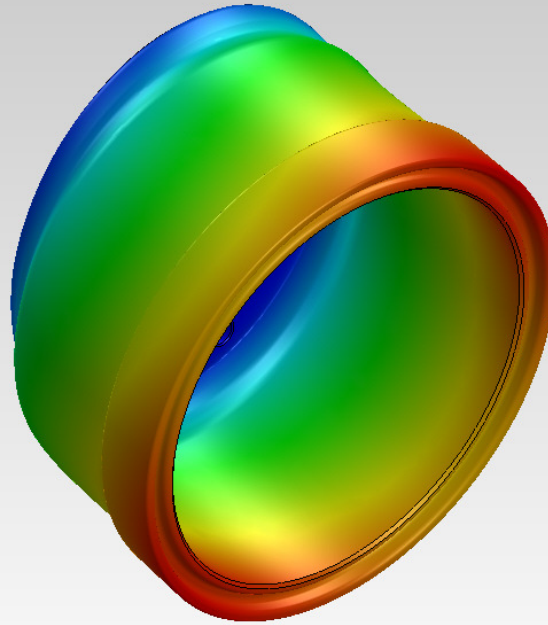


9C46-1125-A_DRUM-WHEEL BRAKE - 410 MM DIA-Study 1-Displacement-Displacement3

Name	Type	Min	Max
Displacement4	URES: Resultant Displacement Plot for Mode Shape: 4(Value = 938.489 Hz)	0 mm Node: 2594	192.988 mm Node: 29417



Model name: 9C46-1125-A_DRUM-WHEEL BRAKE - 410 MMDIA
Study name: Study1
Plot type: Frequency Displacement4
Mode Shape : 4 Value = 938.49 Hz
Deformation scale: 0.360096

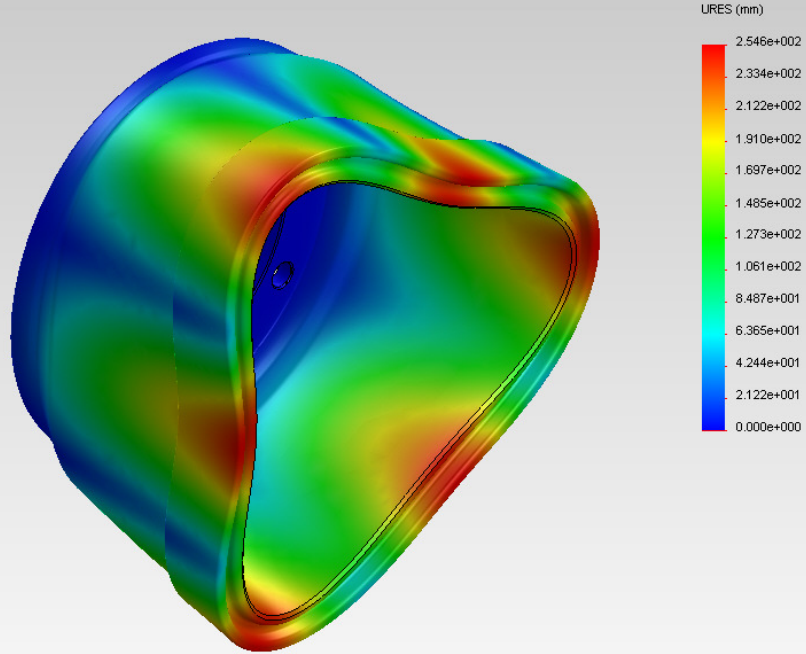


9C46-1125-A_DRUM-WHEEL BRAKE - 410 MM DIA-Study 1-Displacement-Displacement4

Name	Type	Min	Max
Displacement5	URES: Resultant Displacement Plot for Mode Shape: 5(Value = 966.833 Hz)	0 mm Node: 2594	254.612 mm Node: 3052



Model name: 9C46-1125-A_DRUM-WHEEL BRAKE - 410 MMDIA
Study name: Study1
Plot type: Frequency Displacement5
Mode Shape : 5 Value = 966.83 Hz
Deformation scale: 0.192991

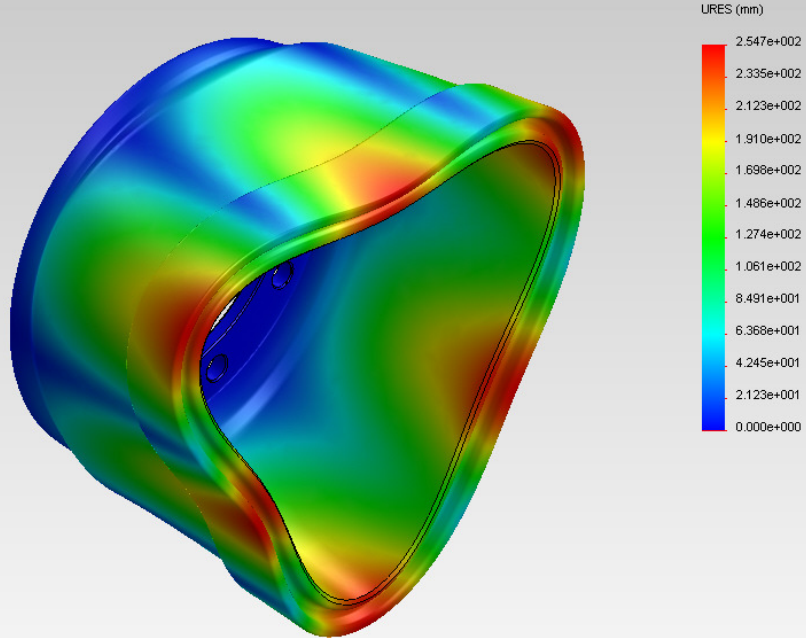


9C46-1125-A_DRUM-WHEEL BRAKE - 410 MM DIA-Study 1-Displacement-Displacement5

Name	Type	Min	Max
Displacement6	URES: Resultant Displacement Plot for Mode Shape: 6(Value = 966.964 Hz)	0 mm Node: 2594	254.725 mm Node: 3069



Model name: 9C46-1125-A_DRUM-WHEEL BRAKE - 410 MMDIA
Study name: Study1
Plot type: Frequency Displacement6
Mode Shape : 6 Value = 966.96 Hz
Deformation scale: 0.192811

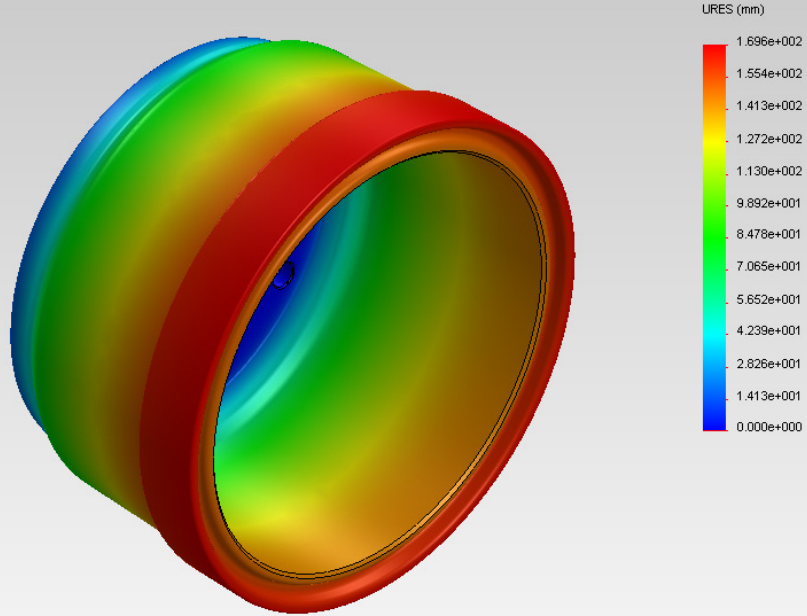


9C46-1125-A_DRUM-WHEEL BRAKE - 410 MM DIA-Study 1-Displacement-Displacement6

Name	Type	Min	Max
Displacement7	URES: Resultant Displacement Plot for Mode Shape: 7(Value = 1701.89 Hz)	0 mm Node: 2594	169.569 mm Node: 3287



Model name: 9C46-1125-A_DRUM-WHEEL BRAKE - 410 MMDIA
Study name: Study1
Plot type: Frequency Displacement7
Mode Shape : 7 Value = 1701.9 Hz
Deformation scale: 0.284443

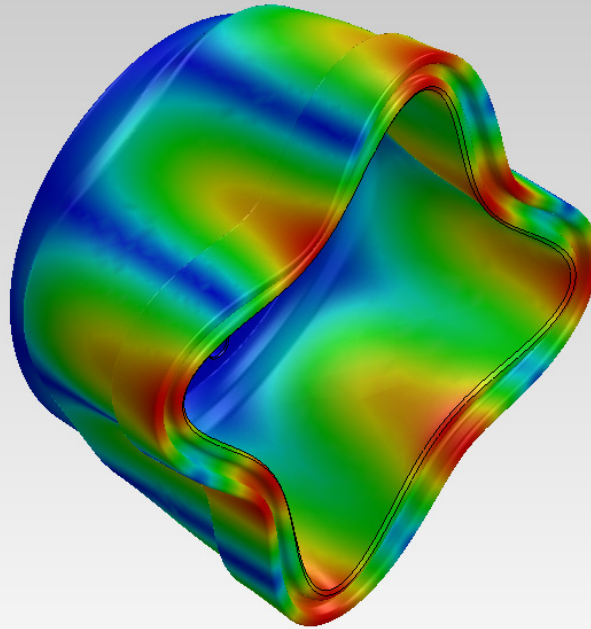


9C46-1125-A_DRUM-WHEEL BRAKE - 410 MM DIA-Study 1-Displacement-Displacement7

Name	Type	Min	Max
Displacement8	URES: Resultant Displacement Plot for Mode Shape: 8(Value = 1710.61 Hz)	0 mm Node: 2594	244.559 mm Node: 15372



Model name: 9C46-1125-A_DRUM-WHEEL BRAKE - 410 MMDIA
Study name: Study1
Plot type: Frequency Displacement8
Mode Shape : 8 Value = 1710.8 Hz
Deformation scale: 0.204299

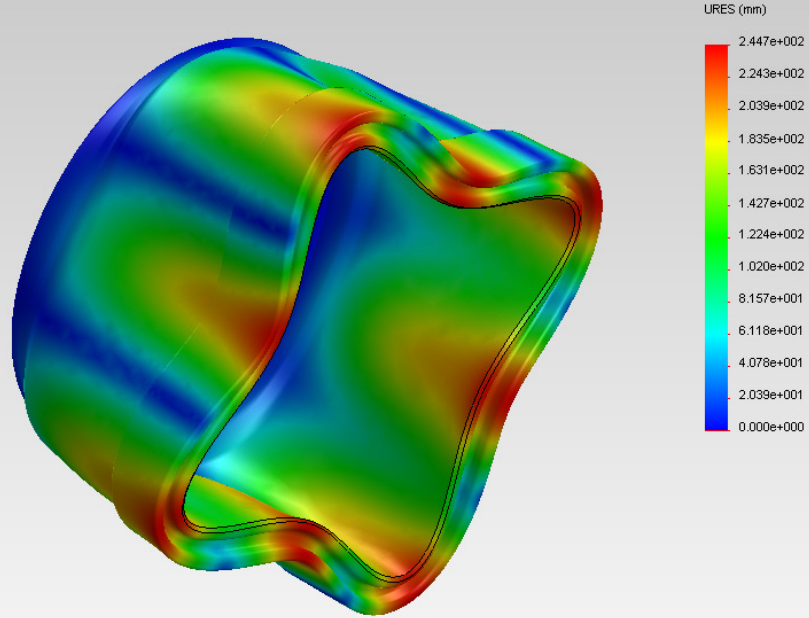


9C46-1125-A_DRUM-WHEEL BRAKE - 410 MM DIA-Study 1-Displacement-Displacement8

Name	Type	Min	Max
Displacement9	URES: Resultant Displacement Plot for Mode Shape: 9(Value = 1710.78 Hz)	0 mm Node: 2594	244.707 mm Node: 15478



Model name: 9C46-1125-A_DRUM-WHEEL BRAKE - 410 MMDIA
Study name: Study 1
Plot type: Frequency Displacement9
Mode Shape : 9 Value = 1710.8 Hz
Deformation scale: 0.200991

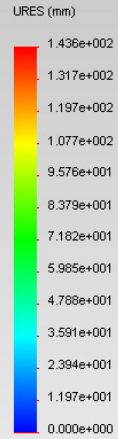
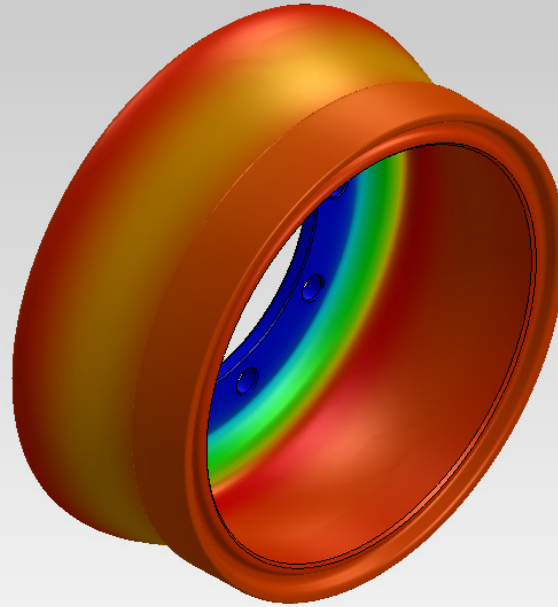


9C46-1125-A_DRUM-WHEEL BRAKE - 410 MM DIA-Study 1-Displacement-Displacement9

Name	Type	Min	Max
Displacement10	URES: Resultant Displacement Plot for Mode Shape: 10(Value = 2078.48 Hz)	0 mm Node: 2594	143.643 mm Node: 5566



Model name: 9C46-1125-A_DRUM-WHEEL BRAKE - 410 MMDIA
Study name: Study1
Plot type: Frequency Displacement10
Mode Shape : 10 Value = 2078.5 Hz
Deformation scale: 0.354858



9C46-1125-A_DRUM-WHEEL BRAKE - 410 MM DIA-Study 1-Displacement-Displacement10

Mode List

Frequency Number	Rad/sec	Hertz	Seconds
1	3560.3	566.65	0.0017648
2	3561.2	566.78	0.0017643
3	5896	938.38	0.0010657
4	5896.7	938.49	0.0010655
5	6074.8	966.83	0.0010343
6	6075.6	966.96	0.0010342
7	10693	1701.9	0.00058758
8	10748	1710.6	0.00058459



9	10749	1710.8	0.00058453
10	13059	2078.5	0.00048112

Mass Participation (Normalized)

Mode Number	Frequency(Hertz)	X direction	Y direction	Z direction
1	566.65	4.2721e-009	5.555e-011	2.0691e-008
2	566.78	1.6676e-010	1.1388e-007	1.6724e-008
3	938.38	1.5522e-010	0.38595	0.32739
4	938.49	3.4339e-008	0.3274	0.38598
5	966.83	2.954e-010	1.079e-006	6.4933e-007
6	966.96	5.8183e-009	1.8318e-006	2.0199e-007
7	1701.9	1.3464e-012	1.2137e-010	1.5311e-010
8	1710.6	6.5866e-009	2.2273e-010	1.4525e-008
9	1710.8	3.6944e-009	2.5087e-010	9.7554e-010
10	2078.5	0.7178	6.5527e-008	4.5936e-008
		Sum X = 0.7178	Sum Y = 0.71336	Sum Z = 0.71337

Conclusion