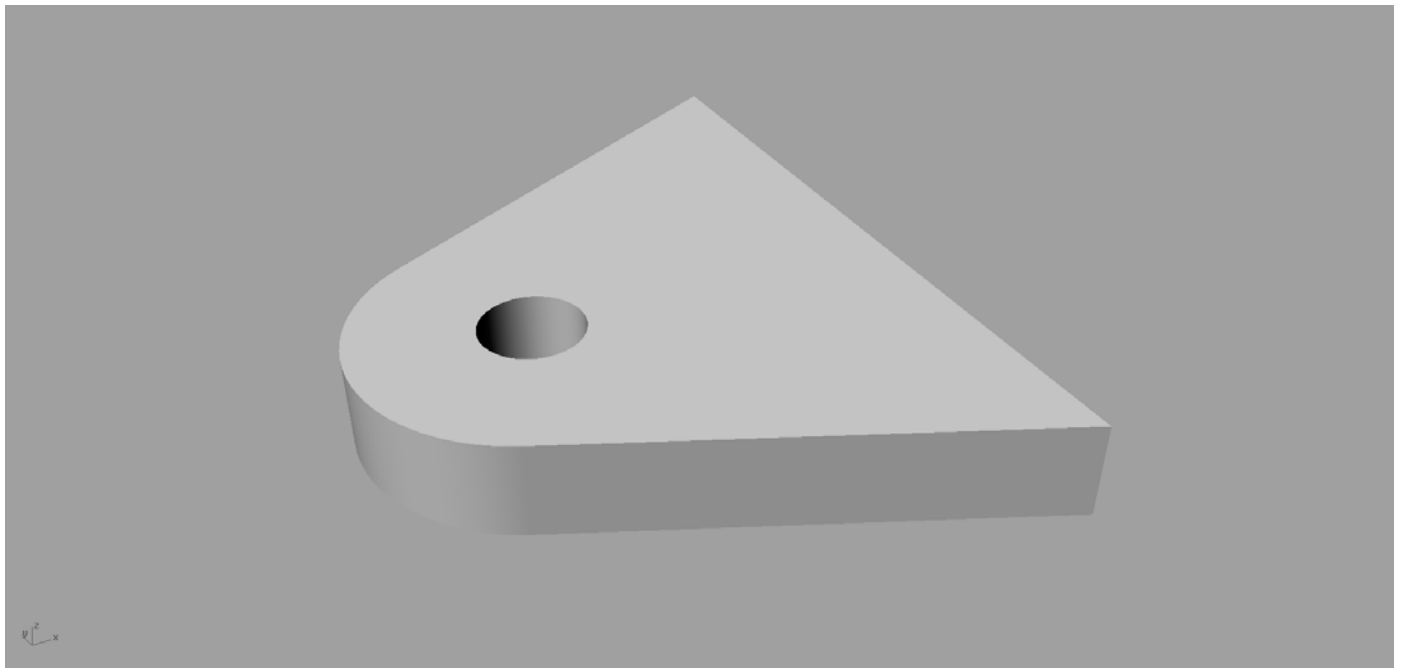


Scan&Solve™ Simulation Summary

Tue Aug 23, 2011 10:05:18

Geometry



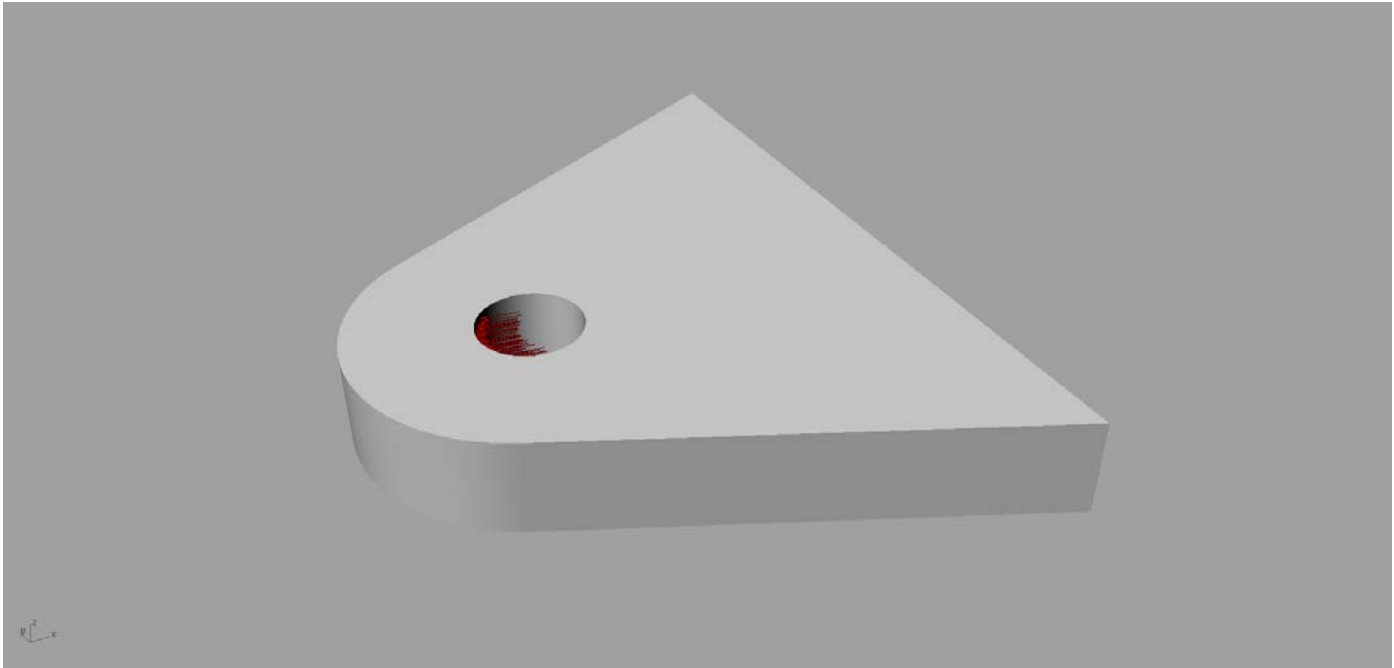
Geometry Summary

Quantity	Unit
Volume	1.63948e+06 mm ³
Surface Area	121642 mm ²
Mass	0.0129027 Mg
Bounding Box	
min. corner	{-71,-150,-5.68434e-14}
max. corner	{150,150,40}

Material Properties

Property	Value
Description	Steel AISI 1018 Cold Drawn
Density	7.87e-09 Mg/mm ³
Elastic Modulus	205000 MPa
Poisson Ratio	0.33
Default Failure Criterion	von Mises
Tensile Yield Strength	370 MPa

Loads & Restraints



Load Summary

Description	Type	Definition
Load 2	Vector Force per Face	{-473000,-77000,107000} N

Restraint Summary

Description	Definition
Restraint 5	X-Fixed,Y-Fixed,Z-Fixed

Simulation Summary

Settings

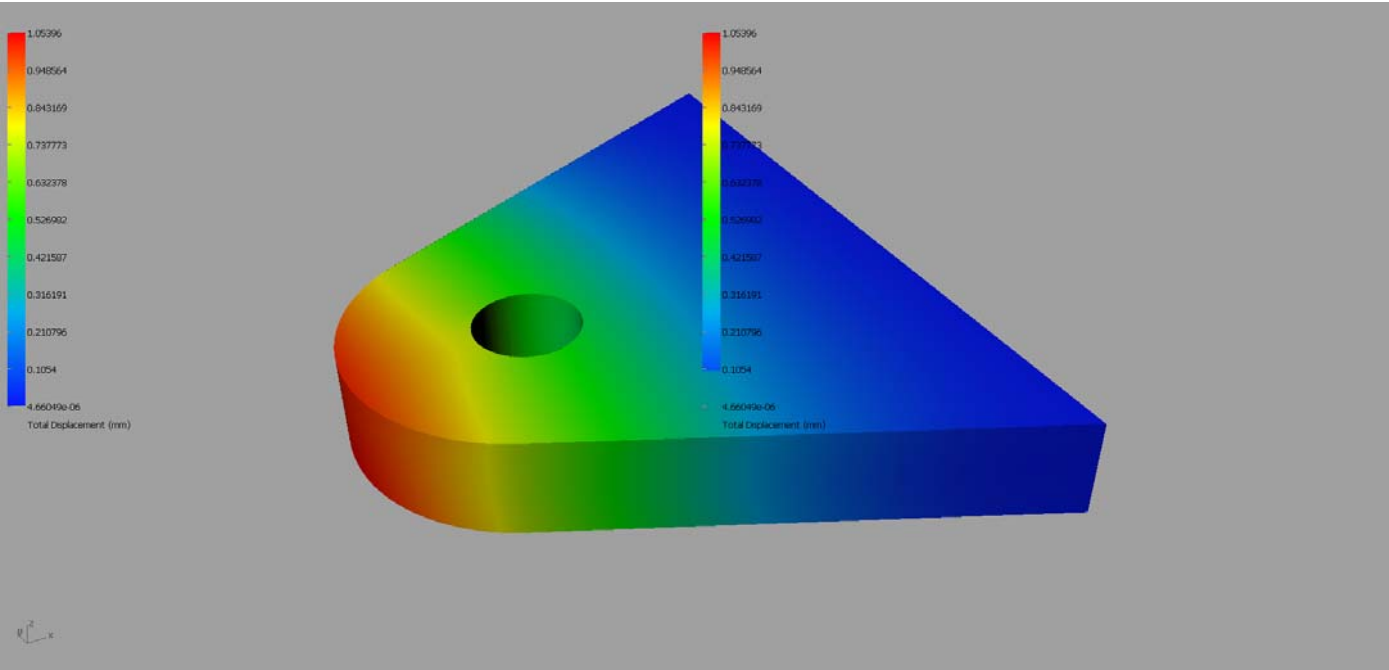
Basis Functions	
Degree	1
nx	65
ny	87
nz	13
Element size	{3.50445,3.50445,3.50445}
Resolution setting	48000
Computation Box	
min. corner	{-74.3847,-152.467,-2.77055}
max. corner	{153.405,152.42,42.7873}

Units

Quantity	Unit
Length	mm
Mass	Mg
Force	N
Time	s

Simulation Results

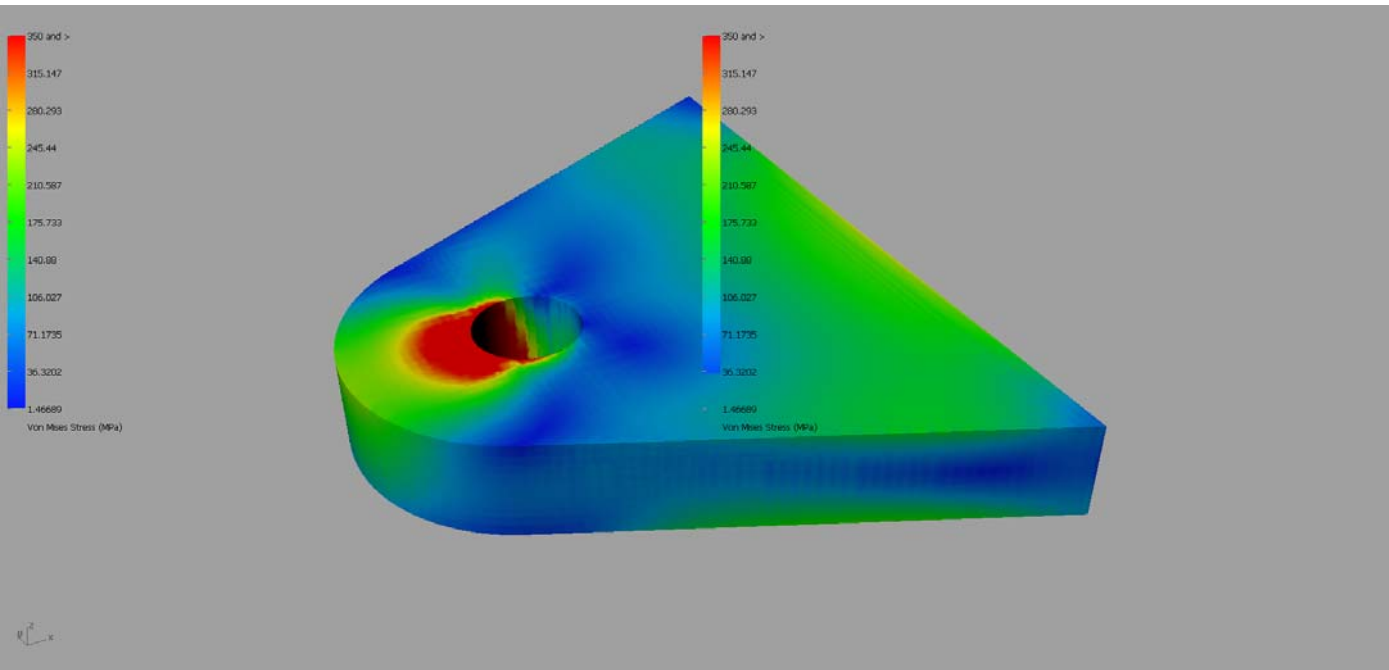
Displacements



Displacement Summary

	Amount	Location
Minimum	4.66049e-06 mm	{150,150,40}
Maximum	1.05396 mm	{-71,-2.84217e-14,0}

Von Mises Stress

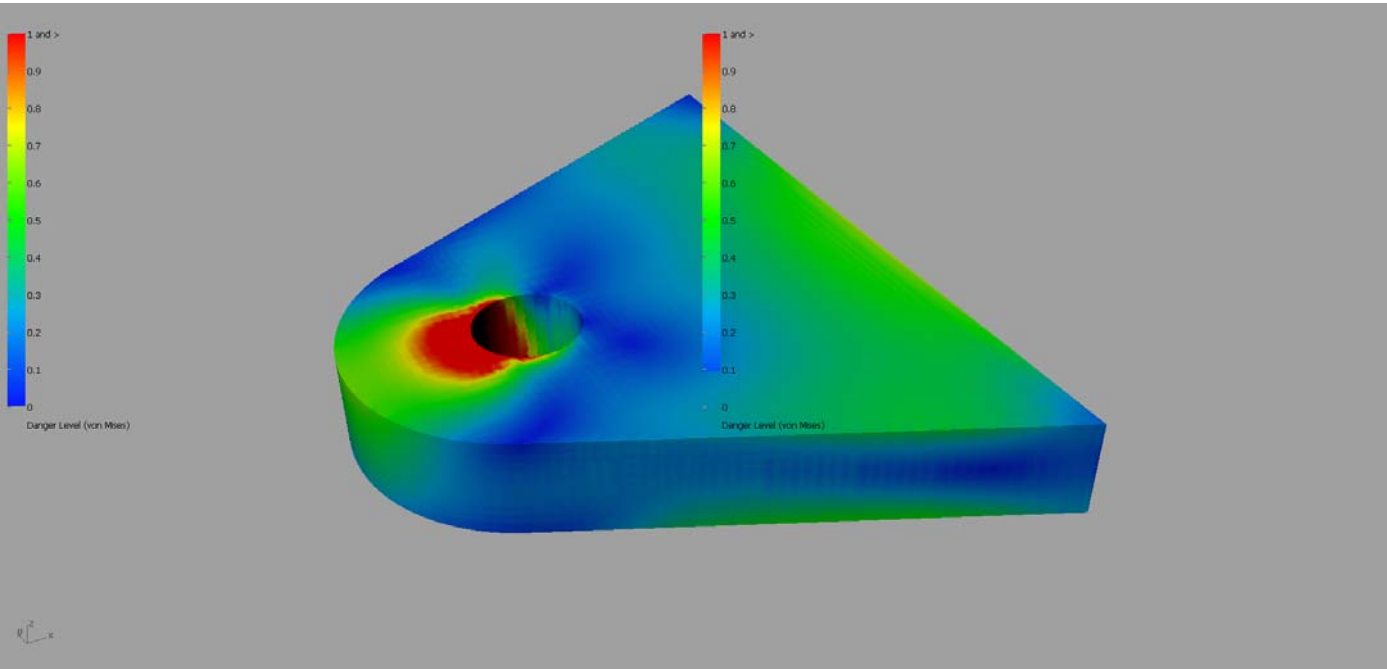


Von Mises Stress Summary

	Amount	Location
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Minimum	1.46689 MPa	{-35.0148,61.7654,40}
Maximum	874.37 MPa	{-15.5508,14.1128,34}

Danger Level



Danger Level Summary

	Amount	Location
Minimum	0.00396456	{-35.0148,61.7654,40}
Maximum	Criterion Limit Exceeded	{-15.5508,14.1128,34}

Results Extrema

	Minimum	Maximum
X-Displacement	-0.253608 mm	0.0951788 mm
Y-Displacement	-0.0788766 mm	0.0230489 mm
Z-Displacement	-0.00219732 mm	1.02823 mm
Total Displacement	4.66049e-06 mm	1.05396 mm
Von Mises Stress	1.46689 MPa	874.37 MPa
Max. Principal Stress	-225.602 MPa	965.462 MPa
Mid. Principal Stress	-488.686 MPa	225.411 MPa
Min. Principal Stress	-728.944 MPa	159.099 MPa
Danger Level (von Mises)	0.00396456	Criterion Limit Exceeded
Danger Level (Max. Shear Stress)	0.00892517	Criterion Limit Exceeded

CAUTION

Design decisions require experimental data and substantial experience; they should never be made based solely on a software simulation. Simulation is not intended to replace physical testing of prototypes, which is required to validate any design.