

# Study Report



Analyzed File	Simple_star_fish v5
Version	Autodesk Fusion (2604.1.48)
Creation Date	2025-11-09, 22:44:45
Author	vishal

☐ **Report Properties**

Title	Studies
Author	vishal

☐ **Simulation Model 1**

☐ **Study 1 - Static Stress**

☐ **Study Properties**

Study Type	Static Stress
Last Modification Date	2025-11-09, 22:34:02

☐ **Settings**

☐ **General**

Contact Tolerance	0.10 mm
Remove Rigid Body Modes	No

☐ **Mesh**

Average Element Size (% of model size)	
Solids	10
Scale Mesh Size Per Part	No
Average Element Size (absolute value)	-
Element Order	Parabolic
Create Curved Mesh Elements	No
Max. Turn Angle on Curves (Deg.)	60
Max. Adjacent Mesh Size Ratio	1.5
Max. Aspect Ratio	10
Minimum Element Size (% of average size)	20

☐ **Adaptive Mesh Refinement**

Number of Refinement Steps	0
Results Convergence Tolerance (%)	20
Portion of Elements to Refine (%)	10
Results for Baseline Accuracy	von Mises Stress

☐ **Materials**

Component	Material	Safety Factor
Body1	Steel	Yield Strength
Body5	Steel	Yield Strength

☐ **Steel**

Density	7.850E-06 kg / mm^3
Young's Modulus	210000.00 MPa
Poisson's Ratio	0.30
Yield Strength	207.00 MPa
Ultimate Tensile Strength	345.00 MPa
Thermal Conductivity	0.056 W / (mm C)
Thermal Expansion Coefficient	1.200E-05 / C
Specific Heat	480.00 J / (kg C)

☐ **Contacts**

☐ **Bonded**

Name
[S] Bonded1 [Body1  Body5]

☐ **Mesh**

Type	Nodes	Elements
Solids	22000	12844

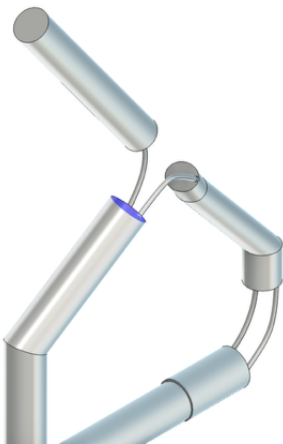
☐ **Load Case1**

☐ **Constraints**

☐ **Fixed1**

Type	Fixed
Ux	Fixed
Uy	Fixed
Uz	Fixed

☐ **Selected Entities**

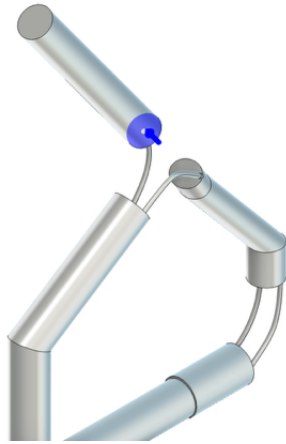


☐ **Loads**

☐ **Force1**

Type	Force
Magnitude	100.00 N
X Value	0.00 N
Y Value	-59.181 N
Z Value	80.608 N
Force Per Entity	No

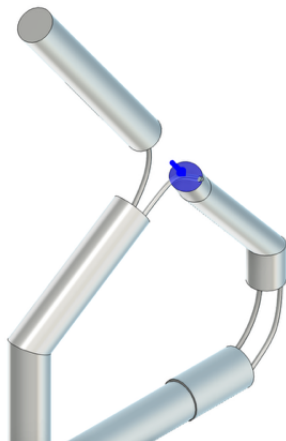
☐ **Selected Entities**



## ▣ Force2

Type	Force
Magnitude	50.00 N
X Value	0.00 N
Y Value	29.59 N
Z Value	-40.304 N
Force Per Entity	No

## ▣ Selected Entities



## ▣ Results


### ▣ Result Summary

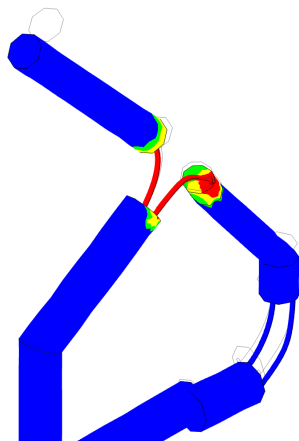
Name	Minimum	Maximum
Safety Factor		
Safety Factor (Per Body)	5.068E-04	15.00
Stress		
von Mises	3.158E-08 MPa	408424.602 MPa
1st Principal	-78429.472 MPa	344799.616 MPa
3rd Principal	-493412.864 MPa	77294.611 MPa
Normal XX	-91686.522 MPa	89644.096 MPa
Normal YY	-307071.974 MPa	204580.006 MPa
Normal ZZ	-264963.072 MPa	218399.437 MPa
Shear XY	-38689.354 MPa	42670.582 MPa
Shear YZ	-206127.808 MPa	139373.427 MPa

Shear ZX	-14980.768 MPa	25275.098 MPa
Displacement		
Total	0.00 mm	216.72 mm
X	-0.131 mm	85.983 mm
Y	-195.613 mm	4.129 mm
Z	-114.905 mm	13.459 mm
Reaction Force		
Total	0.00 N	595.916 N
X	-61.921 N	70.551 N
Y	-254.57 N	391.124 N
Z	-273.327 N	447.282 N
Strain		
Equivalent	0.00	3.118
1st Principal	-5.162E-08	2.232
3rd Principal	-3.381	1.454E-07
Normal XX	-0.433	0.488
Normal YY	-0.953	0.534
Normal ZZ	-0.819	0.71
Shear XY	-0.479	0.528
Shear YZ	-2.552	1.726
Shear ZX	-0.185	0.313
Contact Pressure		
Total	0.00 MPa	487263.027 MPa
X	-8384.982 MPa	7594.298 MPa
Y	-243999.795 MPa	369797.453 MPa
Z	-230472.909 MPa	317182.541 MPa
Contact Force		
Total	0.00 N	1071.384 N
X	-72.917 N	70.488 N
Y	-846.834 N	598.848 N
Z	-655.62 N	658.857 N

## ☐ Safety Factor

### ☐ Safety Factor (Per Body)

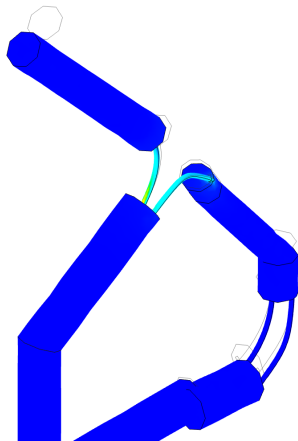
0.00  8.00




## ☐ Stress

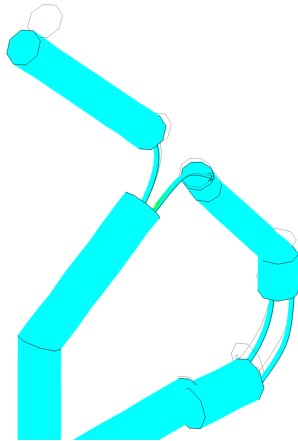
☐ **von Mises**

[MPa] 0.00  408424.625



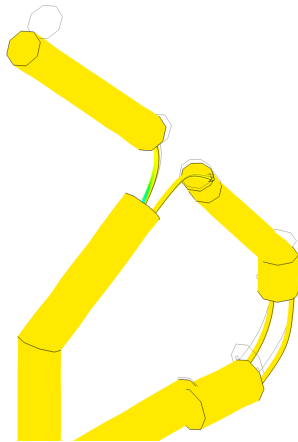
☐ **1st Principal**

[MPa] -78429.469  344799.594



☐ **3rd Principal**

[MPa] -493412.844  77294.609



☐ **Displacement**

☐ **Total**

[mm] 0.00  216.72

