

DHS Results and study set-up

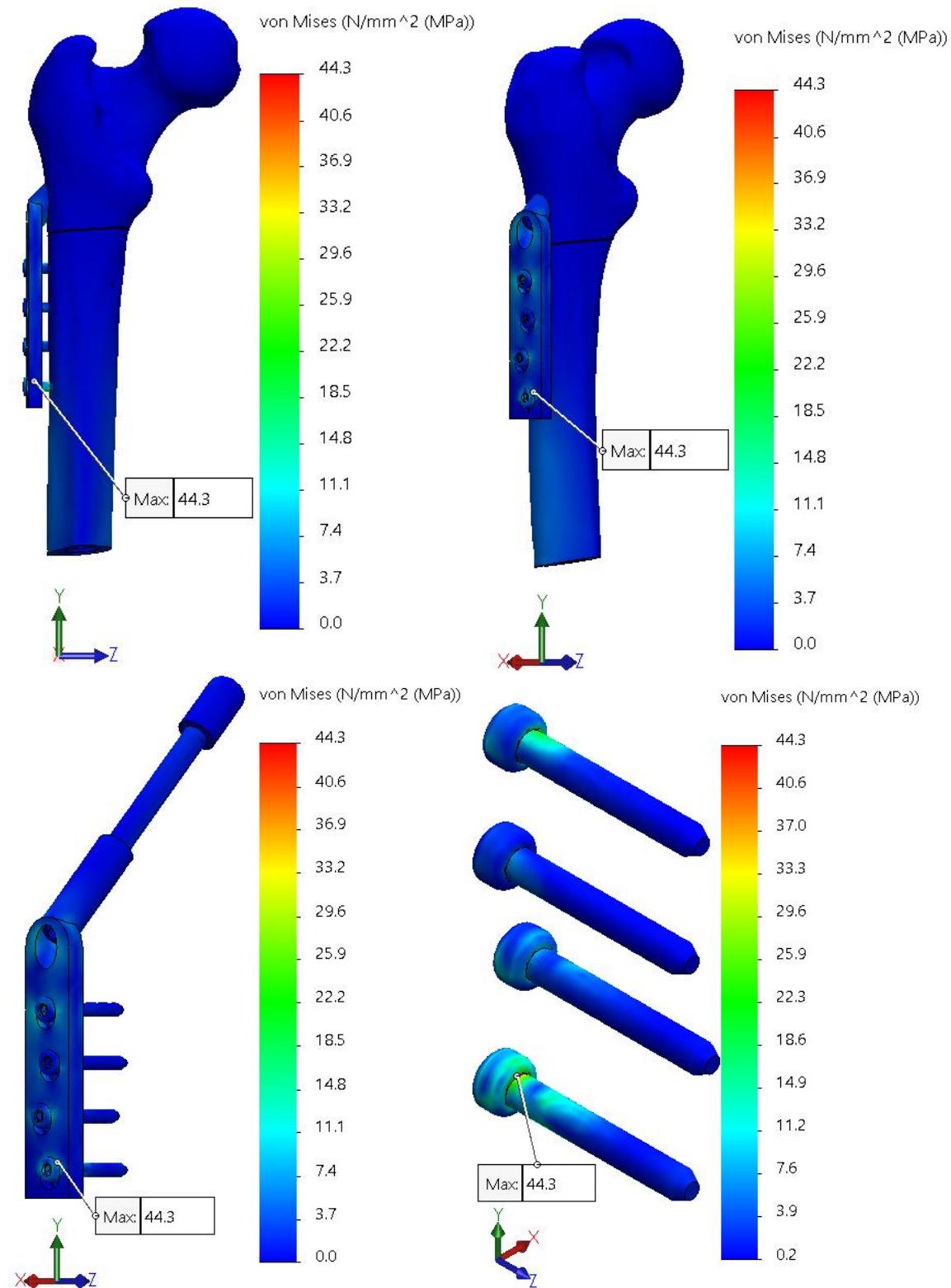
Contents

DHS (location 1: 0.5 cm below LT)	3
Force: 125 N.....	3
Force: 250 N.....	4
Force: 375 N.....	5
Force: 500 N.....	6
DHS (location2: 1 cm below LT)	8
Force: 125 N.....	8
Force: 250 N.....	9
Force: 375 N.....	10
Force: 500 N.....	11
DHS (location 3: 1.5 cm below LT)	13
Force: 125 N.....	13
Force: 250 N.....	14
Force: 375 N.....	15
Force: 500 N.....	16
DHS (location4: 2 cm below LT)	18
Force: 125 N.....	18
Force: 250 N.....	19
Force: 375 N.....	20
Force: 500 N.....	21
DHS (location 5: 2.5 cm below LT)	23
Force: 125 N.....	23
Force: 250 N.....	24
Force: 375 N.....	25
Force: 500 N.....	26
DHS (location 6: 3 cm below LT)	28
Force: 125 N.....	28
Force: 250 N.....	29

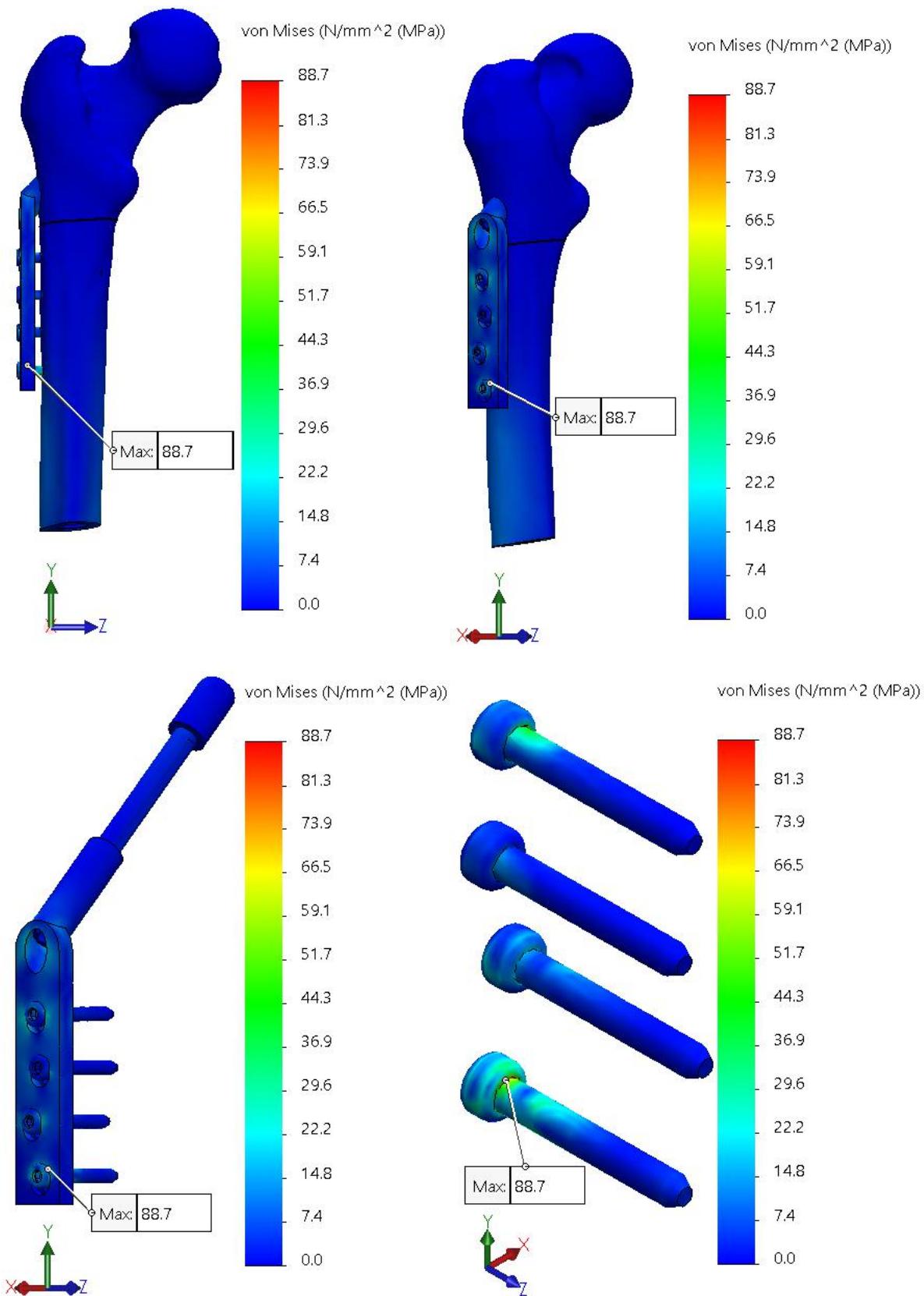
Force: 375 N.....	30
Force: 500 N.....	31
DHS (location 7: 3.5 cm below LT)	33
Force: 125 N.....	33
Force: 250 N.....	34
Force: 375 N.....	35
Force: 500 N.....	36
DHS (location 8: 4 cm below LT)	38
Force: 125 N.....	38
Force: 250 N.....	39
Force: 375 N.....	40
Force: 500 N.....	41
DHS (location 9: 4.5 cm below LT)	43
Force: 125 N.....	43
Force: 250 N.....	44
Force: 375 N.....	45
Force: 500 N.....	46
DHS Simulation FEM Set-Up	48
Fracture height / location	48
Force & Fixture	49
Connection	50
Contact-Set	50
Global-Contact.....	51
Mesh	52
Material	53
Femur.....	53
DHS & PFNA	54

DHS (location 1: 0.5 cm below LT)

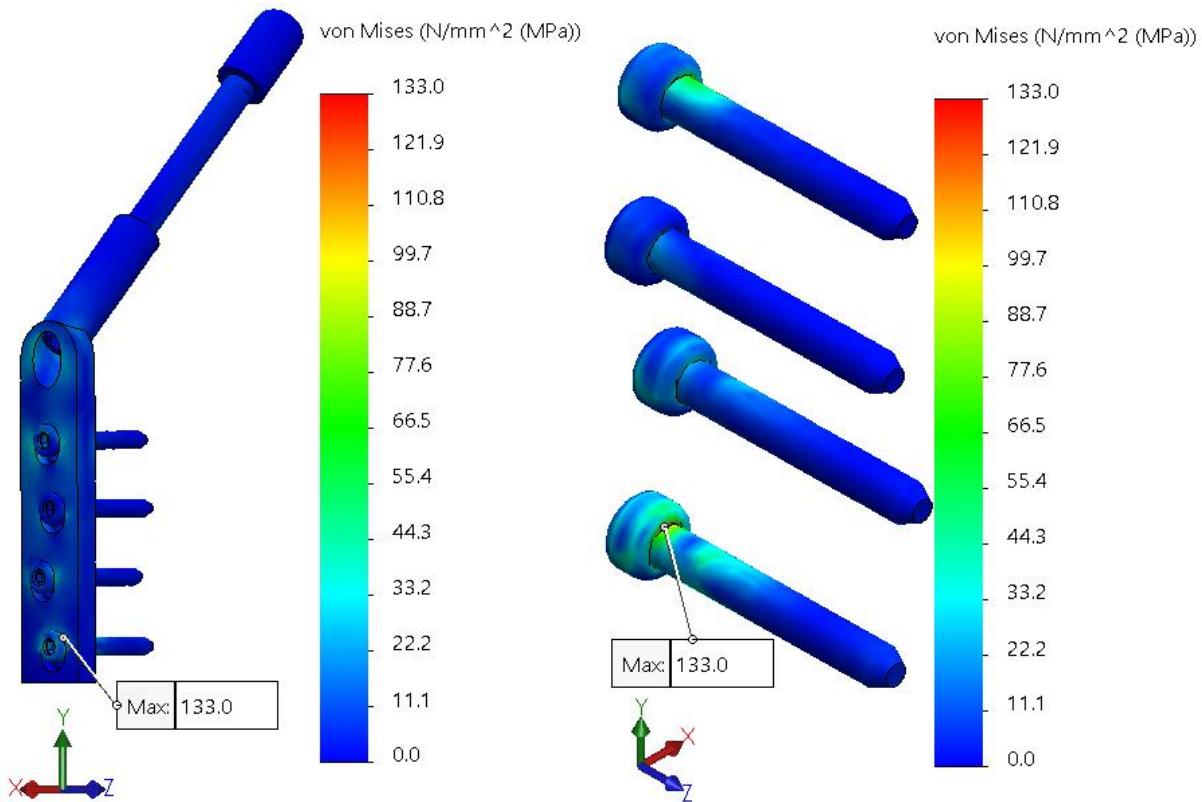
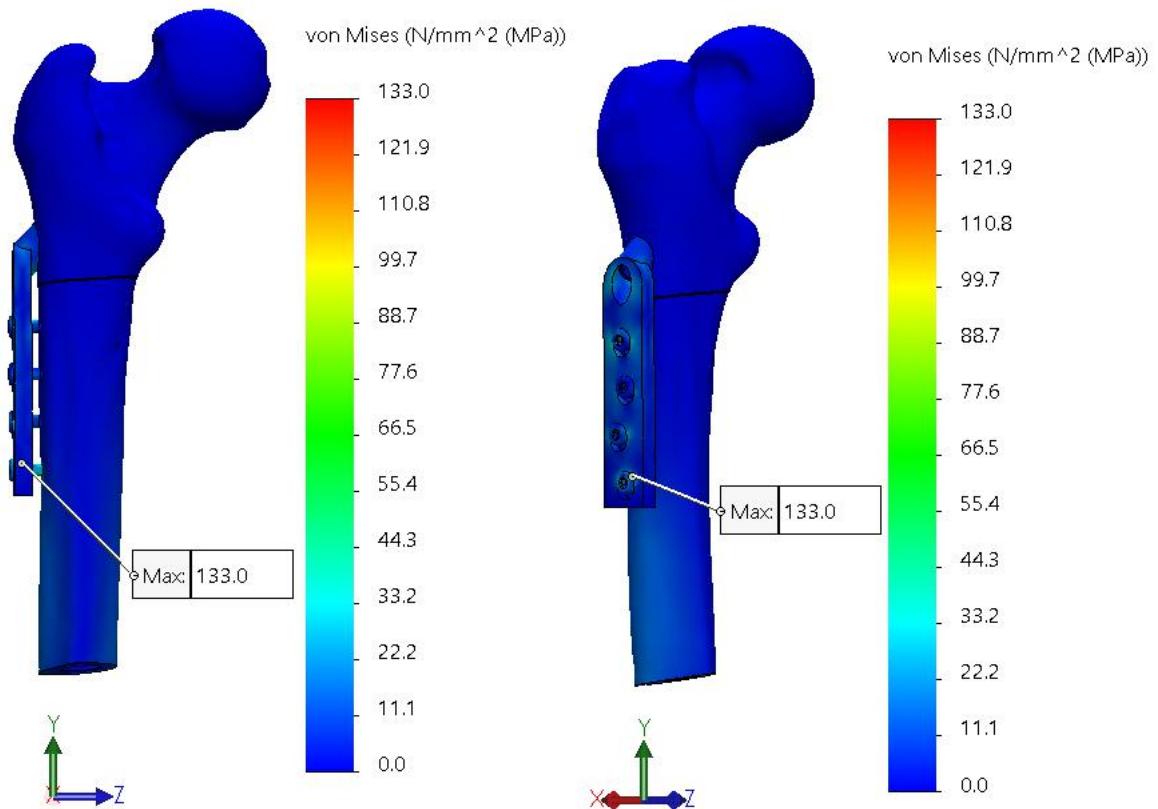
Force: 125 N



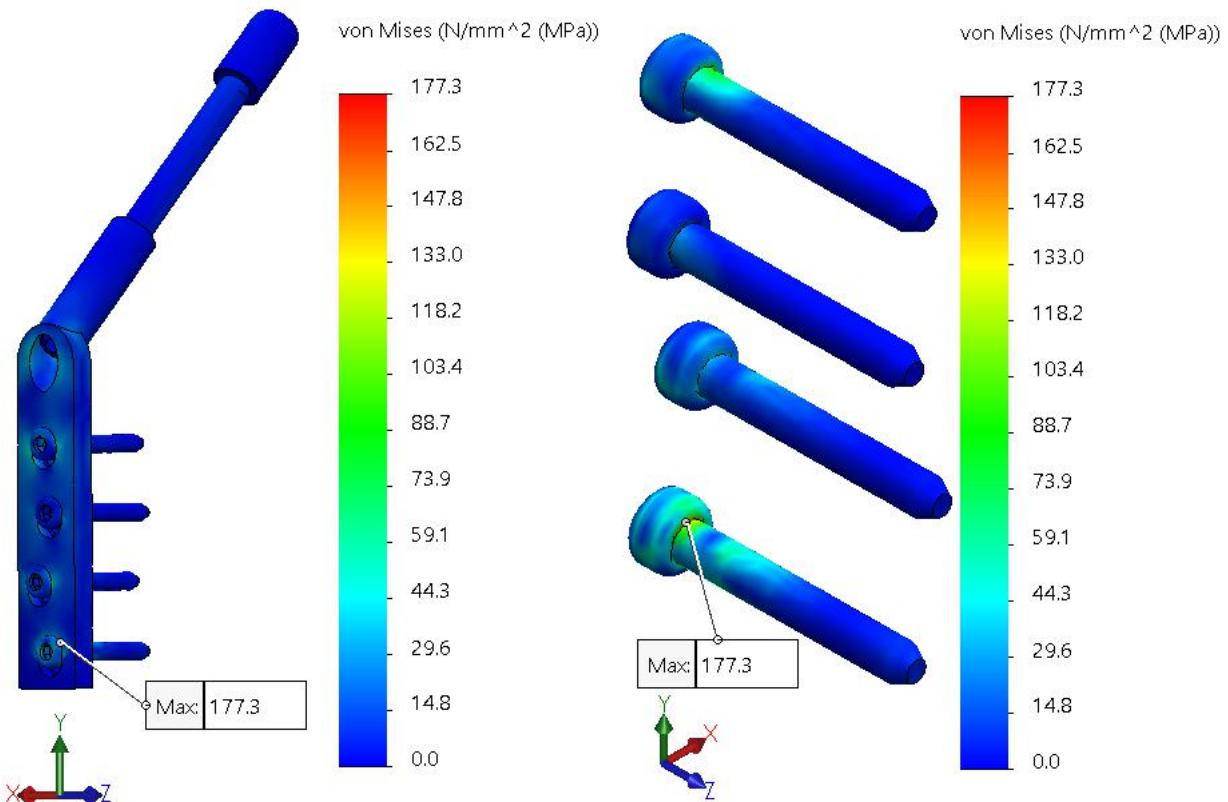
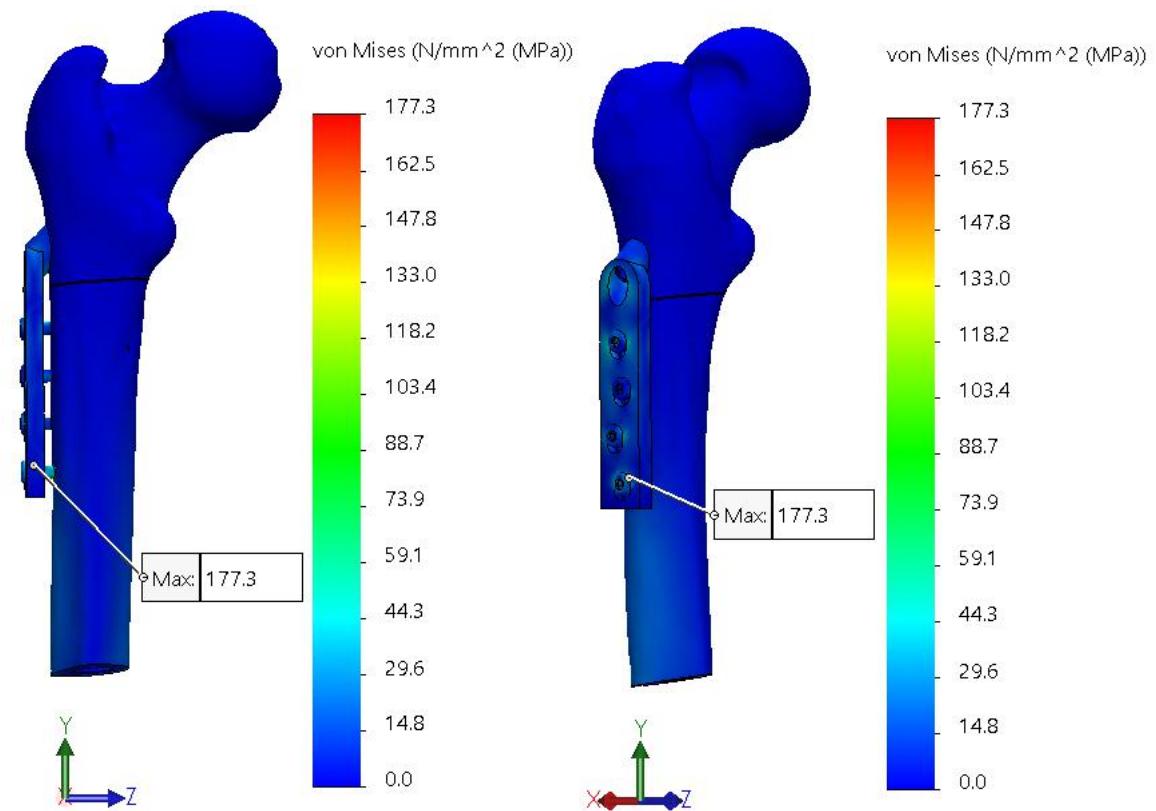
Force: 250 N



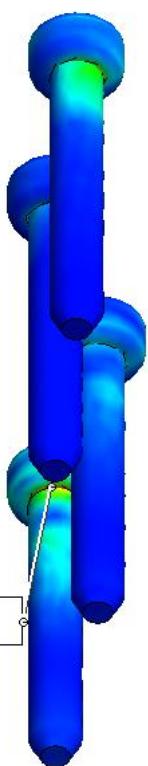
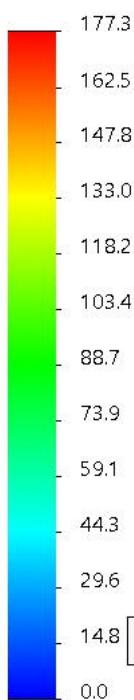
Force: 375 N



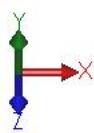
Force: 500 N



von Mises (N/mm² (MPa))



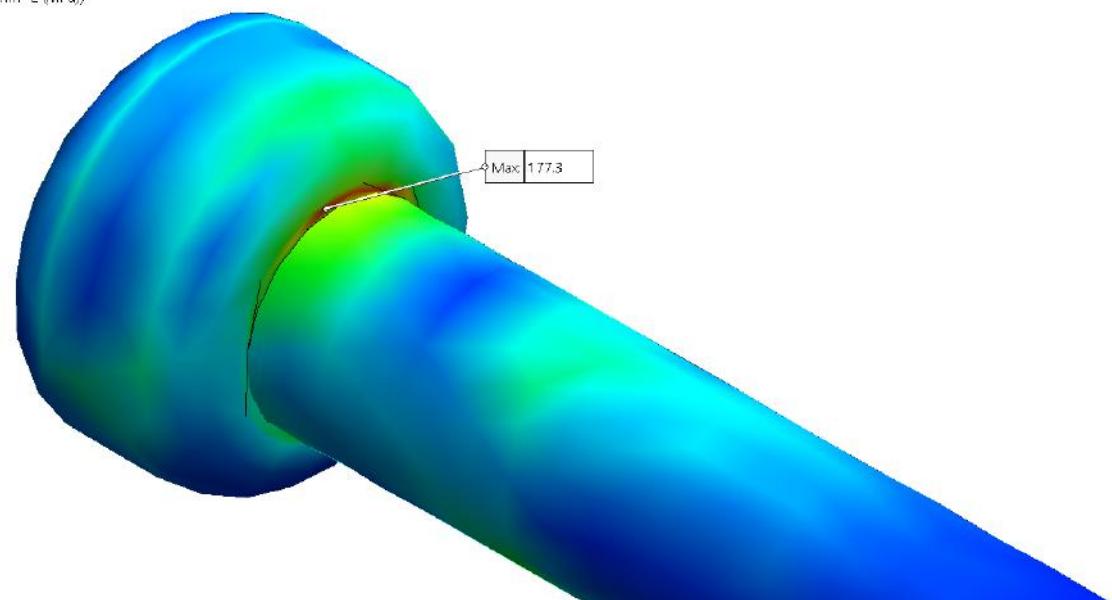
Max: 177.3



von Mises (N/mm² (MPa))

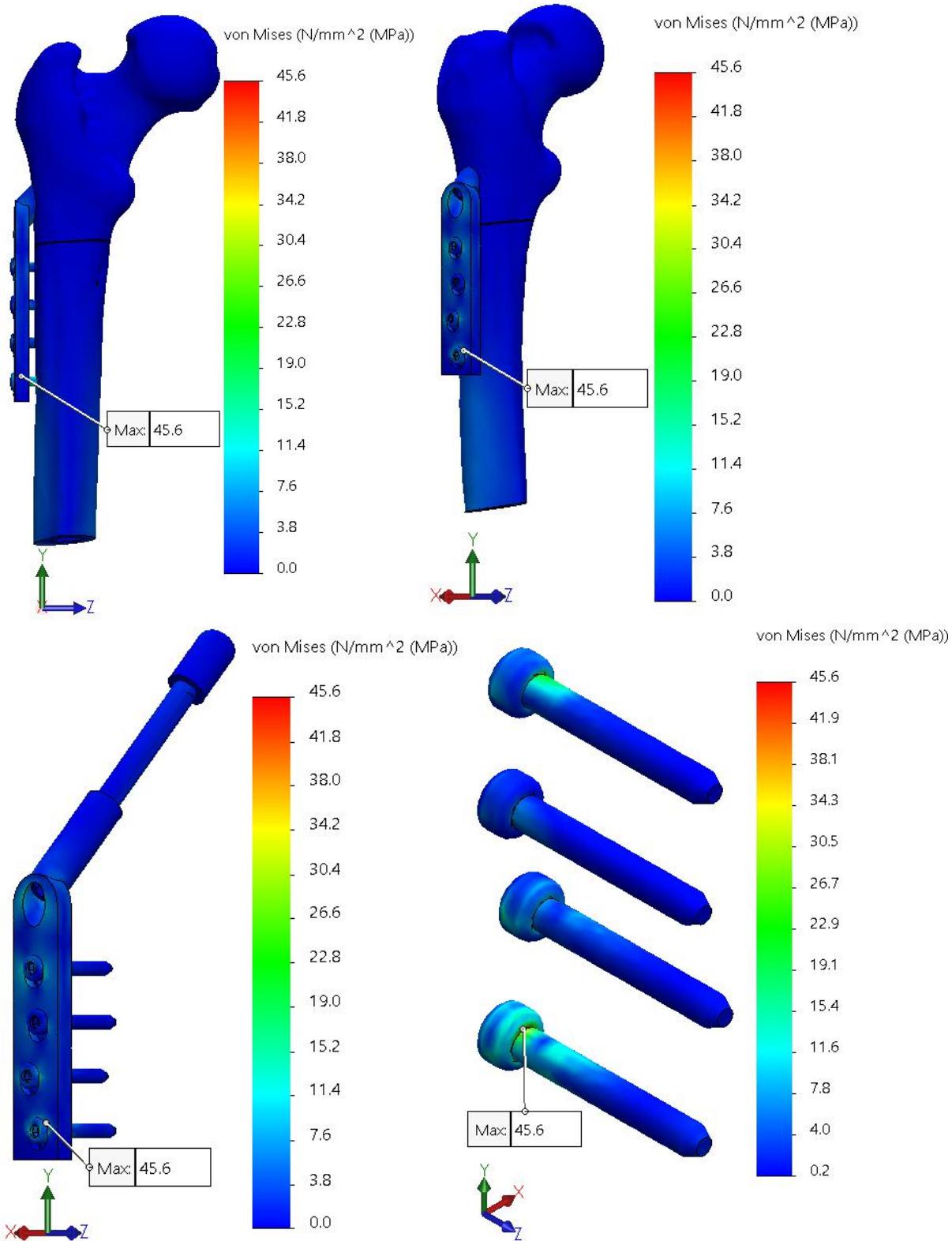


Max: 177.3

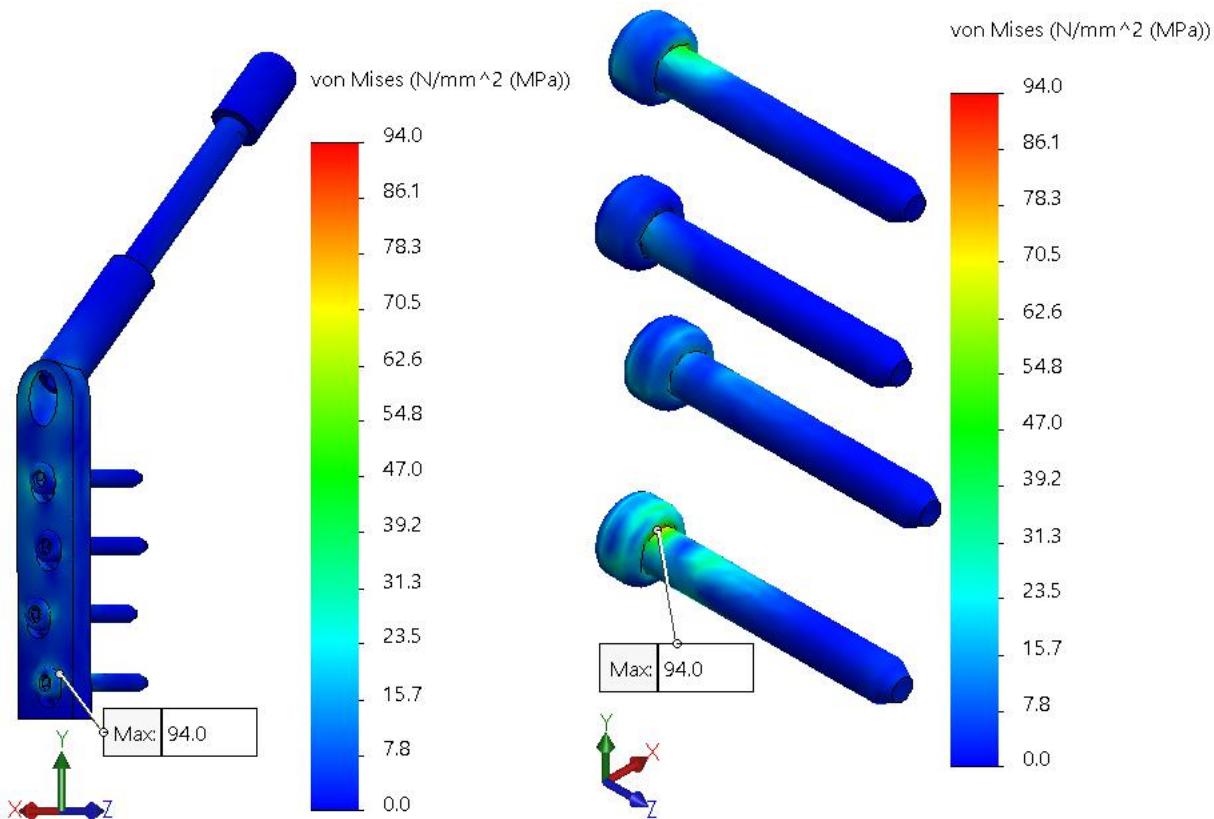
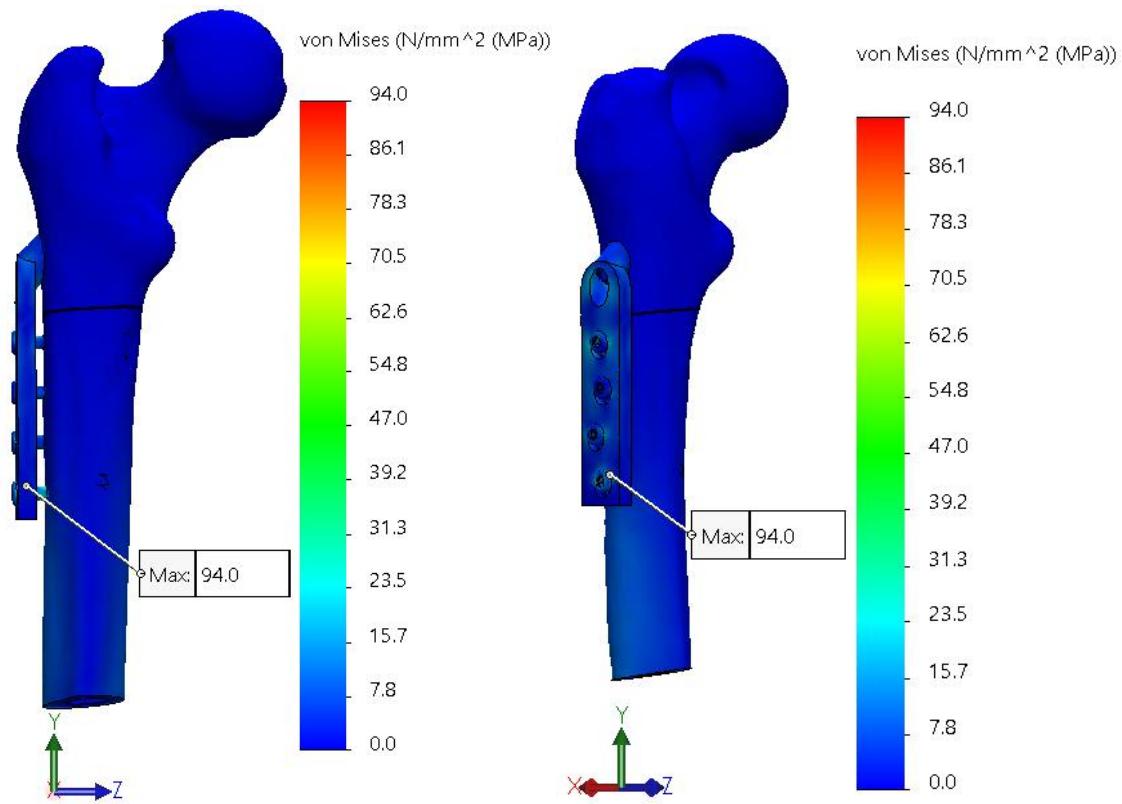


DHS (location2: 1 cm below LT)

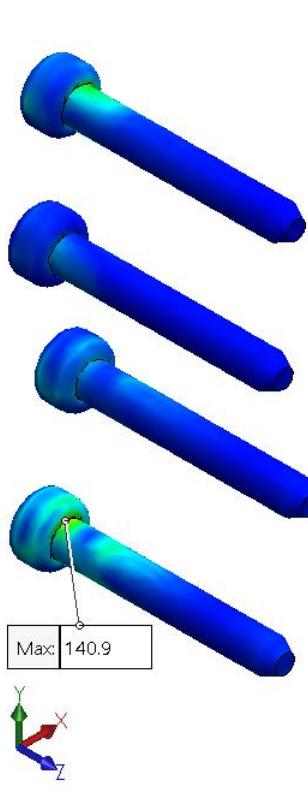
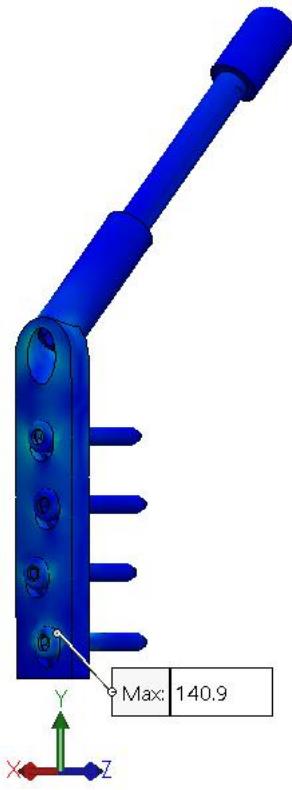
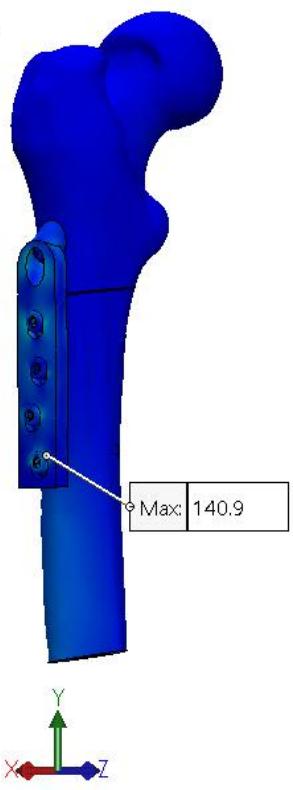
Force: 125 N



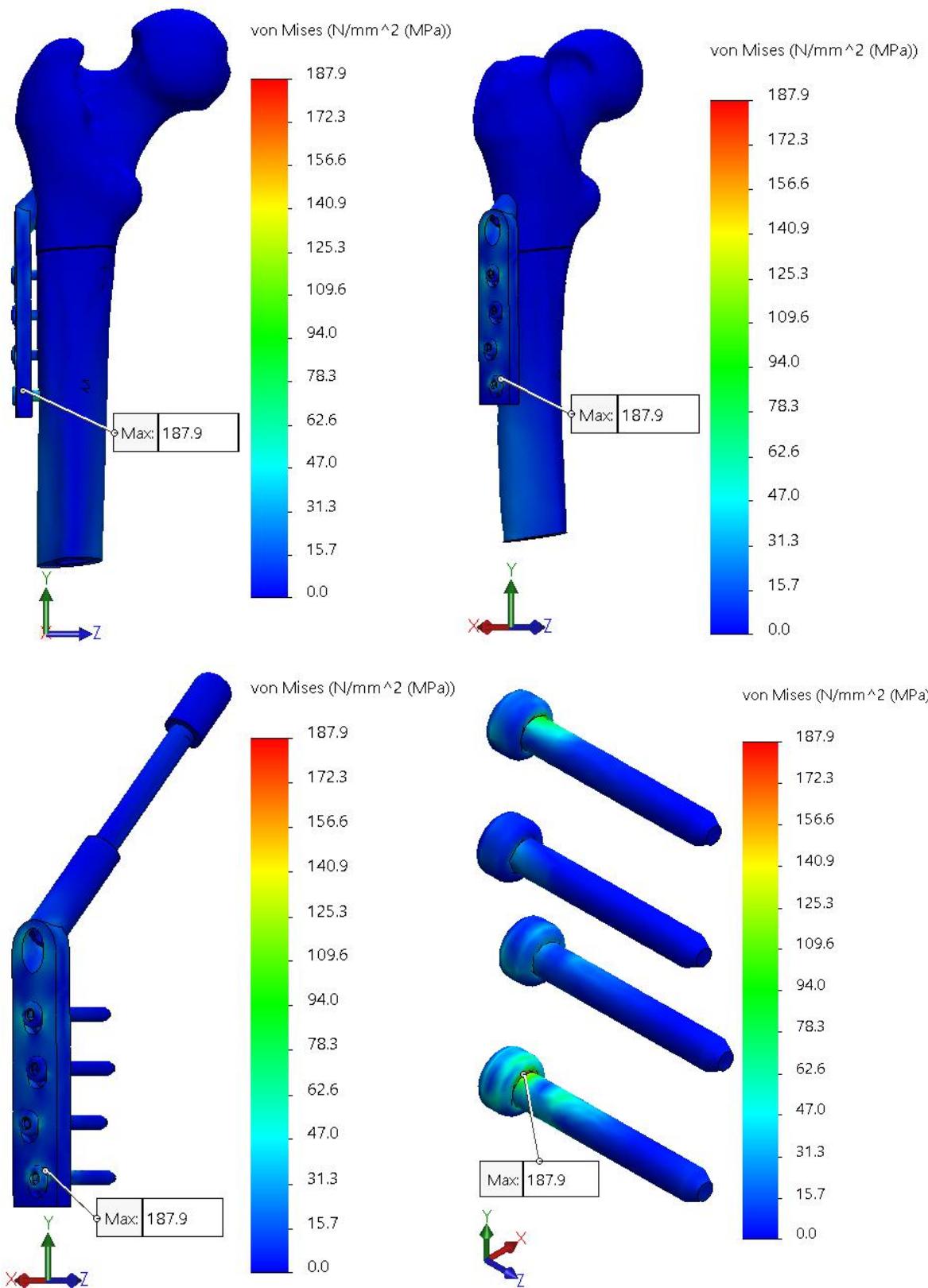
Force: 250 N



Force: 375 N



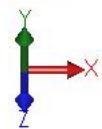
Force: 500 N



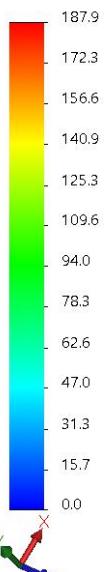
von Mises (N/mm² (MPa))



Max: 187.9



von Mises (N/mm² (MPa))

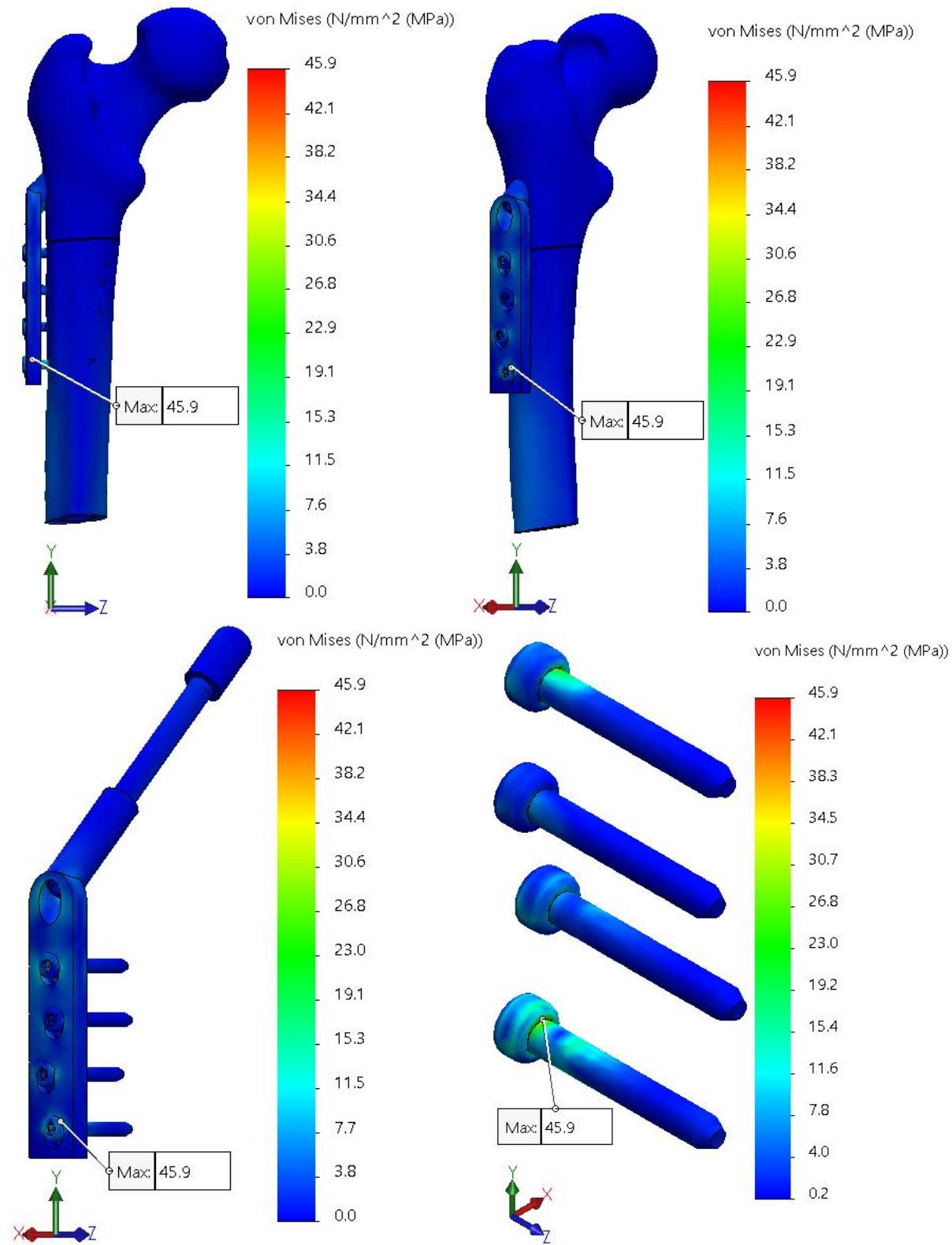


Max: 187.9

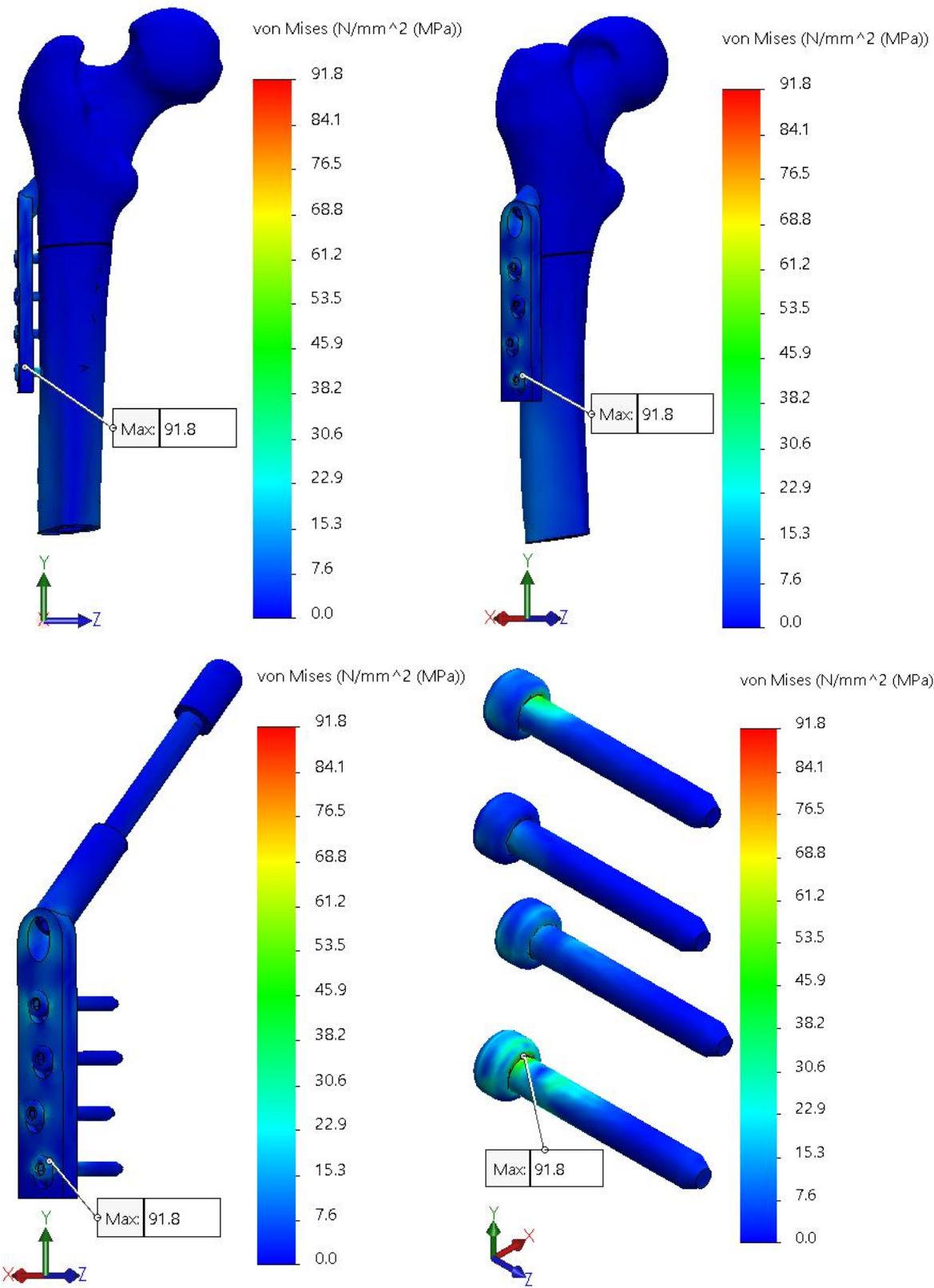


DHS (location 3: 1.5 cm below LT)

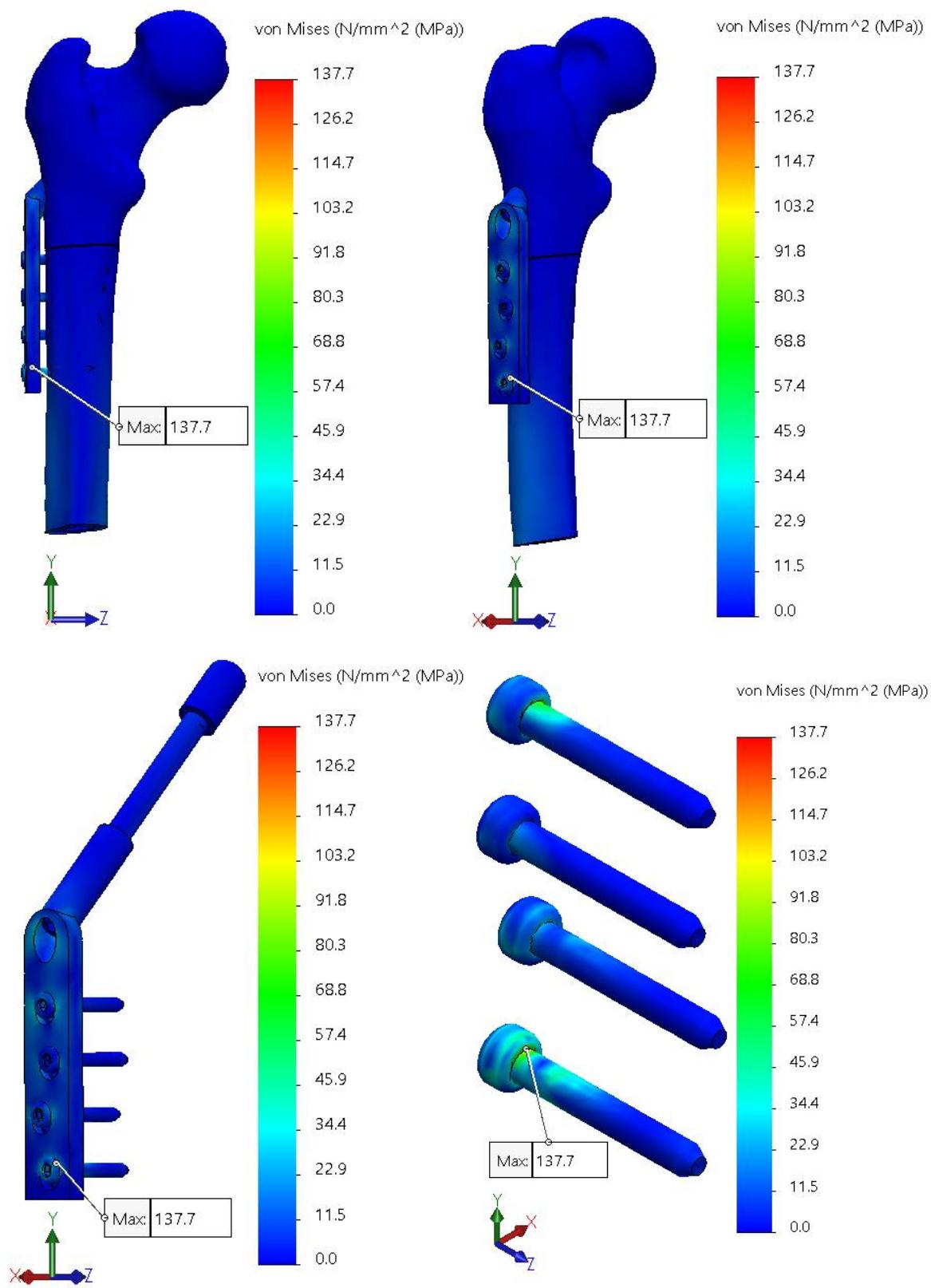
Force: 125 N



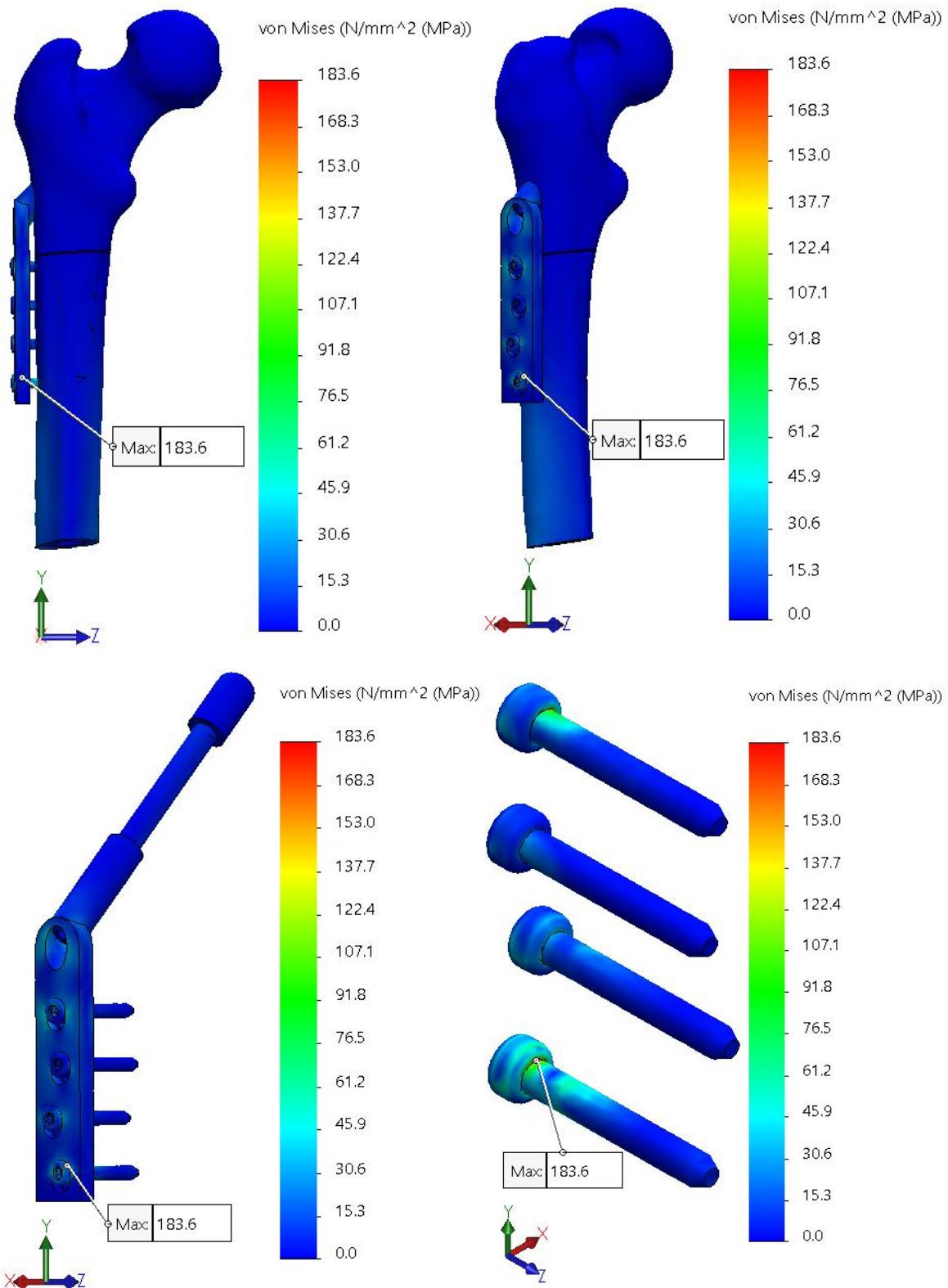
Force: 250 N



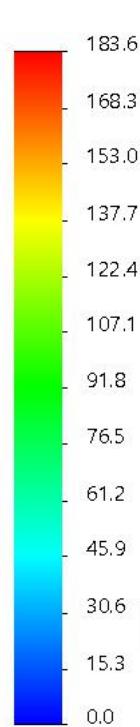
Force: 375 N



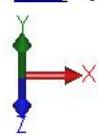
Force: 500 N



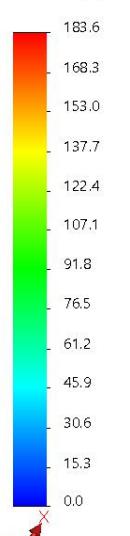
von Mises (N/mm² (MPa))



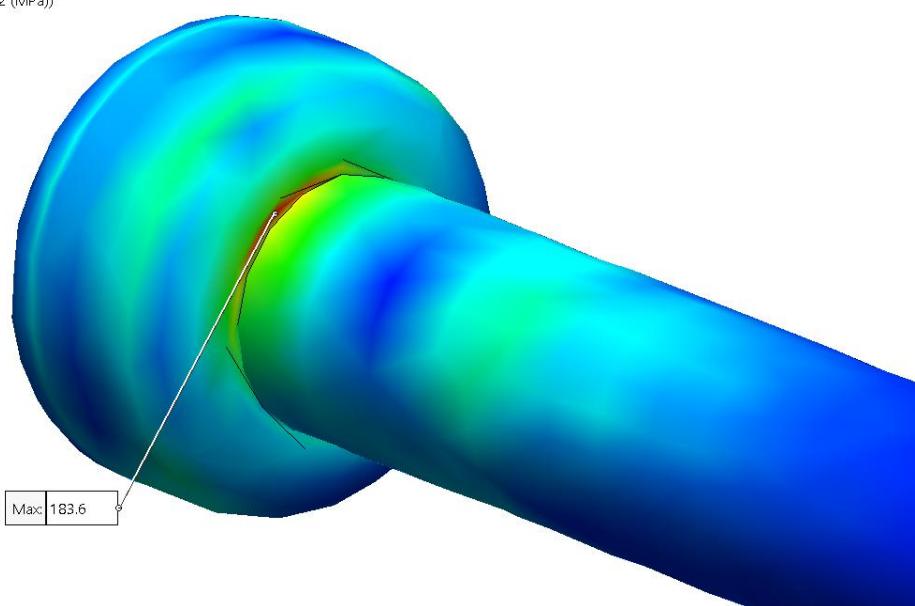
Max: 183.6



von Mises (N/mm² (MPa))

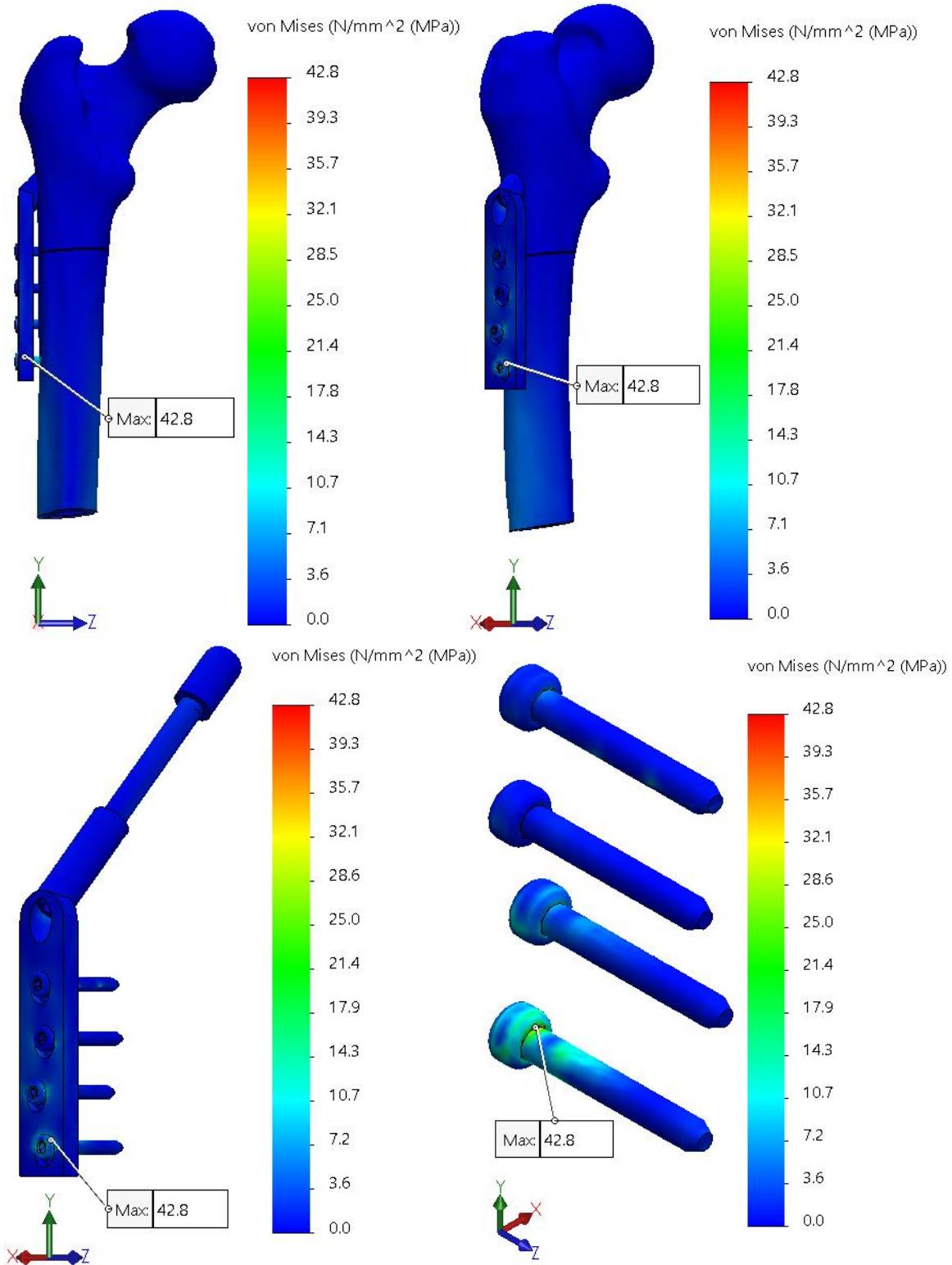


Max: 183.6

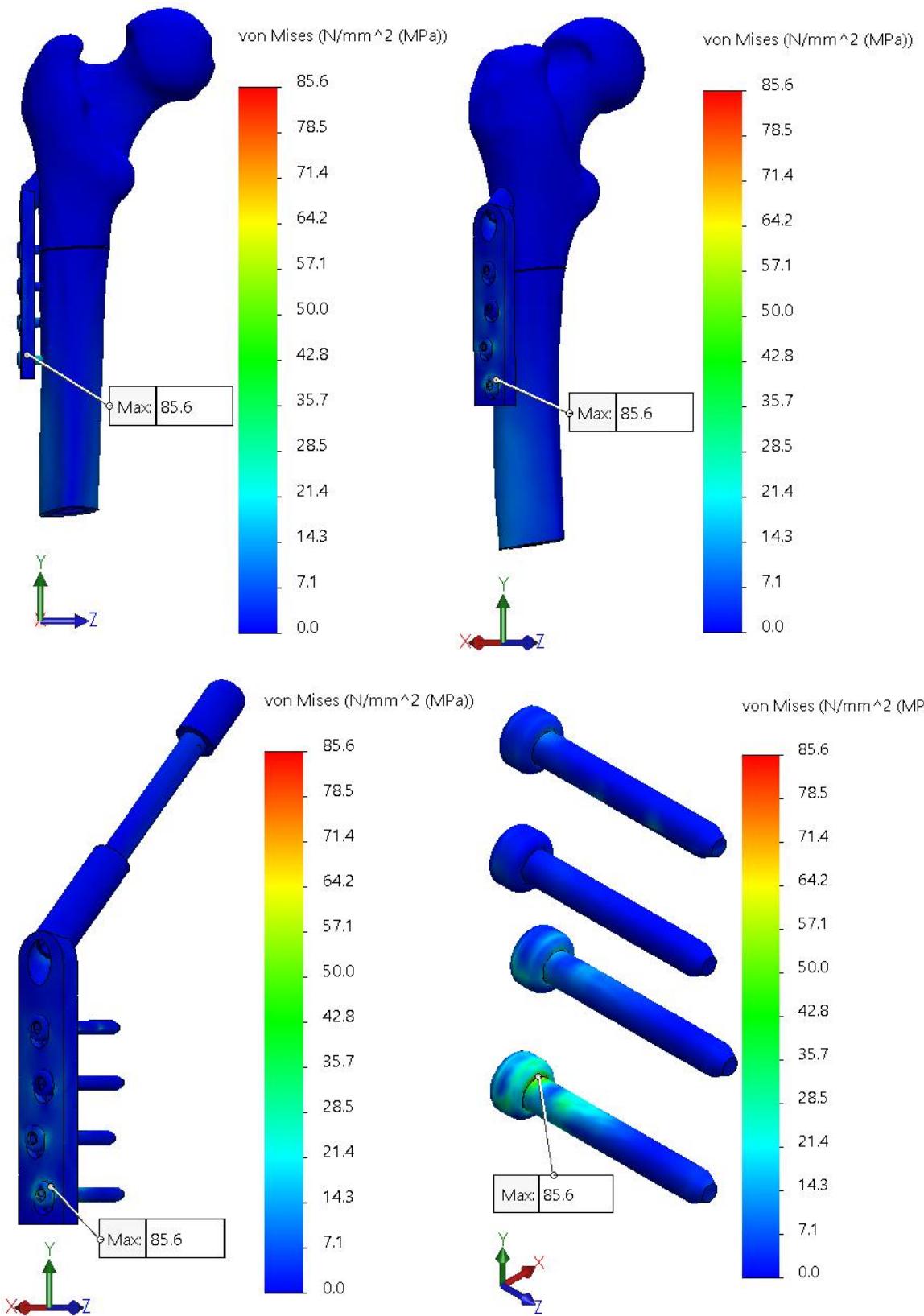


DHS (location4: 2 cm below LT)

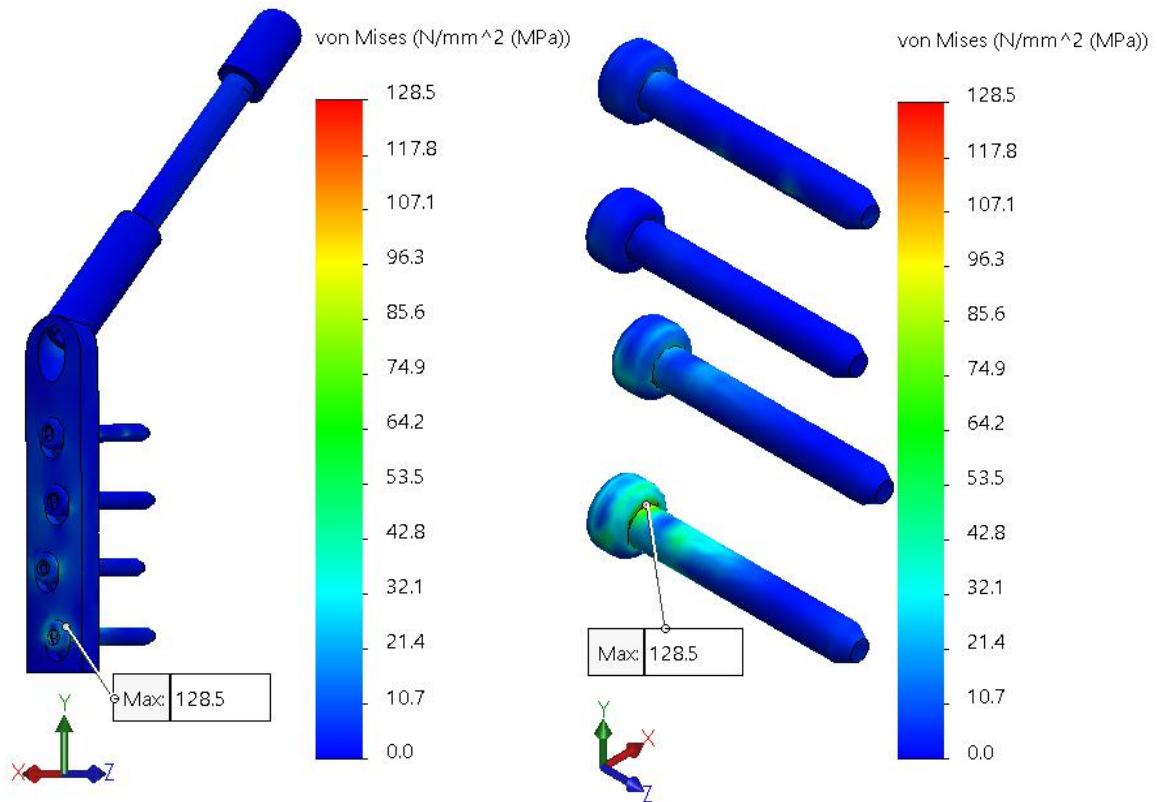
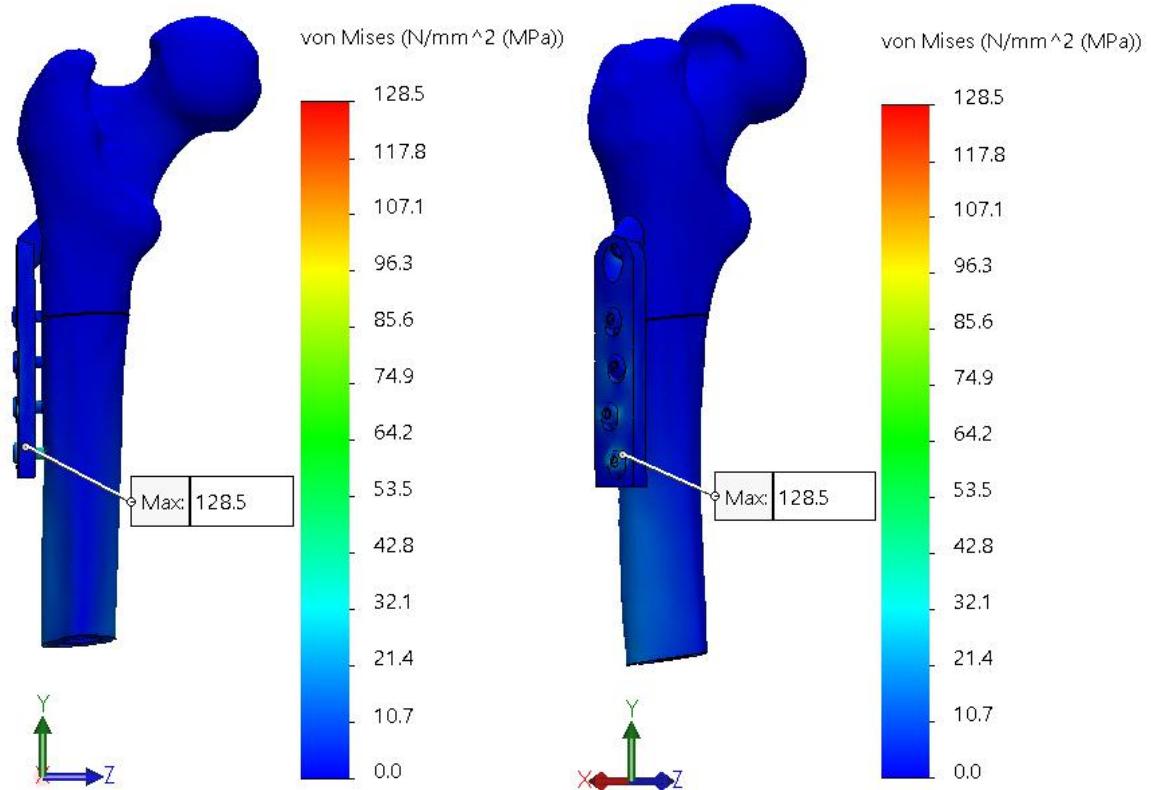
Force: 125 N



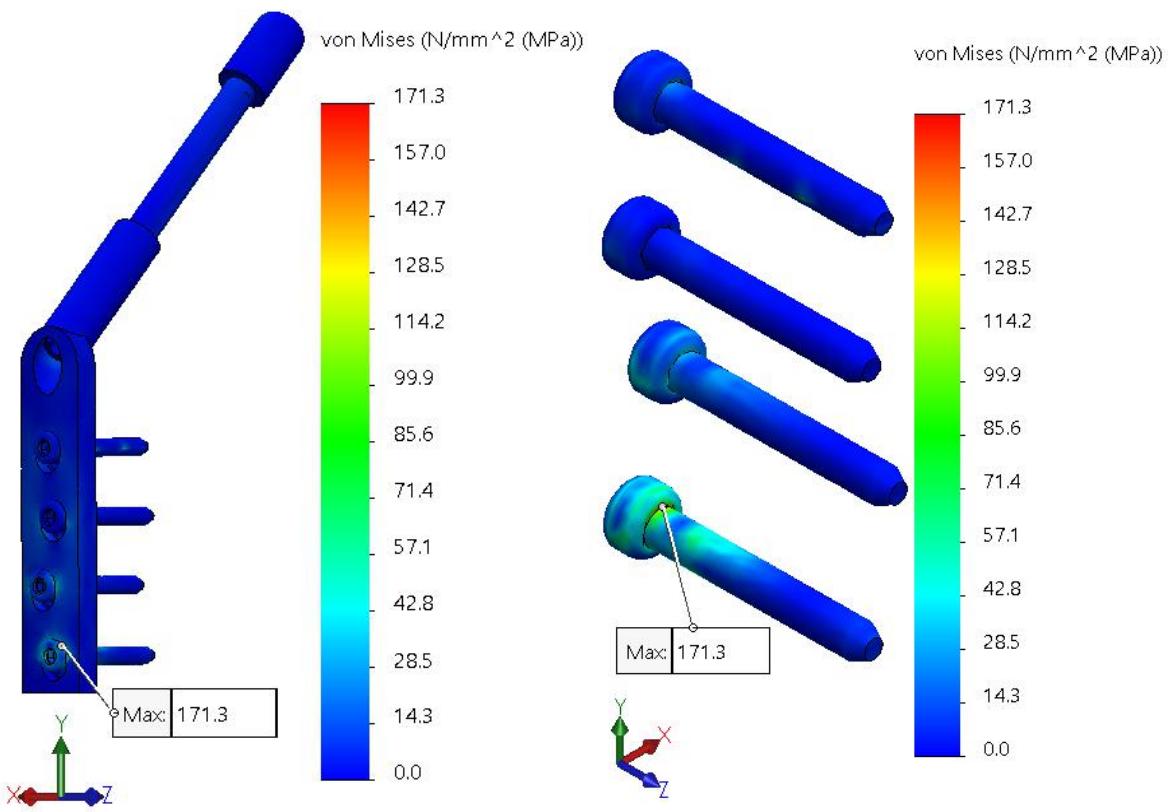
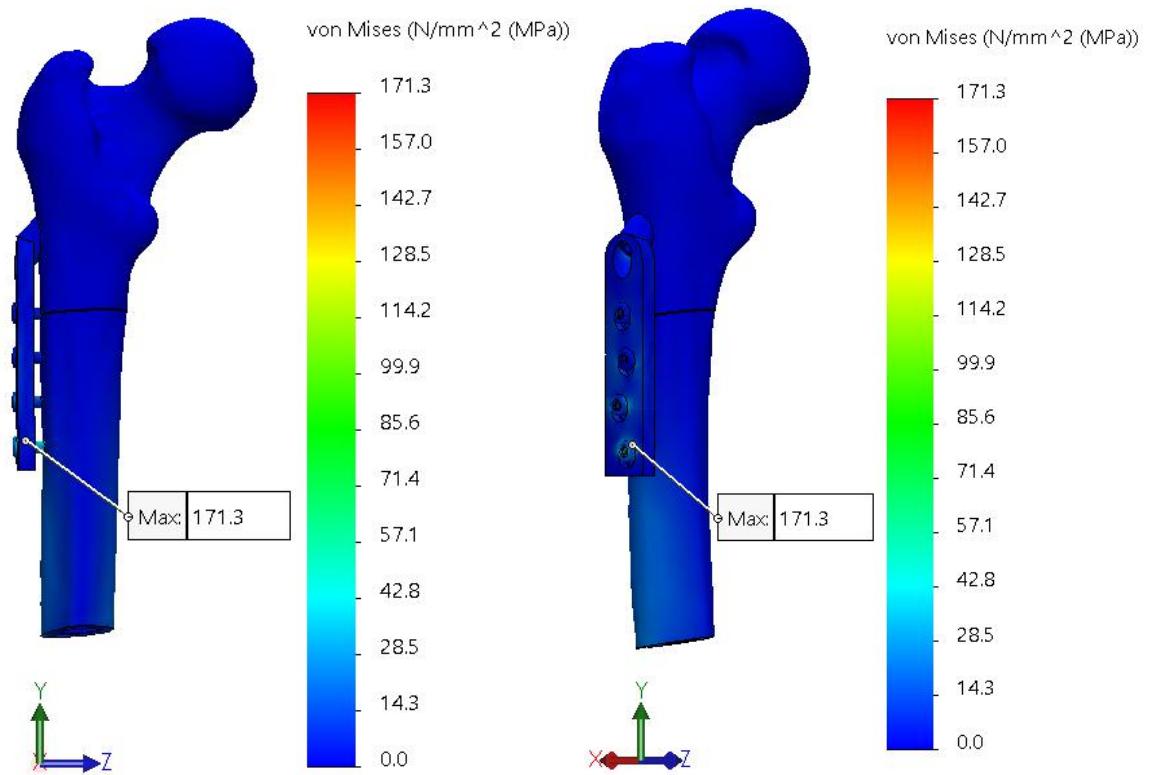
Force: 250 N



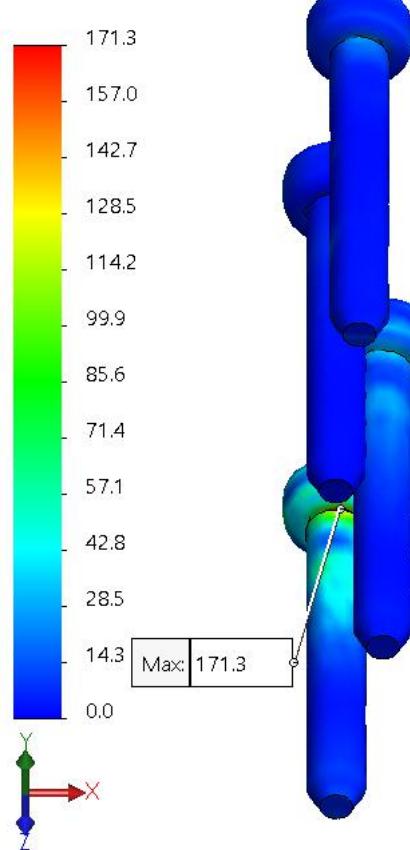
Force: 375 N



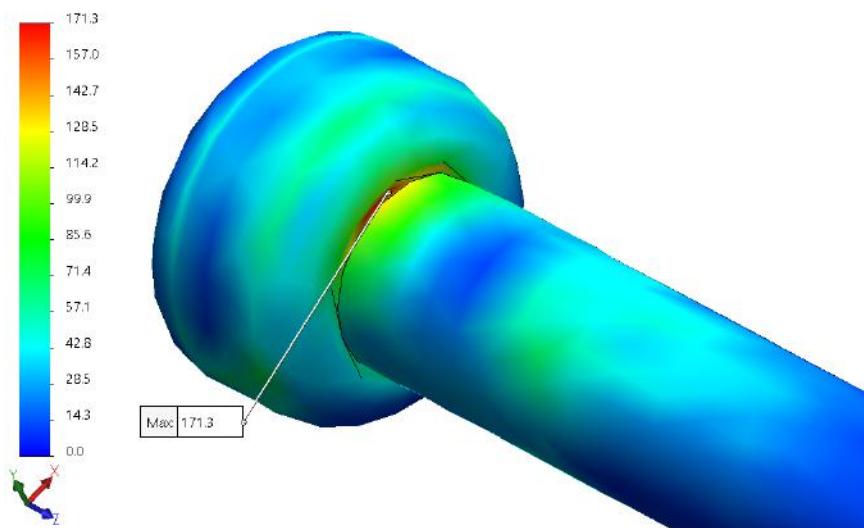
Force: 500 N



von Mises (N/mm² (MPa))

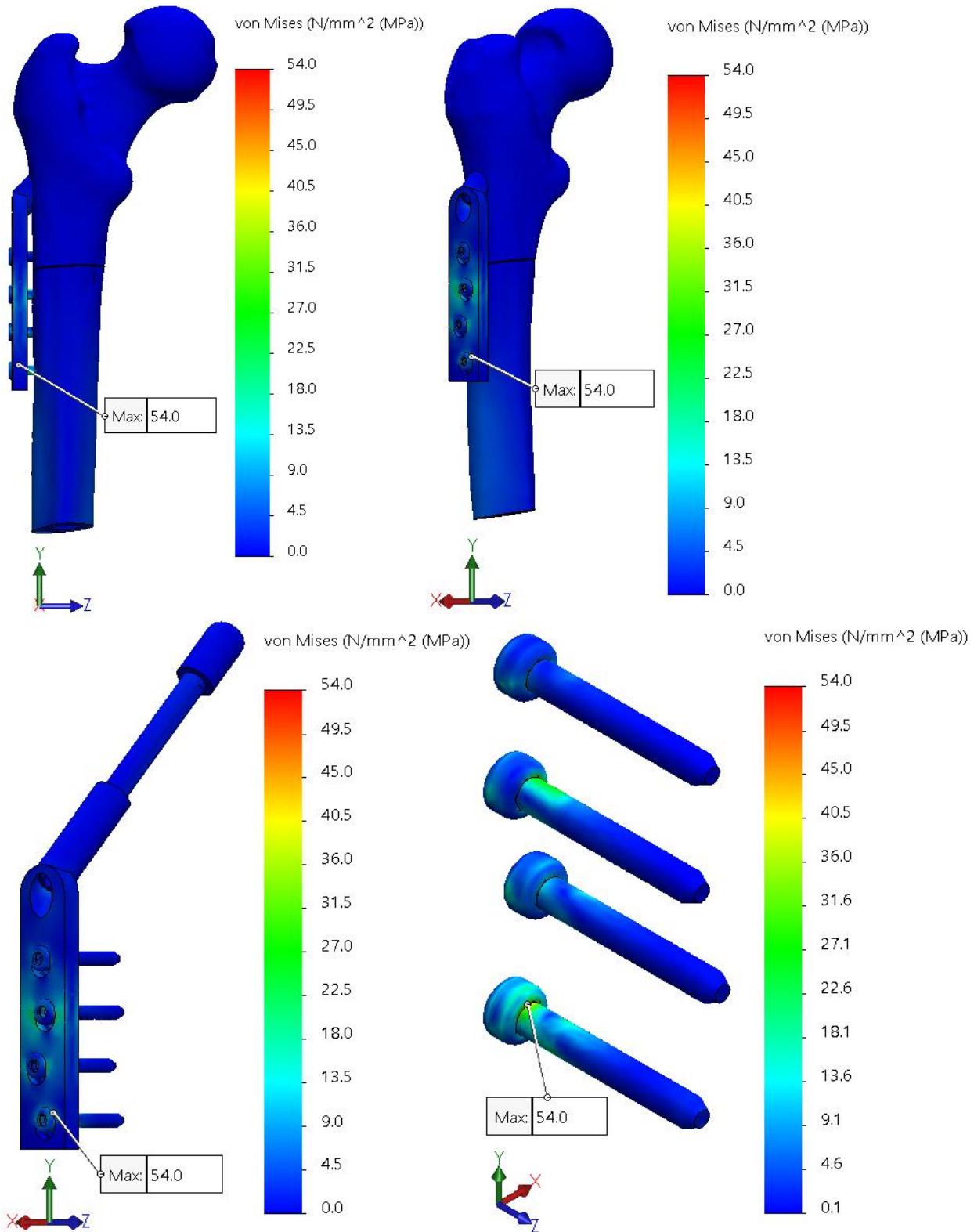


von Mises (N/mm² (MPa))

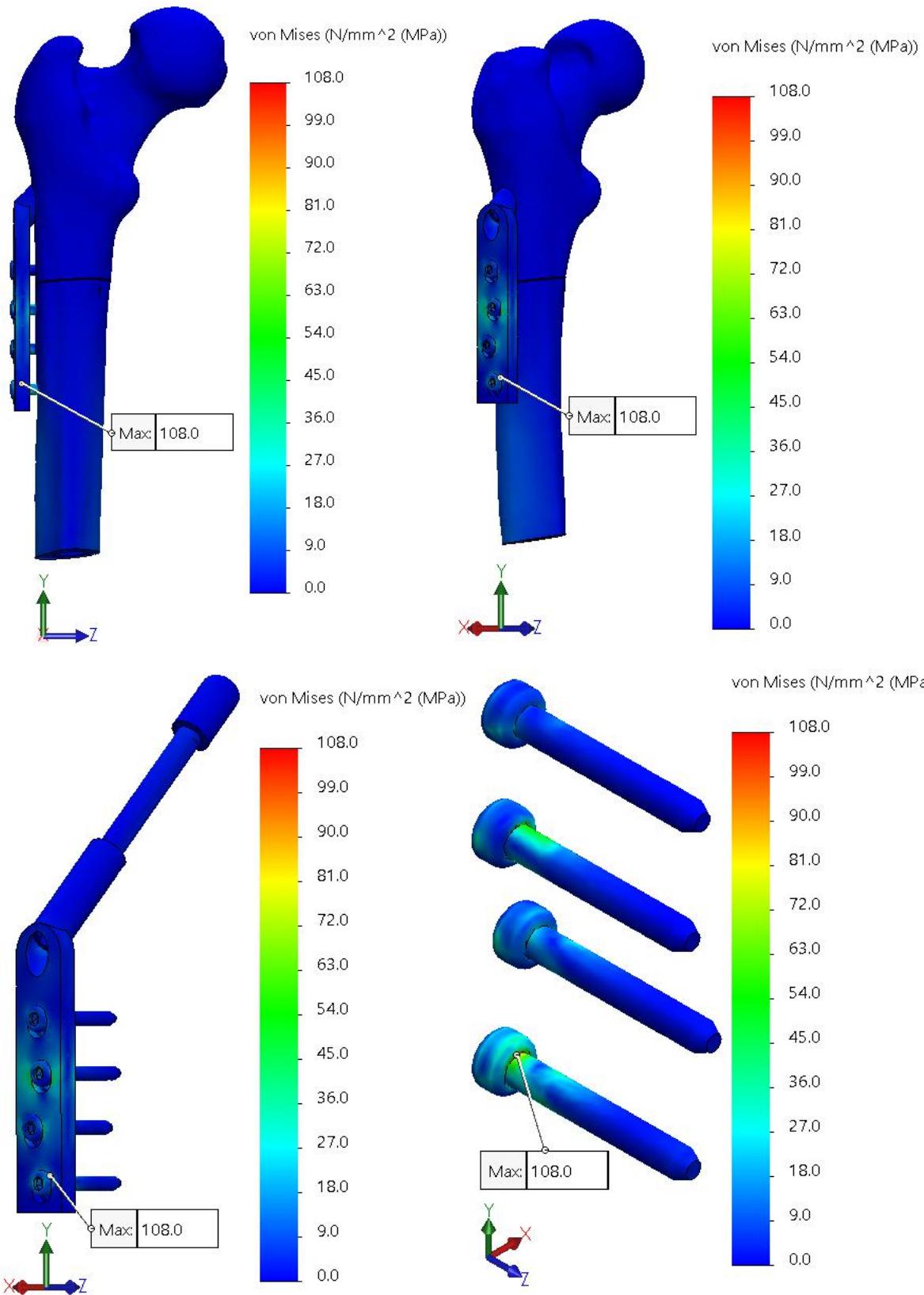


DHS (location 5: 2.5 cm below LT)

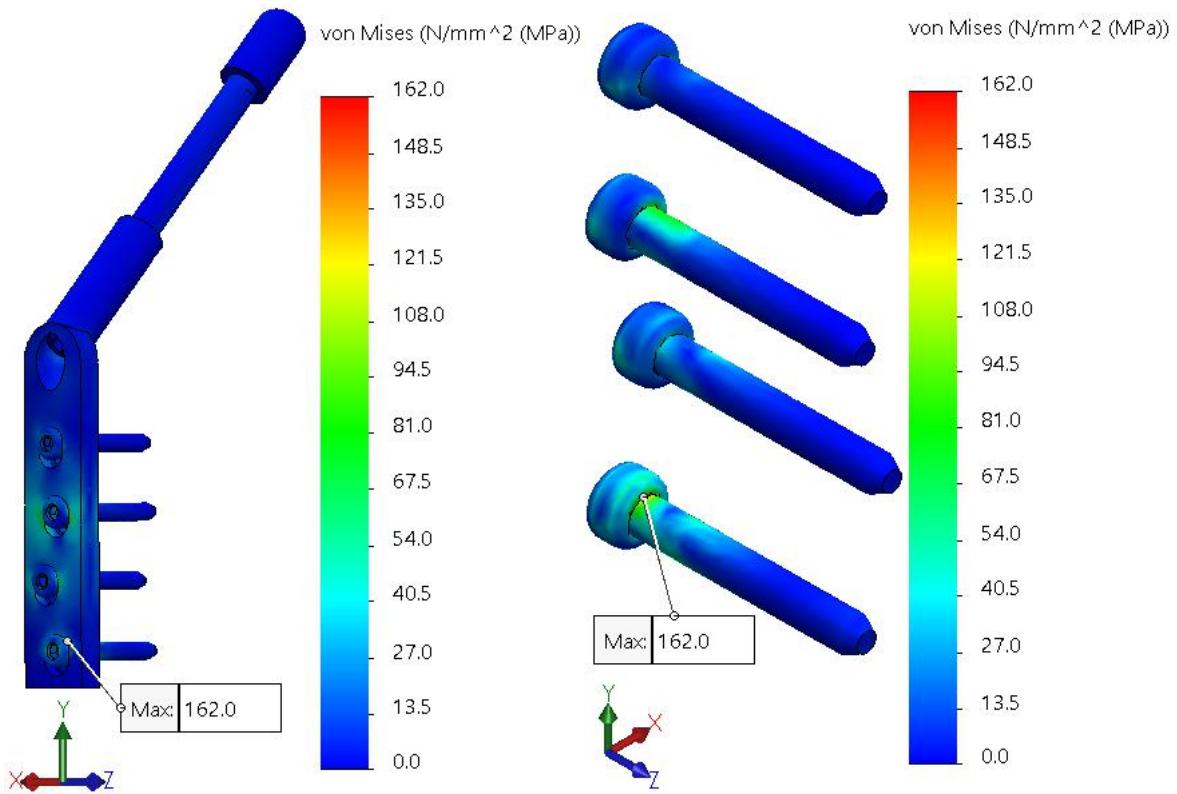
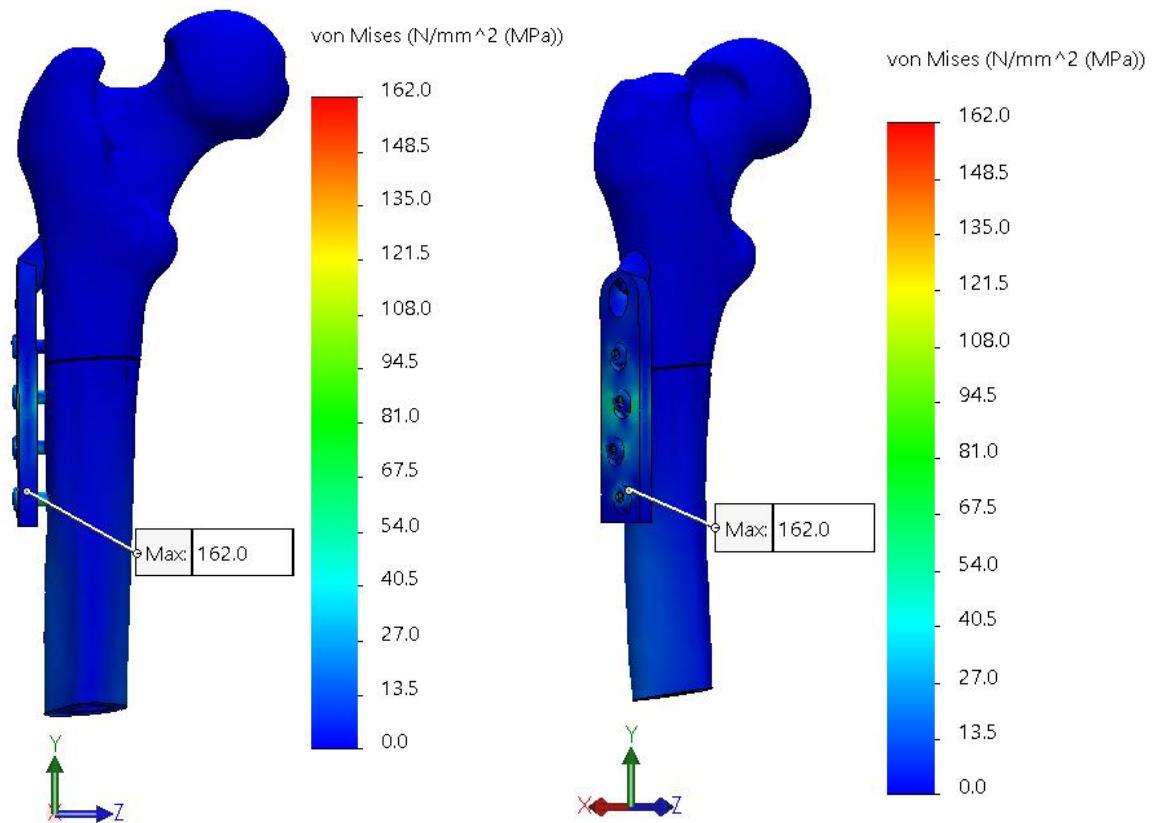
Force: 125 N



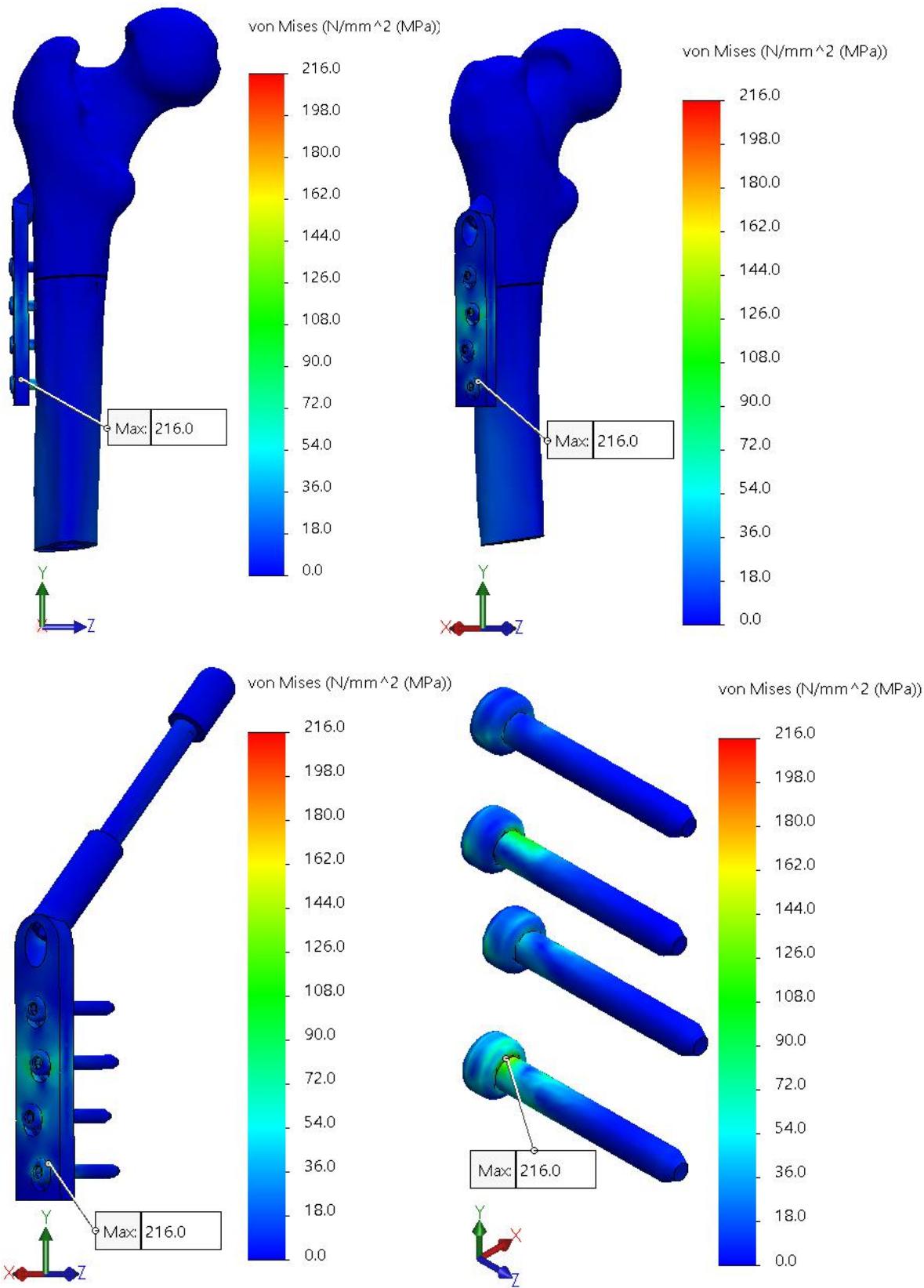
Force: 250 N

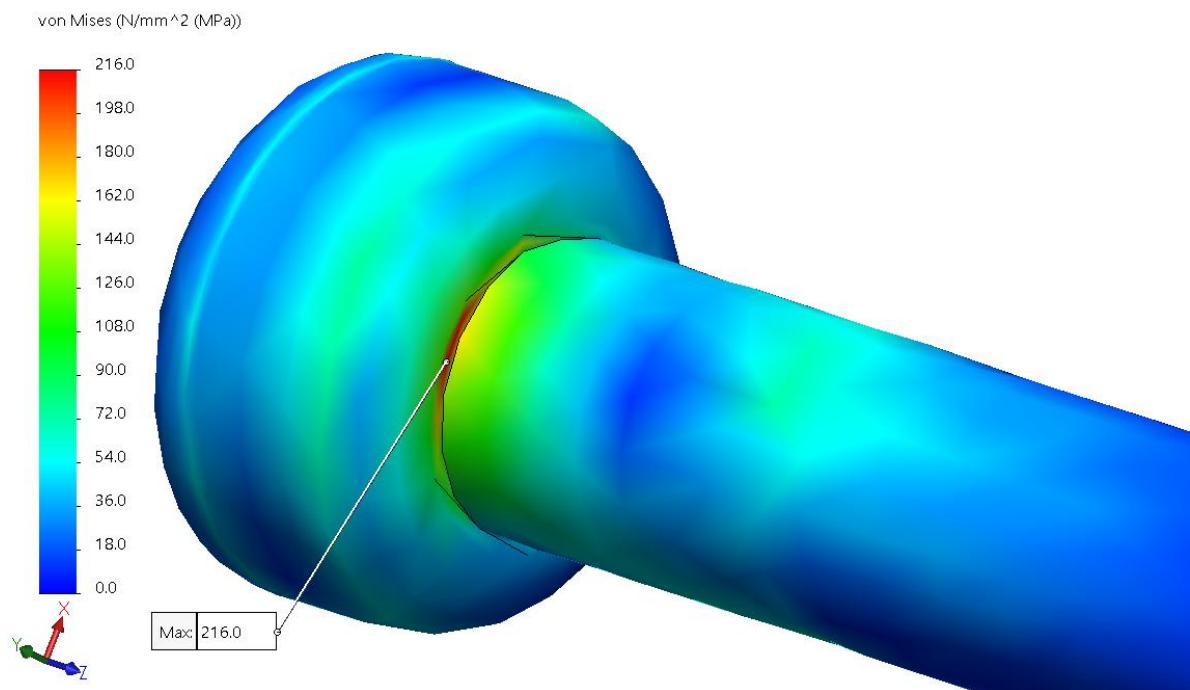
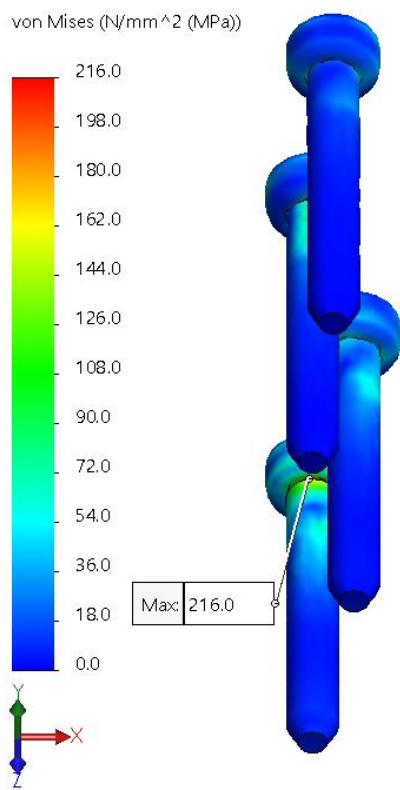


Force: 375 N



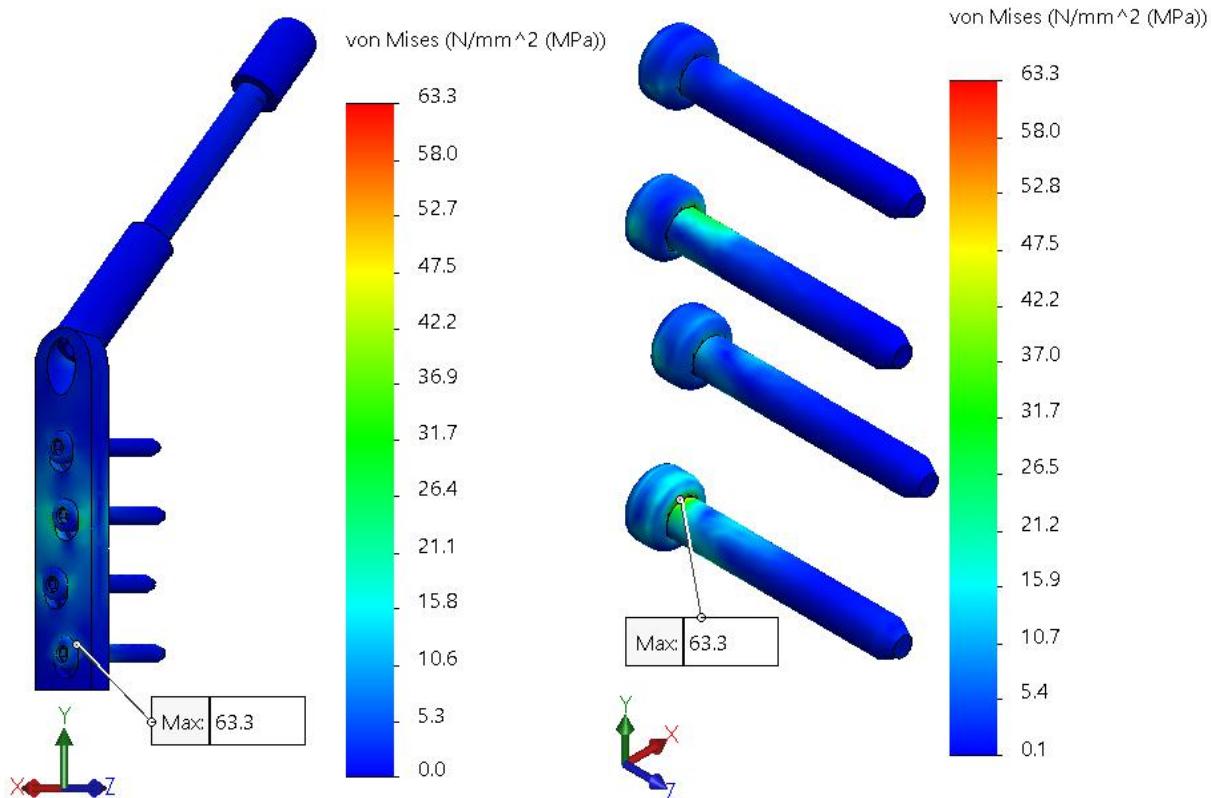
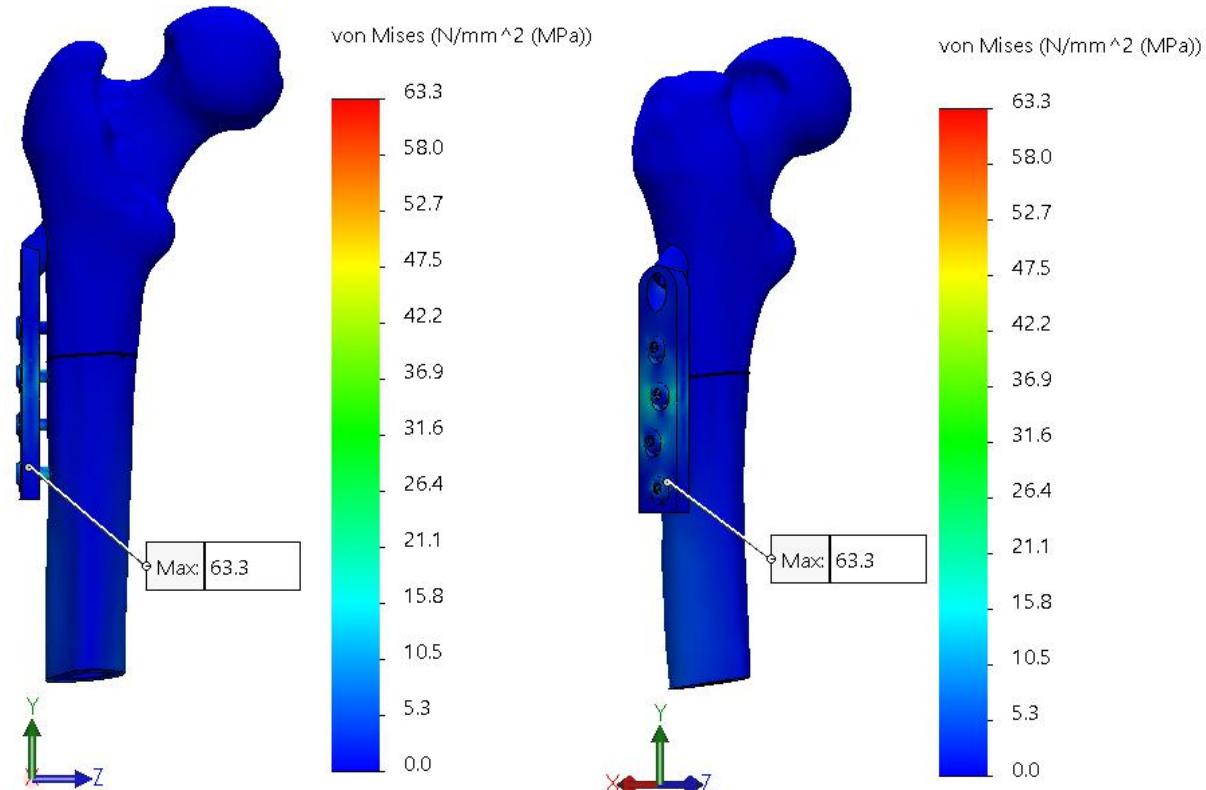
Force: 500 N



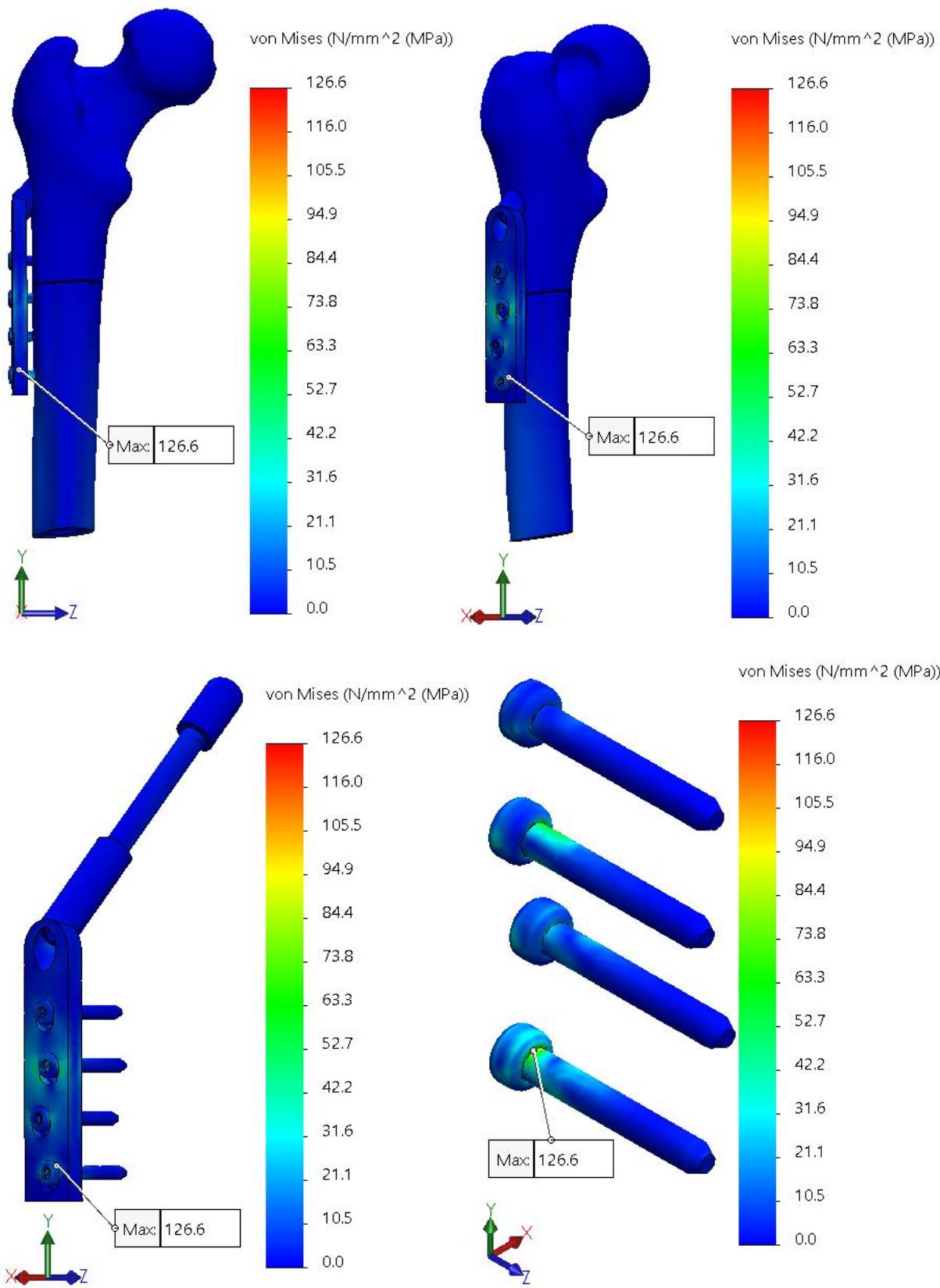


DHS (location 6: 3 cm below LT)

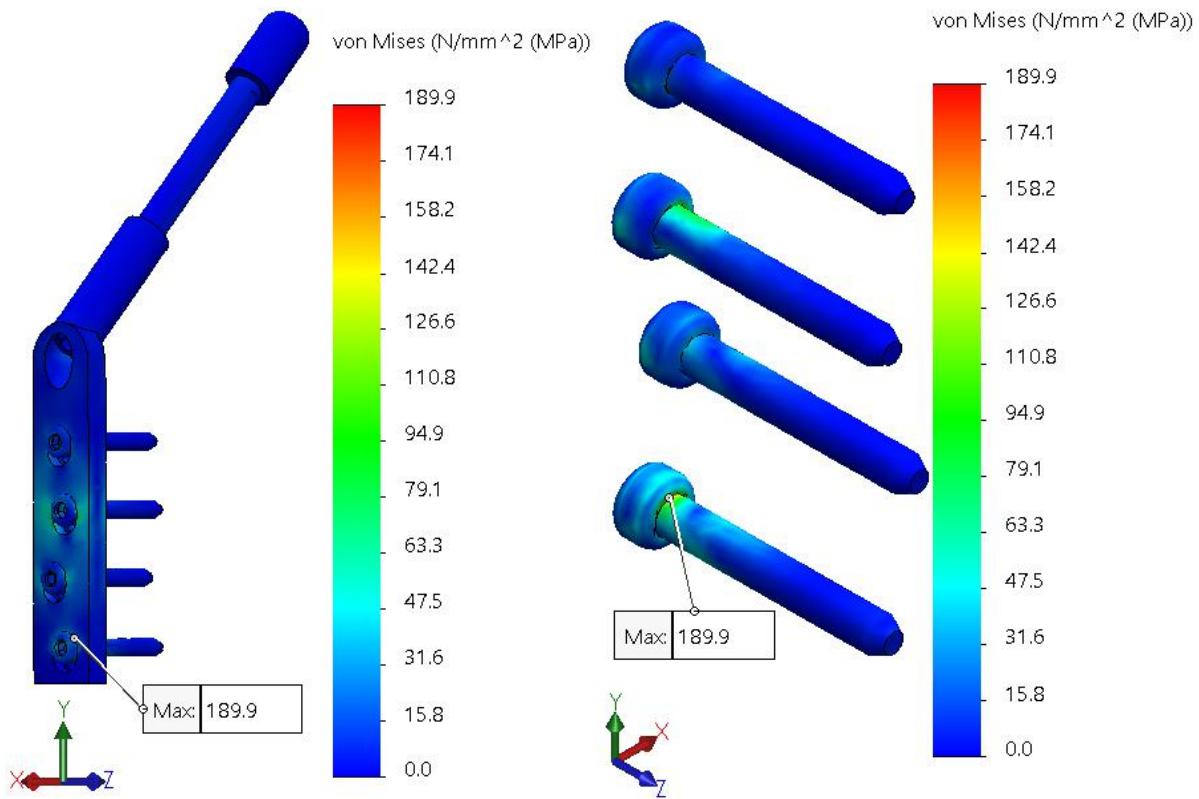
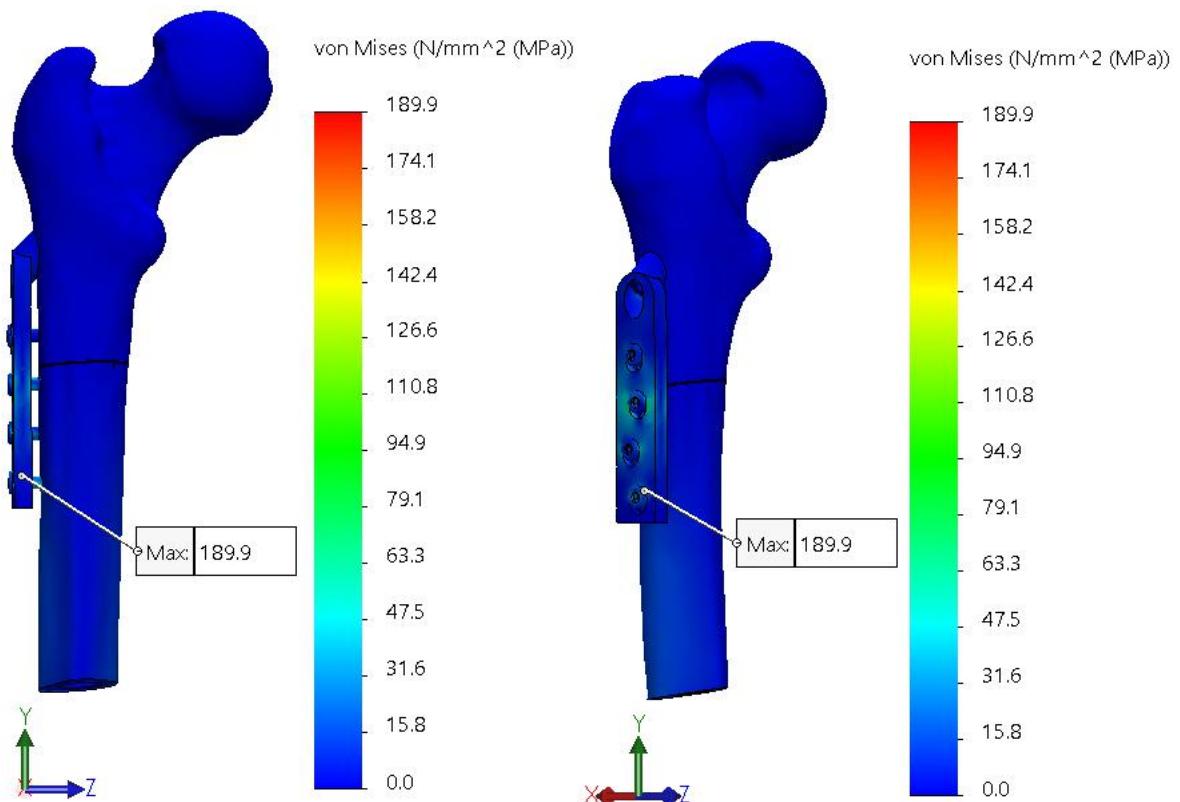
Force: 125 N



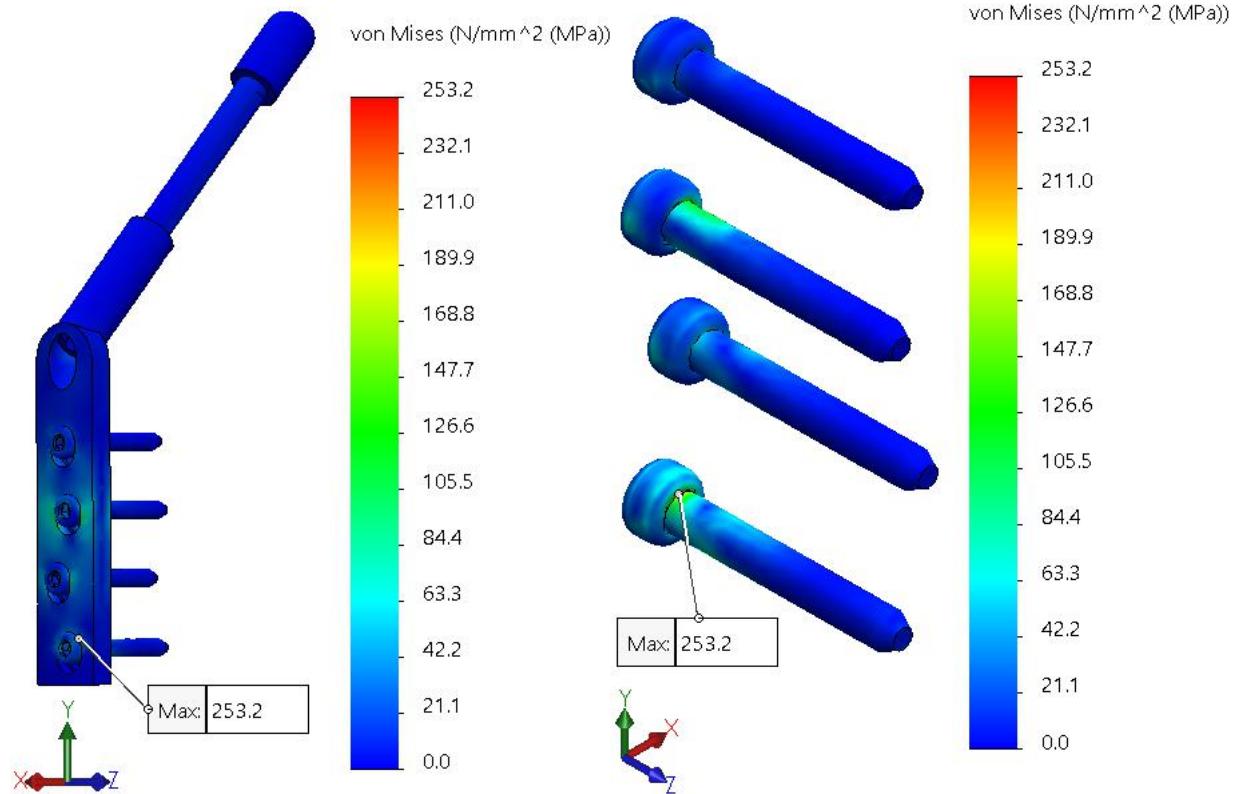
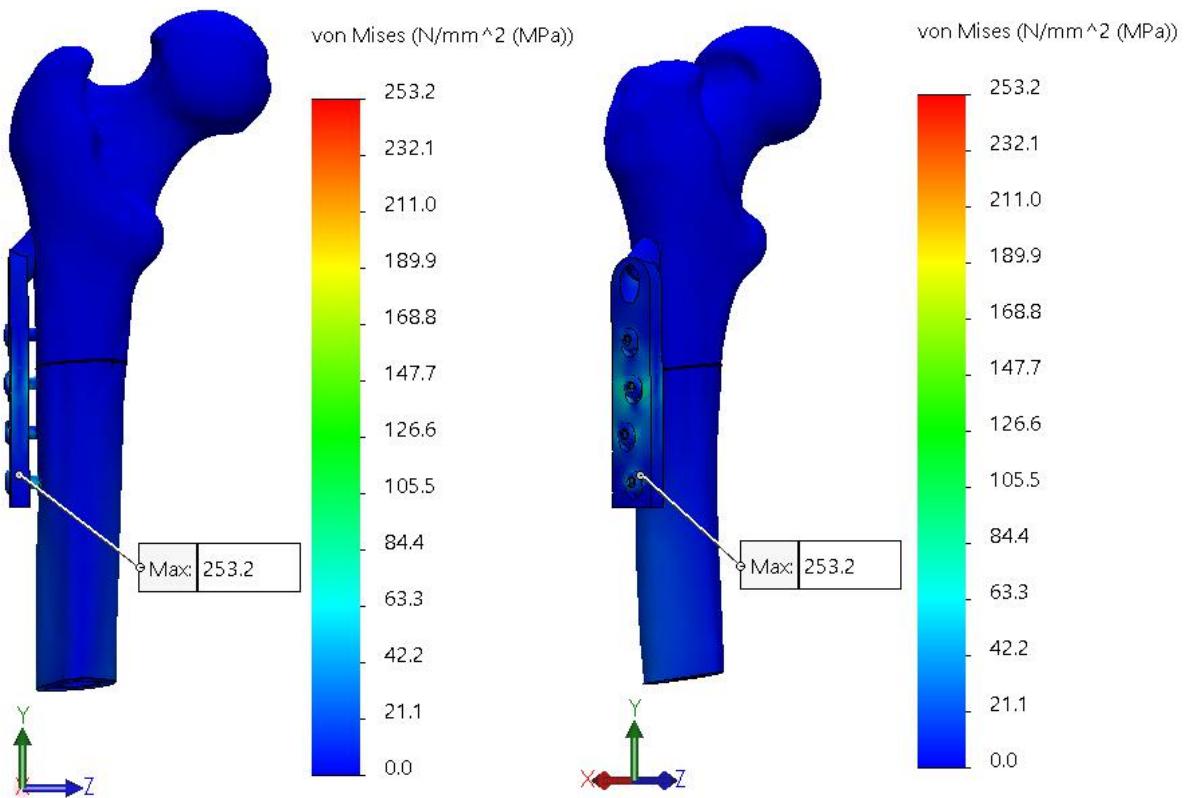
Force: 250 N



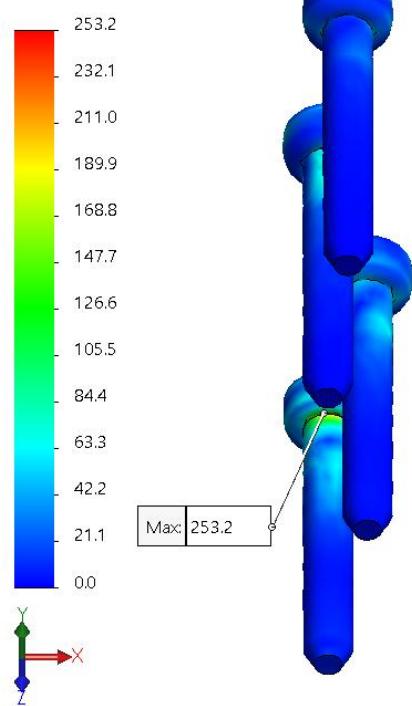
Force: 375 N



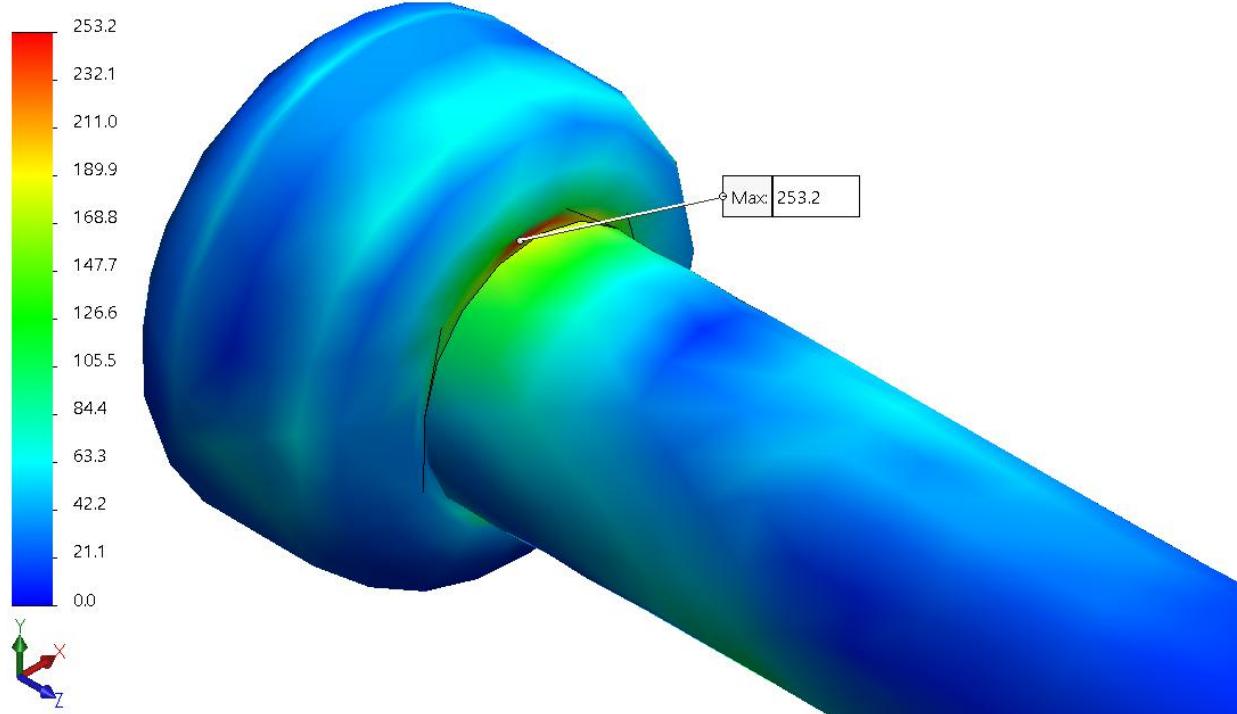
Force: 500 N



von Mises (N/mm² (MPa))

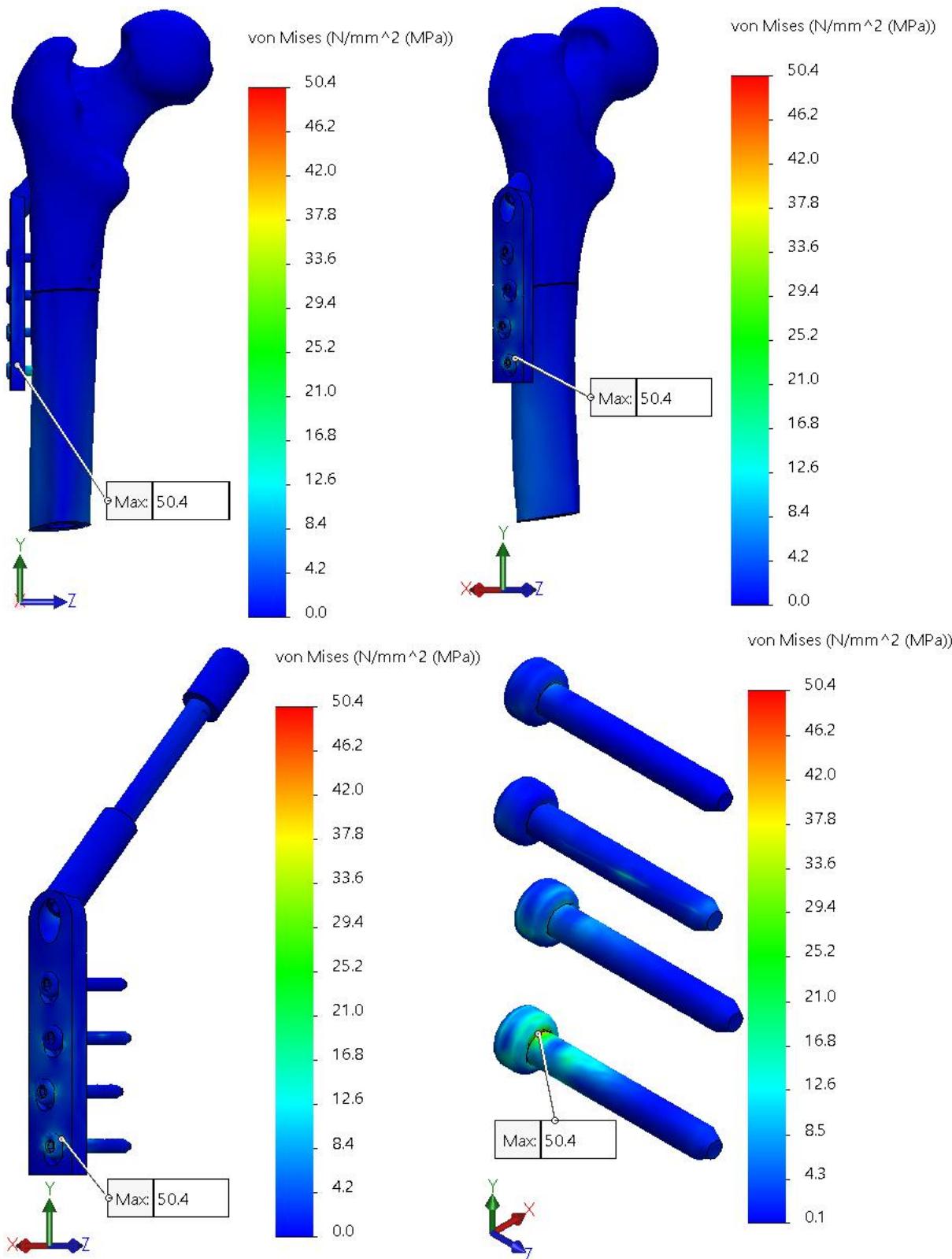


von Mises (N/mm² (MPa))

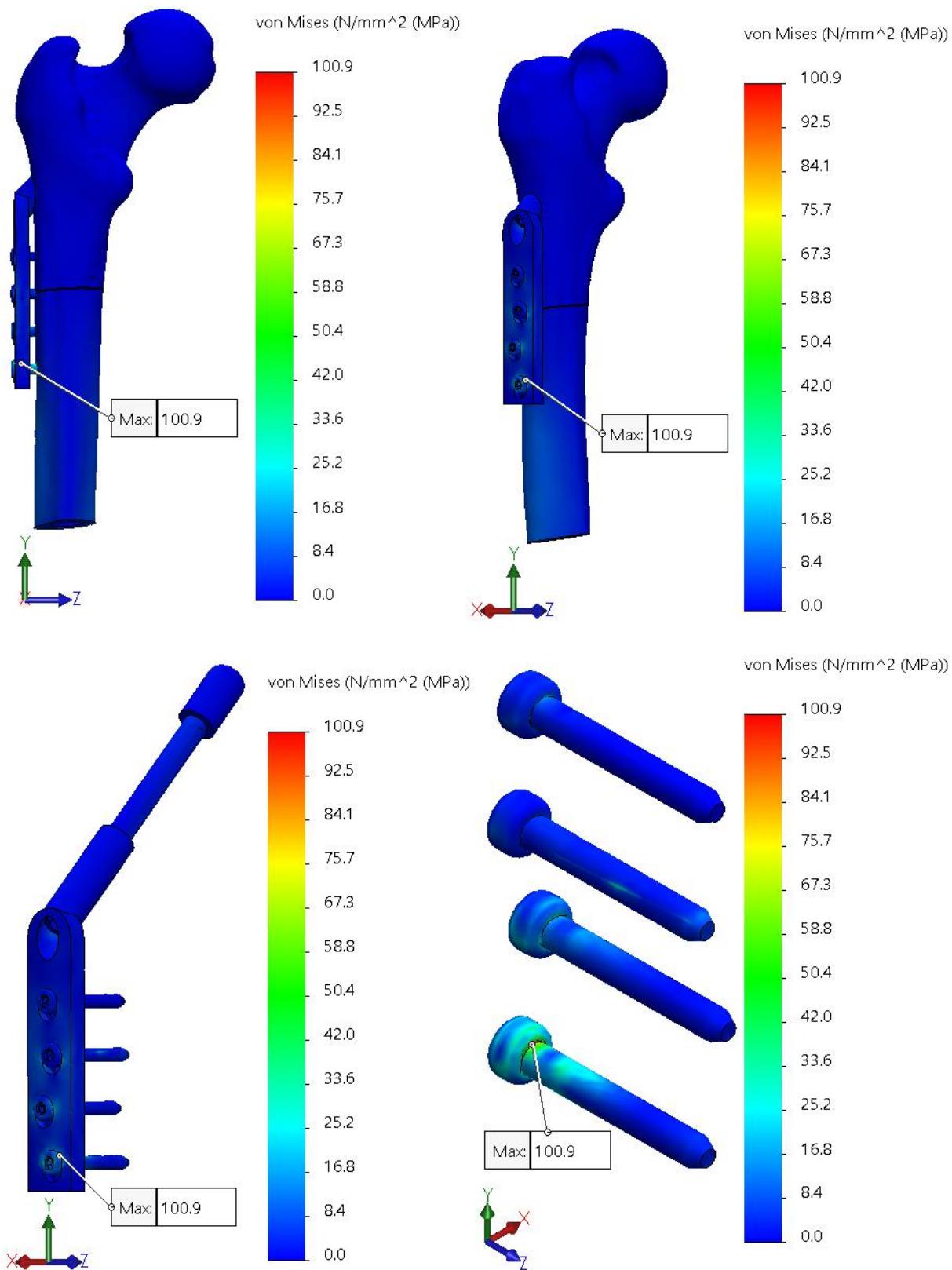


DHS (location 7: 3.5 cm below LT)

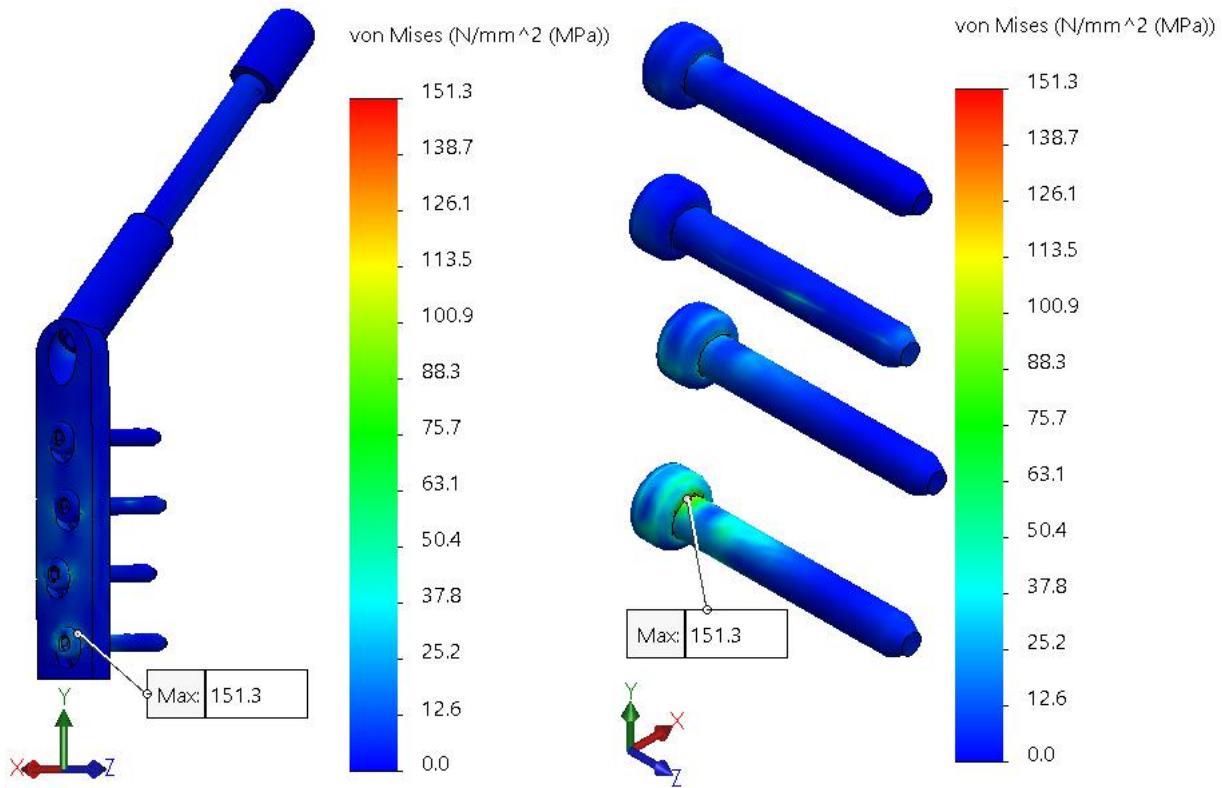
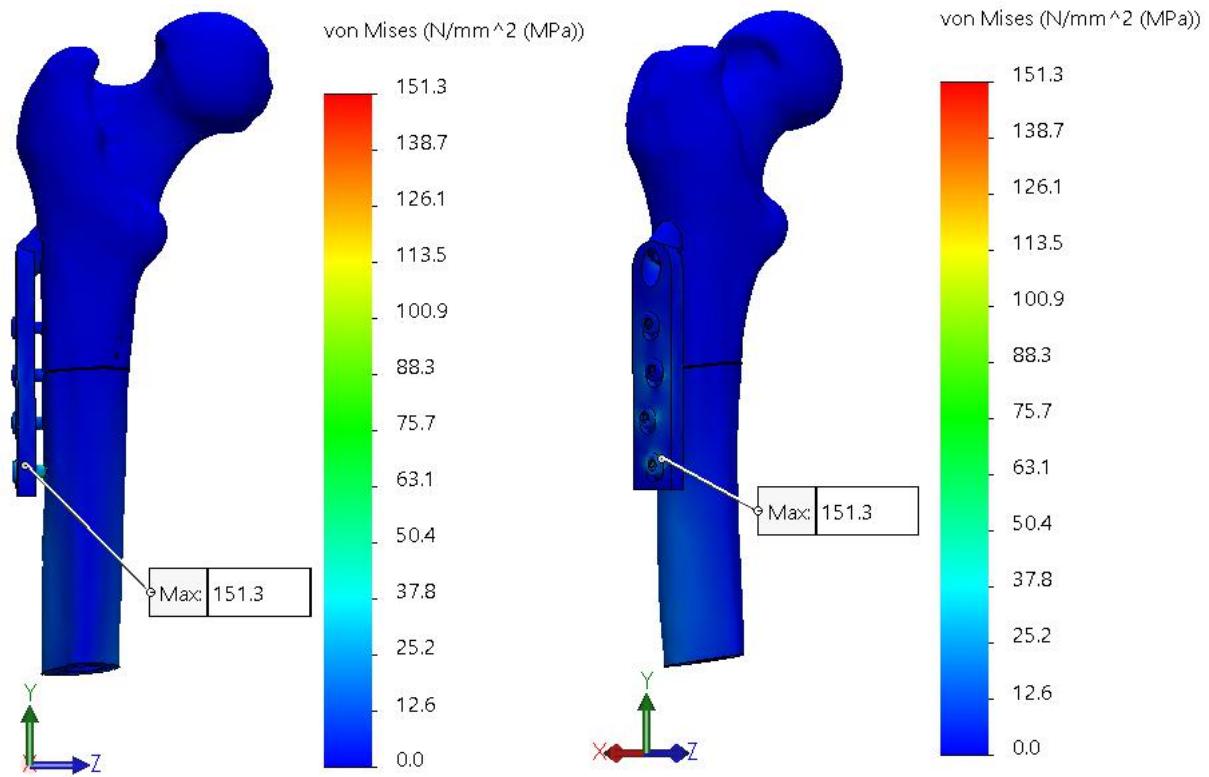
Force: 125 N



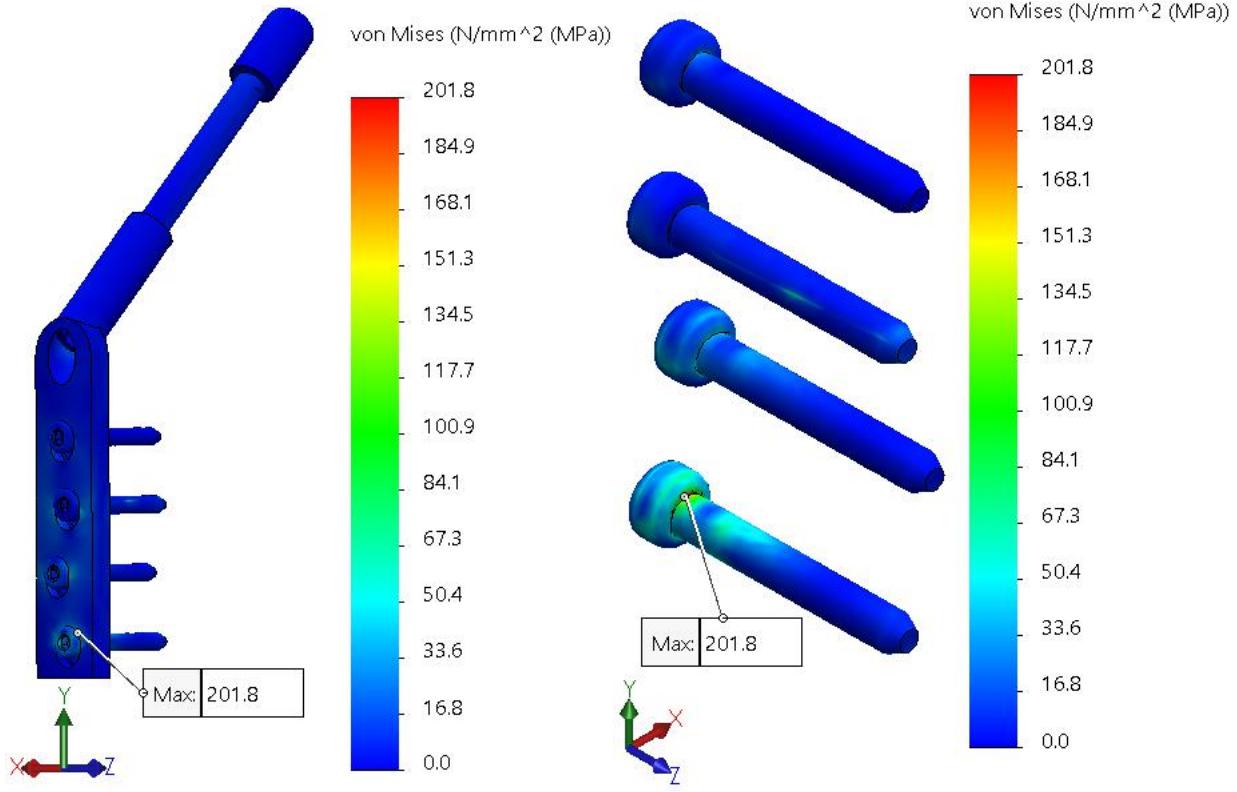
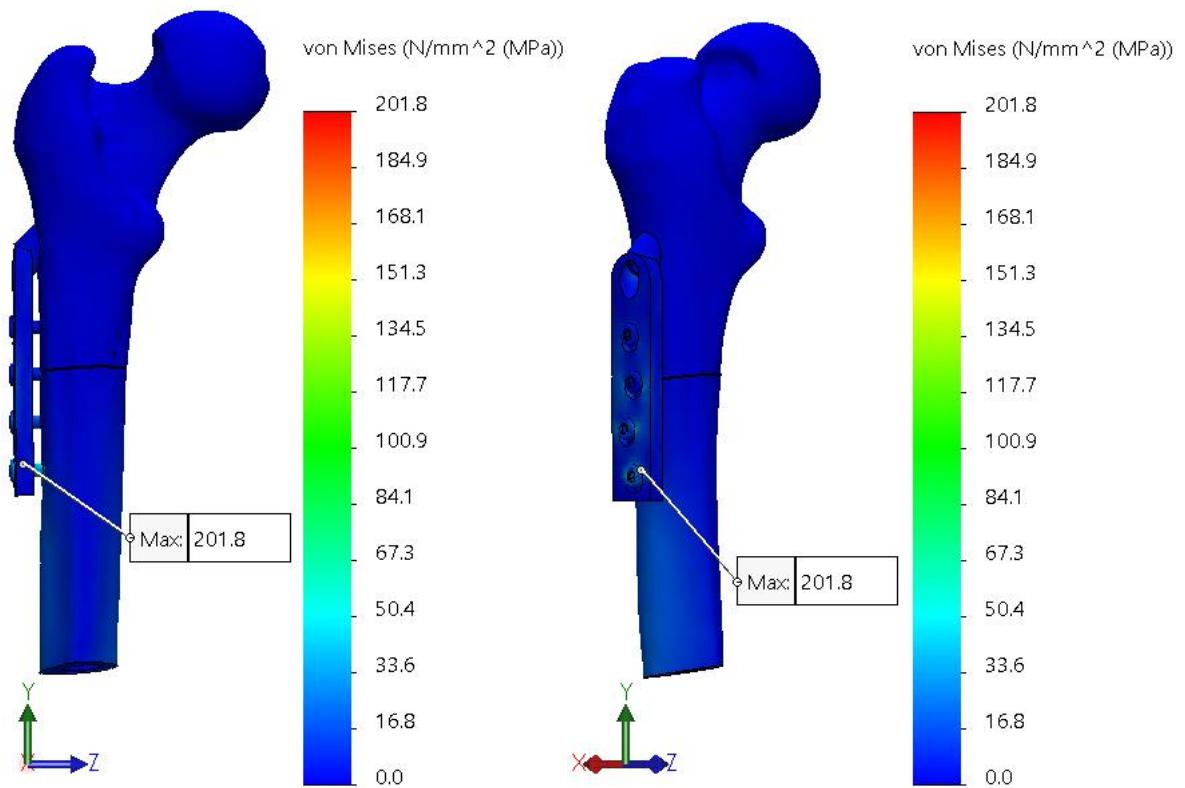
Force: 250 N

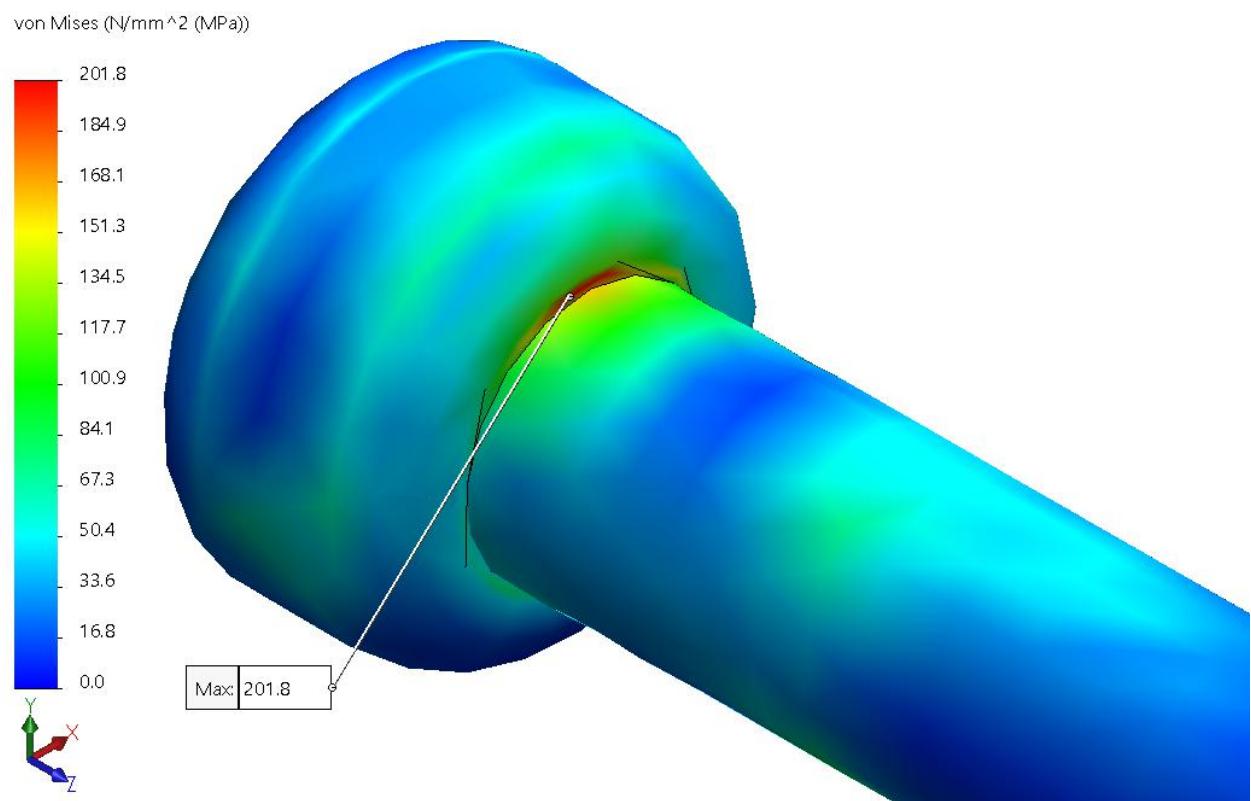
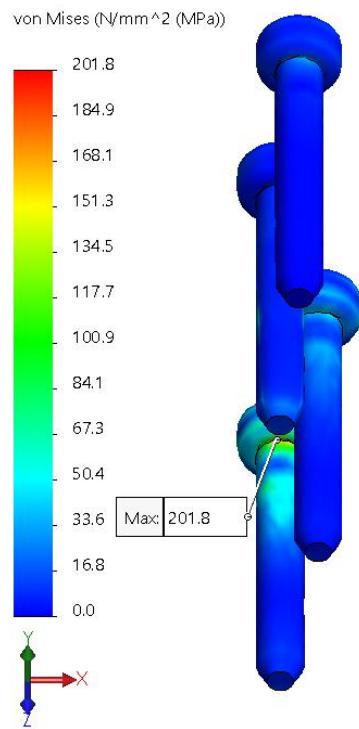


Force: 375 N



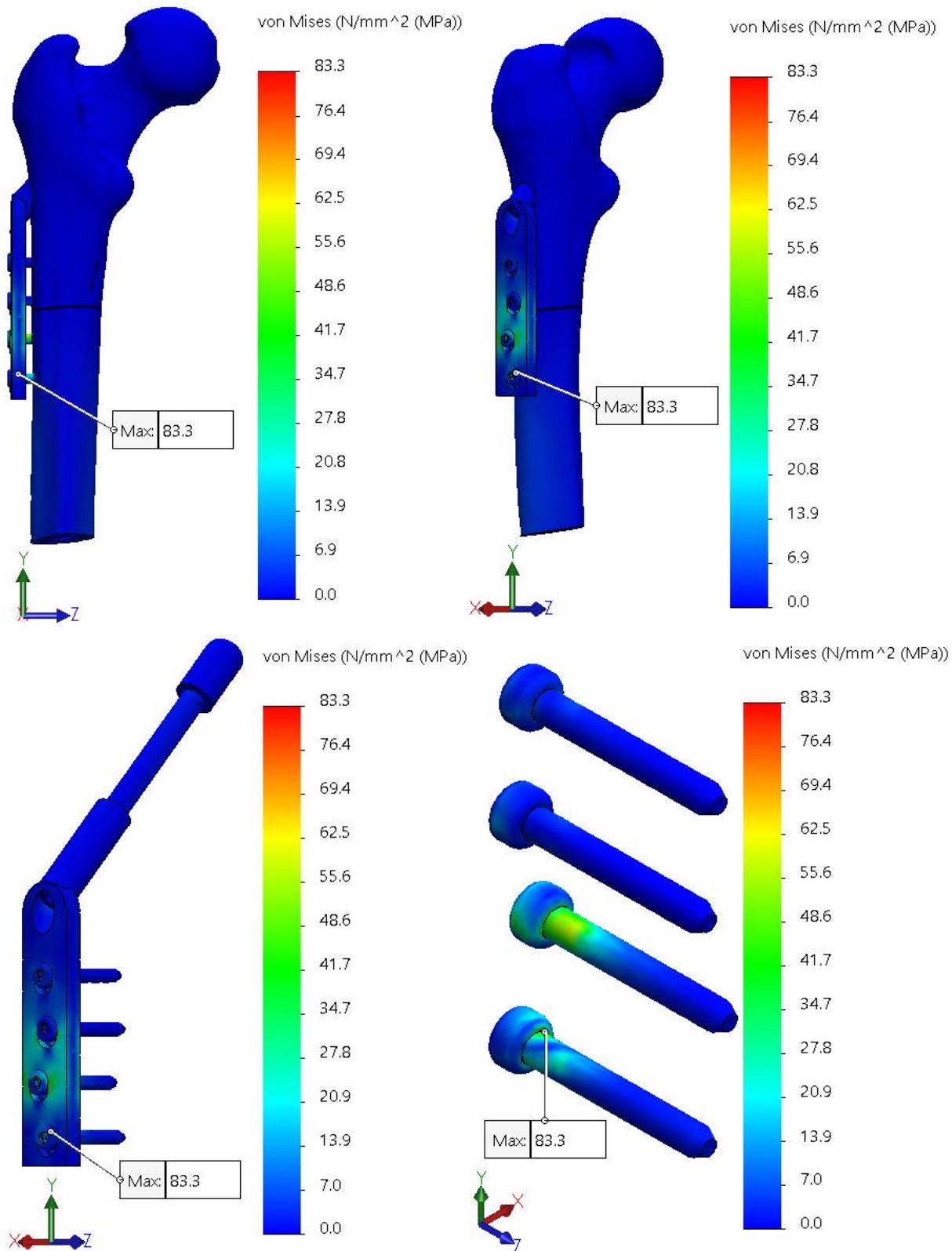
Force: 500 N



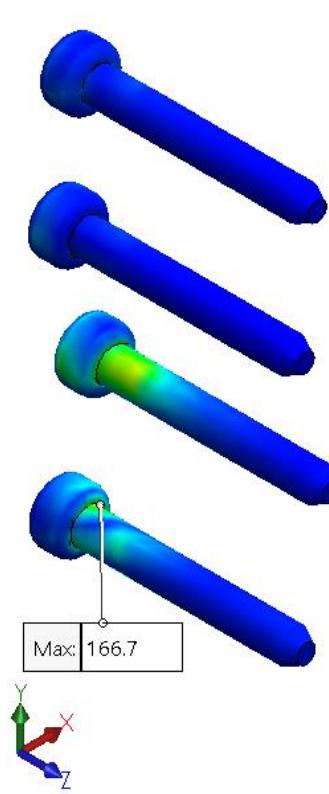
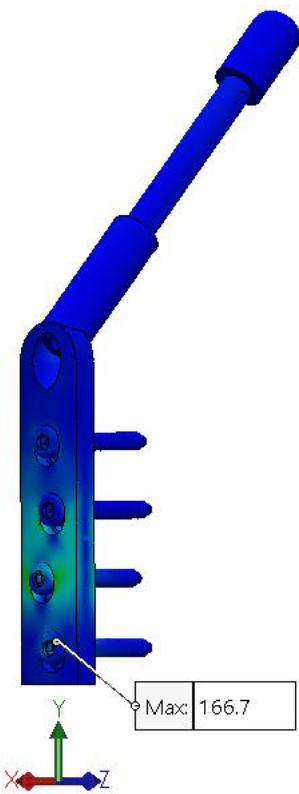
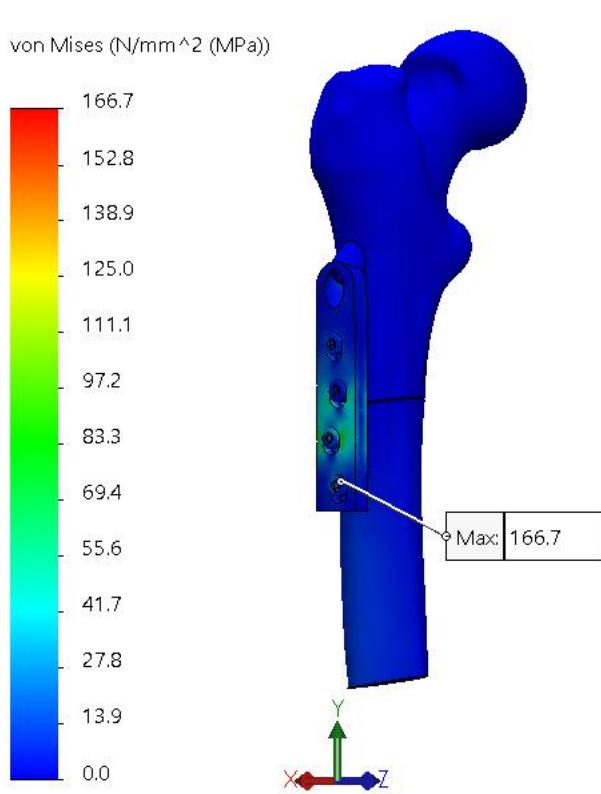
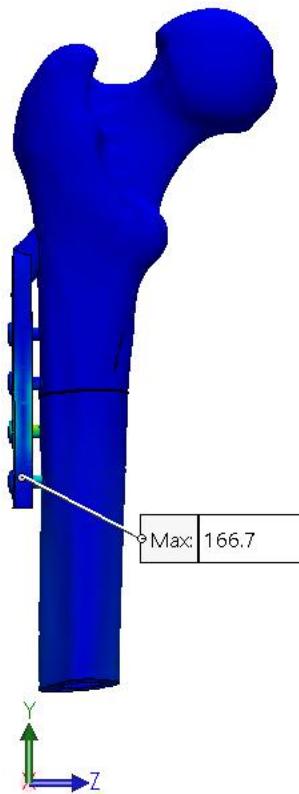


DHS (location 8: 4 cm below LT)

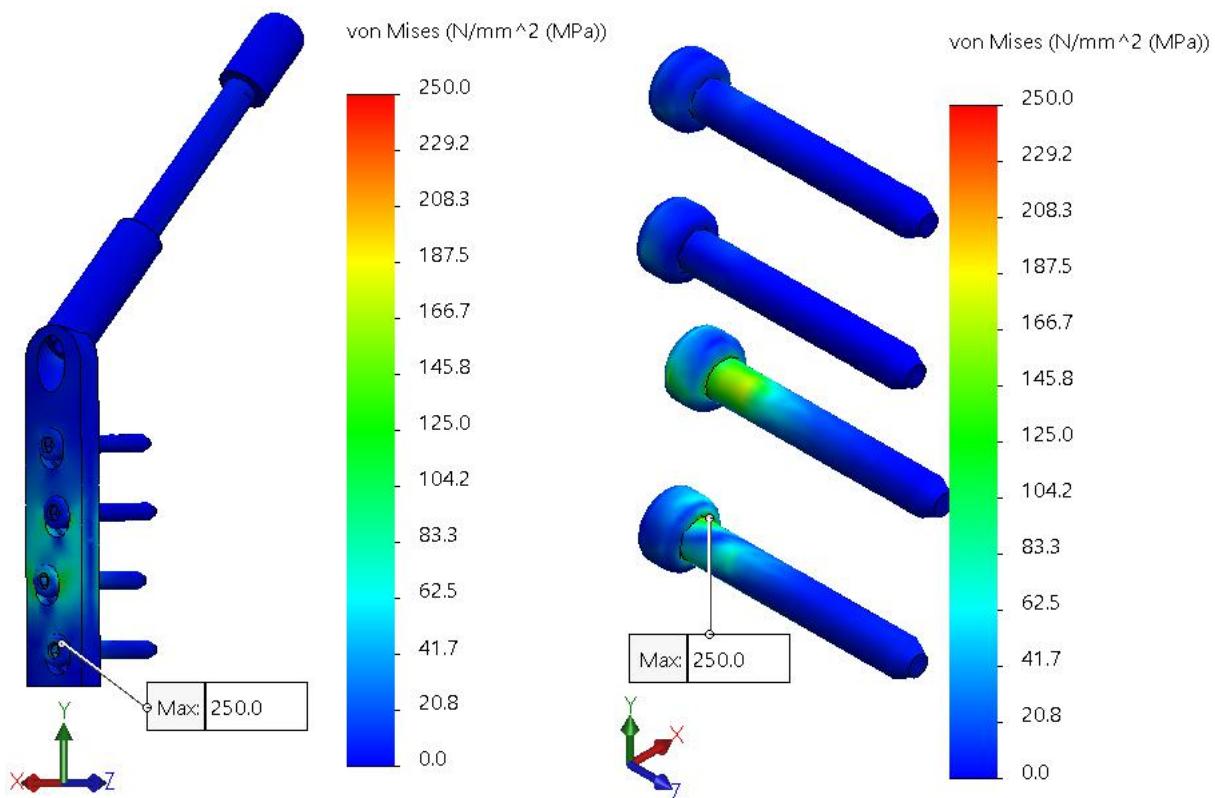
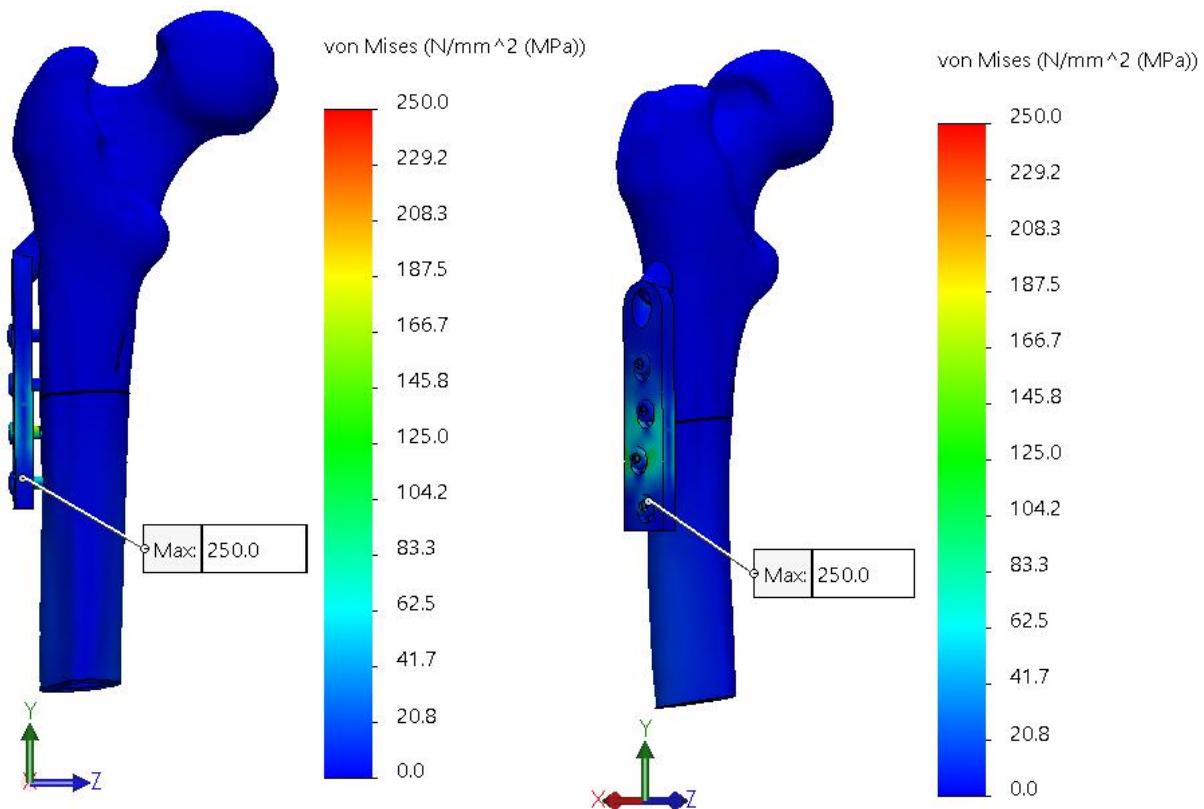
Force: 125 N



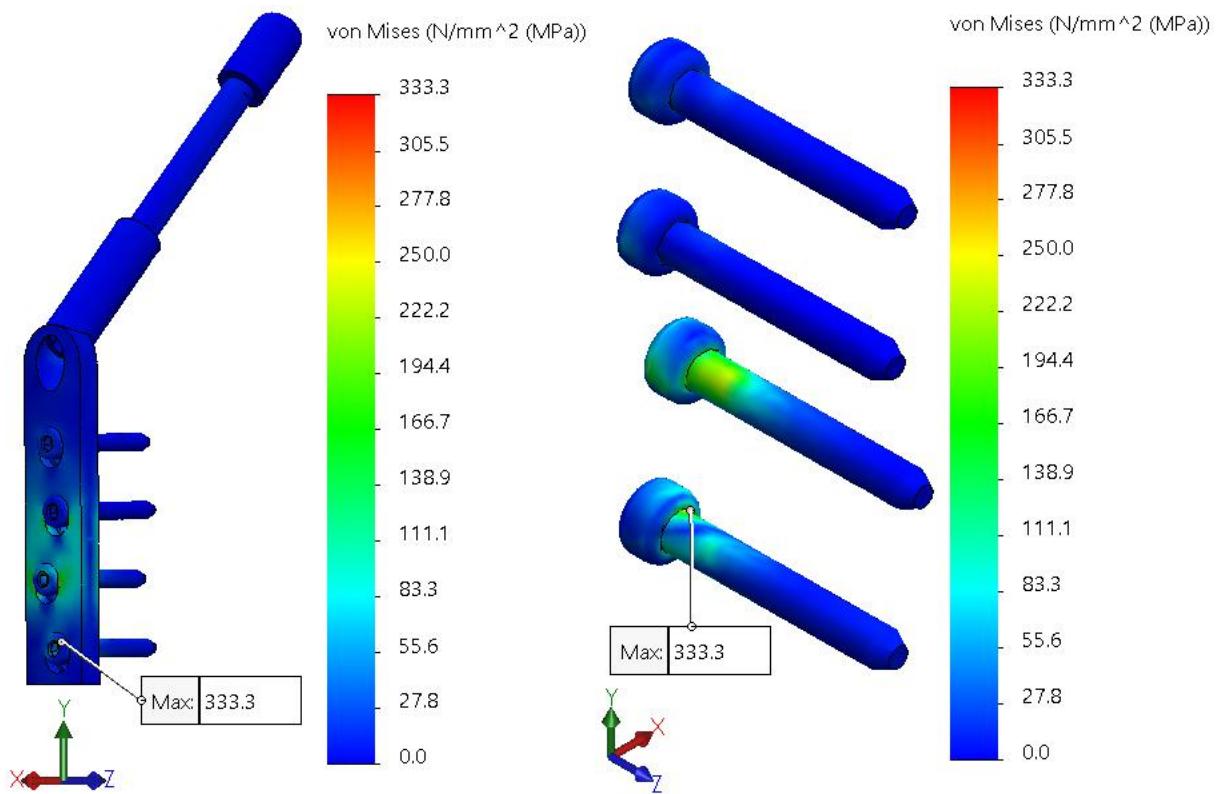
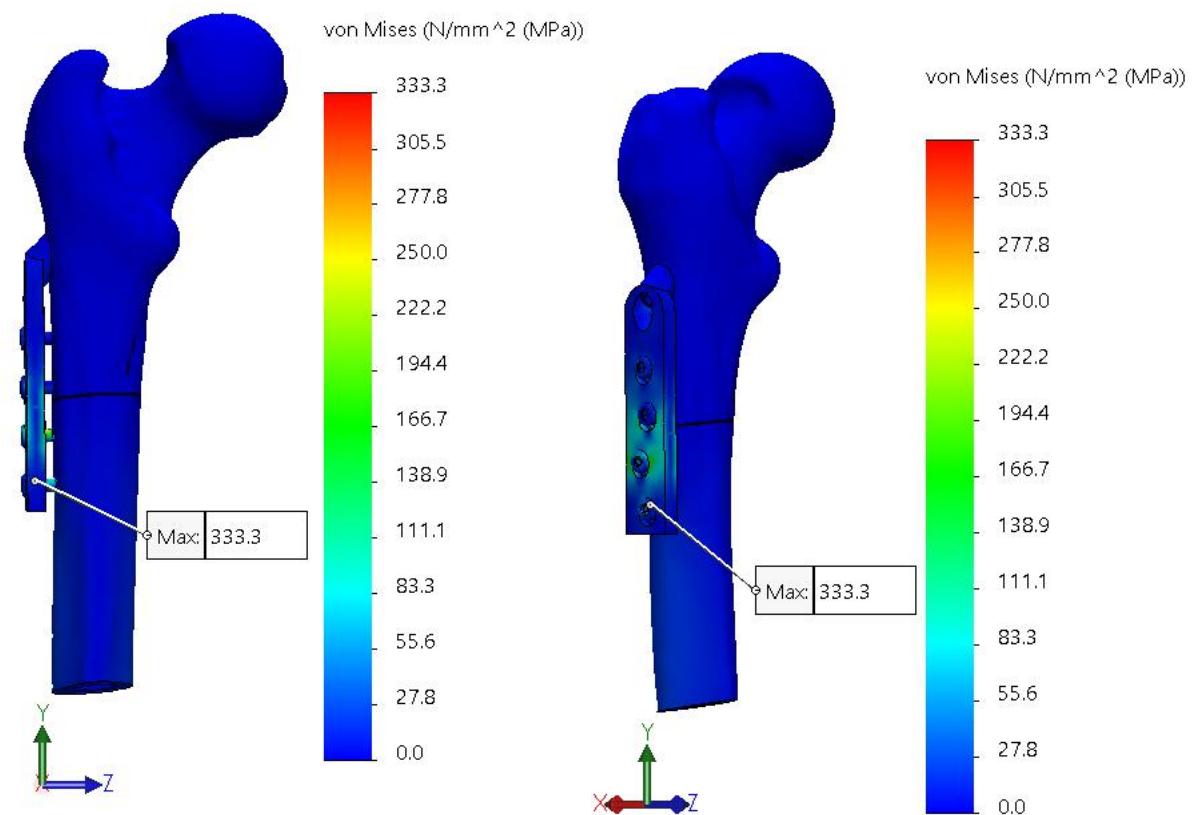
Force: 250 N

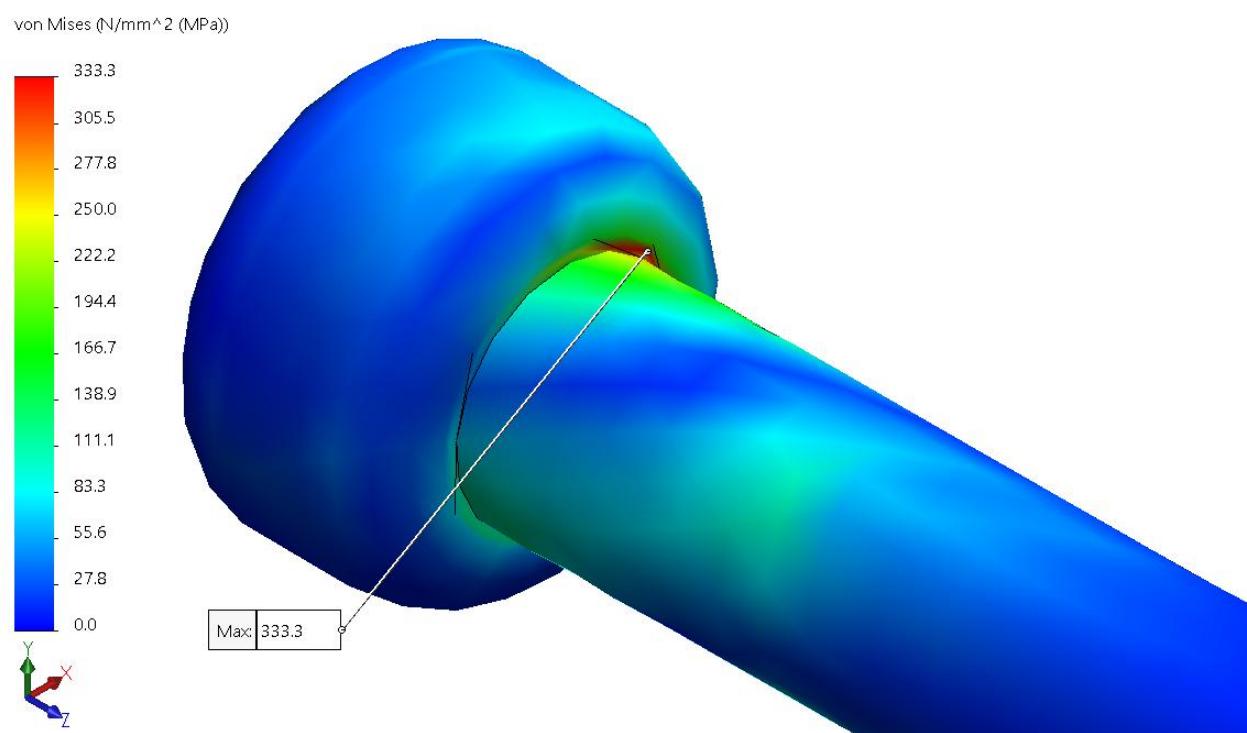
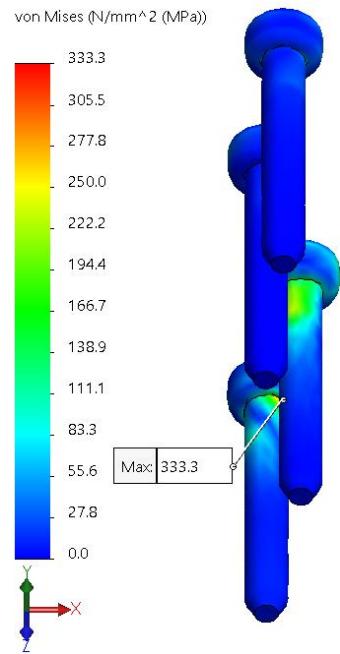


Force: 375 N



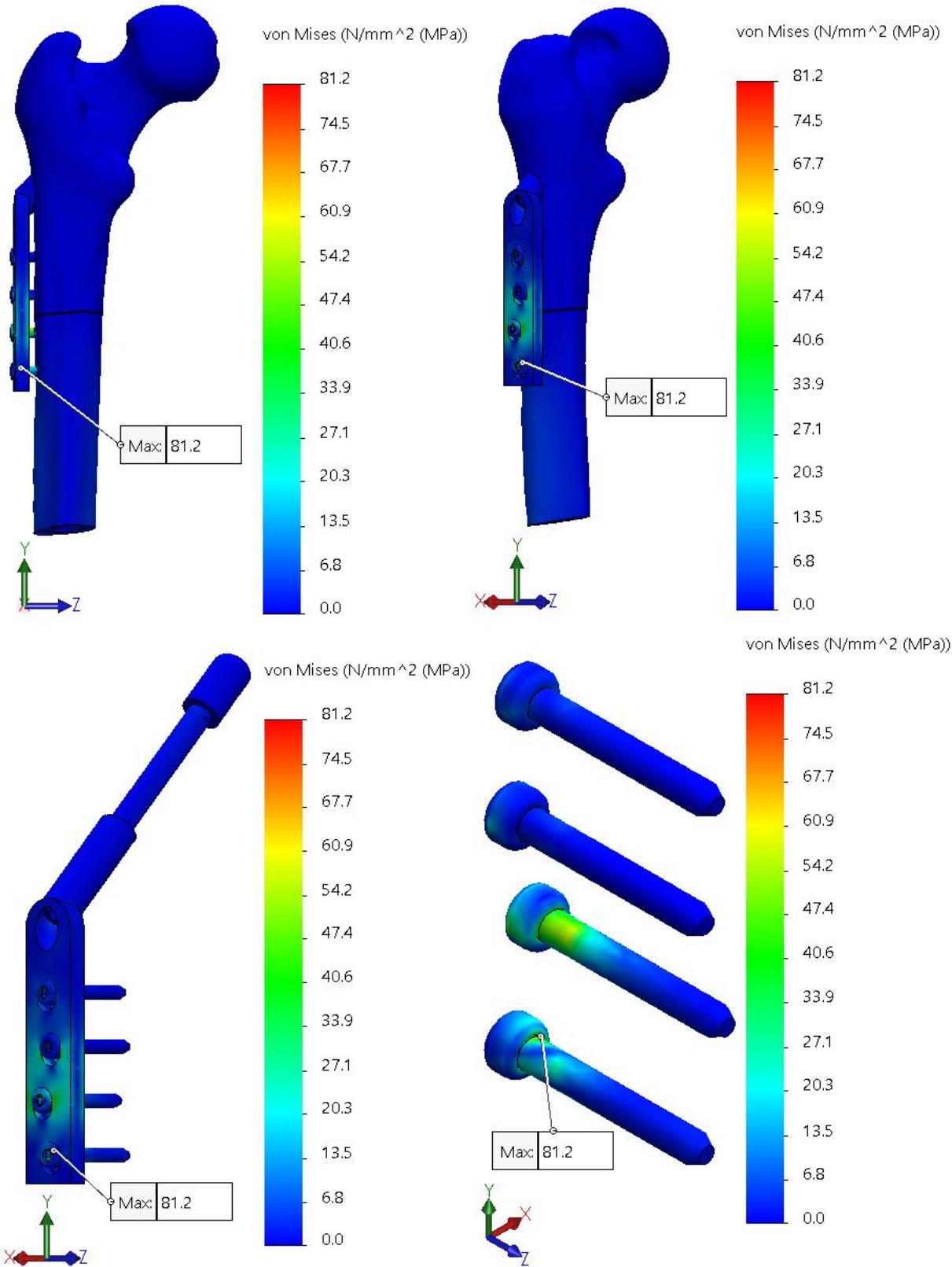
Force: 500 N



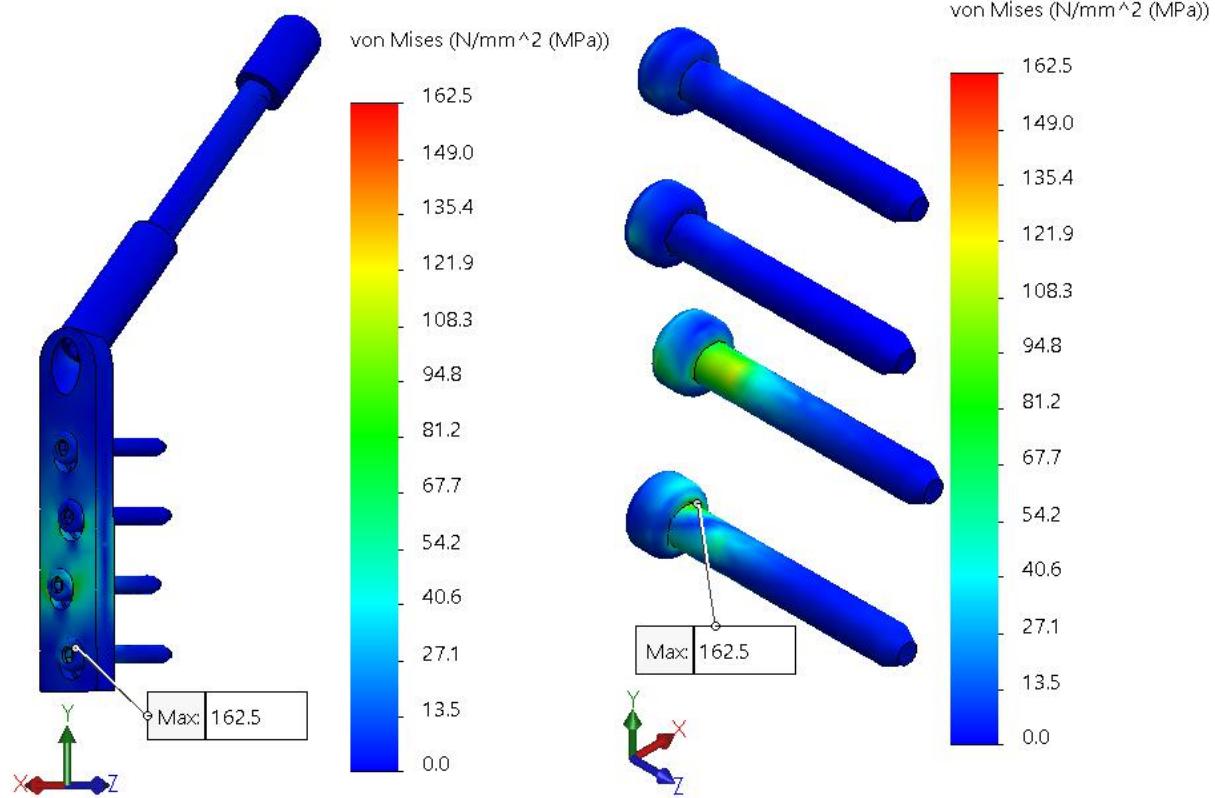
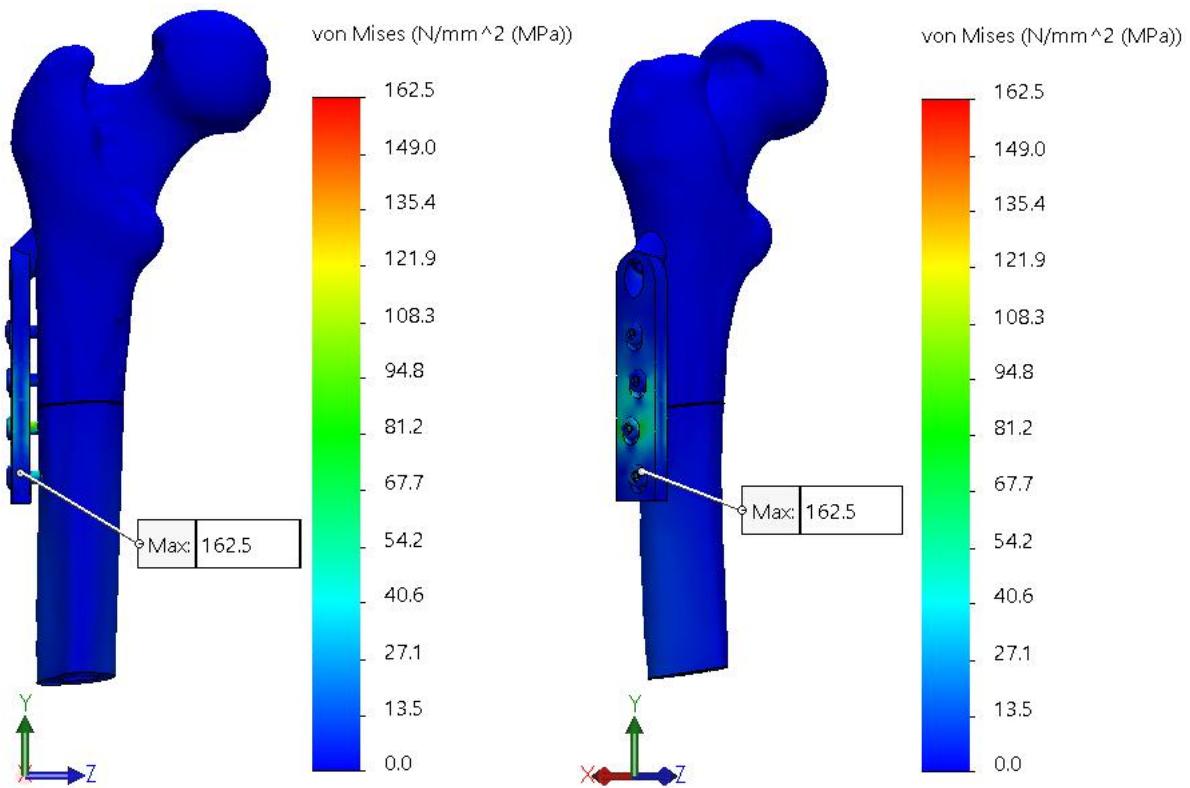


DHS (location 9: 4.5 cm below LT)

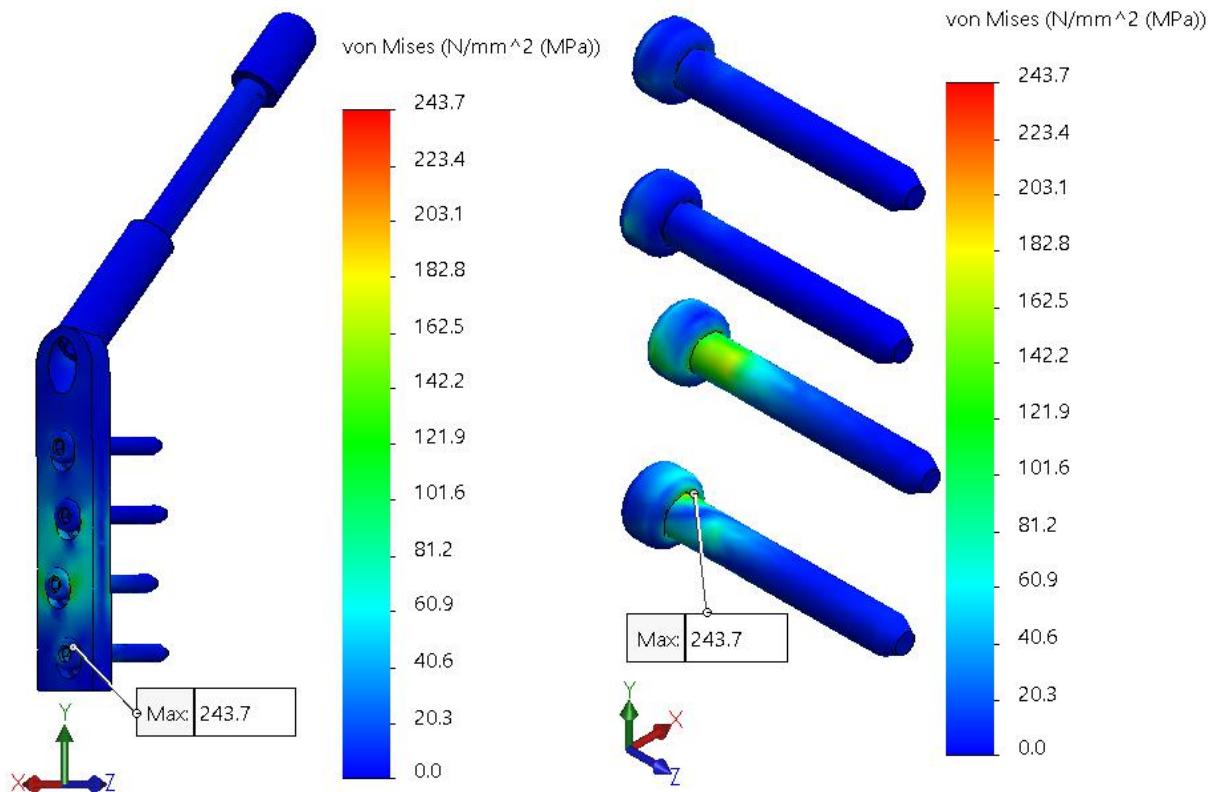
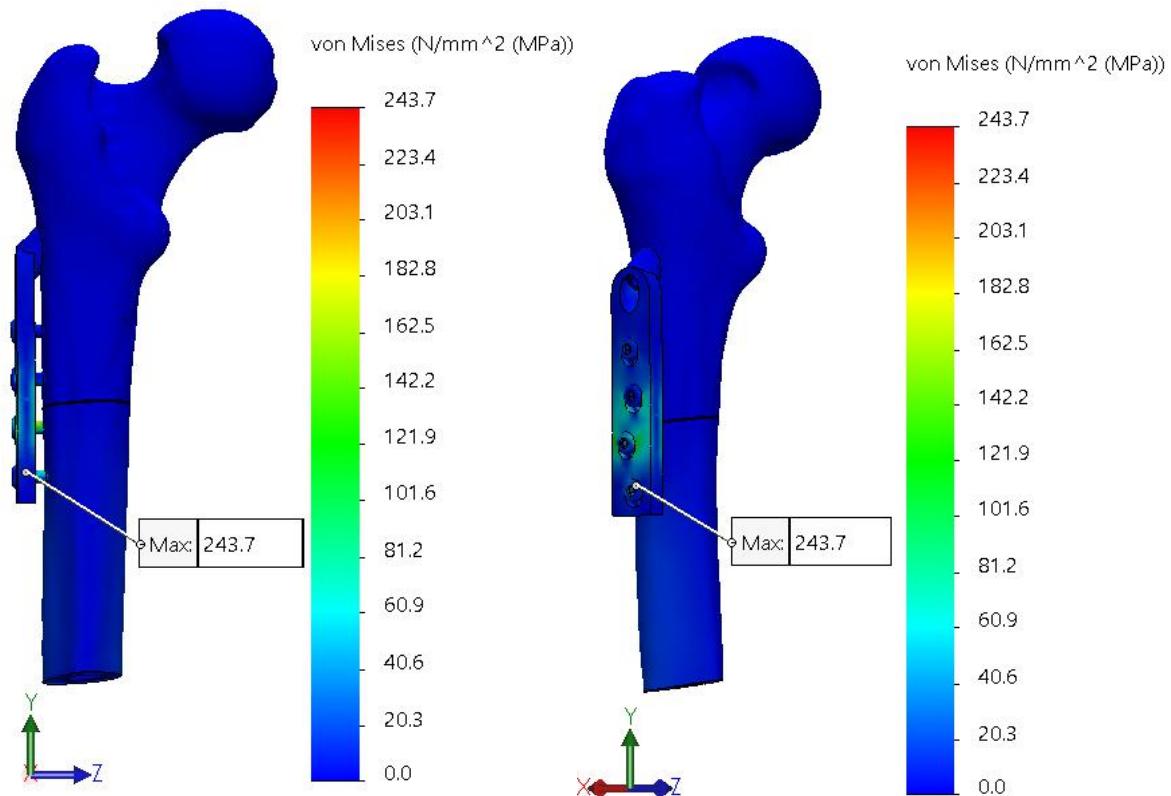
Force: 125 N



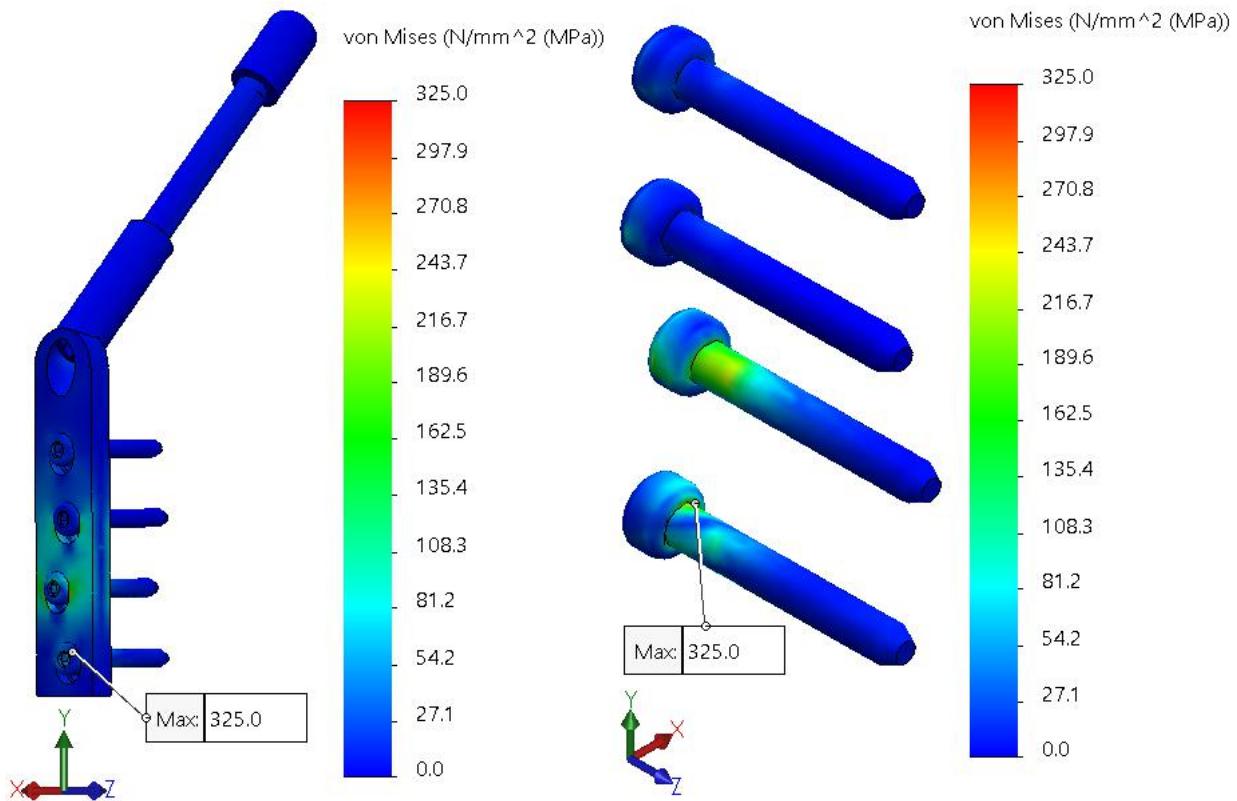
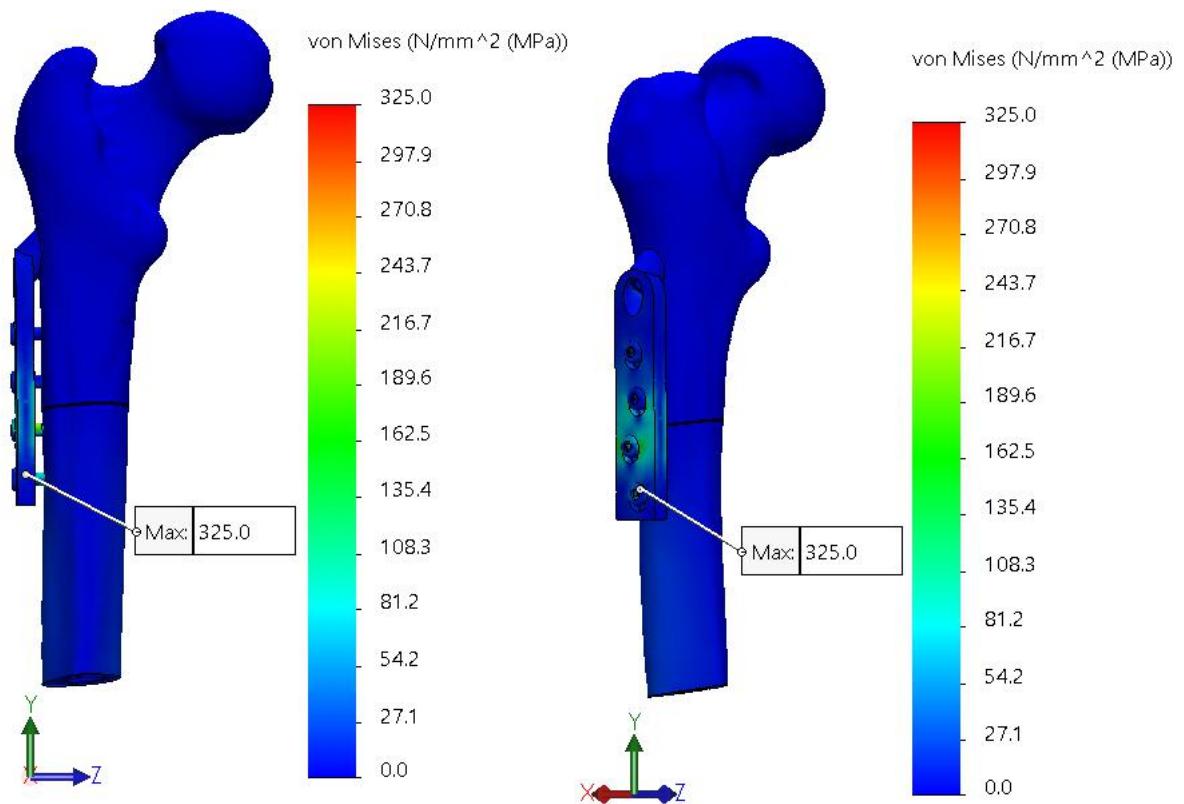
Force: 250 N



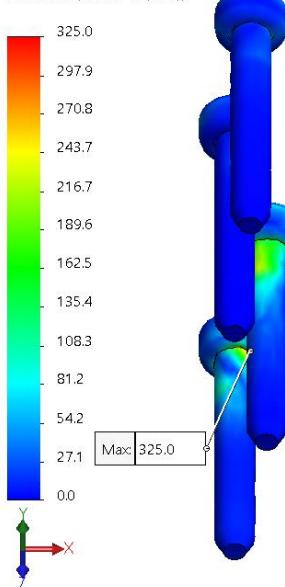
Force: 375 N



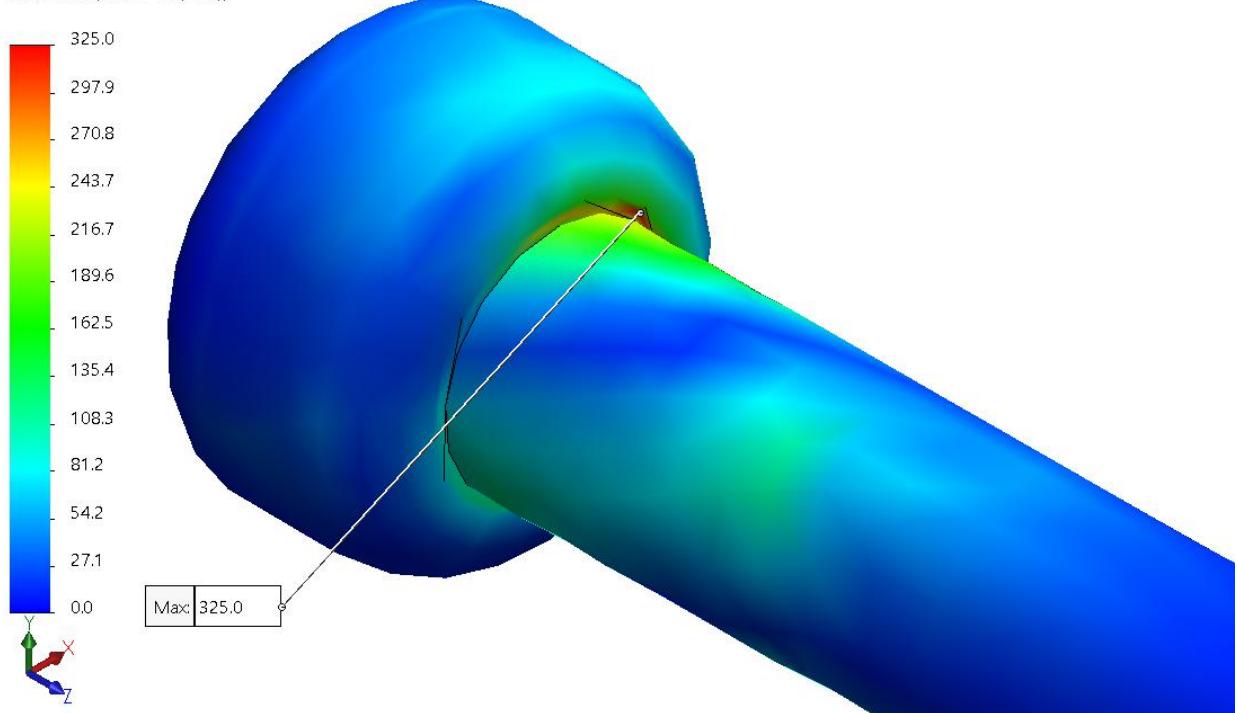
Force: 500 N



von Mises (N/mm² (MPa))

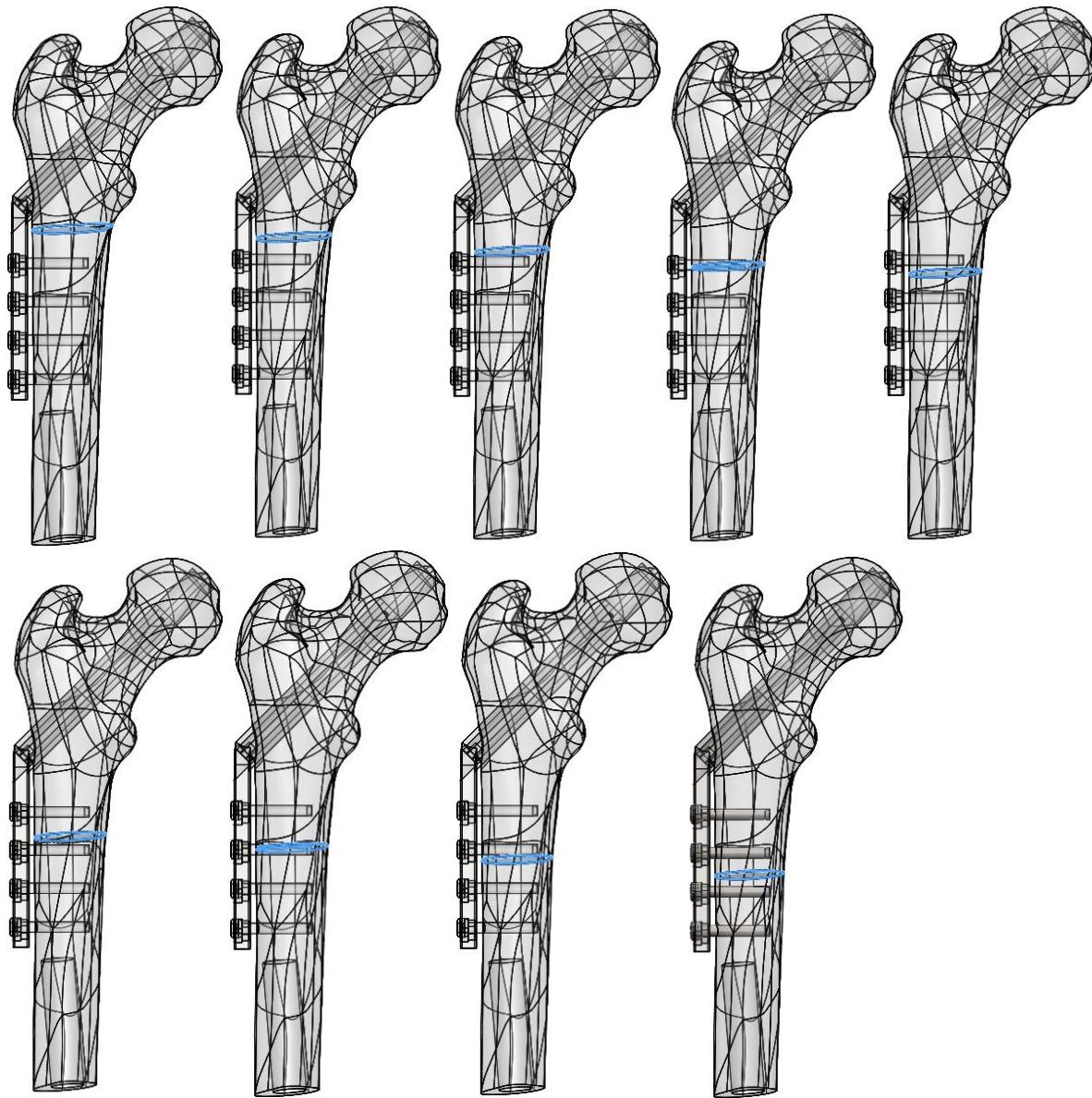


von Mises (N/mm² (MPa))



DHS Simulation FEM Set-Up

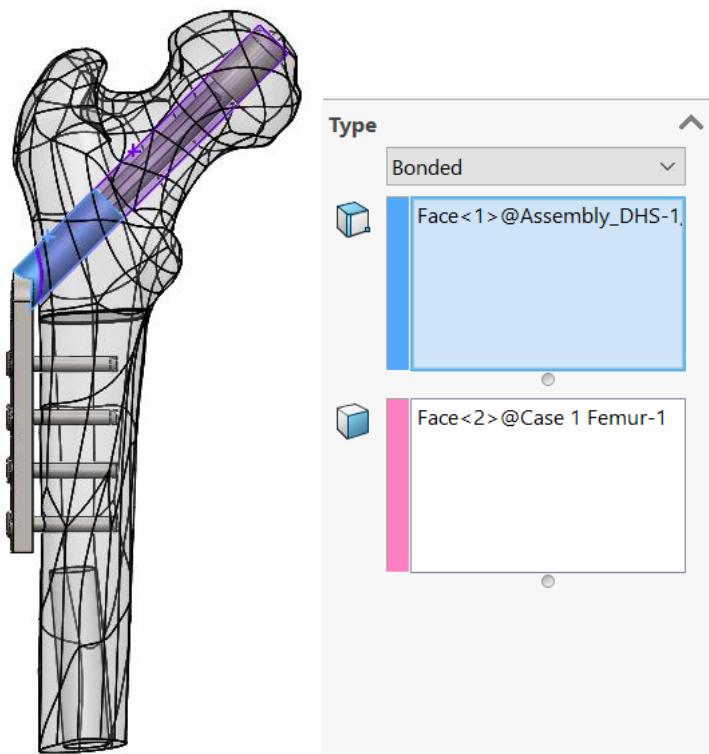
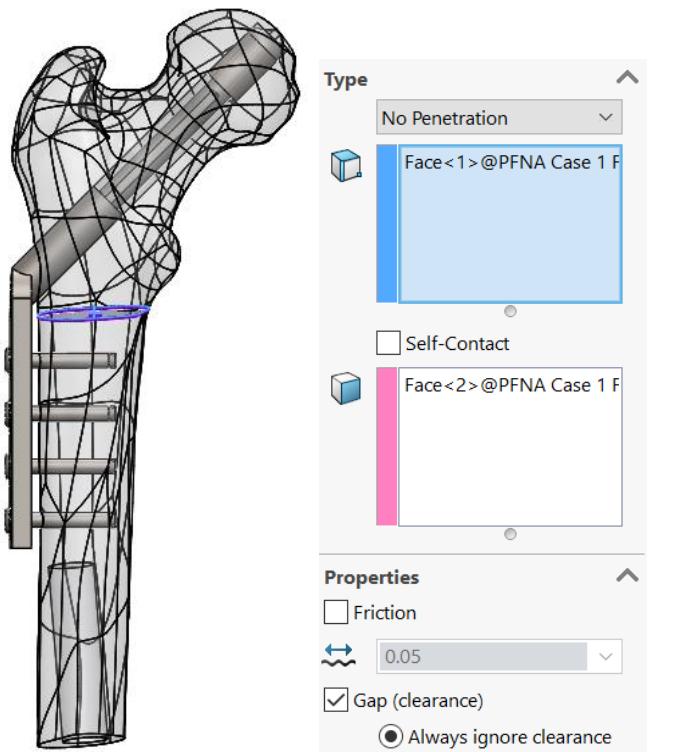
Fracture height / location



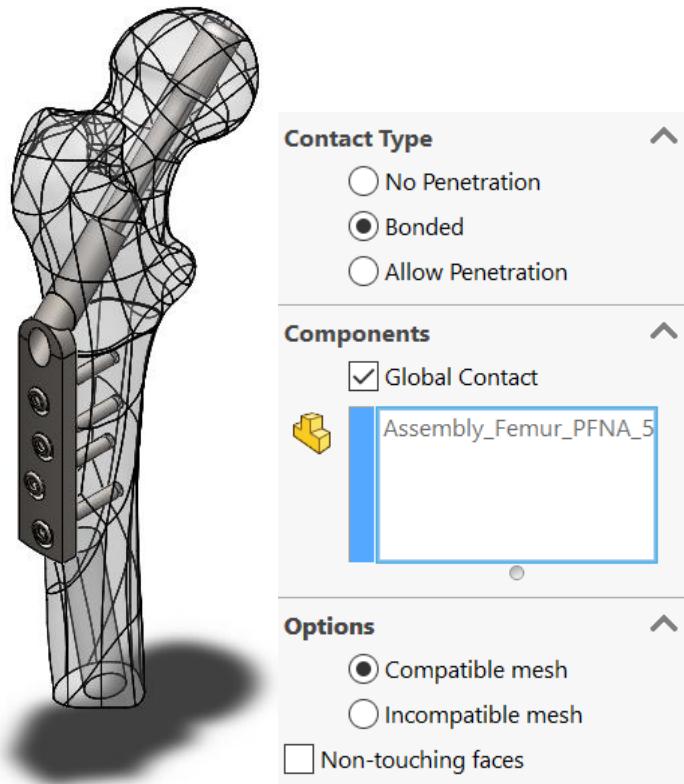
Force & Fixture



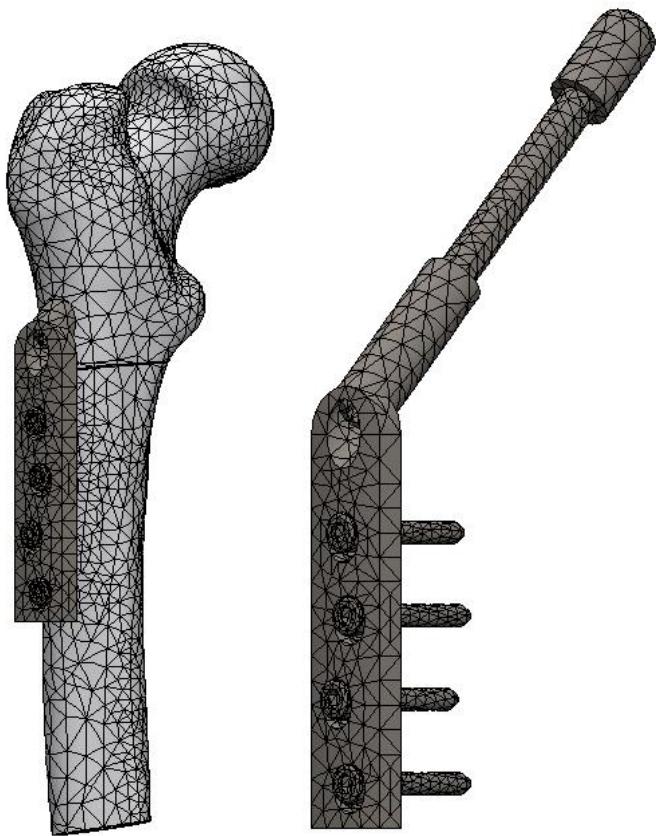
Connection Contact-Set



Global-Contact



Mesh



Mesh Parameters

- Standard mesh
- Curvature-based mesh
- Blended curvature-based mesh

mm

12.00mm

2.40mm

8

1.6

Advanced

Jacobian points 4 points

Draft Quality Mesh

Remesh failed parts with incompatible mesh

Material

Femur

Material properties

Materials in the default library can not be edited. You must first copy the material to a custom library to edit it.

Model Type:	Linear Elastic Isotropic	<input type="checkbox"/> Save model type in library
Units:	SI - N/mm ² (MPa)	
Category:	Assembly_Femur_DHS	
Name:	Bone	
Default failure criterion:	Max von Mises Stress	
Description:	Bone	
Source:		
Sustainability:	Undefined	<input type="button" value="Select..."/>

Property	Value	Units
Elastic Modulus	14500	N/mm ²
Poisson's Ratio	0.3	N/A
Shear Modulus	3280	N/mm ²
Mass Density	1180	kg/m ³
Tensile Strength	150	N/mm ²
Compressive Strength		N/mm ²
Yield Strength	150	N/mm ²

DHS & PFNA

Material properties

Materials in the default library can not be edited. You must first copy the material to a custom library to edit it.

Model Type: Plasticity - von Mises Save model type in library

Units: SI - N/mm² (MPa)

Category: Steel

Name: Alloy Steel (SS)

Default failure criterion: Max von Mises Stress

Description:

Source:

Sustainability: Defined

Property	Value	Units
Elastic Modulus	210000.0005	N/mm ²
Poisson's Ratio	0.28	N/A
Tensile Strength	723.825617	N/mm ²
Yield Strength	620.4219978	N/mm ²
Tangent Modulus		N/mm ²
Thermal Expansion Coefficient	1.3e-05	/K
Mass Density	7700.000118	kg/m ³
Hardening Factor	0.85	N/A