Simulation of two rotory seals with different pressure

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Type of seals

Carcoseal/UN

Use for standard application

Carcoseal/APWT

Use for application with pressure

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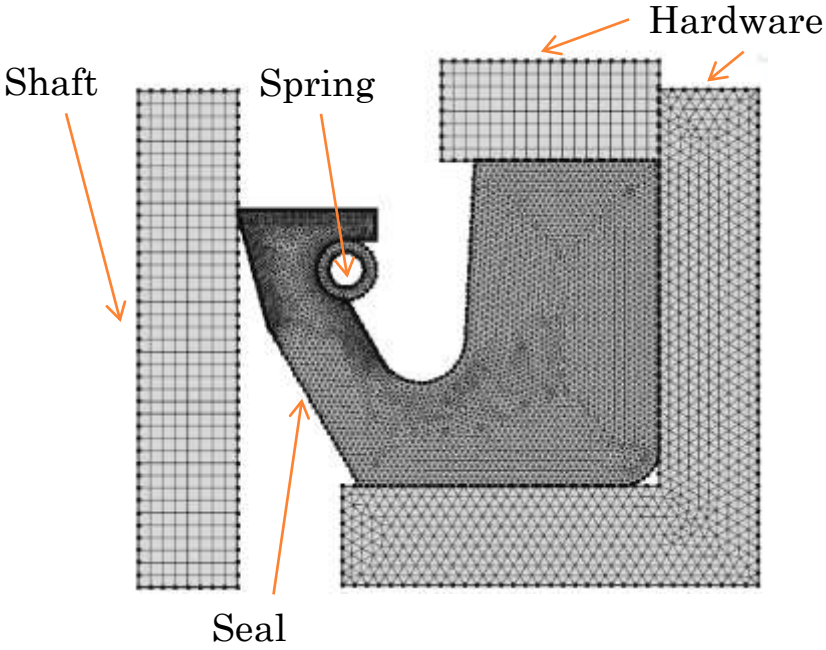
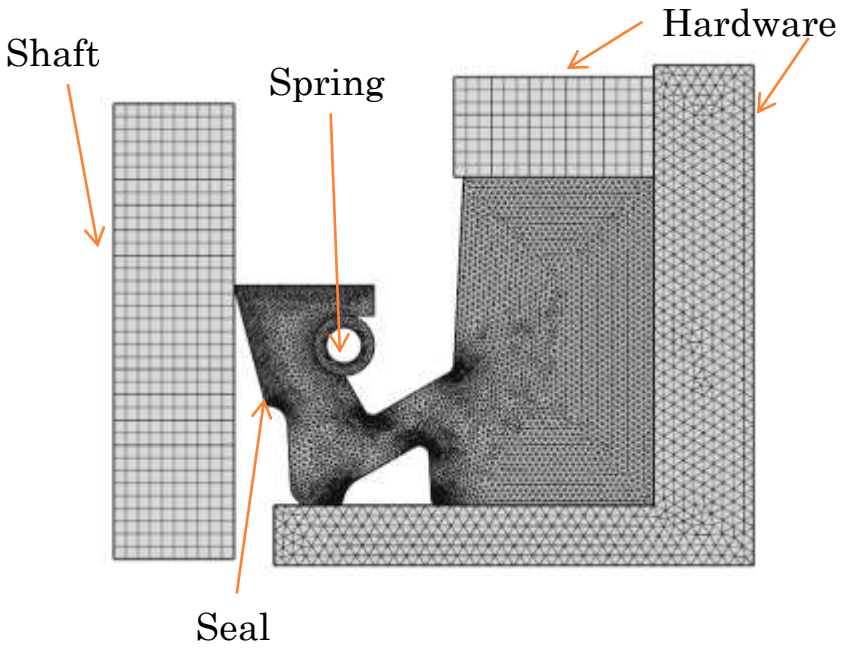
MESHING

Carcoseal/UN



Carcoseal/APWT



Seals and Spring: Free Triangular with size Extremely Fine
Hardware and Shaft: Free Triangular and Mapped with size Extra Fine
Where there are the contacts with the spring and important deformation of seals I have used also the Edge with a size that it is half of Extremely Fine

Technical Data

Project data of rubber:

- *E=Young's Modulus*
- *ν=Poisson's Ratio*
- *ρ=Density*

Project data of spring:

- *E=Young's Modulus*
- *ν=Poisson's Ratio*
- *ρ=Density*
- *σ=Initial Strain*

Computation Method

Hyperelastic model of Neo-Hookean:

- $S = \frac{\partial W_S}{\partial \epsilon}$
- $W_S = \frac{\mu}{2}(I_1 - 3) - \mu \ln J_{el} + \frac{\lambda}{2}[\ln J_{el}]$
- $\epsilon = \frac{1}{2}[(\nabla u)^T + \nabla u + (\nabla u)^T \nabla u]$

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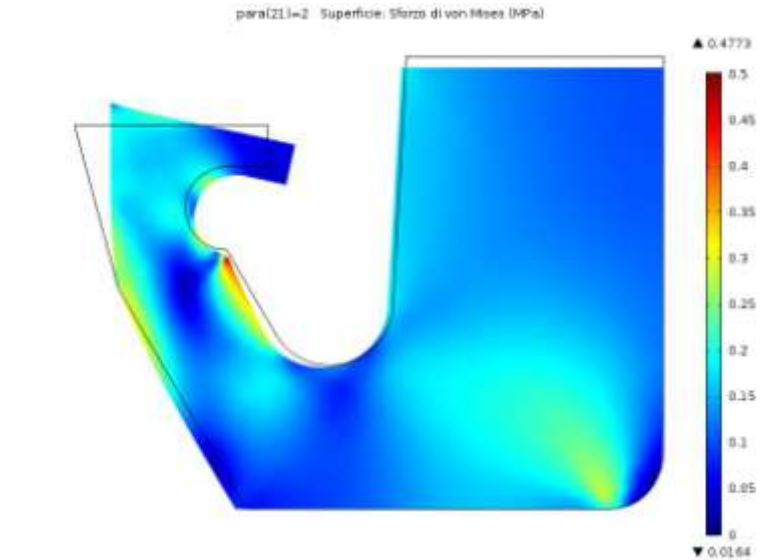
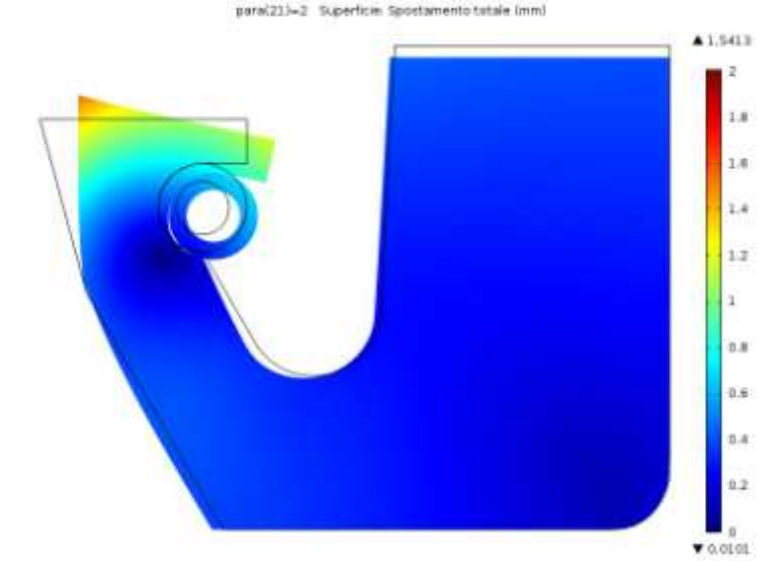
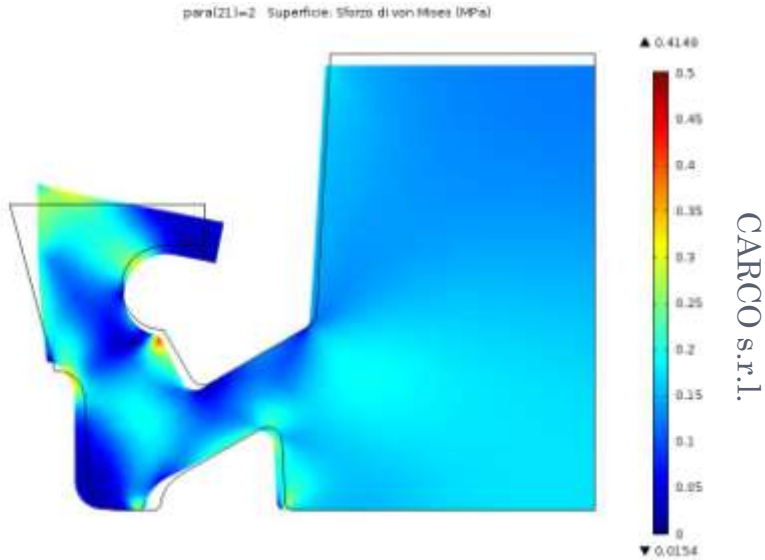
WITH PRESSURE OF 0,5 BAR

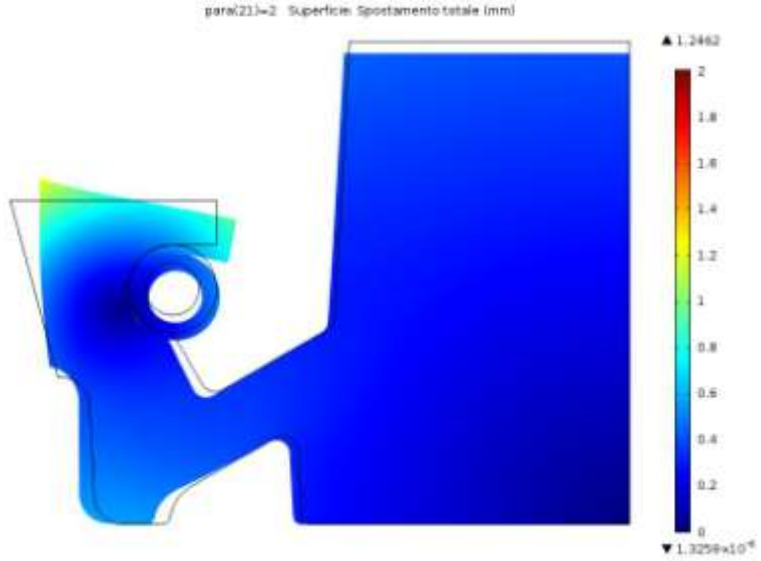
Carcoseal/UN





Carcoseal/APWT





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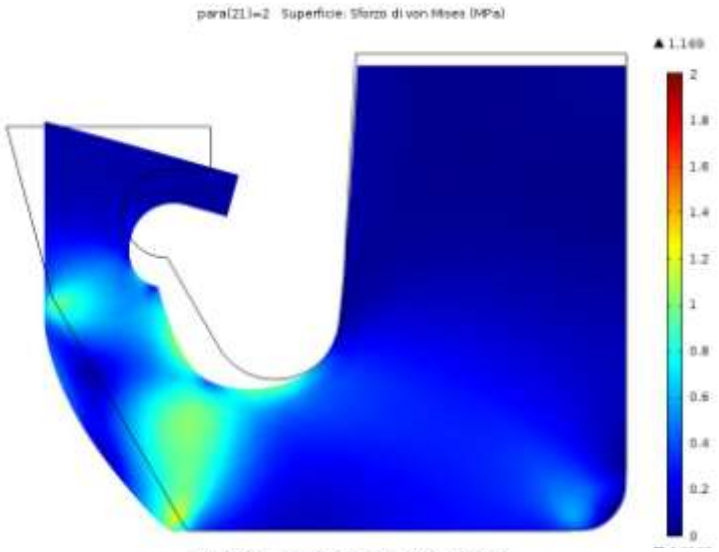
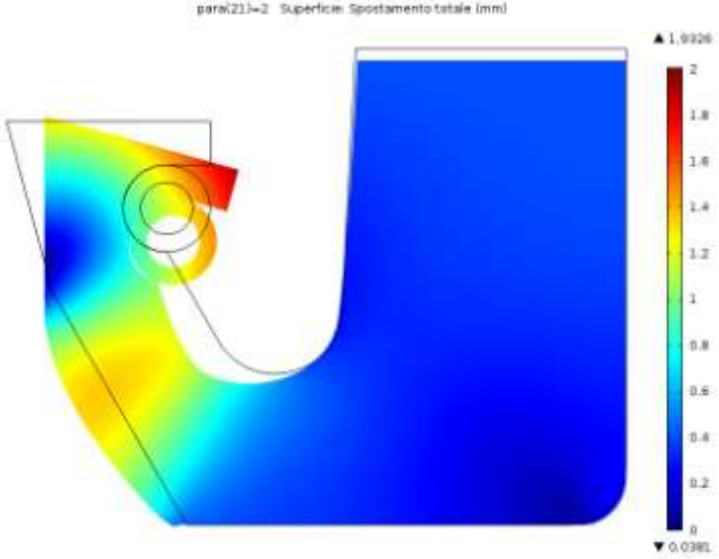
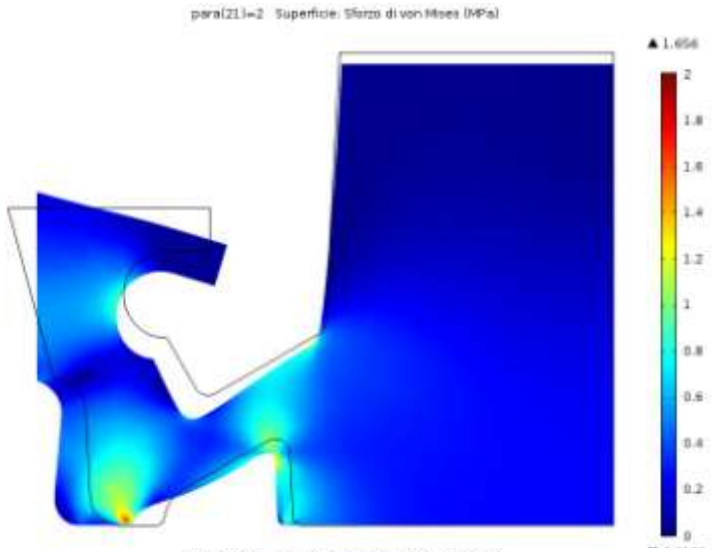
WITH PRESSURE OF 5 BAR

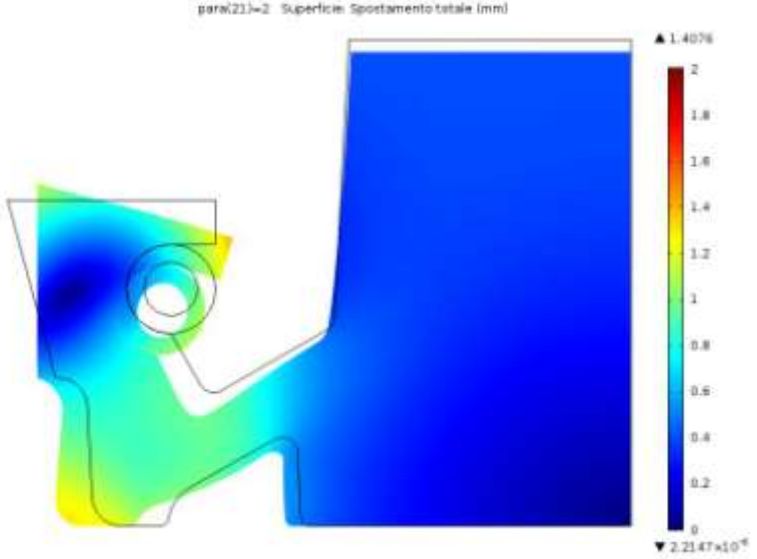
Carcoseal/UN





Carcoseal/APWT





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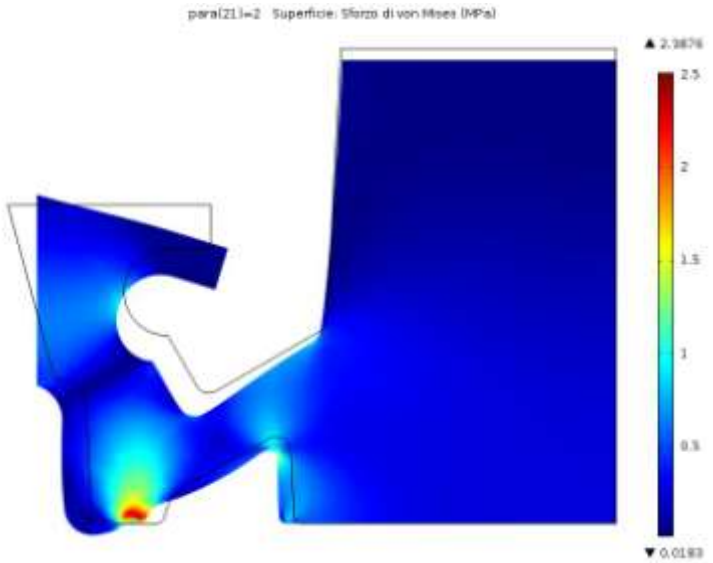
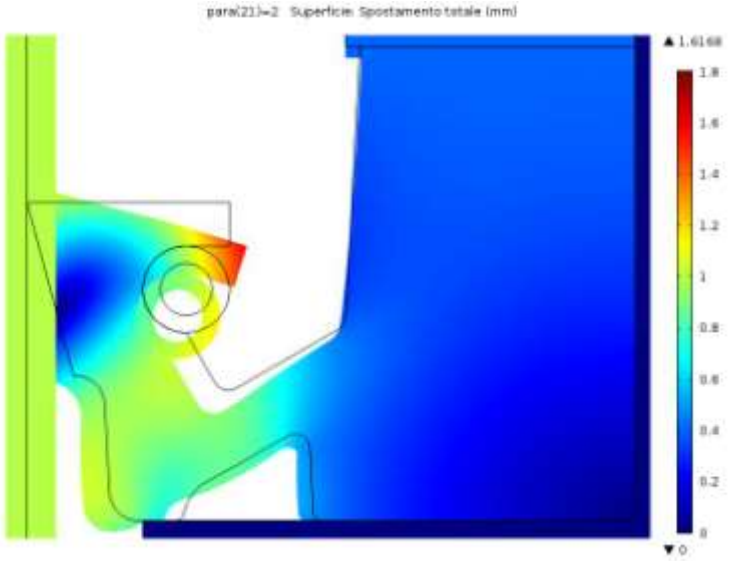
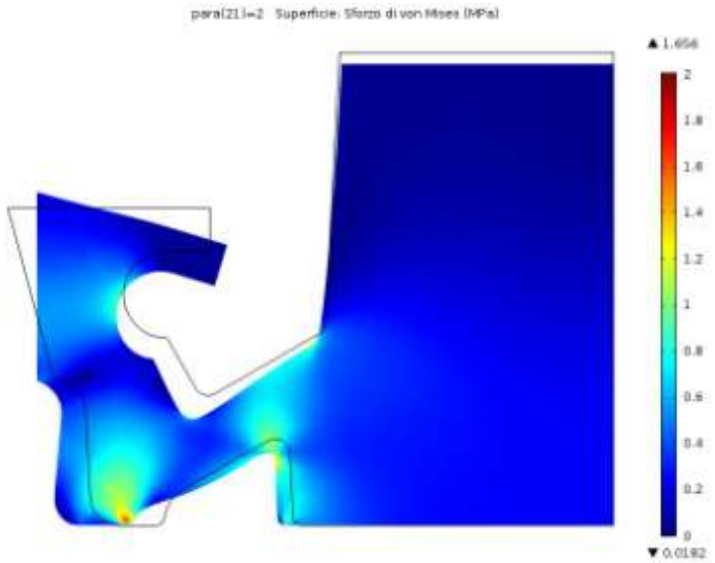
CARCOSEAL/APWT WITH 5 BAR AND DIFFERENT GAP

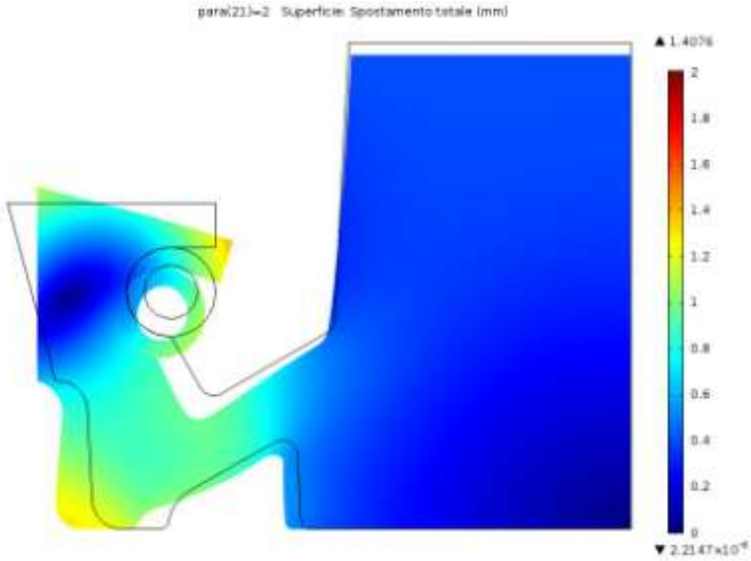
With wrong hardware





With correct hardware





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