

ANSYS 12 - Crank - Step 6

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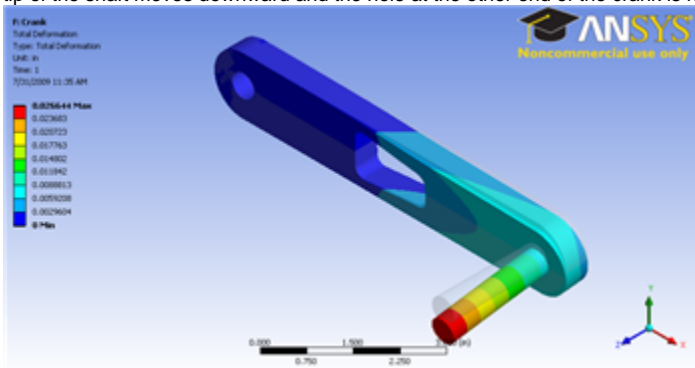
Problem Specification

1. Pre-Analysis & Start-Up
2. Geometry
3. Mesh
4. Setup (Physics)
5. Solution
6. Results
7. Verification & Validation

Step 6: Results

Total Deformation

Let first look at Total Deformation. Under **Solution (F6)**, click on **Total Deformation**. The Total Deformation plot is then shown in the Graphics window. The maximum deflection is 0.026644 in. We should check that our results make sense. It appears that the boundary conditions have been satisfied as the tip of the shaft moves downward and the hole at the other end of the crank is held in place.



Higher Resolution Image

Note: To show the original undeformed crank, go to third menu click



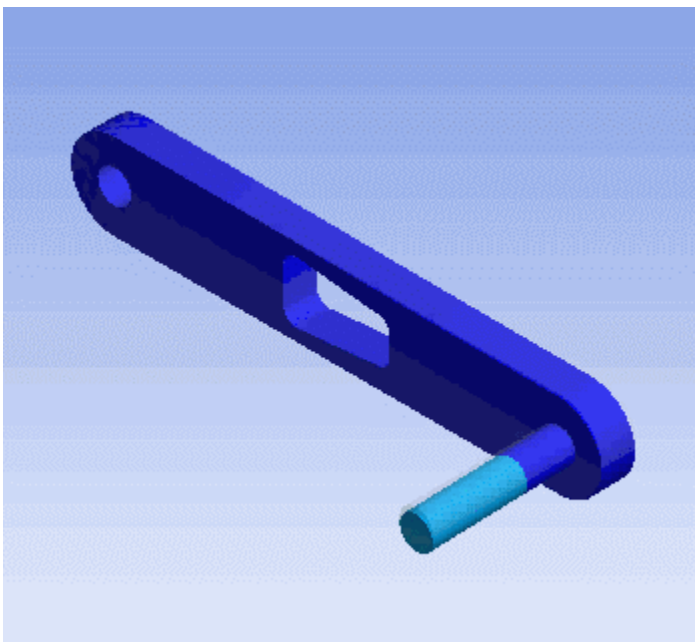
and click on



Show Undeformed Model

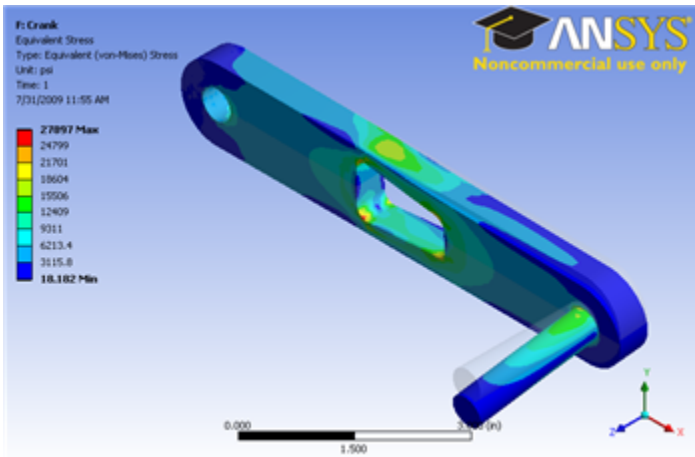
Notice the deformation is exaggerated, revealing that deformation is primarily caused by torsion.

You can also animate the deformation by clicking play button right under **Graphics** window.



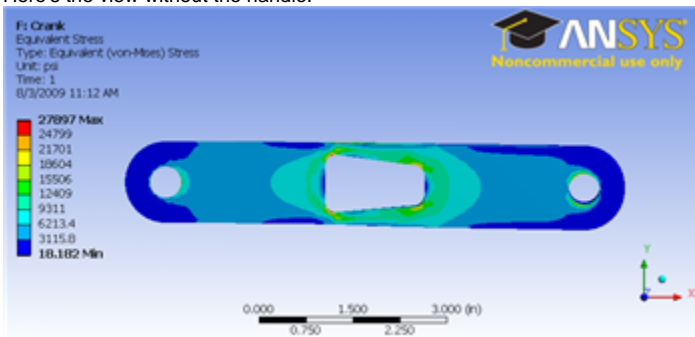
Von Mises Stress

Now let's look at the stress on the crank. Left clicking on Equivalent Stress under Solution (F6). In the Graphics window show the crank stress contour. The maximum stress is 27897 psi.



[Higher Resolution Image](#)

Here's the view without the handle.



[Higher Resolution Image](#)

Note: To hide the crank handle, select the appropriate body in the Graphics window and right click and select **Hide Body**. Do the same to unhide a body.
[Go to Step 7: Verification & Validation](#)

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