AIM Stepped Shaft in Axial Tension - Physics Set-Up

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Physics Set-Up

The entire object is made of structural steel, which is the default material in AIM. We can immediately add our other constraints.

Boundary Conditions / Forces

Select the **Physics** task in the workflow. The first conditions that need to be specified for a structural simulation are supports. In this case, the supports will exist on the symmetry planes where we “cut” the model into quarters. Next to **Structural Conditions** press **Add** > **Support**, select one of the cut sides as the location, and change the **Type** to **User specified**. Edit the **Translation** drop down menus until there is only one arrow going into our model, then repeat for the other side and the large quarter circle at one end. This creates a symmetrical constraint support for the shaft, which allows it to deform while also not translating or rotating from its location.

Next, the pressure is added to the outermost face of the shaft by selecting the **Pressure** option in the **Add** drop down menu. It was given to us as 1000 Psi, but since AIM defaults pressures as compressive, the correct value to input is -1000 Psi.

Go to Step 5: Results

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