AIM Bike Crank - Physics Setup

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Problem Specification
1. Pre-Analysis & Start-Up
2. Geometry
3. Mesh
4. Physics Setup
5. Numerical Results, Verification & Validation

Physics Setup

We need to create a new material and assign it to the model as shown in the following video. Otherwise, ANSYS will use the Young's modulus and Poisson's ratio for structural steel which is the default. This step is easy to overlook. Next, we apply the boundary conditions i.e. displacement constraints at the 3 left holes and traction on part of the right hole. Boundary surfaces where we neither apply a displacement constraint nor traction are assumed by ANSYS to be free surfaces with zero traction.

Summary of steps in above video:

- Change the material from default to a newly created material
- Change the properties of the new material to those of Al 6061-T6 in the problem description
- Create a fixed support at the three holes
- Create a force acting on the inside facing circular hole
- Specify the y-component to be 100lbf
- Solve the physics

Go to Step 5: Numerical Results

Go to all ANSYS AIM Learning Modules