## **ANSYS Forces in Permanent Magnets - Geometry**

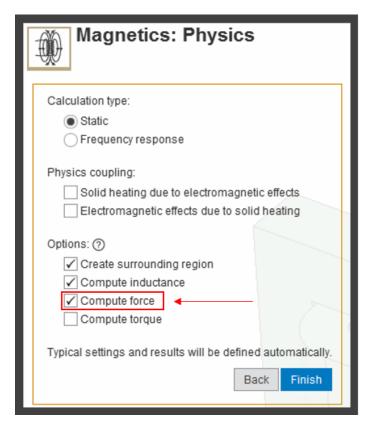
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**Problem Specification** 

- 1. Pre-Analysis & Start-Up
- 2. Geometry
- 3. Physics Setup
- 4. Case Setup
- 5. Solution/Results

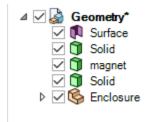
## Geometry

You will be prompted to either **Define new geometry**, **Import geometry file**, or **Connect to active CAD session**. Select **Import new geometry** and downloaded the file <u>here</u>. AIM will prompt again asking to select your calculation type, physics coupling and options. Under **Options**, check **Compute force** and then click **Finish**.

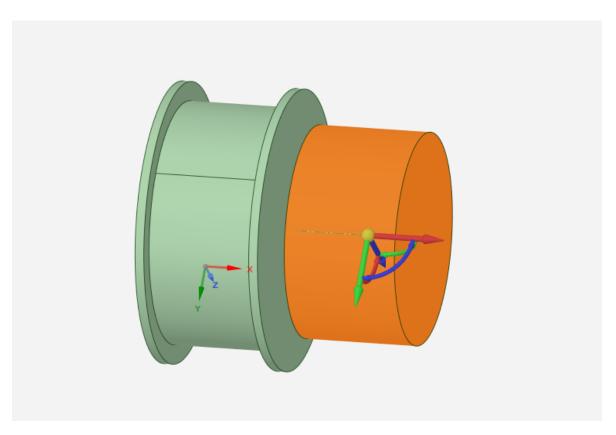


## Creating geometric parameters

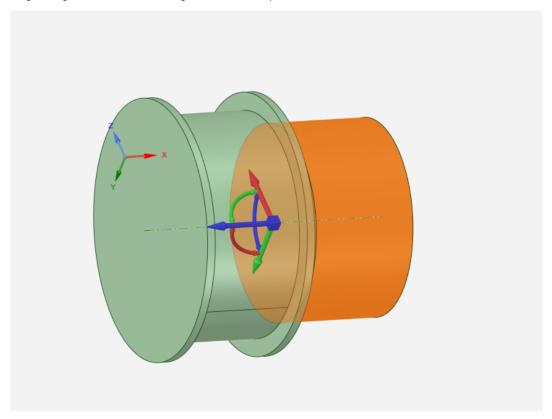
In order to vary the horizontal distance between the coil and magnet a parameter must be created. Once AIM has loaded click on **Geometry > Edit Geometry**. Hide the enclosure by deselecting the checkmark.



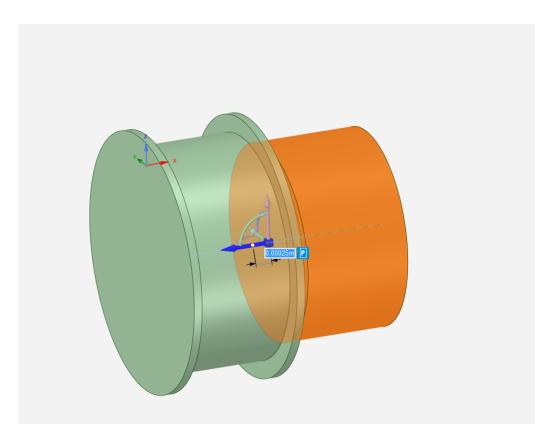
Triple click on the magnet to select the body. Select the **Move** tool and click on the origin.



Drag the origin onto the face of the magnet closest to the spool.



Once the origin turns into a square, select the blue axis of the **Move** tool. The other axis will be greyed out and in the **General** sidebar select the **Ruler** tool. The **Ruler** tool will then follow the cursor, at which point click the face of the spool closest to the inside the gap.



To create the parameter, click on the  $\bf P$  next to the highlighted dimension box. Once the parameter is created, click the x in the top right corner to begin the physics set up.

## Go to Step 3: Physics Setup

Go to all ANSYS AIM Learning Modules