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| **Activity 7.4 Assembly Models** |

Procedure

**Part I.** Use the CAD modeling software to create an assembly of the Jack Lift. You will need access to the five parts of the machine: Base, Wedge, and Wedge Screw.

1. Create a new assembly file titled Jack Lift and save it to your student folder.
2. Place the Base component into the assembly. This component will be grounded and, therefore, locked in space. Next, place the Wedge and Wedge Screw components into the assembly.

  

1. Apply a tangent constraint to the neck of the Wedge Screw component (selection shown in blue) and one of the vertical walls of the open slot on the Base component (selection shown in green).



1. Apply a mate constraint to the back face of the Base component (selection shown in blue) and the circular face on the underside of the Wedge Screw**’**s head.



1. Apply a mate constraint to the bottom face of the Wedge component (selection shown in blue) and the top angled face on the Base component (selection shown in green).



1. Apply a mate constraint between the center axis of the threaded hole in the Wedge component (selection shown in blue) and the center axis of the Wedge Screw component (selection shown in green).



1. Apply a flush constraint to the front faces of the Wedge component (selection shown in blue) and the front face of the Base component (selection shown in green).



1. Perform an interference analysis between the Wedge and Wedge Screw components. Select the Inspect tab and Analyze Interference. Define set #1 as the Wedge and set #2 as the Screw. Select OK.



1. Revert to wireframe screen mode and perform a screen grab of the image. Select the View tab, Visual Style, and Wire Frame with Hidden Edges. If necessary, redo the Interference Analysis to highlight the area of interference. Print the image out and affix it to a page in your engineering notebook. Make an entry in your notebook that speculates as to the reason why interference exists between these two components.

 

1. Save the Jack Lift assembly file.