



Digital Design Graphics Technology  
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## DDGT240 – 20.69 Engine Instructions

Create a working drawing of the engine concept model. The following bullet points are to clarify the design and my expectations:

- Please note that the Connecting Rod parts are a sub-assembly. Label the parts as follows:
  - Long piece “Connecting Rod Top” = 4.1
  - Short piece “Connecting Rod Bottom” = 4.2
  - Bolts (not shown in pdf) = 4.3 (You can use Content Center. Choose bolts that will fit and make sense.)
  - Create the parts list to reflect this.
  - I would recommend creating the “connecting rod top” and “connecting rod bottom” originally as one piece and then split them into separate parts using the “split” component into separate bodies. Then use the “derive component” command I showed you in previous assignments.
- When you create the drawing, do not annotate the connecting rod parts individually. Please annotate them as an assembly.
  - Create the drawing with a “Front” and “Top” view as seen in the pdf. However, please add a “Parting Line” callout with a centerline and multileader.
  - Please label each part with balloons calling out the “connecting rod top” and “connecting rod bottom” parts as 4.1 and 4.2 respectively.
  - Note that the concept model does not include holes in either of these parts. You will need to add these features to your parts and annotate them in the drawing correctly.
    - The holes in the “connecting rod bottom” should be clearance holes.
    - The holes in the “connecting rod top” should be threaded to match the bolts you choose.
- In the drawing, when you create the exploded assembly, you only need to explode one set of the “connecting rod sub-assembly”.
- On the “Engine Block”, when you are working in the drawing, you do not need a section view if you call out the depth of the hole on the hole dimension in the top view. Make sure to include symmetry callouts along the length and width.
- For the “Crank Shaft”. I would recommend creating “offset work planes” with the various offset distances starting from one of the origin work planes in one direction only. You do not need to try to keep this part “centered” along the length. You can get away creating this whole part with only one sketch but you can use multiple ones if that is easier. Use the “Extrude” command with the “From-To” option and you can select multiple profiles using different work planes as needed.
  - Note: The shape of the lobes are not ellipses. You need to create two circles each with a diameter of 39 spaced 34 units apart. Then you need to create an arc on

both sides. Each arc needs to be tangent to both circles. The width of the lobe is 51 and symmetrical.

*Revised 12/19/2018 gjs*