

Assignment 03:
Pro/ENGINEER Drawing of a Simple Winch-and-Cart Component

Last Updated 2/12/2009
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Due: Monday, February 16, 2009 @ 2pm

In class on 2/9/2009, each Group Project 01 Team was given a working winch-and-cart device build by students in MEEN 1110.

In groups, disassemble the winch-and-cart to the greatest extent possible without breaking any of the individual pieces and while assuring reassembly can occur. Be sure to keep track of how the winch-and-cart was put together as each team must completely and correctly reassemble these artifacts at the end of Group Project 01 or the project grade will be 0.

Select N simple parts (where N is the number of members in your group) from the disassembled winch-and-cart. It is up to each team to define "simple parts", but these components should have simple features and a high level of symmetry; for example, the spool on the winch. Each individual is to draw a unique simple part from the winch-and-cart (if two identical parts are available DO NOT draw them both, assign a different part to the second team member).

Each team member must use engineering measurement tools like calipers and micrometers to measure key dimensions of their simple part. This process must be documented with a photograph appended to the Assignment 03 submission, or credit will not be given.

With key dimensions identified, use the object representation techniques learned in the first three weeks of class to determine the best way to represent the object on a 2-D page. Draw this representation. Enough information must be provided for a machinist to correctly build the part from raw materials, and standard engineering drawing conventions, taught in class, must be followed. The drawing must include dimensions and tolerances. The drawing must also include a complete title block.

Note that for Group Project 01, all the individual digitized winch-and-cart parts must be combined into an assembly drawing of the winch-and-cart. Thus, it is important for team members to communicate about critical dimensions and tolerances to assure all digitized parts can be easily assembled on Pro/E.

Each student will receive an individual grade on Assignment 03 based on the quality of his/her individual work.