Reading Working Drawing Packets and Section Views

ENGR 1182
Graphics 06
Graphics Wrap-Up:

- Why study graphics?
  - Technical drawings are another major form of technical communication
  - Formal drawings and Working Drawing Packets are a means to communicate between the engineer and the manufacturer
Putting It All Together

- How does it apply to engineering in real life?
  - Reading technical drawings is one of the most important skills to learn from graphics
  - Hand sketching is important during the brainstorming process, usually precedes CAD modelling
  - Employers look for visualization skills
    - Tests during interviews at times
Today’s Objectives

- Identify the purpose and components of a formal drawing packet
- Be able to collect and deduce information from an assembly and its working drawing packet
- Describe the basic characteristics of section views
- Distinguish between different types of section views
- GP06 Out-of-Class Homework Assignment
Formal Drawing

- **Definition:** Detailed multi-view representations of a finished part

- **Components:**
  - Detailed orthographic views
  - Isometric view of part
  - Dimensions
    - Size and type of features (diameter, radius, etc.)
  - Title Block
Title Block

- Specific to each organization

**Components:**
- Part name
- Scale
- Units
- Author
- Date
- Any other necessary info
Working Drawing Packets

- Components:
  - Assembly Drawings
    - Assembly of parts (parts already fit together)
    - Exploded assembly (show how parts fit together)
  - Detail drawings of non-standard parts
  - Bill of Materials
Assembly Drawings

- Fully assembled object is shown with all required pieces
- Multi-view drawing
  - With appropriate section view, if applicable
Exploded Assembly

- Parts are “exploded”, showing how they connect and fit into the overall assembly
Bill of Materials

- Part numbers in bubbles
- Part descriptions
- Material
- Quantity
Section View Drawings

- **Definition:** Views of parts with cutouts to show inner details

- **Components:**
  1. Cutting plane line
  2. Viewing Direction
  3. Cutout View (Section A-A)
     - Previously hidden features are now visible in the section view
     - Cut materials are cross hatched
Full Section Views

- Object is cut completely in \textit{half} by a cutting plane perpendicular to the viewing plane.
- This will show the \textit{full} interior of the part.
Half Section Views

- **Half** of the interior is visible by cutting out a part of the object
- The section view shows both the exterior and interior

Section B-B
Important Takeaways

- Section views reveal details of the interior of a part
- Working drawings are a major form of technical communication
  - Primarily between the engineer and the manufacturer
- There are several components common to all working drawings
What’s Next?

- Midterm 1
  - Graphics

- Introduction to SolidWorks
  - Familiarize student with layout of SolidWorks
  - Learn 2D Sketching

- Take SolidWorks 1 Quiz on readings