Sectional and Auxiliary Views

You may have tried to sketch a part with many internal details. How can we prevent these details from interfering with one another?

How would you see what’s inside an apple?
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http://flickr.com/photos/3dphoto/583092934
Sectional and Auxiliary Views

Sectional View Example  Technical Drawing, Geiseke, 12th ed.

**FIGURE 7.2** Full Section.

- **(a)** LEFT-SIDE VIEW
- **(b)** FRONT VIEW
- **(c)** RIGHT-SIDE VIEW IN FULL SECTION

Hard to visualize. Compare with right-side in section for readability.
Sectional and Auxiliary Views

Cutting plane style
- Heavier, longer dashes than hidden lines.
- Arrows point in direction in which the section is viewed.
- Sectional view is placed in the position from which the section is viewed.

Rules for Sectional views

- Show visible lines that are beyond the cutting plane.
- Omit hidden lines for the sake of clarity.
- Include centermarks and centerlines.
- Do not show sectioning on features that are thin parallel to the cutting plane.
Sectional and Auxiliary Views

Other types of sections

Half-section

Technical Drawing, Geiseke, 12th ed.

![FIGURE 7.13 - Half Section.](image)
Sectional and Auxiliary Views

Broken out

Revolved

Removed. A removed section does not have to be in standard alignment if it is not close to its parent view. However, it must be labeled.
Sectional and Auxiliary Views

Offset sections. Cutting planes can be offset to capture details of features that are not aligned. Technical Drawing, Geiseke, 12th ed.
Sectional and Auxiliary Views

Aligned section. In an object with a section through an uneven number of spokes, the cutting plane is bent to show the features in the most clear way.  Technical Drawing, Geiseke, 12th ed.

\[ \text{FIGURE 7.30} \] Aligned Sections.
Sectional and Auxiliary Views

How to do sectional views in SolidWorks
ANSI vs. ISO
Third angle vs. first
Including half-section
Multiple section
Removed section (create new sheet, copy main view, then hide it).

Warning: the tutorial has you do this in first angle using ISO. They have you put the view in front of the section arrows. I would like you to change it to third angle and use ANSI, and to place the sectional view behind the section arrows. Also, it is on C sized paper. It will not print out correctly unless you go into the print page and select “print to fit.”
Sectional and Auxiliary Views

Auxiliary Views
View based on folding line which is inclined or oblique. Like a glass box with an inclined viewing surface.
How to do in SolidWorks.
Can show an oblique surface in true shape by creating a second auxiliary view.