

## Chapter 7- Sections

To produce a Section View of an object, a \_\_\_\_\_ is assumed to pass through the part. Imagine the cutting plane is then removed, and the two halves are pulled apart, exposing the interior of the part.

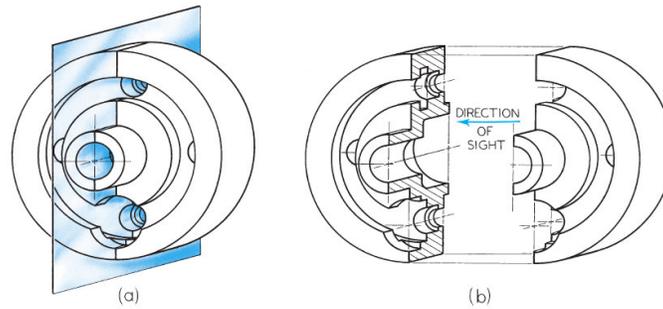


FIGURE 7.1 A Section.

### Section Lining

Section lining is used to \_\_\_\_\_. The basic section lining is the ANSI31 symbols which are \_\_\_\_\_.

However, special section lining symbols can be used to show what \_\_\_\_\_.

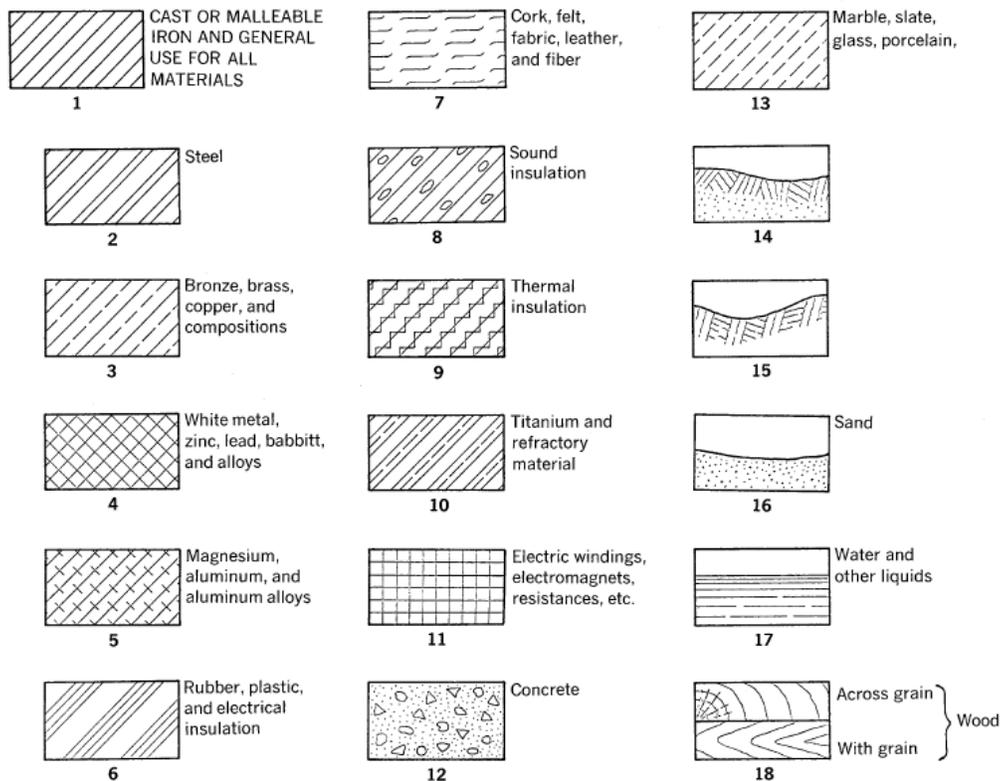


FIGURE 7.5 Symbols for Section Lining.

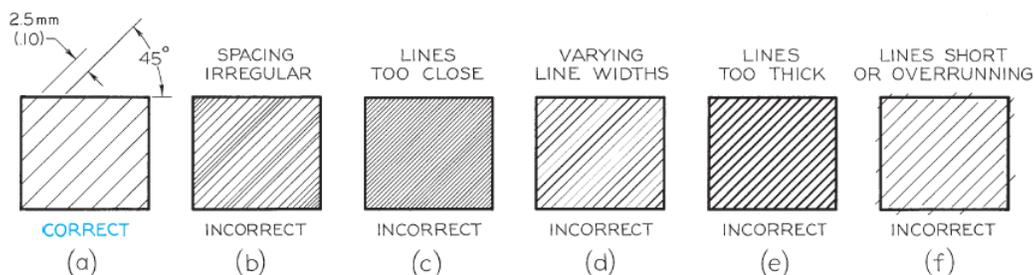
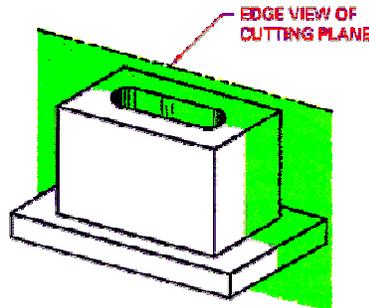
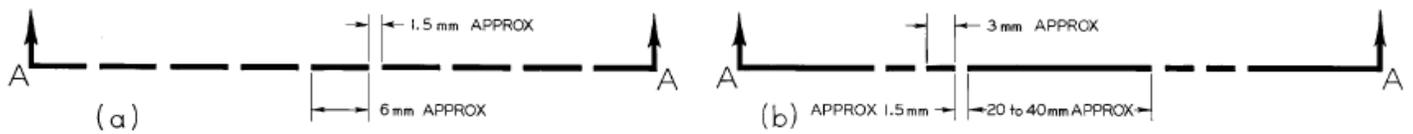


FIGURE 7.6 Section-Lining Technique.

## The Cutting Plane Line

The cutting plane line indicates where the object is being cut. This is represented with a heavy, dark,

\_\_\_\_\_ or \_\_\_\_\_ line.



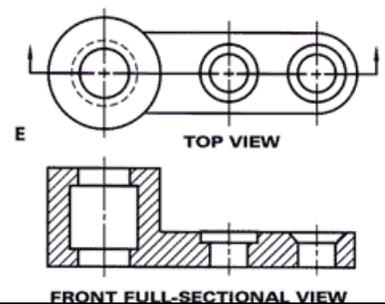
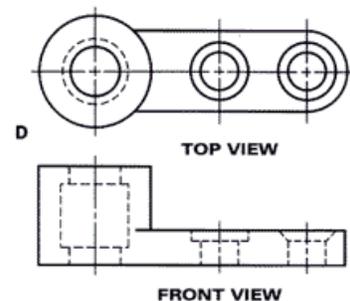
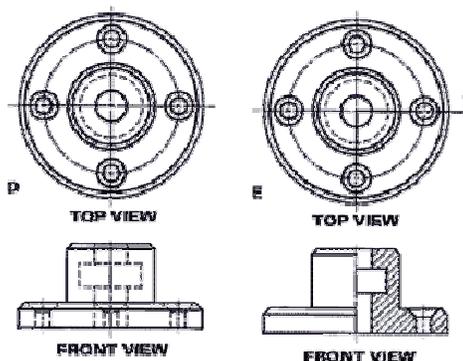
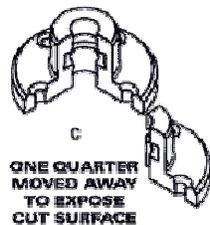
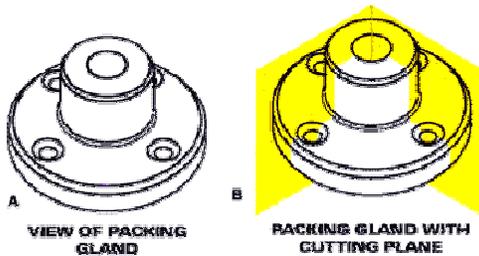
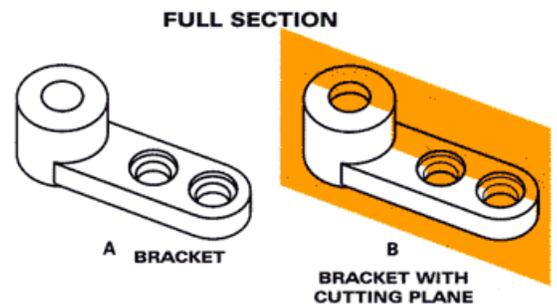
The cutting-plane line represents the edge view of the cutting plane.

## Types of Sections

We will review **Full, Half, Offset Section, Broken-Out, Revolved, and Removed Sections.**

⊗ **Full Section:** A sectional view that shows the object as if it were cut completely apart from one end to the other.

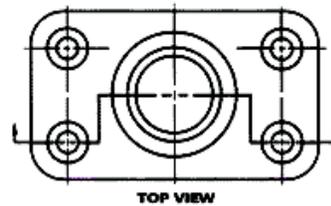
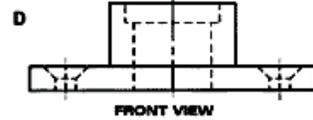
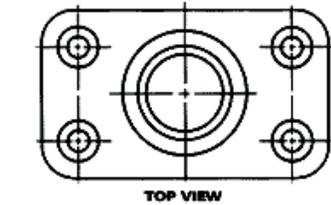
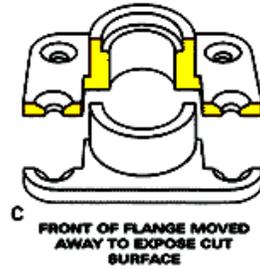
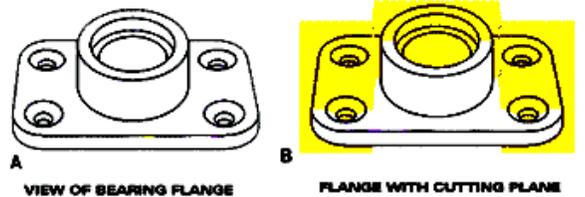
⊗ **Half Section:** A section that is \_\_\_\_\_. A half section looks as if one quarter of the original object has been cut away.



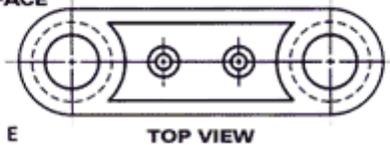
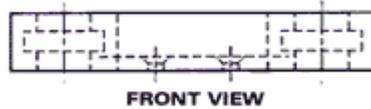
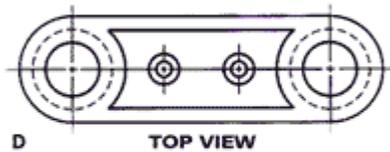
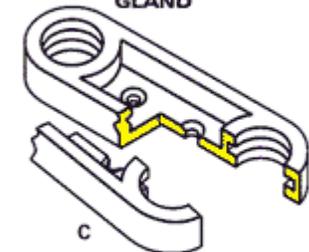
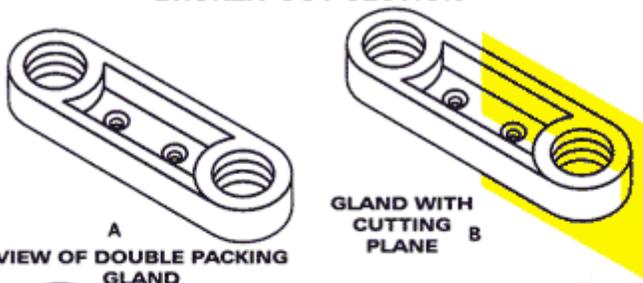
⊗ **Offset Section:** In sections, the cutting plane is usually taken straight through the object. But it can also be \_\_\_\_\_  
 \_\_\_\_\_.

⊗ **Broken-Out Section:** A view with a broken-out section shows an object as it would look if \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_.

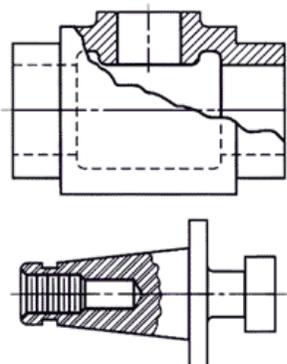
**OFFSET SECTION**



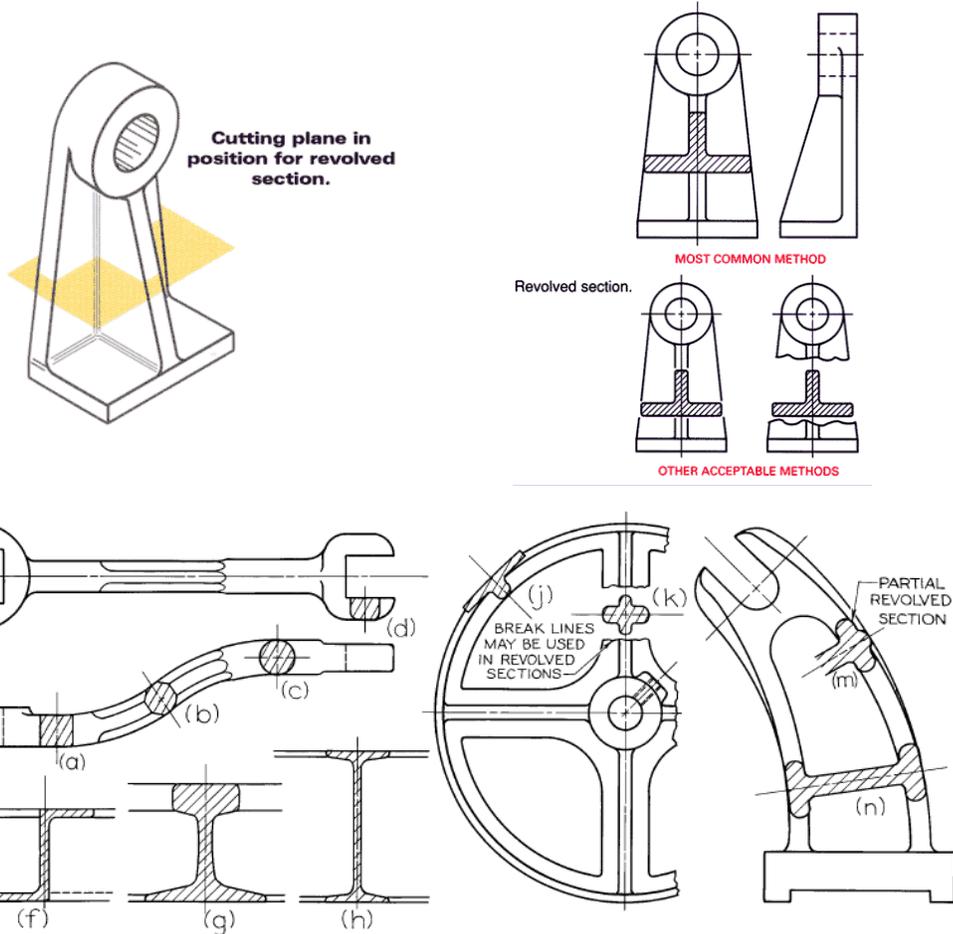
**BROKEN-OUT SECTION**



Two additional examples of broken-out sections.



⊗ **Revolved Section:** Think of cutting plane passing through an object as shown in the first figure below. You then \_\_\_\_\_



⊗ **Removed Section:** When a sectional view is taken from its normal place on the view and \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

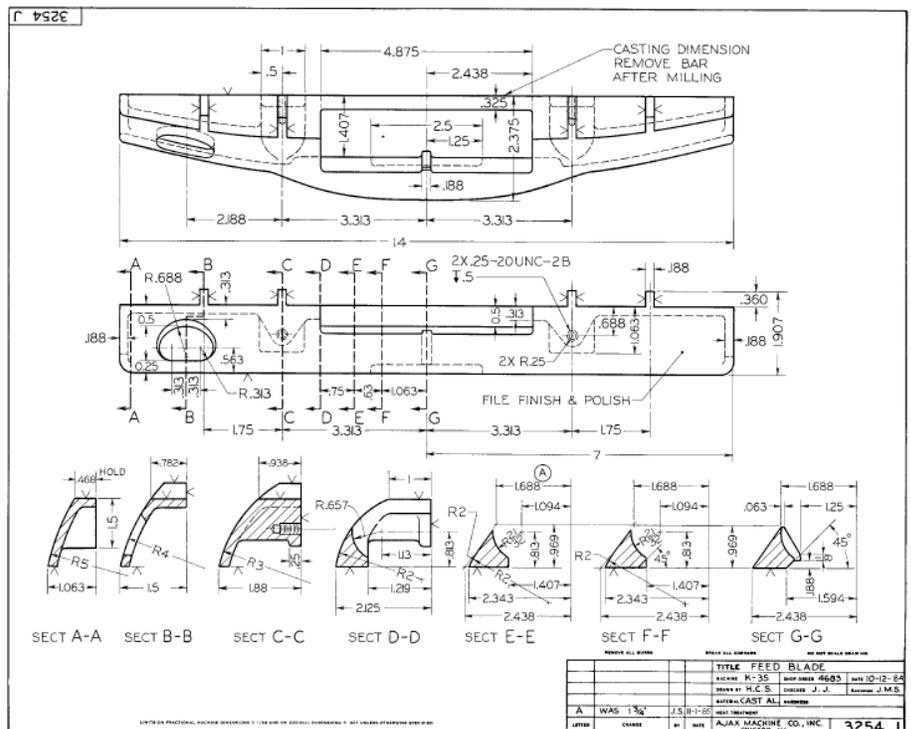
\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

the result is a removed section. Remember, however, that the removed section will be easier to understand if it is positioned \_\_\_\_\_

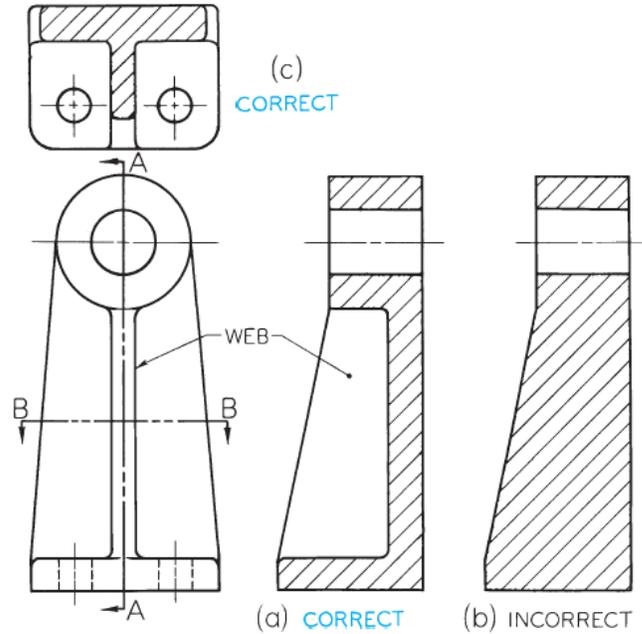
• In other words, do not rotate it in just any direction. The figure to the right shows correct and incorrect ways to position removed sections. Use bold letters to identify a removed section and its corresponding cutting plane on the regular view, as shown to the right.



### Ribs and Webs In Sections

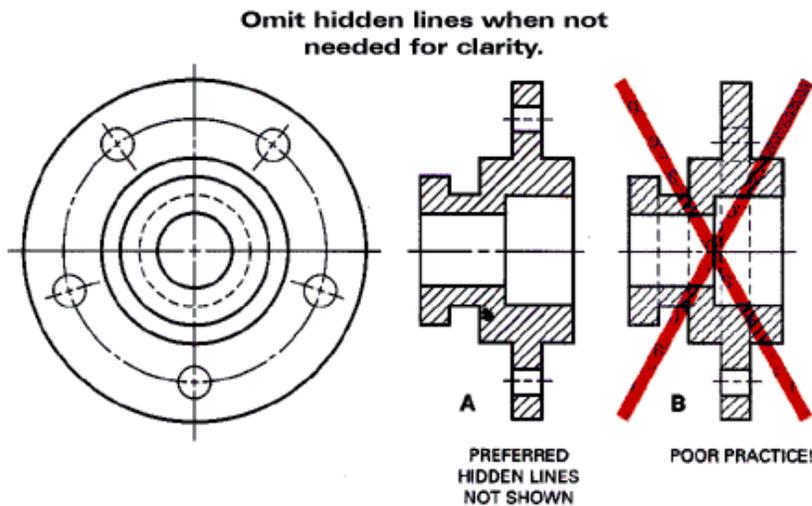
Ribs and webs are thin, flat parts of an object that are used to brace or strengthen another part of the object. Often, a true section of an object that contains ribs or a web structure does not appear to show a true description of the part. For example, the **Figure (b)** section shown to the right would give the idea of a very heavy, solid piece. This would not be a true description of the part. Therefore, when a cutting plane passes through a rib or web parallel to the flat side, \_\_\_\_\_

Instead, draw the part as shown in **Figure (a)**. Think of the cutting plane passing \_\_\_\_\_



### Hidden and Visible Lines

Do not draw \_\_\_\_\_ on sectional views unless they are needed for \_\_\_\_\_ or for \_\_\_\_\_. In Figure A below, a hub is described clearly using no hidden lines. Compare it with the incorrectly drawn section in Figure B below.



Normally, in a sectional view, include all the lines that would be \_\_\_\_\_. In the figure below, for example, the section drawing in part A correctly includes the numbered lines, which match the lines on the drawing in part B. A drawing without these lines, as shown in part C, would have little value.

