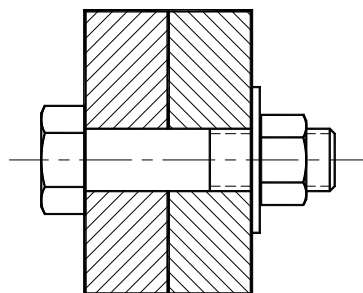


ITEMS FOR REVIEW FOR COMPETENCY 6:

- Function of a section view
 - Show complicated interiors
 - Visible edges behind cutting plane line to be shown
 - Hidden lines generally omitted.
- Function of the cutting plane line
 - Location of cut
 - Reveal interior details
 - Identify line of sight
- Basic rules
 - Hidden lines not shown
 - Visible edges behind cutting plane line shown
- Explain the application of section lines
 - Cast iron, .125" uniformly spaced thin lines, is the general-purpose section line.
 - Section lines should all be at the same angle for a single part. Section lines at different angles on the same drawing indicate more than one part.
 - Section lines should not be drawn vertical, horizontal or parallel to an adjacent object line of the drawing.
 - Section lines can identify the general class of material such as steel, brass or rubber.
 - Thin items such as gaskets or sheet metal are shown un-sectioned.

Types of features that are not sectioned

- On an assembly section, items that are not sectioned include; **shafts, bolts, nuts, rods, rivets, keys, pins, screws, gear teeth, spokes, etc.**

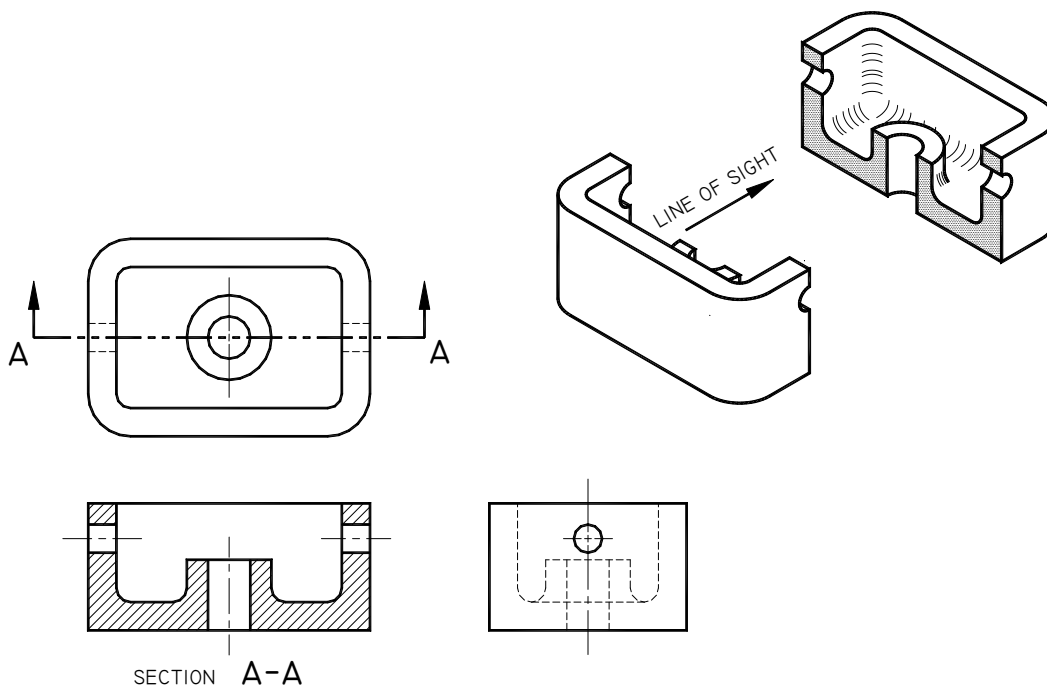


TERMS TO BE DEFINED OR IDENTIFIED for COMPETENCY 6:

- Full section
- Half section
- Offset section
- Aligned section
- Broken out section
- Revolved section
- Cutting plane line
- Viewing plane line
- Removed section
- Conventional breaks
- Ribs
- Webs
- Keyways

Full Section

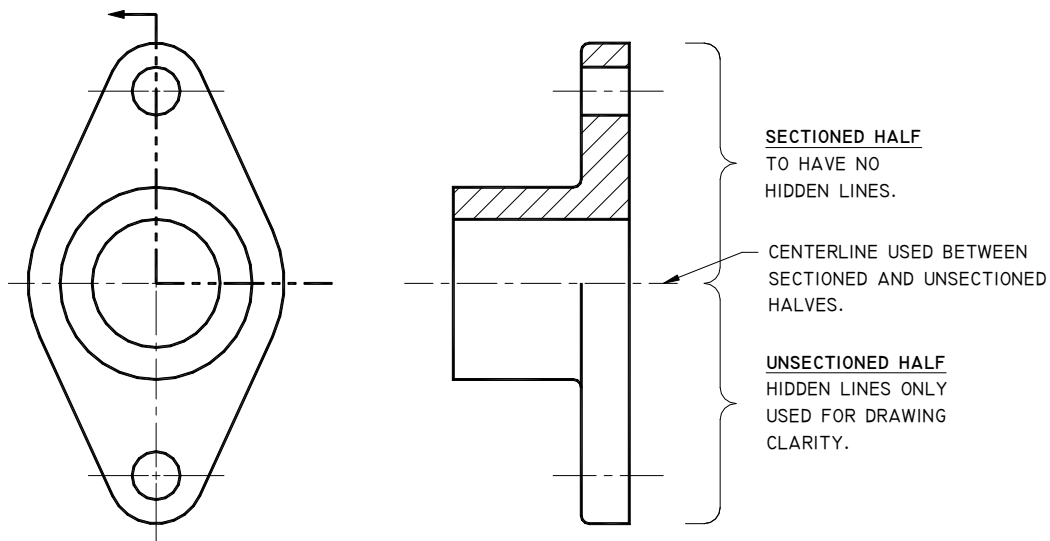
The cutting plane line extends straight through the object, generally at the centerline of symmetry.



Half Section

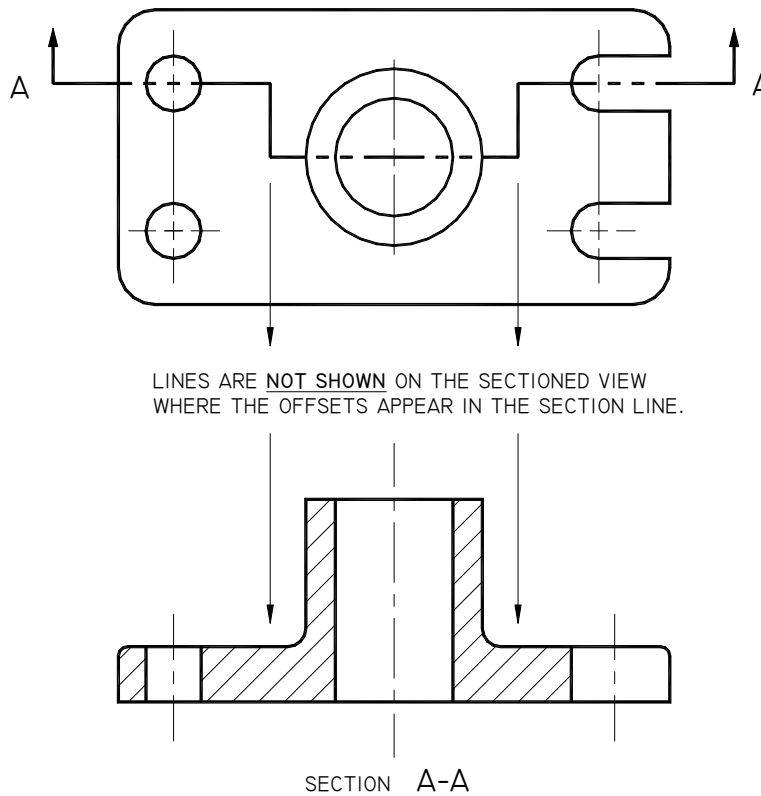
The cutting plane passes half way through the object, removing one fourth of the object.

- Half sections are most applicable to symmetrical objects to show both the interior and exterior in a single view.
- A centerline is used between the sectioned and the unsectioned half.
- Frequently used for assembly drawings.



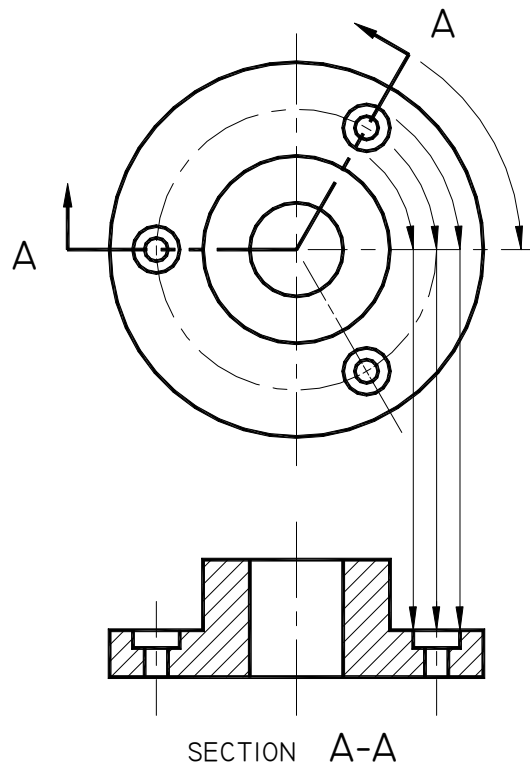
Offset Section

To include features that do not appear in a straight line, the cutting plane may be offset to pass through the features. Offsets or bends created by the cutting plane are not shown on the section view.



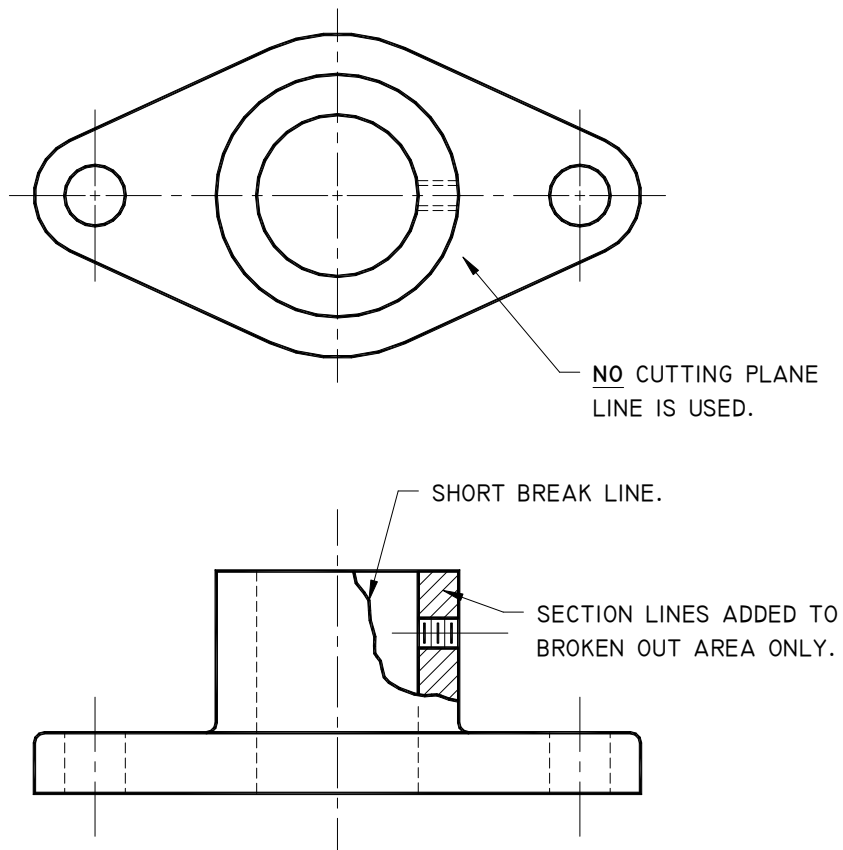
Aligned Section

The cutting plane is offset to pass through features that are then rotated into a plane perpendicular to the line of sight of the section view.



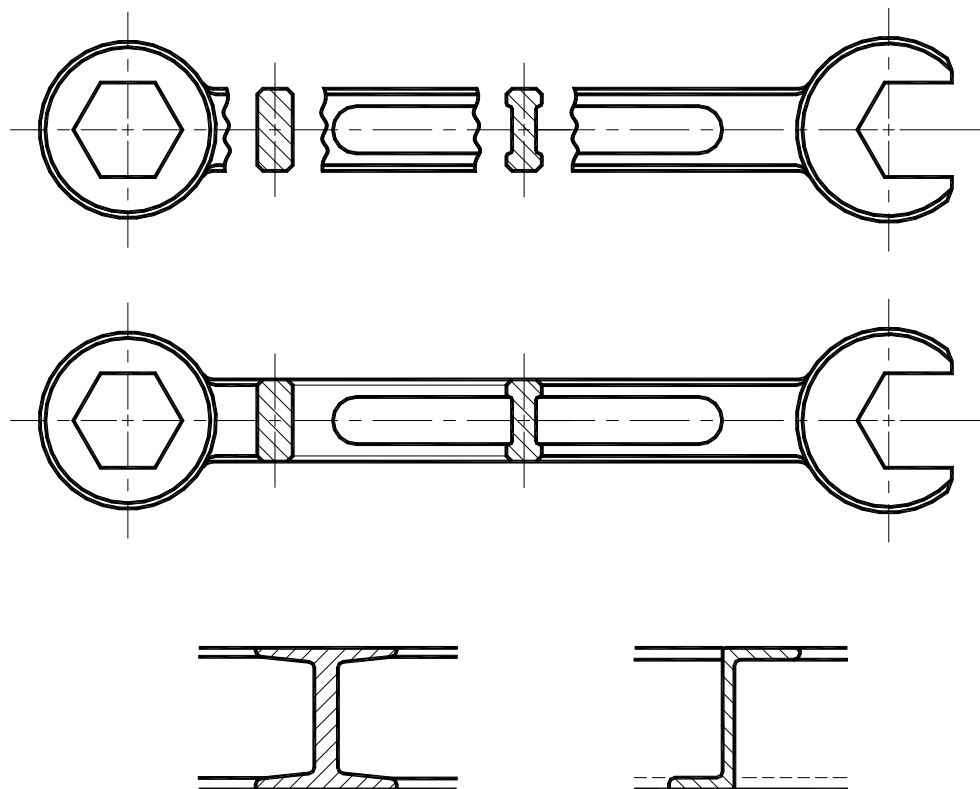
Broken-Out Section

Where only a portion of the object needs to be shown in the section. The section is limited by a short (freehand) break line. No cutting plane line is required.



Revolved Section

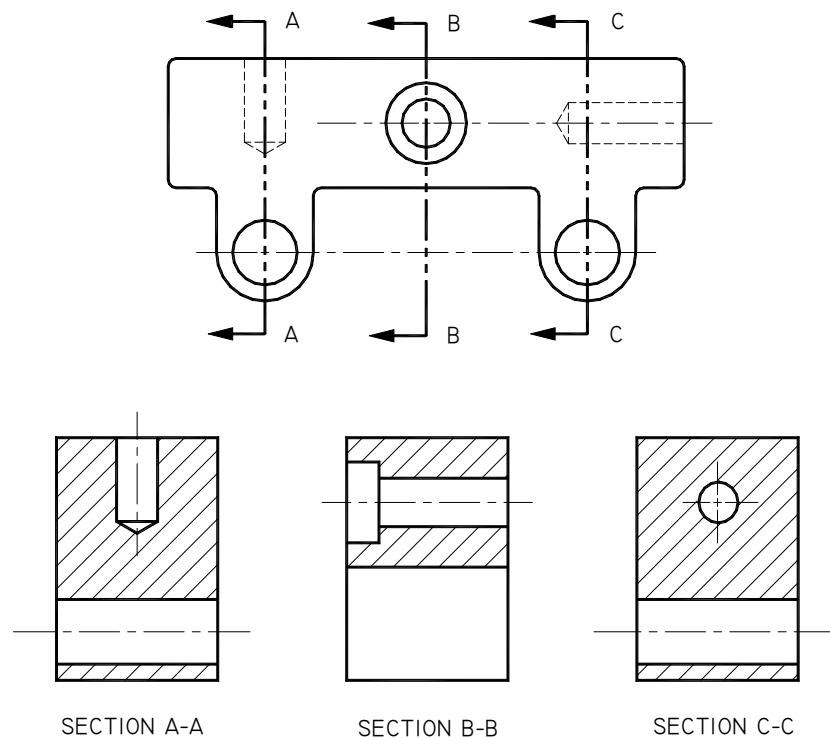
A cutting plane line is passed through the object and revolved 90° in place towards the plane of the drawing. Used to show the cross section of a spoke, bar, rib, etc.



Removed Section

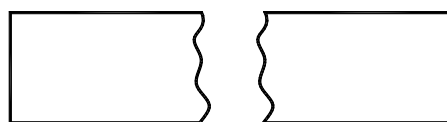
A section that is not a direct projection from the view with the cutting plane. The section view is generally moved from its normal projection position, but must remain in its true orthographic orientation.

- Removed sections are often drawn at a scale different from the view it was taken from.
- Center lines may extend from the imaginary cutting plane to the removed section provided it is symmetrical.

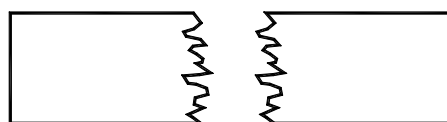


Conventional Breaks

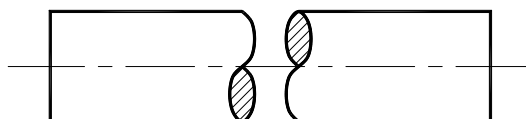
Used to shorten long features.



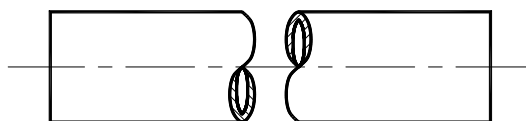
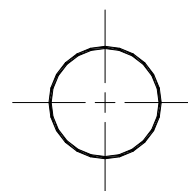
BAR



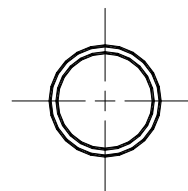
WOOD



ROD

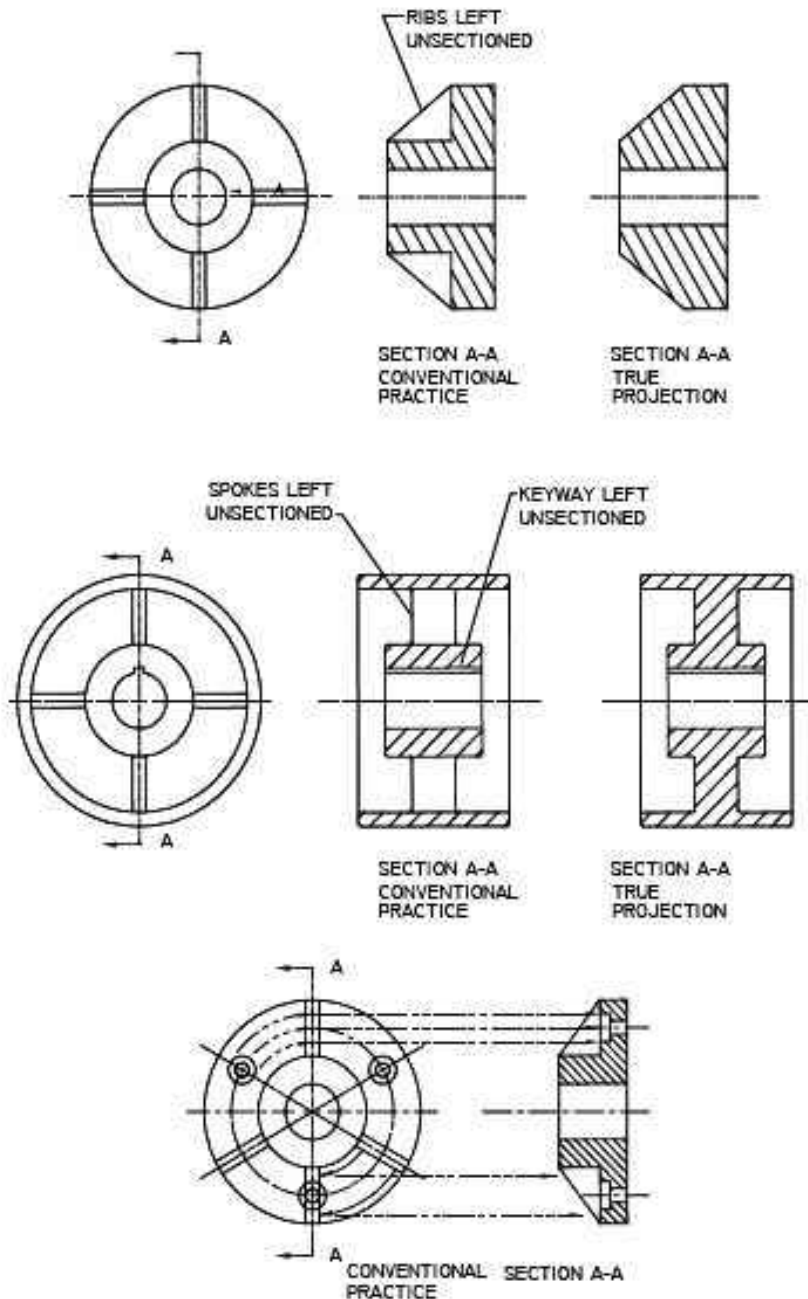


TUBE



Ribs/Web/Keyways

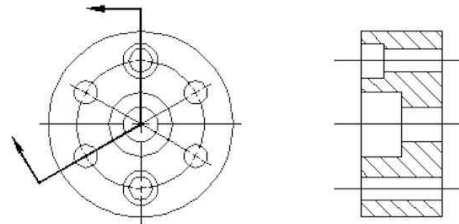
Webs, ribs, gear teeth and other like features are not sectioned to avoid giving a false impression of the parts thickness.



SAMPLE REVIEW QUESTIONS

1. When creating a section view, hidden lines behind the cutting plane generally should be omitted.
True
False
2. When the cutting plane offsets, a line is never shown in the sectioned view to represent the offset
True
False
3. When the cutting plane line bends at 90° intervals, the section would be called:
Offset
Aligned
Revolved
Half
4. Identify the type of section shown.

Aligned
Full
Half
Offset



5. Section lines are always drawn at 45°
True
False
6. Identify the conventional break shown.

Round bar
Round tube
Short break
Semi break

