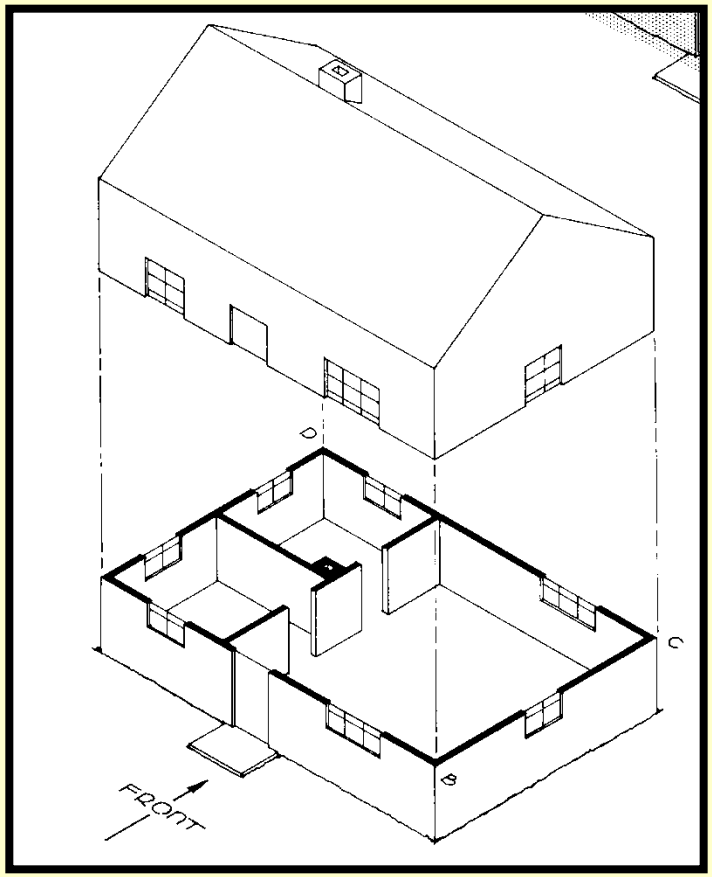
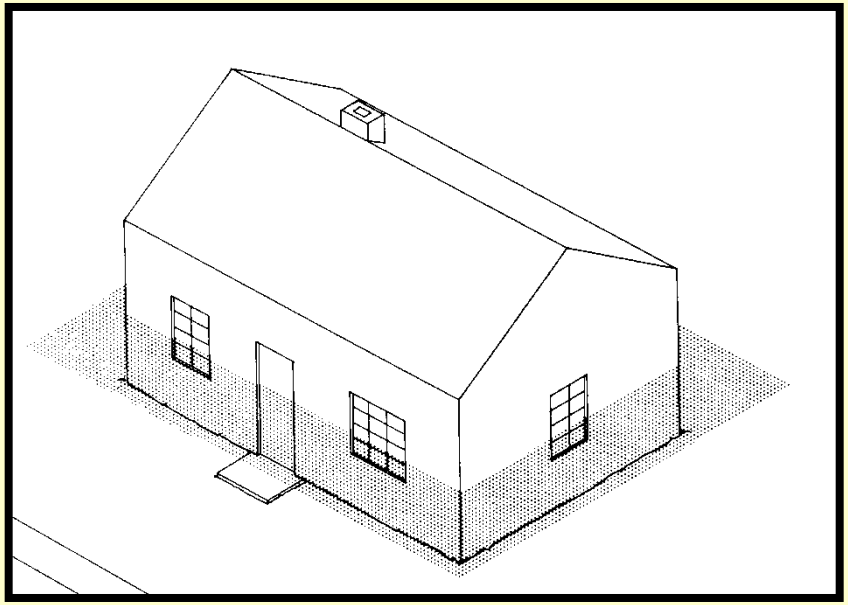
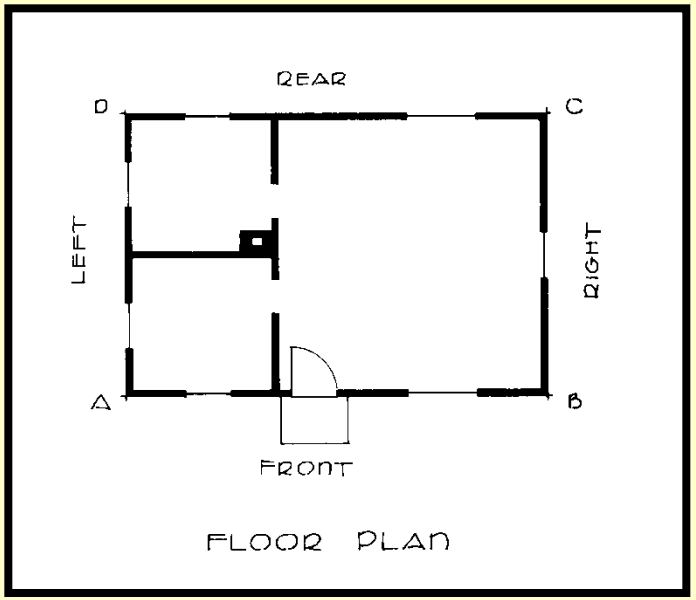
Sketching Section Views

- **Uses**
- **New Features**
- **Examples**
- **Characteristics**

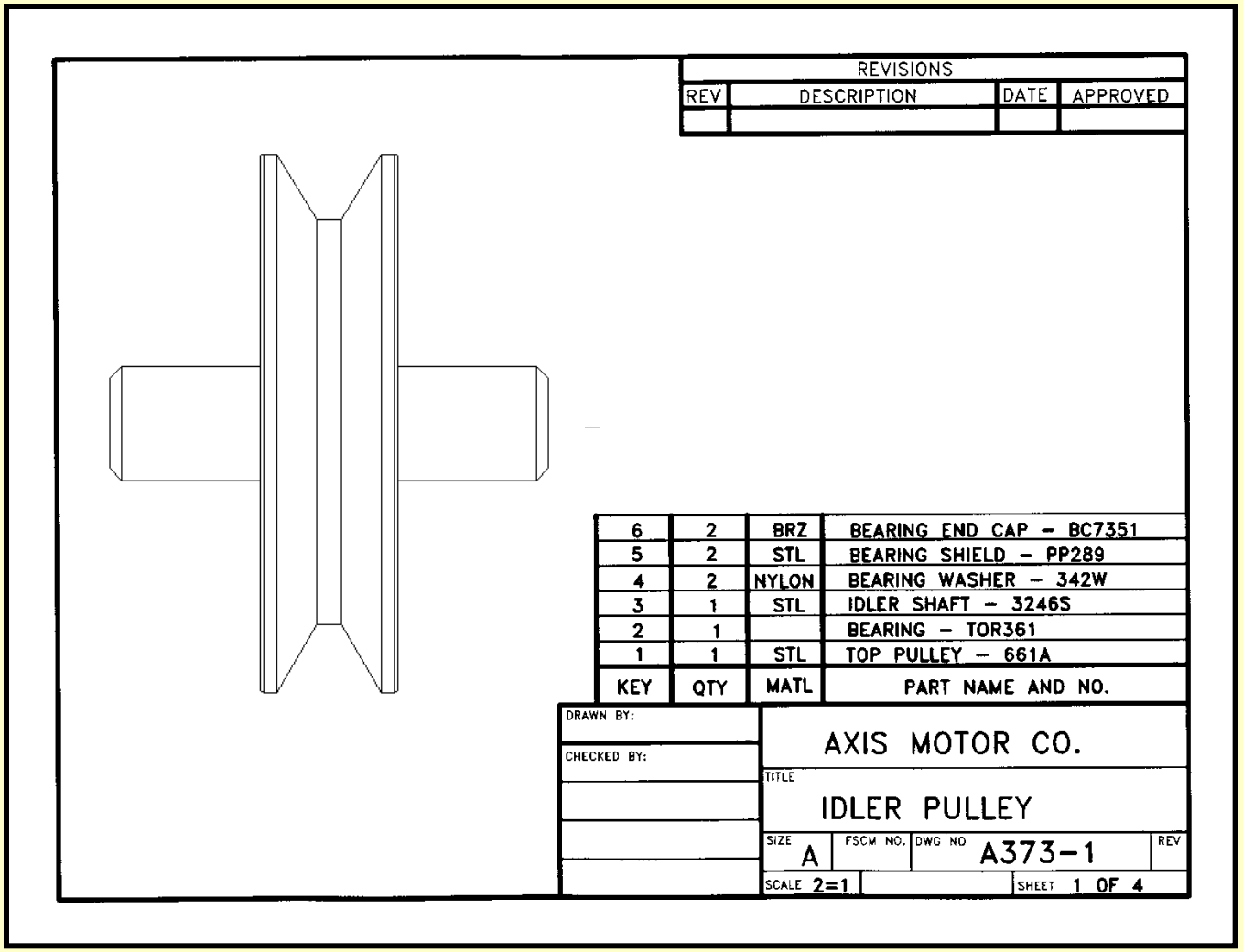
Uses - Floor Plan



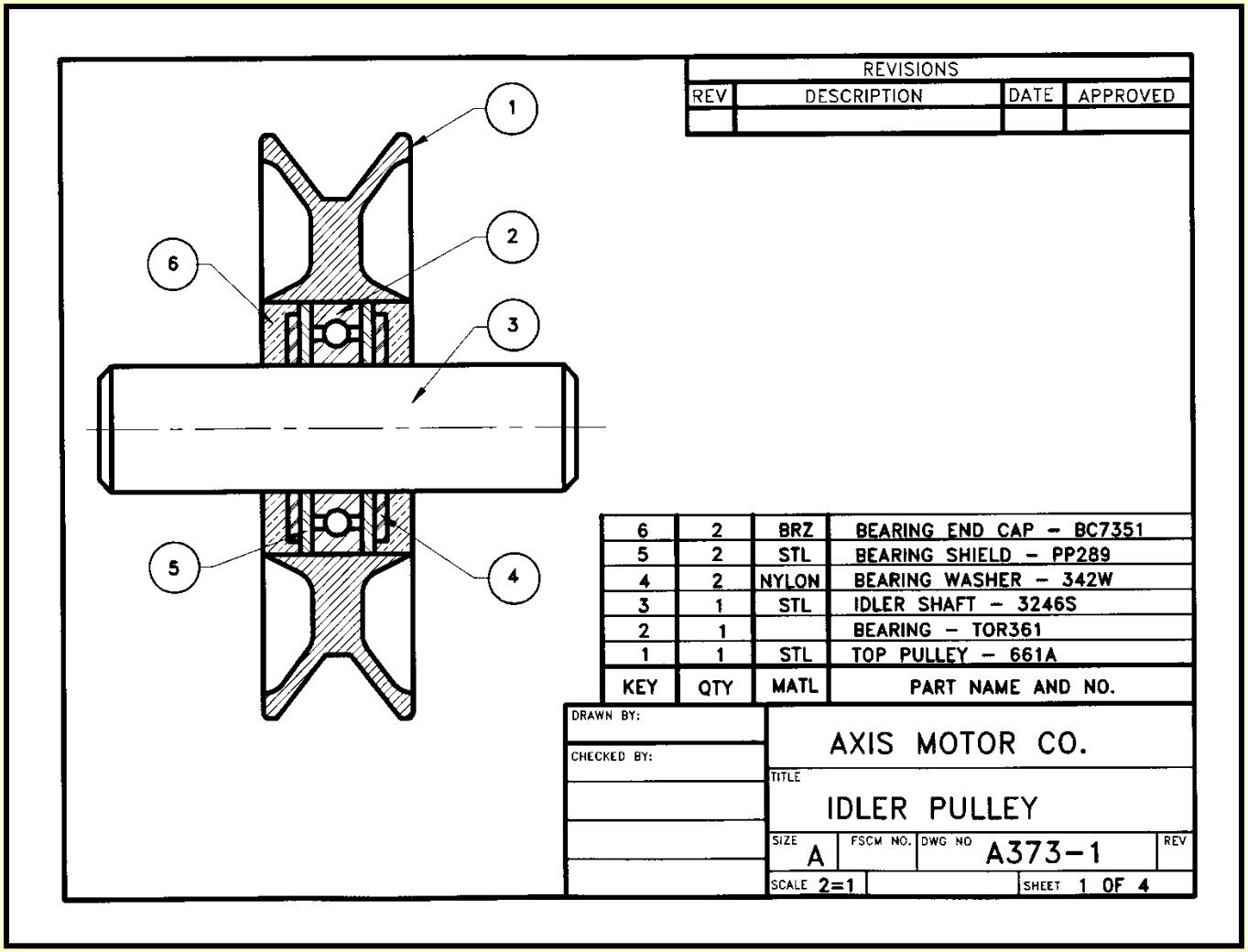




Uses - Assembly Drawing

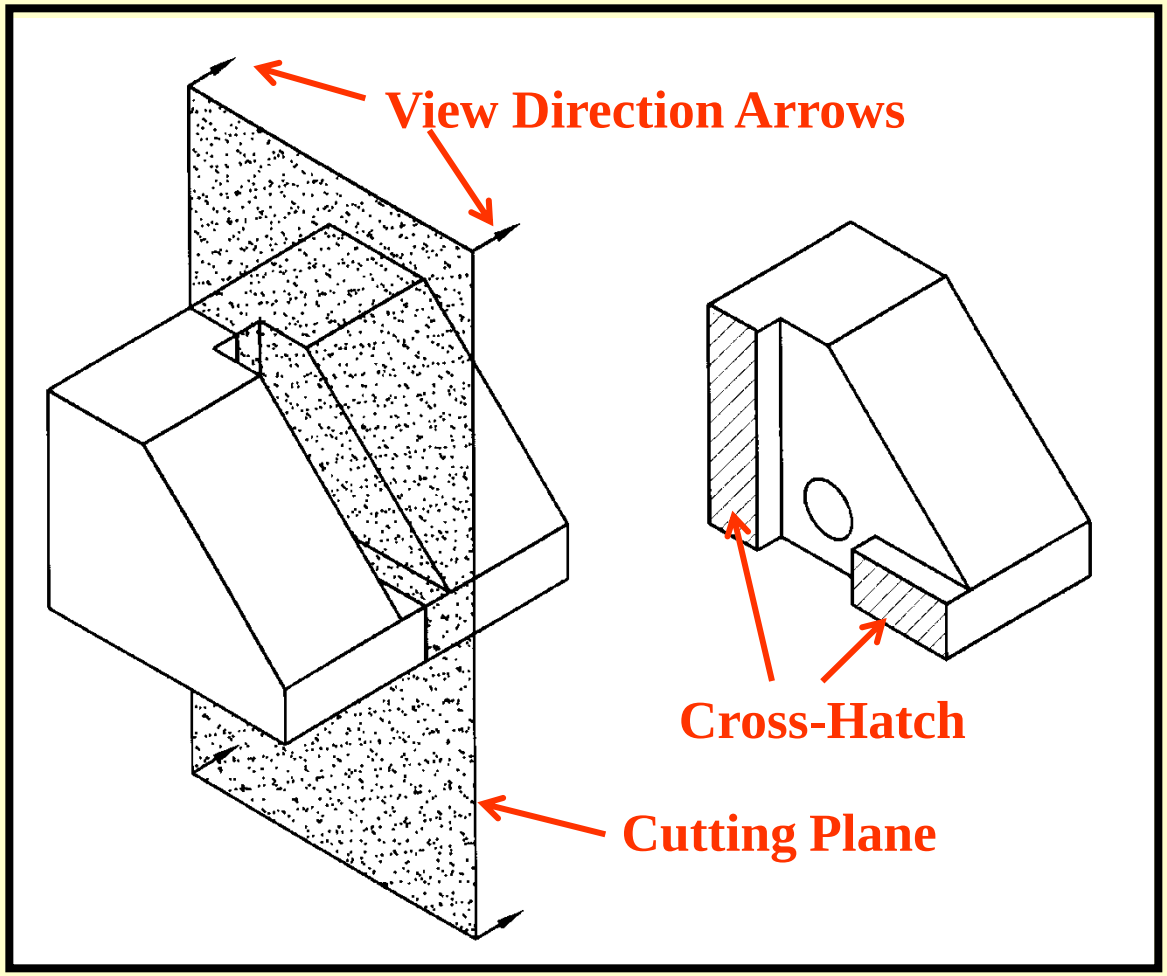


Uses - Assembly Drawing (Full Section)

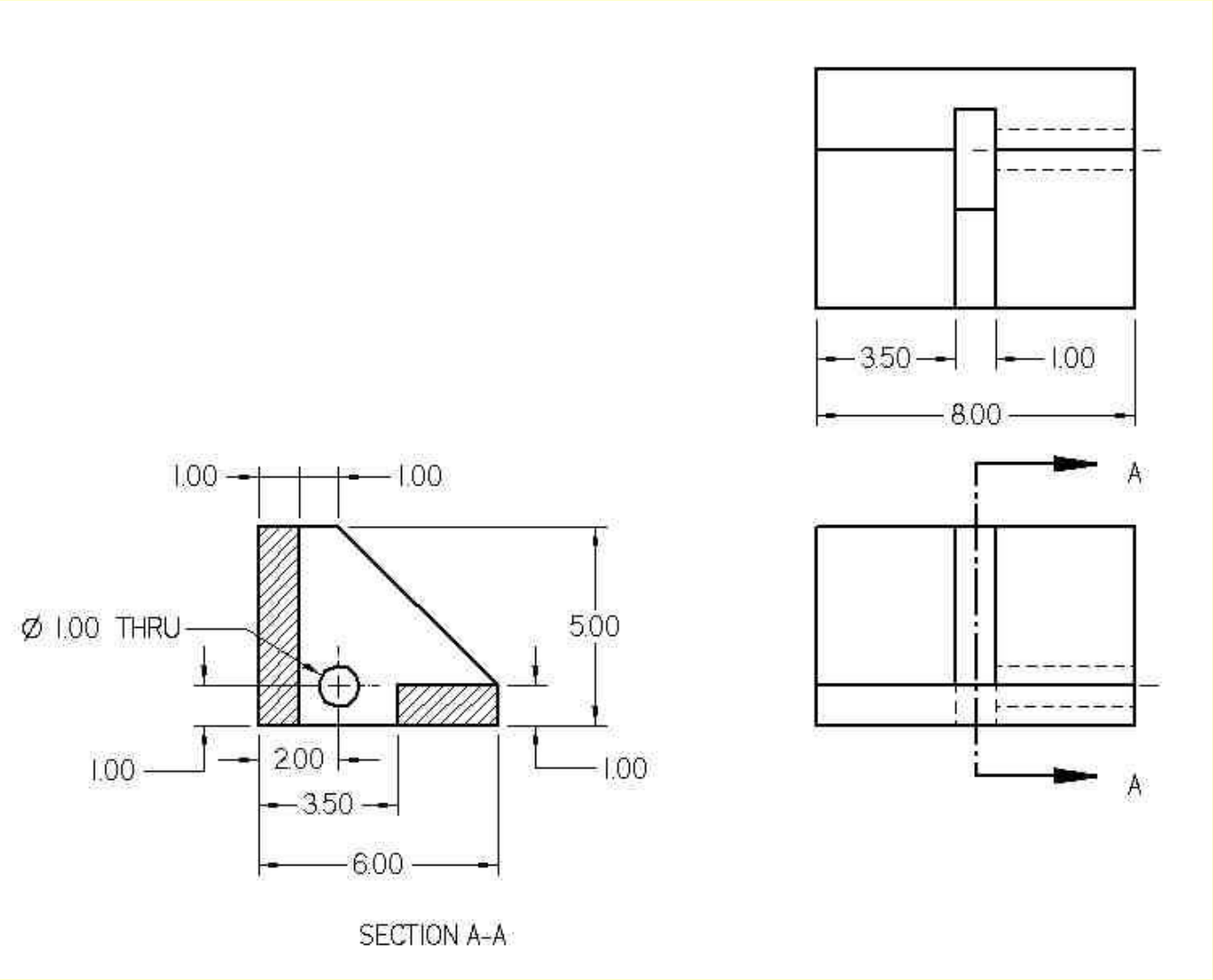


Section View Basics

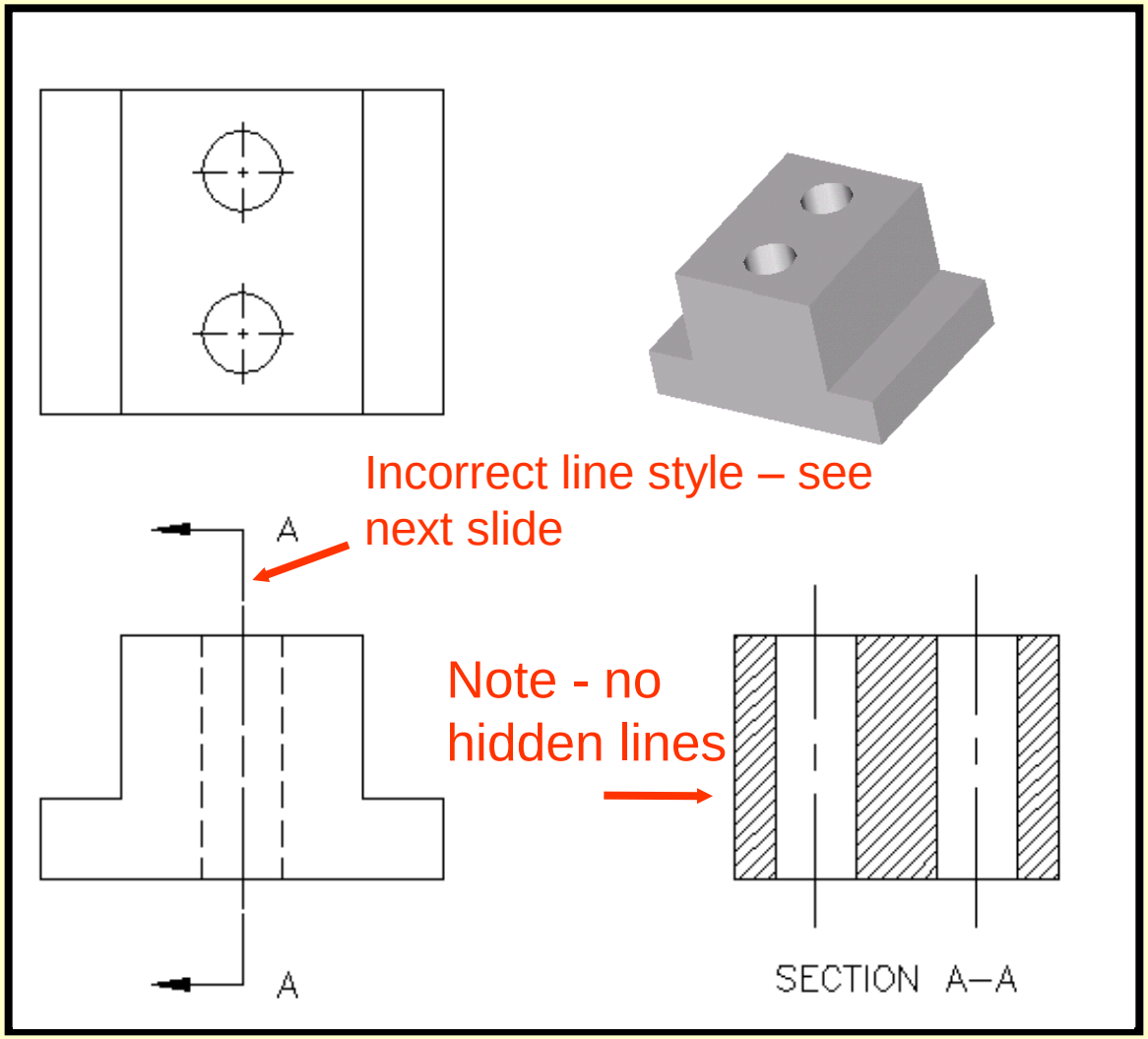
Reveal part or assembly inner structure details



Fully Dimensioned Section View

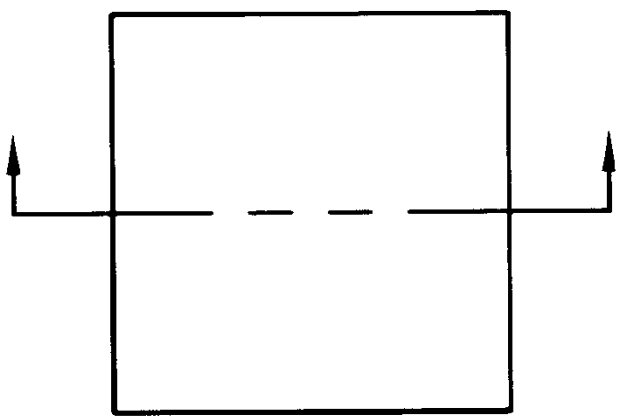


Full Section Example



Cutting Plane Line Type

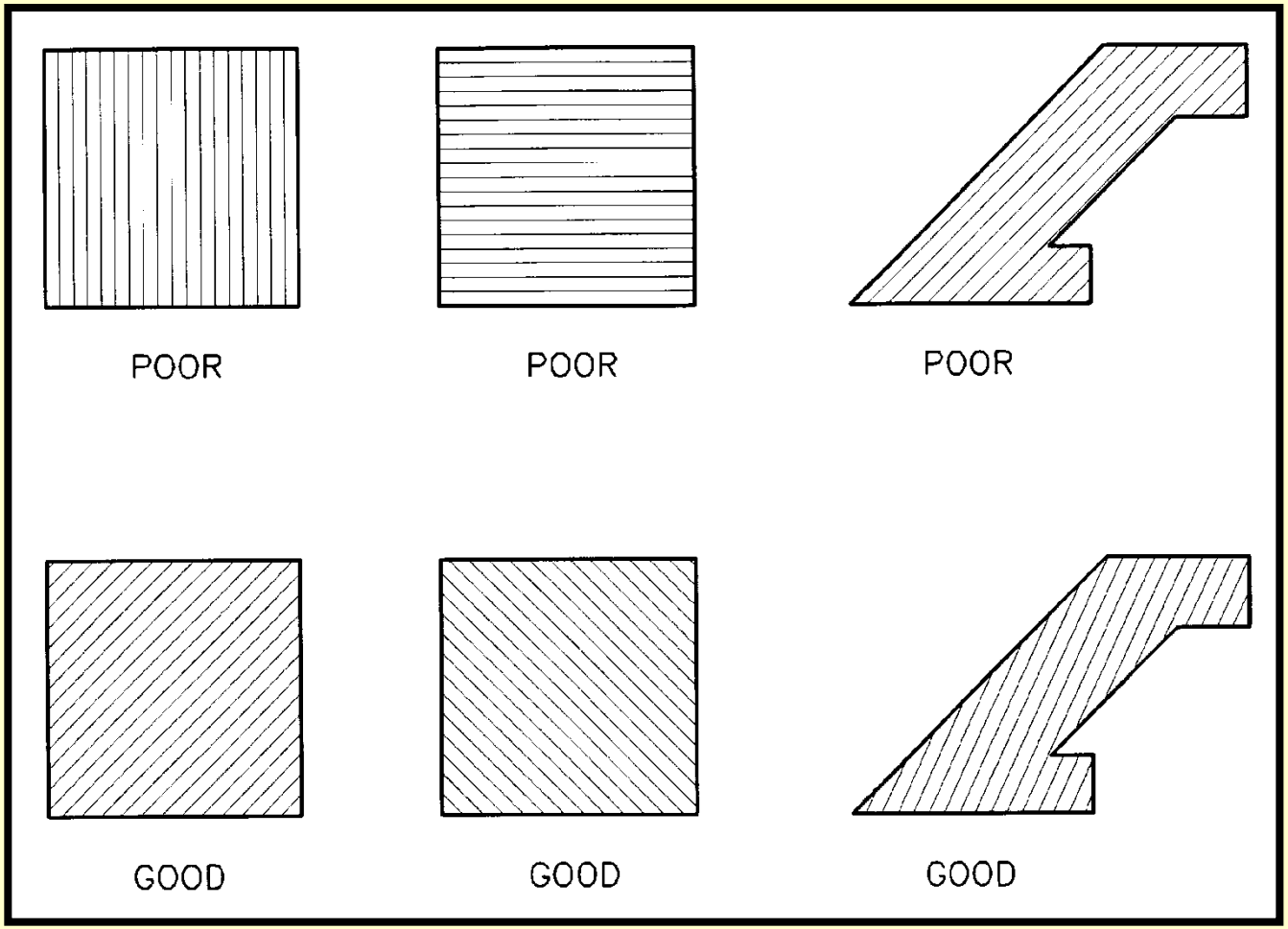
Thick – like visible



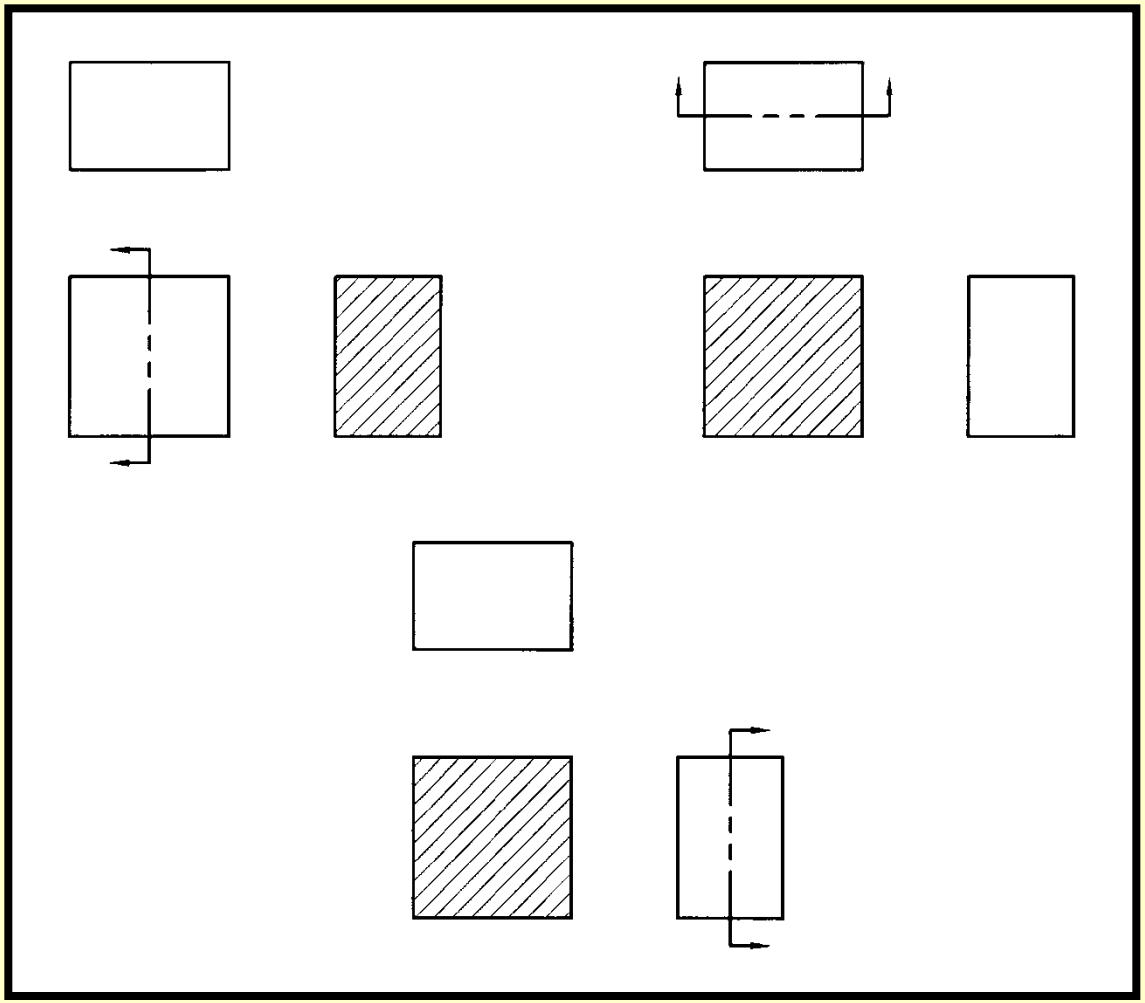
1/8” dashes
1/16” gaps
Used in this course

Cross Hatch Practices

Lines of the cross hatch pattern should not be parallel nor perpendicular to boundaries of view



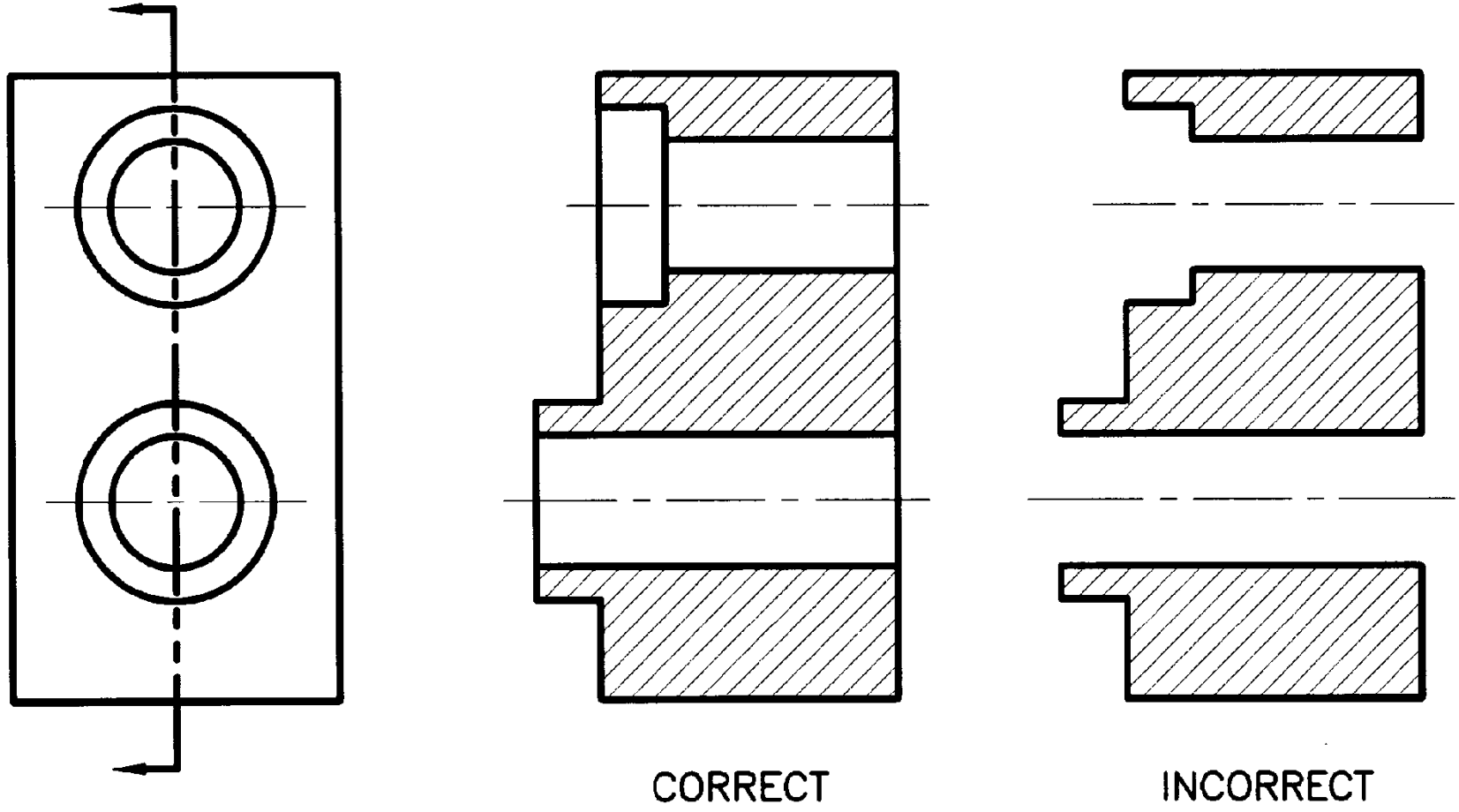
Cutting Plane Arrows and Section Location



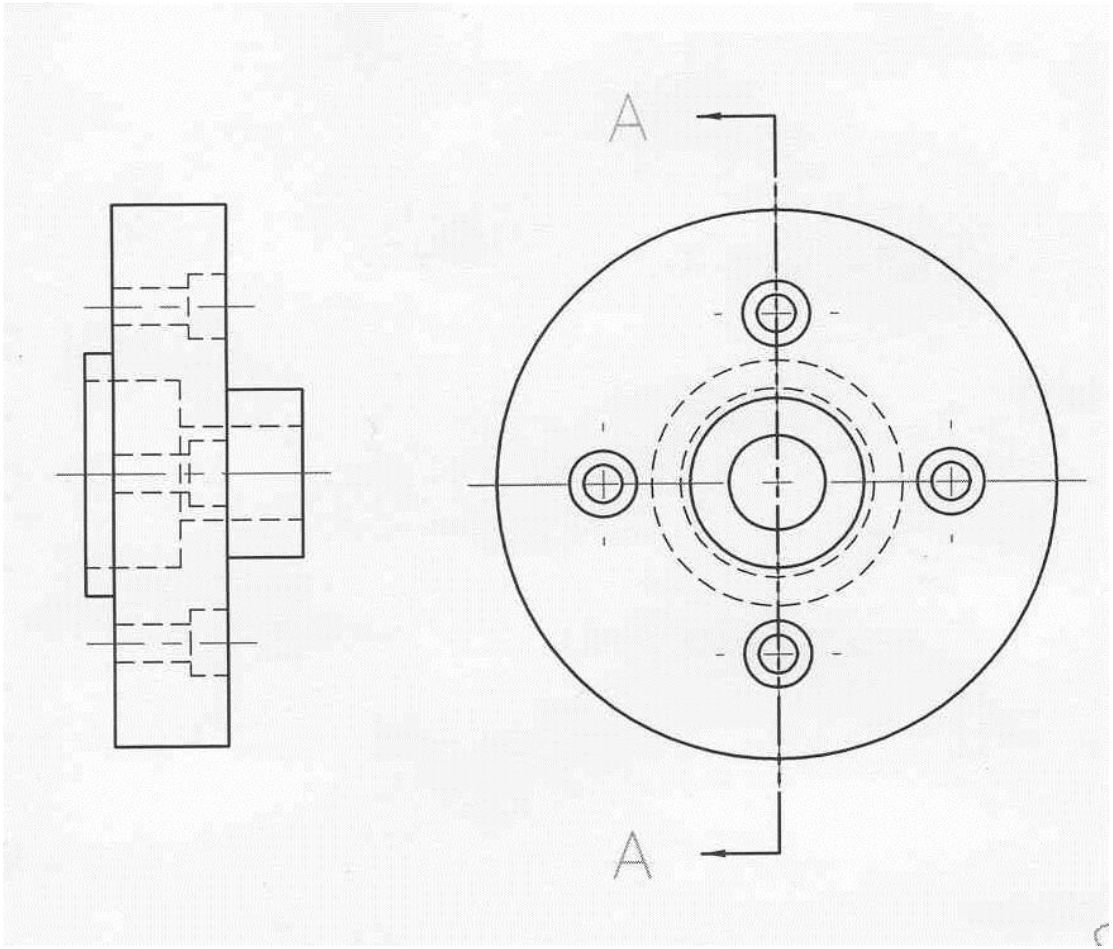
Section View Behind Arrows -

- but may be on a separate sheet

No Islands



Section View – Easier to Interpret

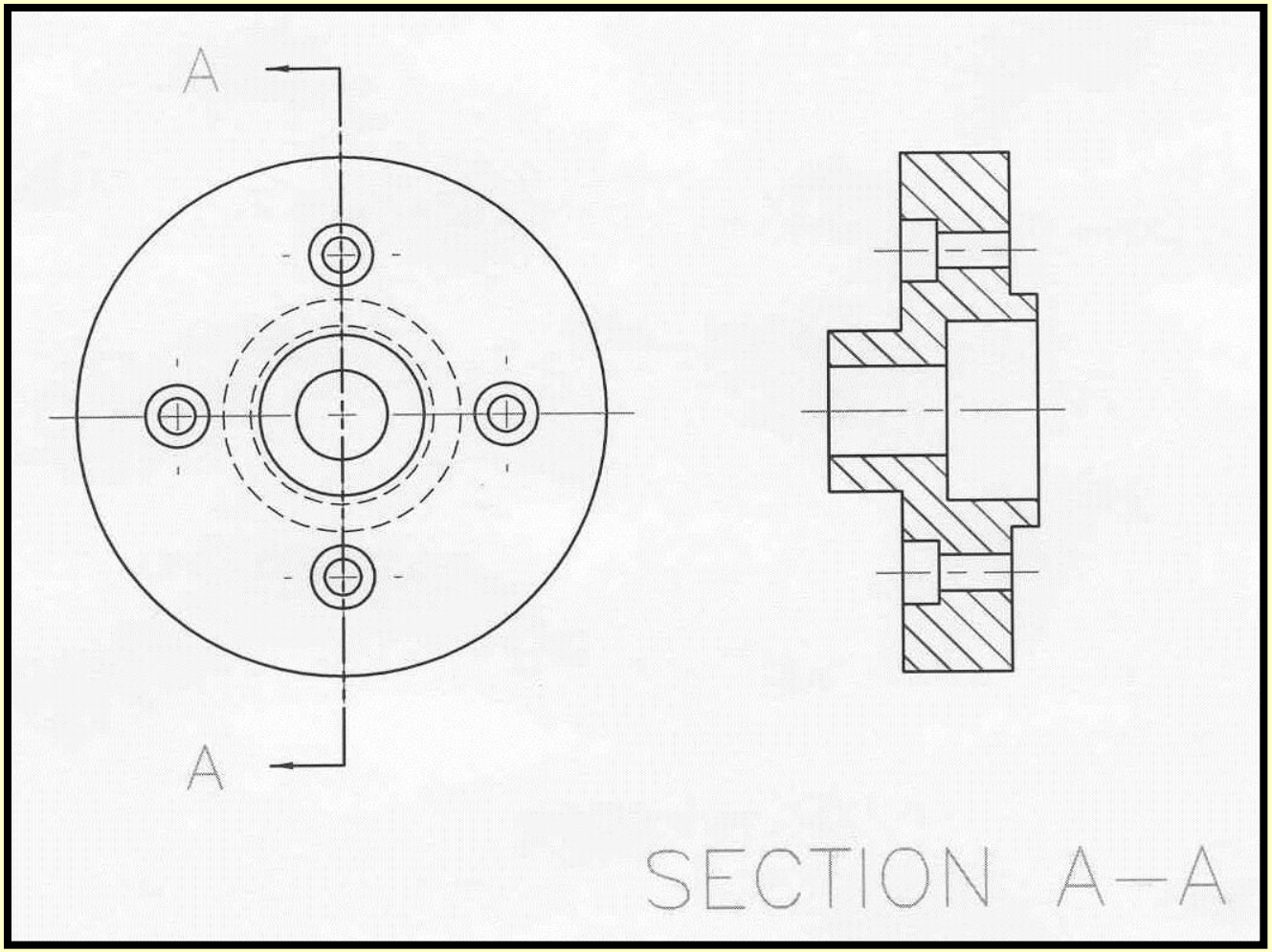


Section View Characteristics

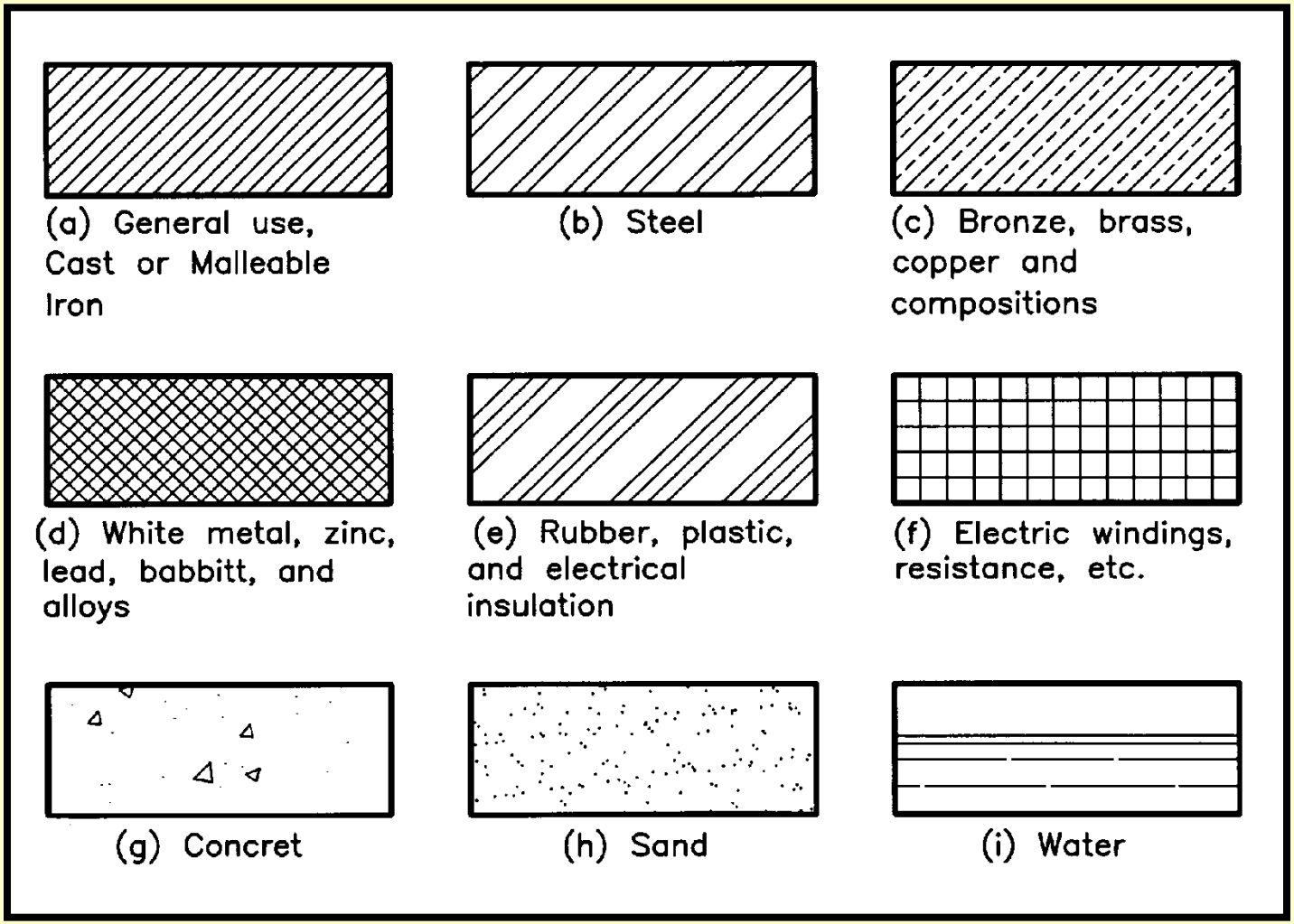
Cutting Plane Line –
- **type**
- **placement**
- **arrows**
- **label**

Section View –
- **orientation**
- **position**
- **label**
- **visible lines**
- **center lines**
- **no hidden lines**

Cross Hatch –
- **line type**
- **uniform**
- **line slope**
- **only “cut” regions**



Cross Hatch - Material Symbols

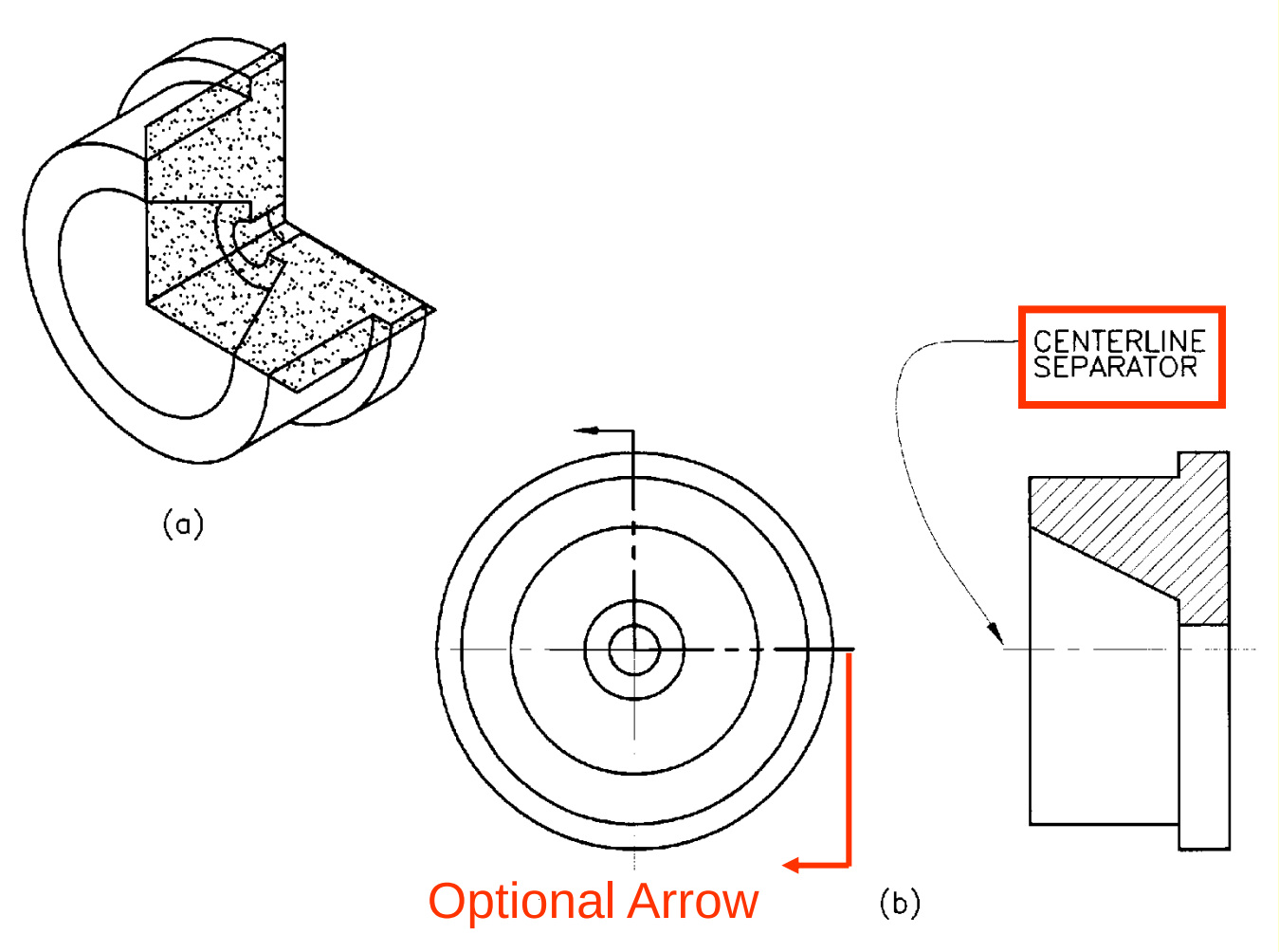


Half Section

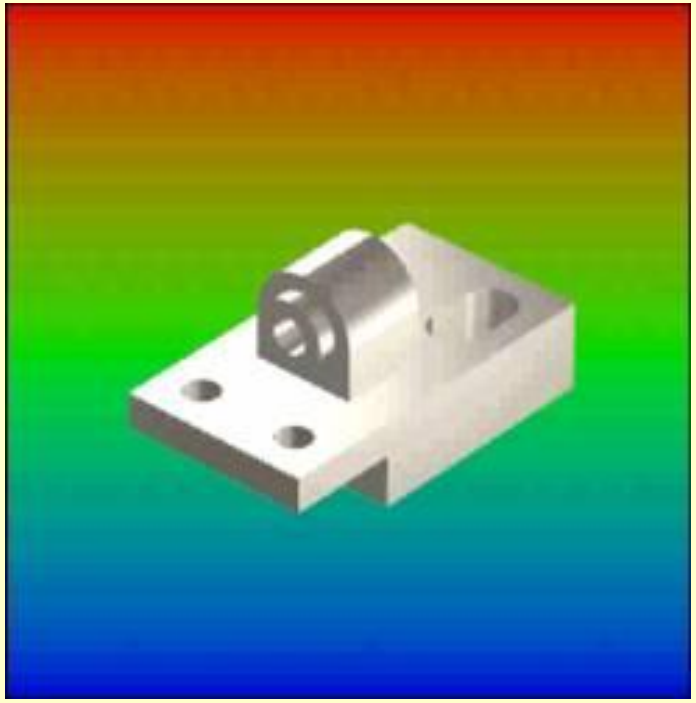
Often used for assemblies or symmetric parts.

Interior on one side, exterior on the other side.

Half Section

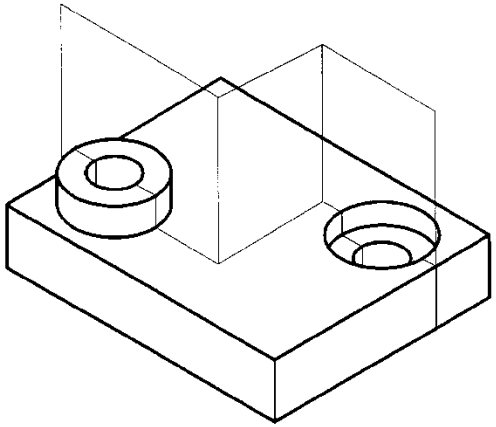


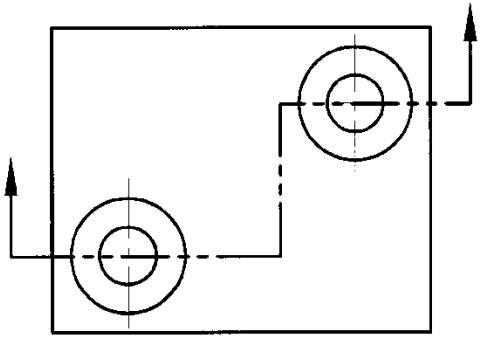
Offset Section

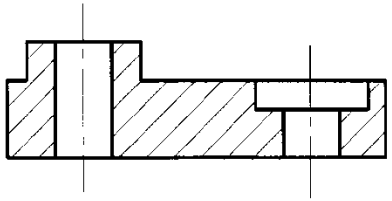


- Used when features do not fall on straight line.
- All turns in cutting plane are right angles.
- Turns in cutting plane not shown in section view.

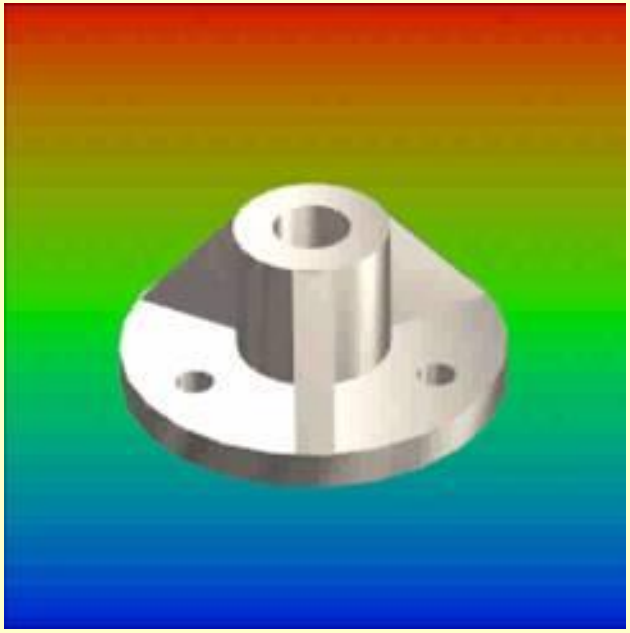
Offset Sections





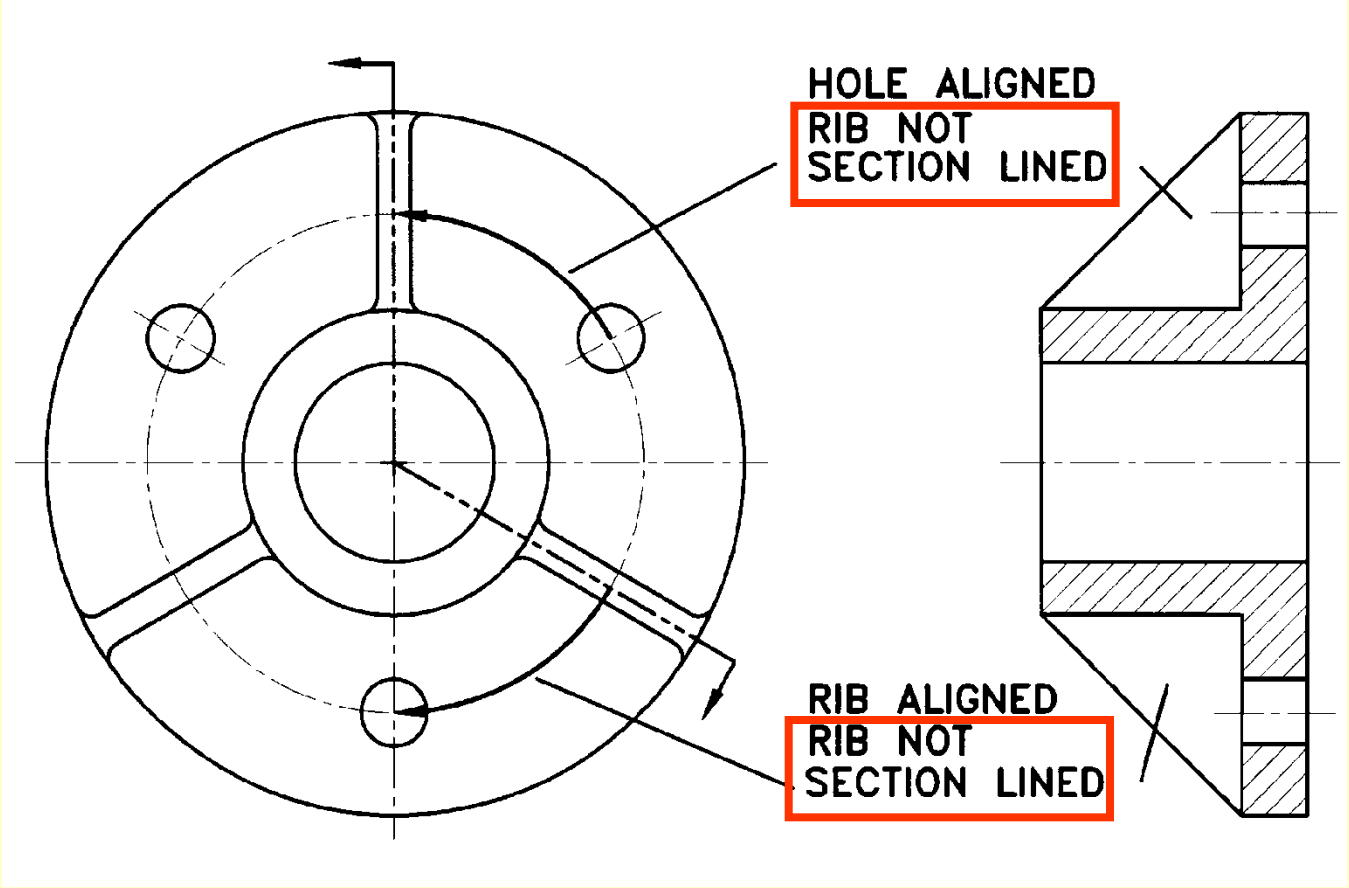


Aligned Section



- Aligned sections use a bent cutting plane to include all radial elements in the section.
- Radial features (holes, ribs, spokes, etc.) are revolved into a position that would be cut by a standard full section.

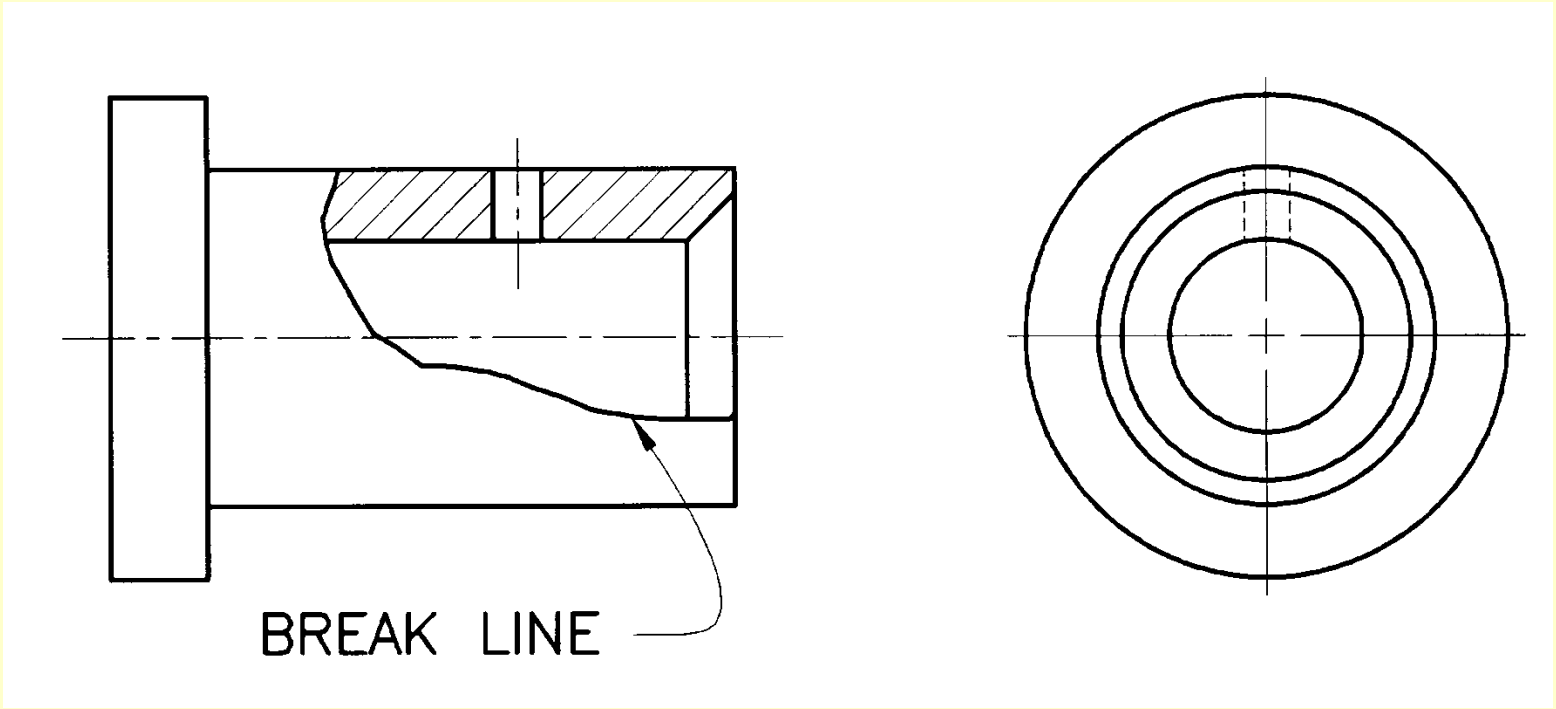
Aligned Section



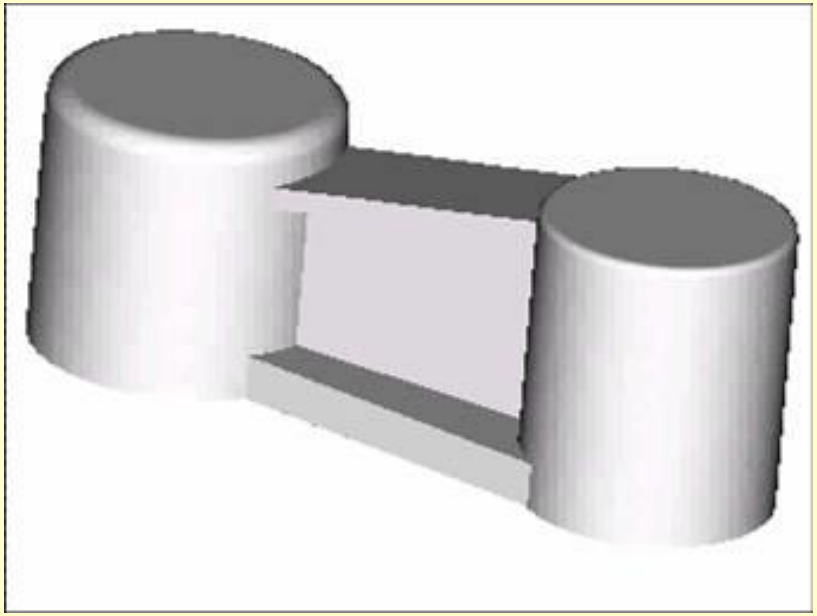
Broken Out Section

- Shows a partial view of interior features.
- Irregular lines represent the break.
- Shows part details with a minimum of views.

Broken Out Sections

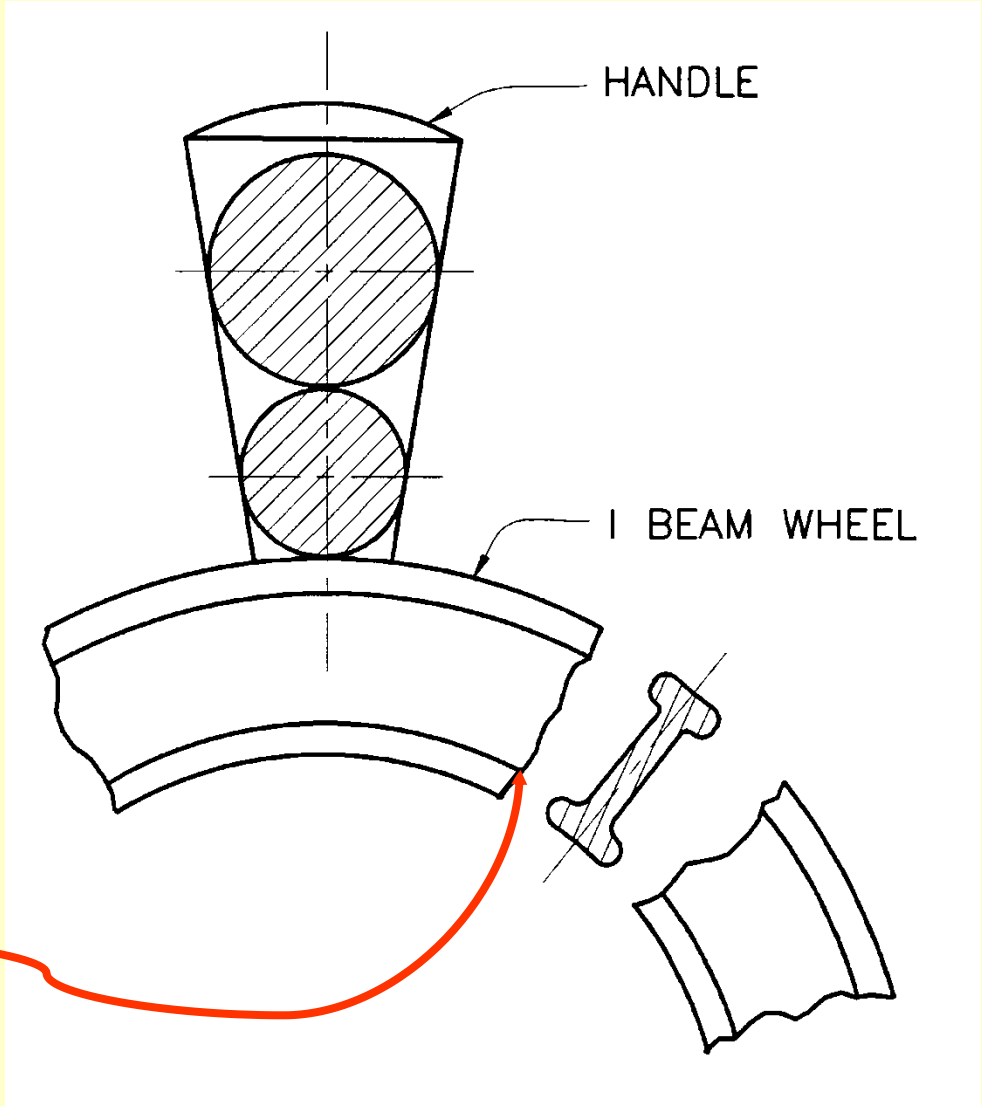


Revolved Section Animation



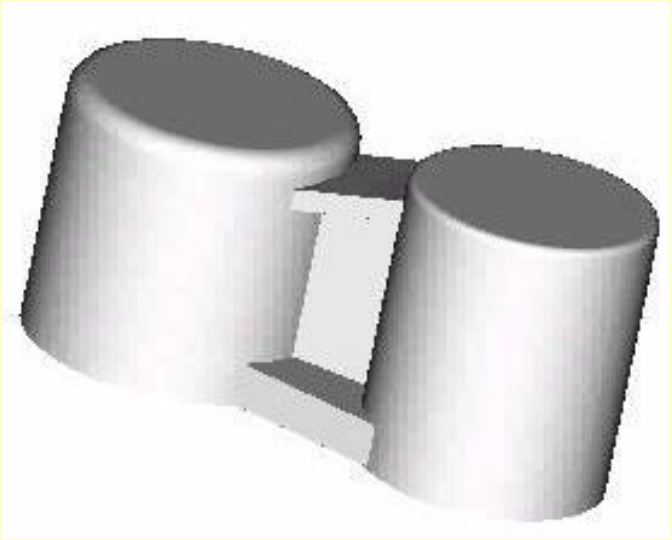
The cross section is revolved about an axis of revolution and placed on the view where the revolution occurred.

Revolved Section



with breaks

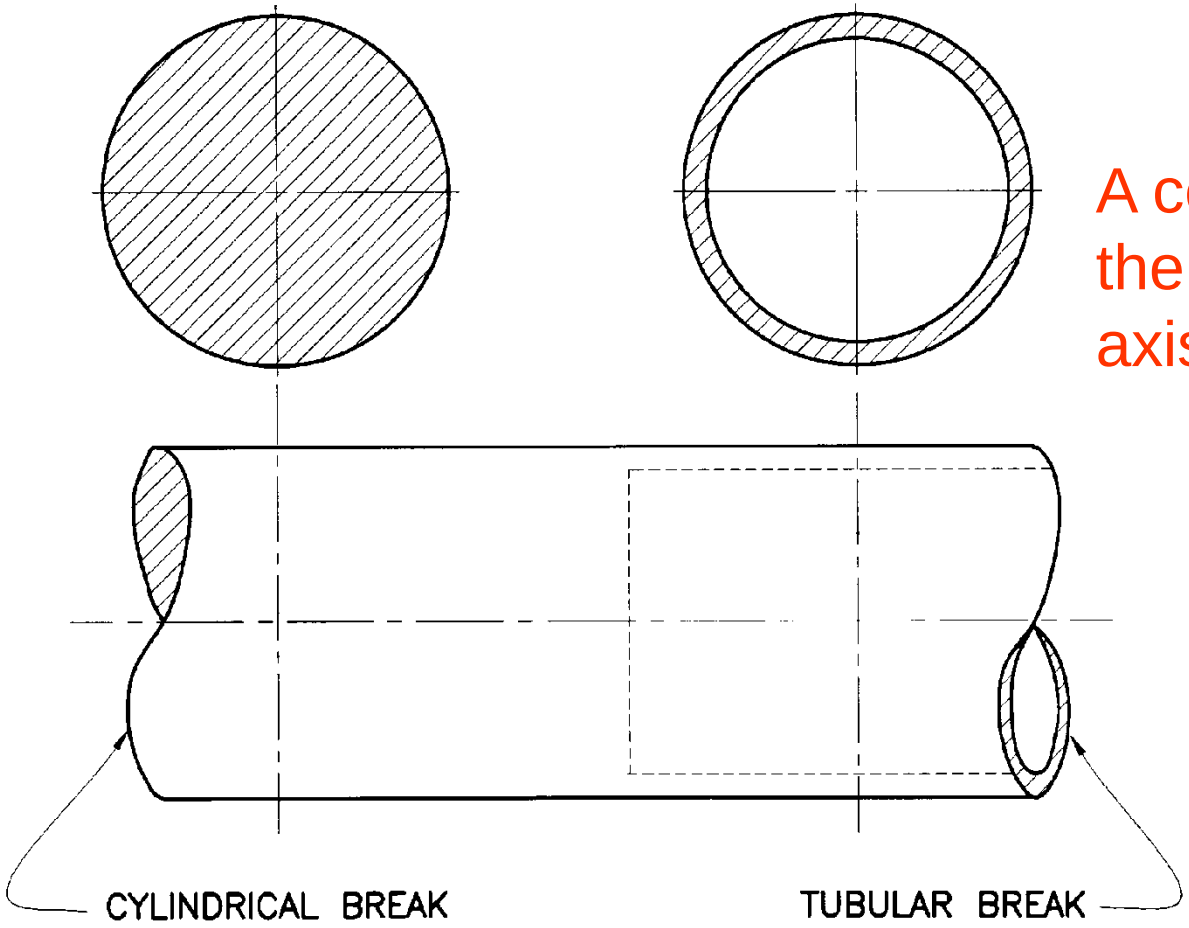
Removed Section Animation



A revolved section shown outside the view in which it is revolved.

Used when there is not enough room for a revolved section.

Removed Section



A centerline shows the location of the axis of revolution.