

## Section & Detail Views Guide

A student reference for showing internal features and enlarged details clearly in engineering drawings.

### Use this guide when...

- hidden lines make a view crowded or difficult to read.
- you need to show an internal feature, wall thickness, hole, pocket, or slot.
- a small feature needs to be enlarged for communication or dimensioning.

## What each view does

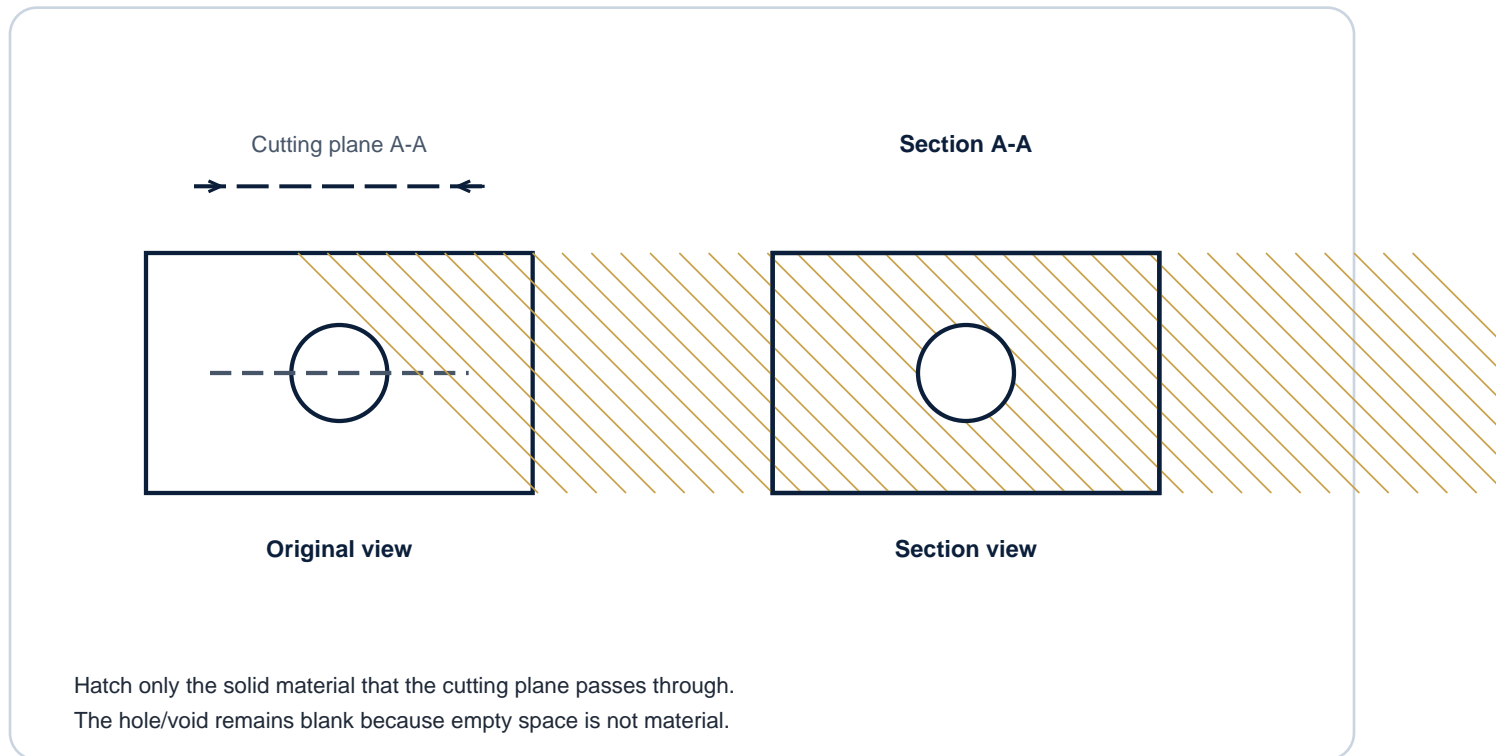
View type	Purpose	Use it when
Section view	Shows what the object looks like after it is cut by an imaginary plane.	Internal geometry is important or hidden lines are too cluttered.
Full section	Cuts completely through the object along one plane.	The internal shape is symmetric or easy to explain with one straight cut.
Half section	Shows half exterior and half interior.	The object is symmetric and both inside/outside information matters.
Offset section	Bends the cutting plane to pass through multiple features.	Important features are not lined up on one straight plane.
Detail view	Enlarges a small area of the drawing.	A small feature cannot be read or dimensioned at the main view scale.

## Section view basics

- A cutting plane line shows where the object is sliced.
- Arrows on the cutting plane show the viewing direction.
- The section view label matches the cutting plane label, such as A-A.
- Hatch lines identify solid material cut by the plane.
- Empty spaces such as holes, pockets, and voids are not hatched.

## Full section example

The cutting plane identifies where the part is sliced; the section view shows the cut interior clearly.

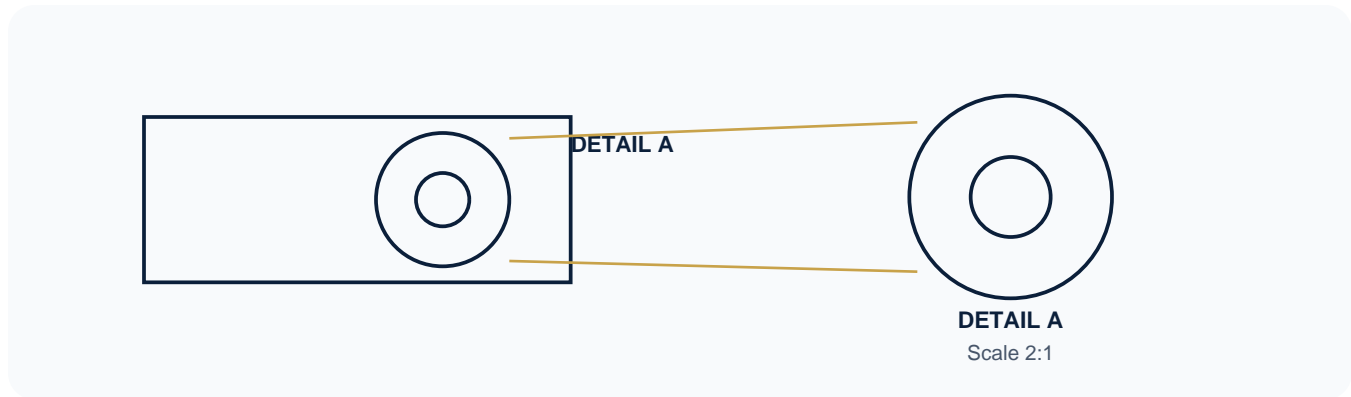


## Hatching rules

Rule	Why it matters
Hatch only solid cut material.	Hatching a void or hole incorrectly suggests that material exists there.
Keep hatch spacing and angle consistent within one part.	Consistent hatching makes the section view easier to read.
Do not hatch thin features so heavily that they become dark blocks.	The reader still needs to see edges, holes, and dimensions.
Avoid hidden lines in section views unless they add important clarity.	The section view usually replaces hidden-line clutter.
Label the section clearly, such as SECTION A-A.	The reader must know which cutting plane produced the section view.

## Detail view example

A detail view enlarges a small feature so it can be read or dimensioned clearly.



## Detail view rules

Rule	Why it matters
Circle or otherwise identify the area being enlarged.	The reader needs to know where the detail came from.
Label the enlarged view, such as DETAIL A.	The detail label connects the enlarged view to the source area.
Include the detail scale when needed.	The enlarged detail may not be the same scale as the main view.
Use a detail view only for a feature that benefits from enlargement.	Too many detail views can make a drawing harder to use.

## Common mistakes to avoid

Mistake	Better choice
Hatching a hole, pocket, or empty space.	Leave voids blank; hatch only solid cut material.
Forgetting arrows on the cutting plane.	Add arrows so the viewer knows the viewing direction.
Using a section view without a matching label.	Match the cutting plane and view labels, such as A-A.
Using hidden lines everywhere instead of a section view.	Use a section view when it communicates the interior more clearly.
Adding a detail view without scale or source area.	Show where the detail comes from and label the enlarged view.

## Quality checklist

- The section or detail view has a clear reason for being included.
- The cutting plane line, arrows, and section label match.
- Hatch lines appear only on solid material cut by the plane.
- Holes, pockets, and empty spaces are not hatched.
- The section/detail view is easier to interpret than a hidden-line view.
- Detail views identify the source area and include scale when needed.