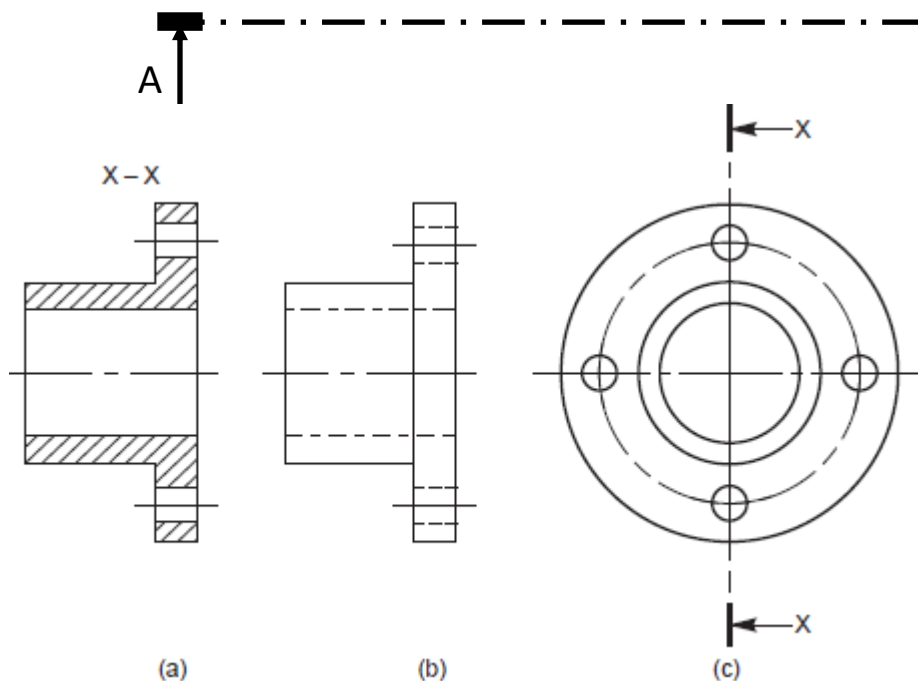
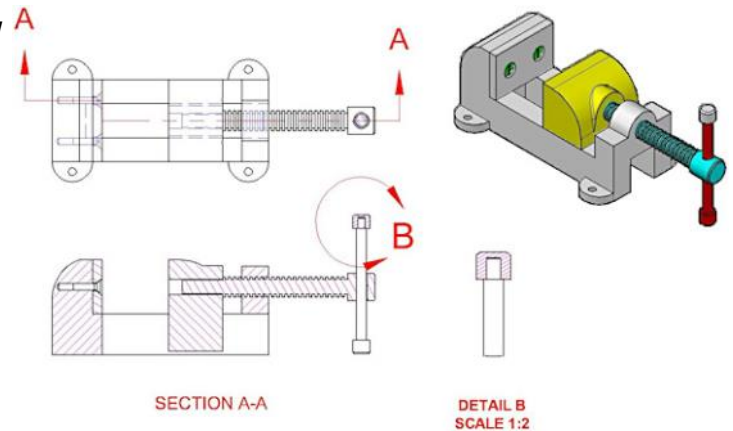


## Sectional Views and Hatching

Sectional views are used on drawings to show the inside of objects in more detail. They are very helpful when showing the inside parts of an assembly, for example a machine.

To indicate the location of a cut, a **Cutting Plane** is shown on one view. Imagine the cutting plane as being like where the item is sawn in half. At cutting plane is like a centre line, with thick ends, arrows pointing in the direction of view and two letters to identify the Section. One is shown below:



The view created is known as **Section A-A**—this could be a Plan, Elevation or End Elevation.

Where the object is 'cut' is indicated by **Hatching Lines**. These are lines drawn at 45 degrees in the first instance. They are usually thinner than outlines.

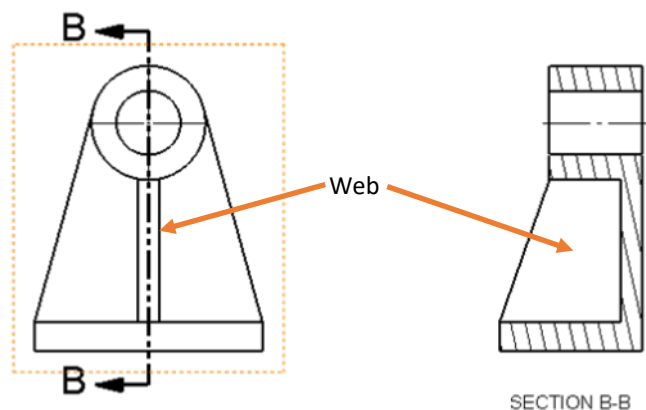
In this drawing, (a) is the Sectional view, whereas

Note that you:

- Don't hatch holes
- Don't show hidden detail

### Webs

A web is a thin block of metal or other material used to strengthen various components. Convention states that webs, when sliced through their thickness, should not be hatched in the Section view. The web should be drawn, but not hatched.



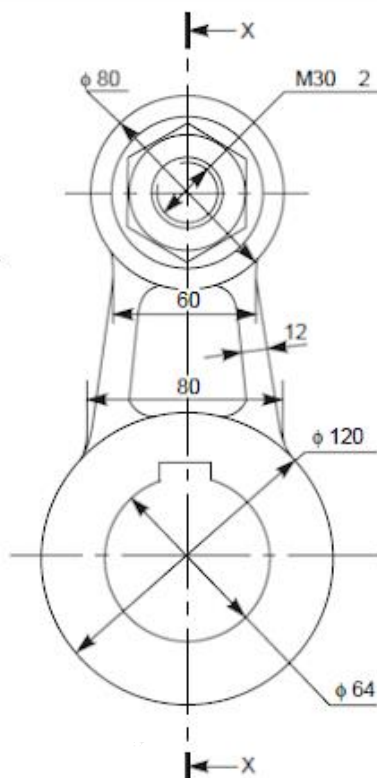
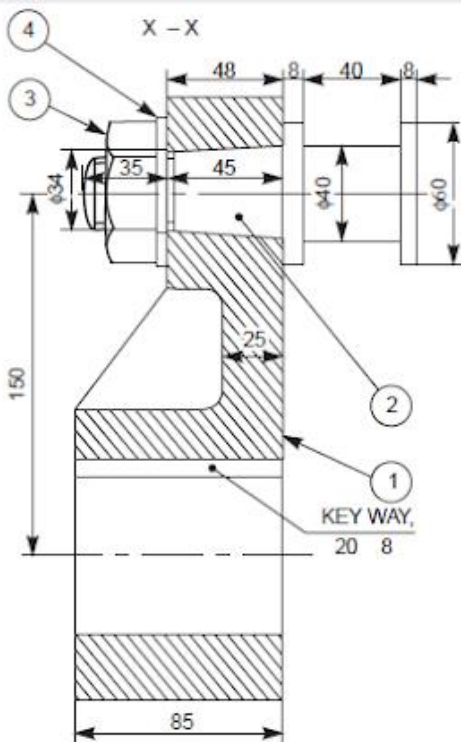
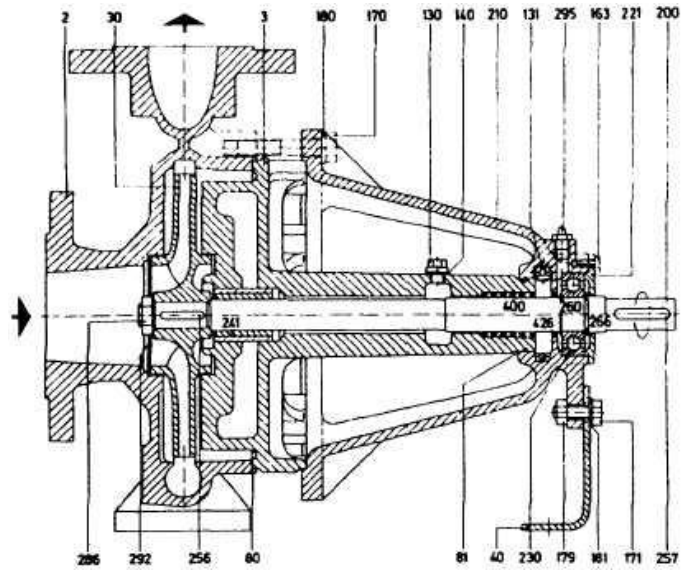
**NOTE** that some conventions on this page are not to BSI—eg some Cutting Planes and some views are in 3rd Angle—can you spot those drawings that are not shown correctly?

## Sectional Views and Hatching

When creating an assembly, the drawing will be made up of different parts. If you are creating a Sectional view, then each part will be hatched in a different way.

The normal way to hatch is as follows:

- 1 Hatch at 45 degrees
- 2 Hatch at 45 degrees in different direction
- 3 Change spacing of hatching—eg narrower in small components
- 4 Change hatching to 60 degrees
- 5 Change hatching to 30 degrees
- 6 Stagger the hatching (ie offset lines)



Things where you **do not** hatch:

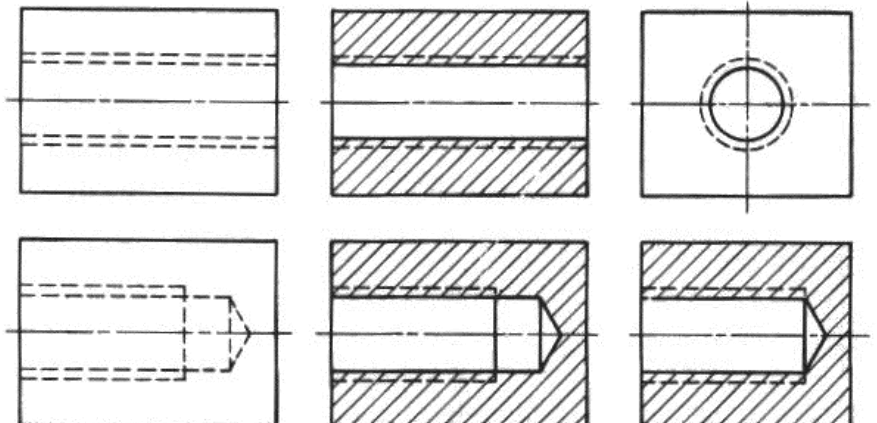
**Axes, Holes, Nuts, Bolts, Washers, Shafts, Screws, Bearings, Spindles, etc.**

These should be drawn complete as an outside view. Imagine removing these from the assembly, applying cut and then sitting them back in the space where they came from.

### Threads

If a threaded hole is cut, the hatching should include the threaded area between the two lines. The inner lines should be changed from broken to solid.

*NOTE that some conventions on this page are not to BSI—eg some Cutting Planes and some views are in 3rd Angle—can you spot those drawings that are not shown correctly?*

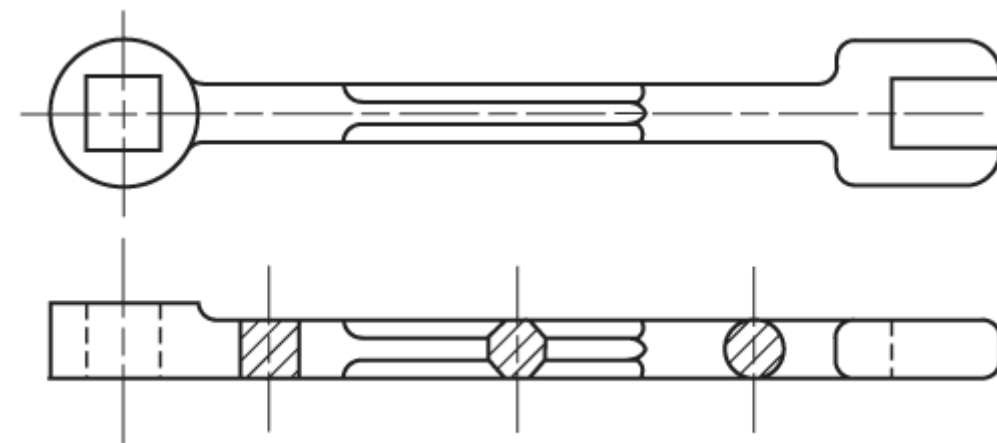
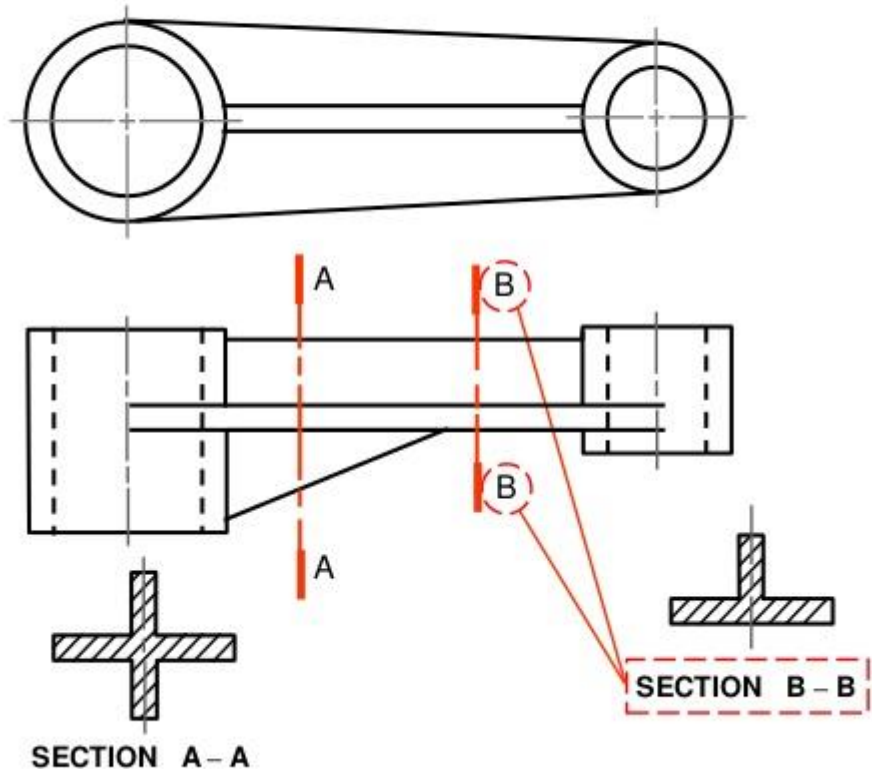


## Sectional Views and Hatching

There are a few types of special sectional views that you should know.

### Removed Section

This is a detail of part of a component and shows the section at a particular location. It is often used to show how a component changes along its profile—eg AA and BB here.



### Revolved Section

A revolved section shows the same information as a removed section, but draws the result on the original view. In this example, there are three different profiles along the length of the spanner.

### Half Section

A half section shows part of the view as an outside view, the other half as a section. This is common in round components as it allows you to see how it would look in two views at the same time.

