

Inventor Lecture #9

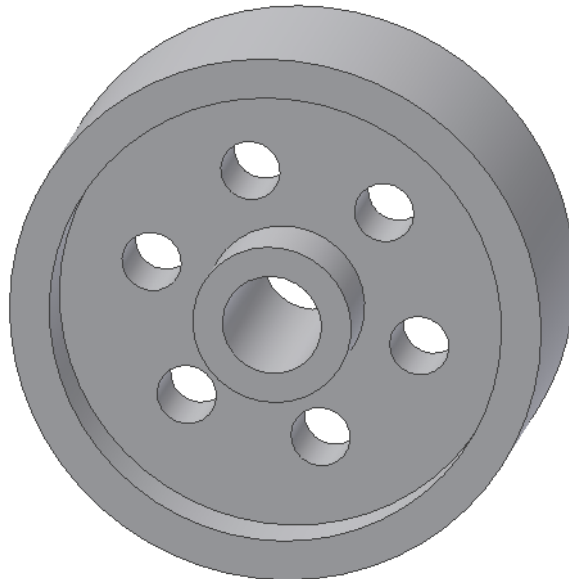
Sectional Views

Inventor can easily create sectional views. Once a base view has been created in a drawing file, additional views can be added, including:

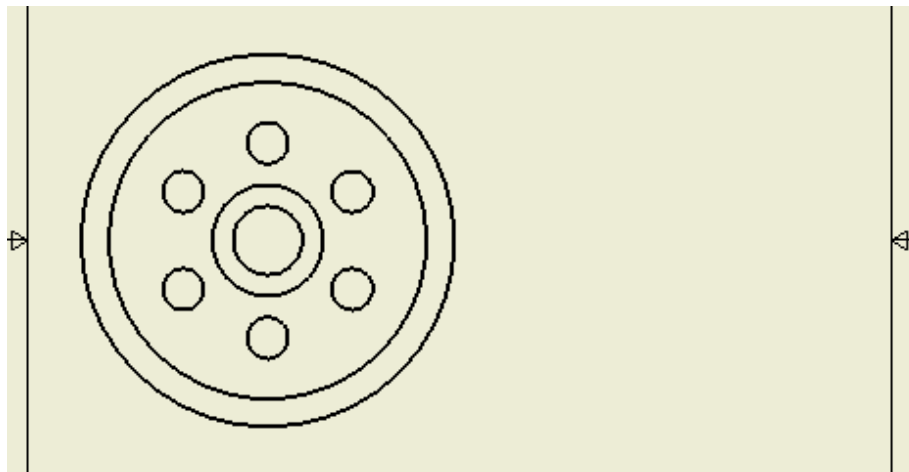
- Projected views (orthographic) – used in several previous examples and assignments
- Sectional views – this week
- Auxiliary views – next week

Example 1 – Full sections, half-sections, and aligned sections

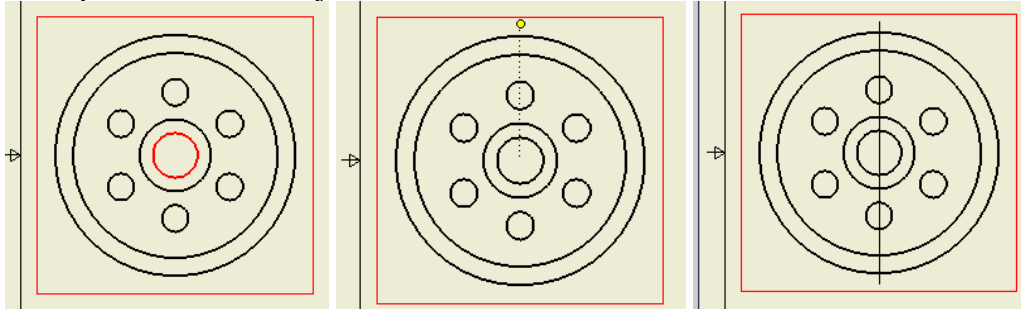
1. **Part.** Create an object (standard part) similar to the one shown below. The exact dimensions are not critical.



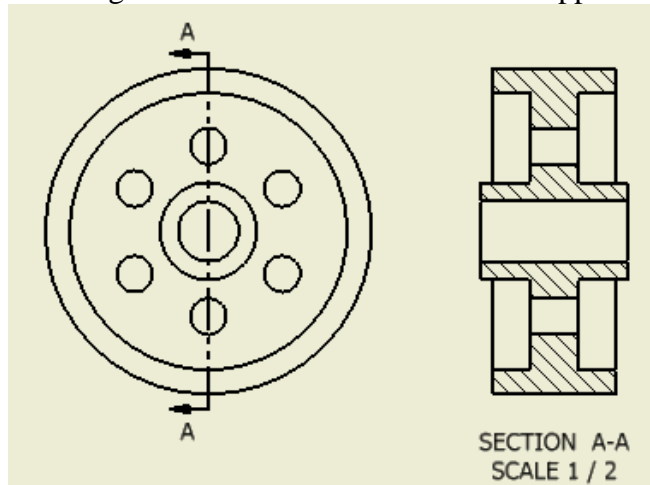
2. **Drawing File.** Create a drawing file and use the front view as the base view.



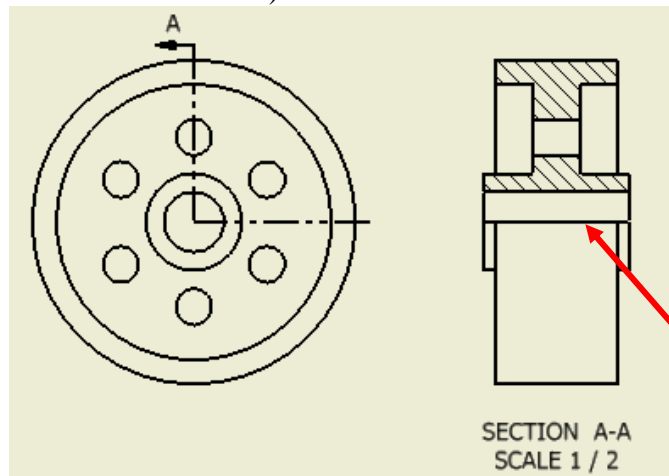
3. **Full Section.** Create a full section of the part as follows:
 - A. Select **Section View** from the Drawing Views Panel.
 - B. Select a circular feature through which the cutting plane will cut.
 - C. Select a point above the object (alignment to the center should be shown).
 - D. Select a point below the object.



- E. Right-click and pick Continue.
- F. Move the mouse to the right and the sectional view should appear.

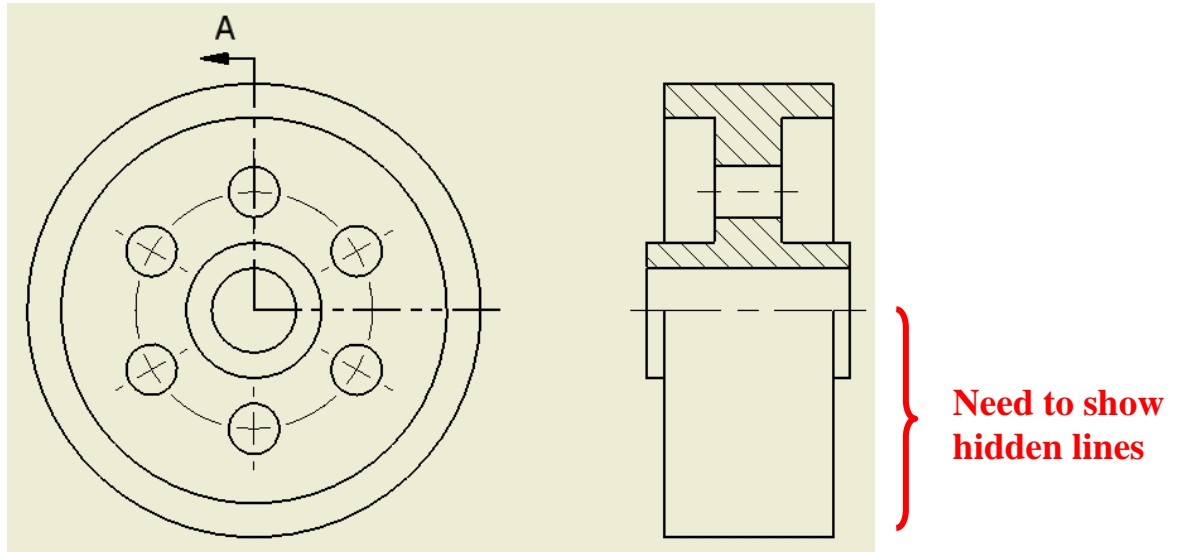


4. **Half Section.** Similarly create a half section view as shown below (Hint: Pick a center circle, pick a point above the circle (aligned with the center), pick a point to the right side of the circle, and then right-click and select Continue.)

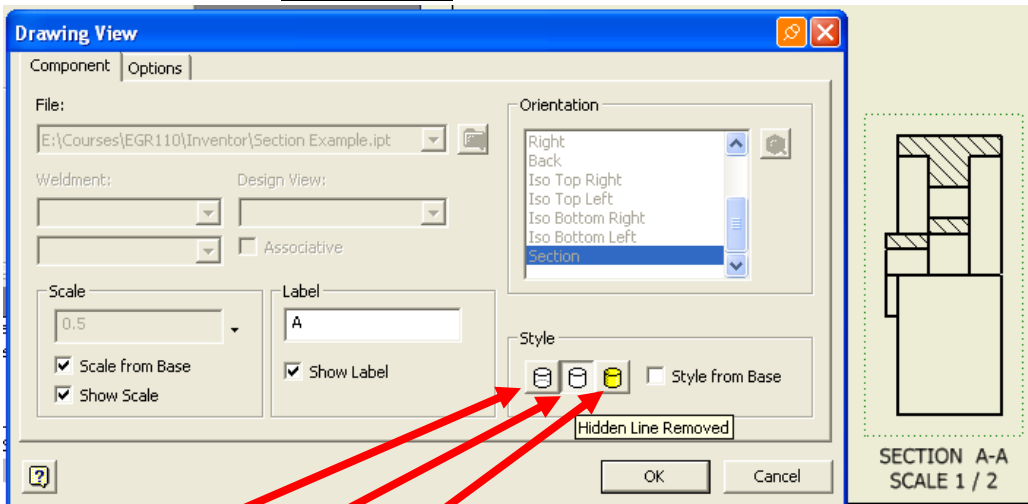


5. **Adding centerlines.** Note that sectioned view should have a centerline dividing the upper sectioned half and the lower unsectioned half. Right-click on this line and uncheck **visibility** to remove the line. Use the centerline tool in the Drawing Annotation Panel to add centerlines.

The half-section is shown below with a centerline added where the visible line was just removed. Centerlines were also added for the bolt circle in the front view and for the bolt hole in the sectioned view.

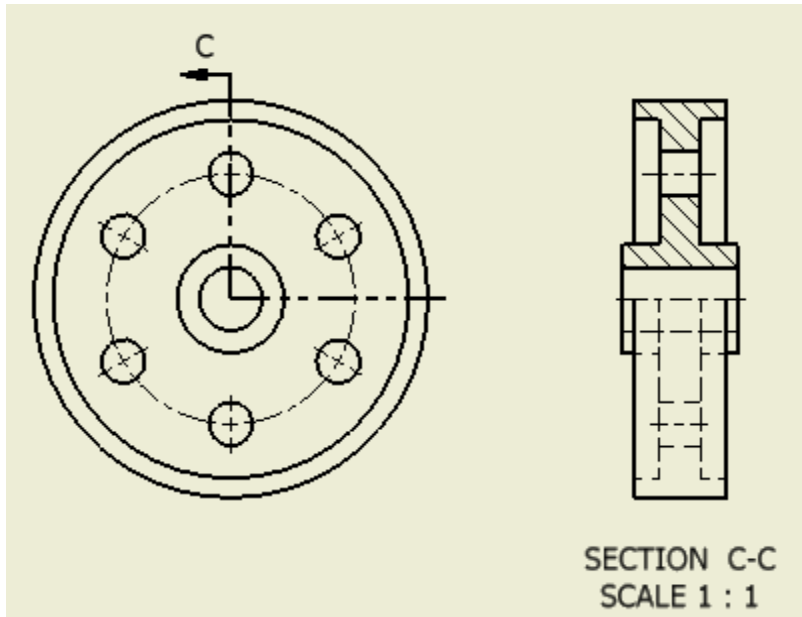


6. **Adding hidden lines.** Also note that by convention we typically show hidden lines in the unsectioned half of an unsectioned view (see note above). Hidden lines can be shown as follows:
 - A. Right-click on the sectioned view and pick **Edit View**.
 - B. Note the three symbols in the lower right corner (see below). Select the symbol corresponding to **Hidden Line**.



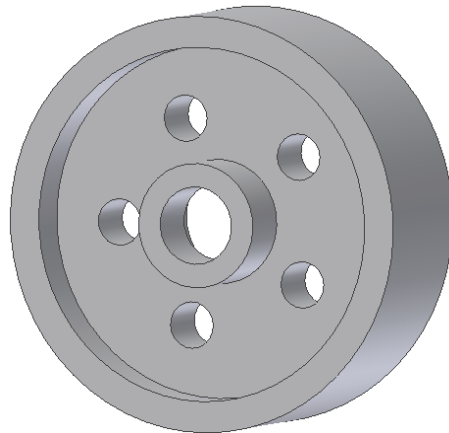
Hidden Line **Hidden Line Removed** **Shaded**

C. The half section is now shown with hidden lines in the unsectioned half.

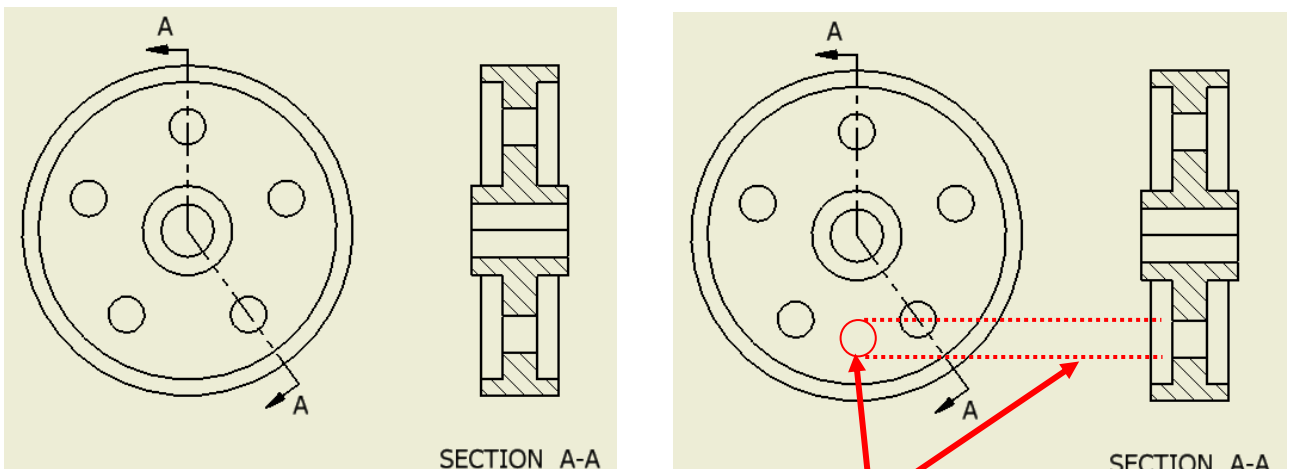


7. **Aligned Section.** Create an aligned section as follows:

A. Modify the object so that it has only 5 holes as shown below.

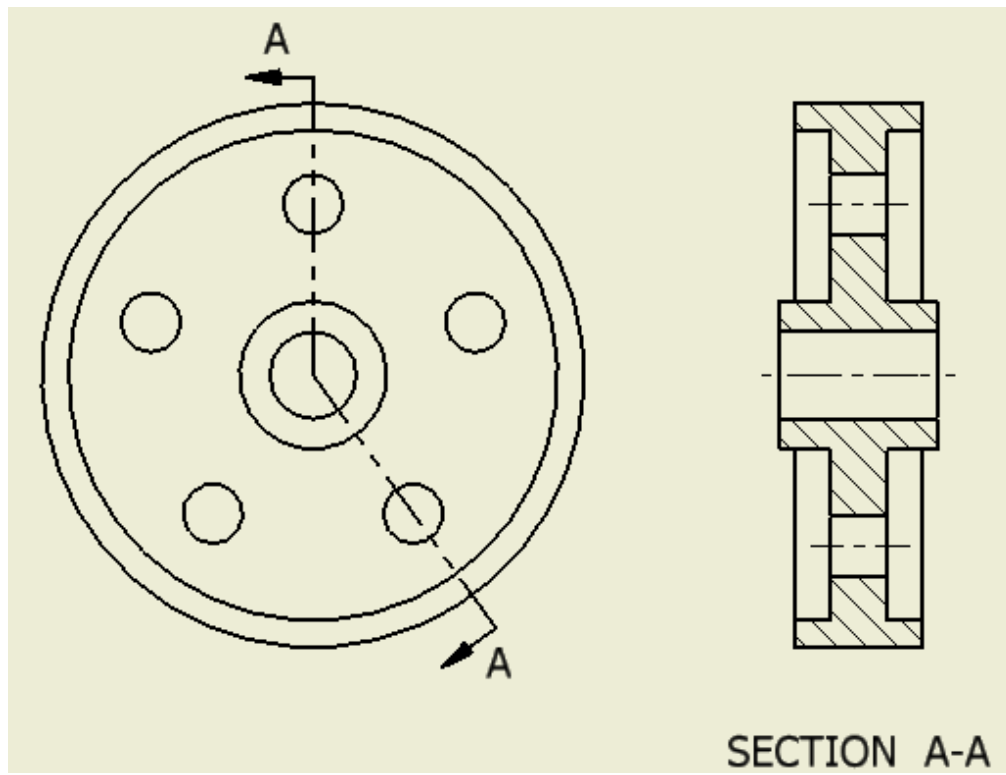


B. Create an aligned section by using a cutting-plane line similar to the one shown below. Note that aligned sections show the holes rotated into the extreme positions (see note below).



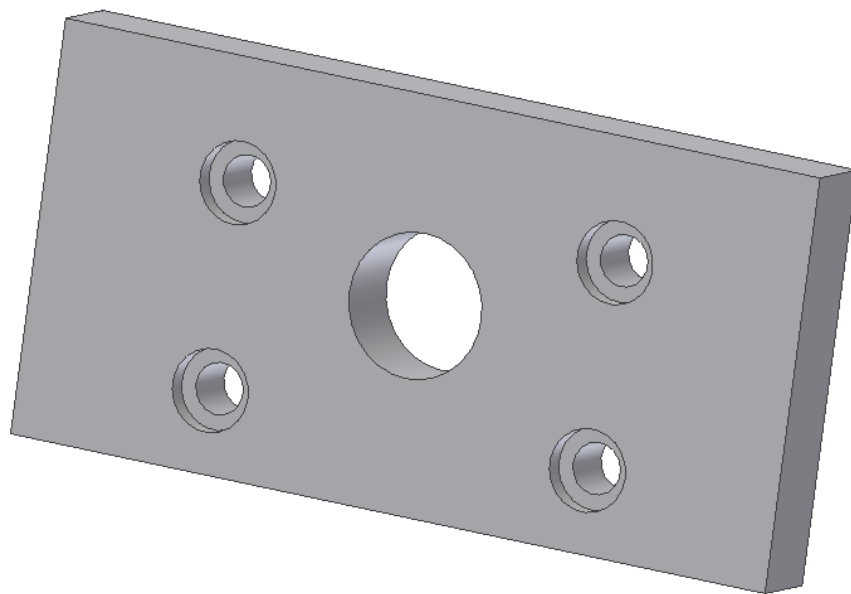
**Just for illustration.
Not part of drawing.**

C. Again note that various centerlines were added.

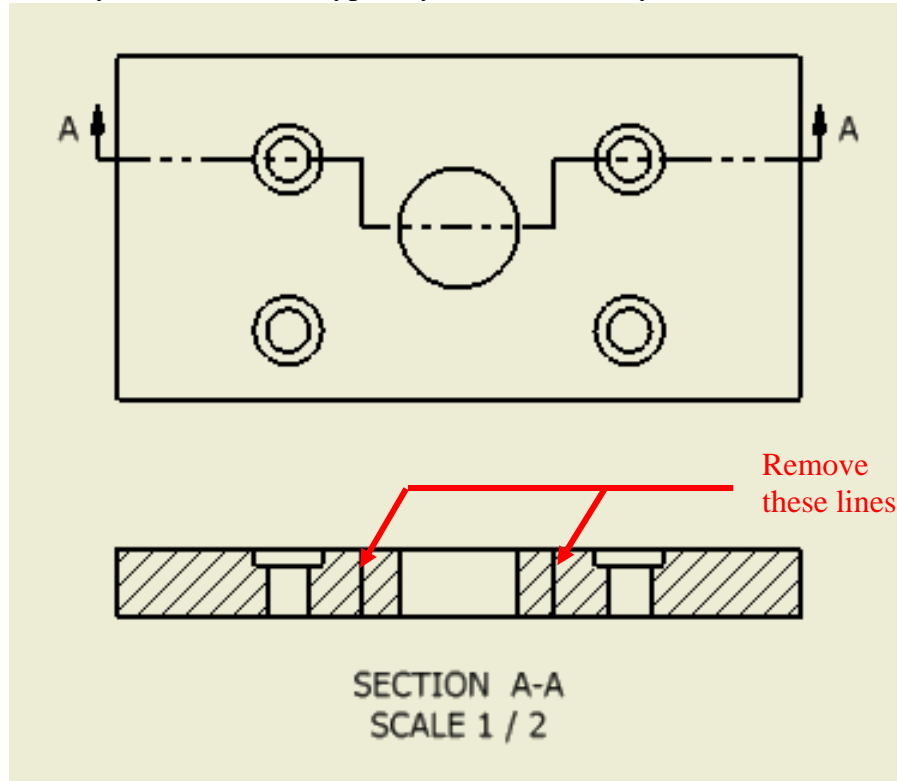


Example 2 – Offset Sections

1. Create an object similar to the one shown below.



2. Create an offset section using a cutting-plane line like the one shown below. Note that two of the lines created by Inventor would typically not be shown by convention.



3. Right-click on the lines to be removed and uncheck **visibility**. Add center lines.

