ANSYS Mechanical Getting Started

Module 02 Student Step-by-Step Guide: Problem Statement

- Release 2023 R1

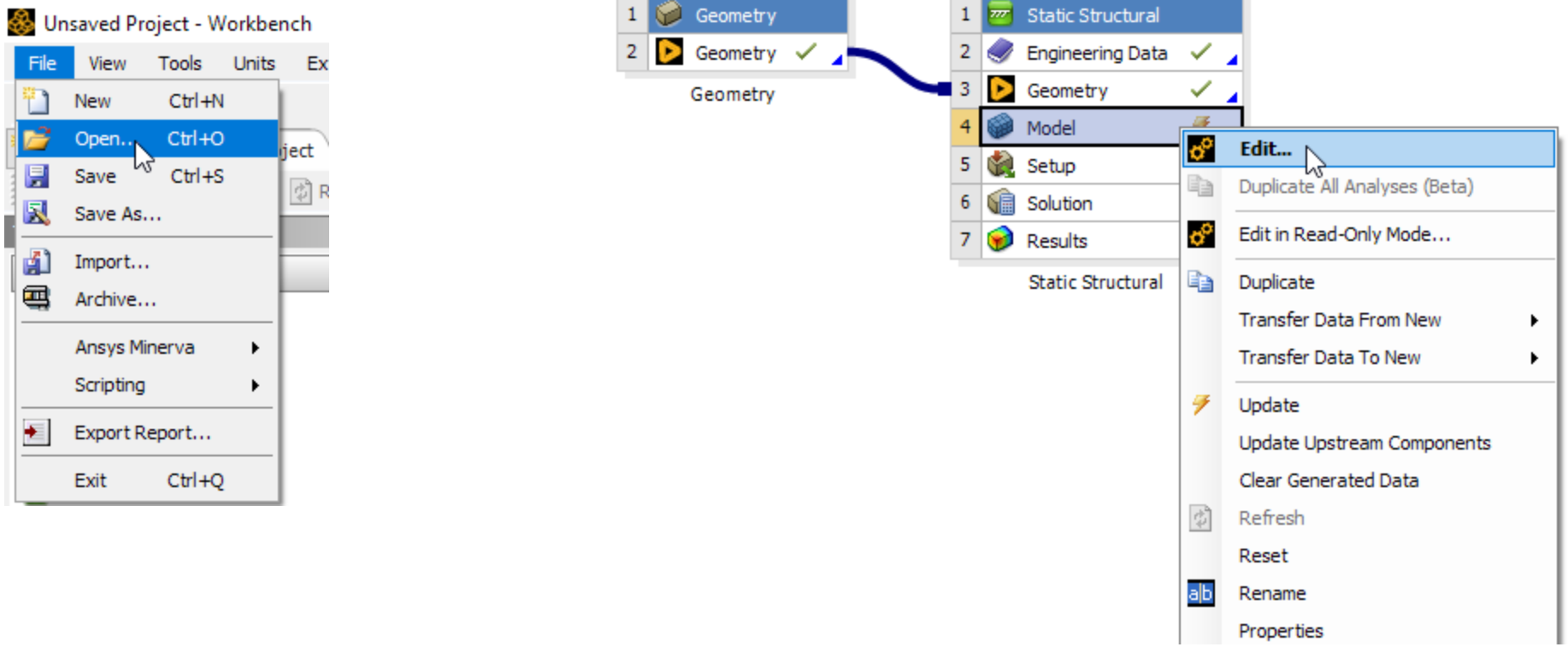
Please note:
- These training materials were developed and tested in Ansys Release 2023 R1. Although they are expected to behave similarly in later releases, this has not been tested and is not guaranteed.
- The screen images included with these training materials may vary from the visual appearance of a local software session.

Step-by-Step Guide 02 – Problem Statement

- Use this guide to repeat the steps the instructor demonstrated in this module.

Step-by-Step Guide 02 – Problem Statement

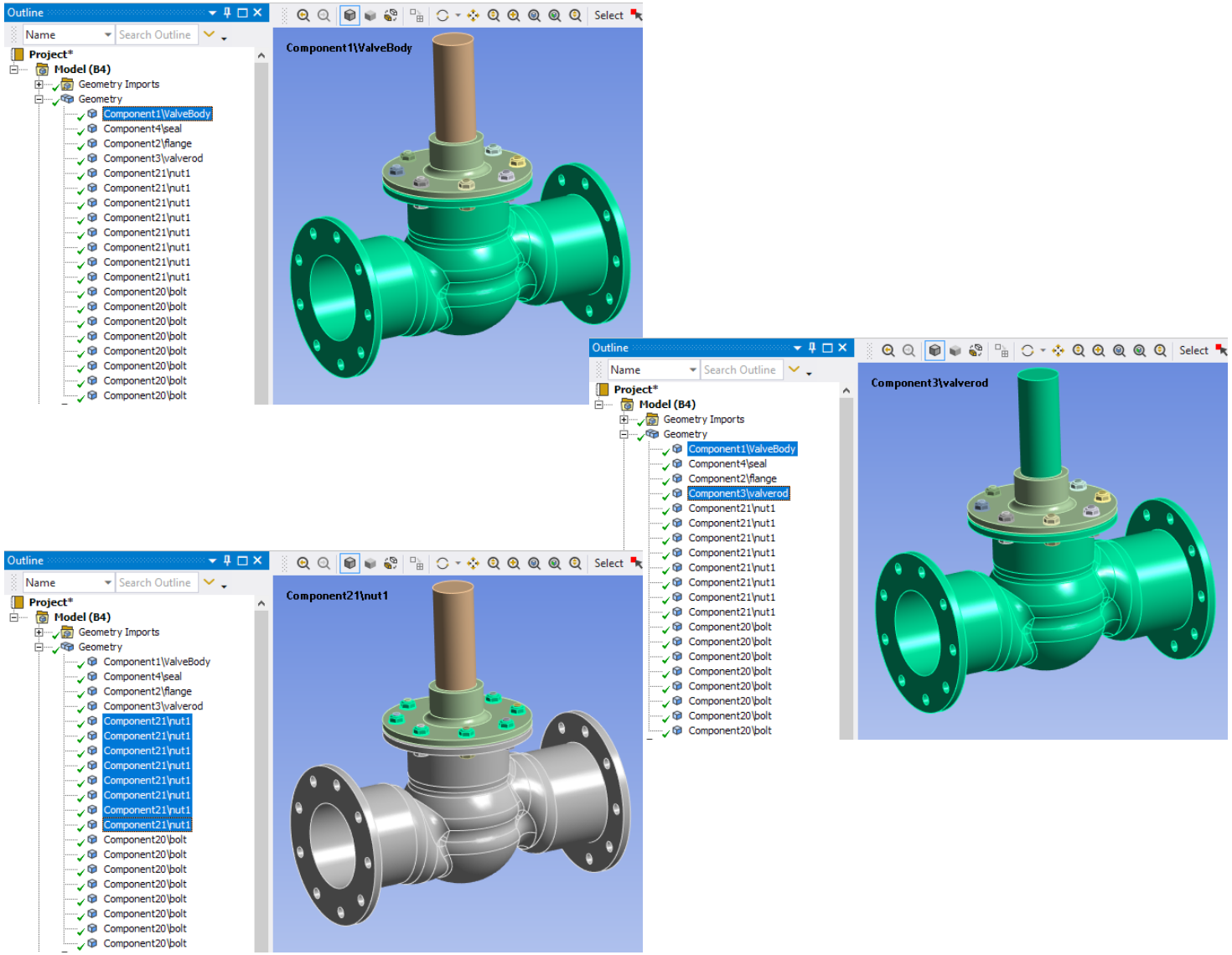
- Open Archive “Globe_Valve_SS02_Start.wbpz”
- Open Mechanical using RMB → Edit on cell B4.



Step-by-Step Guide 02 – Problem Statement

Become familiar with navigating throughout the Model Outline:

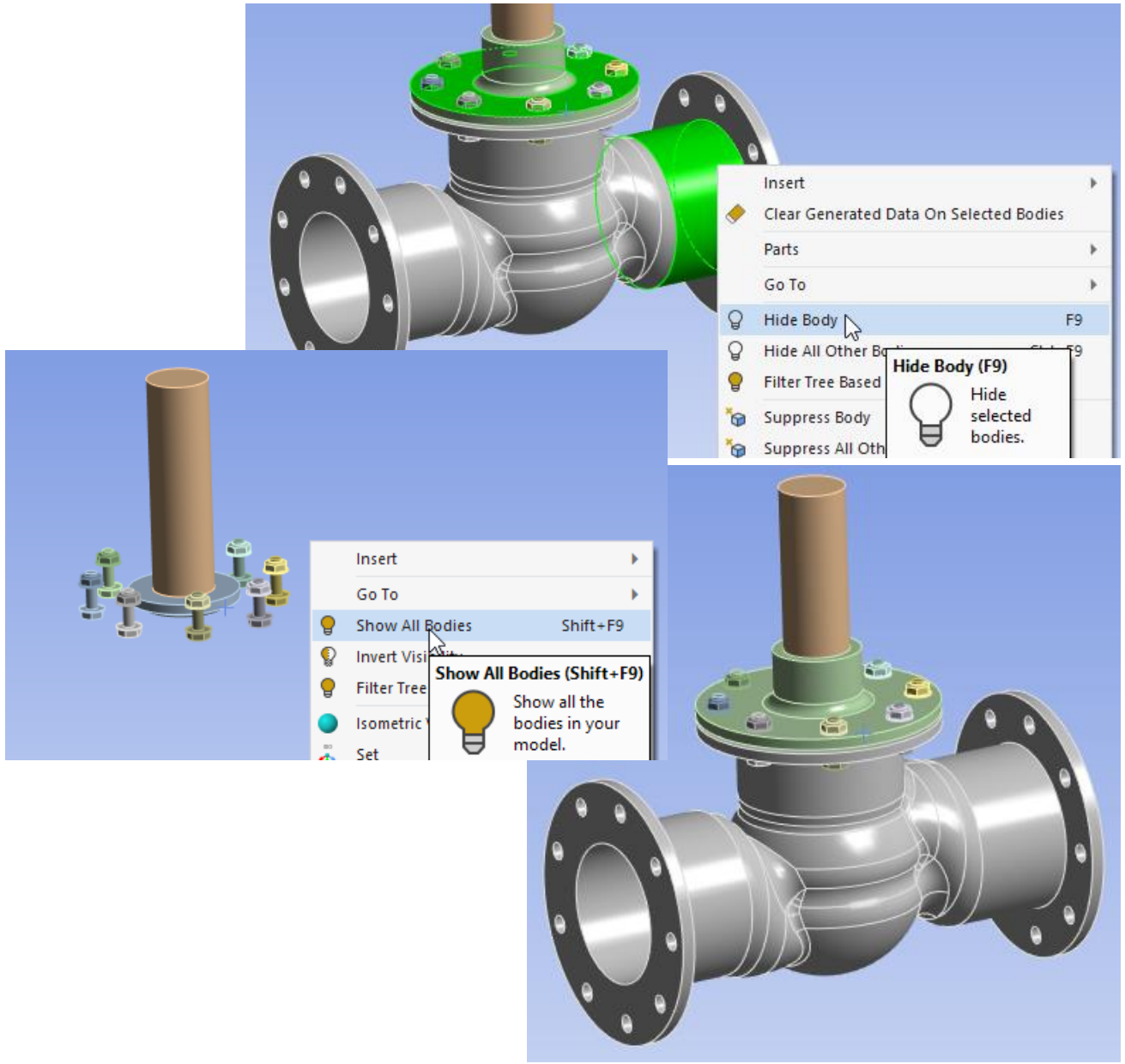
- Expand the Geometry Branch to show a listing of the components of the assembly
- Highlight component bodies by clicking on them in the Model Outline
- Highlight multiple bodies by Ctrl-Select or Shift-Select them in the Model Outline
- Click on the Geometry branch of the Outline when finished



Step-by-Step Guide 02 – Problem Statement

Hide the Valve Body and Flange:

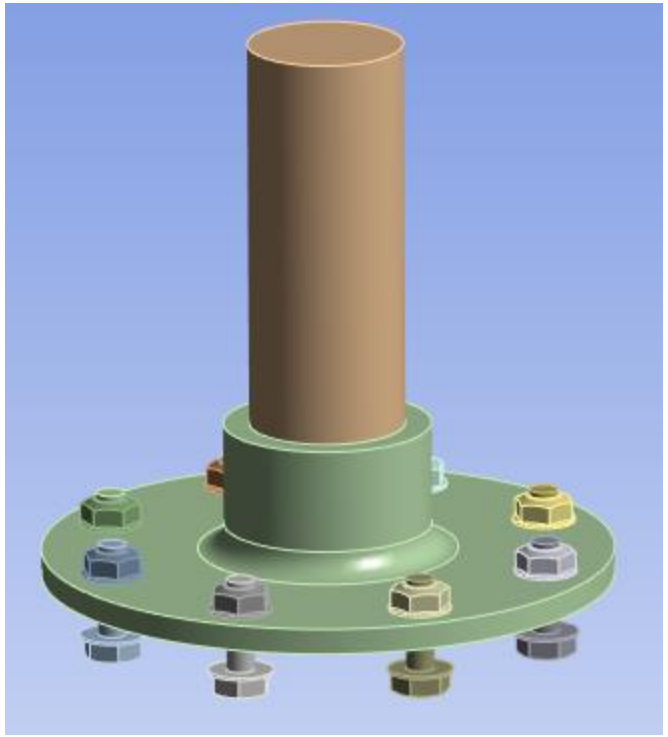
- From the graphics window, **select** any face of the **Valve body**
- **Ctrl-Select** any face of the **Flange**
- **RMB → Hide Body**
- **RMB → Show All Bodies**



Step-by-Step Guide 02 – Problem Statement

Hide the Valve body by using keyboard shortcut:

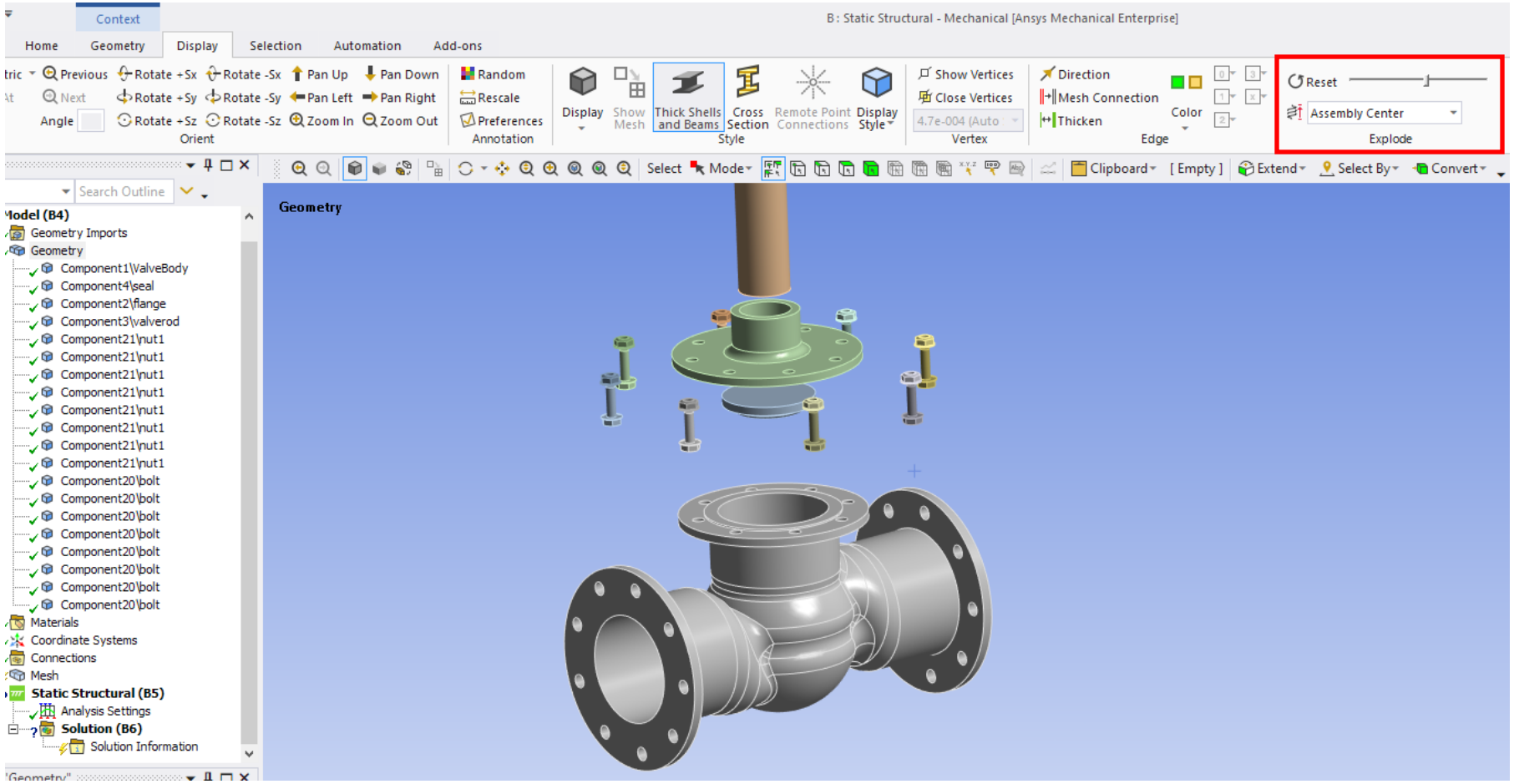
- Select any face on the **Valve body**
- Press **F9** on the keyboard
- **RMB → Show All Bodies or press shift + F9**



Step-by-Step Guide 02 – Problem Statement

Use the Explode tool to view the assembly in exploded format:

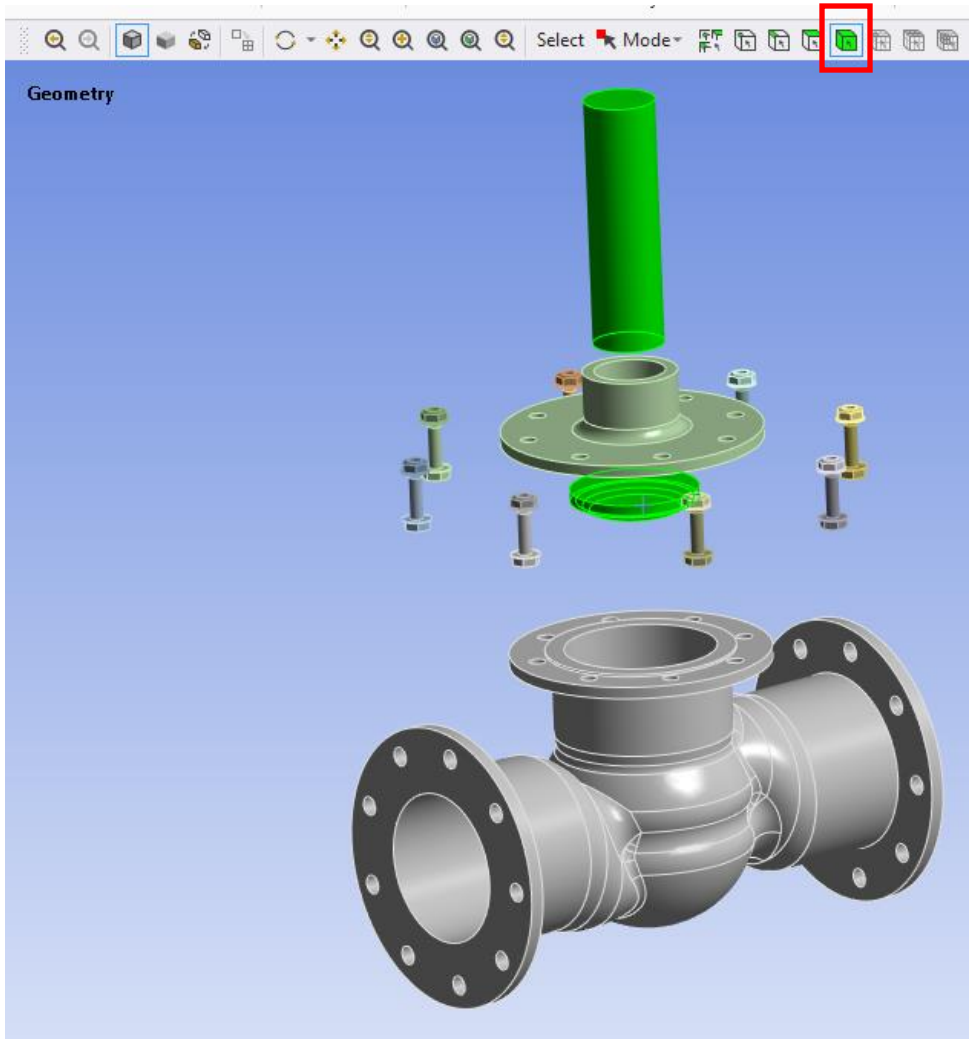
- Locate the **Explode** Toolbar in the Display tab and use the slider adjustment to explode the assembly by sliding it to the right



Step-by-Step Guide 02 – Problem Statement

Use Body selection filter and select bodies from the graphics window:

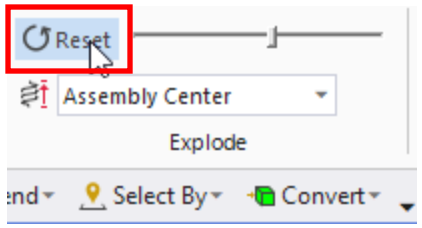
- Locate the **Selection Filters** toolbar and toggle the **Body** selection filter on
- Select a body from the graphics window
- Select multiple bodies by holding the **Ctrl** key while selecting

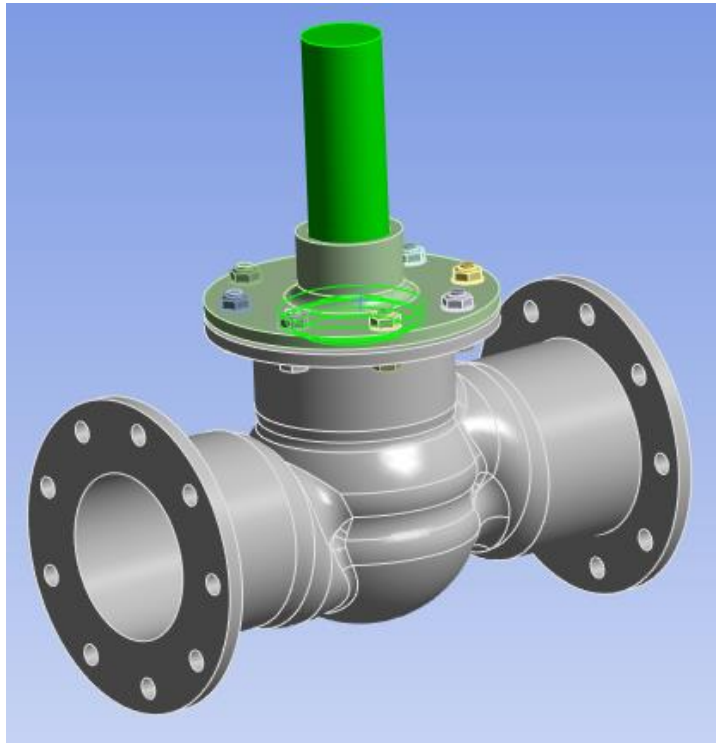


Step-by-Step Guide 02 – Problem Statement

Turn the Exploded view off using the **Reset** button

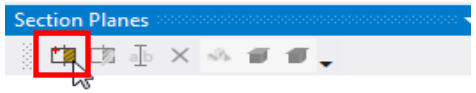
- Locate the **Reset** button on the Explode tool to switch the display back to a non-exploded view
- Click in the graphics background to clear the current selection

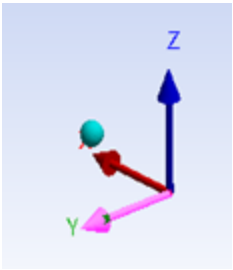


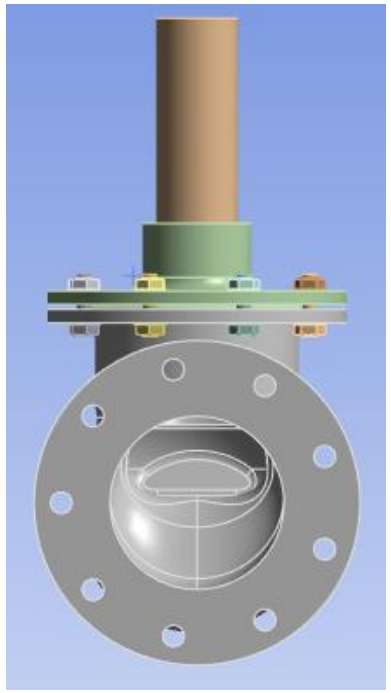


Step-by-Step Guide 02 – Problem Statement

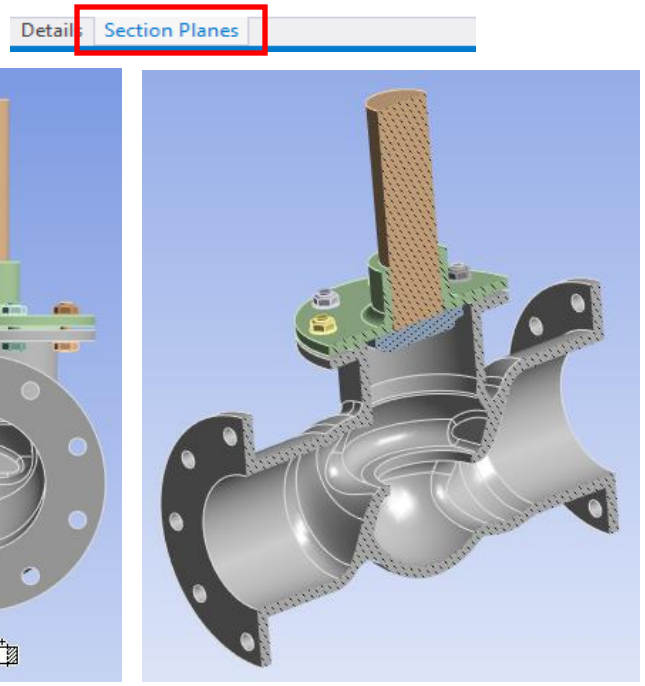
Create a section view in order to view the inside surfaces of the Valve body:







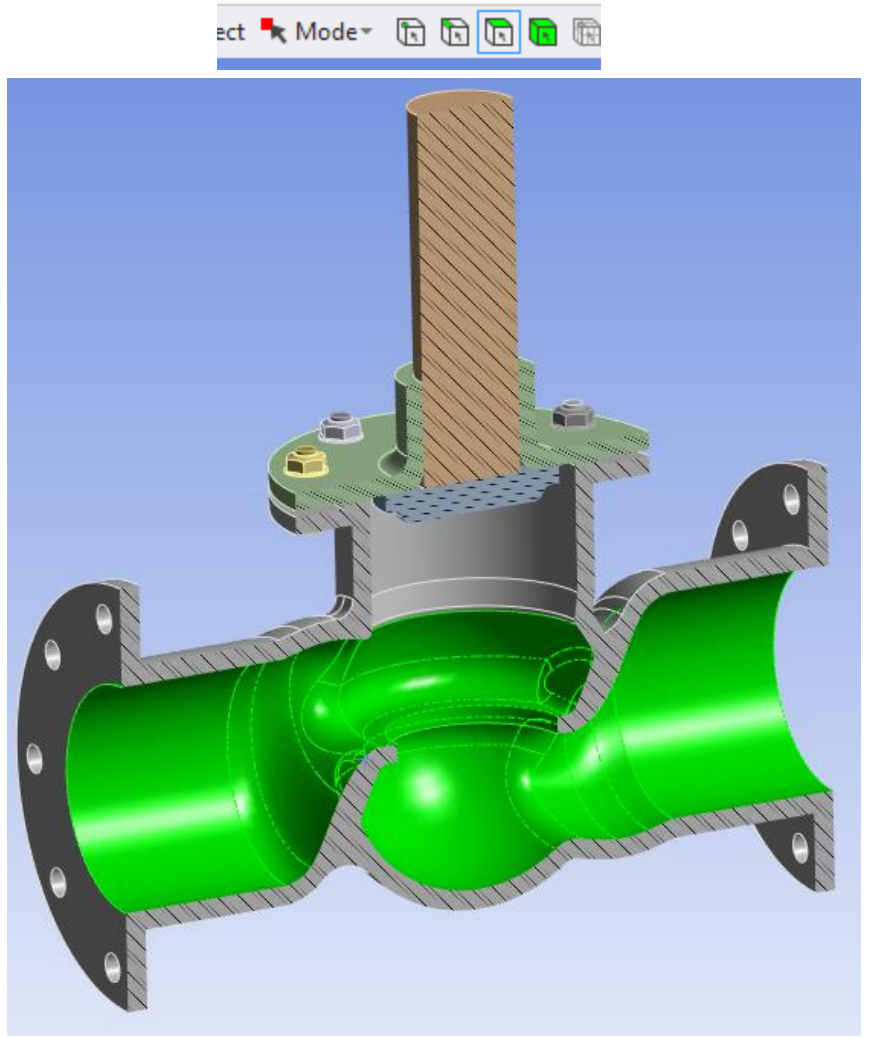
- Select the **Y axis** of the triad in the lower right corner of the graphics window to orient the view looking down the Y axis
- Switch to **Section Planes tab in the bottom left and click on the new section plane** icon
- Drag the **LMB vertically** through the valve rod
- Rotate the view to see internal to the **Valve body**



Step-by-Step Guide 02 – Problem Statement

Use Paint Select to select all the surfaces internal to the Valve body:

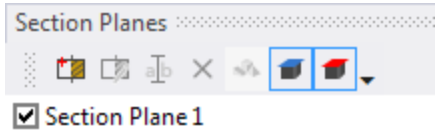
- Use the **Face** Selection Filter to select faces in the model
- Click / Drag the LMB over all the surfaces internal to the **Valve body**

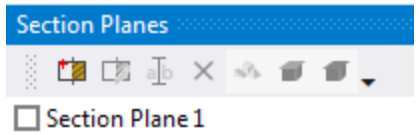


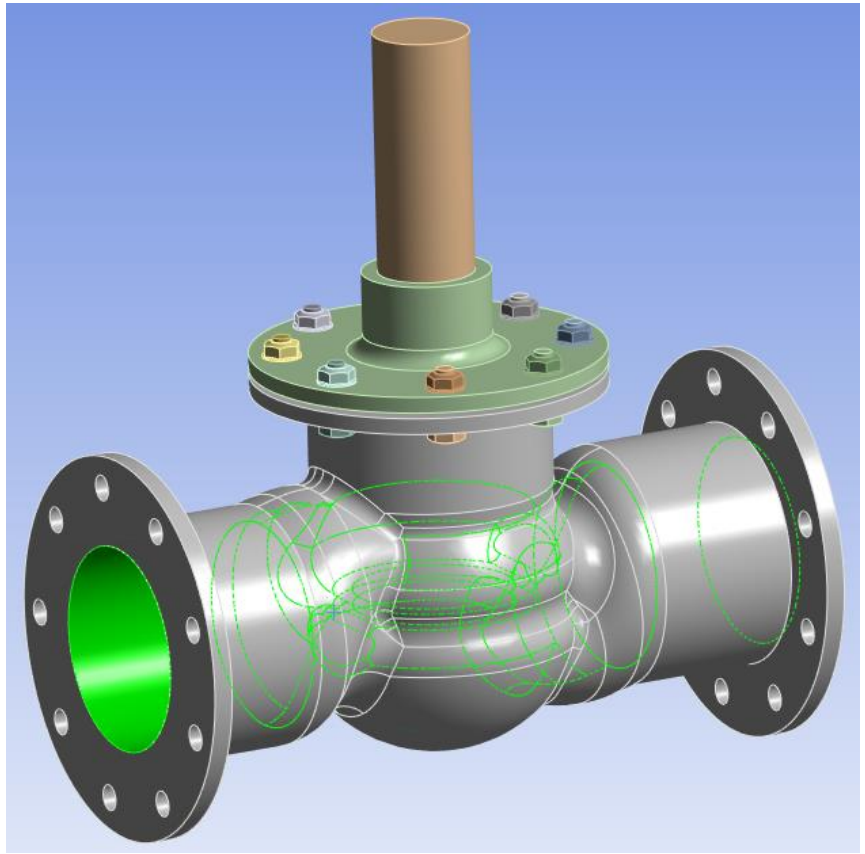
Step-by-Step Guide 02 – Problem Statement

Turn the Section Plane off using the Section Planes window:

- Locate the **Section Planes** window in the lower left corner of the Mechanical Window
- Select the box to the left of **“Section Plane 1”** to clear the check mark





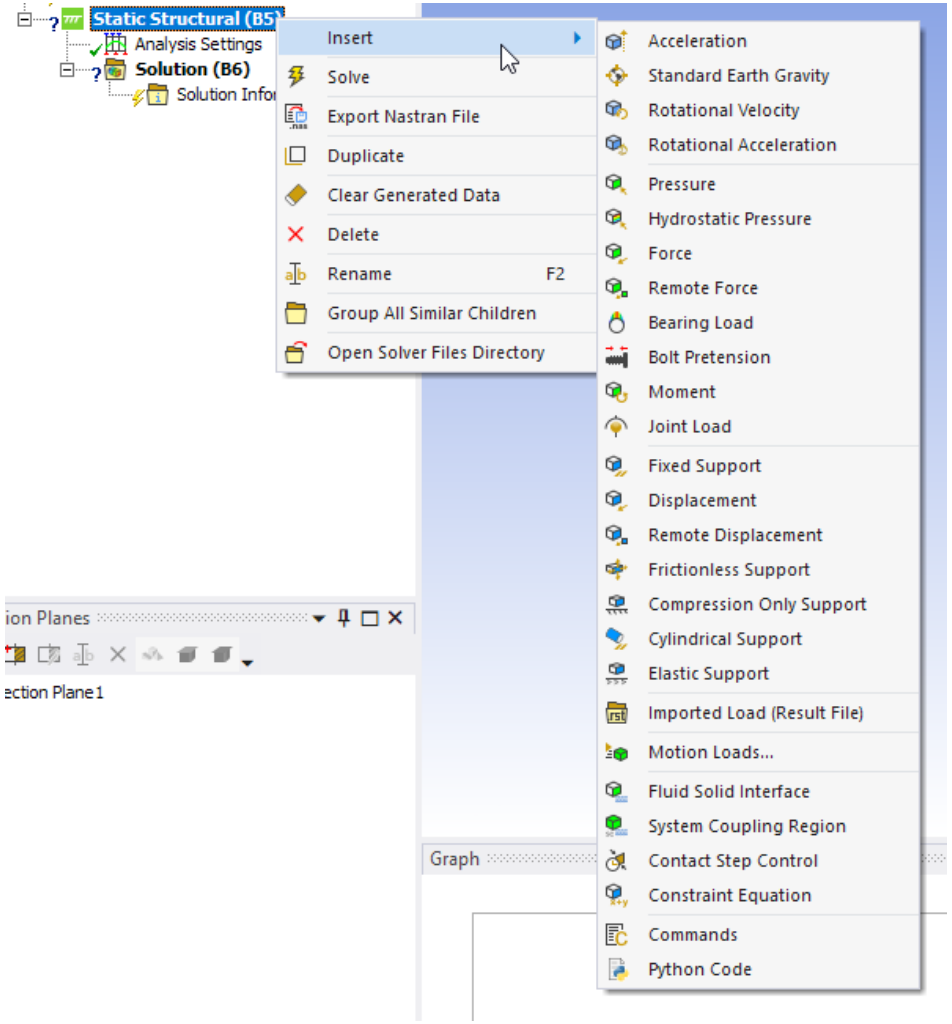


Step-by-Step Guide 02 – Problem Statement

Investigate Loads and Supports available in the Static Structural Branch

- Click in the graphics window background to clear the surface selection
- RMB – Static Structural → Insert

Loads and supports will be covered in detail later in the course.



End of presentation