This lab will explore SolidWorks Toolbox parts that can be used in assemblies, and the creation of detail drawings of parts and assemblies.

A. Create a Multi-Sheet Drawing of an Assembly

Follow the instructions in "**Lesson 3 – Drawings**" of the SolidWorks Online Tutorial.
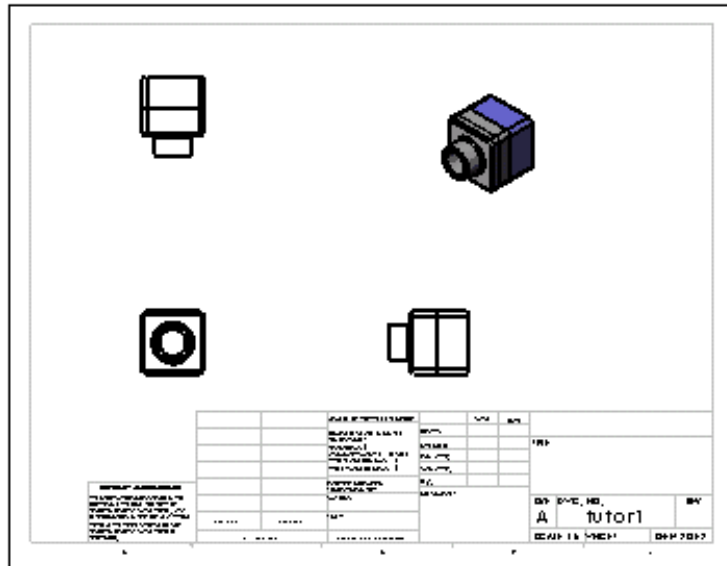

B. SolidWorks Tool Box Basics   NOTE: SolidWorks Tool Box does not work on the Student version.

You can skip most of this section; just use the assembly file your created
Follow the instructions in *Productivity Enhancements* → *Toolbox* in the SolidWorks Tutorials. Then
for the switch plate in LAB#21.
proceed with the exercise below.

Add screws to the switchplate using the predefined hardware in Toolbox. In the previous lesson, you added screws to the switchplate by modeling the screws and mating them to the switchplate in an assembly. As a general rule, hardware — such as screws — are standard components. Toolbox gives you the ability to apply standard hardware to assemblies without having to model it first.

### Open the Switchplate Toolbox Assembly

Open the Switchplate Toolbox Assembly. Notice that this assembly only has one part — or component — in it. Switchplate is the only part in the assembly.
An assembly is where you combine parts together. In this case, you are adding the screws to the switchplate.
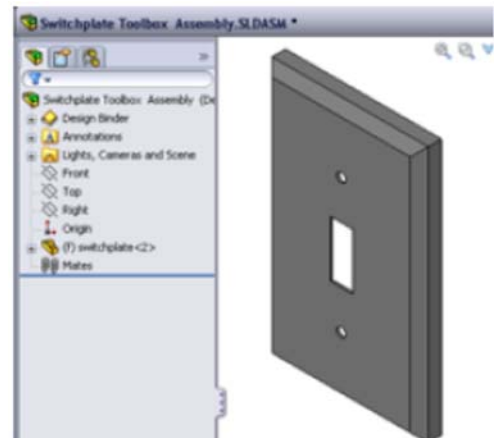
Open Toolbox Browser

Expand the Toolbox item on the Design Library Task Pane. The Toolbox Browser appears. The Toolbox Browser is an extension of the Design Library that contains all available Toolbox parts.

The Toolbox Browser is organized like a standard Windows Explorer folder view.
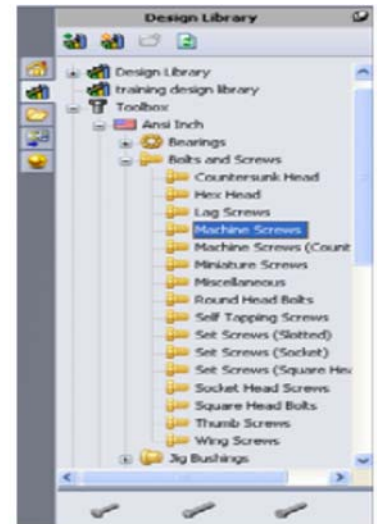
Selecting the Appropriate Hardware

Toolbox contains a wide variety of hardware. Selecting the right hardware is often critical to the success of a model. You must determine the size of the holes before selecting the hardware to use and match the hardware to the hole.

1. Click Smart Dimension on the Dimensions/Relations toolbar or Measure on the Tools toolbar and select one of the holes on the switchplate to determine the hole size.
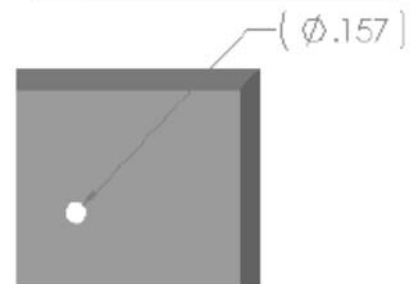
Note: The dimensions in this lesson are shown in inches.

2. In the Toolbox Browser, browse to **Ansi Inch, Bolts and Screws, Machine Screws** in the folder structure.

   The valid types of machine screws display.

3. Click and hold Pan Cross Head.

   Does this hardware selection make sense for this assembly? The switchplate was designed with the size of the fasteners in mind. The holes in the switchplate are specifically designed for a standard fastener size.

   The fastener size is not the only consideration in selecting a part. The type of fastener is important too. For example, you would not use miniature screws or square head bolts for the switchplate. They are the wrong size. They would be either too small or too large. You also have to take into consideration the user of this product. This switchplate has to be attachable with the most common of household tools.
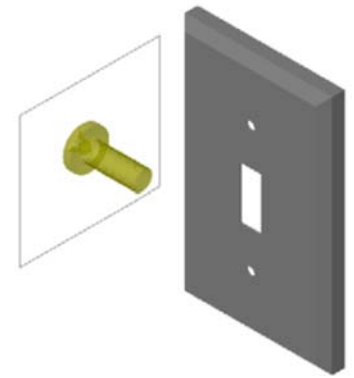
Placing Hardware

1. Drag the screw towards the switchplate.

   As you begin to drag the screw, it may appear very large.

   Note: Drag and drop parts by holding the left mouse button. Release the mouse button when the part is correctly oriented.
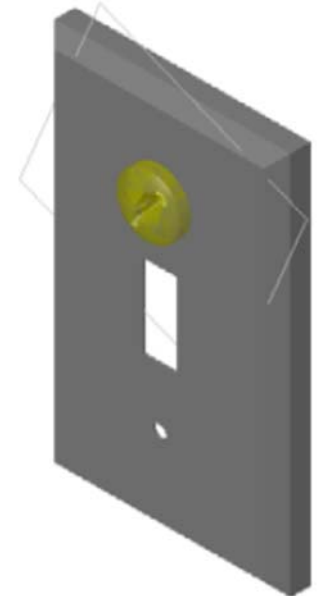
2. Slowly drag the screw towards one of the switchplate holes until the screw snaps into the hole.

   When the screw snaps into the hole, it is correctly oriented and properly mates with the surfaces of the part that it is combined with.

   The screw still may appear too large for the hole.

3. When the screw is in the correct position, release the mouse button.

Specifying the Properties of the Toolbox Part

After you release the mouse button, a *PropertyManager* appears.

1. If necessary, change the properties of the screw to match the holes. In this case, a #6-32 screw with 1" length works with these holes.
2. When you have completed the property changes, click ✔ **OK** .

   The first screw is now placed in the first hole.

3. Repeat the process for the second hole.

   You should not have to change any of the screw properties for the
   second screw. Toolbox remembers your last selection.

4. Both screws are now in the switchplate.
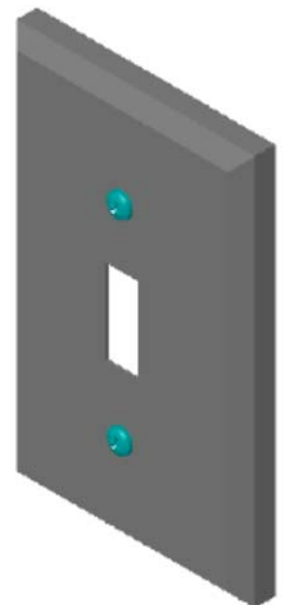
C. **Add a Sheet to an Existing Drawing**

1. Add a new sheet to the existing drawing you created in Part B. Use the drawing created in Part A.
2. Create a drawing of the `switchplate`.
   The chamfer is too small to be clearly seen and dimensioned in either the Top or Right views. A detail view is required. Detail views are views that usually show only a portion of the model, at a larger scale. To make a detail view:
3. Select the view from which the detail view will be derived.
4. Click **Detail View** , or **Insert, Drawing View, Detail**.
   This turns on the Circle sketch tool.
5. Sketch a circle around the area you want to show.
   When you finish sketching the circle, a preview of the detail view appears.
6. Position the detail view on the drawing sheet.
   The system automatically adds a label to the detail circle and the view itself. To change the scale of the detail view, edit the label's text.
7. You can import dimensions directly into a detail view, or drag them from other views.