SOLIDWORKS

DESIGN PROJECTS

STUDENT GUIDE

3DEXPERIENCE



PEN HOLDER

DASSAULT SYSTEMES

DESCRIPTION

Welcome to the Design Projects Student Guide for Pen Holder! The focus of this project is a pen holder, a simple and useful design to organize pens, pencils, and markers on your desktop.

This guide contains information regarding Design Intent, DFAM (Design for Additive Manufacturing) and Design Tips to keep in mind for each part.

You will use CAD to design each part, and print the part on a 3D printer.

For a video demonstrating the design approach, detailed dimensions and step by step instructions, see the links in the **Additional Resources** section below.

PROJECT TASKS

- Create the Pen Holder component in CAD.
- Print the physical components on a 3D printer.
- Fill the Pen Holder with pens, pencils, and markers.

ADDITIONAL RESOURCES

- **LINK TO DOCUMENTS**
- **LINK TO YOUTUBE VIDEO**
- **LINK TO STEP-BY-STEP**

PEN HOLDER

DESIGN INTENT

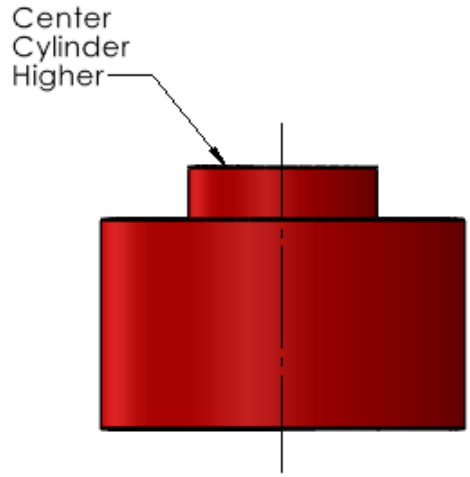
- Fillets are added at corners to strengthen the design.
- The center thin cylinder is higher than the base.
- All wall thicknesses are equal.
- Circles are concentric.

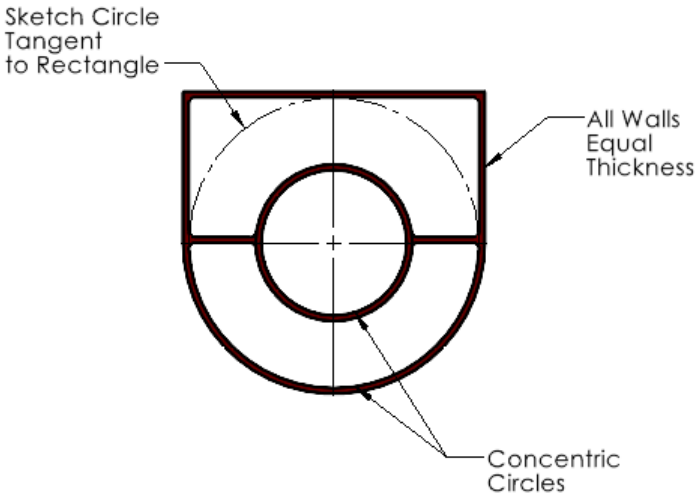
DFAM

- Uses Flat-Pack Design (no support material necessary).

DESIGN TIPS:

- All extrusions are of the 'thin' type, using the edges of the sketch rather than the enclosed area.
- A single sketch is reused to create two extrusions.
- The sketch consists of two concentric circles and a rectangle.
- The circle is tangent to the rectangle.

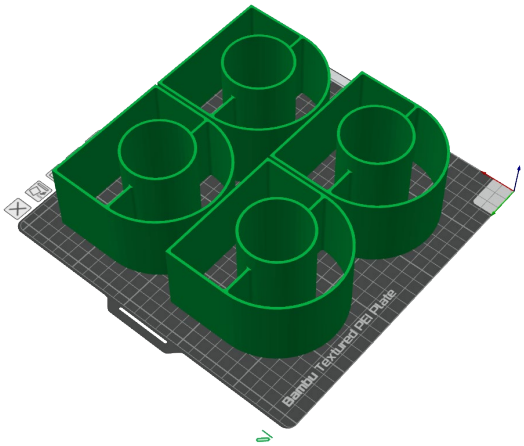


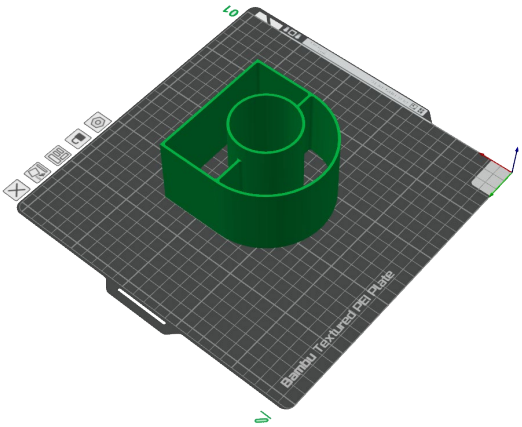


3D PRINTING

- Save the part as an .stl file.
- Import your .stl files into your 3D printer's slicer software.
- Nest your parts to print many at one time.
- If you print multiple pen holders, note that some slicing software includes automatic arranging options.

MULTIPLE





ORIENTATION OF PEN HOLDER