Inventor Tooling: Using Lips, Bosses, and Grills

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This class covers the use of the Lip, Boss, and Grill commands inside of Inventor software. We'll discuss real-world examples of how to create lips, bosses, and grills in Inventor software. We'll also take a look at the Split command, and we’ll show how to use multiple solid bodies within a part, including how to control their visibility and material. Prior part-creation and sketch-creation knowledge will be useful.
Key learning objectives

At the end of this class, you will be able to:

- Create multiple solid bodies within a part model
- Edit the visibility of solid bodies within a part
- Add Lips, Bosses, and Grills to a part model
- Justify using the tooling commands
+QUESTIONS:

- How does a shell make modeling plastic parts easier?
- What happens to a solid part when the split part command is used?
- After shelling a plastic part, what other features would be useful?
SOLID VISIBILITY
DEMONSTRATION TIME!
PRACTICE

• Create a new part.
• Create the circle in a sketch on the XY plane.
• Extrude the sketch 5in.
• Add fillets to both edges with a radius of .25in.
• Shell the part without selecting a face.
• Split the part using the XZ plane.
• Turn off the visibility of the solid on top.
• **CHALLENGE** - Change the appearance of the part using the Appearance button in the quick menu bar.
BOSS
BOSS

Centers:
- Points
- Endpoints
SHARE SKETCH
+BOSS
DEMONSTRATION TIME!
PRACTICE

- Create the sketch on the top face.
- Create the boss heads using the values on the next slide.
- Share the sketch. Turn off the bottom solid, and turn on the top solid.
- Create the boss threads using the values from the next slide.
- **CHALLENGE** - Edit the Boss features, and use the rib tab to add stiffening ribs to the features.
+LIP
DEMONSTRATION TIME!
PRACTICE

• Place the Lip on the bottom face of the top solid. Make the width of the lip .05 in.

• Turn off the top solid. Turn on the bottom solid.

• Create the Groove on the top face of the bottom solid. Make the width of the groove .05 in.

• **CHALLENGE** - Create the cut through the part with a centered rectangle 5.5in wide. Make sure it goes through both solids.
DEMONSTRATION TIME!
PRACTICE

• Create a plane tangent to the top of the model.

• Create the sketch on that plane that includes a boundary and lines for the ribs.

• Use the Grills command to create the grill feature using the sketch geometry.

• **CHALLENGE** - Use the Rule Fillet command to add fillets to the grill.
REVIEW QUESTIONS:

• What are the advantages to working on multiple solids inside the part environment?
• What option did we control to really help with this?
• What are two placement options when creating bosses?
• How can you justify using the lip and boss commands?
  Productivity  Accuracy
Session Feedback

- Via the Survey Stations, email or mobile device
- AU 2015 passes given out each day!
- Best to do it right after the session
- Instructors see results in real-time