

Design for injection molding

The challenge: Create a saw trigger model that can be injection molded.

Complete the required objectives:

- Review a design.
- Create fully detailed model with draft.
- Use Draft Analysis.

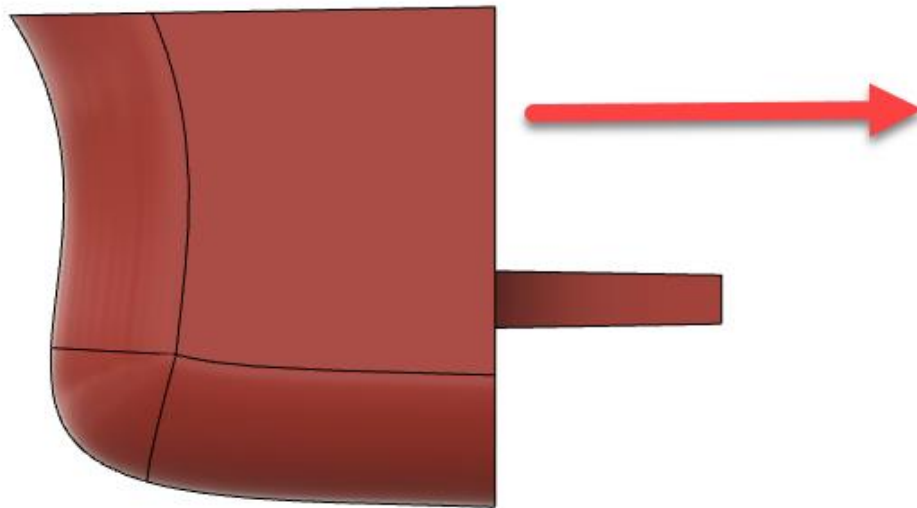


Figure 1: Molded trigger pull direction

Criteria: A customer has asked your company to create a version of a power tool trigger that can be drafted from a different direction. The model **Trigger Model.f3d** can be pulled in the X direction but is a solid part. To follow injection molding best practices the customer would like a thin-walled version of this part with at least 3 degrees of draft on the external trigger shape, and 1 degree of draft on any internal ribbing used. You may need to search for injection molding best practices and use guidelines available to drive your design. Maintain the overall trigger shape and the location of the actuator mechanism on the back.

Defeatured Design: A defeatured version of the design is supplied for general ideas on how to proceed. Review *Trigger Model – Defeature.f3d* for ideas on general shape and geometry, but ultimately create your own unique design.

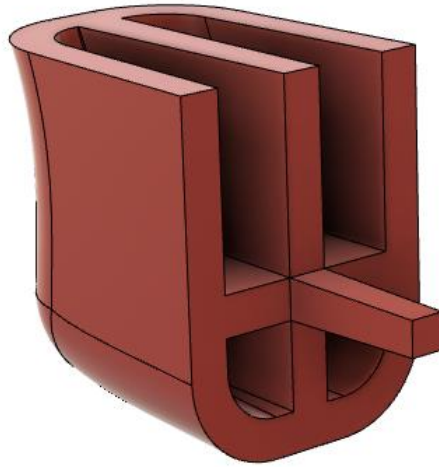


Figure 2: Defeatured design

Draft Analysis: The Draft Analysis tool can be found under the Inspect menu. Using this tool will require you to set the upper and lower draft angle limits just below your expected values. For example, if you are analyzing for 3 degrees of draft you may need to set your draft limits to -2.9 deg up to 2.9 deg. The analysis will ensure that you have enough draft for the design.

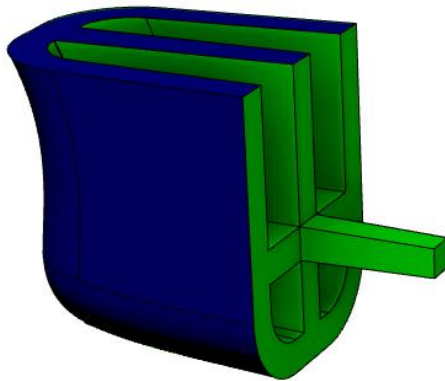


Figure 3: Draft analysis

Grading Rubric:

1. **Yes/No:** Was the design completed?
2. **Yes/No:** Does the design have the required draft for manufacture?
3. **Yes/No:** Does the design have a consistent wall thickness ideal for injection molding?

Options: Does the design contain any challenging geometry?

Feedback: Reviewer leave feedback on the design.