AUTODESK

Practice exercise: Trigger lock button

Create a 3D trigger lock button.

Learning objectives:

- Create a parametric sketch.
- Add sketch dimensions/constraints.
- Use Extrude.
- Use Fillet.
- Use Shell.

The completed exercise

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1. Open the supplied dataset ***trigger lock.f3d***.

Figure 1. Uploaded design.

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2. Create a sketch on the Right plane and add lines to roughly match the trigger lock in the canvas.
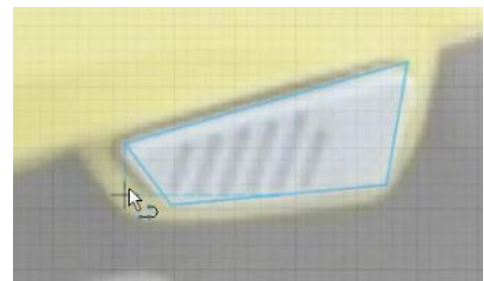

Figure 2. Create a rough sketch

3. Apply a 2mm sketch fillet to each of the trigger lock profile corners.
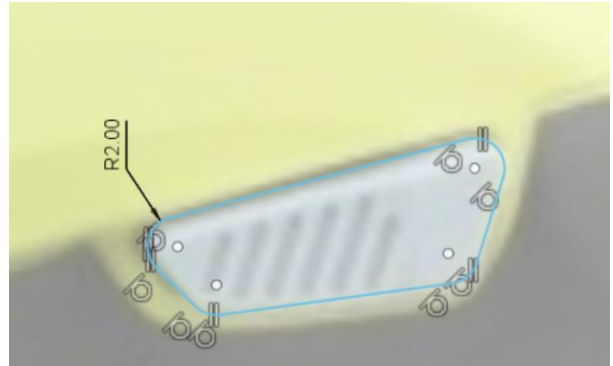

Figure 3. Apply sketch fillets

4. As shown in Figure 4, add a horizontal line extending from the origin and a vertical line at its endpoint. Ensure the lines are construction lines.

Figure 4. Insert construction lines

5. Add the indicated angular dimensions between the vertical construction line and the trigger lock profile.
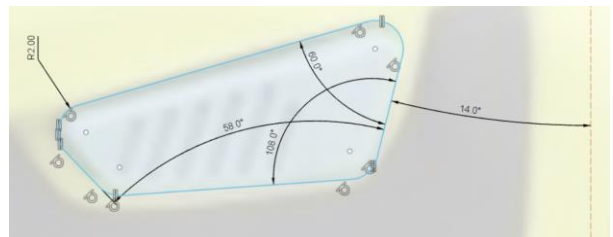

Figure 5. Add angular dimensions

6. Locate the bottom left corner of the profile by applying the dimensions indicated in Figure 6.

Figure 6. Add positioning linear dimensions

7. Apply the internal dimensions for the profile shown in Figure 7. Finish the sketch and launch the Extrude tool.
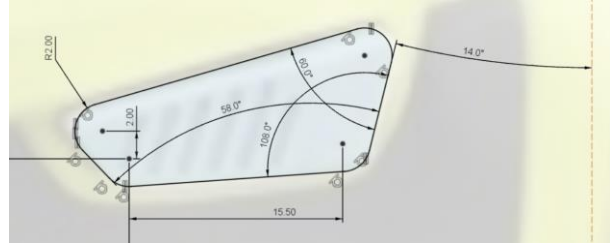

Figure 7. Add internal linear dimensions

8. In the Extrude dialog, ensure the trigger lock profile is selected. Extrude the profile 8mm with a -1° Taper Angle.
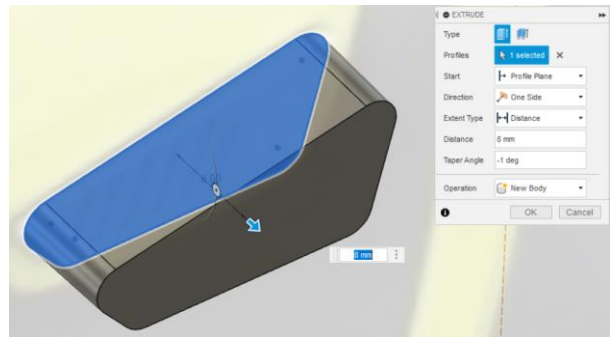

Figure 8. Extrude the profile

9. Use Modify > Fillet to add a 2mm radius to the pictured perimeter of the trigger lock.
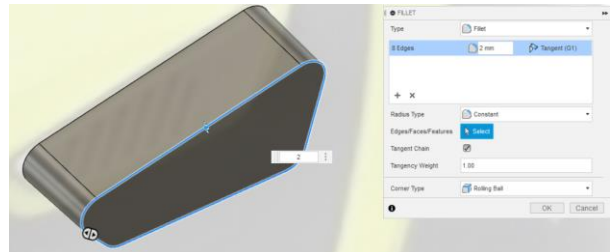

Figure 9. Apply a fillet

10. Hide the canvas in the Browser and orbit to the opposite side of the trigger lock. Use Modify > Shell to apply a 1.5mm shell to the inside of the body.

Figure 10. Create a Shell feature

11. Show the canvas in the Browser again and create a sketch on the front face of the trigger lock body.
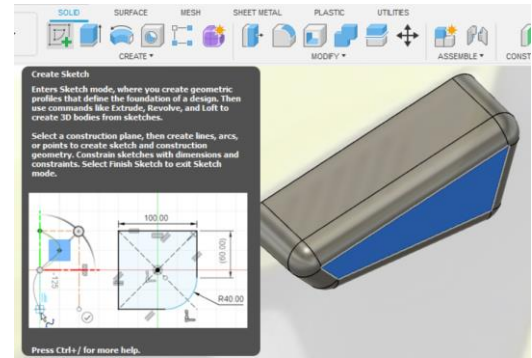

Figure 11. Create a new sketch

12. Create Center to Center slots as pictured in Figure 11. Apply the appropriate dimensions and constraints to fully define the slots.
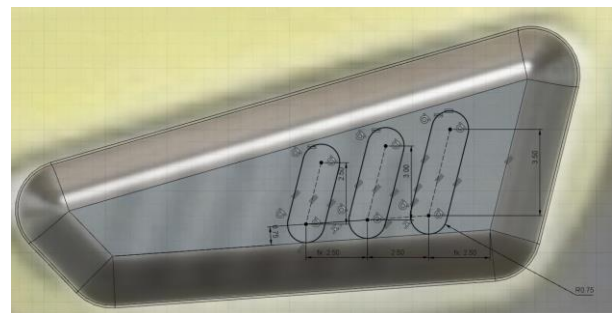

Figure 12. Dimension and constrain slot geometry

13. Finish the sketch and use Create > Extrude to cut the slots into the trigger lock body. Set the Distance to -0.5mm and apply a -1° Taper Angle. Click OK to confirm.

Figure 13. Extrude cut slot geometry

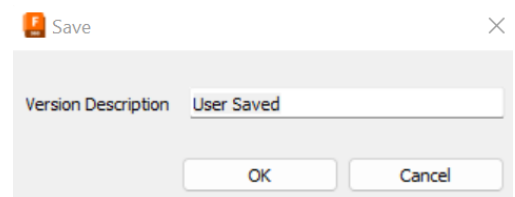**14.** Review the final model and save the design.

Figure 14. Save