

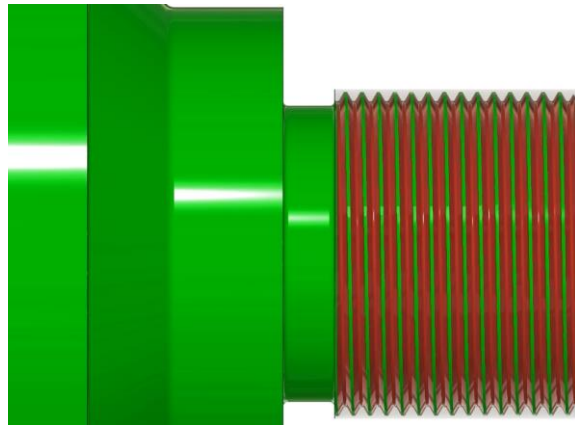
Step-by-step guide

Use toolpath simulation

Explore Fusion 360's simulation to validate that a setup is correctly configured.

Learning objectives:

- Use Simulate to validate toolpaths.



The completed exercise

1. Upload and open the supplied *CAM Lathe Simulation.f3d* file.

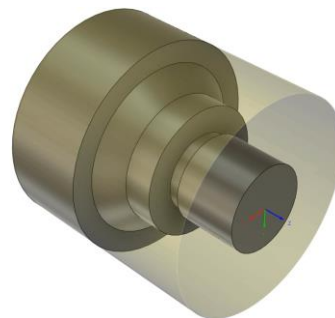


Figure 1. Open the supplied file

2. Expand the Browser's Setups folder and notice that there are five operations that could be simulated. Select the Thread operation.



Figure 2. Inspect the Setups folder

3. Notice that Fusion 360 does not show the operation's threads. Press F8 to temporarily show the in-process stock and notice that the threads aren't shown here, either. Press F8 to turn off the in-process stock. The setup or operation needs to be simulated to see the threads.

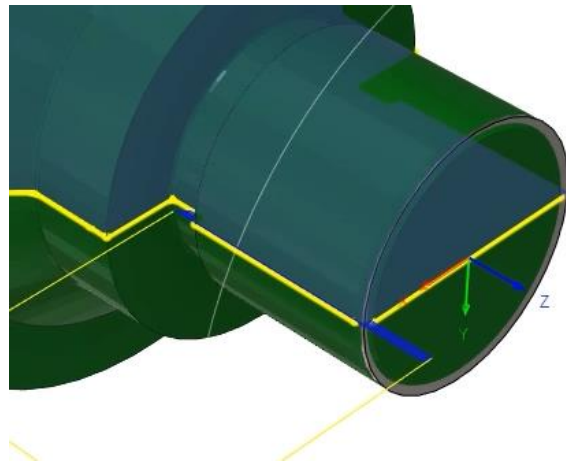


Figure 3. Notice that the threads aren't shown

4. Select Setup4.

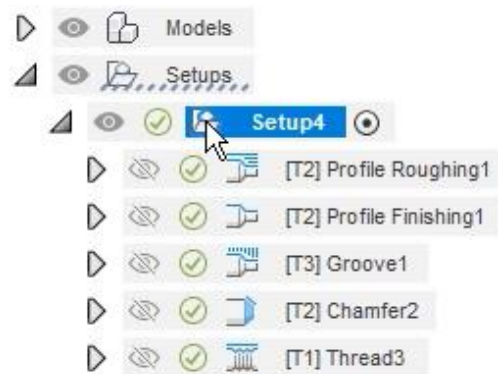


Figure 4. Select the setup

5. Click Actions> Simulate.

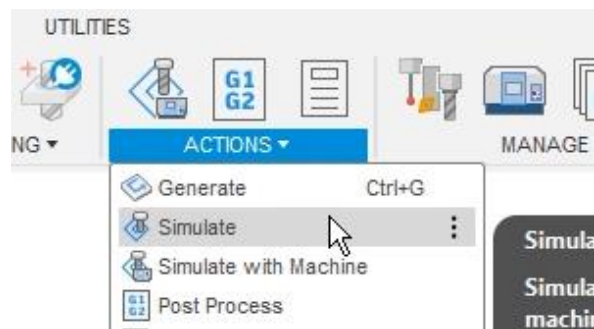


Figure 5. Open the Simulate tool

6. Click in the Canvas area and drag from left to right. Notice that you can scrub through the simulation's animation.

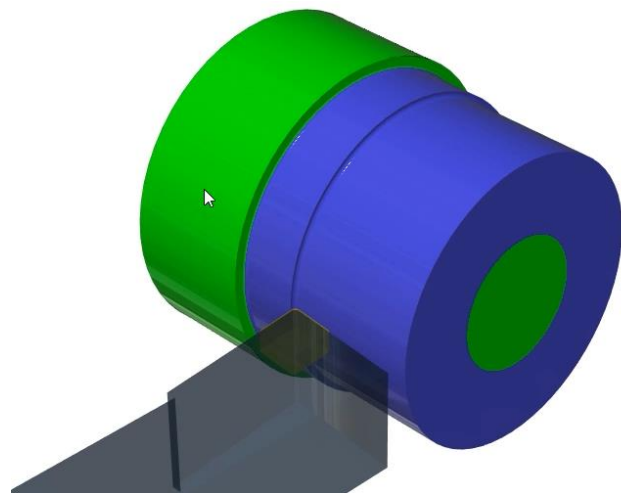


Figure 6. Scrub through the animation

7. Also notice that you can click the timeline at the bottom of the screen to jump to specific points in the animation. The timeline is divided to show the setup's various operations. Hover your cursor over the timeline and note that you can learn about each operation.

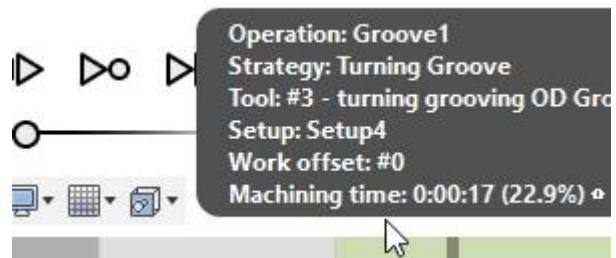


Figure 7. Click the timeline

8. Press play to begin the animation. Notice the strategy that each operation uses to remove the material.

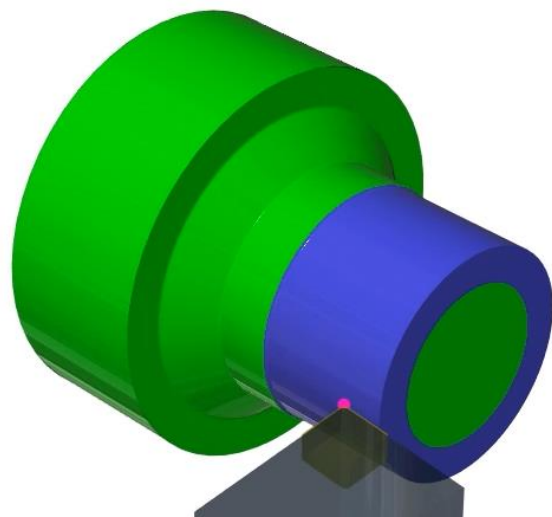


Figure 8. Play the animation

9. Choose the Comparison option in the dialog's Colorization menu. Notice that the Chamfer and Turning operations create red faces. These red faces indicate that the faces are out of tolerance. The chamfers and threads were not modeled, so Fusion 360 thinks that too much material has been removed in this area. The green faces match the modeled geometry and blue faces indicate that additional material needs to be removed to match the modeled geometry.

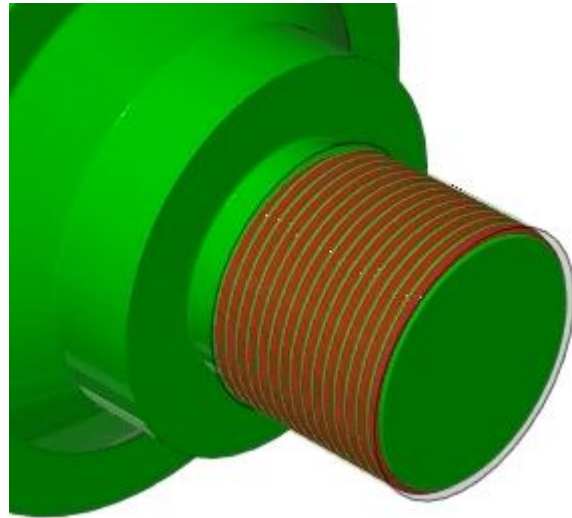


Figure 9. Inspect the colored faces

10. Inspect the Simulate dialog's options to note how you can customize the simulation. For instance, the Tool menu can be used to determine how much of the tool is visible during the simulation. You could also activate the Stop on collision option to automatically pause the animation if a collision is detected.

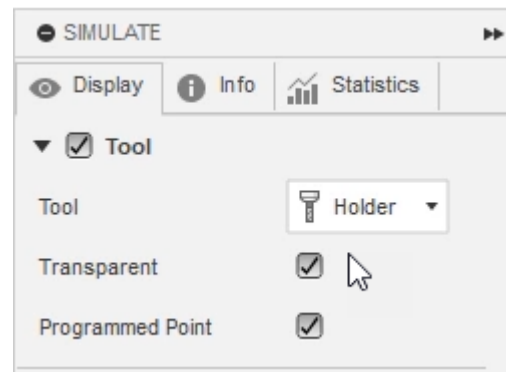


Figure 10. Explore the Simulate dialog's options

11. Continue to the Info and Statistics tabs to see the types of information you can learn. Click the dialog's Exit Simulation after you finish exploring the simulation, then save the design.

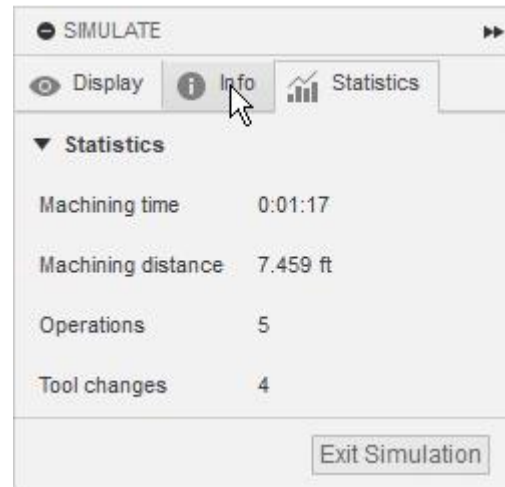


Figure 11. Explore the Simulate dialog