

## Step-by-step guide

### Create a lathe CAM setup

create and customize a lathe setup so you can begin creating cutting operations.

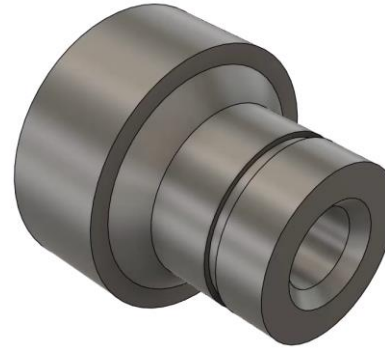
#### Learning objectives:

- Create a new CAM setup for a lathe.
- Define WCS location.
- Define stock.



*The completed exercise*

1. Open the supplied *CAM Setup.f3d* file.



*Figure 1. Open the supplied file*

2. Use the Workspace picker to navigate to the Manufacture workspace.

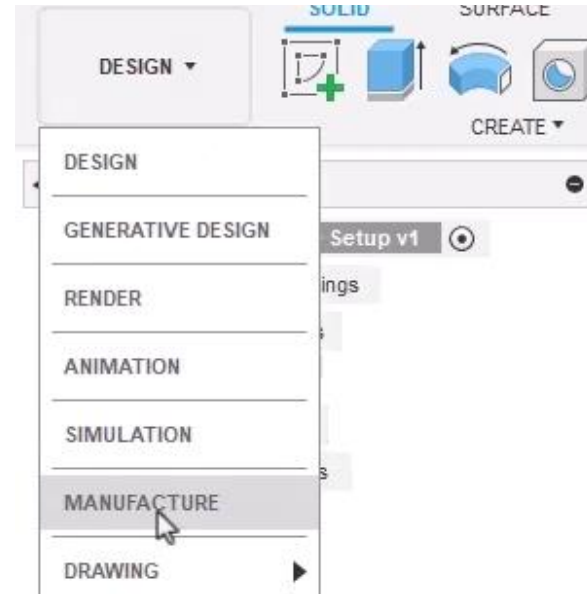


Figure 2. Navigate to the Manufacture workspace

3. Check the Browser to make sure the file's units are correct. The file is currently using millimeters but should be using inches. Click the Change Active Units icon shown in the image on the right.

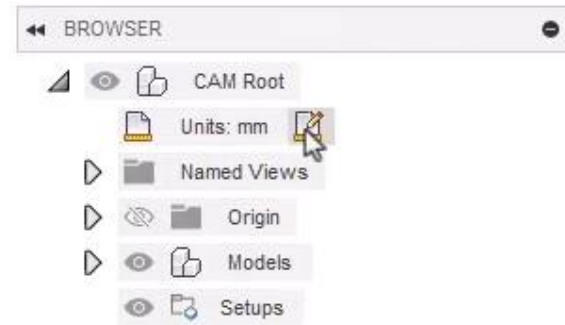


Figure 3. Change the file's units

4. Choose the Inch option from the Change Active Units dialog, then OK the dialog.



Figure 4. Select Inch

5. Note there are several tabs across the Toolbar at the top of the screen. Activate the Turning toolbar to access the lathe toolpaths this part needs.

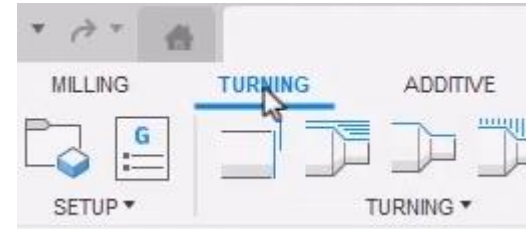


Figure 5. Insert caption here

6. Create a new setup by clicking Turning> Setup> Setup.

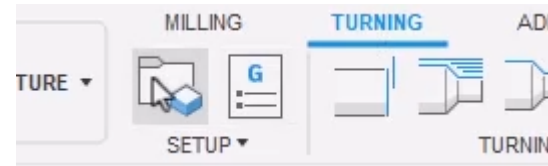


Figure 6. Create a new setup

7. Notice the default Z axis is pointing the wrong direction. To adjust the setup's WCS, choose the Z axis/plane & X axis option from the dialog's Orientation menu.

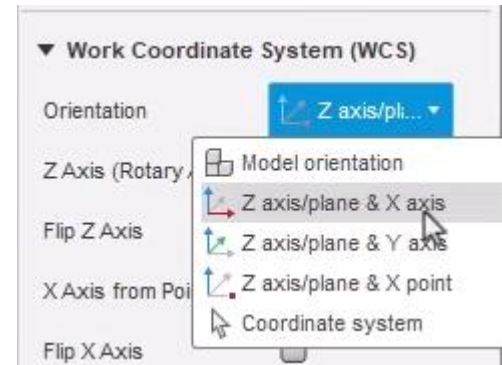


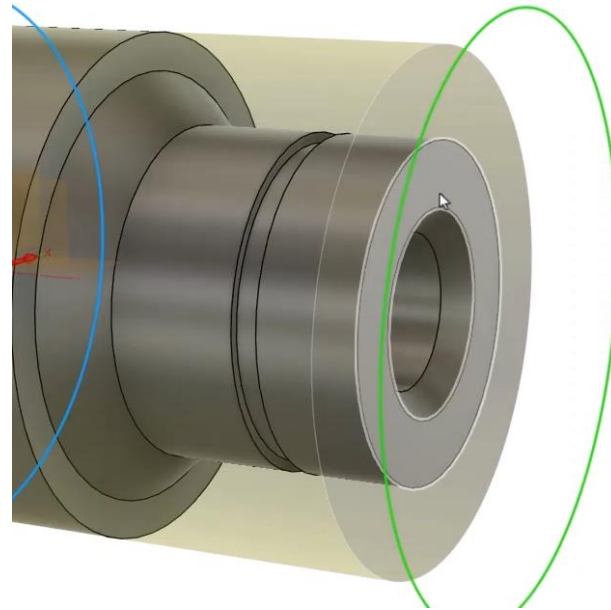
Figure 7. Choose a new orientation type

8. Clear the default Z Axis selection by clicking the X shown in the image on the right.



Figure 8. Clear the default selection

9. For the new Z Axis selection, choose the face shown in the image on the right.



*Figure 9. Select a new face*

10. The Z axis is still pointing in the wrong direction and needs to be flipped; click the dialog's Flip Z Axis option.

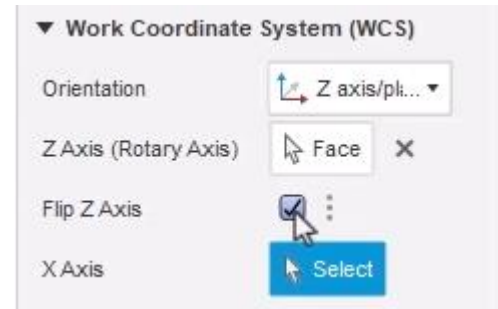


Figure 10. Click Flip Z Axis

11. Click and drag the Chuck plane forwards -2 inches. This plane represents the lathe chuck's jaws.

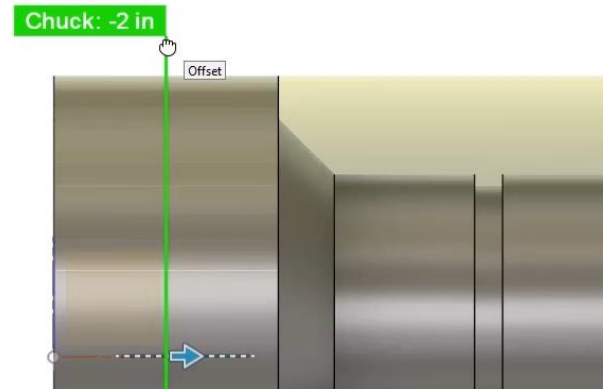


Figure 11. Adjust the Chuck plane



12. Continue to the dialog's Stock tab and explore the various stock options. Verify that the Fixed size cylinder option is selected in the Mode menu.

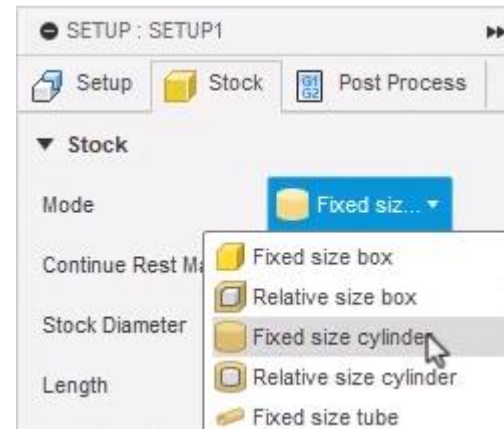


Figure 12. Verify the stock's settings

13. You can use the dialog's options to add extra material to the stock body. Increase the Length value to **2.55**, then choose the Model Position menu's Offset from back option.



Figure 13. Add material to the stock body

14. Inspect the result and notice that 0.05 inches of extra material is added to the stock body's front. This allows the part's end face to be correctly machined.

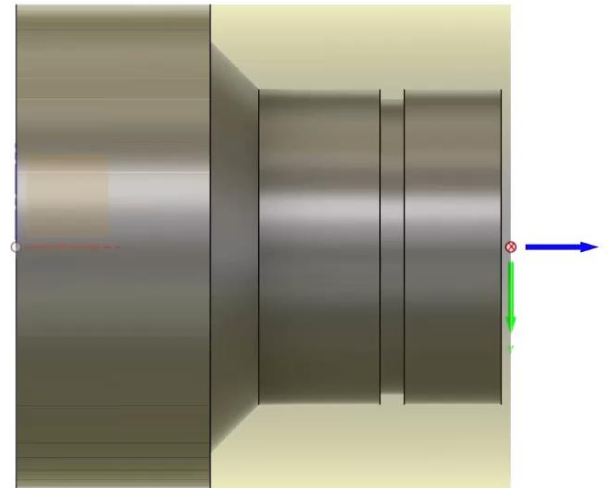


Figure 14. Inspect the result

15. Continue to the dialog's Post Process tab and enter **2001** into the Program Name/Number box. Enter **Lathe Setup1** into the Program Comment box, then OK the dialog to finalize and create the setup.

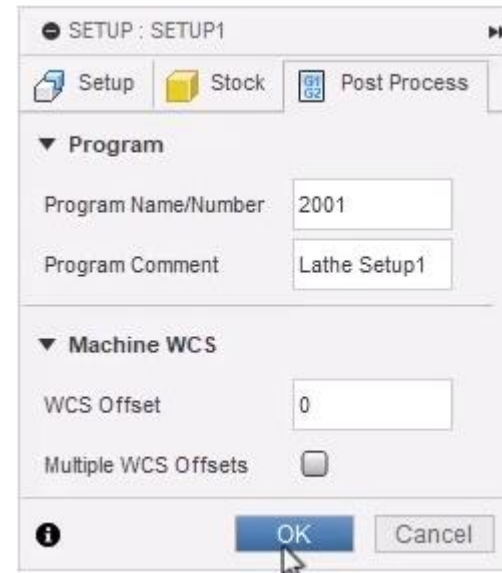


Figure 15. Configure the Post Process tab

16. Click in an open section of the Canvas area and notice the stock preview disappears. You can return the stock preview by clicking Setup1 inside the Setups folder. Save the design.



Figure 16. Click Setup1