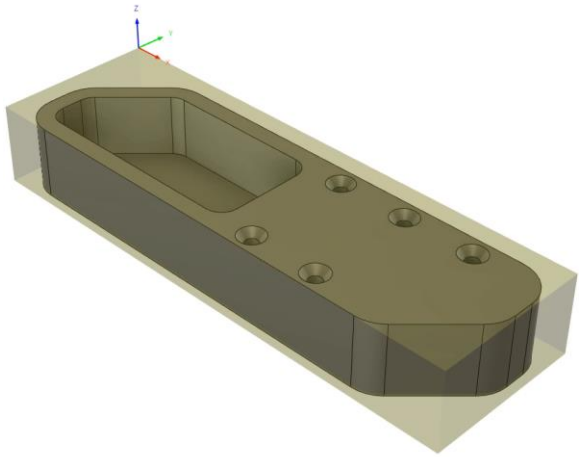
Lesson: Create a Machine Configuration

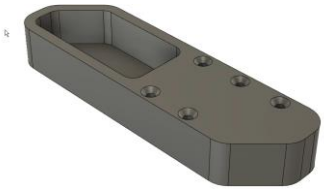
In this lesson, you'll create a custom machine to make sure that Fusion 360's calculations are appropriate for a specific machine.



The completed exercise

Learning Objectives

- Modify a machine configuration.

1. Continue with the *CAM Milling Setup* file from the previous module.	
2. Additional parameters for a machine can be configured inside Fusion 360. If any operations exceed the machine's limits, Fusion 360 will prompt a warning to identify that the machine's capabilities have been exceeded. Edit the Browser's CAM Milling Setup1.	

3. Click the dialog's Select inside the Machine section.

4. Open the supplied *Haas VM-3 Specifications* Excel file and keep it available for reference. The values in this Excel file will be used to populate a custom machine's parameters. All the values in the file are sourced from the Haas website. Explore the file's contents.

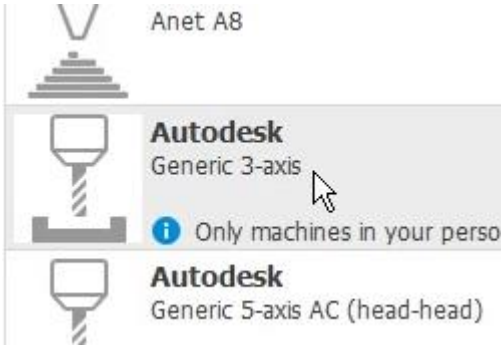
HAAS VM 3 Specs

Travel	inch
X Axis	40
Y Axis	26
Z Axis	25

Spindle	SAE
Max Rating	30hp
Max Speed	12,000 rpm
Taper	CT or BT 40

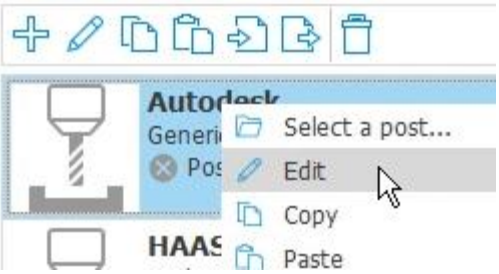
Table	inch
Length	54
Width	24
T-slot width	0.63
T-slot center distance	3.94

5. In the Machine Library dialog, choose the Fusion 360 Library option in the left column. Navigate to the Autodesk Generic 3-axis option and select it. Right-click the Generic 3-axis machine and choose Copy from the menu.

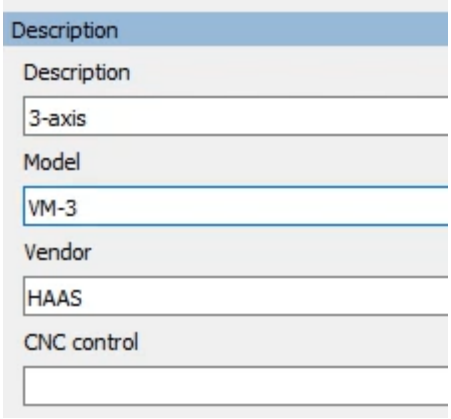


6. Decide whether you want to create the new machine in your local library or on the cloud. Activate this library in the dialog's left column. Paste the copied machine into your selected library. For the purposes of this document, the cloud library was selected.

7. Edit the new machine.

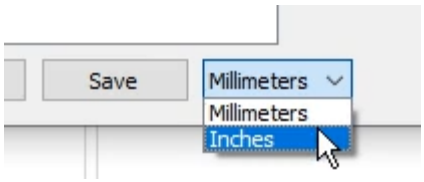


8. Navigate to the Machine Configuration dialog's Description section, then change the information to match the image on the right. Click the dialog's OK when you are finished.

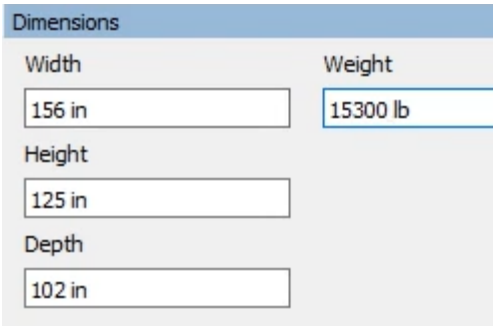


9. The new information is updated in the library. Edit the new machine again.

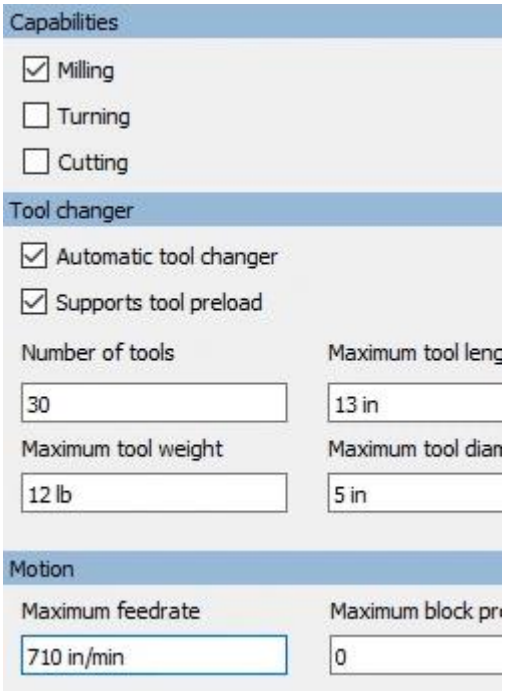
10. Navigate to the Machine Configuration dialog's Dimensions section. Notice that the units are listed in metric. Choose the Inches option from the menu at the bottom of the dialog.



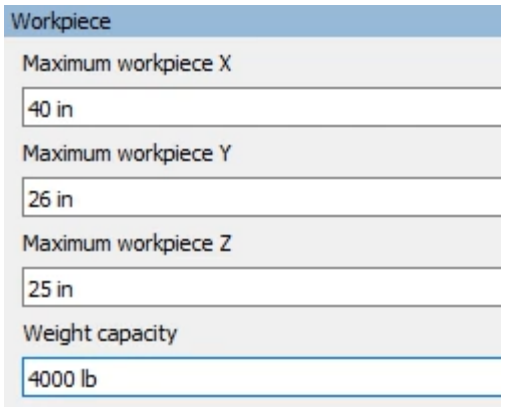
11. The Excel file does not list a specific width, height, and depth value. The Excel file's dimensions for shipping values can be used to populate these fields.



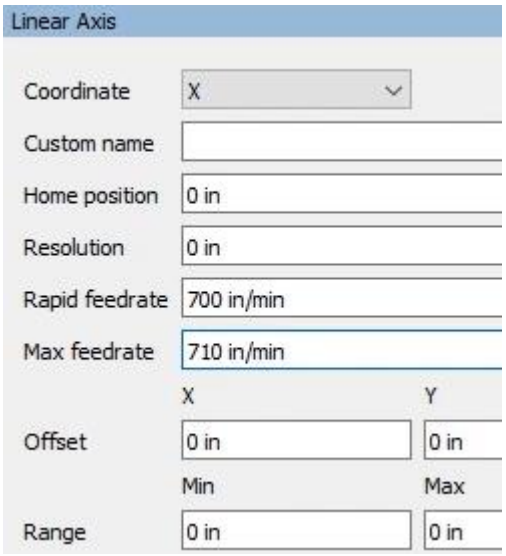
12. Continue to the dialog's Capabilities section and use the Excel file to populate the various fields.



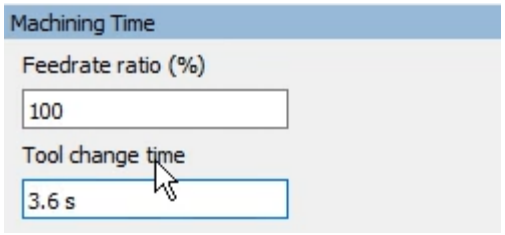
13. Continue to the dialog's Workpiece section. These values are not shown in the Excel file but can be extrapolated from the machine's travel and table length dimensions. Use this information to populate the various fields.



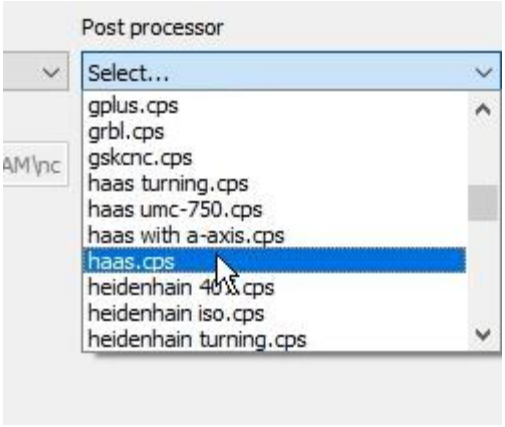
14. Continue to the Kinematics> X Linear section and enter the Rapid feedrate and Max feedrate values. Note that these values are the overall feedrates and not the cutting feedrates. Also add these values to the Y Linear and Z Linear sections.



15. Continue to the Machining Time section and reduce the Tool change time to **3.6 s**.



16. Continue to the Post Processing section and choose the hass.cps option from the Post-Processor menu. Click OK to accept all the parameters you entered and update the Haas VM-3 machine. If any values create an error, you will be prompted to fix the values before the dialog can be OKed.



17. Click the Machine Library dialog's Select to choose this machine for the setup. Accept the changes. Save the file and continue to the next module.