

How to Modify the Caster Wheel Part CAD Model

Introduction

The caster wheel part model provided on the website uses a *design table* to generate the part, so you can select any of the caster wheels available in lab, input the relevant dimensions, and an accurate CAD model is created. Before explaining the process for changing the dimensions of the caster wheel part model, you will need to make note of the following dimensions (Fig. 1) to change them in the design table:

- *Length of the plate*: The top of the caster wheel is characterized by a rectangular plate with four holes. The larger of the dimensions is labeled as the length.
- *Width of the plate*: The top of the caster wheel is characterized by a rectangular plate with four holes. The smaller of the dimensions is labeled as the width.
- *Hole Distance (Length)*: The distance between hole centers along the length of the plate.
- *Hole Distance (Width)*: The distance between hole centers along the width of the plate.
- *Load Height*: The total height of the caster wheel, from the bottom of the wheel to the top of the plate.
- *Wheel Diameter*: The diameter of the actual wheel.
- *Tread Width*: The width of the wheel's tread.
- *Swivel Radius*: The largest distance from the center point of rotation of the caster plate to the outside wheel diameter.

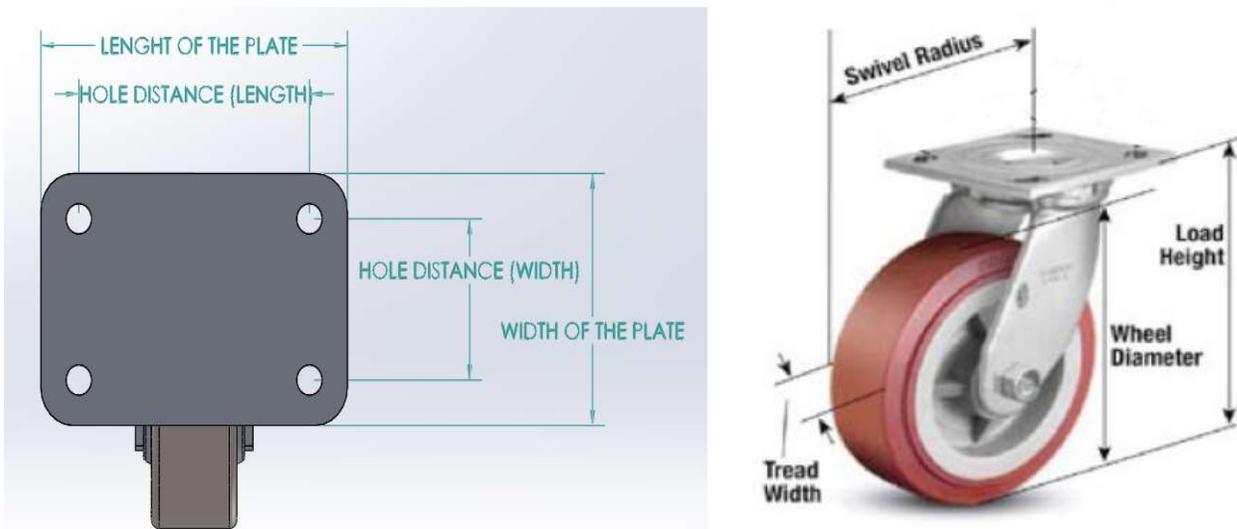


Fig. 1. Different views of a caster wheel with dimension annotations detailed above.

Instructions

1. Download the [.zip archive file](#) from the website and extract it.
2. Open the SolidWorks part file in the folder.
3. Select the Configuration Manager tab in the top left corner of the project workspace (Fig. 2).

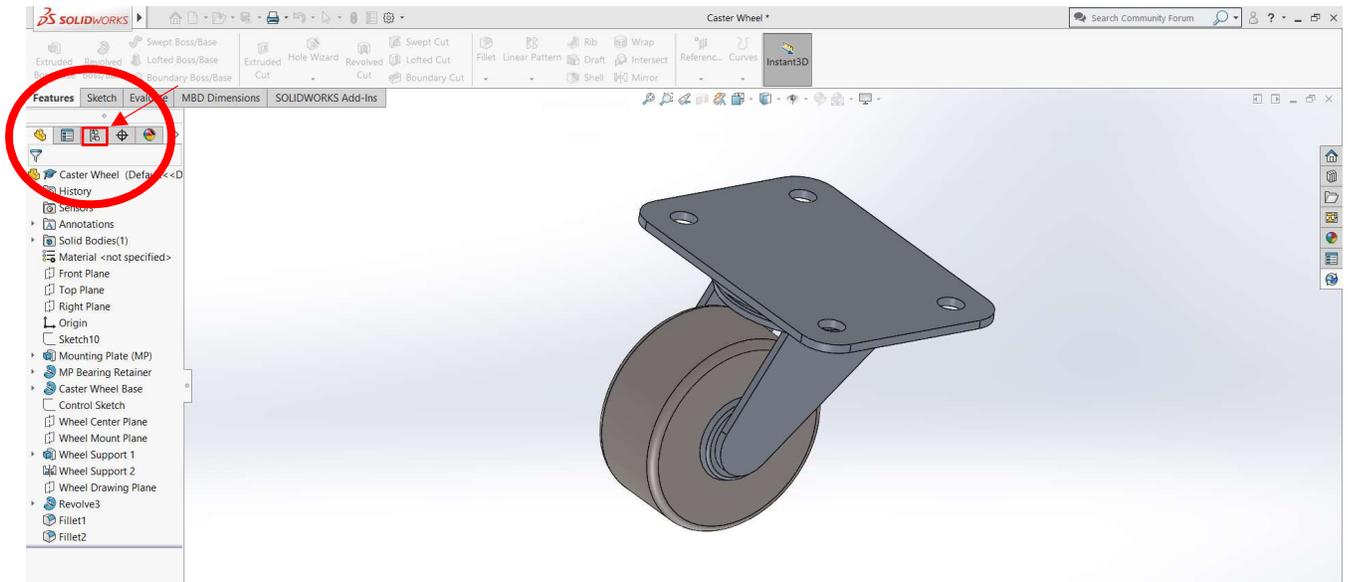


Fig. 2. Image of SolidWorks workspace, pointing to the ConfigurationManager tab.

- Expand “Caster Wheel Configuration(s)” and “Tables” to see all the options (Fig. 3).

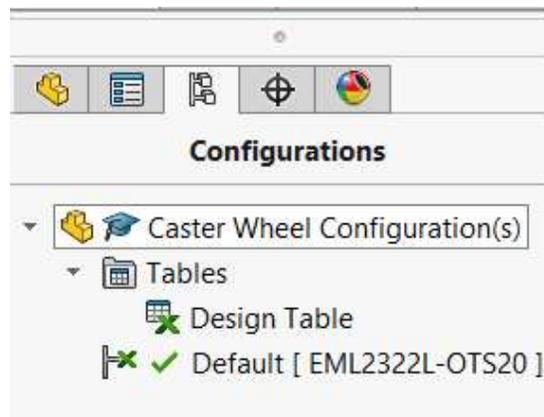


Fig. 3. ConfigurationManager tab showing all options for the caster wheel.

- Right-click Design Table  and select “**Edit Table**” or “**Edit Table in New Window**”. The worksheet appears in the window. (If you select Edit Table in New Window, the worksheet opens in a separate Excel window.)
- You will be prompted to add more dimensions. Just click "OK".
- Edit the table as needed.
- IMPORTANT!!!** Click outside of the table to close it. (If you are working with the design table in a separate window, click File > Close.)
- If you receive a confirmation message that the design table generated new configurations, click OK. The configurations update to reflect your changes.

NOTE: If this is not working for you, you may download an appropriate caster wheel model from another source as long as its dimensions match those of the caster wheel you are using on your robot.