Getting Started with Robot Design

This chapter details what software you need to install to design our robots and some basic exposure to CAD Software

What you need to install

SOLIDWORKS

SOLIDWORKS is a popular CAD (computer-aided design) software used for product development. We use SOLIDWORKS to design, simulate, and manufacture our robots. You can download SOLIDWORKS using the instructions in the pinned message of the CAD channel in the YETI discord.

CacheCad

Created by FRC team 8096 Cache Money this software allows FRC teams to collaborate and share CAD files via Google Drive. This greatly speeds up the design process. You can download CacheCad here.

Read this if you use a mac or Linux machine.

Unfortunately you can only run SOLIDWORKS on Microsoft Windows operating systems so if you are currently using a Mac Machine you need to use bootcamp until you are ready to purchase a windows laptop. If you are currently running Linux you need to download a Microsoft Windows operating system like Windows 10.

Next Steps

Learn basic CAD skills from Solid Professor. Also learn FRC specific skills in the next chapter of creating a gearbox.

Creating a Gearbox

Find a 2x1 from WCP

Go to the Punched Tubing tab in the WCP website. Navigate to WCP-1025 in the CAD & Drawings section. Then click the grey link called "STEP".

Find other parts

Using the same search method find the following and put all of the files into a folder named: "Stage 1 - Gearbox"

1.) Kraken X60 Powered by TalonFX

2.) 50t Aluminum Spur Gear (20 DP, 3/8" Hex Bore) (WCP-0698)

3.) 12t Steel Spur Gear (20 DP, 8mm SplineXS Bore) (WCP-1010)

4.) .159" ID x .500" OD Rounded Hex Stock (36") (WCP-0914)

5.) 0.500" Hex ID x 1.125" OD x 0.313" WD (Flanged Bearing) (WCP-0783)

If you are having trouble finding parts just search (ctrl-f) the parts number (EX:WCP-0000).

-IN PROGRESS-