

# Tunes for the Road

Tuning is one of the most important aspects of programming. It ensures that your mechanisms move smoothly and quickly. It is important to understand how to tune PID control loops by using Pheonix Tuner.

- Plotting and Scheming

# Plotting and Scheming

## Plot (pluh):

One of the greatest tools that will aid you in your tuning escapades is the Phoenix Tuner plot. The reason this is so useful is that it shows you how much your mechanism is off (in terms of position and velocity) in an intuitive manner.

Read through this guide to understand plotting with Phoenix Tuner:

<https://v6.docs.ctr-electronics.com/en/stable/docs/tuner/plotting.html>

## Things to Plot (pluh):

- Position: The actual position of the motor according to the motor (or the CANcoder if there is one)
- Reference Position: The expected position of the motor; The position that you want the motor to be at
- Velocity: The actual velocity of the motor
- Reference Velocity: The expected velocity of the motor; The velocity that you want the motor to have