

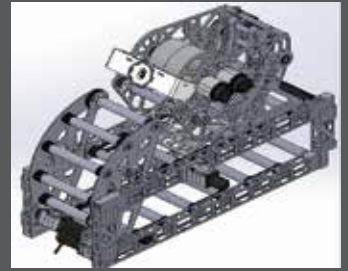
INTAKE

Our intake is powered by a Falcon 500 and uses pneumatic pistons to raise and lower the intake. We use mecanum wheels to drive the balls to the center of the robot.



CLIMBER

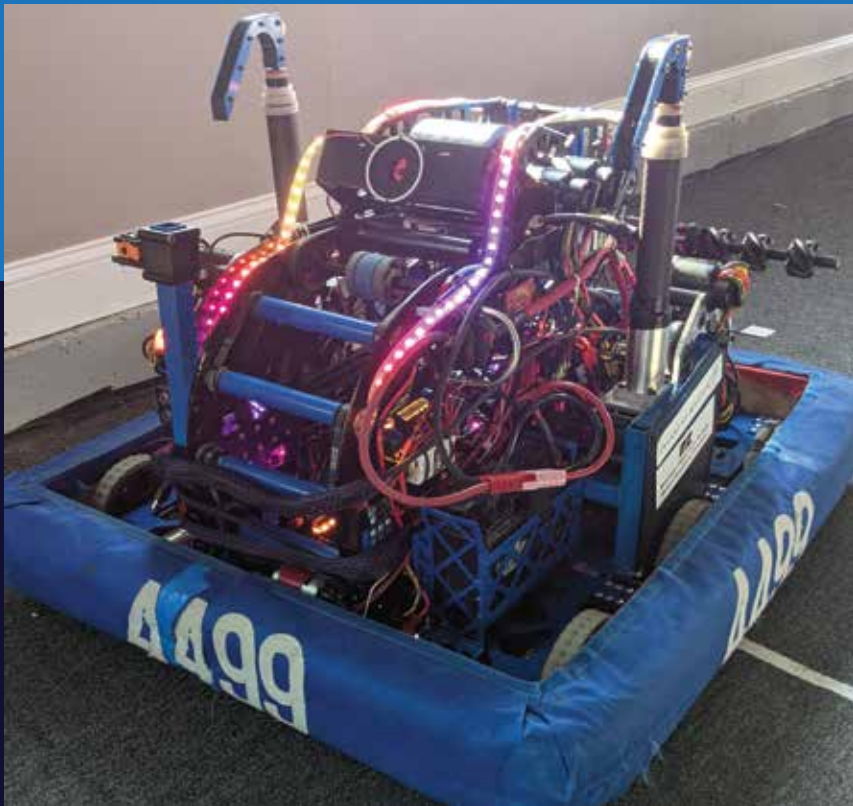
Our climber functions by first raising itself with a piston, and then using a motor to go higher. It then places the hook and uses a separate motor to winch the robot up..



MAGAZINE

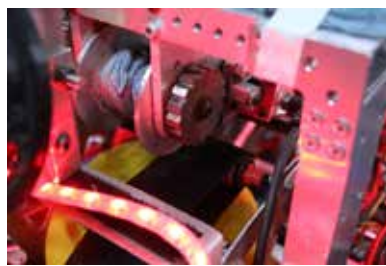
We implemented multiple rollers connected with belts that are driven by 3 separate motors, or stages. (lower, arch and upper). We also installed 6 sets of beam breaks to keep track of the balls through the system.

CHRONOSTAR



SHOOTER

The shooter is designed with the use of 2 falcon 500s. A steel flywheel with a high rotational inertia is implemented to make it not lose momentum when firing.



WINCH MECHANISM

We designed and machined our own custom one way ratcheting mechanism to hold our robot up after it climbs. This is actuated by a small pneumatic piston.



VISION

We have developed a custom vision processing solution using Jevios camera with open CV using Python. The target is tracked with the camera and distance and angle are sent to the robot to auto align. The vision code can also detect a ball.

ABOUT OUR ROBOT DESIGN DECISION

We make our robot in house, machining, designing and assembling everything by team members. Each year we analyze the game challenge and decide on robot tasks with current years resources. Having fun is always on the top of the list!