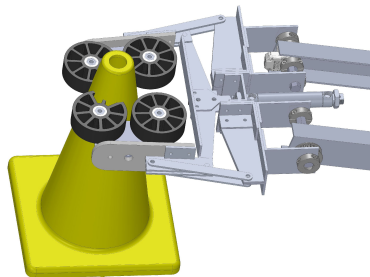


FRC TEAM 980 THUNDERBOTS CHARGED UP FACT SHEET



ROBOT AND GAME STRATEGY

- Our robot is designed for both high torque and high speed.
- Our robot uses a swing through 3 segment arm allowing for acquiring game pieces and scoring from both the front and back of the robot.
- Our game strategy includes scoring on any node and balance on the charging station at the end



PICKUP SYSTEM

- Pneumatic powered grabbing claw using 3-inch fixed compliant wheels for grip
- Gripper rotates on wrist joint to orient cone for scoring

DRIVE SYSTEM AND CHASSIS

- West Coast style drive with six 4" rubber wheels
- Two-speed gearboxes with 3 CIMs each, and automatic shifting provides high speed or high torque
- Robot can easily cross the field in ~4 seconds
- Robot frame and bumper system are robust against impacts

SENSOR INTEGRATION AND AUTONOMY

- Navigation uses incremental encoders for speed control for teleop and odometry for autonomous
- Arm control uses absolute through-bore encoders with feed-forward motion control for the three joints
- Pixy Camera and Limelight used for vision-based targeting for game piece acquisition and node tracking respectively
- Inertial Measurement Unit monitors robot turns for autonomy and tilt angle for balancing, tip-over avoidance

