



Drivetrain

- Square base with four rear mounted 6" dia. high-traction wheels and two 6" dia. omni wheels in the front
- Four CIM motors with AndyMark two-speed transmissions
 - Low speed 6 ft/s
 - High speed 14 ft/s

Shooter

- Fixed angle (45°) puncher form factor
- Use of a 3D printed ABS convex puncher contacting head
- Powered by latex tubing and tensioned by two full CIM motors
- Variable tensioning system to allow for a range of shooting locations
 - Accurate ~7ft – 18ft
- Fully automatic reloading and tensioning sequence
- ARM based Linux computer (BeagleBone) in coordination with a chassis mounted camera is used to determine depth and shooter tension

Ball Manipulation

- Two stage rotating arm intake system
- Stage one (upper arm) is actuated by a 1 1/2" dia. pneumatic cylinder, uses two pairs of 4" dia. wheels on it to aid catching a pickup
- Guides on arm used to center ball for pickup and aid catching, as well as protect the ball against side impacts
- The pickup arm is actuated by a 2/3 CIM motor mounted in a 49:1 planetary gearbox, used to raise and lower the ball to shooting and catching position
- First stage rollers are also used to score in the top of the 1pt. goal and passing

Autonomous

- Single ball autonomous, scores in the hot goal
- Achieves mobility points

