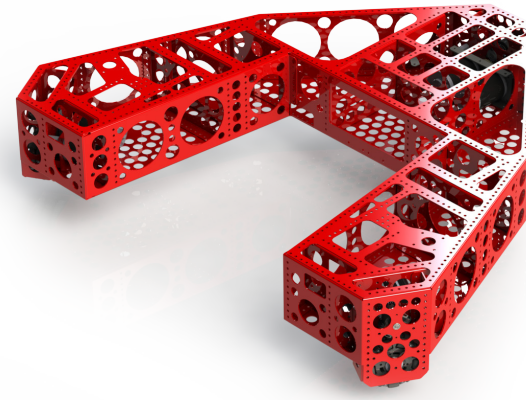


TEAM 1114 PRESENTS: SIMBOT SIDESWIPE



Drive

- Riveted aluminum sheet metal chassis
- 3 wheeled holonomic drivetrain utilizing VEXpro omni wheels
- Powered by 6 Mini CIM motors with a robot speed of 13 ft/sec
- 2" ground clearance for mobility over the scoring platform



Indexer

- Aluminum hooks attached to a continuous chain loop raises the bottom tote of a stack by its lip
- Pneumatically actuated latches hold and release totes
- Powered by a single CIM motor and mechanically linked to both sides
- Pneumatic cylinder dingus pushes cooperation stack onto step
- Angled 3 degrees back to allow the elevator to support tote stacks



Intake

- Two 3.875" BaneBot wheels per side belted together
- Outer wheels sprung to conform to the orientation of landfill totes
- Each side driven by a single mini CIM motor
- Pneumatic actuation for recycling container control and stack release



Claw

- Pneumatic claw grips recycling container with 40 lbs of force
- Mounted to passive elevator carriage lifted by indexer and tote stacks
- Supported by 1" box tube rails with sheet metal supports
- Stabilizes stack with weight of claw and recycling container
- Elevator is easily detachable for transport configuration



Boot

- Creates a pivot point at the bottom of tipped recycling containers allowing the intake rollers to rotate it into the claw
- Pneumatically actuates to clear for tote indexing



Control

- Drivetrain maintains a heading using a PD control loop on a gyroscope
- When a tote is sensed by the light sensor, the indexer hooks raise it onto four latches then loop around to prepare for the next tote
- Derivative feedback loop on indexer motor accounts for varying stack heights