

# Control Award Sponsored by Arm Submission Form

**\*\*Please turn in this sheet during your judge interview along with your engineering portfolio\*\***

<b>Team #</b> 8696	<b>Team Name:</b> Trobotix
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## Autonomous objectives:

Score a single pre-loaded cone on a medium and/or high junction.  
Park in the correct zone based upon the signal cone.

## Sensors used:

Encoders (4) - Accurate driving and navigation.      Distance Sensors (3) - Supplement encoder readings.  
Magnetic Limits Switches (2) - Controls linear slide positioning.      REV Color Sensor V3 - Read the signal cone.

## Key algorithms:

Finite-State Machine - Control slide positioning without compromising the availability of other mechanisms.  
An inverse function is applied to the detected battery voltage to ensure the robot consistently moves at constant speed.

## Driver controlled enhancements:

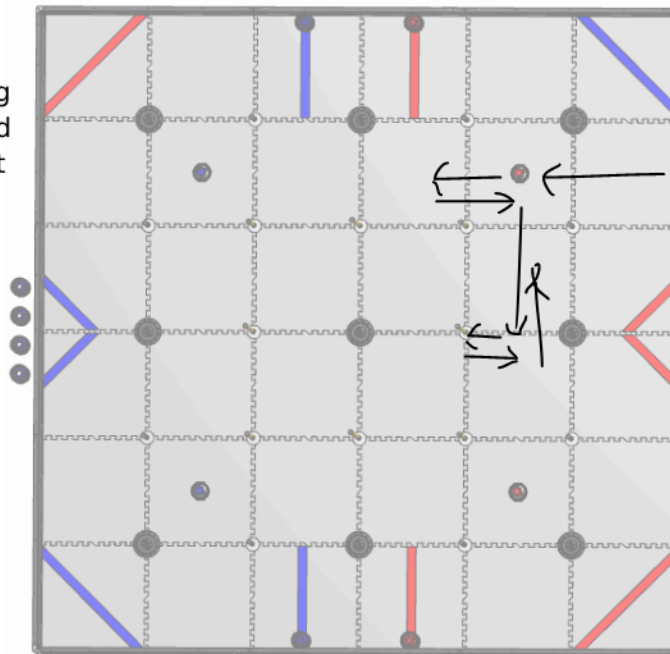
Automatic linear slide positioning using magnetic limit switches.  
Squared controller input to provide a more "natural" feel.

## Engineering portfolio references:

Design § 4.a - Sensors      Programming § 1 - Autonomous      Programming § 2 - TeleOp

## Autonomous program diagrams:

Note: Sample autonomous route. Multiple routes are available depending on what side of the field the robot starts or what junction to score on.



1. Grabs pre-loaded cone.
2. Raises slide.
3. Moves forward.
4. Reads the signal cone.  
(The read zone was #2.)
5. Pushes the signal cone away.
6. Returns to middle.
7. Strafes to high junction.
8. Moves to position cone above junction.
9. Releases cone.
10. Moves back.
11. Strafes to zone #2.