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bots

// BetaBots

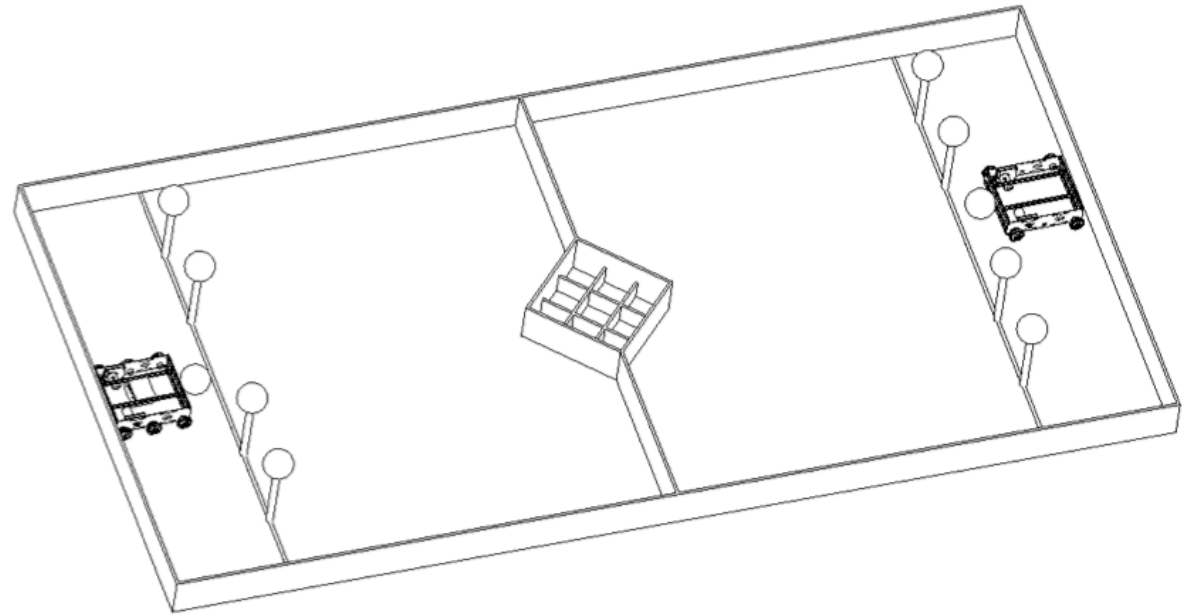
BetaBots is a game of robotic Tic-Tac-Toe. The game pieces are 8.5" diameter yellow and green gym balls. The balls are scored in a goal consisting of a grid of 3x3 spaces. Each space in the grid has room for a single ball.

Robots play 1 against 1 on opposite sides of the field. The shared goal is in the middle of the field. Unlike conventional Tic-Tac-Toe, the robots do not take turns to score. The first robot to score 3 balls in a row wins the match.

// The Field

The game is played on a 12' wide by 24' long carpet, divided into two equal zones by a wall and the goal. A start line is marked on the field 3 feet from each back wall.

Each team has 5 balls to score with. 4 balls are placed on 24-inch black ABS pipe on the start line. The fifth ball can be pre-loaded on the robot, or placed anywhere behind the line before the beginning of the match.

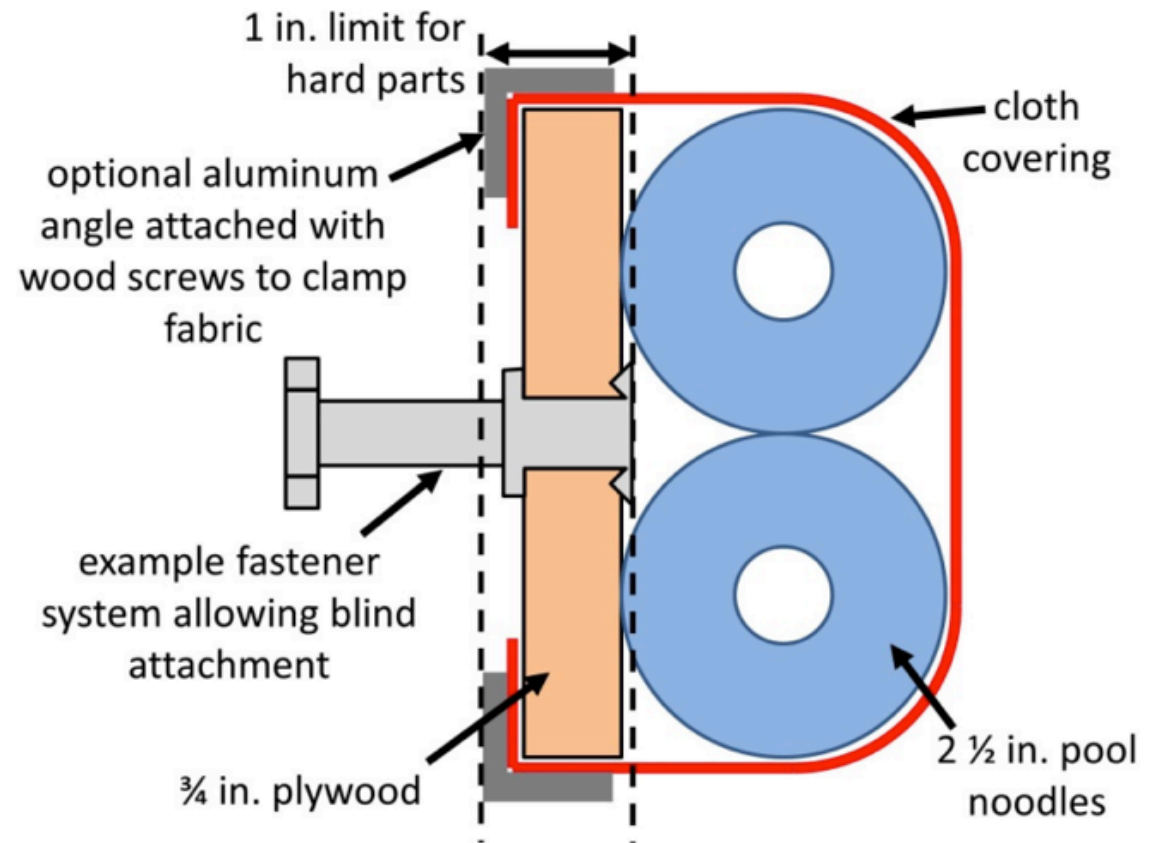


// The Game

- Robots must start each match entirely behind the line
- Each match last 2,5 minutes. This begins with a 15 second autonomous period, followed by 2 minutes and 15 seconds of teleoperated play.
- A ball is scored when it settles on the base of the goal.
- Robots may only control 1 ball at a time. Intentional herding counts as control. Teams will be warned after an infraction, and disqualified from that match after a second infraction.
- Contact between robots is permitted over the goal, provided each is holding and attempting to score a ball. Once the ball has been released, a robot must move clear of the goal. Strategies of simply blocking the opponent are not allowed.
- Robots may not make contact with any balls which have been scored. Teams will be disqualified from that match. Teams should be very careful operating appendages which risk contacting balls inside the goal.
- The match is over once one robot scores 3 balls in a row in the goal to score a Tic-Tac-Toe (TTT). If neither robot accomplishes this by the end of a match, the number of balls scored by each robot counts towards their ranking. It is possible to score more than one TTT in a match.
- Balls put out of play during a match will not be returned onto the field.
- The walls surrounding the playing area are stable, but may be knocked over by strong collisions. A robot will be disabled and the team disqualified for that match if they knock over a wall. The team receives 0 ranking points. If a team is disqualified during a match, the other team may continue to try to score to improve their ranking. The match will end with the first TTT scored or when the match time has elapsed.
- Robots will be disqualified from a match for unsportsmanlike conduct. This includes illegally blocking the goal, strategically using game pieces to undermine an opponent's strategy, deliberately confusing an opponent's vision system etc.

// The Robot

- There is no size or weight limit, though note that the robot must be completely behind the start line at the beginning of the match.
- Teams may use any chassis or drive system of their choosing.
- Robots must include bumpers covering the entire front and rear, manufactured in the style of the 2014 FRC bumper rules ($\frac{3}{4}$ " plywood, 2.5" pool noodles covered with durable fabric as shown). Only one set of bumpers of any colour is required, markings or team numbers are optional.
- Electrical, pneumatic and overall safety rules follow 2015 FRC robot rules.



// The Tournament

The tournament is divided into 2 parts, the round-robin and the playoffs. During the round-robin, teams play randomly assigned matches. All teams play the same number of matches.

Teams must have at least four drivers who take turns according to a “batting order”, which the team must provide to the score-keepers before their first match. If a team advances to the elimination round, they may change their batting order.

At the end of the round-robin, the final ranking will determine which teams move into the elimination round. Ranking is determined by the number of TTTs the team has scored. Note that it is possible to score two TTTs in a match. Tie breaks are determined by the total number of balls a team has scored.

- 1st sort : # of TTTs
- 2nd sort : # of balls scored

The top 6 ranked teams move on to the playoffs. The top 2 ranked teams automatically qualify for the semi finals, while the teams ranked 3-6 play for the last 2 semi final spots.

A team wins a playoff round if they win 2 matches. In the event that neither team scores a TTT by the end of an elimination match, the team with the most balls scored wins the match. If both teams have scored the same number of balls, the winner is the team which scored the first ball of the match.

// Awards

All teams must sign up for a judging session. The judging session consists of a 5 minute presentation by 2 to 4 team members followed by a question period. Teams should prepare a summary sheet and have presentation media ready (video, powerpoint, etc.).

The following awards will be presented:

- Winner of the game
- Quality*
- Creativity*
- Innovation in control*
- Judges' award*

* Based on the same criteria used at FRC competitions.