Sumo

Description of the contest

Contestant robots will be required to push or persuade their single opponent out of the ring. The competition will consist of bouts in which every robot will face every other. Points will be awarded for win, draw and lose, the highest scoring robot being the winner. In the event of a tie, a sudden death run-off of three bouts will decide the winner. If all three run-off bouts result in a draw, then the winer will be decided by popular vote. If the popular vote is split exactly 50:50, then the organizers will decide the winner based on some totally irrelavent property of the competing robots, such as maximum use of pink plates.

Rules

The ring will be a circular arena. It will be a flat 48 inch diameter disk the center of which will be painted flat white with an outer band, 3 inches wide, painted flat black.

The arena will be placed at least an inch above a supporting surface to ensure that robots falling out of the ring can be clearly identified by their tipping motion.

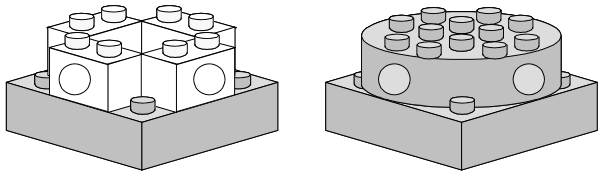
Robots dimensions will be limited to to fit within an 8 inch diameter circular sizing ring with a height limit of 6 inches from the arena surface to the highest point on the structure, excluding competition defined additions (see below).

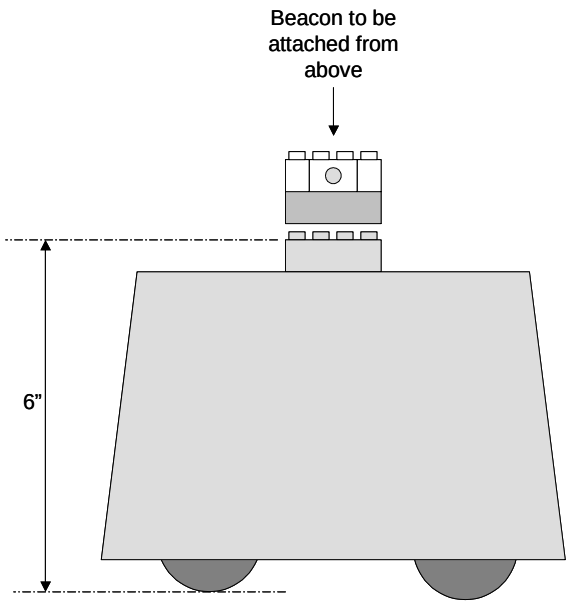
Robots may exhibit “variable geometry” after competition heat start. Robots may deploy structure which extends beyond their starting limited size.

Robots will be limited to 3 lbs. Note that the competition weighing scales will have an accuracy of +/- 5%. Therefore any robot weighing more than 2.85 lbs may become subject to a weight based elimination.

All robots will be designed to support an organizer supplied lamp structure which will consist of four Lego brand 9 volt 1x2 lamp bricks mounted at right angles on top

Beacons will either be constructed from Lego lamp bricks or more efficient IR emitters mounted around a 4x4 round brick as shown based on light sensor sensitivity testing to be carried out at GMU facility.





of a 4x4 stud brick height structure. The center of this structure mount (4x4 stud area) must be within 2 inches of the vertical center of the robot (defined as the line extending vertically upward from the center of gravity of the robot when the robot is set on a leel surface). This structure will have a Lego 9 volt compatible wire which must be supplied with a constant 8-9 volt supply during the contest. If the robot cannot supply this power, space must be provided to accommodate a small 9v battery pack, to be supplied by the organizer, which must fit within the 6 inch height, 8 inch diameter and 3lb weight limits. The weight of the lamp asssembly is not included in the weight limit.
Since robot size is limited, this 360 degree visible light beacon may be used by competing robots to detect each other using Lego light sensors.

All competition heats will start with robots placed side by side facing opposite directions. When the competition heat starts, each robot must delay for 5 seconds before moving. Within 5 seconds of the start of movement, each competing robot must make a turn to the left or right of at least 45 degrees unless perturbed by contact by the other robot. (This turn will be estimated by eye by the organizers and will be used to indicate that the mechanical design of the robot permits it to make controlled turns.)

Robots must be constructed of 100% Lego brand parts. No glue, melting or modification of Lego brand parts is allowed. (Non Lego brand batteries are permitted ;)

Robots may not make use of active agression, ie; robots may not employ any devices or structures which specifically aim to damage or disassemble competing robots. Techniques which are designed to push, tip or turn the opponent are highly encouraged however.

Robots must be totally autonomous. Remote controlled robots will be disqualified.

If one robot clearly leaves the arena, the other will be declared as the winner, even if it subsequently exits the arena.

A start to finish time of 3 minutes will be allowed.

Robots that are clearly deadlocked within this 3 minute time period may elect to finish their attempt early if they agree to a draw.

Robots that are still both in the arena at the end of this 3 minute period will be scored as a draw.

For adherents to the metric system of measurement, please use the 1 inch is equivalent to 25.4 millimeters conversion for all dimensions given in this document.

The organizers are not and cannot be held responsible for loss are damage to contestant’s robots as a result of taking part in this contest. Contestants enter the competition entirely at their own risk.