

5th International Robo Tech Olympiad - Mini-Sumo Robot Competition Rulebook

1. Overview

Two autonomous robots are placed in a ring. The robots attempt to avoid falling out or being pushed out of the ring. The first robot that touches outside the ring loses the round. The first robot to win two rounds wins the match.

2. Mini-Sumo Robots

Autonomous Mini-Sumo robots must be self-propelled and self-controlled, without tethers or external assistance. After positioning and starting the robot, no remote control, external power, or manual intervention is allowed. The robot must operate autonomously until the round ends.

2.1. Mass

- Mini-Sumo robots may have a maximum mass of **800 grams**.
- A scale will be used to verify the weight before the competition.
- Devices such as helium-filled balloons to reduce weight are not allowed.

2.2. Size

- At the start of each round, Mini-Sumo robots must not exceed **15cm in width and 15 cm in length**.
- There is no height limit.
- Once movement is allowed, the robot may twist, fall, or expand beyond the initial size limits.

2.3. Harmlessness

At all times, robots must be non-offensive, non-destructive, and non-harmful to humans, robots, and the facilities. Judges may require safety modifications at any time. Robots will be disqualified if they exhibit harmful behavior.

Sumo Robots must not:

- Emit smoke or fire
- Leak, stain, or soil the ring
- Disperse powder, grit, or grime

- Spray, throw, or use projectiles
- Jam, shock, or electromagnetically interfere
- Snare, entangle, or use nets/ropes
- Scratch, gouge, or scrape

Exception: Some damage from scoops, collisions, and battles is expected and acceptable.

2.4. No Flying

- Robots must not fly or generate lift to detach from the ring surface.
- Floating portions such as cameras or sensors are allowed as long as a major portion of the robot remains pushable.

2.5. Traction Regulations

- **Suction, magnets, and sticky wheels** for increased traction are prohibited.
- To test wheel stickiness, the robot will be placed on paper and lifted. If the paper lifts, the wheels are too sticky.

3. The Ring

- The ring is a **77cm diameter** flat disc made of rigid material (wood, aluminum, or steel).
- The surface is **black with a 2.54cm (1-inch) wide white border**.
- Two **brown starting lines** are marked at the center.

4. The Contest

The Mini-Sumo tournament will follow a **double-elimination** format. All robots will be inspected before the competition to verify rule compliance.

4.1. A Match

- Matches are conducted in the ring.
- A match consists of several rounds.
- The first robot to **win two rounds** wins the match.

4.2. Placement

- The better-ranked robot (or previous round's winner) is placed first.
- The other robot is placed second.
- Once placed, robots cannot be moved or rotated.
- Each robot must be placed behind its respective starting line.

4.3. Starting Procedure

- Robots must have a clear start method (e.g., button press, timer activation).
- The referee will signal "Go", and both contestants must start their robots and move away from the ring.
- Robots must remain **motionless for at least 5 seconds** after activation.

4.4. No Start & False Start

- If a robot fails to start, the contestant may notify the referee to halt the countdown.
- If a robot moves before the **5-second waiting period**, it commits a **false start**.
- Two false starts by the same robot result in a **loss of the round**.

4.5. Out of Bounds (Out)

A robot is considered **out** and loses the round if:

- Any part of the robot touches outside the ring.
- Any detached piece, no matter how small, touches outside the ring.
- A robot lands outside while resting on an opponent's part (e.g., scoop, whisker).

4.6. Contestant Stoppage

If a contestant stops the round after it starts, they forfeit that round.

4.7. Referee Stoppage

The referee may restart or end a round under the following conditions:

- **Restart if:**
 - 3 minutes have passed with no winner.
 - No progress has been made for a prolonged period.
 - The robots are entangled or deadlocked.
- **End the round** and declare a winner if:
 - A rule violation occurs (e.g., fire, damage, or interference).
 - No progress is likely, even after a restart.

5. Code of Conduct

- Participants must adhere to fair play and respect referees' decisions.
- Judges' rulings are final and binding.
- Any unsportsmanlike conduct may lead to disqualification.

This rulebook applies to the **5th International Robo Tech Olympiad** organized by **Uttara University and Robo Tech Valley**. All participants must review and follow these regulations to ensure a fair and exciting competition. Good luck!