LEGO I MINI SUMO

PARTICIPANTS

1. Participants may compete individually or in teams of two: a robot operator and an assistant.
2. Each participant (team) may register only one robot.
3. The operator is responsible for preparing and placing the robot in the ring. In unforeseen circumstances, the assistant may take over with the referee's permission.
3. Before the competition, each participant (team) must attend the technical inspection and register their robot at the time specified by the organizers.

CATEGORIES

Robots are divided into the following categories:
1. Mini Sumo.
2. LEGO Sumo Junior (ages 7–12).
3. LEGO Sumo (ages 13 and over).
1. The age category of a participant (team) is determined by the age of the participant or the oldest team member on the day of the competition.
2. Depending on the number of participants, the organizers reserve the right to combine the LEGO Sumo Junior and LEGO Sumo categories.

COMPETITION RING (DOHYO)

1. The competition ring is a black circle with a white boundary line (Tawara).
The white line is part of the ring. Ring dimensions are provided in Table 1.

Category	Height	Diameter	White line width	Material
Mini Sumo	≥ 18 mm	770 mm	25 mm	Wood
LEGO Sumo Junior	≥ 18 mm	770 mm	25 mm	Wood
LEGO Sumo	≥ 18 mm	770 mm	25 mm	Wood

Table 1. Ring dimensions.

2. The ring layout is shown in Figure 1. The ring diameter and markings may have a tolerance of ±4 mm.

3. An area outside the ring is provided for robots that leave the ring. The ring and the surrounding area are referred to as the ring area.

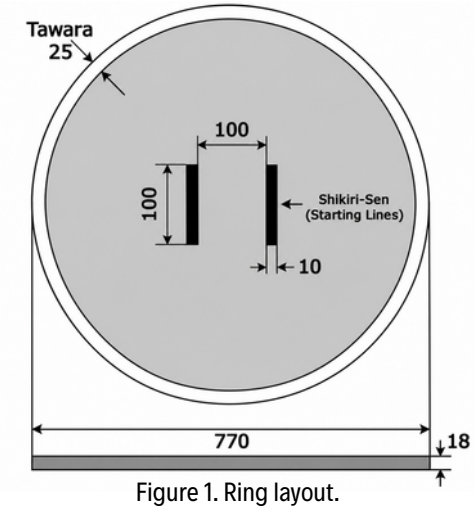


Figure 1. Ring layout.

ROBOT PLACEMENT IN THE RING

Robot placement procedures for each category are shown in Tables 2 and 3.

LEGO SUMO JUNIOR I LEGO SUMO	
1.	A starting marker is placed in the center of the ring, dividing it into four equal sectors.
2.	On the referee's instruction, both operators place their robots in opposite sectors at the same time (Figure 2).
3.	The robot's body must touch the white line.
4.	Once the robots are placed, the referee removes the starting marker. The robots may no longer be repositioned.

Table 2. Robot placement procedure for LEGO Sumo Junior and LEGO Sumo.

MINI SUMO	
1.	On the referee's signal, both operators place their robots behind the starting lines (Shikiri–Sen).
2.	The robot's projection must remain within the placement area (Figure 3). The robot may be placed at an angle as long as it does not extend beyond this area.
3.	Once placed, robots must not be moved. With the referee's permission, a lowered blade may be raised without moving the robot.
4.	The referee checks the positions. Incorrectly or late–placed robots must be repositioned.

Table 3. Robot placement procedure for Mini Sumo.

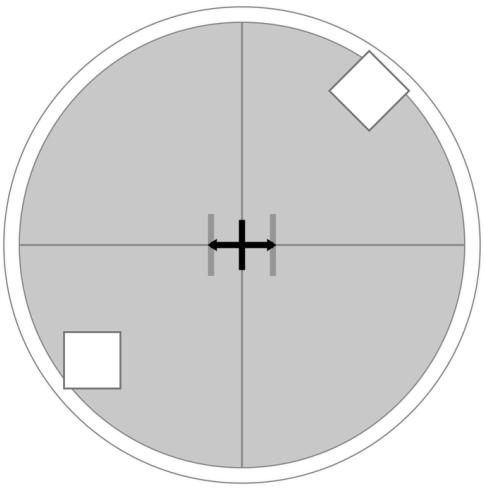


Figure 2. Robot placement for the LEGO Sumo Junior and LEGO Sumo categories.

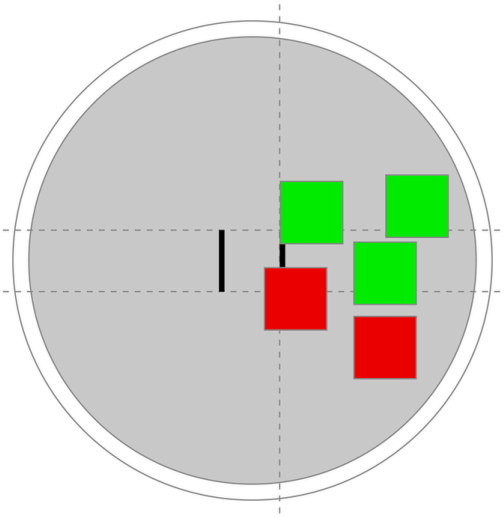


Figure 3. Robot placement for the Mini Sumo category. Green indicates correct positions; red indicates incorrect positions.

ROBOT REQUIREMENTS

Robot size and weight limits are shown in Table 4.

Category	Length	Width	Height	Weight
Mini Sumo	≤ 100 mm	≤ 100 mm	No limit	≤ 500 g
LEGO Sumo Junior	≤ 150 mm	≤ 150 mm	No limit	≤ 1 000 g
LEGO Sumo	≤ 150 mm	≤ 150 mm	No limit	≤ 1 000 g

Table 4. Robot dimensions and weight.

1. All robots must operate autonomously. External control during a match is prohibited.
2. Robots must be programmed to detect and respond to an opponent. If there are doubts about a robot's autonomy, the referees may inspect its control logic.

3. Robots may change size after the start but must remain in one piece. A robot that breaks into separate parts loses the match. However, the loss of small parts with a combined weight of no more than 5 g does not result in a loss.
4. Any devices that generate additional downward force against the ring are prohibited.
5. The number provided by the organizers must be attached to a clearly visible external part of the robot.
6. Additional robot requirements are listed in Tables 5 and 6.

LEGO SUMO JUNIOR I LEGO SUMO	
1.	The robot must be built using only original LEGO or HiTechnic parts.
2.	The robot must use only batteries or rechargeable batteries recommended by LEGO.

Table 5. Additional robot requirements for LEGO Sumo Junior and LEGO Sumo.

MINI SUMO	
1.	When the robot is not competing, its blade must be covered with a removable protective guard, or the robot must be transported safely in a box.
2.	The robot must have a working IR Start/Stop module compatible with the referee's remote control. The IR receiver must be installed on top of the robot in an unobstructed position.
3.	Devices designed to interfere with the opponent's sensors, such as dedicated IR light sources, are prohibited.

Table 6. Additional robot requirements for Mini Sumo.

TECHNICAL INSPECTION

1. Each participant (team) must present their robot for technical inspection by the deadline set by the organizers.
2. The inspection covers the robot's dimensions, weight, starting and stopping functions, safety, and compliance with all robot requirements and restrictions.
3. If there are reasonable grounds for concern, a referee may inspect a robot again at any time during the competition.

LEGO I MINI SUMO

COMPETITION PROCEDURE

1. Depending on the number of participants, robots are divided into groups. Group assignments are determined randomly.
2. Each participant (team) must follow the competition schedule and respond to calls for matches. Failure to appear within five minutes of an official call results in a match loss.
3. The participant (team) with more match wins ranks higher.
4. If two participants (teams) have the same number of wins, the winner of their head–to–head match ranks higher. If more than two participants (teams) have the same number of wins, their number of wins against each other is considered.
5. If the rankings still cannot be determined, the following criteria apply in order:
a) Higher number of “Yuhkoh” points.
b) Higher point difference, calculated by subtracting the opponents' points from the points earned.
6. If the results are still tied, an additional match is held. If more than two participants (teams) are tied, each competes once against every other tied participant (team).

MATCH PROCEDURE

1. A match consists of three rounds and lasts up to three minutes.
2. A participant (team) receives one “Yuhkoh” point for each round won. The first participant (team) to earn two “Yuhkoh” points wins the match. Match time is counted only during rounds; time between rounds is excluded.
3. If only one “Yuhkoh” point has been awarded by the end of the match, the team that earned it wins.
4. If neither team wins a round during the match, the winner is determined by Yusei (dominance). If Yusei cannot be determined or the number of rounds won is equal, the match is extended by three minutes.
5. If a participant (team) earns one or more Yuko points during the extension, that participant (team) wins.
6. A break of up to 30 seconds is allowed between rounds to clean the wheels, make adjustments to the robot, and select a pre–programmed strategy.

LEGO I MINI SUMO

STARTING AND ENDING A ROUND

1. Before each round, both operators place their robots at the same time, following the referee's instructions and the placement procedure for their category.
2. Rounds are started and robots are stopped as specified in Table 7.
3. Robots may only be removed with the referee's permission. Any questions about the round result must be raised before removing the robots. The referee makes the final decision.
4. The procedures for starting and ending a round are described in Table 7.

Category	Starting a round	Ending a round
LEGO Sumo Junior ir LEGO Sumo	After the referee's signal, the operator activates a five–second timer and steps back. The robot starts moving after five seconds.	After the referee's signal, the operator stops the robot.
Mini Sumo	Once the participants have stepped back, the referee sends the IR Start command. The robot starts operating immediately.	The referee sends the IR Stop command.

Table 7. Starting and ending a round.

POINT SCORING

One “Yuhkoh” point is awarded to a participant (team) when:
1. Their robot pushes the opponent's robot out of the ring, causing any part of it to touch the surface outside the ring.
2. The opponent's robot drives or falls out of the ring on its own and touches the surface outside the ring.
3. One or more wheels of the opponent's robot move beyond the edge of the ring, and the referee determines that the robot can no longer return to the ring (“Shinitai”).

4. A participant (team) fails to appear, withdraws, experiences a robot failure, or is removed from the match. The opponent (team) wins and is awarded two “Yuhkoh” points. If the opponent already has one point, only one additional point is awarded. The losing participant (team) keeps any points already earned.
5. In the case of “Yusei” (dominance), the referee may award one “Yuhkoh” point to a participant (team) based on the robot's strategy, movement, and effective attacks.

RESTARTING A ROUND

1. A round is restarted if the robots become entangled or block each other's movement, and the referee agrees to a restart with the consent of both operators.
2. A round is restarted if both robots touch the surface outside the ring at the same time and it is impossible to determine which touched first.
3. If one robot fails to start moving, the start is repeated. If the same robot still fails to move after two repeated starts, one “Yuhkoh” point is awarded to the participant (team) whose robot starts moving.

STOPPING A MATCH

1. If a participant is injured or a dangerous situation occurs, the referee stops the match. The match resumes once the cause has been resolved.
2. If a participant (team) cannot continue the match, the opponent (team) wins.

VIOLATIONS

1. Participants must comply with all robot requirements, restrictions, and referee instructions. Insults, unfair conduct, and dangerous behavior are prohibited.
2. A warning is issued for an unjustified request to stop a match, exceeding the 30–second break without the referee's permission, violating the robot placement procedure, a robot starting to move too early, or touching a robot without the referee's permission.
3. Two warnings during the same match result in one “Yuhkoh” point being awarded to the opponent (team). Warnings are reset at the start of each new match.

4. Serious violations include unsafe handling of a robot, failure to move to the safe area, failure to follow referee instructions, external robot control, and the use of prohibited parts.
5. A serious violation results in a match loss or disqualification. The head referee and/or organizers decide on the penalty based on the nature of the violation.

ORGANIZATION

1. The organizers aim to minimize environmental interference with robot sensors. However, lighting conditions and IR interference may affect robot performance. Participants are advised to test their robots under different lighting conditions.
2. Referees have the right to photograph robots during technical inspection.
Participants are responsible for safely operating and transporting their robots, as well as for any incidents caused by the participant (team) or their equipment.
3. Any questions about the match procedure or result must be resolved at the ring immediately, before the robots are removed. In the event of a dispute, the final decision is made by the head referee and/or organizers.