3KG LEGO SUMO COMPETITION RULES

1. Introduction

This document outlines the rules for the 3kg LEGO® Sumo robot competition.

2. Description of the Competition

One operator and four helpers can be registered for each robot (there can be a maximum of 5 team members in total). However, only one operator is allowed to guide the robot during the encounter. The area where matches take place is called Dohyo . Both contestants who are called to Dohyo for the match accept the competition rules, winning conditions and must participate in the competition using only autonomous robots of their own making. A competition is held between two robots prepared in accordance with the category rules. The robots are placed on the dohyo by the contestants at the same time in a symmetrical manner determined randomly by the referee. On the command of the referee, they start the robots and move away from the dohyo . The robots work autonomously after a 5-second waiting period. The robot that manages to throw its opponent off the dohyo wins a round. The robot that wins two rounds is declared the winner of the competition. The winning robot is announced by the referees.

2.1. Fixture

The competition format is determined by the tournament organizers depending on the number of participants. If the number of participants is large, subgroups are formed to decide which competitors will participate in the final tournament. In group matches, robots are divided into groups of 3, 4 or 5 depending on the number of participants. One or two robots with the highest scores in the group matches advance to the next round. Re-matching is made between the robots that advance to the next round, and this process continues until a maximum of 8 robots remain. Depending on the number of remaining robots, the competition continues in elimination or points format. If the competition continues with points; Each robot competes with each other and collects points for the round it wins. The robot with the higher score gets ahead in the rankings. If the scores of two robots are equal, the robot that won their mutual competition takes the lead. Ranks are determined according to the score ranking. If the competition continues with the elimination method; Quarter final, semi final, third place and final competitions are held respectively.

2.2. Classification and Rating

Fibonacci International Robot Olympiad Lego Sumo competitions take care to classify and grade by taking into account education level and age groups. It can be divided into 5 basic groups: kindergarten (0-6), primary school (6-10), secondary school (10-14), high school (14-18) and university (18+). The age group and education level of the team is determined by the age or education level of the oldest member of the team. It is the responsibility of the team mentor to ensure that teams are registered in the correct age category . If during the competition it is determined that the team is registered in the wrong age category, the robot of this team will be disqualified from the competition.

Note: Teams in the younger age group are allowed to compete in the older age group. The organizers reserve the right to check the age of contestants during the competition. In case of violation, the robot of the team that violated the rules will be **disqualified** .

3. Competition Field Description (Dohyo)

will be held on a round wooden field with a diameter of 100cm, called " Dohyo ". The field is painted with a 90cm black circle in the center and the remaining area white, as shown in Figure 1. The white line on the outside of the Dohyo is called Tawara and is 5cm wide in white color. The area in the middle of the dohyo is matte black. Dohyo is placed 5cm above the ground. Try to place the dohyo so that it is 5cm above the ground .

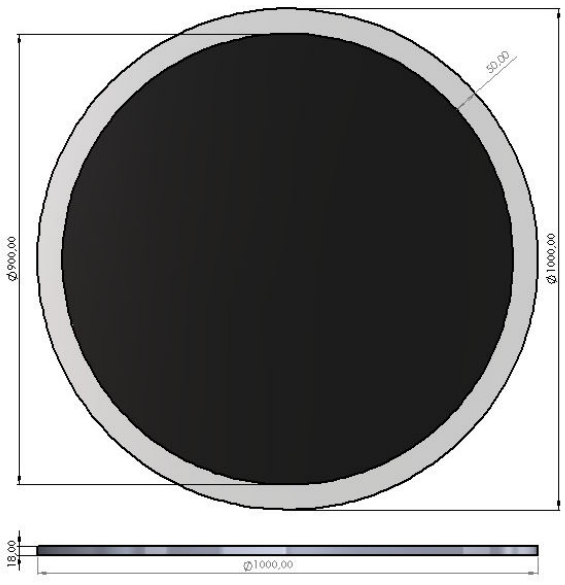

Figure 1: Dohyo Dimensions

Class	Height	Diameter	court material
3kg LEGO® Sumo	2 - 5cm	100cm	Wood/Plastic

Table 1: 3 kg LEGO® Sumo Course Parameters

3.1. starting area

The robots can initially be placed on both sides, in line with the starting line, as in Figure 2, and in the position desired by the user, with their projections on the white outer line (tawara). Once the robot is placed, it can no longer be moved. In cases where the winning robot cannot be determined, such as a draw, the referee may request that the robots start in a different starting position.

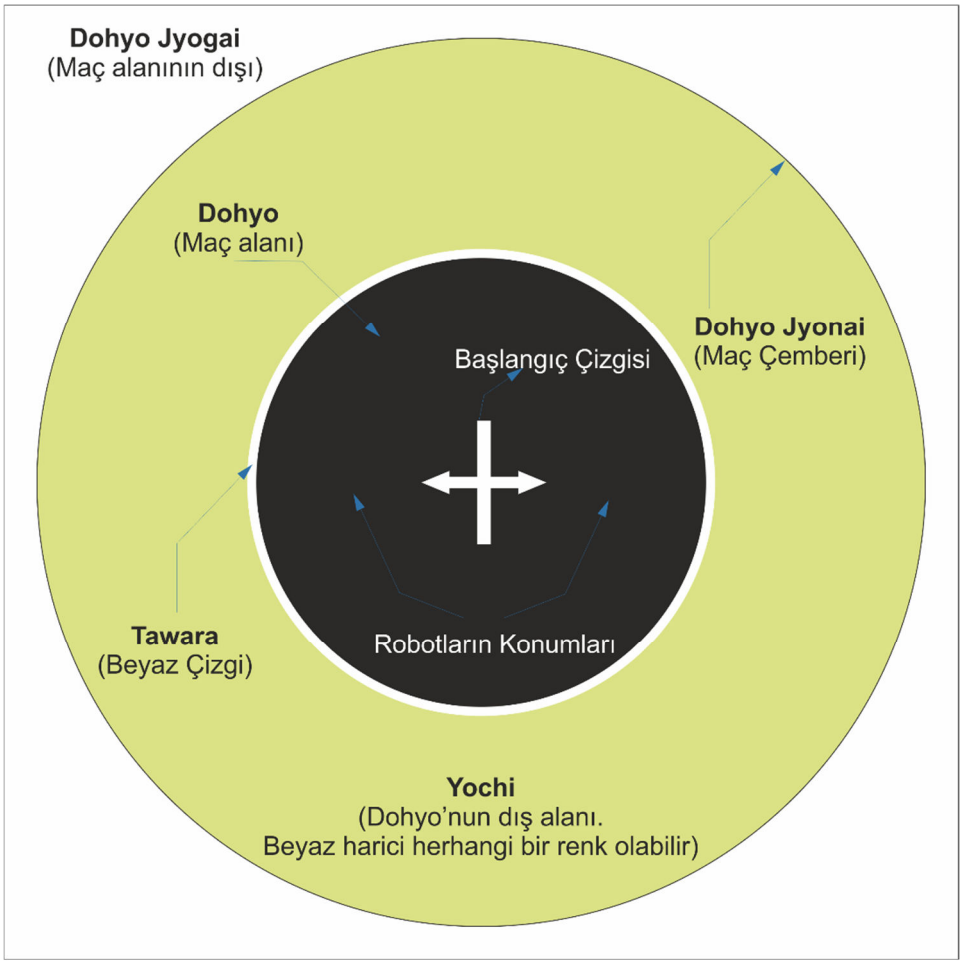

Figure 2: Match area and robots' starting positions

4. Robot

4.1 3 kg LEGO® Sumo robots must have a maximum width and length of 20cm (200mm), a height of 30cm (300mm) and a weight of at least 2000g and at most 3000g.

Class	Weight	Length*	Width*	Height*
3kg LEGO® Sumo	2000-3000gr	20cm	20cm	30cm

Table 2: Size and Weight Limitations

Note: Dimension box for 3 kg LEGO® Sumo robots is 20.2 x 20.2 x 30.2 cm with +2 mm tolerance

4.2 Robots cannot be divided, cannot leave or throw away any part of themselves during the competition. Competitors must secure the parts of their robots so that they do not fall. If the pieces falling from the robot weigh 10 grams or more, this will cause the contestant to lose the round.

4.3 The height and width of the robots may increase by a maximum of 10 cm after the start of the tour, but the robot must remain in one piece.

4.4 Robots cannot contain equipment (e.g. flashing lights, mirrors) that will affect or blind the opponent's sensors .

4.5 After the start command given by the referee, the robots must wait 5 seconds and then start working. This period is controlled by the referees during technical controls and during the match.

4.6 Robots may not contain any components designed to harm the Opponent (components that rotate to lift or knock down the opponent during the match, or components that may tear off any part of the opponent). Robots may not contain any components that could damage or scratch the Dohyo surface, except in Robot collisions.

4.7 Liquid, powder and gas cannot be used as weapons against the opponent.

4.8 It is forbidden to use flammable materials in robots.

4.9 The use of components that will restrict the movements of the opponent robot (the robot throwing a net at the opponent, tying it, etc.) is prohibited.

4.10 Robots should not contain any parts such as glue or suction cups that secure them to the Dohyo.

5. Match Rules

5.1 Competitors must be in the competition area, ready for the competition, within 3 minutes after the names of their robots are announced. Otherwise, the match will start and the side that does not show up will lose the round .

5.2 After the match starts, the parties are given 1 minute of preparation time. At the end of the preparation period, both parties must be present with their robots next to the dohyo where the competition will be held. The side that is not in the competition area at the end of the preparation period is eliminated from the competition.

5.3 Parties have the right to one three-minute technical break for each match. The party taking a technical timeout may intervene in the structure of their robot. During the technical break, an assistant of the contestant can enter the competition area with their belongings. The contestant who is in the competition area cannot leave the competition area or give his robot to an assistant outside the competition area. During the match, the competing robot cannot leave the competition area for any reason.

5.3.1 If the other party wants to interfere with their own robots, they must also use their technical break rights at the same time.

5.4 The referee decides how the lineup will be in each round. After the preparation period is over, the referee explains to the parties how the robots will line up. As the referee counts down, the parties simultaneously place their robots on the Dohyo.

5.5 Once the parties place their robots on Dohyo, no interference with the robots is allowed.

5.6 Robots that do not move within 5 seconds after the command given by the referee after the round starts, lose that round .

5.7 A match can last a maximum of 3 minutes, each round a maximum of 1 minute. If both robots cannot throw each other out of the dohyo at the end of this period , the robots are stopped by the referee and the round is repeated.

5.8 The round ends with one robot touching the ground outside the dohyo . The first robot to touch the ground is considered defeated.

5.9 If one of the robots becomes unable to move in the competition (turning upside down, wheels falling off the ground, etc.), the other side wins the round.

5.10 In competitions, the robot that wins 2 rounds becomes the winner of the match.

6. Objections

Referees' decisions are final and not subject to subsequent review. Complaints must be made during or immediately after the match. If a resolution cannot be reached with the referee, claims must be submitted immediately to the Fibonacci International Robot Olympiad Head Referee. Complaints made after this point will not be accepted. In case of disagreement or dispute, the final decision will be made by the referees and/or organizers.

Note: Rude behavior will not be tolerated and a team that does not respect the decisions of the referees/head referees may be disqualified by the head referee and/or event organisers.

6.1 Competitors **cannot raise objections due to field elements after the round has started** . These factors are eliminated by the referees with warnings made before the round.

6.2 The competitor may make a verbal objection to the referee for the result of a round after that round . When the next round begins, the contestant loses the right to verbal protest.

6.2.1 The contestant may present the evidence he/she has to the referee within the scope of the objection. The referee can decide according to his own logic when there is a situation outside the rules.

6.2.2 Contestant; After the competition is over, the person can submit a written objection to the verbal objection decision until the next elimination draws are announced. This objection must be written and submitted to the Chief Referee in the form of a petition .

6.2.3 The Chief Referee makes final decisions on appeals. Decisions cannot be appealed again.

6.3 Competitors who do not comply with the referees' warnings or disrupt the course of the competition will be disqualified.

6.4 Fibonacci Robot Competition reserves the right to make any changes it deems necessary in the rules.

7. Marking of Robots

Robots must be checked by the referees before the tournament and their number labels (Robot Number / Team Their IDs should be labeled with). These stickers are provided by the competition organizers. The sticker cannot be placed on the robot or any other component that could interfere with the operation of the opponent's sensors . Before each new tour, robots must undergo technical control again.

8. Changes and Cancellations to the Rules

Changes and cancellations in the specifications are made by the main organizer of the competition in accordance with the regulations of the competition organizing committee.

9. Security Measures of the Competition

Class	gloves	Glasses
3kg LEGO® Sumo	Not necessary.	Not necessary.

Table 3: Security Requirements

9.1 Competitors will not be allowed into the competition area with any electronic device (e.g. phone, tablet, RF remote control).

9.2 It is forbidden to interfere with the robots without stopping the competition. Competitors who intervene despite this will be disqualified.

9.3 Robots with swollen batteries and leaked fluids cannot be raced. If dangerous situations such as short-circuiting or smoke are detected in a robot during the competition, the competition will be stopped and the robot will be disqualified.

10. Disclaimer

Lego Sumo Category must work carefully and take the necessary precautions at every stage of the competition. Despite this, Fibonacci International Robot Olympiad Organizers disclaim all liability for any material damage or injury that may occur .