

# Baltic Robot Sumo Rules

For 3kg Sumo and Mini Sumo robots

## Chapter 1 General Rules

### Article 1. Objective

This document defines rules for 3kg Sumo and Mini Sumo robots. These rules are almost exact copy of the official All Japan Robot Sumo Tournament rules, with minor adaptations for European players. Being officially certified Pre-Tournament for All Japan Robot Sumo Tournament Grand Finals, Baltic Robot Sumo strives to keep these rules as close as possible to the original Japanese rules.

### Article 1.1. Robot classes

Baltic Robot Sumo has following classes of robots:

1. 3kg Sumo, autonomous only
2. Mini Sumo, autonomous only
3. Roomba Sumo, autonomous only
4. Other categories

This document defines rules for 3kg Sumo and Mini Sumo robots.

## Chapter 2 Definition of a Match

### Article 2. Definition

For every unit of robot, a single operator and an assistant can be registered. However, the assistant is not allowed to operate the robot. Both contestants are required to follow the competition rules, definition of winning (defined below), compete using own made autonomous robots at the pre-allocated Dohyo area. The winner will be determined by the judges.

## Chapter 3 Specifications of Dohyo Jyonai

### Article 3. Definition of Dohyo Jyonai

1. Dohyo Jyonai (the match ring area) consists of Dohyo (the match ring) and Yochi (the outer layer area of Dohyo). The rest of the space will be deemed as area Dohyo Jyogai (outside Dohyo area).

2. The specification of Dohyo

Dohyo (the match ring) is the circle that is covered by a board of black color.

<i>Class</i>	<i>Height</i>	<i>Diameter</i>	<i>Top material</i>	<i>Bottom material</i>
3kg Sumo	5.0 cm	154 cm	Steel	Aluminum/steel
Mini Sumo	2.5 cm	77 cm	Plastic	Wood/plastic

3. Shikiri-sen (the starting lines)

Shikiri-sen lines are indicated as two brown lines in the center of Dohyo.

4. Tawara (the white line)

Tawara line is the white line around Dohyo. Tawara line is considered as within Dohyo.

<i>Class</i>	<i>Shikiri width</i>	<i>Shikiri length</i>	<i>Shikiri separation</i>	<i>Tawara width</i>
3kg Sumo	2 cm	20 cm	20 cm	5.0 cm
Mini Sumo	1 cm	10 cm	10 cm	2.5 cm

## 5. Yochi

Yochi is the 100cm area from the outer layer of Dohyo. However, the color of Yochi should be other than white and configuration and materials can be chosen freely in the extent that doesn't detract mind of this regulation.

## Chapter 4 Specifications of the Robot

*Article 4. The specifications of the robot are stated as below:*

### 1. The specification of the robot

<i>Class</i>	<i>Weight</i>	<i>Length</i>	<i>Width</i>	<i>Height</i>
3kg Sumo	3.0 kg	20 cm	20 cm	unlimited
Mini Sumo	0.5 kg	10 cm	10 cm	unlimited

### 2. The autonomous type robots - Starting the movements

The match will begin five seconds after the operating switch has been turned on.  
(Please make the necessary preparations)

### 3. The autonomous type robots - Terminating the movements

As a safety measurement, "remote terminate function" has to be built in. In addition, the remote terminate function should be activated only via the remote control.

<i>Class</i>	<i>Remote terminate function</i>
3kg Sumo	required
Mini Sumo	not required

### 4. The conditions of usage of blades

The usage of spare edge component for blade is prohibited. Components that maybe dispersed off from the robot body when in contacts with other robots or during the movement are prohibited as well.

*Article 5. Movements of autonomous type robots*

The movements of the robot should be designed to detect the movements of the opponent and respond/attack accordingly. If its movement is suspicious, operation check maybe made by indication of the judges. \*The check is carried out as the condition that a match terminates without program modification.

*Article 6. The usage conditions of "remote terminating function" of autonomous type robots*

During the competition, the remote control of the remote terminating function should be placed in pre-allocated station, and shall not be used until the terminating instruction is issued by the judges.

*Article 7. Prohibited items in design and manufacturing of the robots*

1. Any components that may affect the operation of opponents such as flash, are prohibited.

2. Any components that may scratch or cause any damages on the surface of Dohyo are prohibited.

3. Liquid, powder or gas are prohibited to be used as a weapon or attack mechanism against the opponent.

4. Inflammable components should not be installed in the robots.

5. The robot must not include a throwing device.

6. The robot must not include any parts that fix the robot to Dohyo surface and prevents it from moving (such as suckers, glue and so on).

## Chapter 5 Game Principles

### Article 8. Game principles

1. In principle, the competition time is based on three matches in three minutes. Team who get two Yuko points (effective points) within the competition time will be the winner.
2. If only one single Yuko point has been got by the end of the competition time, the team that has get the Yuko point will be the winner of the competition.
3. Within the competition time, if neither of the team wins any matches, the winner will be decided according to chapter 15 - Yusei. If Yusei cannot be decided, or the number of winning match is the same for both teams, the competition will be extended by three minutes. In the extension time, the team who get one Yuko point in advance will be the winner of the competition.
4. Before the competition (up to 2 Yuko points) is over, all maintenance is prohibited. However, it's allowed in stand by time to the next match and program change for autonomous robots during the match.

## Chapter 6 The Execution of the Competition

### Article 9. Safety Measurements

1. For the safety of the contestants and judges, goggles and gloves should be worn during the match.

<i>Class</i>	<i>Protective gloves and goggles</i>
3kg Sumo	required
Mini Sumo	not required

### Article 10. Beginning of the Game

1. The match will begin following the instruction of the judges. Contestants will bow to each other before entering Dohyo Jyonai. After that contestants shall put their robots on Shikiri-sen lines (any part of robot shall not go over the line toward the opponent) or within the extend lines vertically from the both edges of Shikiri-sen lines to Tawara white line.
2. Contestants should place the robots according to the pre-allocated Dohyo and the sign board displayed by the judges. Robots are not allowed to be moved after they have been placed.
3. For autonomous robot models, the operating switch should be pressed upon the "begin" announcement of the judges. The match will begin five seconds after the switch has been turned on. Contestants are required to leave Dohyo immediately.
4. Should there be any scratches/dirt on the Dohyo, the judges will decide if the match can continue on the same Dohyo or changing to a new Dohyo is required.

### Article 11. The Ending of the Game

1. The competition will officially end upon the announcement of the main judge. Contestants are required to carry the robot from Dohyo before bowing to each other and leave Dohyo Jyonai.
2. Upon the ending of the match, contestants should follow the instructions issued by the judge and terminate the robots. For 3kg autonomous models, contestants are required to terminate the robots using the remote control.

*Article 12. Torinaoshi (Restart of a match)*

In the situations below, the match will be suspended and resumed.

1. Both robots are stuck facing each other and further movements are not possible or both robots are marching against each other.
2. Both robots fall out into the outside Dohyo simultaneously.
3. Other situations when win/lose is not possible to be determined.
4. If winning cannot be determined after Torinaoshi, the main judge may place the robots in the allocated position and resume the game within the allocated time.

## Chapter 7

### Yuko (effective) point, Shinitai and Yusei (pre-dominance)

*Article 13. Yuko (effective) point*

The winning is determined based on the following situations.

1. If the opponent robot is forced out of Dohyo. (The robot touches outside Dohyo area)
2. The opponent robot falls out of Dohyo by its own and touches outside Dohyo area.
3. As per “the Shinitai” condition stated on *Article 14*
4. As per “the Yusei (pre-dominance)” situation stated on *Article 15*
5. If “Keikoku (warning)”, defined in *Article 6*, was given twice to the opponent.
6. If the situations stated under *Article 17* Hansoku (foul) were determined.
7. A winner who has been granted a win without a match in accordance with *Article 20 Item 3*, receives two Yuko points (if it has already had one Yuko point then one point will be granted) and the acquired Yuko point(s) by the opponent who lost the game remain effective.

*Article 14. Shinitai*

A single win will be granted on the “Shinitai” situation if one or more wheels leave Dohyo, and not able to return to Dohyo. One Yuko point will be given to the opponent.

*Article 15. Yusei (pre-dominance)*

One Yuko point will be granted on the Yusei (pre-dominant) situations below:

1. In the matches, judges may based on the strategy, movements and skills to grant one Yuko point to the party with the Yusei (pre-dominant) condition
2. On the conditions stated on *Article 8, Item 3*

## Chapter 8

### Hansoku (foul) and Penalty

*Article 16. Keikoku (warning)*

A contestant who takes any of the following actions will receive a Keikoku (warning). If a participant receives two Keikoku (warnings), one Yuko point will be granted to the opponent.

1. The operator or a possession of the operator (remote control etc.) enters Dohyo Jyonai before the judges' calls of match end.
2. There is a movement of the robot before the match begins (physical extension and movements)
3. *Article 6* is violated
4. The robot is repositioned after it has been placed in Dohyo.

5. The contestants violate safety measurements stated in *Chapter 9, Item 2*
6. Any other actions that may be deemed unfair.

*Article 17. Hansoku (violations)*

If the following situation happens, the opponent or both parties will be granted one Yuko point.

1. If the components were dropped from the robots, and the dropped components were in moving condition.
2. If the robot is unmovable.
3. If both of the robots are moving but no contacts are made.
4. If there is fire from the robot, or the situation that identified as similar with fire from the robot. Or when there is application from contestants to terminate the match.

*Article 18. Hansokumake (loss by violation)*

A contestant who takes any of the following actions will lose the game by violation:

1. A contestant does not show up at the appointed Dohyo when called at the beginning of the game.
2. A contestant who sabotages the game. For example, by intentionally breaking, damaging or defacing Dohyo.
3. A contestant violates *Article 4* "Specification of the robots".
4. If the movements listed on *Article 5* "The requirements of autonomous robots" are not made.
5. If the contestant does not meet requirements stated on *Article 9, Item 1*

*Article 19. Sikkaku (disqualification)*

A contestant who takes any of the following actions will be disqualified and forced to leave the game and will not be on the ranking list:

1. A contestant's robot doesn't meet the "Specifications of the robots" stated in *Article 7*.
2. A contestant displays unsportsmanlike behavior. For example, using offensive language or assaulting opponents or judges
3. A contestant intentionally injures the opponent

## Chapter 9 Injuries and Accidents

*Article 20. Request for suspension*

1. When a contestant is injured, and the game can not be continued, a suspension can be requested by the contestant.
2. In the event above, the judges will make necessary arrangements for the game to be resumed immediately.
3. If the arrangements made do not enable match to be resumed, the opponent will be granted a win without match.

## Chapter 10 Objections

*Article 21. Objections to the judges*

No objections to the decisions of the judges will be considered.

## Chapter 11 Specifications of robot markings

### *Article 22. The East-West direction*

The east west direction of Dohyo is determined based on the position of the judges. The right hand side of the judges marks the east, and vice versa.

### *Article 23. Mark on the robot*

The east side contestant must put red marks on the robot. The west side contestant must put blue marks in the same places.

At Baltic Robot Sumo, color coding may be used along with numbers. Judges may request to put additional markings on robots or participant's vests.

<i>Class</i>	<i>Color vest with robot number</i>	<i>Additional markings</i>
3kg Sumo	required	on request
Mini Sumo	required	on request

## Chapter 12 Others

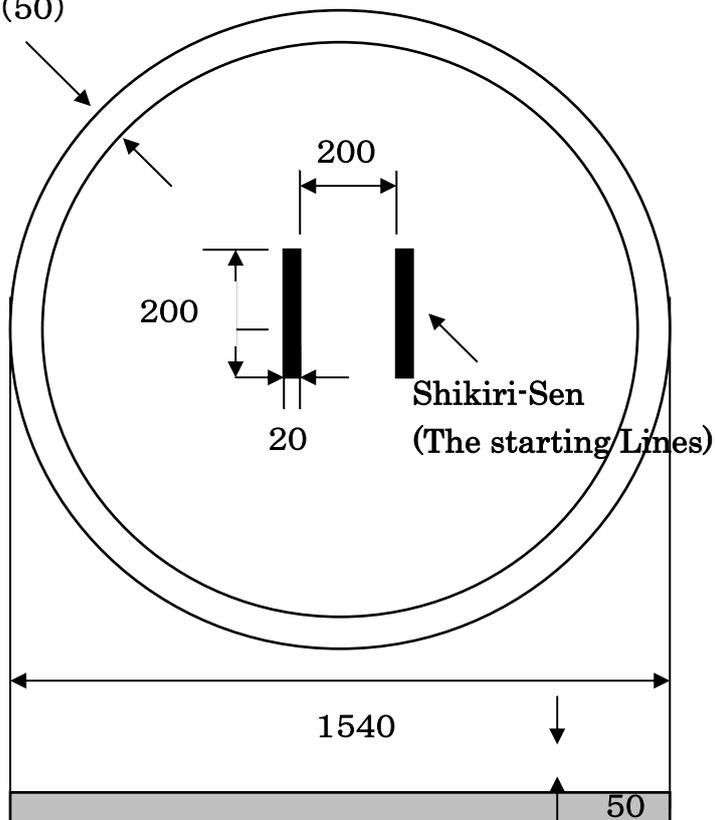
### *Article 24. Modifications and abolition of the Rules*

Modifications or abolition of the Rules are adopted by the chair person of the Tournament through deliberation of Tournament committee's regulation

## Support documentation for match regulation

### 1. Specification of dohyo (match ring) (unit:mm)

Tawara (50)

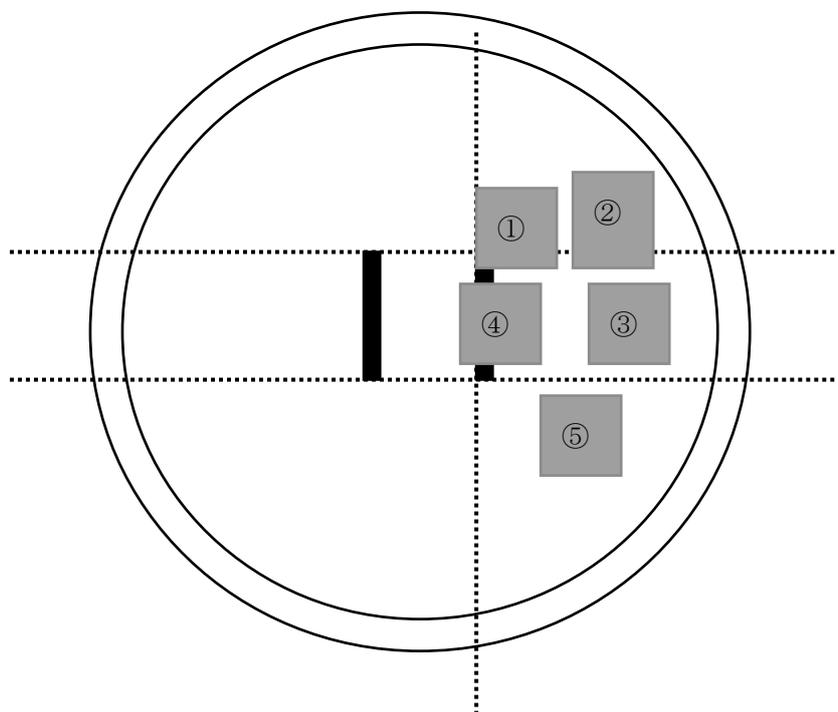


- Diameter.....1,540mm
- Material.....SPCC  
(JIS: Cold-reduced carbon steel)
- Colors
  - Dohyo area.....black
  - Shikiri-Sen.....brown
  - Tawara.....white
- Surface illuminance  
.....more than 500 lx.

### 2. How to put robots on the dohyo(match ring)

Any part of participant's robot shall not go over the line toward the opponent and robot should be placed on and within the extended lines vertically from the both edges of Shikiri-Sen(starting line).

Ex. ①~③ are in right place ④ and ⑤ are in wrong.



### 3. Layout

