Prairie Sumo Tethered

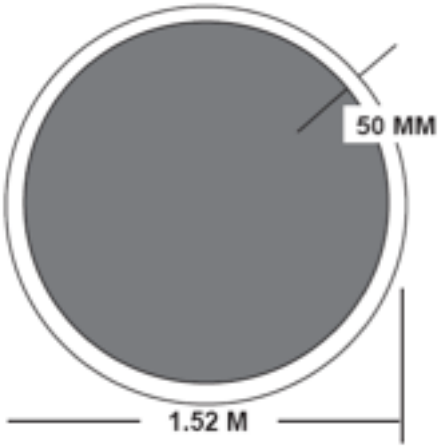
Effective November 26, 2015

Code:	PST
Control:	Tethered
Open to:	Gr 12 (see below)
Max Robot Size:	1 meter perimeter
Weight limit:	3 kilograms
Size of Playing field:	1.52 meters (see details below)
Explanation:	The object is for two robots to try to push each other out of the ring.

For robot size, weight, ring diameter and competitor eligibility [Top Grade Limit], consult the following table:

Type	Class	Group	Max Size	Max Weight	Top Gr Limit	Ring Dia.
Prairie Sumo	**Tethered**	**PST**	**1m Perimeter**	**3 Kg**	**Gr 12**	**1.52 m**
Prairie Sumo	Auto	PSA	1m Perimeter	3Kg or 3.2Kg*	University	1.52 m

Starting Positions



Preface: **The** Manitoba Robot Games (MRG) has opted not to follow the official FSI All Japan Robot Sumo Tournament (FSI-AJRST) rules. This has been done in order to tailor competitions to available components and facilitate greater competitor participation.

Match Definition: **A match** shall be a competition between two robots. Each robot must have a designated driver. The driver may not be changed within a match unless they are injured or become ill and cannot physically continue. Each robot competes to push its opponent beyond the perimeter of the defined Sumo Ring (playing field).

Playing field: **The** diameter of the playing field is as specified in the above table. The border consists of a 5 cm white border at the edge and within the diameter of the playing field.
The interior of the playing field is black in colour. The surface of the playing field is made of laminate and sits approximately 7 cm above ground level.
Five holes have been drilled into the surface of the playing field, and objects may be attached through these holes to provide obstacles, around or over, which the robots must navigate.

Robot Specifications: **The** robot must be able to be constrained (surrounded) by a flexible sheath 1 meter in length. There are no restrictions on height.

The maximum weight including accessories, excluding the hand controller and tether, must be less than or equal to that specified in the above table as weighed on the scale provided by the MRG for registration for the competition. (It is highly recommended that a method be incorporated into the robot design to adjust the weight if the intention of the team is to attain the maximum weight at registration).
Any robot found losing its body parts will also lose the match except for screws or nuts (each no more than one cubic centimeter) falling off.
A design to stretch a robot's body, its parts, or opening up after the start of the round shall be allowed.

Restrictions:

Power - No Fuel Cells allowed.
Lithium Ion, or Lithium Polymer may be used under the following strict conditions.
All Lithium based batteries must be commercially available battery packs, unaltered, and identifiable to the judges (have the original label visible).
If using Lithium based batteries, the robot is to be fitted with a removable fuse. (See "MRG General Rules 2016" page 3 for more information or online at http://mbrobotgames.ca/mrgwp/f-a-q/how-to-page/lithium/
Only one Lithium based battery pack can be used on the robot at a time, although you may have replacement batteries if stored in a safe manner.(see General Rules)
Lithium based battery packs are to be placed on or in the robot in such a way as to avoid direct contact by another robot or against any chance of being punctured or shorted.
The charging of all Lithium based batteries shall be performed in the charging area provided. A volunteer will be available to monitor for excessive heat, leakage or eruption of the batteries but will not be responsible for theft. If any charging battery is deemed to be in danger of eruption, the supervising volunteer will cover the battery with sand and remove it from the building, therefore we recommend the battery be removed from the robot for charging if possible.

Tether control wires must be a minimum of 2.4M in length and may have a maximum of 8 conductors no larger than 22 AWG (0.326 sq. mm.), e.g. CAT5e ethernet cable. A 20cm diameter loop must be formed in the cable and held lightly with a rubber band.
The robot must contain some form of motor controller to limit current in the tether cable. Please see the CAT 5 rule on the MRG WEB site at http://mbrobotgames.ca/mrgwp/f-a-q/some-useful-circuits/

Radio controlled robots must use authorized RC land-use frequencies.
All radio controlled robots should have incorporated into their design the provision for a change of frequency without the use of soldering equipment.
The robot shall not contain parts that could break or damage the playing field.
The robot shall not contain devices that can store solids, liquid, powder, or air and throw it at your opponent.
The robot shall not contain any inflaming devices.
The robot shall not contain any sucking devices or glue to stick the robot down onto the playing field.

Robot Identification:

The supplied MRG identification sticker(s) (as supplied while registering in the contest) must be easily readable on the robot's body while the robot is in competition.

Game Principles:

Each match consists of up to three rounds with a total time of three minutes.
Each round starts at the judge's command and continues until a team pushes the opponent off the playing field or time expires.
The first team to win two points within the time limit is awarded the match.
When neither team can push the other off the playing field the winner will be decided by the judges. However, if no obvious superiority exists and a winner cannot be determined, an extra one minute match on a reduced size playing field may be played.
The judges will decide when a point is scored.

Game Procedure
Beginning of the Game:

At the judge's instruction, the robots are placed in the playing field 20 cm apart and equal distance from the centre of the playing field .The robots are set down parallel to each other and facing opposite directions.
The team to place their robot in the playing field first shall select the direction their robot is

to face (if both robots are facing the same direction, the second robot placed within the playing field will be required to be replaced facing the opposite direction).
When both contestants are ready, the judge will signal the start of the three minute match at which time the robots may be activated. No movement must occur before the official start (no posturing).
A team may halt the start, just once, no later than 10 seconds upon the start of one round without penalty. This allows for last moment emergencies like forgetting to plug in a battery. The start can be delayed no longer than 60 seconds.

End of the Game: **The match** ends when the judge announces so.

Cancellation/Rematches: **The** round stops and resumes when a judge announces so. The round may also be cancelled and a rematch called for by the judges when:
Both robots are in a clinch and stop movements for 5 seconds, or move in the same orbit for 5 seconds with no progress being made.
Both robots move without making progress, or stop (at the exact same time) and stay stopped for 5 seconds without touching each other. If one robot stops its movement first, after 5 seconds it shall be considered not having the will to compete.
If both robots touch the outside of the playing field at about the same time, and it cannot be determined which touched first, a rematch may be called.

A successful round: One point shall be given when:
You have legally forced the body of your opponent's robot to touch the surface beyond the perimeter of the playing field. A robot whose body, wheel, or other support hangs over the edge is not considered outside the playing field until it physically tips or touches the playing field exterior.
Your opponent's robot has touched the space outside the playing field, on its own.
Either of the above takes place at the same time that the End of the Match is announced.
Your opponent's robot is disqualified or has had more than one violation or warning.
Your opponent's robot become disabled (flipped on its back or side, for instance) and is unable to move in the playing field.
When judges' decision is called for to decide the winner, the following points will be taken into considerations:
Technical merits in movement and operation of a robot.
Attitude of the players during the match.
Which robot exhibited the best effort.

Warnings: **Contests** WILL start within a reasonable time, once announced.
A contestant who takes any of the following actions will receive a warning…

- In the event a contestant fails to respond to the announced start time.
- They enter into the playing field during the match, except when the team does so to bring the robot out of the playing field upon the judge's announcement of a point or after the round/match is stopped. To enter into the playing field means a part of a team member's body is in or directly above the playing field.
- Halts the start of a round more than the one time allowed for.
- A robot moves before the judges start signal.
- Tether control wire contact the playing field surface or the competitor's robot.
- Tether is tugged or pulled to assist the robots progress. In the event that this is done to keep the robot within the playing surface, the opponent will be awarded the point as if the round is lost.

When a contestant receives two warnings, the contestant's opponent will be awarded one point.

MRG General Rules: **Failure** to follow the MRG General Rules may result in the following:
Warning being issued, or
Disqualification and loss of the pull, or
Disqualification from competition and or event.