

# **HELL IN CELL**

## **SPECIFICATIONS: DIMENSIONS AND FABRICATIONS**

1. The machine should fit in a box (chassis) of dimension 450 X 450 X 600 mm (l x b x h) (+ or – 50mm) at any given point during the match. The external device used to control the machine or any external tank is not included in the size constraint.
2. The machine should not exceed 45kg of weight including the weight of weapons or any other source. All pneumatics tanks/source should be on board. Weight of remote control & adapter will not be counted.

## **MOBILITY:**

All robots must have easily visible and controlled mobility in order to compete. Methods of mobility include:

1. Rolling (wheels, tracks or the whole robot).
2. Non-wheeled robots having no rolling elements in contact with the floor and no continuous rolling or cam operated motion in contact with the floor, either directly or via a linkage. Motion is continuous if continuous operation of the drive motor(s) produces continuous motion of the robot.
3. Linear-actuated legs and novel non-wheeled drive systems come under this category.
  - a. Jumping and hopping is not allowed.
  - b. Flying (using air foil, helium balloons, ornithopters, etc.) is not allowed.

## **ROBOT CONTROL REQUIREMENTS:**

1. The machine can be controlled through wired or wireless remote. Power supply should be on board only. Refer below for further details on battery and power.
2. The machines using wireless remote must at least have a four frequency remote control circuit or two dual control circuits which may be interchanged before the start of the race to avoid frequency interference with other teams. The case of any interference in the wireless systems will not be considered for rematch or results.
3. Remote control systems from toys or available in the market might be used.

4. Non-standard or self-made remote control systems must be first be approved by the event coordinators.
5. The voltage difference/voltage i/p in the remote control should not exceed 9V
6. at any point of time and during the entire length of the competition. But if there is no wired connection between robot and the remote controller then it can exceed the given limit of 12V.
7. If the robot is wired, all the wires coming out from robot should be stacked as a single unit.
8. Loose connection or improper winding may lead to disqualify before event is started.
9. Wires should be properly installed.

### **BATTERY AND POWER:**

1. The machine can be powered electrically only. Use of IC engine in any form is not allowed. On board batteries must be sealed, immobilized electrolyte types (such as gel cells, lithium, NiCad, NiMH, or dry cell).
2. The electric voltage b/w 2 points anywhere in the machine should not be more than 24 V DC at any point of time.
3. All effort must be made to protect battery terminals from direct short and causing a battery fire, failure to do so will cause direct disqualification.
4. Use of damaged, non-leak proof batteries may lead to disqualification.
5. Special care should be taken to protect the on-board batteries.
6. Change of battery will not be allowed during the match.
7. AC supply is strictly not allowed.

### **WEAPONS SYSTEMS:**

1. Robots can have any kind of magnetic weapons, cutters, flippers, saws, lifting devices, spinning hammers etc. as weapons with following exceptions and limitations:
2. Liquid projectiles.
3. Any kind of inflammable liquid.
4. Flame-based weapons.
5. Any kind of explosive or intentionally ignited solid or potentially ignitable solid.

6. Nets, tape, glue or any other entanglement device.
7. High power magnets or electromagnets.
8. Radio jamming, takers, tesla coils, or any other high-voltage device.
9. Tethered or un-tethered projectiles.
10. Spinning weapons which do not come in contact with arena at any point of time are allowed. In no case should the arena be damaged by any bot.

### **SAFETY RULES:**

Compliance with all events rules is mandatory. It is expected that competitors stay within the rules and procedures of their own accord and do not require constant policing.

1. Special care should be taken to protect the on-board batteries and pneumatics, robot without proper protection will not be allowed to compete.
2. If you have a robot or weapon design that does not fit within the categories set forth in these rules or is in some way ambiguous or borderline, please contact the event organizers. Safe innovation is always encouraged, but surprising the organizers with your brilliant exploitation of a loophole may cause your robot to be disqualified before it even competes.
3. Each event has some safety inspections. It is at their sole discretion that your robot is allowed to compete. As a builder you are obligated to disclose all operating principles and potential dangers to the inspection staff.
4. Proper activation and deactivation of robots is critical. Robots must only be activated in the arena, testing areas, or with expressed consent of the event coordinators.
5. All weapons must have a safety cover on any sharp edges.
6. All participants build and operate robots at their own risk. Combat robotics is inherently dangerous. There is no amount of regulation that can encompass all the dangers involved. Please take care to not hurt yourself or others when building, testing and competing.

7. Any kind of activity (repairing, battery handling, pneumatics systems etc.) which may cause damage to the surrounding during the stay of the teams in the competition area should not be carried out without the consent of organizers.
8. Not following this rule should not be carried out without the consent of organizers. Not following this rule may result in disqualification.
9. All the resources provided at the time of competition from the organizers should be strictly used only after the consent of the organizers.
10. Once the robots have entered into the arena, no team members can enter into the arena at any point of time. In case if fight has to be halted in between and some changes have to be done in the arena in the area or condition of the robot(s), it will be done by organizers only.
11. Team members will not be allowed to touch their robot, once it entered into the arena. Same Robot cannot be used by two or more different teams in the event.

### **CERTIFICATE POLICY:**

Certificate of Excellence will be given to all the winners. Certificates of Participation will be given to all the teams who qualify first round of the competition.

### **TEAM SPECIFICATION:**

A team may consist of a maximum of 4 participants. Participants can be from the same or different educational institutes.

### **TEAM NAME:**

Every team must have a name which must be unique. Event Coordinators reserves the right to reject entries from any Team whose name it deems inappropriate, offensive or conflicting.

### **TEAM REPRESENTATIVE:**

Each team must specify their Team Representative (Leader) at the time of registration on the website. All important communications between Event Coordinators and the registered teams will be done through Team Representative. The Team Representatives must submit valid contact details (phone no., email ID etc.) at the time of registration.

**NOTE:**

During any kind of conversation, registration, communication, mails or submissions the team must identify themselves via their Team IDs provided at the time of registration.

Please do not use your team name as your identification in any kind of communication with the coordinators.

**ROUND DETAILS:**

1. Mainly four rounds will be held. First two rounds are knock-out rounds.
2. In first round 50% robot will be qualifying for next round.
3. Proportion of elimination of robot may vary by coordinators in knock-out rounds as per the entries during the event.
4. Round procedure may change, according to the situation.

\*\*Any rules or specifications can be altered by the coordinators as per the situation.





