

ROBOWARS

'War does not determine who is right. Only who is left'

Passionate about Bots? Or you just like to watch things get crushed from fierce competition? The path to glory passes through the alley of destruction, lethal combats, violent bots, and flying blades! Merge your technical know-how with the ferocious gladiator in you! Make your bot fight for the ultimate glory or land up in the junk yard!

So folks, fight smart, be patient and pray. Seriously, pray because Robowars just got crazier in its new avatar!

General instructions

- All participants are to build and operate robots at their own risk. Combat robotics is dangerous. Please take care to not hurt yourself or others when building, testing and competing.
- Compliance with all event rules is mandatory. It is expected that competitors will comply with the rules and procedures of their own accord and not require constant policing.
- Robots will be inspected for safety and reliability before being allowed to compete. As a builder you are obligated to disclose all operating principles and potential dangers to the Event Coordinators.
- Proper activation and deactivation of robots is critical. Robots must only be activated in the arena, or with expressed consent of the Coordinators.
- Moving weapons that can cause damage or injury must have a clearly visible locking device in place at all times when not in the arena. Locking devices must be clearly capable of stopping, arresting or otherwise preventing harmful motion of the weapon.
- It is expected that all builders follow basic safety practices during work on the robot at the event. Please be alert and aware of your neighbours and people passing by.
- Any kind of damage to the arena or people standing by would mean immediate disqualification without the need for proper explanation.

- In all cases the decision of the Coordinators at the venue would be final, binding and unquestionable.
- Teams of 3-5 people are allowed.
- The organizers reserve the rights to change any or all of the above rules as they deem fit.
- Change in rules, if any will be highlighted on the website and notified to the registered
- teams.
- Violation of any the above rules will lead to disqualification.
- Judges' decision shall be treated as final and binding on al

Bot Specification

1.Style:

- Robots can be built using wheels, tracks and legs (Walker robots).
- 1.2. Other styles or methods may be considered, but it is be sure to contact the Coordinators before registering.
- 1.3. 'Cluster Bots' - robots consisting of two or more components - are allowed, but they must enter the arena as a single object. If 50%or more of the Cluster Bot is immobilized, the robot will be deemed to have lost that particular battle.

2.Weight:

- The maximum weight allowed for the robot is40kgs (This assumes that the power supply for the robot is on-board).
- If interchangeable weapons / armour / systems are used, the weight measured is the one with the heaviest set-up in place.
- A 50% relaxation in weight and dimensions would be given to absolute walker bots. Decision of whether a particular Bot is an absolute walker Bot would be taken by the organisers, upon abstract submission.

Dimensions:

- Overall dimensions must not exceed 60cm x 60cm x 60cm (W x B x H) respectively.
- Width, breadth and height are measured to the extremities of the robot, i.e. including any overhanging bodywork, weaponry or protrusions. The measurements would be taken in the position that the robot would enter the arena, i.e. if the robot starts a fight

- with weaponry or other devices in a retracted position, the width, breadth and height are measured with these in this retracted position.
- After every duel the robot is expected to autonomously retract itself in its original dimensions provided that these have been altered during the fight. Failure to do this will result in the robot losing the battle.

4. Power:

- The machine can be powered electrically only. Use of an IC engine in any form is not allowed. The only permitted batteries are ones that cannot spill or spray any of their contents when damaged or inverted. This means that standard automotive and motorcycle wet cell batteries are prohibited. Examples of batteries that are permitted: (Such as gel cells, lithium, NiCad, NiMH, or dry cells).
- All on board voltages above 36 Volts require prior approval from this event. (It is understood that a charged battery's initial voltage is above their nominal value)
- All electrical power to weapons and drive systems (systems that could cause potential human bodily injury) must have a manual disconnect that can be activated within 15seconds without endangering the person turning it off. (E.g. No body parts in the way of weapons or pinch points.) Shut down must include a manually operated mechanical method of disconnecting the main battery power, such as a suitable high current switch or removable link. Relays may be used to control power, but there must also be a mechanical disconnect.
- All efforts must be taken to protect the battery terminals from a direct short and causing a fire. Failure in doing so will lead to disqualification.

- Only bots with on-board power supply are permitted.

5. Pneumatics:

- Robot can use pressurized non-inflammable gases to actuate pneumatic devices. Maximum allowed outlet nozzle pressure is 10 bar. The storage tank and pressure regulators used by teams need to be certified and teams using pneumatics are required to produce the Safety and Security letters at the Registration Desk at the venue. Failing might lead to direct disqualification.
- Participants must be able to indicate the used pressure with integrated or temporarily fitted pressure gauge. Also there should be provision to check the cylinder pressure on the bot. The organisers will not provide any equipment to gauge the pressure.
- The maximum pressure in cylinder should not exceed the rated pressure at any point of time.
- You must have a safe way of refilling the system and determining the on board pressure.
- All pneumatic components on board a robot must be securely mounted. Care must be taken while mounting the pressure vessel and armour to ensure that if ruptured it will not escape the robot.
- Entire pneumatic setup should be on board, no external input (from outside the arena) can be given to the robot for functioning of its pneumatic system.

6. Hydraulics:

- Hydraulic pressure is limited to 3000 psi. The competitor must be able to demonstrate the pressure used and carry with them a portable pressure gauge that can be fitted to the system if required to do so by the organizing team. The organisers will not provide any equipment to gauge the pressure.

- The use of accumulators on the Hydraulic circuits is strictly prohibited.
- Hydraulic fluid storage tanks must be of a suitable material.
- The lines must be routed to minimize the chances of being cut.

7. Weapon:

- All pyrotechnics (refer 7.2); explosives; flames; firearms; corrosives; liquids; electronic devices - e.g. radio jamming, heat-guns, Tesla coils- are banned.
- Small, non-offensive pyrotechnics - e.g. flash puffs - May be allowed at the organisers' discretion.
- Devices using inflammable or combustion-supporting gases are banned.
- Untethered projectiles are not allowed. Tethered projectiles are allowed, but the tether may not exceed 1.5m (approx. 5ft) in length, (measured from the centre of the robot to the tip of the projectile).
- The speed of any rotating weapons - e.g. circular saws, carbon or steel cutting discs - must not exceed the manufacturer's specification. The manufacturer' specification must be available for inspection. Diameter of blade should be not more than 8 inch.
- Rotating hardened steel blades that may shatter are not allowed.
- Commercial blades - e.g. bayonets - must not exceed 20cm/8inches in length.
- All sharp edges of weapons, including fixed weapons - e.g. spikes –and robot bodywork in general that is sharp, MUST be fitted with adequate protection that must be in place at all times except in the arena. (These guards are not included with the overall weight of the robot).

- Any moving or swinging arms - whether or not they hold sharp and/or rotating weapons - MUST be fitted with a visible locking pin that shows the arm(s) is securely locked into place.
- No laser allowed

Control Requirements:

- The machine can be controlled through wired or wireless remotes. Power supply should be on board only. Refer above for further details on battery and power. In case of wired remote length of wire should at least 7m .
- There should be binding capability between transmitters and receivers. The remotes with such facility will only be allowed.
- The team must have at least four frequency wireless 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.
- Remote control systems from toys might be used. Remote control systems available in the market may also be used.
- Non-standard or self-made remote control systems must first be approved by the organizers.
- Team should pair up the wireless remote with the machine before putting it into the arena.
- In case of wired control, the teams are expected to bring enough wire according to the arena specifications which would be updated soon.

Arena Specifications:

- The concept of arena will be revealed in a later stage

- **Judging Criteria:**

- A robot would be victorious if its opponent is immobilized.
- A robot will be declared immobile if it cannot display linear motion of at least one inch in a timed period of 30 seconds. A robot with one side of its drive train disabled, demonstrating some degree of controlled movement would not be considered.
- A robot that is deemed unsafe by the judges after the match has begun will be disqualified and therefore declared the loser. The match will be immediately halted and the opponent will be awarded a win.
- If a robot is thrown out of the arena the match will stop immediately, and the robot still inside the arena will automatically be declared as the winner.
- Robots cannot win by pinning or lifting their opponents. Organizers will allow pinning or lifting for a maximum of 15 seconds per pin/lift then the attacker robot will be instructed to release the opponent. If, after being instructed to do so, the attacker is able to release but does not, their robot may be disqualified. If two or more robots become entangled or a crushing or gripping weapon is employed and becomes trapped within another robot, then the competitors should make the timekeeper aware, the fight should be stopped and the robots separated by the safest means.
- In case both the robots remain mobile after the end of the round then the winner will be decided subjectively.
- Points will be given on the basis of aggression (frequency, severity, boldness and effectiveness of attacks deliberately initiated), damage(through deliberate

- action), control, strategy (attack as well as defence) and crowd reaction. Further details would be put up soon!
- Ultimately, the Judges' decision would be final, binding and unquestionable

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