



FOR
ROBOVANZA 7.0

ROBO WARS

THE MANUAL TO MASTER YOUR METAL

FOREWORD

Welcome to Robowars 2K24

This Rulebook has been formulated by the Robovanza Robowars committee for the 2024 season, considering insights gained from the RZ'23 ROBOWARS. It is a comprehensive manual that includes all guidelines and instructions that participants must adhere to. We have worked hard to create a clear set of rules that serve the interests of both the competitors and the event itself.

It is also to be noted that all robots are to participate at their own risk and the Robovanza Robowars committee will not be responsible for any damage incurred to the bots and participants during the event.

It's our sincere request to all the participants to go through this rule book thoroughly and not a single point mentioned in the rule book will be compromised under any circumstances. We also request you to have a copy of this rule book handy during the event

1. PROBLEM STATEMENT

- 1.1. Design a wireless manually controlled robot that has the ability to defeat the opponent's bot by getting it into a halt position within the given time limit.
- 1.2. The team having the best attacking, defending and control strategy will be the winners by the judging panel.

2. GAME FIELD

2.1. The Operating Arena

Dimensions: **16Ft x 16Ft x 8Ft**

2.2. Floor Sheet of the Arena made of Mild Steel

Thickness : **4mm**

2.3. The Arena will be bounded by Polycarbonate Sheets

Thickness : **10mm**

2.4. Walls will have nails embedded on them.

2.5. Arena may also contain certain debris and/or have damage from previous matches. Competitors are encouraged to use the traps and debris / damages to their advantage.

2.6. Any damage caused by the debris, traps or the arena to the bot will be considered as part of the match. The event managers are not responsible for any damages incurred to the bots.

2.7. The exact arena will be disclosed at the time of the event.

3. TEAMS

3.1. There is no team limit.

3.2. Members of different institutions can form a team.

3.3. At Most 3 members of a team are allowed to stay around the arena (one for

3.4. A team is allowed to play with one robot only.

3.5. There can't be a change of robot between the match/round.

4. SPECIFICATIONS

NOTE : Event will be held in only one category i.e 15kg.

4.1. ROBOT SPECIFICATIONS.

4.1.1 The robot's maximum dimensions, including expanding arms, should not exceed : **750mm x 750mm x 700mm** (LENGTH x WIDTH x HEIGHT) 2% tolerance.

4.1.2. For wireless robots, utilize either : **Four Single-Frequency Remote Control Circuits OR Two Dual-Control Circuits.**

4.1.3. All precautions must be taken to avoid a direct short of battery terminals, thus preventing a potential fire accident.

4.1.4. **Absolutely Prohibited** : The use of Pneumatics and Hydraulics

4.1.5. Failure to take these precautions may result in disqualification.

4.2. POWER SUPPLY

4.2.1. The electric supply voltage to the bot should not exceed 48V with a 5% tolerance at any point during the game.

4.2.2. No external AC power supply will be available during the game.

4.2.3. The use of non-leak-proof batteries may result in disqualification.

4.3. WEIGHT

4.3.1. The maximum weight for the robot is 15 kg with 2% tolerance.

5. SAFETY

(In addition to these rules, please review the 7.2 Regulations for better safety)

5.1. All precautions must be taken to avoid a direct short of battery terminals, thus preventing a potential fire accident. **Failure to take these precautions may result in disqualification.**

5.2. It is mandatory for team members to wear shoes and goggles while participating in the match.

5.3. **Absolutely Prohibited** during the event : explosives, fire, water, magnetic weapons, hammers, cutters, nets, glue, radio signal jammers, and dangerous chemicals.

5.4. No team members should enter the arena after the match begins.

5.5. It is mandatory to have a kill switch on the bot to prevent any damage caused during the match

6. WEAPON SYSTEM

(The 4.1 Specifications should adhere with the following conditions)

6.1. A bot may be equipped with one or more operational weapon systems. Allowed : Spinners & Wedges Strictly Prohibited : Hammers, saws, cutters, magnetic devices, lifters, and similar mechanisms.

6.2. The use of any form of projectile weapons, including solids, foam, liquefied gasses, acids, nets, is strictly prohibited.

6.3. The use of obstructive devices, such as adhesives, nets, fishing lines, etc., is strictly forbidden.

6.4. Electromagnetic Pulse(EMP) generators, Radio Frequency(RF) jammers, electrical weapons, Tasers, etc. are prohibited.

- 6.5. The use of weapons that result in the entanglement of the opponent's weapon, such as chains, ropes, fabrics, etc., is strictly prohibited.
- 6.6. Any weapon that uses any form of explosives for damage is prohibited.
- 6.7. Weapons employing lifters or magnets are permitted to make physical contact with the opponent, provided that the connection or contact is promptly broken within a 10-second timeframe.
- 6.8. The use of weapons that cause damage to other bots through selfdestruction of any of their parts is strictly prohibited.
- 6.9. A weapon may be employed as a means to support the mobility of the bot in the event that the primary mobility system is damaged.
- 6.10. Weapons capable of intentionally causing damage to the arena or creating foul/litter conditions are prohibited.
- 6.11. If a bot is thrown or launched into the air, resulting in it surpassing the jumping/hopping limit of 2 meters by the opponent, there will be no grounds for disqualification or degrading, and the action will be excused.
- 6.12. The weapon is not required to be powered or have motion.
- 6.13. The weapon is allowed to be retractable, and during its use, the lengthwise, breadthwise, or height-wise limits can be excused. However, when the bot is powered off, all dimensional limits must be strictly adhered to.
- 6.14. Non-compliance with any of the specified rules will result in immediate disqualification

Bots are required to undergo a technical inspection before each fight. Only those bots that successfully pass the inspection will be permitted to enter the arena.

7. COMPETITION RULES

7.1. MATCHES

7.1.1. The event will feature robot battles/matches where they compete to win in the arena.

7.1.2. Each match will have robots chosen randomly to compete against each other.

7.1.3. The number of matches a team participates in depends on how many teams are involved.

7.1.4. In the qualifying round, two robots will face off one-on-one.

7.1.5. Each match consists of three rounds, each lasting 60 seconds or longer, at the discretion of the event managers.

7.1.6. To win a match, a team must win at least two of the three rounds.

7.1.7 Abstract should be submitted to the organizing team on time of registration.

7.2. REGULATIONS

(In addition to these rules, please review the 8.1 Disqualification)

7.2.1. **Arena Damage:**

Any damage to the arena will result in immediate disqualification of the robot

7.2.2. **Participant Responsibility:**

Participants must bring all necessary accessories.

(No accessories will be provided by event managers or Robovanza team during the competition.)

7.2.3. **Technical Assistance:**

No technical help by Robovanza team will be provided during the event/match.

7.2.4. **Practice Runs:**

There will be no practice runs.

7.2.5. Engine Restrictions:

Robots cannot use IC engines in any form. Human interference during the game is not allowed.

7.2.6. Fair Play:

Unfair play will lead to team disqualification, decided by event coordinators.

7.2.7. Behavior Guidelines:

Misbehavior will not be tolerated and may result in team disqualification.

7.2.8. Safety Measures:

Robots must not harm opponents or the arena. Constant damage to the arena may lead to disqualification.

7.2.9. Power Supply:

No external power supply will be provided during the event.

7.2.10. Disqualification Criteria:

Robots resembling toy car bases or using LEGO kits are prohibited and will be disqualified. Ready-made RF modules, PCBs, and development boards are allowed.

7.2.11. Weaponry Regulation:

Weapons must deactivate when power is unplugged. Robots must comply with specified specifications or face disqualification.

7.2.12. Referee Disputes:

Major arguments with referees may result in team disqualification decided by event managers.

7.2.13. Match Conduct:

No breaks are allowed between matches.

7.2.14. Team Membership:

Participants cannot switch teams within the same event.

7.2.15. Pre-check Process:

All robots must undergo a pre-check before competing, and their design cannot be altered afterward.

7.2.16. Technical Timeouts:

No technical timeouts are permitted.

7.2.17. Starting Protocol:

Teams must start their robot from the designated starting line when signaled by the referee.

7.2.18. Clash Rules:

Clashes are allowed, but dragging or pushing an opponent's robot is limited to 10 seconds. Afterward, robots must return to their halves of the arena with a 10-second gap before another clash.

7.2.19. Final Decision:

The Event coordinator's decisions are final.

7.3. SCORING

(In addition to these rules, please review the 8.2 Judging Criteria)

7.3.1. To win, a robot must stop the opponent's robot from moving forward or backward at least 2 inches within 15 seconds. If the opponent's robot stays still for this duration, the match ends.

7.3.2. Teams have 60 seconds to place their robot in the arena before the match begins. If they take longer, their opponent automatically wins.

7.3.3. Points are given based on how well a robot attacks and defends during the match. The judges evaluate each robot's performance in these areas to determine the winner.

8. VIOLATION & DEDUCTION OF POINTS

- Getting into an argument with the referee/judge leads to the deduction of points or disqualification, decided by event coordinators.
- Any team member touching any part of the bot apart from the controller is a violation.

8.1. DISQUALIFICATION

8.1.1. Arena Integrity: Teams must ensure that their robots do not cause any damage to the arena. Any intentional damage caused by a team may lead to disqualification.

8.1.2. Sportsmanship and Conduct: Teams are expected to uphold a high level of sportsmanship during the competition. Arguing with opponents, using offensive language, or engaging in any unsportsmanlike conduct may result in penalties or disqualification. This rule is crucial for promoting a positive and respectful atmosphere within the competition.

8.1.3. Referee Instructions: Teams must promptly and fully comply with instructions or warnings issued by the referee. Ignoring or disobeying the referee's directives can disrupt the flow of the competition and compromise the safety of participants. Non-compliance may lead to disqualification to ensure a fair and orderly event.

8.1.4. Bot Specifications Adherence: Robots must adhere to the specifications outlined in the competition guidelines. Any deviation from the specified dimensions, weight limits, or other technical requirements may result in disqualification. This rule ensures that all teams compete on a level playing field and that the competition remains fair and consistent.

8.1.5. False Starts Limit: Teams are allowed a maximum of three false starts before the referee's signal. A false start is defined as any premature movement or action by the robot before the official start signal. Exceeding the limit of three false starts may result in disqualification to maintain the integrity of the competition and avoid potential advantages gained through repeated attempts.

8.2. JUDGING CRITERIA

8.2.1. **Objective:** The primary goal of RoboWars is to bring an opponent to a halt within the designated time limit. If both robots remain mobile after the time limit, the judges will determine the winner based on specific criteria.

8.2.2. **Halt Position:** A robot is considered in a halt position if it remains motionless for 15 seconds without the opponent making contact.

8.2.3. **Decision Making:** If both robots are mobile at the end of the time limit, the judges will decide the winner for the round.

8.2.4. Judging Parameters:

8.2.4.1. **Aggression and Defense:** Points will be awarded based on the aggressive and defensive maneuvers executed by the robots during the match. Aggressive attacks on opponents and effective defensive strategies contribute positively to the overall score.

8.2.4.2. **Extent of Damage to Opponent Robot:** Judges will evaluate the damage inflicted on the opponent's robot. Points will be awarded for significant and impactful damage caused during the match. This criterion emphasizes the destructive capabilities of each robot.

8.2.4.3. **Extent of Damage Perceived:** Judges will consider the overall visual impact of the damage sustained by the robots. This includes the perception of damage, even if it does not affect the functionality of the robot.

8.2.4.4. **Robot Operating Skills:** Points will be allocated based on the skillful operation of the robot by the team. Judges will assess the control, precision, and strategic decision-making exhibited by the teams during the match. This criterion emphasizes the technical proficiency of the competitors.

8.2.4.5. **Arena Damage (Negative Points):** Negative points may be assigned for causing damage to the arena. Any actions leading to harm or disruption of the competition environment will result in deductions. This ensures teams prioritize strategic and controlled aggression without compromising the integrity of the competition space.

Judges' Decision:

The judges' judgment is final and will be based on an in-depth evaluation of the factors mentioned above. In the exciting Robowars tournament, the evaluation criteria seeks to reward a combination of technical skill, strategic expertise, and efficient damage-dealing abilities.

9. OTHERS

- 9.1 Any misbehavior will result in immediate disqualification of the team.
- 9.2. The dimensions and weights of the field, facilities, and equipment may vary by up to 5% from the descriptions provided in this document.
- 9.3. All participants will receive a Certificate of Participation.
- 9.4. Winners and runners-up will be awarded Certificates of Merit.
- 9.5. Participants must bring their college ID cards. Team Robovanza is not liable for any damage to your robot during or outside of the event.
- 9.6. In case of unforeseen circumstances, decisions made by the institution regarding the event will be followed. Registered participants will be notified of any changes in event dates or cancellations, and registration fees will be refunded accordingly.
- 9.7. Participants must pay the scheduled amount before participating in the event.

IMPORTANT NOTE:

- The decision made by the event organizers, coordinators, or heads is final, regardless of any situation or disagreements.
- Event organizers have the authority to adjust the duration of gameplay or the number of rounds fairly. Disagreements are not allowed and may result in team disqualification.
- Participants will be informed about the exact number of rounds and playing time before the match begins.
- Event organizers, coordinators or heads have the authority to change the game rules at any instant of time, and their decision is considered as the final one.

PRIZE MONEY:

Total Pool - Rs.80,000/-

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