



ROBOTICA

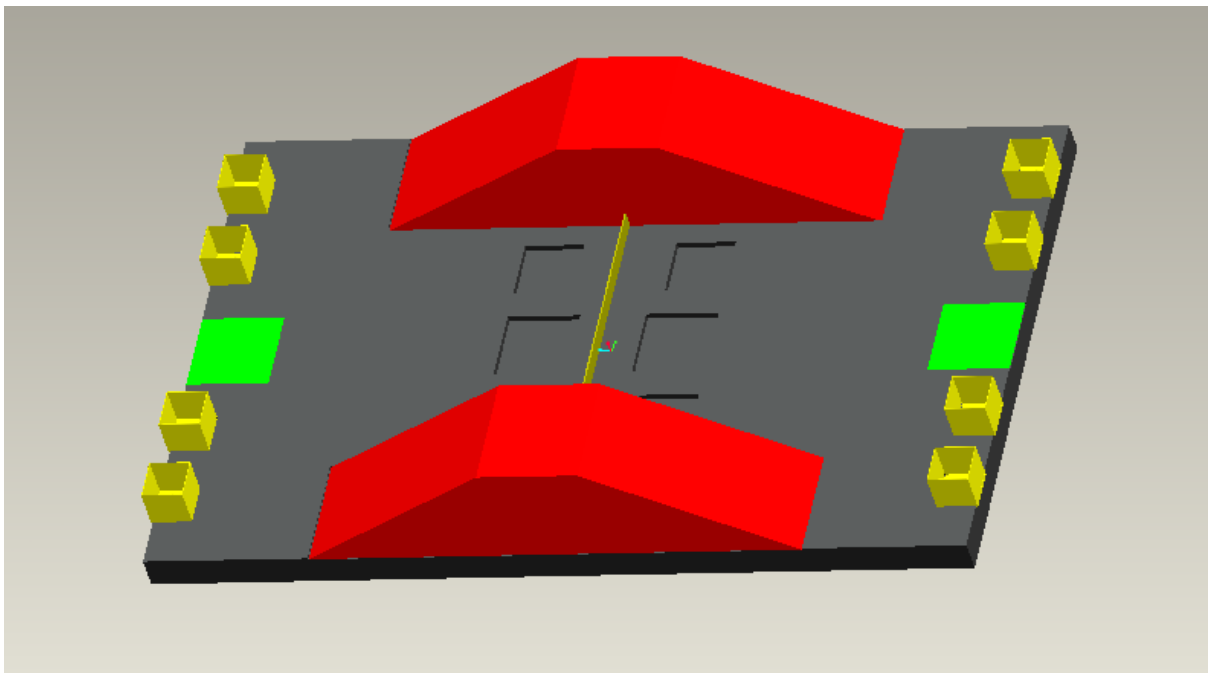
The Quicker The Winner

INTRODUCTION

Students, use the Robotics Design System to build innovative robots designed to score the most points possible in qualification matches, one on one matches and Skills Challenges.

In addition to having a great time and building amazing robots, through their participation in the Robotica competition and their work within their team, students will learn many academic and life skills.

GAME FIELD AND OBJECTS



3D VIEW

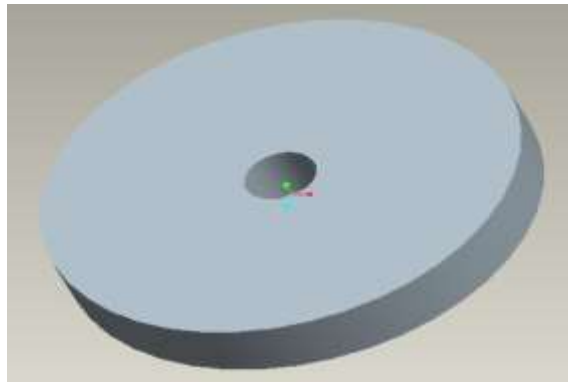
The game field is as shown in figure.

The field consists of an area having the dimension of

2500 mm x 1600mm.

The game field is divided equally for two teams by a fence.

DISCS SPECIFICATION:



There will be 3 types of discs of Dimensions :

Diameter: 200 mm, 150 mm, 100 mm.

Hole diameter: 30mm

Height: 30 mm

Material: Thermocol

Total number of discs: 7 each team

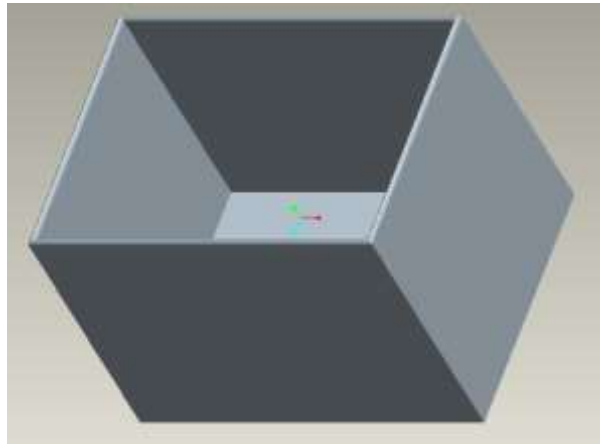
PIT SPECIFICATION:

Dimensions:

Two pits of 180 X 180 mm and **One** 220X220
mm

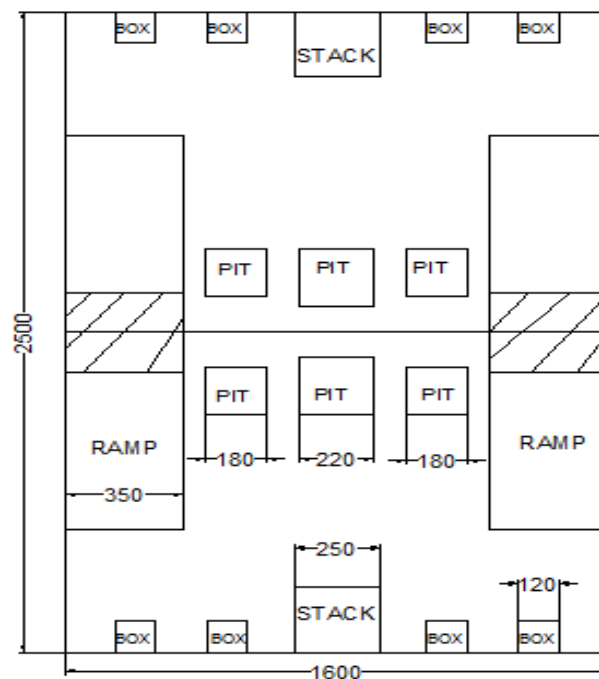
Depth: 15 mm on each side.

BOX DIMENSIONS:



Four Boxes of 120X120 mm and height 200 mm on each side.

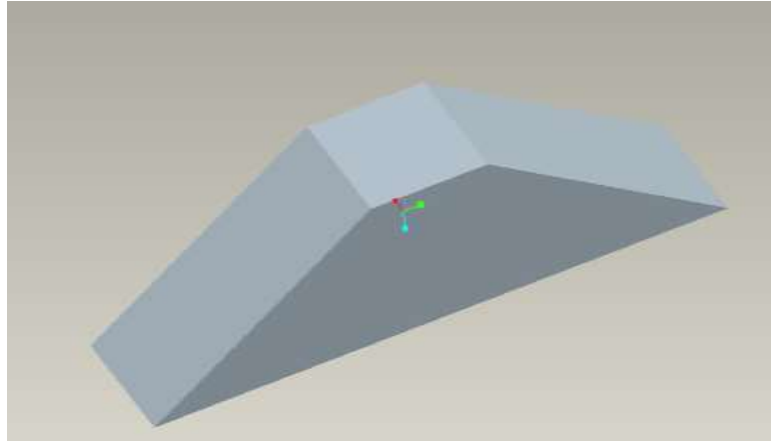
FIELD SPECIFICATION



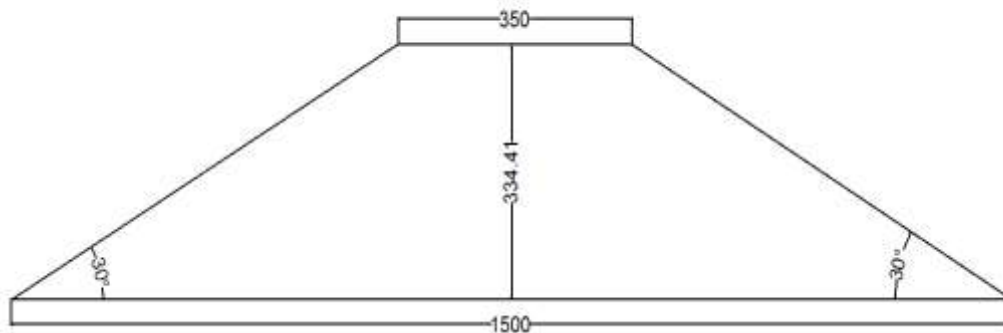
TOP VIEW

Field material:- wooden flooring. (All dimensions are in mm)

RAMP:



Isometric View



Side View (All dimensions are in mm)

GAME RULES

- 1) Only one manual machine for each team will be used throughout the tournament.
- 2) Substitution of Manual Robot's Operator is not allowed in a single match.

- 3) Manual Robot's Operator can not touch the disc, pits, boxes or any other parts of the game field after the game has started.
- 4) The feet of the operator can not touch any surface of the game field as well.
- 5) One minute is given for setting of robots before the game starts.
- 6) Only the four registered members of each team, including the Operator, can engage in the setting up of robots.
- 7) Any team that fails to complete setting of the robots within one minute can resume the setting process once the game starts.
- 8) In the case of mechanical problem, or failing of a task, the robot can be brought back to its start zone to restart with the consent of referees.
- 9) Strategies based on restart are allowed with consent of referees.
- 10) A team will be disqualified if it commits any of the following actions during the match:
 - i) The team performs any acts that are not in the spirit of fair play.
 - ii) The team fails to obey instructions or warnings issued by the referees.
 - iii) The team intentionally damages or tries to damage the field, facilities, equipments or opponent's robots.
 - iv) The team with five Violations in a match will be disqualified.

- 11) When the Violation occurs, the team will be given a penalty of points and the team has to bring the violating robot back to the start zone.
- 12) The Violations are categorized as follows:
 - i) Any box is pushed from its original position.
 - ii) Damage to field and facilities.
 - iii) Moving outside the arena.
 - iv) Damage to the discs or boxes.
- 13) Robot should not use any part of the fence or box as support.
- 14) Use of any explosive material is prohibited.
- 15) If a laser emitting device is used, it must be of class 2 or less
- 16) The organizers reserve the right 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 participants. Participants are requested to check website regularly for updates.

GAME PROCEDURE & COMPETITION TASKS

ROUND 1:

Objective

The main objective of this round will be pushing 200mm & 150 mm dia. discs into pits and lifting and putting 100 mm dia. discs in the boxes. Points will be given to the each disc.

ROUND 2 AND FINALS:

Complete task will be declared at the time of events. Tasks in this round will be designed such that bots will have to climb the ramp with carrying discs.

****Note : In case of pushing task one point contact mechanism should be there.**

Scoring (discs)

There will be different set of points for each type of discs.

- 15 points will be allocated for the task of putting 100 mm dia. discs in to boxes. Lifting mechanism should be there in the bot.
- 10 points will be allocated for pushing the 200mm dia. disc in to bigger pit.
- 5 points for pushing 150mm dia. disc in to smaller pits.

DECIDING THE WINNER

- 1)First team to put all the discs in the pits as well as in boxes will be the winner.
- 2)If no team is able to put all the discs in pits and boxes then at the end of 3 minutes the team with maximum points will be declared as winner.
- 3)In case of tie, rematch will be taken by the organizers. Rematch will be of 2 mins.

ROBOT SPECIFICATIONS

- 1) Robot must have its dimensions within 300 mm in length, 300 mm in width and 400 mm in height in start zone.
- 2) The total weight of robot must not exceed 10 kg.
- 3) The voltage of the power sources used by each robot must not exceed DC 24 V.
- 4) Power source will be provided by the organizers.
- 5) The pressure of the compressed air power must be less than 6 bars.
- 6) Compressed air will not be provided.
- 7) Use of hydraulics is not allowed.

EIGIBILITY

All students (Pursuing graduation and post graduation) with a valid Photo Identity card of their respective educational institutes are eligible to participate in robotica.

CERTIFICATE POLICY

1. Certificate of excellence will be given to all the winners (Top 3 Teams).
2. Certificate of participation will be given to all the teams that will participate in the event, but not to the teams which get disqualified due to disobeying any of the competition rules.

REGISTRATION DETAILS

Rs 200/- for non SAE members

Rs 150/- for a team with minimum **TWO** SAE members

Maximum team members: 4

Participants must show their SAE membership card at the time of registration.

PRIZES:-

First Prize: Rs 7,000/-

Second Prize: Rs 5,000/-

Third Prize: Rs 3,000/-

Best bot: Rs 2,000/-

CONTACT DETAILS :-

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