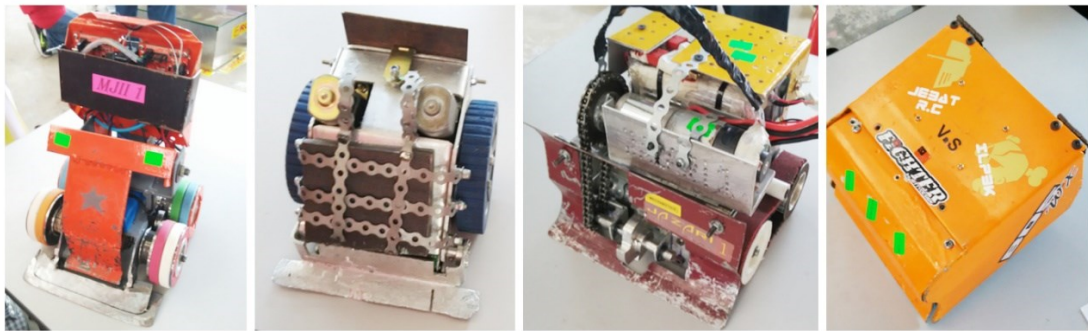


FIGHTING ROBOT COMPETITION

THE 2ND FIGHTING ROBOT COMPETITION (FRC) 2016

28th November 2016



COMBAT ROBOT CATEGORY

RULES AND REGULATIONS

OPEN CATEGORY

Update: 19th September 2016

Important Update:

1. Maximum robot height is 30cm.
2. If no robot enter dead zone in 3 minutes, first robot touch center line win.

1. OBJECTIVE

Participants are required to build a self-contained mobile robot that is able to push its opponent out of the specified area in according to the tournament rules. Robot handlers are to operate their robots through the radio-controlled console.

2. ROBOT SPECIFICATIONS

2.1 Dimensions and Weight

- The size of the robots shall not exceed **20cm (length) x 20cm (width) x 30cm (height)**. Extension of robot is allowed however its size shall not exceed **20cm (length) x 20cm (width) x 30cm (height)**.
- Robot which more than 20cm (height) must able to stabilize itself for not falling down when move by its own during inspection.
- Active weapon is allowed (optional).
- The weight of the robot shall not exceed **5 kg**.

2.2 Restrictions on robot Design

2.2.1 Robots shall not employ any flammable equipment as weapon.

2.2.2 Robots shall not damage the arena deliberately.

2.2.3 Robots shall not throw liquid or powder or other substances at the opponent.

2.2.5 Robots should not secure itself on the ring surface by using, suction cups, diaphragms, sticky treads, glue or other such devices.

2.2.6 Projectile weapons is prohibited.

2.2.7 Do not disturb the opponent's radio-control by putting a jamming device in the robot.

2.3 Robot Control (robot must be wireless)

2.3.1 The radio-controlled frequencies shall only be FM 27 MHz or 2.4 GHz Digital Spectrum Modulation (DSM).

2.3.2 Participants who are using FM 27 MHz must be capable of operating in any of its frequency bands. Participants are allowed up to two changes in frequency bands in a game. If the robot failed to proceed after the second band change, it shall be retired from the game.

2.3.3. Wireless PS2 Controller or PS3 Controller are recommended.

2.4 Labelling

All similar robots must be labelled with their team names on the front of the robot. The **minimum** font size is Arial 24.

2.5 Clearing of Debris

Fallen items from the robots shall be removed after each match.

3. ARENA SPECIFICATIONS (REFER TO FIGURE 1, 2 & 3)

3.1. The game field measures 1200 mm (length) × 1200 mm (width) x 300 mm (height) partially surrounded by metal fence with 300 mm height. Game field is lifted up with 100 mm height.

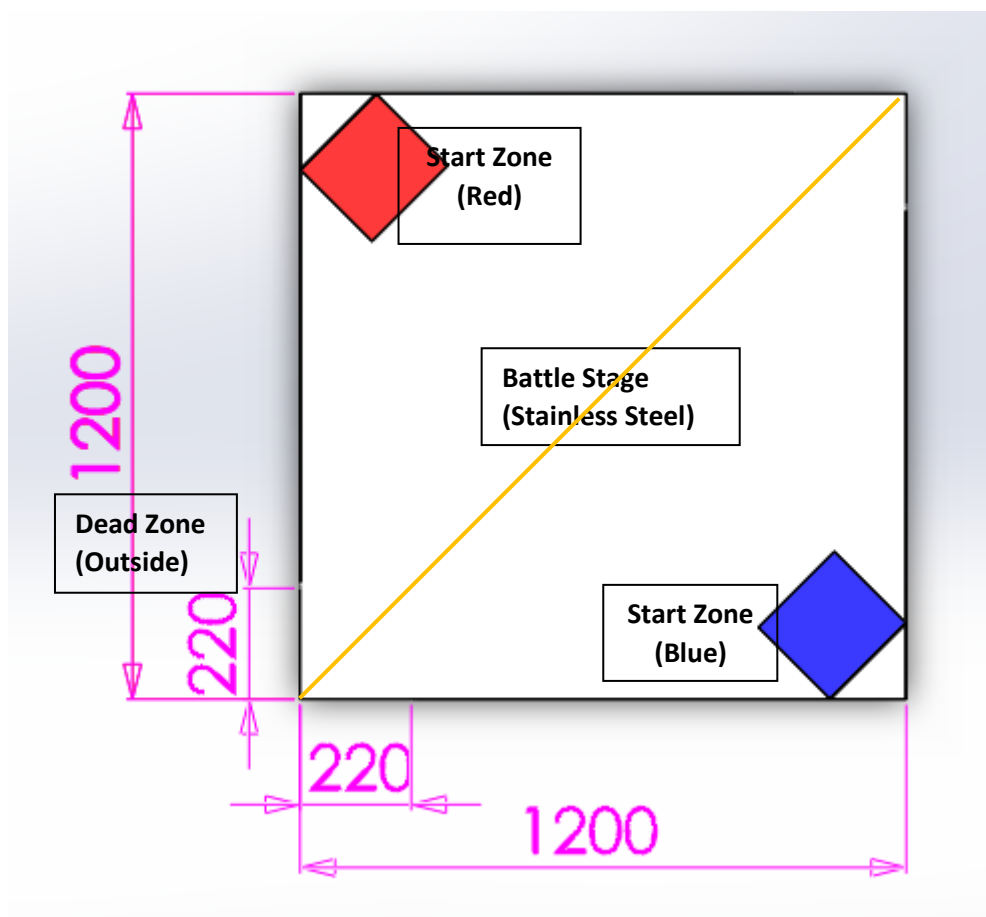


Figure 1. Top view of game field

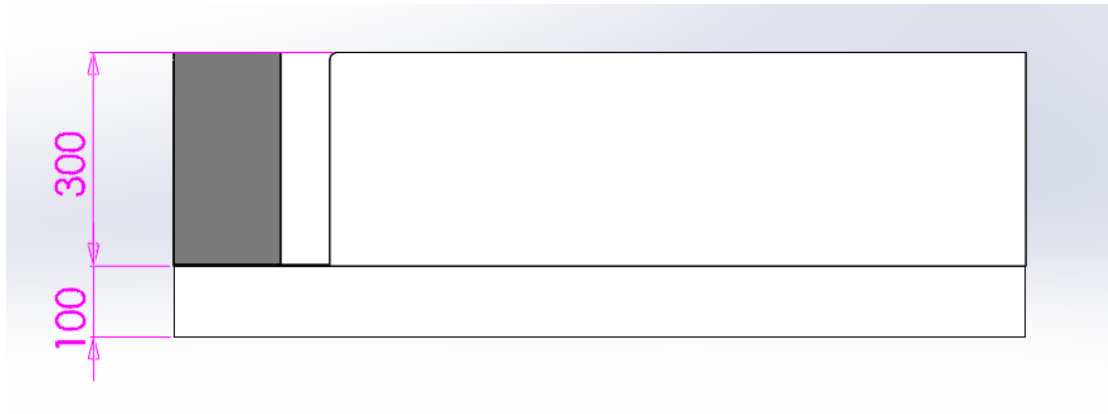


Figure 2. Front view of game field

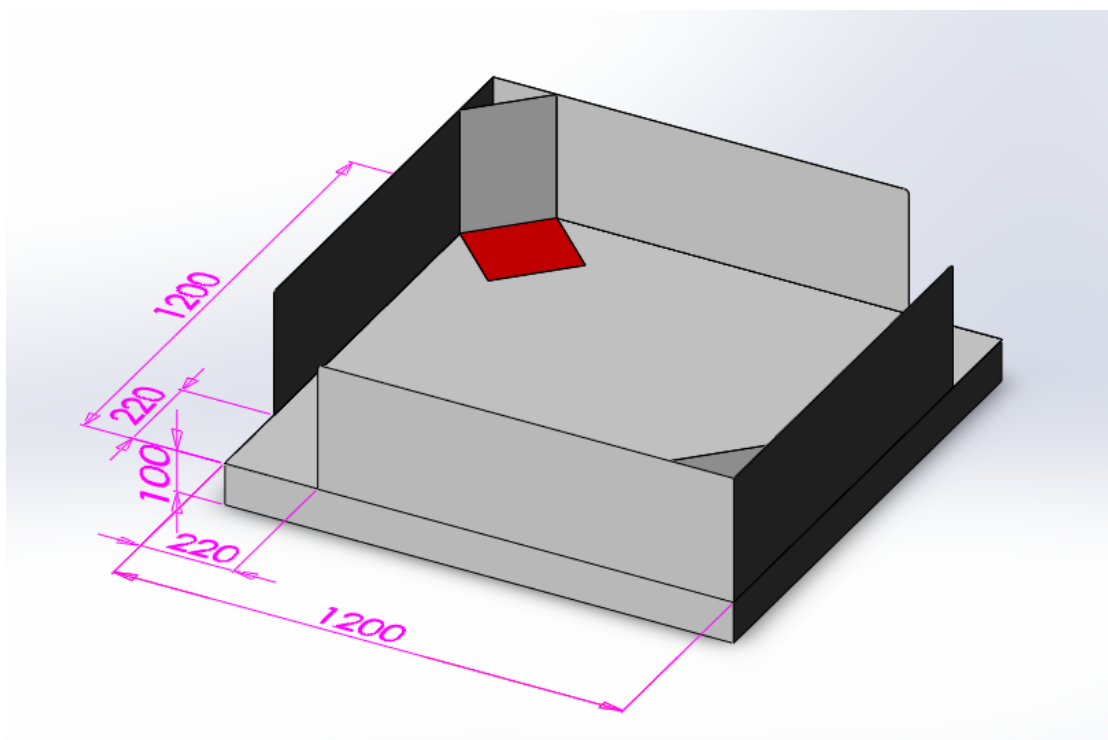


Figure 3. Overview of game field

3.2. The game field is divided into two zones which are the “Battle Stage” and the “Dead Zone”.

3.3. Battle Stage

3.3.1. The area is 1200mm x 1200mm

3.3.2. The starting zones are at two (2) corner side of the area labelled with Blue and Red. Corner of each starting zone is chamfered with stainless steel plate to avoid robot stuck at corner.

3.3.3. The size of starting zone is 300mm x 300mm

3.4 Dead Zone

3.4.1. Robot fall/disabled/immobilized/pushed into “Dead Zone” will end the match immediately.

4. GAMES RULES

4.1 Combat Game

The tournament shall divide the participating teams into groups of maximum 4 robots.

Each match consists of 3 games. Each game shall last for 3 minutes. One point shall be given to every match winner. Zero point shall be given to a loser.

If a game ends with no winner, robot which first touched center line win that game.

4.2 Match Winner

A robot wins when any part of the opponent robot touches the floor (“Dead Zone”).

4.3 Service Time

Participants will be given 1 minute of Servicing-Time before the start of their game. A maximum of two members are allowed to service their robots at a designated area under supervision. Only replacement of identical parts and batteries are allowed during the Servicing-Time.

4.4 Time Out & Retry

No time out and retry.

4.5 Robot Handler

A participant is allowed to handle only one same robot throughout the event. Each robot should only have one same handler. The handler and robot will be identified during registration and caging.

When in doubt, the decision of the Judges will be final.

To register, please visit www.mrea2u.com

For any enquiries, please email to fightingrobotcompetition@gmail.com
or WhatsApp to 012- 905 0357 (Lim).

Participant is compulsory to join our Facebook group.
<https://www.facebook.com/groups/frc2015/>

FAQ: Combat Robot

1. Q: If an opponent robot is immobilized, but not touch dead zone, is this consider a win, or a draw?

A: It is draw game if both robot do not touch dead zone within 3 minutes.

2. Q: Is the game field and the dead zone area are on the same height? If it is, then might be difficult to judge who touch the dead zone first.

A: No, game field is 10cm lifted up.

3. Q: What if a robot is on top of the opponent robot, and the opponent robot move to dead zone? Who is the winner?

A: This depends on which robot touch the dead zone first. If opponent robot fall outside game field (touch dead zone) and another robot still on top of opponent (do not touch dead zone), top robot win this match.

4. Q: 1 match consist of how many round?

A: Each match consist of only three (3) round.

5. Q: The battle stage is made of stainless steel instead of rubber?

A: Yes, battle stage is made of steel.

6. Q: Did the robot consider lose if any detached part of the robot such as tire, screw, parts are pushed or accidentally move outside the ring?

A: No.

7. Q: Are there any tolerance regarding the robot dimension (20cmx20cm) and weight (5kg)?

A: No. Size cannot exceed 20cm X 20cm X 30cm. Weight cannot exceed 5Kg.

8. What is the measurement of the dead zone opening for the FRC battle stage?

A: Dead Zone is floor which located at outside of game field.

9. Q: What is the opening edge for the rc combat robot battle stage to push opponent to the dead zone?

A: 22cm X 22cm for each corner.

10. Q: Weapon is compulsory in both combat robot & tower conquer?

A: Weapon is optional, not compulsory.

11. Q: Is that any maximum power supply for combat robot?

A: No limit on power supply.

12. Q: If the robot is using a lifter type of active weapon, the diameter of the lifter must be within 20cm? Or the dimension of the extension which is 20cm x20cm applies on extension only or together with the robot?

A: The maximum dimension of robot is 20cm X 20cm X 30cm.

Extension of robot shouldn't more than 20cm x 20cm x 30cm during competition.