

MAKE X

New Season Highlight



Updated Competition Procedures

Delete the preparation stage after the automatic stage



Updated Mission

New Missions, new challenge



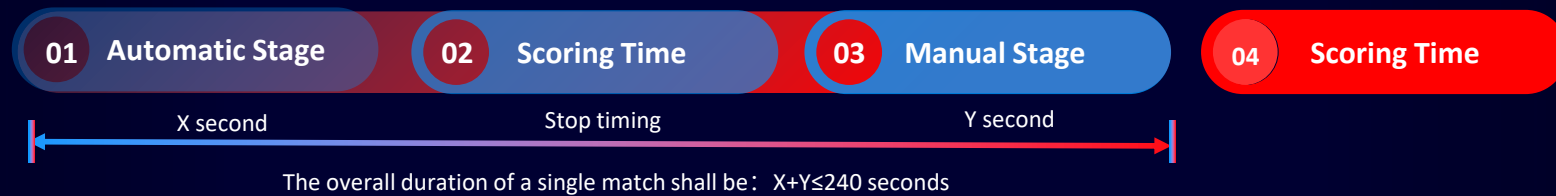
Limitation of robot wheel

A specific requirement on robot wheel

MAKEXX Arena Illustration



MAKE X Competition Procedure



*The single match lasts for 240 seconds.

* When the alliance applies stage switching, the match will stop timing and enter the scoring time after the automatic stage. During this period, the alliance can't contact their robots, the robots have to maintain the state under the stage switching application until the referee has completed the scoring.

*After the scoring time, the referee will give a countdown, the manual stage shall start after the countdown.

*The robot can be restarted at any time in a single match after the referee's permission(time will not stop).

*The robot can be modified at any time in a single match, the modification area is the starting area, manual loading area, and outside the arena.



Mission Introduction

Stage and period	Mission Type	Mission Name
Automatic Stage (x seconds, $0 < x \leq 240$)	Independent Mission	M01 Placing Renewable Resources Cube
		M02 Power-On Energy Storage Power Station
		M03 Transplanting Sapling
		M04 Recycling Sapling
	Alliance Mission	M05 Transferring Automatic Irrigation Device
Manual Stage (240-x Seconds)	Alliance Mission	M06 Plants Research
		M07 Placing Automatic Irrigation Device
		M08 Recycling Marker

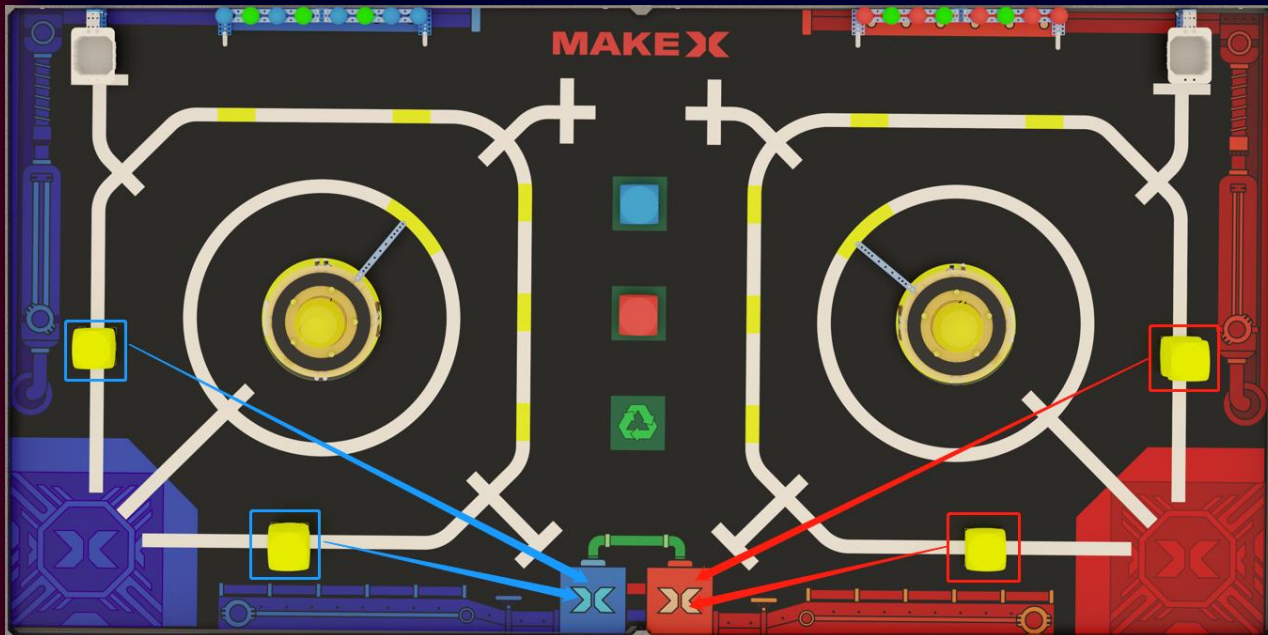
Each competition includes one red team and one blue team, each team should have one robot. 8 missions in total, with **4 independent missions and 4 alliance missions**

Independent Mission: Need to be completed by the team itself, and the scores are independent.

Alliance Mission: During the match, the red and blue team should work as an alliance but not confront each other. The alliance missions can be completed by the red or blue team, or the alliance could work together. The scores are shared by both teams.

MAKE X Mission Description

M01 Placing Renewable Resources Cube



Mission Target

Robot is required to run the automatic programs to move the yellow cubes from the resource area to the storage area.

Scoring Judging

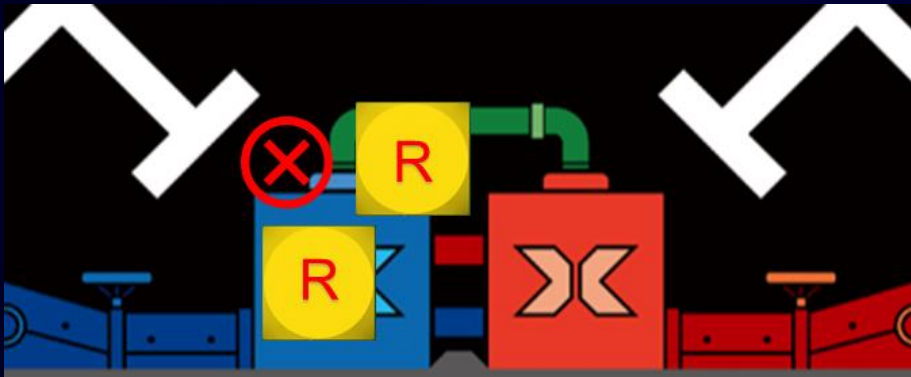
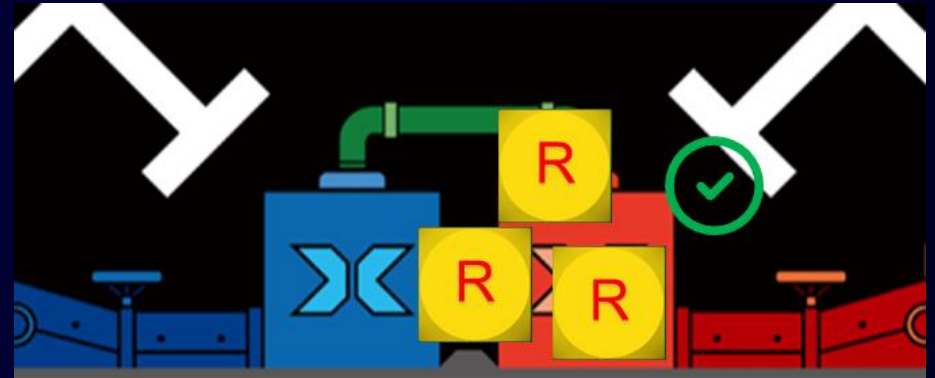
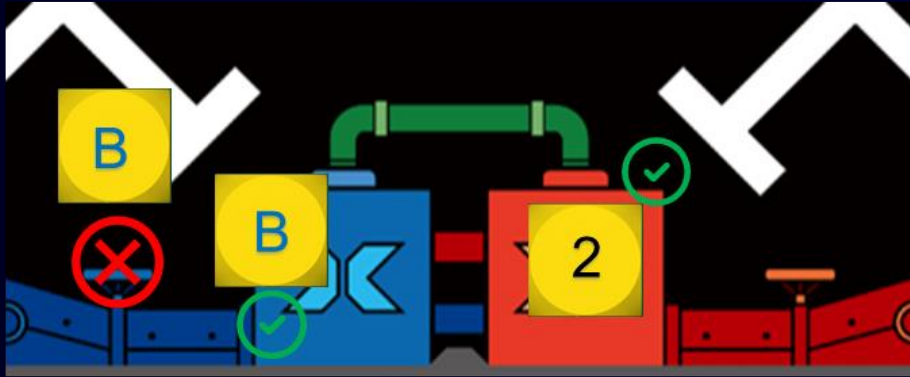
1. The vertical projection of yellow cube should at least partially located in the corresponding storage area.
2. The yellow cube must be completely located in the arena
3. The yellow cube has not contact with robot

Mission Score

Each completely removal of yellow cube counts for 30 points.

MAKE X Mission Description

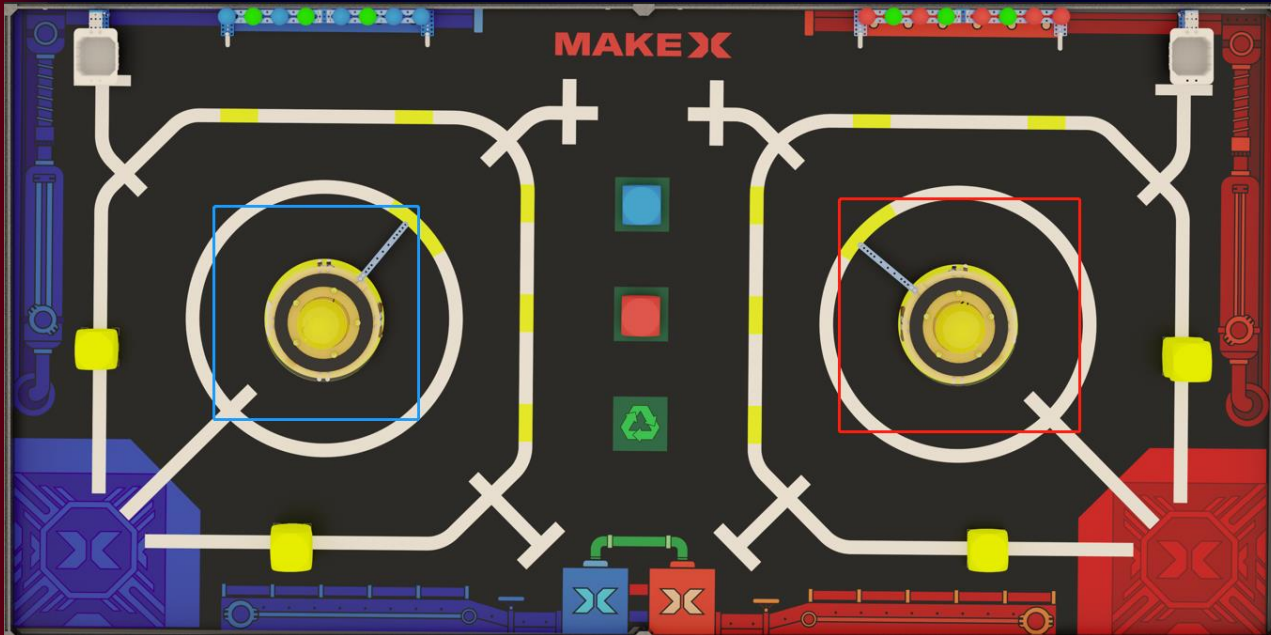
M01 Placing Renewable Resources Cube



Note: "2" referred to 2 layers, "R" referred to cube for red team and "B" referred to cube for blue team.

MAKE X Mission Description

M02Power-On Energy Storage Power Station



Mission Target

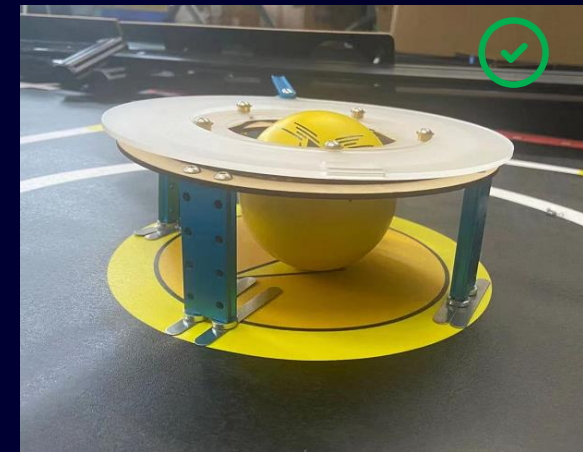
Robot runs the automatic program to push the blue metal bar and let the yellow ball drop to the yellow area below.

Mission Score

The yellow ball drops into the yellow area counts 50 points.

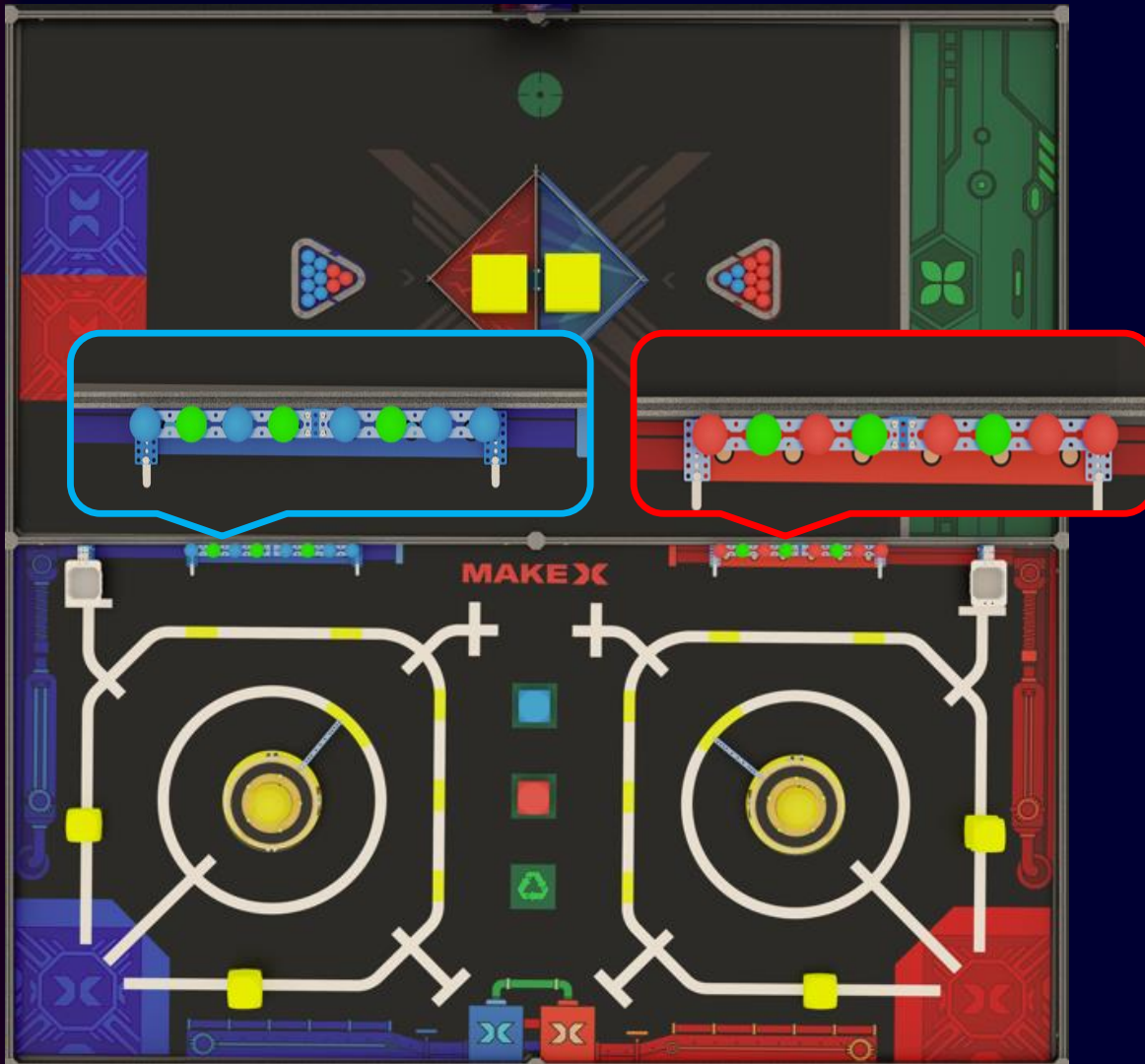
Scoring Judging

1. Yellow ball is completely inside the yellow area below.
2. Yellow ball is in contact with arena directly.
3. Yellow ball has no direct contact with robot.





Mission Description--M03 Transplanting Sapling



Mission Target

Robot is required to remove the red or blue ball (representing sapling) from the frame to the arena.

Scoring Judging

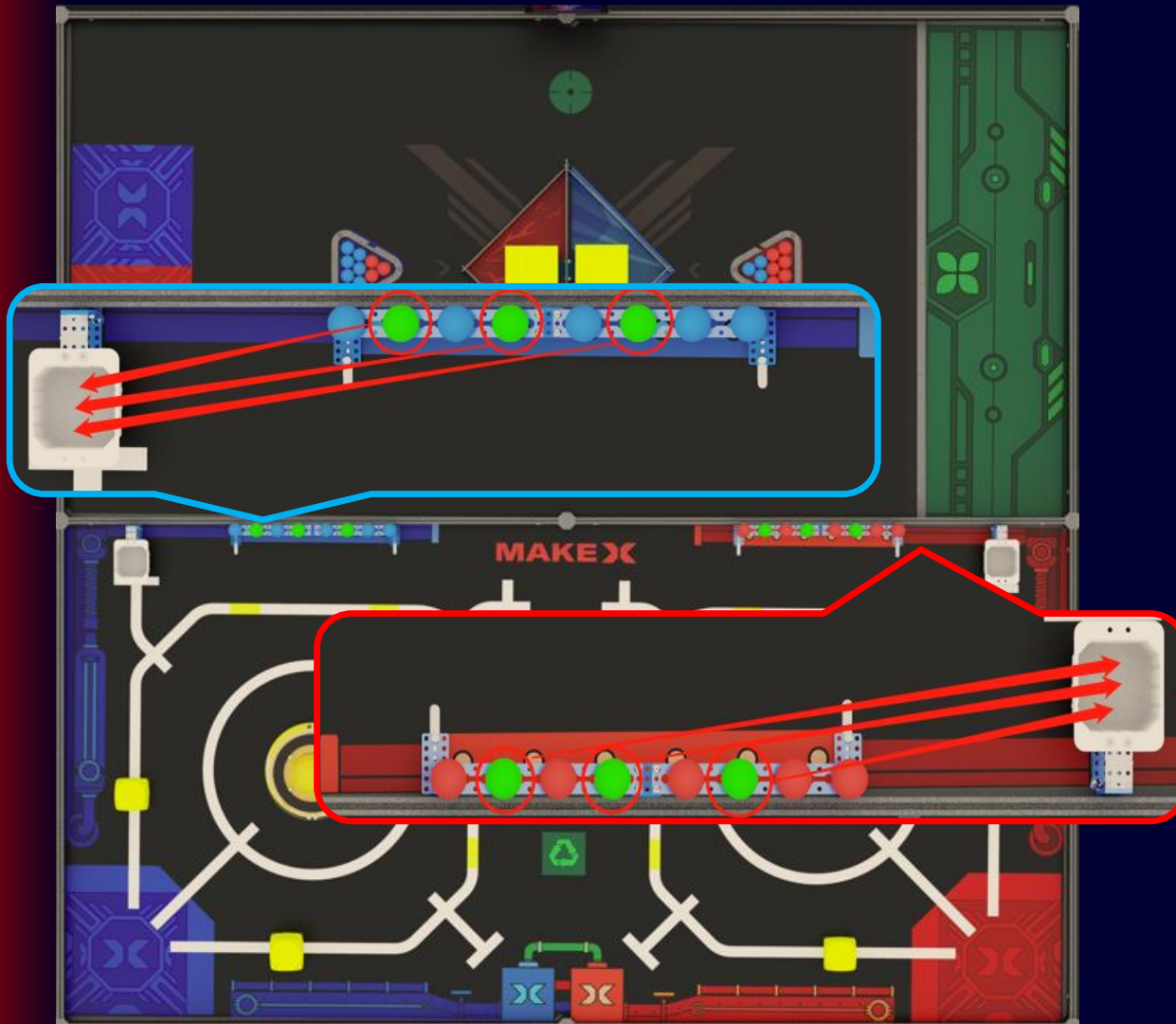
1. Red or blue ball drops on the arena.
2. Red or blue ball is in contact with arena directly.
3. All the balls does not in contact the robot.

Mission Score

Each removal of red or blue ball, is worth 30 points.



Mission Description--M04 Recycling Sapling



Mission Target

Robot is required to move the green ball (representing sapling) from the frame into the corresponding warehouse.

Scoring Judging

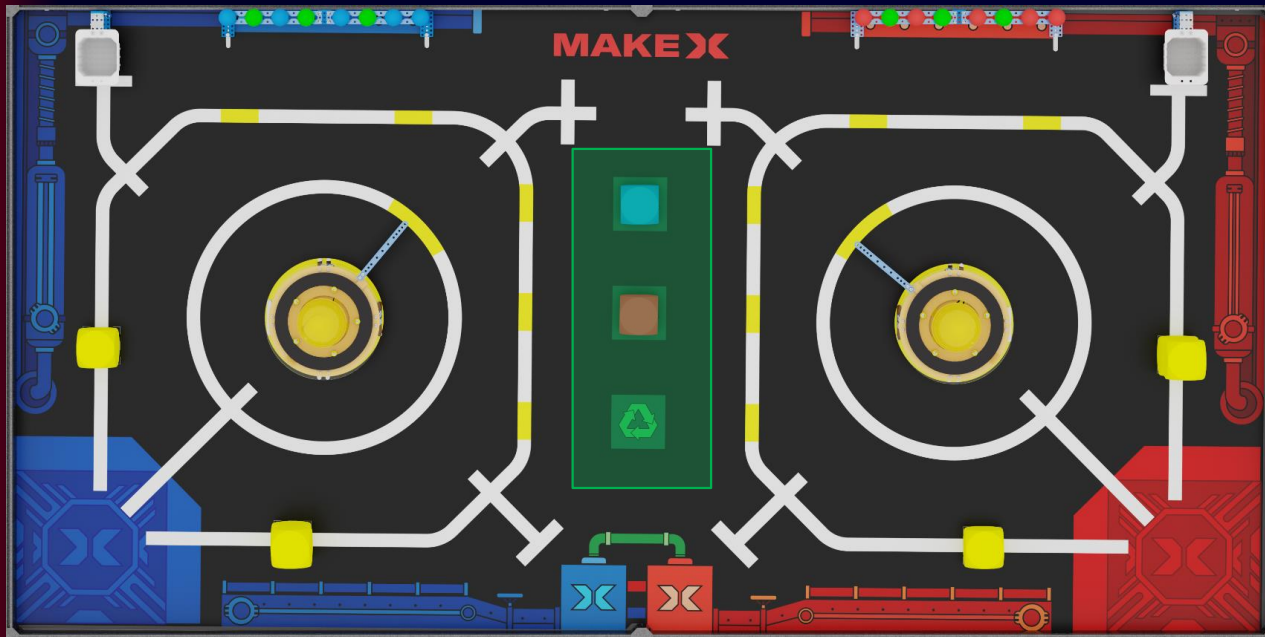
1. The vertical projection of green ball has completely inside the warehouse.
2. Green ball is not in contact with robot.
3. The robot is not in contact with the blister basket of the warehouse.

Mission Score

Each successful removal green ball counts 50 points.

MAKE X Mission Description

M05 Transferring Automatic Irrigation Device



Mission Target

Robot is required to move the red or blue cube completely out of the recycling area.

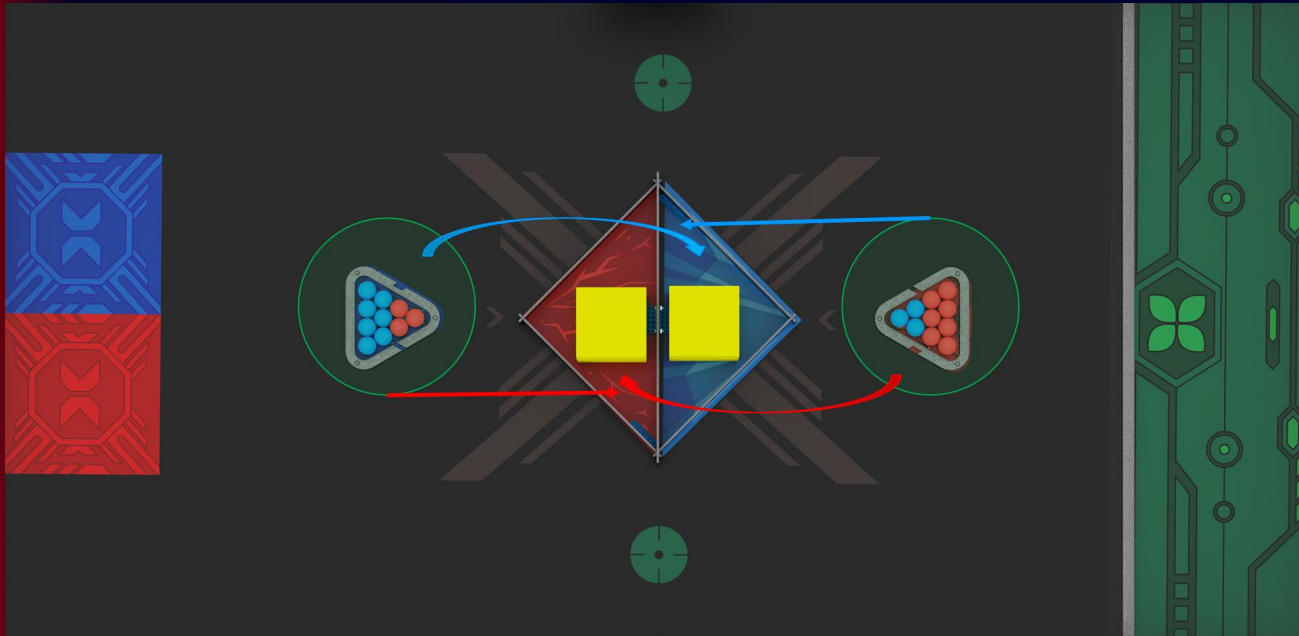
Scoring Judging

1. The vertical projection of the red or blue cube is completely out of the initial area.
2. The red or blue cube is completely located in the arena.
3. The red or blue cube is not in contact with robot.

Mission Score

Each successful removal of red or blue cube counts 30 points.

M06 Plants Research



Mission Target

According to the color, the robot sorts the balls in the arena to the correct forest area. The observer can manually load the red or blue balls on the robot that is completely inside the loading area.

Scoring Judging

1. The vertical projection of red or blue balls are completely in correct area and the forest farm fence
2. The red or blue ball is not in contact with robot

Mission Score

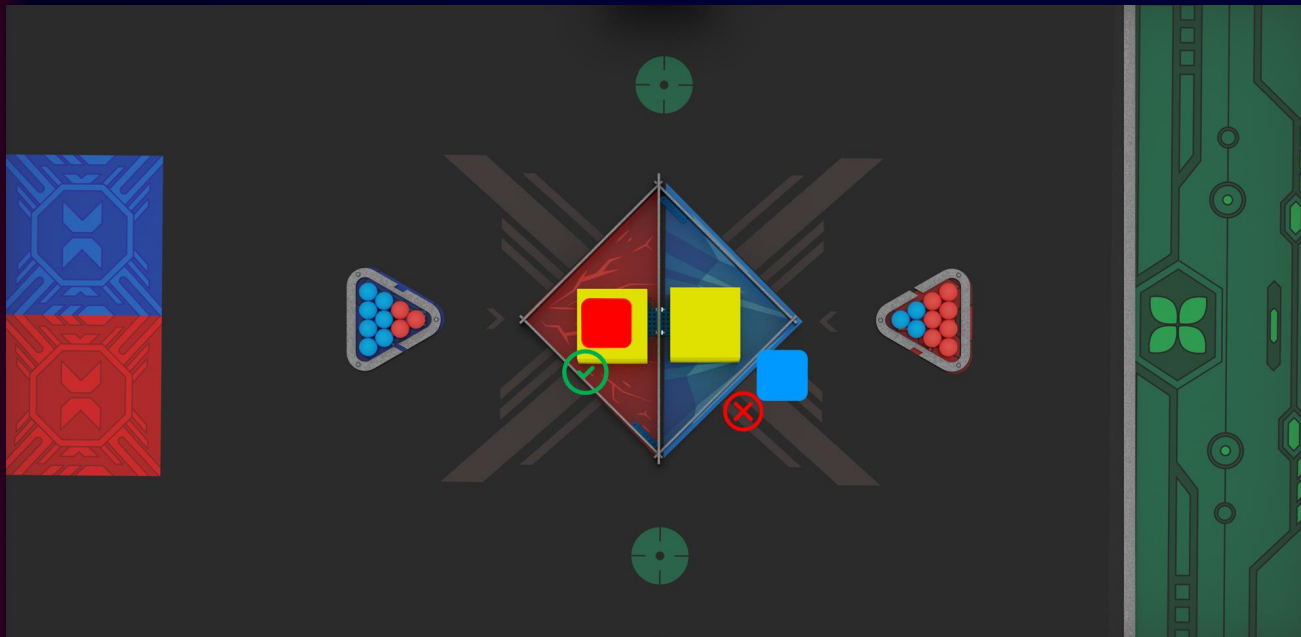
Each correctly sorted red or blue ball counts 10 points.

* The initial scoring props for the mission are 10 red and blue balls each and the remaining red and blue balls depend on whether the corresponding props **can be moved to the manual mission area during the automatic stage.**



Mission Description

M07 Placing Automatic Irrigation Device



Mission Score

Each successful placement of red or blue cube counts 30 points.

Mission Target

Collect corresponding cubes and place them on the yellow cube on the corresponding forest farm.

Scoring Judging

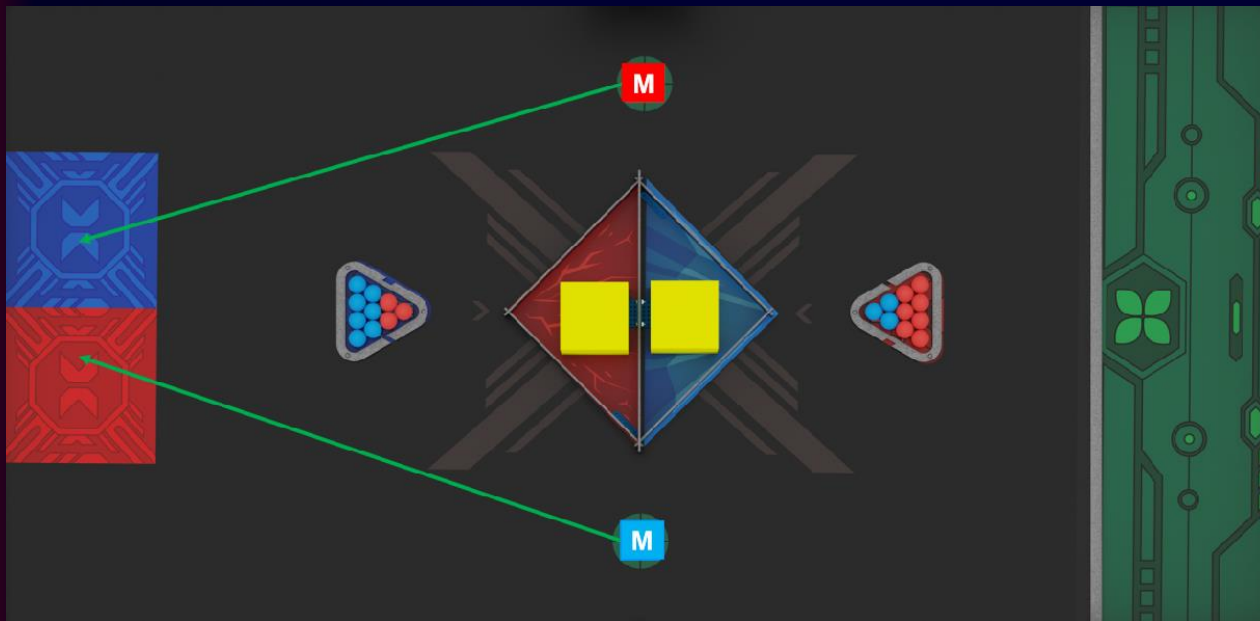
1. Vertical projection of red or blue cubes are completely or partially on the yellow big cube in correct area
2. The red or blue cube is not in contact with robot
3. The lower surface of red or blue cube has directly contact with the upper surface of yellow big cube in the corresponding area.

*** The red and blue cubes depend on whether it can be moved to the manual mission area during the automatic stage.**



Mission Description

M08 Recycling Marker



Mission Score

Each successful placing counts 30 points.

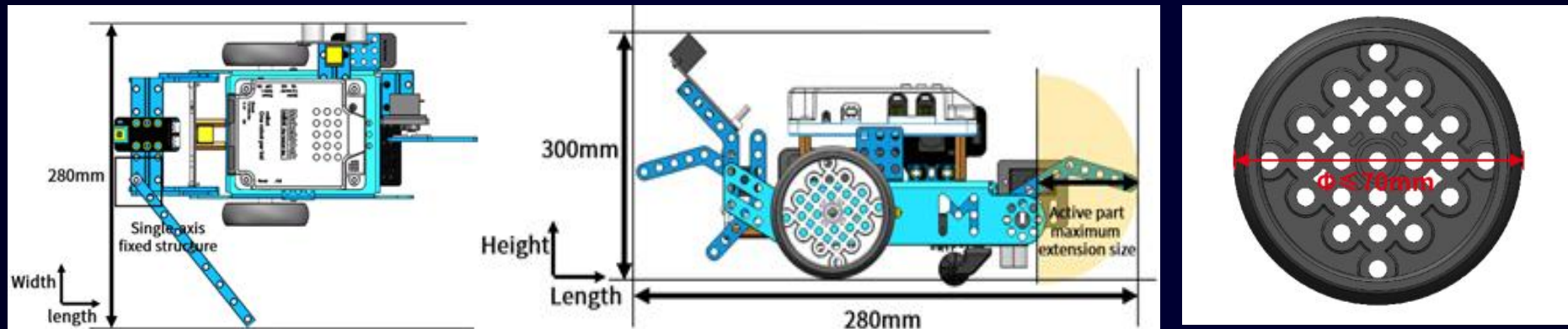
Mission Target

Move the marker that placing in the marking area to the starting area of manual mission area, each starting area can be placed with maximum 1 marker.

Scoring Judging

1. The marker is completely in the starting area of the manual mission area.
2. the marker should keep upright and have no contact with robot and blue-tooth controller.
3. the marker is in contact with arena directly.

MAKE X Size Requirements



During the competition, the robot shall meet the following requirements:

Size: The maximum extension size of robot shall not exceed 280mm*280mm*300mm

Weight: No more than 2.5KG.

The diameter of the wheel (included the rubber tires) should not exceed 70mm.