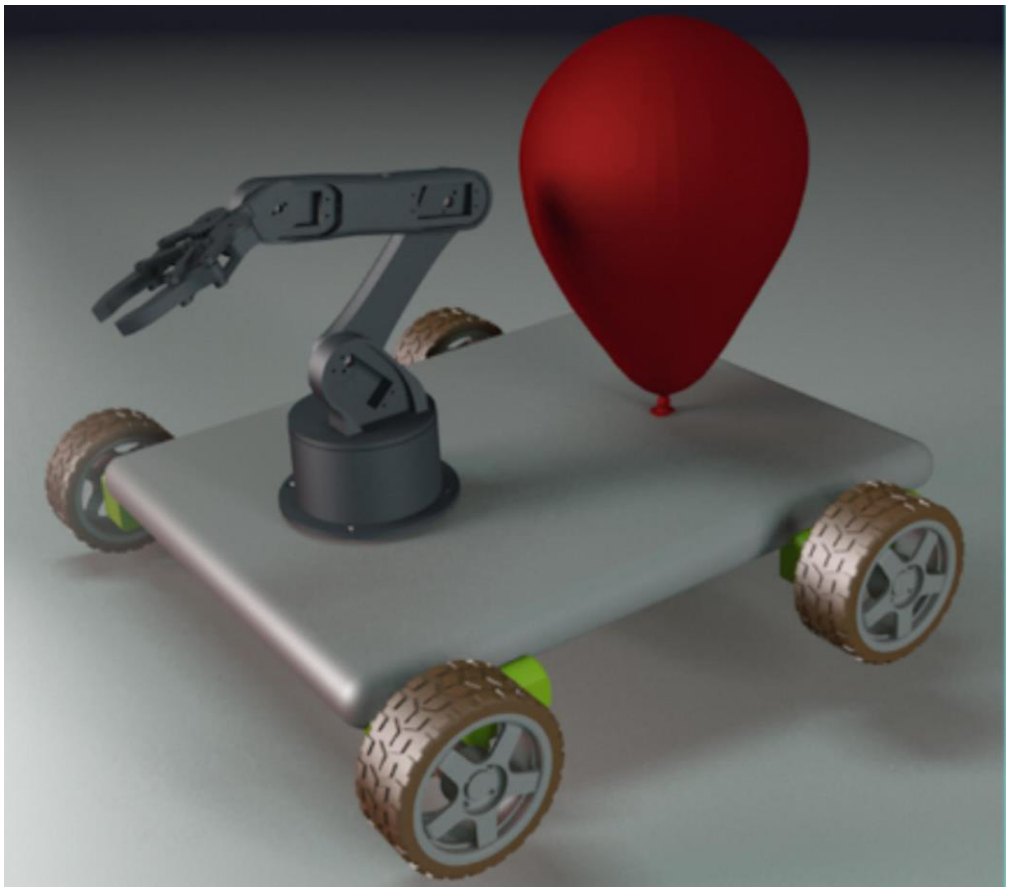
INDUSTRIAL OPERATIONS

CATCHING-ROBOTS

By Rehab Alhusayni.

Contents

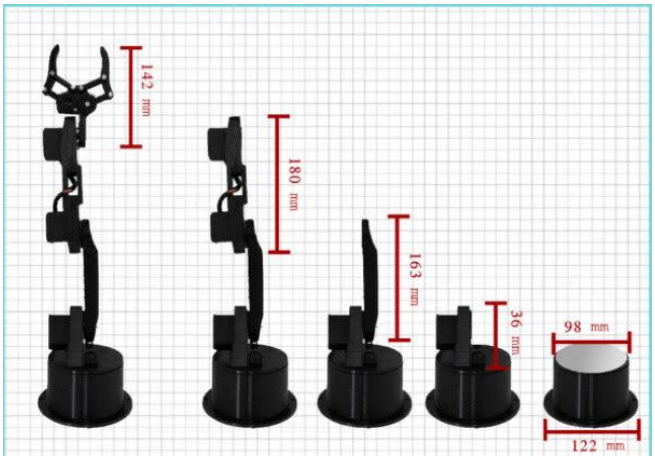


CATCHING ROBOT

ROBOT DIMENSIONS

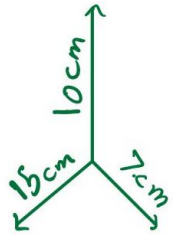
ARM

Dimensions of the arm are as described



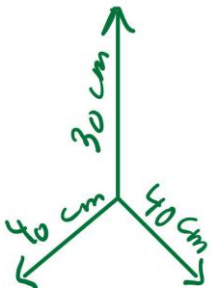
BASE

The base will be 15cm length and 7cm width and hight will be 10cm



ARENA

The arena on which the robots will be fighting should at least be 70cm by 40cm so that the robots will have the freedom to move around and away from each other.



INDUSTRIAL OPERATIONS

Operation Rules

- **Both contestants must stay still for the first 10 seconds of the match**
- **The contestants must not target the arm, base or any other pat of the robot except for the balloons.**
- **If one of the robots falls or turns upside-down the contesters get a 10 second pause to reposition their robot**
- **If any one of the contesters uses his hands or any other object other to touch the opponent's robot they will be banned, and their opponents will be pronounced winners**
- **If a balloon bursts from any other reason than the opponents touching it, they get a new balloon.**

Control panel

ARM POSITION

- Motor 1(depends on names of panel made): revolves the arm
- Motor 2: moves the arm forward and backward
- Motor 3: moves arm vertically
- Motor 4: revolves the wrist/end effector
- Motor 5: swivels the wrist
- Motor 6: bends the wrist
- Start: applies new position

BASE MOVEMENT

- Forward: moves robot forward
- Backward: moves robot backward
- Right: moves robot to the right
- Left: moves robot to the left
- Stop: stops movement

Fault tolerance

Listed below all the errors the user is likely to encounter during operating.

ERROR	DEPARTMENT
Missing pieces	Mechanic
Incorrect assembly	Mechanic
Overusing the robot	Mechanic
Library not installed	AI
Cannot find file	AI
Late responses	AI
Duplicated files	AI
Incorrect file linking	AI
No internet connection	IOT
Unclear interface	IOT
Loss of data	IOT
Server crash	IOT
Excessive voltage	Electronic
Very high resistance	Electronic
Wrong wiring	Electronic

Testing

UNIT TESTING

UNIT	RESULTS
Motor 1	Successful
Motor 2	Successful
Motor 3	Successful
Motor 4	Successful
Motor 5	Successful
Base	Successful
wheels	Successful

SYSTEM TESTING

ARM: System tests on arm motors	We found no problems on the operation of the arms motors; it ran smoothly and followed the control panel's instructions accurately.
BODY: system tests on base	We found no errors during our test run on the base, it moved steadily and followed instructions, the size and dimensions were suitable as it distributed the wight evenly over the base causing no imbalances.

User manual

INSTALLATION AND OPARATING

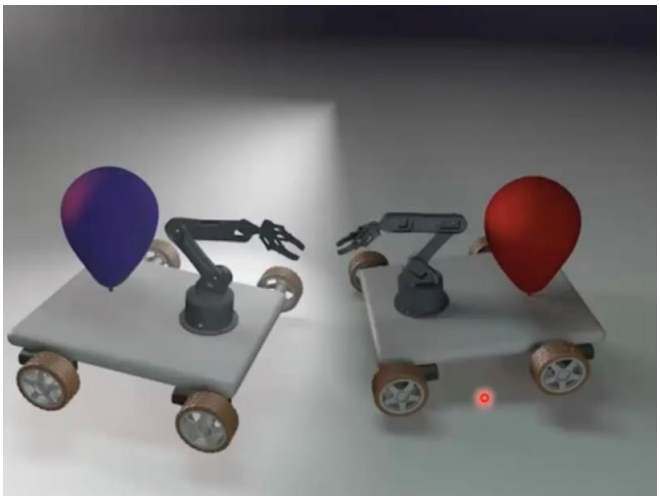
The robot mainly consists of 3 parts: arm, base and balloon. The first step is to assemble the base by installing the wheels. next you will need to install the arm on top of the base, lastly you will blow the provided balloon and put it in the indicated place behind the arm. Then your robot should be ready to run and operate and it should look like the picture below.

After successfully installing your robot head to **page 3 (control panel)** to get introduced to the control panel and then you will be able to start operating on your robot.

CONTESTING

first of all you should carefully read the rules of the game, as they are very important.

the goal of this contest is to target the opponent's balloons and popping them while protecting your . the first contestant to pop their opponent's balloon wins and moves to the next round where he will be faced with another opponent. The last robot standing is pronounced winner and receives a special gift from us.



warranty

This robot has been designed by extremely dedicated and talented engineers and specialists. And after the multiple tests we have conducted we are confidant that this robot has been made to meet your expectations, performance and quality wise. But due to the purpose that this robot has been made -fighting and competing – we decided that the warranty is for **3 months** . and that is because of the damaged that can be caused from the continuous hits and falls that this robot is bound to face.