

ROBOVR

SRB FOOTBALL

About the game:

For Football at RoboVR, participants have to build 3 robots per team. The robot developed should have a kicking mechanism to kick the ball and make a goal. The team making highest no. of goals at the end of two rounds is titled with Championship of SRB Football.

Components and its Specifications:

Sr. No.	Components	Specifications
1.	Chassis	Aluminum Sheet (5mm thick)
2.	DC Motor(x1)	60 rpm (For Kicking mechanism)
3.	Johnson Motors (x4)	300 rpm
4.	Wheels(x4)	-
5.	Battery	5A, 12V
6.	Remote	With 3 DPDT switches
7.	Wires	-

Robot Details:

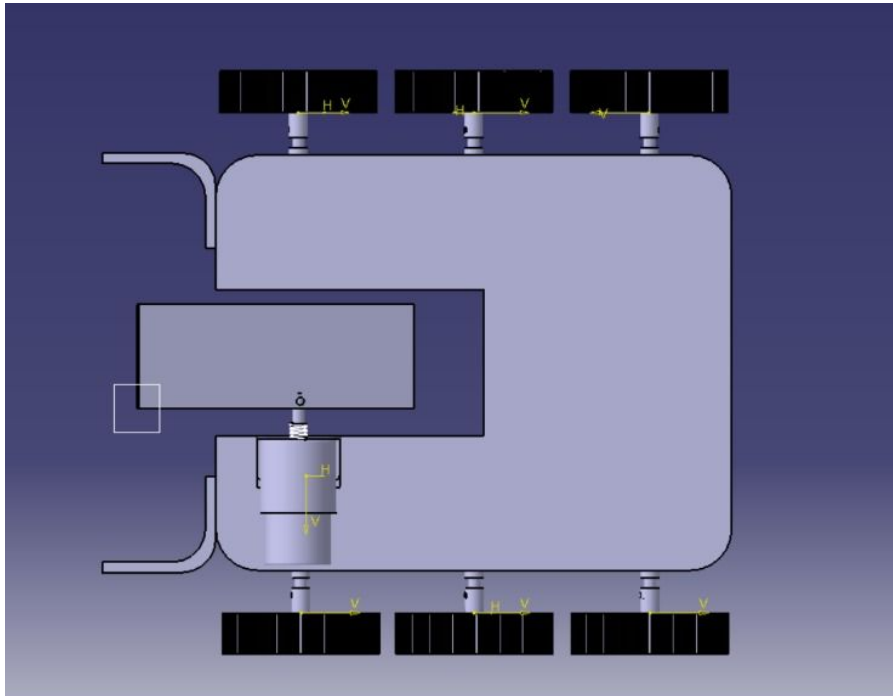
Robot Dimensions: 12" x 12" x 8"

Robot Control: Wired

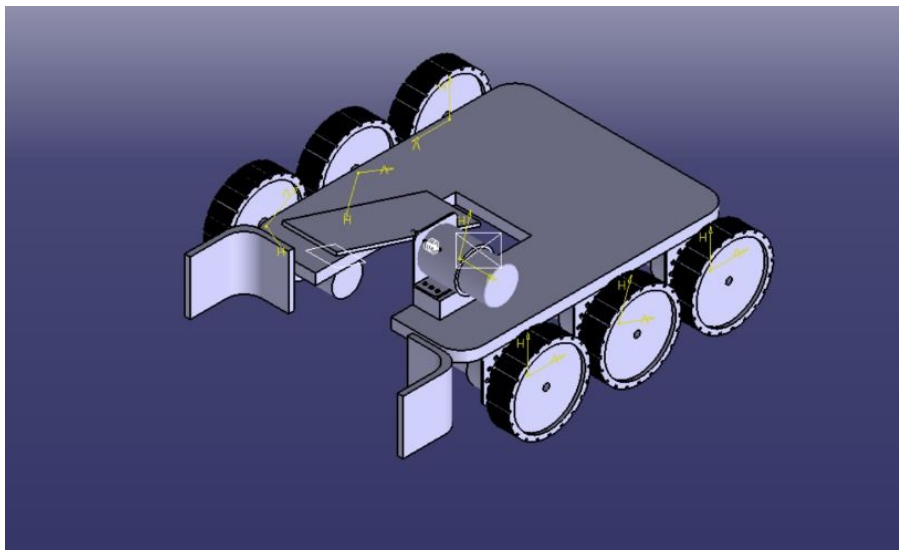
Robot Drive: 4 Wheel Drive

Mechanical Design:

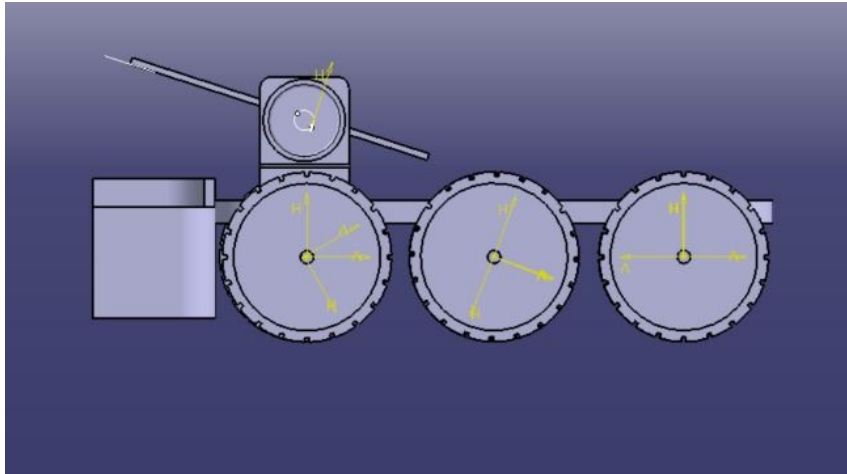
Top View



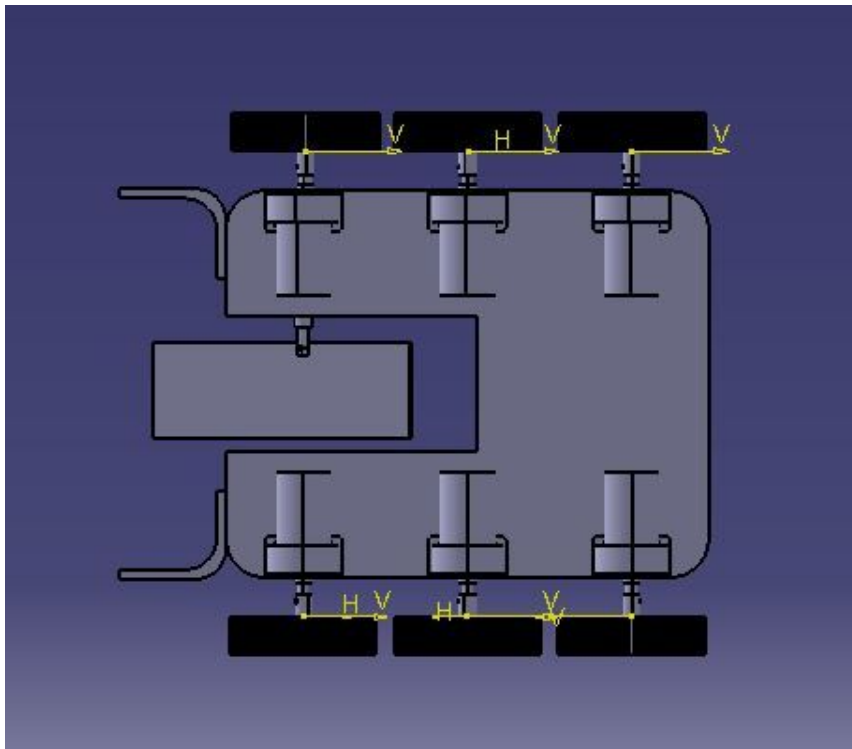
Isometric View



Side View



Bottom View



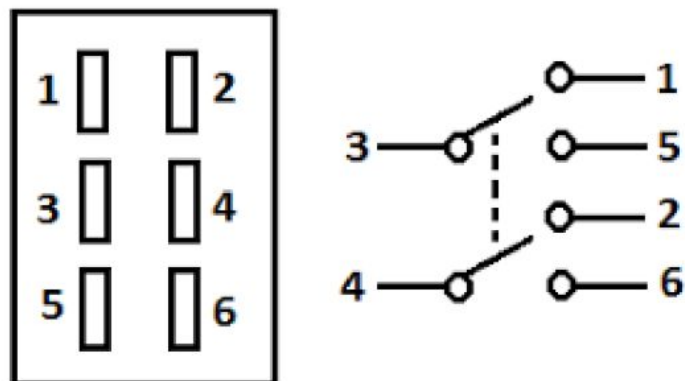
Remote Details:



A similar remote is needed to be built for this robot.

A Double Pole Double Throw (DPDT) switch is an electromechanical switch that has 2 inputs and 4 outputs and each input has 2 corresponding outputs that it can connect to.

Given below is the diagram of a DPDT switch.



Working:

The model developed is a working model. The chassis is made up of wooden sheet in order to make the bot stiff along with lightweight for football. Johnson motors used are of 300 rpm with good torque. For kicking mechanism, a metal plate is attached to the motor which continuously rotates and is capable to kick the ball. The robot is controlled with a wired remote having 3 DPDT switches.

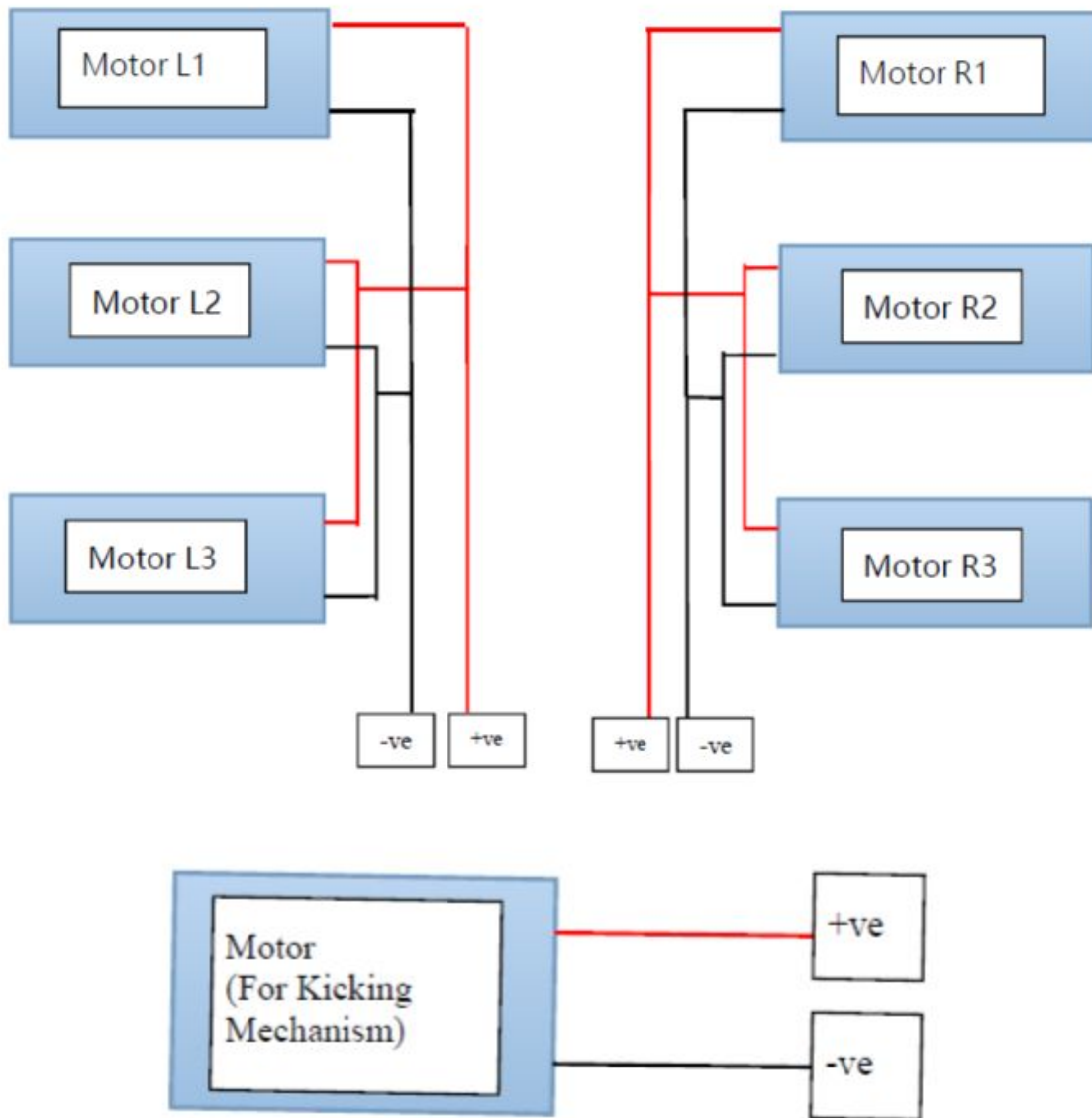
The movement of the robot with respect to the switch operation are given below in the table.

Movement of the Bot :

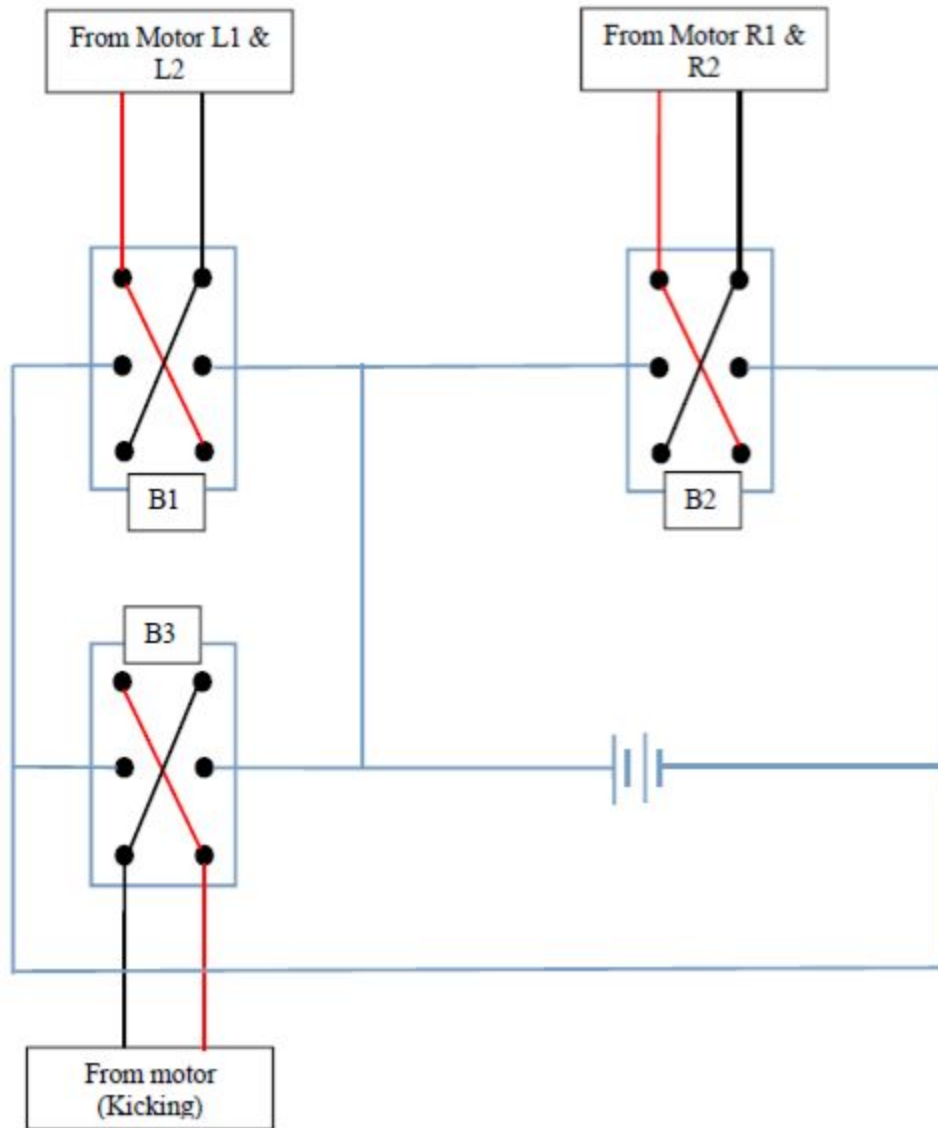
Motion	Switch s1	Switch s2
Forward	Forward	Forward
Backward	Backward	Backward
Left	n/c	Backward
Right	Backward	n/c
360° Right	Forward	Backward
360° Left	Backward	Forward

Movement of metal plate	Switch B3
Clockwise	Forward
Anti-Clockwise	Backward

Connections:



Remote Connections:



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