ROBOTiX CLUB
National Institute of Technology
Raipur

Project Name - Amphibious Robot

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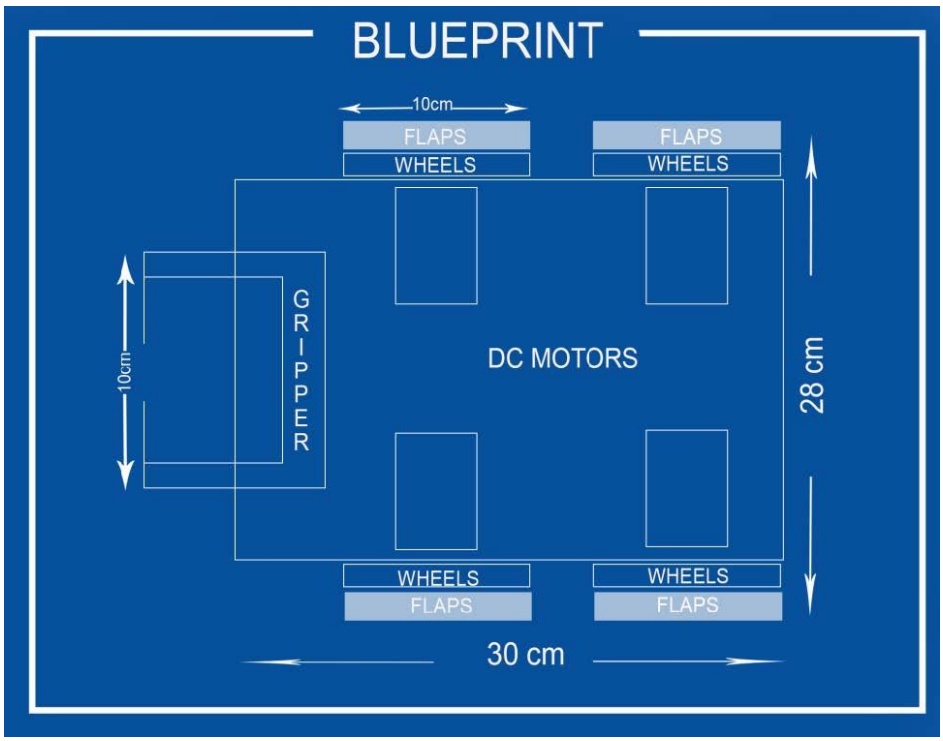
1. Introduction

An Amphibious Robot as the name suggests is a robot that goes on land, on water and in water.
Amphibious bot can be operated in various means. It can be operated manually as well as it can be an autonomous robot.
An amphibious robot, apart from being very attractive and challenging, has a very broad application and can be useful in complex working environment

2. Blueprints



3. Working

Buoyancy: Buoyancy is the upward force exerted by the fluid on a body that is immersed. Buoyant force: When an object displaces water, the water surrounding it has the tendency to try to fill in the space the object now occupies. The water pushes against the object, exerting pressure and force on it.

Three possible conditions for the object:

1. Positive buoyancy: Buoyant force > Weight => object floats
2. Neutral buoyancy: Buoyant force = Weight => object neither floats nor sinks
3. Negative buoyancy: Buoyant force < Weight => object sinks

4. Construction

Materials Required -

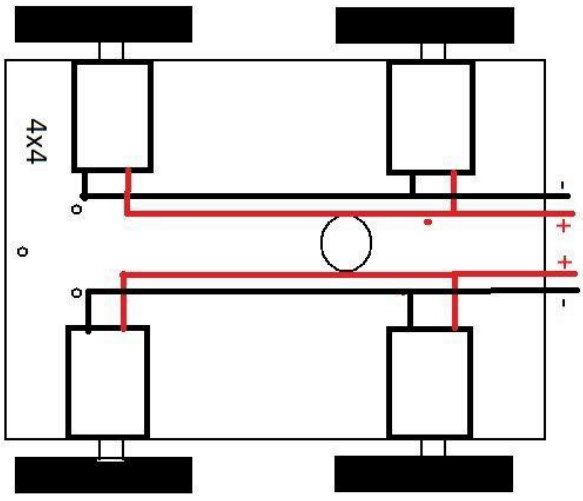
1. Floater (used as chassis)
2. DC motors
3. Wheels
4. DPDT switch
5. Jumper wires
6. Acrylic Sheet

Chassis:

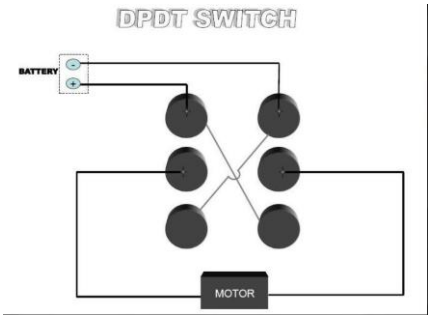
• Floaters used in swimming pool is used as a base, its main motto was to give enough buoyant force.

• It has 4 wheels of 10cm diameter and 2cm thickness.

• Robot Arm is constructed by using differential gear arrangement.



4 Wheel Drive - Connection DPDT Switch



Motion:

• It's a 4 wheel drive with left and right wheels connected in parallel connections.

• Sliding principle is used for turning the bot.