MOTOR AND SERVOMOTOR OF THE CAR

In this PDF, you will see what motor we use, what servomotor we use, how we select them, and how we put it in the car.

MOTOR

For the car we use a DC motor with an encoder, a DC motor with encoder combines a simple brushed motor where DC voltage spins the armature with an optical or magnetic sensor that generates pulse (quadrature) signals! A controller uses these signals to track speed and position for precise, closed loop control!

The model of the DC motor with an encoder that we use is MD520Z19_12V. That is this one:

i=1:30

The main reasons we use this motor are:

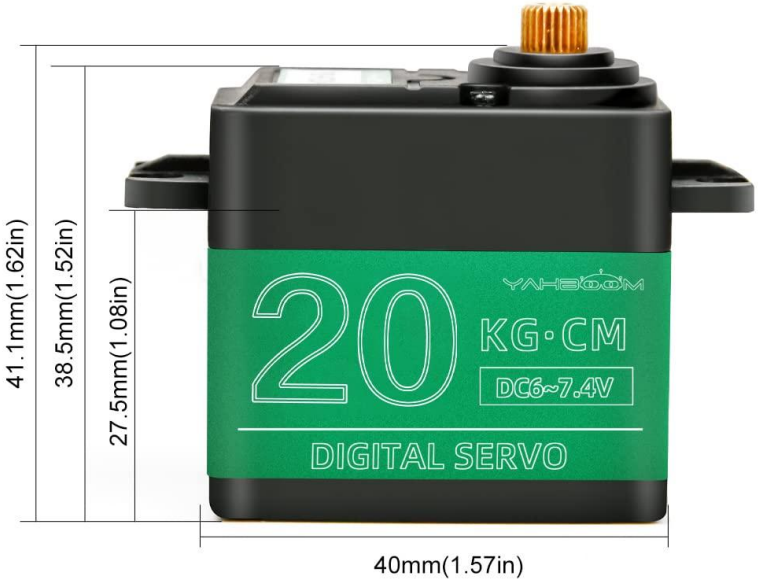
- The rated voltage is of 12V which is perfect for our battery and car.
- The motor can reach 11000 rpm before deacceleration.
- It has an encoder which can help us.
- And the last reason is that compare to other DC motors, this one has more power.

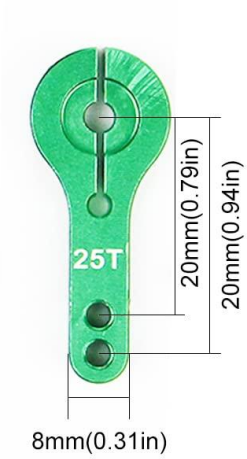
SERVOMOTOR

A servomotor is a type of electric motor designed for precise control of angular or linear position, speed, and torque.

We use a 20 Kg Cm servomotor, and the model is YB-P20M where the voltage is of 7.6V. The main reason we use this servomotor is because it helps us to change the direction of the car and it complements the Ackerman steering mechanism.

The servo motor is the one below:

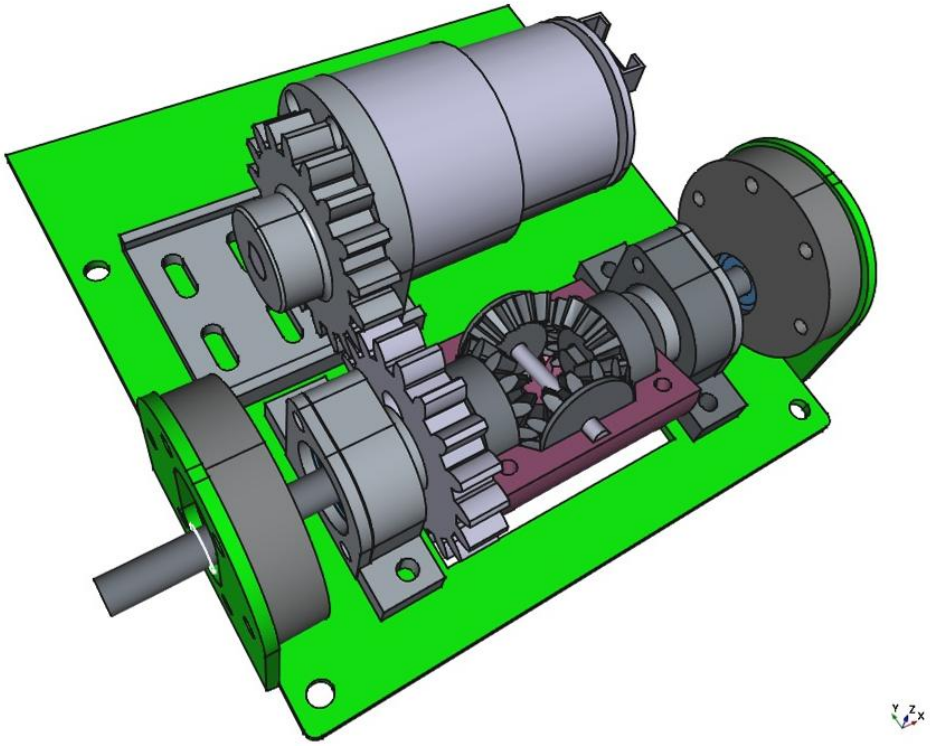




HOW WE PUT IT ON THE CAR

First of all, the servo motor is installed in the front of the chassis, and it is fixed by some screws.

The motor is in the back of the chassis and we put a mechanism that is this one



All this mechanism are created using 3D printer.