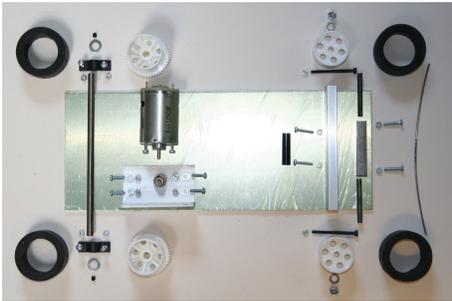
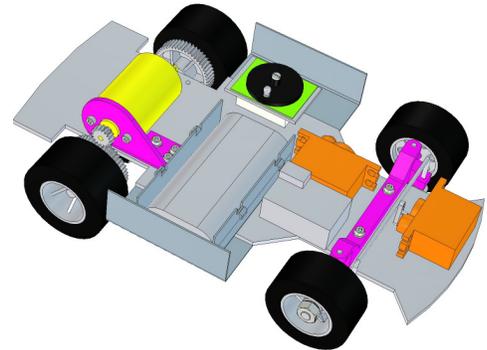


## Formula Schools Engineering Kit



The Formula Schools Engineering Kit is supplied with a set of drawings that are available on-line as well as guidance for some of the more difficult processes. You can engineer your own components to your own designs, or develop detail from the supplied drawings, but plan carefully and make sure you have allowed



enough time to produce accurate components. Your car will not work very well if you do not take care in producing the steering and drive train components to high standards.

The above photographs show the location of components and relationship to each other, take care as many are small and easily lost!

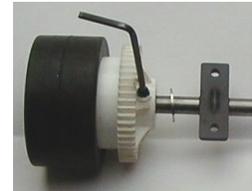
### Chassis

This is supplied as a flat aluminium sheet which requires drilling and basic shaping. Drill all holes 3.5mm DIA. The front axle and rear axle positions are left to you to decide but remember to leave enough space between them for the battery, speed controller and radio gear. Cut outs to enable the front wheel to clear the chassis when turning the steering can be designed in at this stage.

### Sub assemblies :

#### Rear axle

The rear axle is held to the chassis using the nylon bearing blocks which need to be drilled out to  $\varnothing 6.5\text{mm}$  to take the axle. The wheels including their integral gear, need a tapped M4 hole running through the wheel, as shown, to take the grub screws which will lock the wheels to the axle. Flats can also be filed into the rear axle to prevent it slipping.

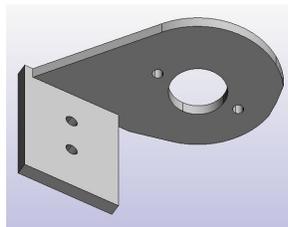


#### Front axle assembly

The front axle is made from the aluminium blank to the drawing supplied or your own design. The stub axle assemblies are made from steel, with the housing and axle being soldered together. Track rod material is supplied as stainless steel wire and needs to be bent up as needed to go connect the steering arms and drag link to connect to the servo arm.



#### Motor mount



Mount the rear axle onto the car first to aid alignment and clearances.

To mount the motor on the car a piece of aluminium alloy angle has been supplied. A  $\varnothing 13.5\text{mm}$  is needed to locate it. Two M3x8 machine screws are supplied to ensure the motor still turns after being fixed to the bracket. Please use the 2 star washers to limit vibration. Attach the pinion gear and check alignment. Adjustments can now be made to ensure good meshing with the rear wheel gear. Clamp the bracket in place and then drill through the bracket and chassis fixing it with the M3x12 machine screws. Shown here is a one sided mount, with only two mounting bolts, for more reliable meshing of the gears four bolts are better as in the drawing supplied.

#### Speed controller

The speed controller for the car comes in component form and needs assembling. The resistors are connected as shown.

