



ELECTRIC 1-5 SPORTS GT CONVERSION

Items used.

FG Sportsline car (minus the fuel tank and motor)

Plentenberg BOLIDO 9hp motor with 10mm output shaft

Schultz 35 volt controller

Twin Flightpower 25 volt and 29 volt Li-Po packs with 11,000mAhs output 30c type

Slipper clutch from Ian Oddie

Emcotec pulse signal booster for the controller to receiver lead.

Please read this in conjunction with the video (see link below). Those of you who have followed the Formula RS5 electric conversion and use will see similarities with this conversion. This is the most read topic on this forum and long may it continue if it helps others and there are others who have converted trucks and so on using different motors etc., etc.... I have used what I learnt from the trial and error conversion of the Formula in this conversion which was done very quickly. Yes, I know HARM make and sell electric cars (I had the very first one) but many of you both do not want to buy yet another car, have a 1-5 car available and like to tinker with things. If any of those last three apply to you then this article and video are for you.

So why go electric? Well I cannot predict the timescale but eventually we will all have to go to them for environmental and noise reasons or maybe the oil runs out? One of the most quoted negative comments is that there is no engine noise. Well fit the electronics to the car (available from the States at present) and you too can have it sounding like a muscle car accelerating noise when the car does, tyres squealing as you go round corners etc.. You can program the simulated sound track to your car so that should dispose of that negative comment. The next comment is cost. Yes the motor, controller and batteries are expensive but the motor and controller are about the same price as a new highly tuned Zenoah and also a lot more powerful. The batteries are getting better, more capacity and cheaper every few months and you really are buying all your fuel at once. The electric motor has been mounted onto a gas clutch cover (by drilling the 4 mounting holes into the cover) and a separate carbon mounting ring to support it. The slipper clutch is fixed to the motor shaft and the whole just mounts into the existing fittings. The gearing is currently a very high 24/36 So lets get on.

I learnt from the Formula installation that a) the controller does not like sharing a connection with a servo; b) using the motor as a brake also

wears it out pretty quickly due to massive strain from such a heavy car; c) most electric cars are direct drive but with our cars using a slipper clutch decreased strain on the motor and allowed for smoother acceleration from such a powerful motor. The first problem was sorted when Futaba released the 4PK system with four channels. This allowed the use of a dedicated brake servo and of braking the motor now goes into neutral and the slipper clutch disengages. The new 4PK has the usual mixing facilities but this extends to the fourth channel as well. It also has more switches on it to change use and profile as you go around the track. Getting to grips with this new unit and exploring the software will reap rewards for those that persevere. I have set mine up with three different profiles. The use of ABS***, brake balance and so on allows speed to be carried into a corner and as this car is now effectively a mid engines car it will behave like the formula car does.

With such high power and amps delivery, heat has to be dissipated. The motor has a cooling fan on the end but due to the enclosed body of the formula I used four cooling fans for that application. This time only two are used as cooling air comes from under the body and down the sides of the chassis as well. The fans are 12volts and speed variable. I obtained these from Maplin in the UK and essentially they are the same as used inside desktop computers. I used one of my earlier 11.2 volt LiPo batteries to run them and this it will do the whole day on one charge.

I chose the 41cm wide chassis with the GT1 shell in order to give the wider wheelbase and greater stability under acceleration. We are dealing with up to 9bhp, 18-22,000 rpm (voltage dependant) and massive torque from the minute you apply power and as most of you will know there is no torque curve as in a gas motor, it is flat right up the rev range. The car itself is now ready for the track and this I plan on doing in early September so we wait and see how it performs.

The video (which I had to do in the shed due to rain, rain, rain) are in the DiVX format. One is standard definition and the other is High Definition. The page link is <http://www.rev-up.tv/electric.html>

Chris

*** The eagle-eyed amongst you will notice I have cable brakes. Considering that I was directly responsible for hydraulic brakes being allowed in EFRA this may make me a Philistine in some eyes. Actually as I now use ABS on both brakes all the time, cable was the only way I could make this work. No other reason.