



A Rough Guide

to upgrades and improvements for the Schumacher 'Club 10' Cars by Mike Rimmer.

Hands up all you newcomers to 1/10 off-road electric racing. Hands up all those who got a Schumacher 'Club 10' car for Christmas. Hands up again if you've been getting to grips with the car in standard trim, and would now like to make it go faster. Now, hands up those who are running out of hands!! Right, since

In the January 1993 issue, I was privileged to review both of Schumacher's 'Club 10' cars for beginners: the Cougar buggy and Storm truck. As mentioned then, the big advantage of the 'Club 10' chassis is its ability to be uprated with bolt-on Speed Secrets' parts direct from the competition-bred Cougar 2 range.

In this follow-on feature I will explore just how these upgrades, together with motor and speed controller changes, can take the standard car through several stages of go-faster tune. The original review explained that I'm a beginner

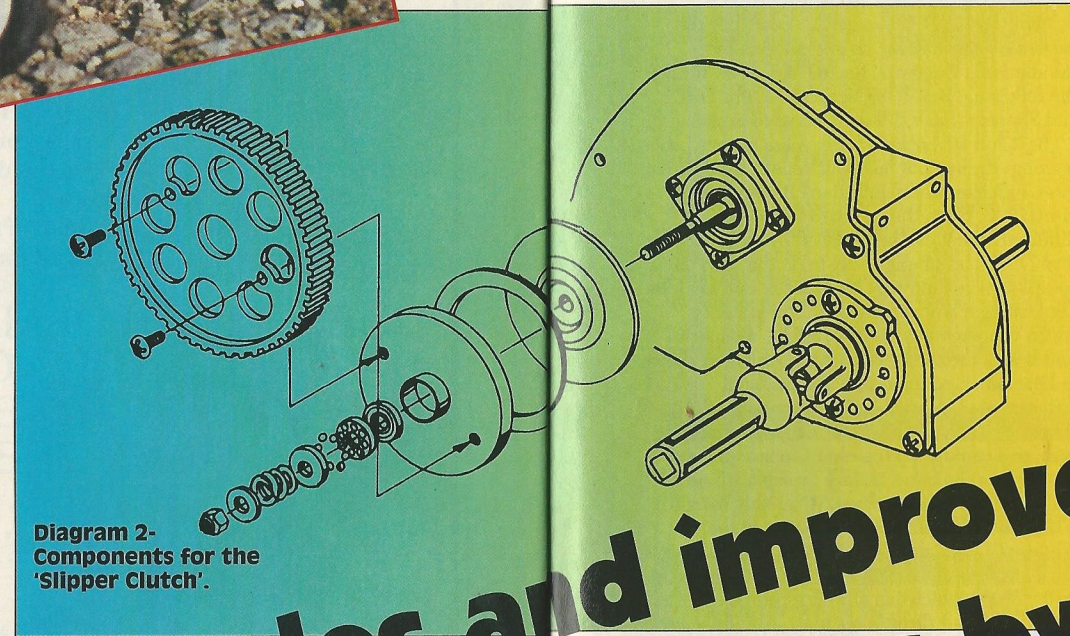


Diagram 2- Components for the 'Slipper Clutch'.

myself; therefore this article is written as a record of a personal voyage of discovery. Other beginners may like to accompany my exploration, in the hope that it will assist their own efforts. I expect that experienced drivers will have already turned to more authoritative features elsewhere in this issue.

I've Got The Power!

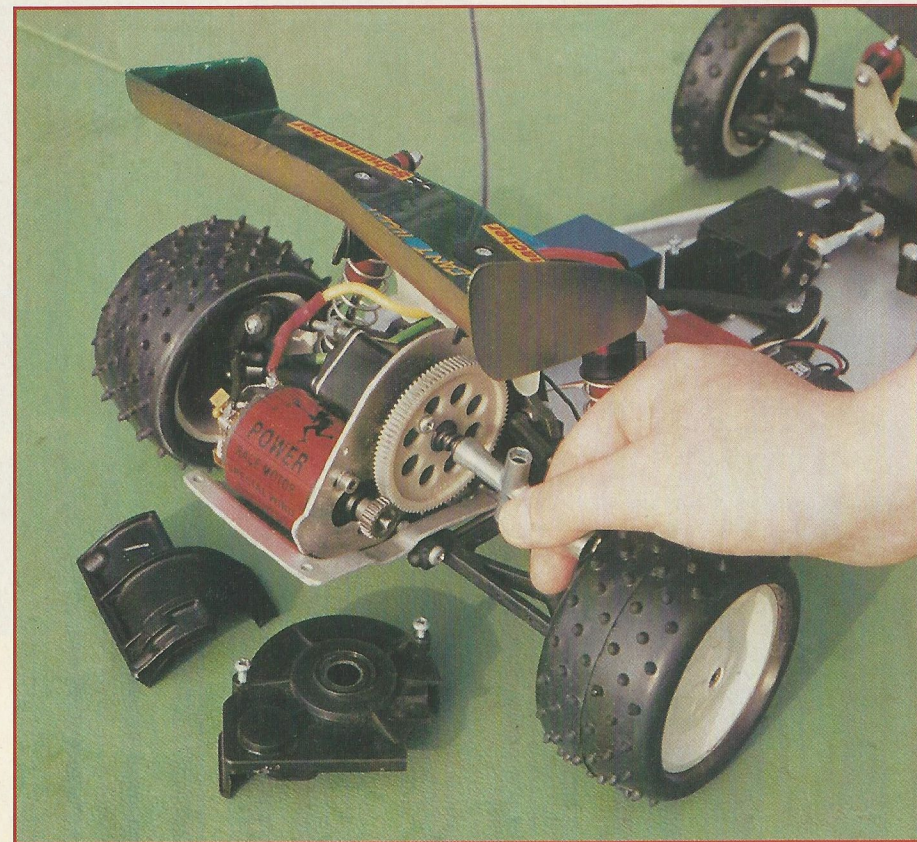
After gaining confidence with the 'Club 10' in out-of-the-box trim, my next thoughts were to increase the speed by fitting a more powerful motor. The main limiting factor here was the Club 10's mechanical speed controller, which could be damaged by the very high current drain

Adjusting the slipper clutch is easy and does not require the transmission cover to be removed — that's just been done here for clarity.

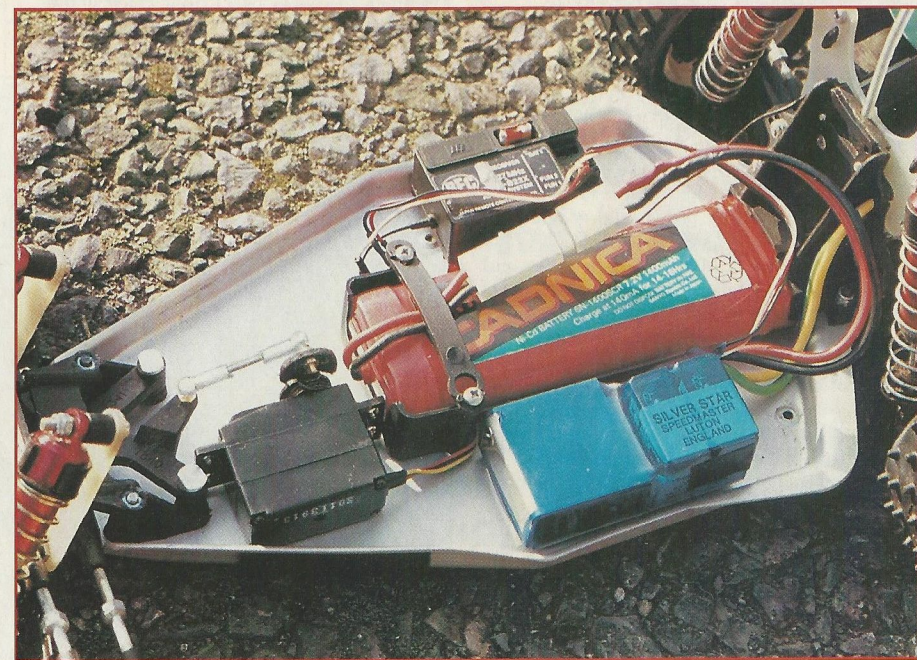
of a fast modified motor. The most sensible course of action was to take things in stages. I'd acquire a 'Stock' motor for a modest speed increase in the interim, and then uprate to an electronic speed controller and fast 'Modified' motor later on.

At first glance, there's a bewildering array of motors on the market and it's difficult to know which to choose. As a starting point, I singled out two sources of useful information; Rev Tech and Power Products. Both are Mail Order specialists, as advertised in this very magazine, and each sent me pages of helpful data on what's available.

Rev Tech motors, etc, are American imports distributed by Sidewinder. Not only do they offer many differing motors, but also a wide range of



Re-arranging the internals, as per Cougar 2 style, gives a neat layout and quicker battery access. Note the new electronic Speed Controller, plus improved servo linkage.



including custom brushes in various densities and shapes. Thumbing through the sheets of information convinced me that I've got a lot to learn! I obtained a faster-than-average 'Stock' motor, the 'Ultra Sport Outlaw'. As a 27 turn single wind it's a standard 'Stock', but with a massively advanced 45 degrees of timing it's built to live fast and die young!

Power Products also have an extensive list of offerings, and from them, as an alternative to a 'Stock', I obtained a 'Mild Modified' 17 turn single wind motor. Power output was similar to the 'Outlaw' but, being a modified type, it can be legally stripped and serviced, and therefore has a longer life.

The car's gearing was duly altered, to squeeze optimum performance from each motor, but the increase in speed now emphasised the 'notchy' nature of the 'Club 10's mechanical speed controller. With only fixed resistors to define the different speed bands, the steps in power output became more noticeable, and made for jerky driving in twisty sections. Time to survey the

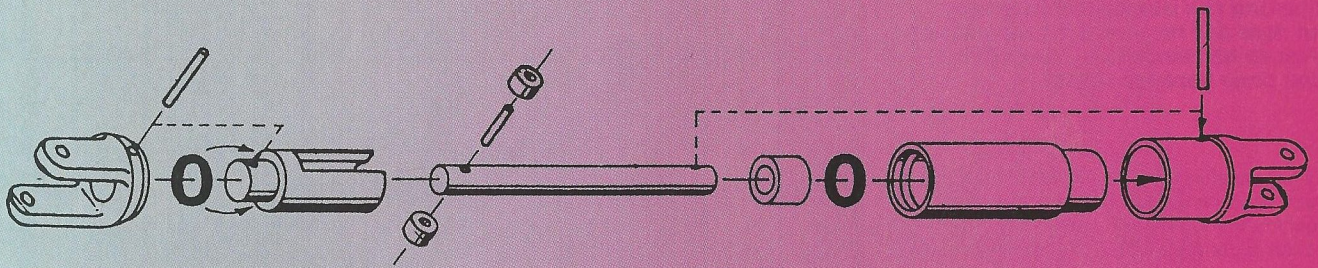
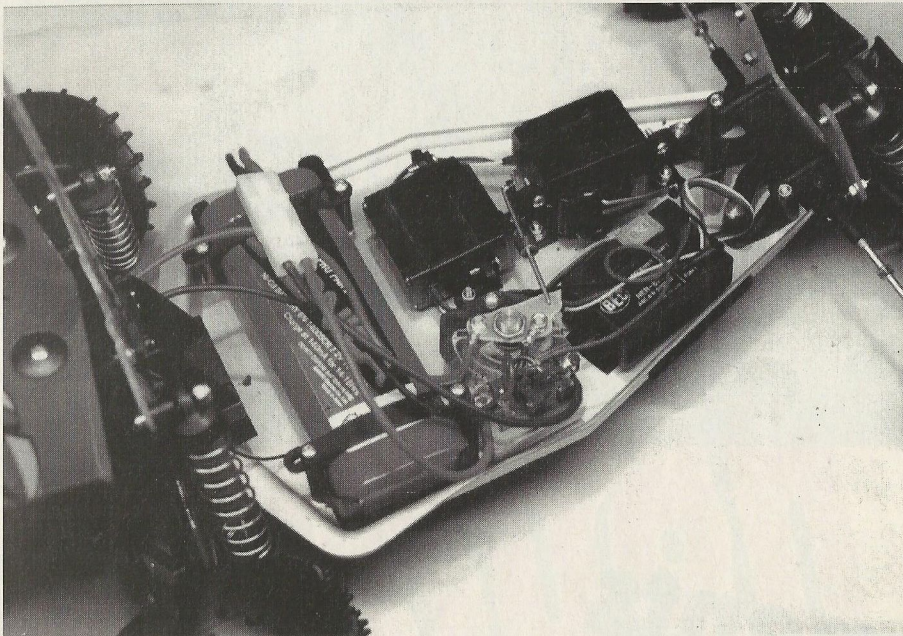


Diagram 3- Components for the Roller Drive Shaft.



smoother electronic alternatives!

Under Control?

Scanning the market once again revealed a staggering choice of controllers available; from simple functional units, through to very complex bits of electronic wizardry. The expensive items offer greater efficiency, i.e. less power loss between battery and motor, plus giving a host of special functions. Sifting through the hype I established my own personal criteria for choice: the unit should be robust, simple to use, reasonably priced, and British! Therefore, Speedmaster and Nosram emerged as likely candidates.

From Speedmaster's range I chose the basic 'Silver Star' as a fussfree, plug-in and-go option. No frills, no hassle, just smooth and reliable power on tap. My son, Mathew, now uses this and is delighted with its reliable performance. It's a popular first choice for both juniors and adults, and the unit can be upgraded to 'Turbo' status at a later date.

The Nosram 'Enhanced' was another choice. Equally reliable and of similar power output at 180 amps, but with a few more features to justify an extra cash outlay. There's a throttle response control and true braking facility, plus the reverse mode can be disabled for greater efficiency. Again, upgrading later is optional.

It's worth noting that both manufacturers offer a rapid repair service in case of mishaps. I damaged the Nosram — my own stupid fault — but a repair was quickly effected, and the unit returned to me within the week.

A Classy Chassis.

Now that I'd improved the electronics, it was time to turn my attention towards increasing the mechanical efficiency in the rolling chassis. At the risk of repeating myself, the 'Club 10' car is essentially the old Cougar 1 from which all the present range of Cougar 2 buggies were developed. The Cougar 2's are available in

Original 'Club 10' layout.

varying degrees of mechanical sophistication; ranging from the 'Sport', through the 'Racing' and 'Team', to the latest top-of-the-shop 'Works' car, and all their improved components are interchangeable with the 'Club 10' chassis parts.

As it stands, the Club 10's specification is similar to that of the Cougar 2 'Sport', but the transmission can easily be upgraded to the standard of a Cougar 2 'Racing' simply by fitting the following: Ball-Race Bearings, a 'Pro Diff', and Slipper Clutch. I'll do my best to explain.

The 'Club 10' back-end uses oilite bronze bush bearings throughout, and will benefit from fitting more efficient sealed Ball-Race Bearings, part No.U780B. Next, the standard tri-lobed differential unit can be replaced by the smoother 'Pro Diff'. The simplest way to do this is to buy a complete new unit, part No.U858B, but you'll be duplicating many of the plastic components which you already have. It could be cheaper to purchase a Pro. Diff. 'Repair Kit' which, as shown in Diagram 1, contains only the essential differences of internal ball races and metal pressure plates. Or, if you're really strapped for cash, you could keep the old tri-lobed unit, and just replace the outer bronze bushes with new ball-races from the pack you've already bought!

Now, Diagram 2. shows the basics of the 'Slipper Clutch', part No.U8235. The idea here is to provide an adjustable 'weak point' in the transmission which can absorb torque stresses, and smooth-out throttle response. Under heavy acceleration, or hard cornering, the P.T.F.E. clutch plate will slip and enable you to maximise traction. Some experimentation is needed to get the setting just right for the power available, and your style of driving.

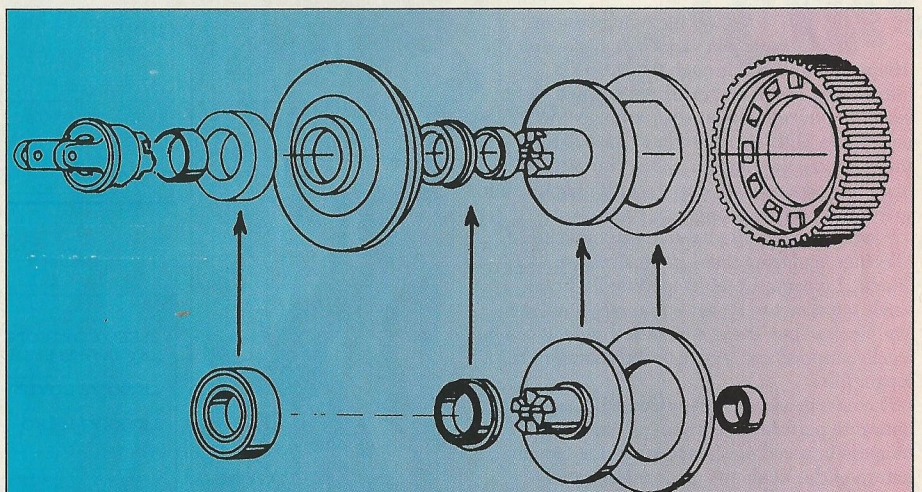
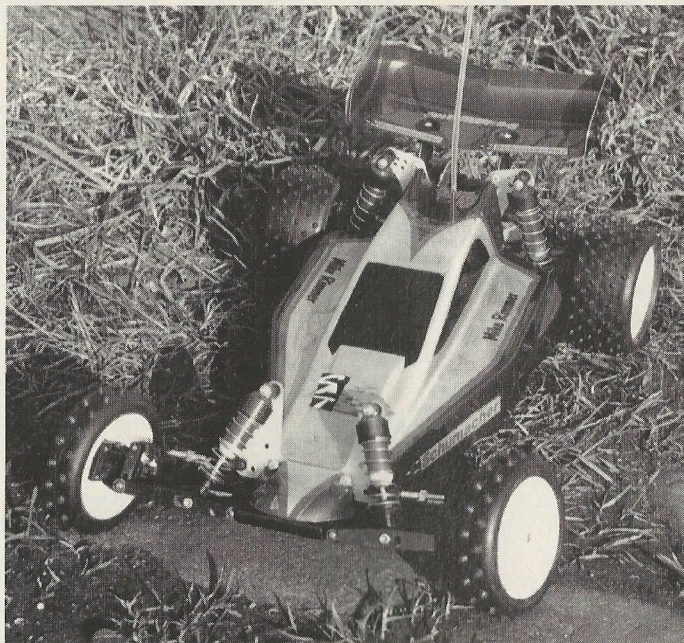


Diagram 1- Replacement metal parts and bearings which upgrade the standard differential unit to 'Pro. Diff'. See text.

By the time you get this far, with a nice fast motor on board and some competition experience under your belt, the Roller Drive Shafts and Ball Raced Steering, as used on both the 'Team' and 'Works' Cougar 2's could become of interest. The Roller Drive Shafts, parts No.U817M, are a strong, slop-free, alternative to the standard splined plastic unit, and have a shear pin to avoid damage if the going gets too tough; see Diagram 3. As speeds are increasing you'll need some rapid-action steering control too. Fitting ball-raced pivots in the steering mechanism, allied to a fast servo, will ensure crisp response to commands.

Can You Handle It?

So, we've improved the motor, controller, transmission, steering, and now my 'Club 10' is a 'Club 10' no more! So, what's next? Speaking personally, I find that although the opposition now has much less advantage on the straight bits, they're still leaving me for dead on the curves! It's time that I started delving into the Black Arts of



suspension settings, steering angles, and tyre choice.

Well, I've already got a selection of suspension springs, part Nos. U7670 and U768P, some 5 and 10 degree castor blocks, part No.U1308D, and a set of 2.2 inch wheels and tyres, but I'm only just scratching the surface in these areas and can't offer any real practical advice yet. Perhaps your editor could find someone experienced in the ways of suspension and steering settings who will pen an informative article for a future issue. I, for one, would be an avid reader!

A Few Loose Ends.

The more observant will have noticed that my 'Club 10' now wears a Cougar2 body shell. Some adjustments at the front end were needed to achieve this. Basically, it involved cutting the Shock Mount to enable it to slide in front of the uprights on the Suspension Plate, as per Cougar 2 practise, thus allowing the new body and nose cone to fit easily. By the way, if, in preference to the Cougar buggy, you are using the 'Club 10' chassis with the Storm truck body and wheels, then obviously all the aforementioned upgrades still apply — but there are some additional items available especially for you! The standard single bearing on the front wheel can be replaced by double bearings, part No.U815K, for extra durability. Also, using high tensile wheel bolts, part No.1309E, will add strength all round to both trucks and buggies alike.

Well, I think that covers just about everything for now; it just remains for me to offer my sincere thanks to all the following manufacturers who helped in compiling this feature:

SPEEDMASTER 60, Mancroft Road, Caddington, Luton LU1 4EL.

REV TECH c/o Sidewinder Distribution, 45, Heaton Road, Newcastle upon Tyne NE6 1SB.

SCHUMACHER RACING Hanson Business Park, 71-73, Tenter Road, Moulton Park, Northampton NN3 1AX.

NOSRAM c/o C.M.L. Distribution, 4, Court Street, Upton-on-Severn, Worcestershire WR8 0JT.

POWER PRODUCTS P.O. Box 12, Aldershot, Hampshire.