

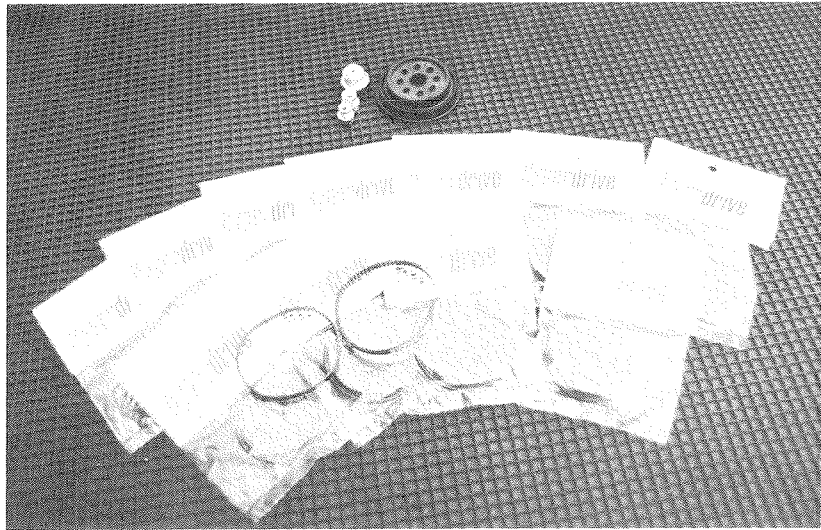


# Hyperdrive

## PRO-TEN

**A**mongst the many myths and legends that are woven around the world of reviewer/columnist, is the belief by many non reviewer/columnist that our life is one of serene calm, a world where clocks do not exist, earning a living does not interfere with the serious task of slagging off the latest turbo nutter thing-um-y-jig that has just been unleashed on the general public and that you are always given months to study this object. So why can you only come up with five and a half pages of useful information!

In order to put the record straight, life just ain't like that! If you are very lucky you will have just two weeks to build, assess,

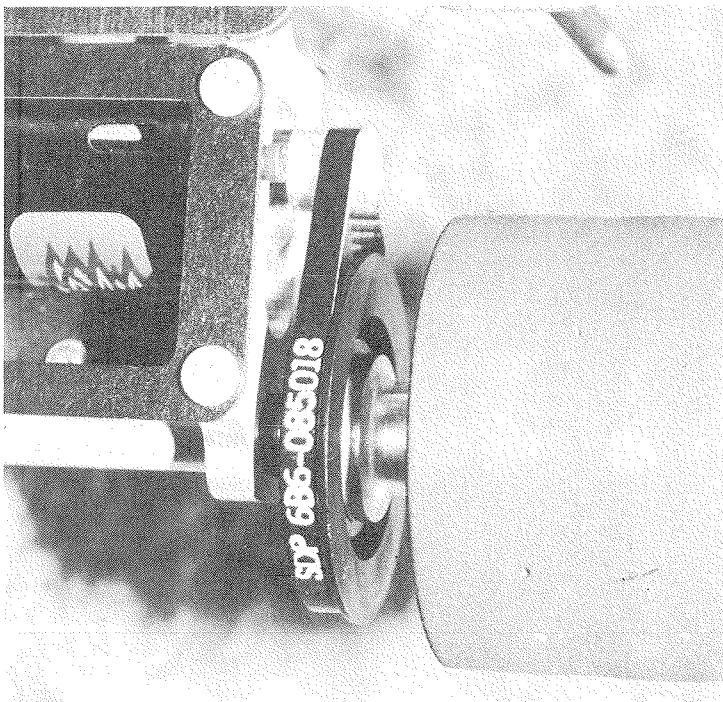


review, spray the best body job in the world, take photographs and try to do an all round good job. There are those, legends in our business, who have been known to do all this in just two days, two days without sleep, eating with a screwdriver in one hand, a box spanner in the other, a pen tucked behind one ear and a camera firmly lodged, well that's another story.

So you see, as much as we would like things to be different, they aren't and most probably never will be. However, the point of all this is, this time it was. This review has had the benefit of nearly four months of playing, building to race standard, race testing, stripping, servicing and tuning, and all by the sheer grace of good luck.

### DO YOU WANT TO PLAY WITH THIS.

Just after Christmas someone handed me a car and a huge bag and I mean huge, of what looked like miniature washing machine components. "Here" he said, "You play with these things don't you." Well before I knew it I was the new caretaker of a Hyper Ten circuit car and a bag of miniature washing machine parts. Having got the car and the bag home I realised that here was no ordinary pro ten car, here was something with a very big difference, in fact several very big differences. Whilst the car was very much in the accepted layout in as much as it had front beam axle, rear pod construction, the first noticeable big difference was that it was belt driven, the second was that the car was set up to accept stick or saddle pack cells. Closer inspection of the huge bag



The quiet heart of the car, the belt transmission, keeps everything running - Oh so smooth!!





of what I had earlier mistaken for miniature washing machine parts, confirmed my growing suspicion that I was also the new caretaker of all the drive pulleys, belts and diff pulleys in the whole world! Would the Monopolies commission be informed? Would I be accused of manipulating the belt drive market? Could I ever sort the bag out? Any way other work was pressing so the car and the bag were sidelined to the development area ( workshed ) for several weeks!

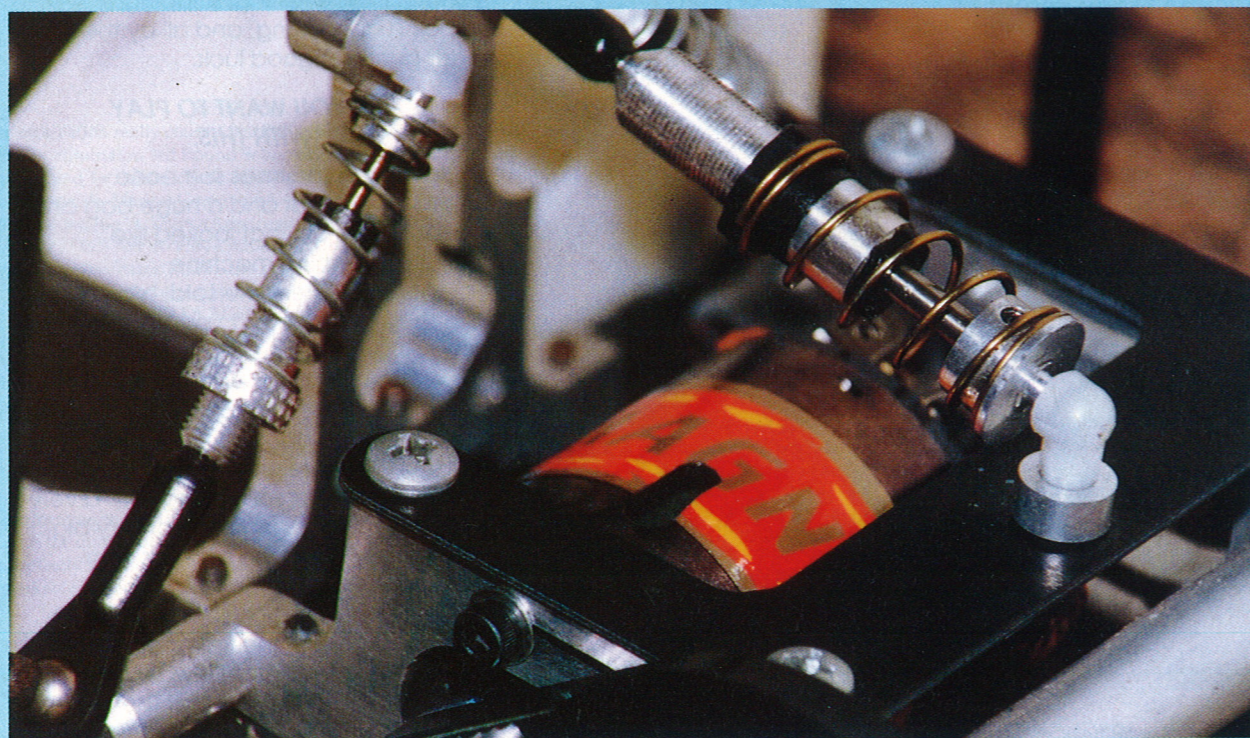
**YOU KNOW HOW SOME SUNDAYS CAN REALLY MESS YOU UP ?**

I'd just had another one of those days, everything but everything went wrong, during the heats disaster followed disaster, a shunt in the rear from the fastest, bulldozer disguised as a circuit car that I have ever seen, made short work of the only 84 tooth spur gear I had with me, well you know how you get attached to these things. Heat two saw my car heading gracefully through the infield one second and pirouetting gracefully the next as a rear wheel and tyre, obviously bored with my choice of direction, parted company with the rest of the car and shot off on it's own chosen course, and so on and so on. Sorry, what did you say, how about the final ? Would you believe that the only loose bit of nylon fibre rope on the entire circuit found a way to jam itself between the spur and pinion, stopping the car dead and wrecking spur gear number two into the bargain!

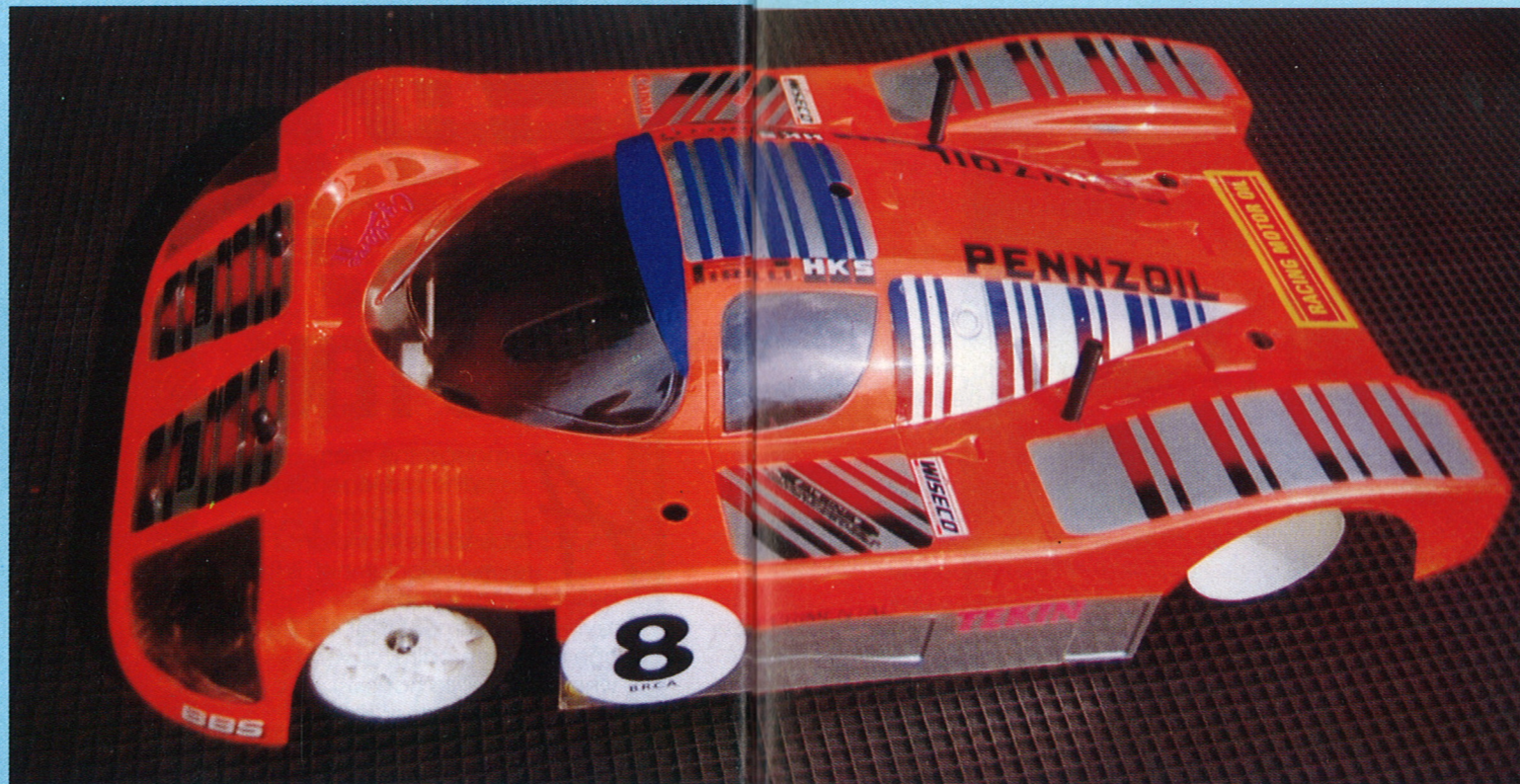
So, feeling more than a little ruffled with the whole shambles, on arrival home the whole gear was consigned to the development area (workshed) and the following evening work began on the Hyper Ten!

**FATE'S FICKLE FINGER, OR IN OUR CASE THUMB.**

It is at this time that the whole story starts to develop a point, mainly due to two things, the first was the launch of T.Q. and the need



Oil-less Shockers work very well indeed, stiffening the ride front to back and keeping the roll soft.



Our trusty old Sauber Mercedes shell was used for the track test.

for material. Taking this into account the build was documented and photographed, the problem was that as the car was not imported into the U.K. by anyone it seemed a bit silly to review it, so the ground work was done and



ensure that the screws sat flush. Across the chassis an Associated type cell holder is situated, this ensures that stick or saddle packs can be used and will be held firmly in place at all times. Using this type of cell holder also means that if you run an off road car that uses stick packs and you wanted to go road racing but couldn't afford to buy a car and five new sets of cells, now you don't have to.

It's the rear of the car, where the major area of interest lies, and where all that shiny metal that looks so good is situated.

An alloy upright supports all three shocks as well as providing a great cable guide to keep everything out of the way of the transmission, the shockers are not oil filled but are spring actuated and damped using an inner return spring, this was thought to be the down point of the whole kit, later testing was going to prove just how wrong you could be. A graphite T bar and top plate is held apart by two beautifully machined alloy motor mounts, yes you can even decide which side you want to mount the motor, diff, et al.

The graphite rear axle is carried in an alloy axle tube for extra security against attacking bulldozers and to keep a lot of dust and dirt out of the bearings, this works a treat. Mounted on the axle is a ball diff, as every other car but this diff carries a belt pulley rather than a spur gear,

Carefull which shell you choose, the Axle Mounted Servo can get in the way!

the report was shelved, hopefully for later use.

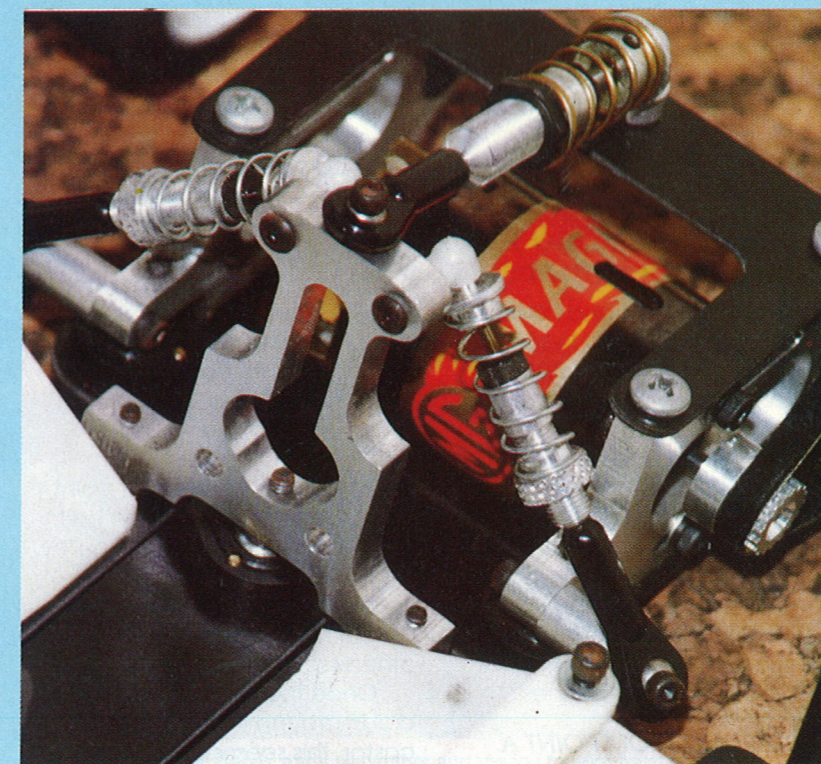
Building the car is easy and can be completed in an evening, instructions are clear and precise and can be followed by anyone, beginner or expert.

The front axle is a straight-forward alloy beam held between two alloy axle supports, these are adjustable to allow castor adjustments to be made. One superb feature of this area of the car is that the chassis is drilled in three different positions, allowing the wheel base to be specifically tuned to suit the track you are driving.

Both kingpins are drifted into position through the beam and held firmly into place on the axle with e clips. Drifting is a nice expression for hitting with a heavy object, do be careful when drifting the kingpins home as it is all to easy to bend the axle if not properly supported from underneath, a vice is a great support to use, lay the axle across the slightly open jaws and drift away.

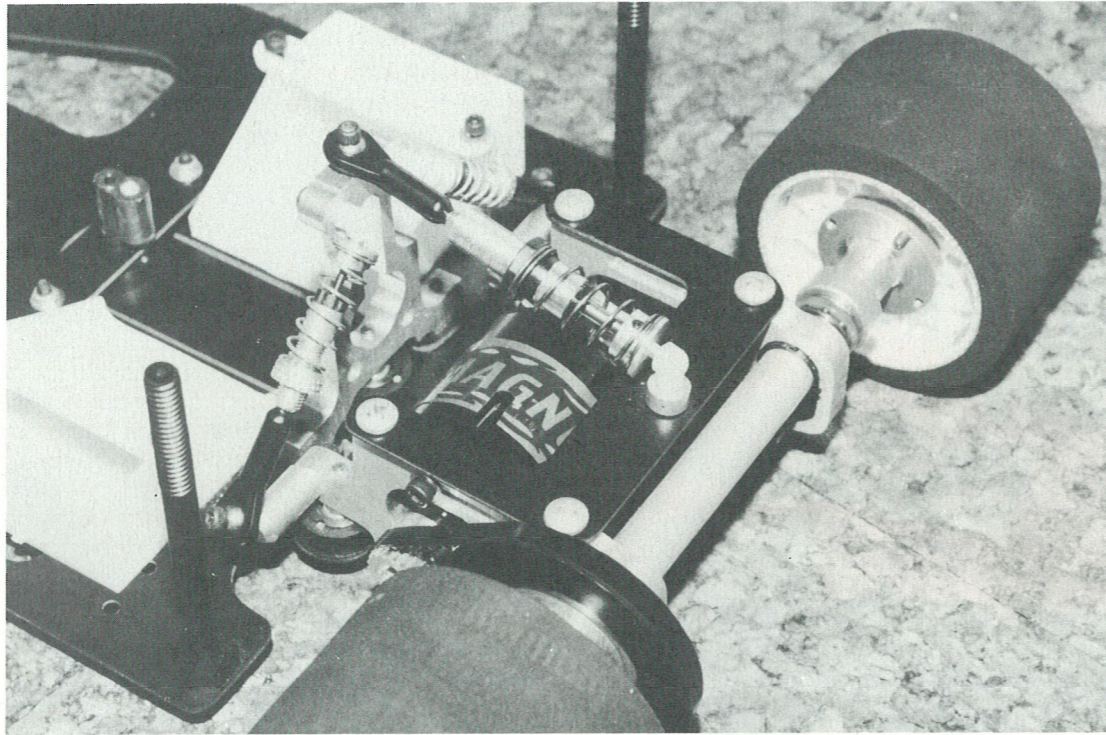
Our example had a graphite chassis and T bar assembly all neatly machined, finished and countersunk on the underside to

the belt is fed around this to what would normally be described as a pinion. As the photo's clearly show both are heavily shouldered, making certain that the belt runs true and does not slip off when in use. Right then, Why a belt system? Well there are several reasons why you may choose a belt over the conventional transmission. Less



Rear Pod shot from above, note how thick the alloy sideplates are, plenty of heatsink. Alloy upright is cut away to allow cables to pass through rather than round. This reduces the risk of fouling any moving parts.





Rear Pod arrangements are clean leaving masses of space to make motor adjustments and refits through.  
Alloy Axle tube keeps dirt and dust out and the axle safe in a rear end smash!

vibration is the first, the car does run much smoother than any other yet driven. Less friction is the second, as many major manufacturers will tell you, belts have a much lower coefficient of friction than any other method of transmission, that means more power where it counts at the back wheels! Another factor that needs to be considered is that lubrication ceases to be a problem, the diff pulleys are all Teflon impregnated and so are self lubricating.

#### **DID YOU KNOW THAT ? NOT A LOT OF PEOPLE DO.**

Back to the plot and having two parts of the jigsaw in place meant that when Brian, boss of TOP models, let us know that he was now importing the Hyperdrive range of products into the U.K. including the circuit cars, we all jumped for joy knowing that we could at last run the review for you all. By this time the car has had several meetings under it's belt and in the right hands would no doubt be considered "the business."

#### **STARTING FROM POINT A.**

Setting this car up is a breeze and is helped by a lot of careful ex factory forethought. Take for

example the front end, we all know why castor is desired in this type of car. (If we don't, then keep reading future issues of T.Q. for the reasons why) Anyway the Hyper Ten is equipped with a small platform on the beam axle to mount your servo on, this means that when the axle is rotated back or forward to increase or decrease any castor setting, the steering linkage geometry moves with it and needs no further adjustment, some cars do need adjustment to the steering tie rods after any castor changes as toe in or out will occur if this is not done. It is advisable to run the car in it's longest wheelbase form unless you are racing on very tight or twisting circuits. Belt adjustment is no problem, the secret being to run the belt under as less deflection as possible (4 mm maximum,) the only other point to watch out for is that the belt centres around the pinion pulley, so careful adjustment of this pulleys position on the motor output shaft is essential otherwise you will loose the belt.

Once the car is ready to go dial in around five degrees of castor, this seems about right as a starting point unless you enjoy driving an over twitchy car. We use Parma Blues, Yokomos and

P.B. Golds on the front and Ufras, P.B. Lilacs and a special that we don't know the name of, (but is supplied from Jimmy Davis's pit box) on the rear! Having used these combinations regularly we can say that they work well and can inspire over-confidence at times, on all surfaces! Having said all that, TOP Models are now stocking a range of Hyperdrive tyres that have been specifically developed by the factory for this car, they are said to be very good indeed and must be worth the small investment. As far as bodysells are concerned we have run several, Andy's Nissan works well giving just the right amount of front end, Parma's Toyota is superb and needn't be run with a wing, this does add to the top end speed of the car and is a point worth considering.

#### **WHAT ABOUT THE DOWN SIDE.**

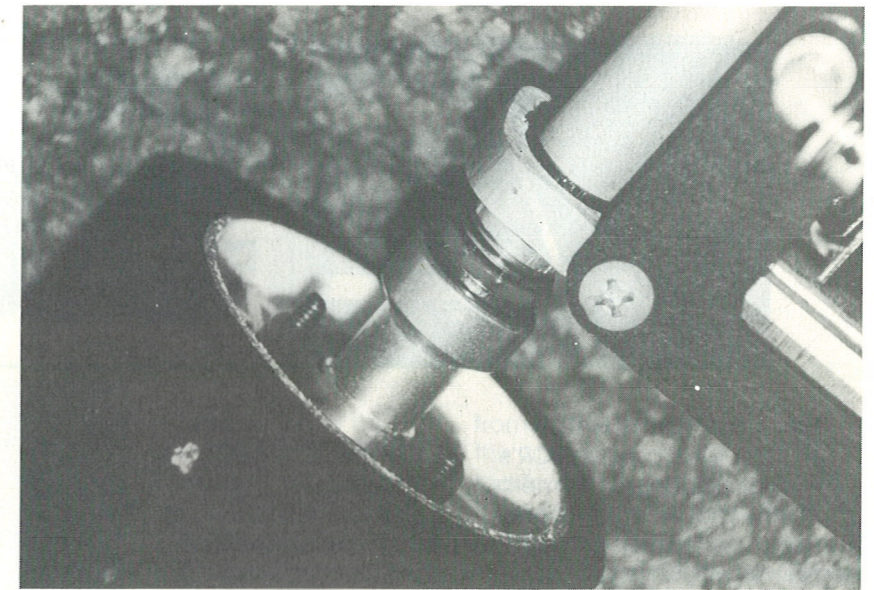
Well really their isn't one, remember those shockers that we spoke about earlier. I really thought that they were no more than a gimmick when the car was assembled, however they do work very well indeed, damping the rear end just enough to give a stiff longitudinal chassis but smooth enough to allow the car to roll in

the corners without coming unstuck. Alternate belts, spurs and pinion pulleys will of course set you back a little but for the extra performance that this system no doubt gives it's well worth the extra dig into the pocket. The range of ratios that the system allows you to use is out of this world and is more than enough for the most discerning driver. Spares are no problem, a full range is stocked by TOP models. Whilst on the subject of spares the review car has been raced several times now and has inevitably been in one or two incidents along the way, so far without any damage! Finally if you do decide to purchase the graphite version, do ensure that you fit an earth strap between the chassis and motor pod, this simple precaution takes care of any problems that may occur between your speed controller chip and the occasional burst of static.

#### **REVIEWERS COMMENT.**

For the serious devotee this version of the Hyper Ten is well worth further investigation, it is different enough to stand out in a crowd. Will certainly compete with any other car on any circuit in the U.K. it is smooth and deceptively quick. How much the transmission gives you in terms of head to head percentage over a direct geared version, would need further testing on equipment more sensitive than mine, all that I can say is that compared to my old car, the Hyper Ten can pull taller gears and is faster in a straight line using the same cells!

Certainly a car that should have been here long, long ago!



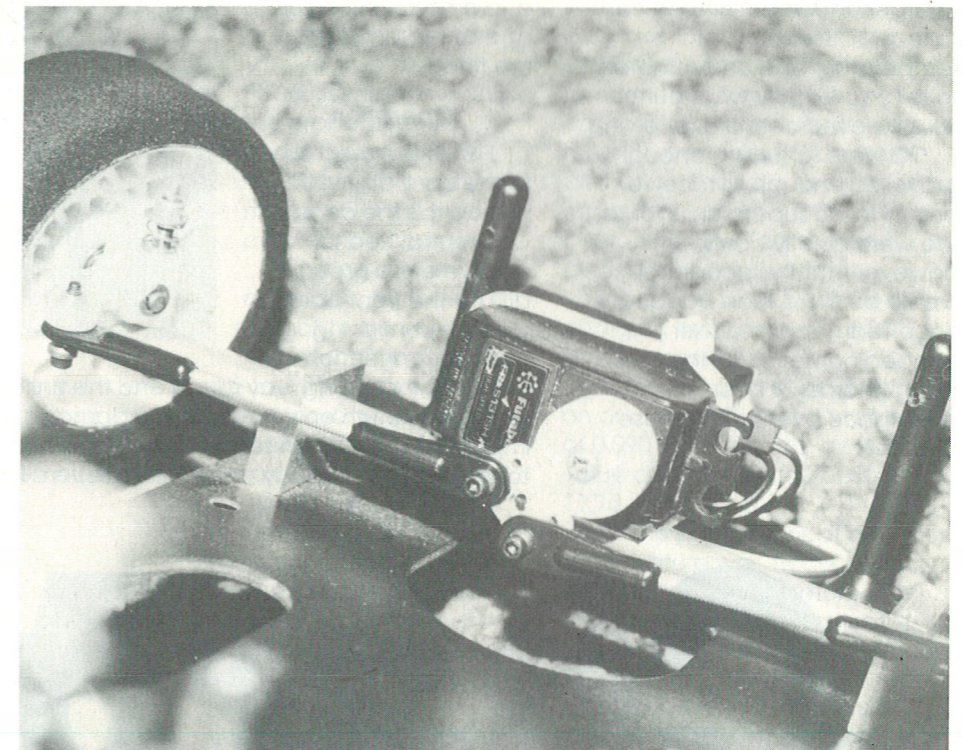
Bearings are everywhere making the drive train smooth.

**HYPER DRIVE CARS, SPARES AND EQUIPMENT ARE AVAILABLE THROUGH:-**

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# Hyperdrive

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The Beam Mounted Servo, ends all camber and toe-in / toe-out hassle's, when adjustments are made.