

The new TENFORCE manufactured by BERTON, the same company that make the legendary Serpent racing cars, has been a long while arriving. The truth of the matter is that a great deal of tooling had to be made for the new car. Then, when it did finally emerge, the early pre-production cars that were sent out for review were frankly disappointing. The long spindly wishbones were

beginner. In typical Berton perfectionist fashion they quickly went about putting the matter to rights and held the car back until they were satisfied with it. The suspension parts are now made of a new and much more ridged plastic and are a very snug fit on the chrome balls. Indeed on the production cars they are

supplied ready assembled to the chassis. Nor have they inored the instructions, having charmed a certain well known columnist, who was characteristically vocal in his criticisms of their original efforts, into extensively revising and expanding them to make them more suitable for the cars intended market. It's what's called being hoisted by ones own petard! The basis of the

car is a sensibly robust and practical 3mm thick aluminium chassis. Suspension front and rear is by unequal length wishbones. The lower ones are each mounted to the chassis on a pair of chrome plated balls. The top wishbones are single adjustable struts that enable the camber of both the front and rear wheels to be adjusted.

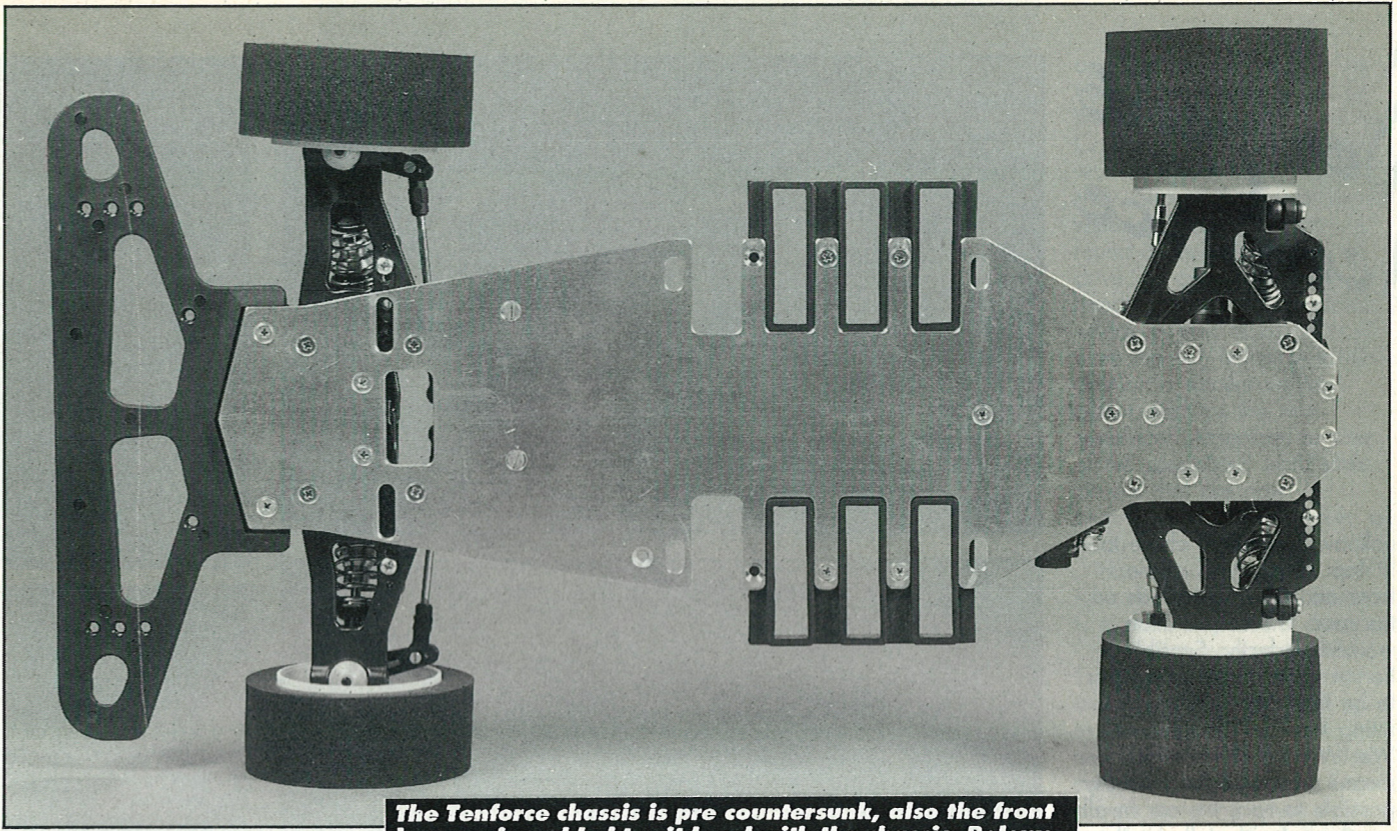
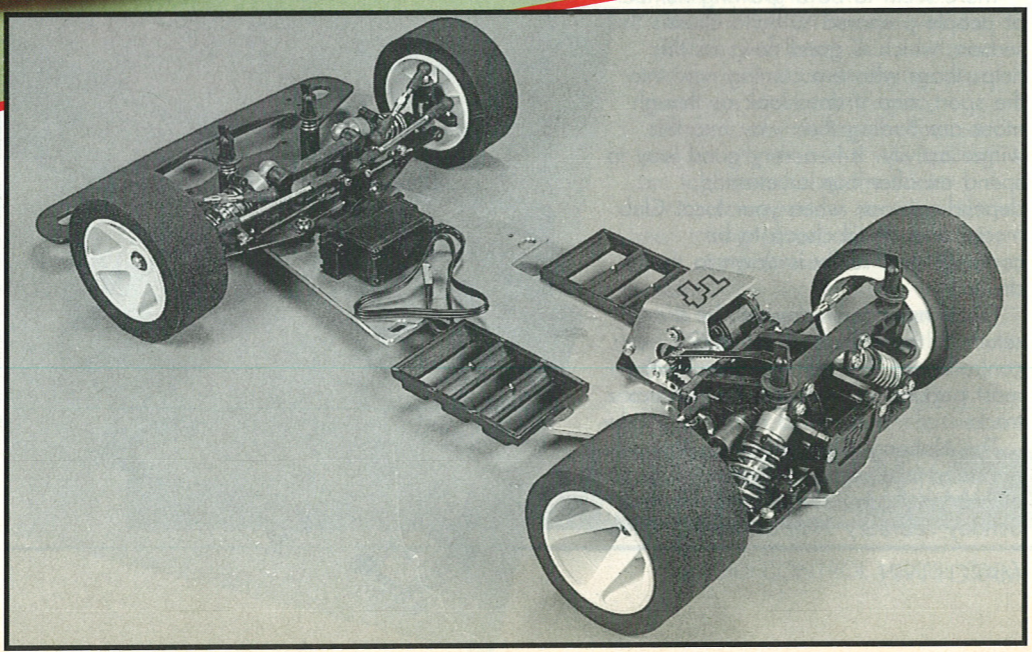
At each end of the car the suspension is provided by the well proven coil over shock

Serpent Tenforce

Colin Leake builds the on road suspension car from Holland



made of a soft plastic that allowed them to deform much too easily. To make matters worse the fit of the lower wishbone on the chrome balls that connect them to the chassis was to say the least poor. The instructions also left much to be desired. They were adequate for those experienced in building and setting up model cars but would be of little help to



The Tenforce chassis is pre countersunk, also the front bumper is molded to sit level with the chassis. Below; Rear shocks lay at around 45 degrees, note body mount which is adjustable to most heights.

units that are used on eighth scale Serpent cars. The actual shock absorbers may be assembled as either fixed piston units, using either single, double, or triple hole pistons, all of which are included in the kit, or as fully adjustable units. Ride height is by varying the amount of pretension on the springs. Berton include their standard plastic collars for this in the kit. However the outside of the shock absorber body is threaded to enable a metal adjuster ring, that is available as an optional extra. Our experience with the eighth scale cars is that these are well worth fitting in that they make it much easier to carry out adjustments.

Further adjustment for the suspension is catered for by providing different mounting holes for the top wishbones. Roll is controlled at both ends of the car by clever adjustable anti-roll bars. A refinement not even found On our eighth scale cars! Adjustable track-roads operate the front steering and are linked to the steering

servo by a well made and effective servo saver. The drive to the rear wheels is taken from the motor by a slim and very efficient toothed belt. This near silent form of drive makes the car uncannily quiet as it circulates round the circuit. You can even hear the tyres working on the track surface. A full range of pinions and differential pulleys are available to provide any gear ratio that may be required.

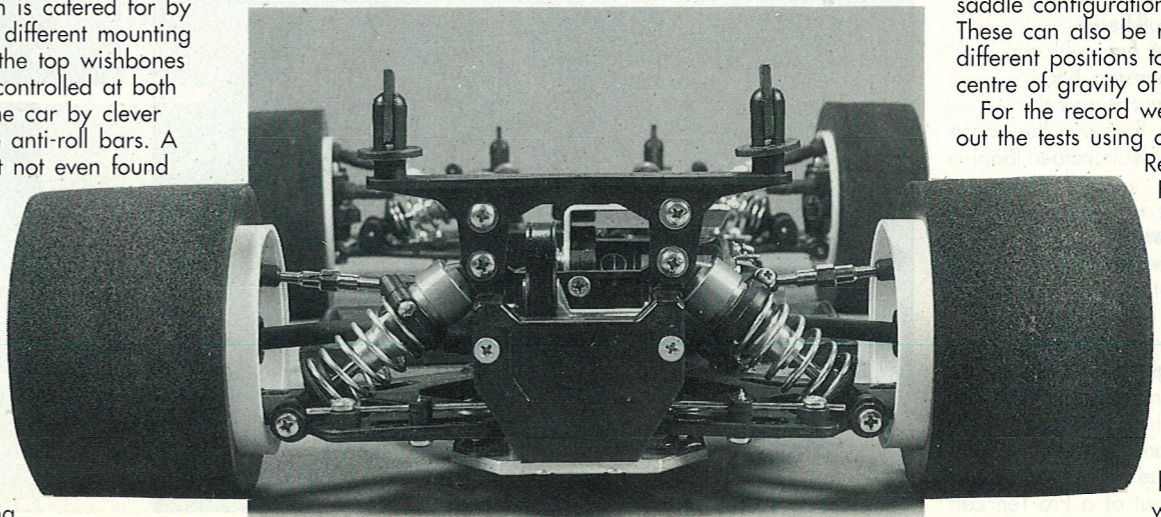
Differential

The differential is a common enough ball type. The mild inconvenience is the need to take one of the rear

drive shafts out to adjust the differential stiffness. This is one of the few areas on the car with which we had trouble. We found the adjusting screw could easily work loose. As it occurred at a race meeting I cured it by wrapping a few turns of PTFE tape round the screw. Had I foreseen the problem when I built the car I would have used a small amount of thread lock to prevent movement of the screw. It was in the differential that we experienced the only other problem with the car. The differential pulley has a plastic flange on one side that clips into the main pulley. Ours came off during

testing, all be it with no detrimental effects I secured it in place by putting a SMALL drop of super glue on each of the clips. I would recommend that this be done before the car is assembled. It would be all too easy to glue the belt to the pulley! Drive is taken out to the rear wheels by plastic drive shafts with a ball and pin drive at each end. What the Americans descriptively call dog bones. Whilst we had problems with the original pre-production shafts the production ones that were sent later have performed faultlessly during the considerable period for which the car has been run. Provision is made for mounting either stick or saddle configuration cells. These can also be mounted in different positions to vary the centre of gravity of the car.

For the record we carried out the tests using a Works Reedy Fifteen Turn Double, Works Reedy Cells, and a Corally Motor Management System. As the kit tyres were an



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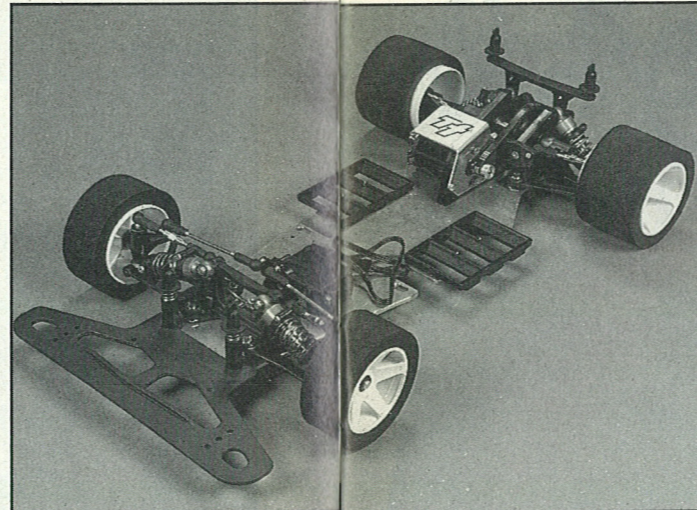
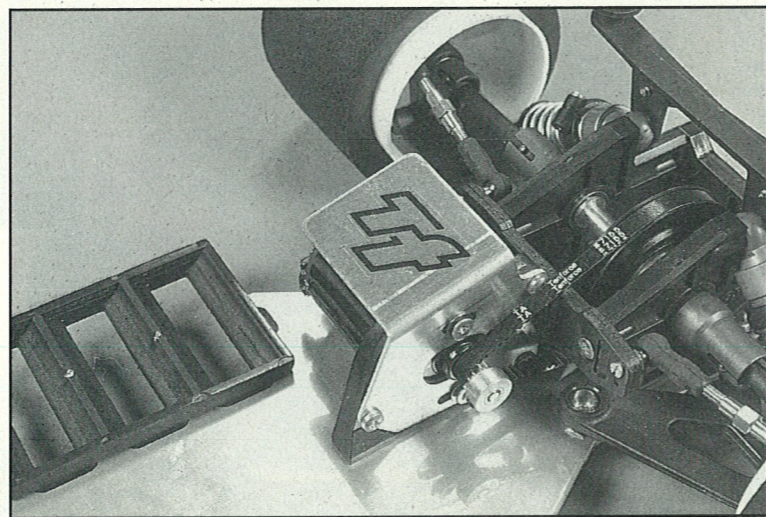
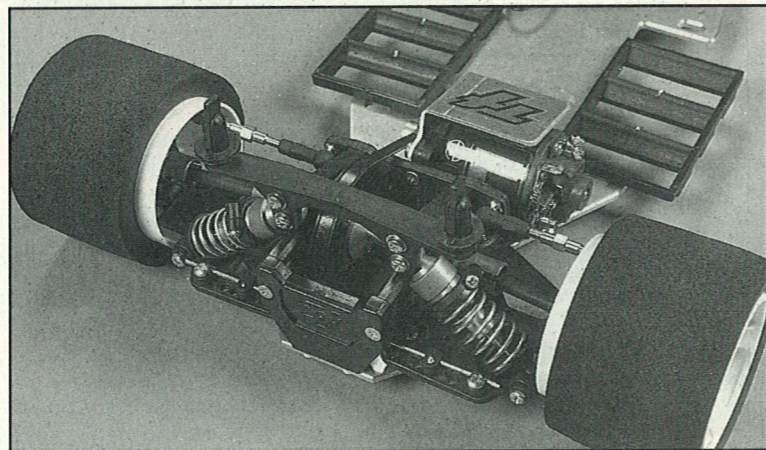
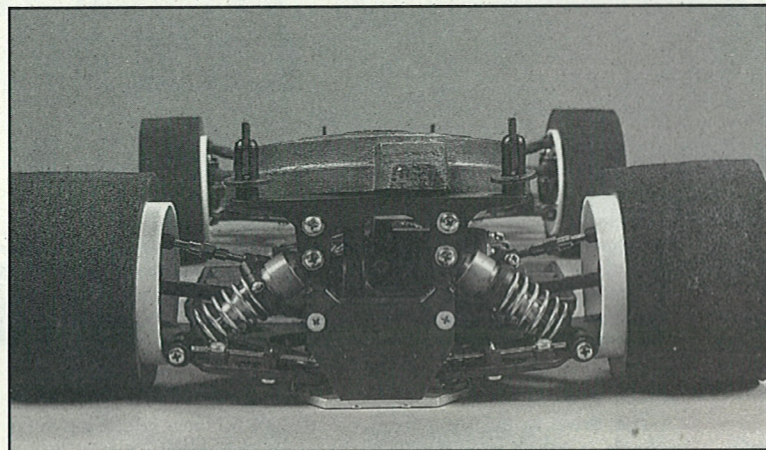
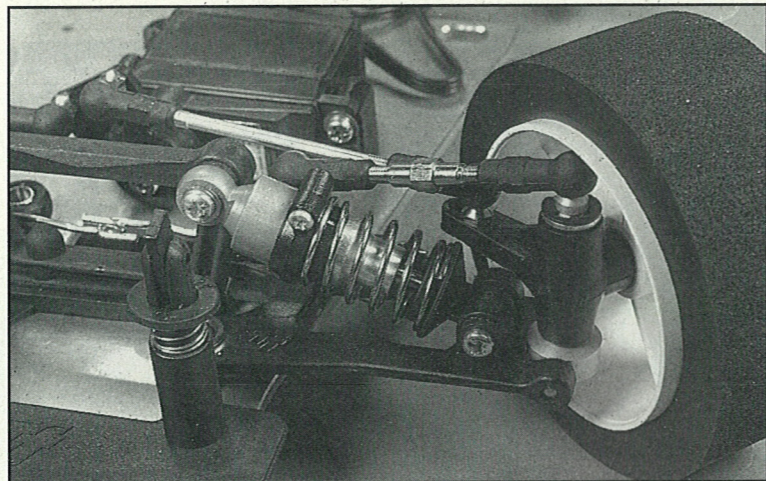
unknown quantity I chose to fit Jap 35deg tyres at the front and Elite Jap 601ds on the rear. The combination worked perfectly. Sensibly Berton have made the wheels to be the ideal diameter for fitting the effective Belsport Wet Weather Tyres which means that it will be perfectly possible to race the car in all weathers. Incidentally by the time you read this the Belsport wets, that have caused so much controversy, will have become commercially available, and as such their use will be legal.

I must admit that when I first saw the body supplied with the car I had my doubts about how well it would work. It's sourced from America and is a typical American body in that it is very well moulded and looks terrific but lacks the sort of down force that our previous experience of Pro-Ten scale cars suggested would be needed in the additive free U.K.

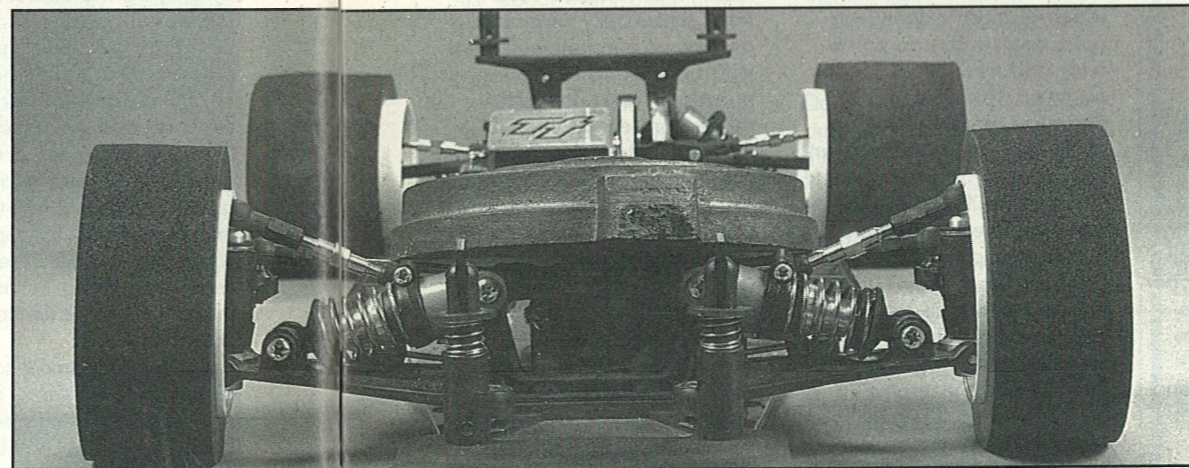
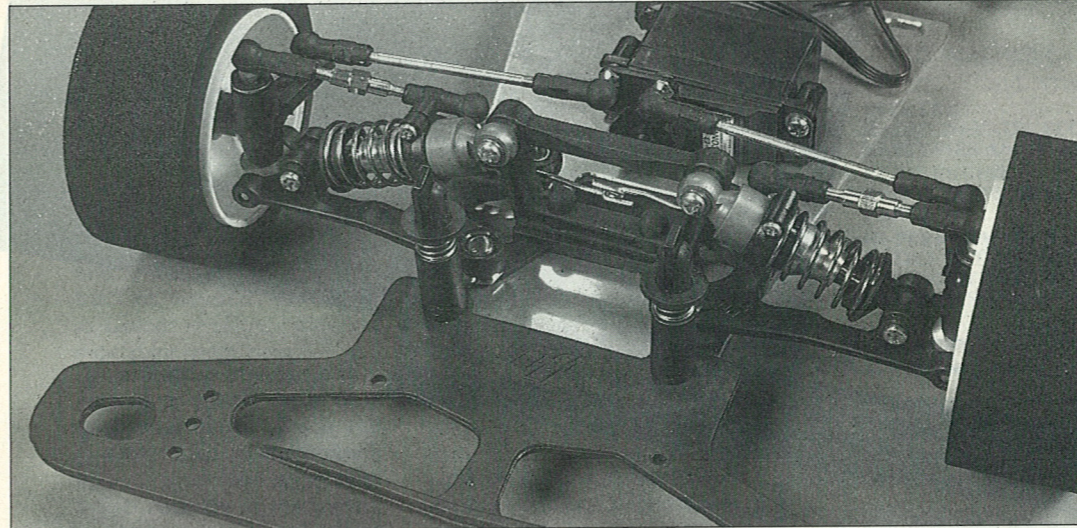
The first runs with the car, as originally supplied, seemed to bear this out so I made a wing mounting plate to fit to the rear bulkhead. Subsequent runs with the stiffer suspension fitted revealed that it was the suspension that was the cause of the problems rather than the body.

Test Time

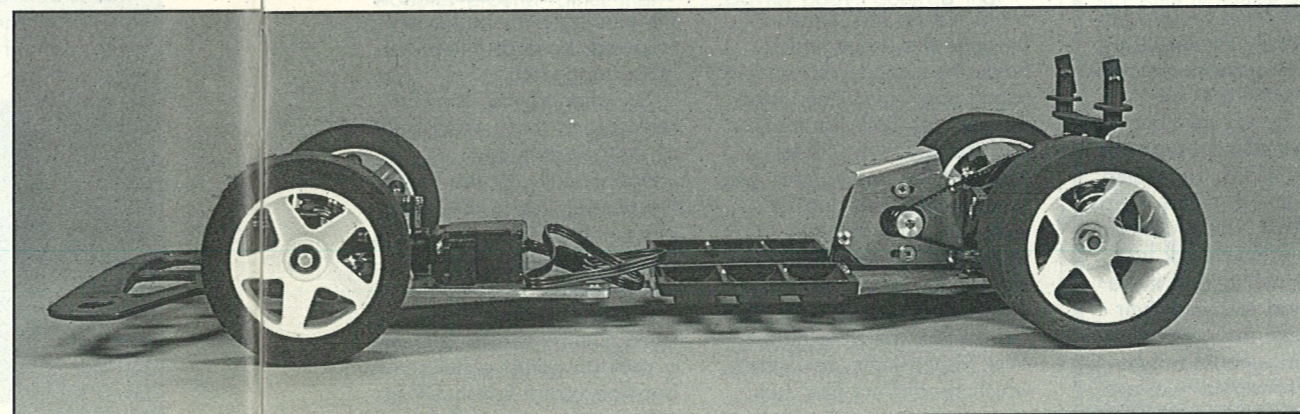
All the test runs were carried out on the very fast and large Crystal palace circuit. As expected with the extra weight of the car and the greater mechanical losses caused by the four extra bearings and drive shafts the performance fell somewhere between that of a Pro-Ten car



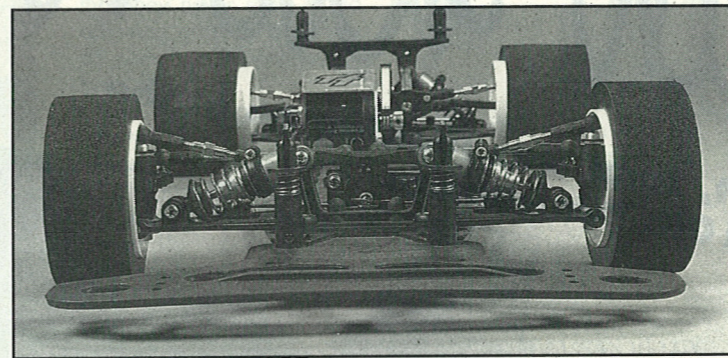
Left; The car is supplied with saddle pack trays. Top; Front suspension is fully adjustable for camber and castor. Bottom Left; Tenforce uses belt drive and will require the user to purchase a set of pinions.



Tenforce is supplied with two sets of springs, soft and hard. Also an aerial is given in the kit. Bottom; The car appears neat and well designed - just right for the new BRCA class of racing.



Tenforce does suffer from a small amount of bump steer, although this seems not to affect the handling. Centre; All track rods are supplied, and the fits are excellent. Note the well designed body mounts (firstly seen on a Japanese Kit).



and a converted buggy. The truth of the matter is that on the vast open expanses of the Crystal palace circuit the car was so stable that it looked slow. Shaun, more used to the speed of his eighth scale car found it decidedly boring to drive. So good was the handling that the only places where he had to lift off at all were the two hairpins. In our opinion a smaller tighter circuit, such as the new resurfaced Aldershot, or one of the specialised tenth scale circuits that are now beginning to appear would be much more suited to the car.

Having said that one must take into account that Shaun is a relativey skillful driver. One of the reasons that Pro-Ten has not taken off as it should is that many less experienced drivers have never managed to master the cars. Certainly many of the drivers watching when we tested the car, who fall into this category were very impressed with the smooth and very driveable nature of the car. Some could hardly wait to get their hands on one.

The Tenforce with its extra weight and better handling should prove to be able to survive the odd nudge without spinning off, making it very much more suited to close competitive racing.

My over all opinion is that Berton have produced a very competent car that can now be legally raced under both BRCA and EFRA rules. Incidentally it looks as if the name Super-Ten will be adopted for this class of racing. The car having been specifically developed for racing outdoors on asphalt is ideally suited for just that. It is easy to drive, robust, and should not require the billiard table smooth surface that the present generation of Pro-Ten cars need. As such more circuits become available for use, and I have no doubt also that many new clubs will spring up racing on local car parks on Sundays etc..

So there we have it a thoroughly competent product and concept. The Berton Tenforce is being imported into the U.K. by Richard Kohnstam and will be available from all good model shops.