

Delta's Super Phaser is not by any means a new car kit, having won the last one twelfth electric World Championships in 1982—a feat of which Delta is naturally proud of and features large in the supplied documentation. In the meantime it has proved itself to be very competitive on carpet racing surfaces as well as the hot sticky tarmac that the World Championships were held on, although it has not been quite as popular as it should have been due to its relatively high price. That legendary Delta quality costs money!

The review kit was designated CK126 and included all mechanical chassis components (even down to wheels, tyres and bearings), plus the interesting all new Delta 'Super Diff' which is a gear type unit. Other versions of the kit are available, such as one which includes all of the above parts except that an Associated carbon fibre differential is substituted for the Delta item (CK124) and a bare chassis version to convert another car (CK122).

The instruction sheets provided were slightly out of date compared to the actual components, but they certainly gave all the information to complete the car successfully and little hints and tips were liberally spread around. Care should of course be taken to read all of the instructions before starting work in case something important is missed. The instructions are something that all of the American firms do really well—they give the impression that all you have to do is follow them and you can start

to clear a space on the mantelpiece ready to receive all the trophies! Things are perhaps not quite that simple, but it does wonders for your confidence.

The car itself is of the sprung front kingpins and hydraulically damped rear pod' type, indeed it was probably the first of this popular and much copied arrangement.

DELTA

The Differential

I must admit that I made straight for the exciting new Delta differential included in the review kit as it is something that can be fitted to any twelfth scale car. A gear type differential promises no slip off the start line and smooth operation, and as the Delta 'Super Diff' is almost entirely made of plastic it is very light (21g including the fixed wheel carrier, but without wheels and tyres). Associated, Greeno/Demon and of course Delta wheels can be used—the Delta rear wheels can be fitted with twin ball races for even smoother differential action.

Two spur gears are included with the differential (48 and 46 teeth) and a neat system is used to attach the plastic fixed wheel carrier to the axle—a steel pin passes through the axle and engages in a slot in the back of the hub carrier. Moulded pegs on the carrier drive the wheel which is retained by a

single small locking nut. This arrangement does away with the heavy and out of balance long steel screw used in the Associated fixed wheel system.

Constructing the Chassis

A quick rub with a piece of sandpaper sufficed to remove any stray whiskers of fibre glass from the chassis plate and construction proper could begin. Starting at the front the kingpins have to be fitted to the alloy front beam making very sure that the beam support blocks are fitted first and that they are in the correct orientation, as the kingpins are a very heavy press fit in the beam. I used a lathe as a press for this operation, although the splines on the kingpins could have been filed down to make life easier. Just to make sure that the kingpins stay put, grub screws pass through the end of the beam—a spot of overkill perhaps!

The kingpins feature threaded ends to take small locking nuts instead of the circlips shown in the instructions, which enables fine adjustment of the spring tensions to be made.

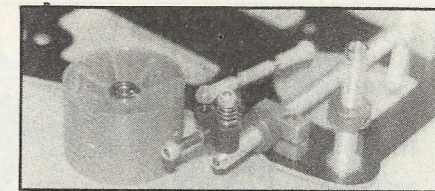
One of the axle beam clamping blocks is slit to allow the beam to be clamped—the clamping screw is a countersunk steel one. All the other chassis screws are countersunk alloy to ensure that the underside of the chassis is smooth and flat, but unfortunately a special design of head is used which prevents the use of a normal screwdriver to tighten them. Details are given in the instructions as to

how to modify a screwdriver to do the job, but this is best done by grinding. For the purposes of this review I was able to manage with an ordinary screwdriver, but for constant dismantling and reassembly of the car the proper tool will be required to avoid damage to the screws.

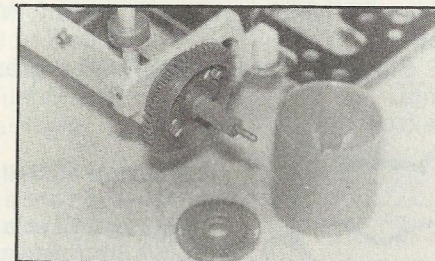
Deltas own plastic steering blocks were included with the kit, these are neat items with the sub axles moulded in but they are not long enough to permit the fitting of Schumacher front wheels—not surprising as the kit is designed around Delta, Associated and Green/Demon wheels! Wheel retention is by locking nuts which allow end play adjustment.

Moving back along the chassis, the suspension movement for the rear pod is provided by a flexible glass fibre tee piece which is available in 1.00mm and 1.5mm thickness for different flex characteristics. Only the thinner one (for 'average' tracks) was included in the kit. The one piece cast alloy rear pod is attached to the tee piece by two countersunk screws—I did not like the look of this at all as the screw heads would damage the tee piece and used spacer washers under the screw heads to spread the load.

The rear end is finished off by the addition of a Delta hydraulic damper (from the 'Eagle' 1/8th scale car), and the rear axle ball races which the instructions recommend should be glued into the rear blocks using an axle to ensure that they are lined up. The bearings themselves are an unusual size and have plastic dust shields which caused a great deal of drag until I removed them, although this of course leaves them unprotected. A degree of rear end height adjustment is provided by using a nut on the damper body to deflect the tee piece downwards which seems a bit crude.

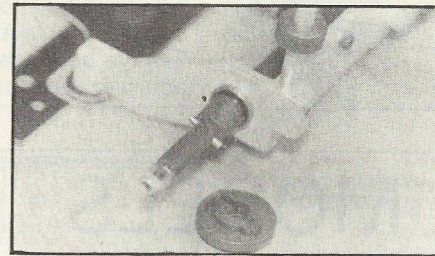


The sprung front end of the Super Phaser showing the axle beam clamp block and the plastic collar that keeps the beam in the correct position across the car when the castor angle is adjusted.

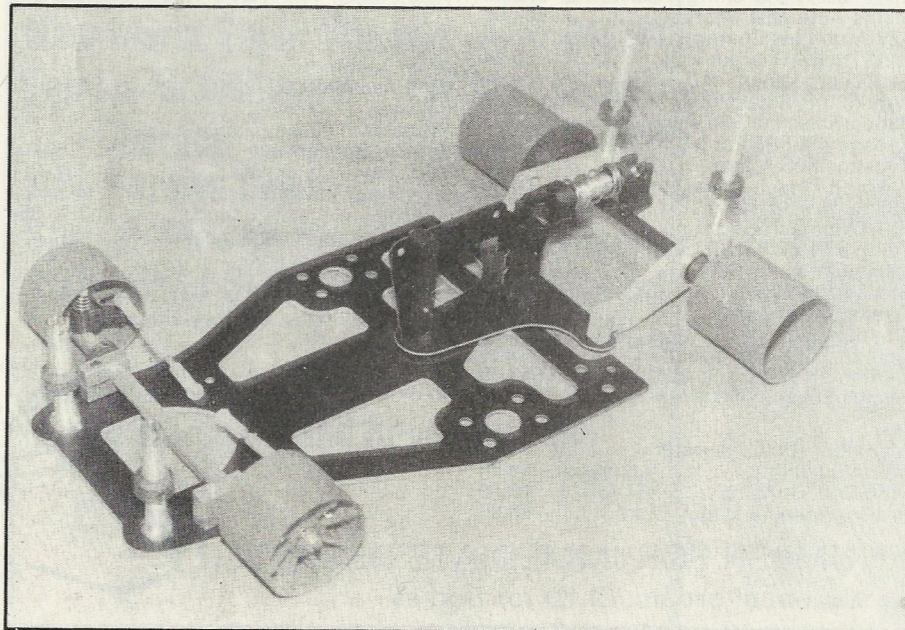


The innards of the 'Super Diff'. The nut which retains the rear wheel also sets the endfloat of the differential assembly.

The other end of the differential axle showing the fixed wheel attachment system.



The completed chassis less electronics, radio and tyres. Weight in this condition was 202g (7.1oz). The forward speed controller post is still at its original height at this stage—the resistor mounting plate has been fitted for the photographs although it was later removed.



Radio Installation

All of the instructions and the wiring diagrams refer to the Novak range of equipment and a resistor type speed controller—it is rather less than straightforward to fit an electronic one. Always having used electronic controllers, I do not feel that I could assess the car properly if I was struggling with unaccustomed 'Turbo Lag', so I shortened the front speed controller mounting post and made a small glass fibre plate to take a Demon. Servo fixing posts were provided (as were track rods and ball joints) and holes are drilled in the chassis to suit a Novak NES 1A servo which was duly fitted.

If you do not intend to use Novak radio equipment do not follow the wiring diagram and run the radio directly from the drive batteries—Use a proper voltage regulator circuit in this case to produce a 5–6 volt supply for the radio.

Running Trials

With everything installed and a Prophet body fitted, the all up weight was 31.5oz (894g) which was surprising in view of the large number of metal parts on the car. A standard 05 motor was used for the first tests and while fitting this it was noticed that the tee piece restricted the motor movement—11:48 gears were about the limit without modifications to the tee piece. The kit tyres were coated all over with the Tractite and running commenced on the usual Primafelt carpet. First impressions were of almost neutral handling, no over or understeer and a very linear steering response. No problems were experienced with the differential, although it is early days yet (regular readers may recall that first samples of the 'Super Diff' proved less than durable!)

Criticisms? Well I personally like to run tyres down to the glue joint if possible (it works out cheaper that way!) as I am afraid that we are not all sponsored drivers who can afford to throw tyres away when a few millimetres have been worn off them. The ride height adjustment provided does not give enough range to be really useful in this respect. I also prefer sfick type battery packs as they are easier to change and install (although this is of course a matter of opinion).

To sum up then, a proven performer which is perhaps not entirely suited to beginners due to the slight difficulties in construction (although the price will probably mean that only 'experts' will consider it!). It is not really possible to buy success in one twelfth racing, but it certainly helps to have the best equipment available and the Delta Super Phaser is one kit that should be considered.