



KIT REVIEW

By Matt Benfield

Kyosho Sard SUPRA

Kyosho have long been involved in producing innovative designs in both race and general use RC cars, their latest trend towards scale vehicles is a return for them to where they first started and the Supra Sard shows they have they skills required to build winning models...

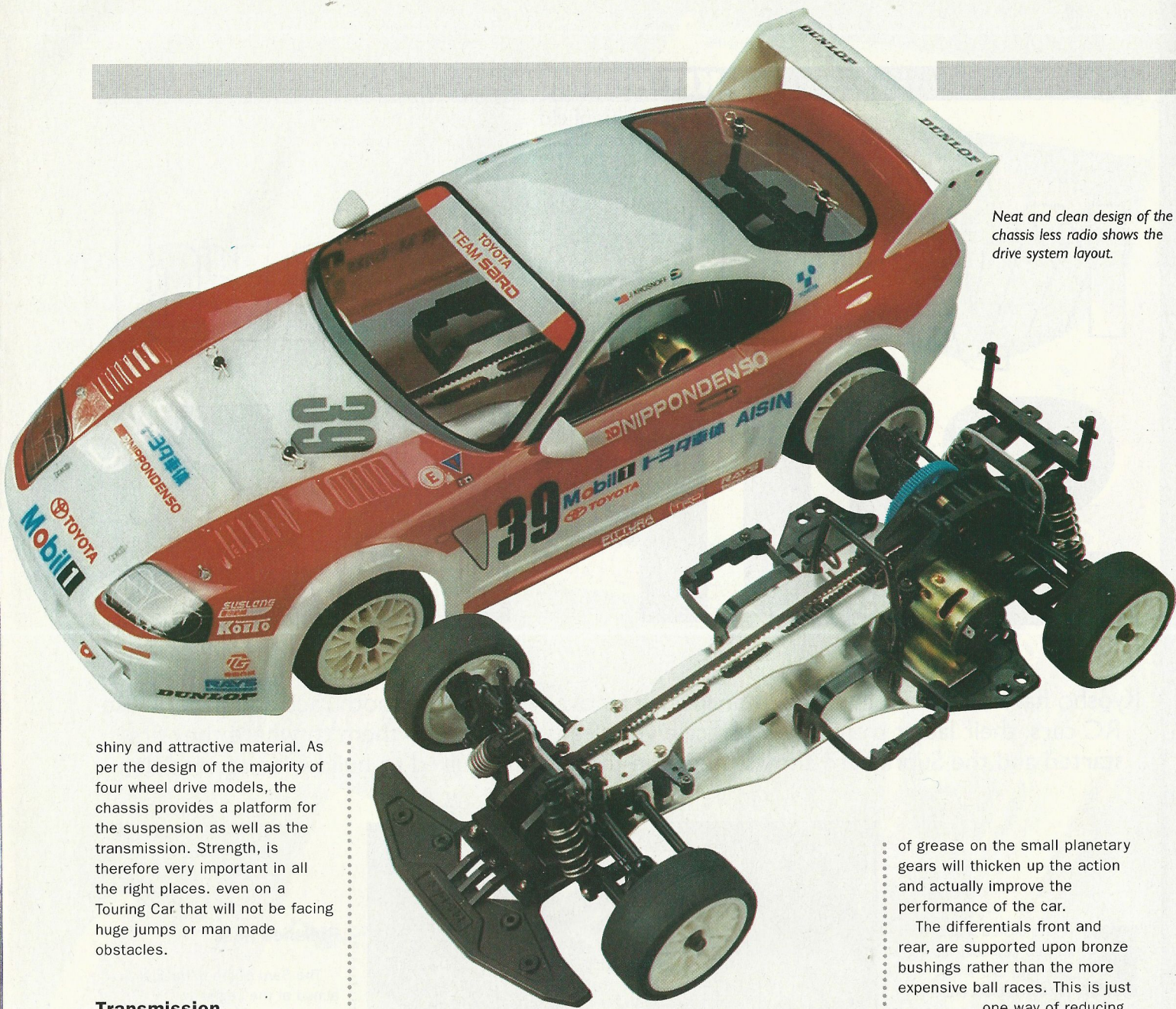
Enter the Sard Supra. A rugged well built Touring Car, with four wheel drive and independent suspension. The overall price of this kit has been kept to a minimum, so there are many corners cut in the basic kit, but there are of course the long list of hop up options which can improve it no end.



Polished base

The Sard Supra is basically aimed at the beginner, purchasing a first real R/C car. The four wheel drive system is at the heart of this model, permanently driving all wheels. This is carefully constructed upon the aluminium chassis, which is neatly produced in its





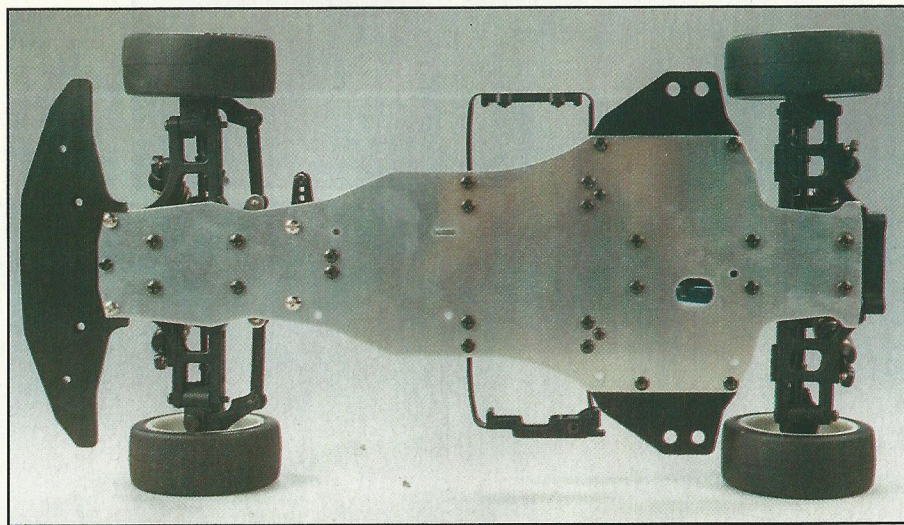
Neat and clean design of the chassis less radio shows the drive system layout.

shiny and attractive material. As per the design of the majority of four wheel drive models, the chassis provides a platform for the suspension as well as the transmission. Strength, is therefore very important in all the right places. even on a Touring Car that will not be facing huge jumps or man made obstacles.

Transmission

The rear transmission is held together by a number of screws. This is due to the fact that the transmission is built up in two halves, that are linked by bolts and spacers. The top layshaft runs between the two halves, and so allows a belt to run from the back to the front. The layshaft also supports the shorter rear belt which runs around the geared differential.

The geared diffs, front and rear are easier to build than a ball differential and so are ideally suited to a beginner. Once the diff has been



constructed, its unnecessary to maintain it that much because its a sealed unit, has no adjustment facility, and no thrust

race assembly. The action of geared differentials are very smooth and light, making the car very easy to drive. A small drop

of grease on the small planetary gears will thicken up the action and actually improve the performance of the car.

The differentials front and rear, are supported upon bronze bushings rather than the more expensive ball races. This is just

one way of reducing the overall cost of the kit, but bearings can be purchased at a later date in order to upgrade and improve the efficiency of the drive train.

At first, the overall feel of the transmission will be a little tight, but after a few runs, will settle and become smoother. A little light oil can be placed directly upon the bush to reduce friction. Regular applications should be made to the

bushes prolonging the life of the parts. If you decide not to upgrade, replacement bushes can be purchased quite cheaply.

Suspension

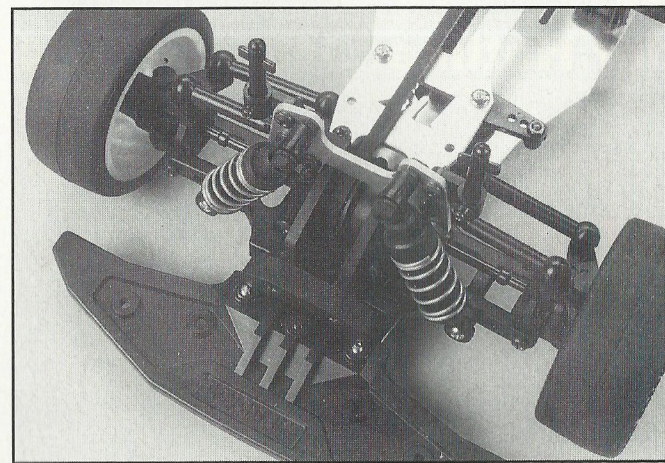
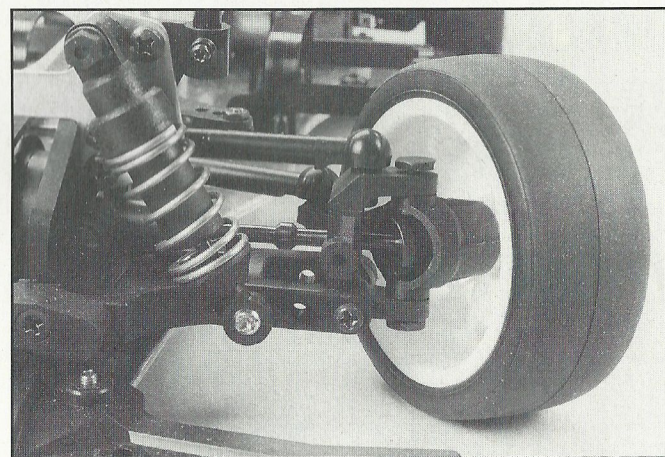
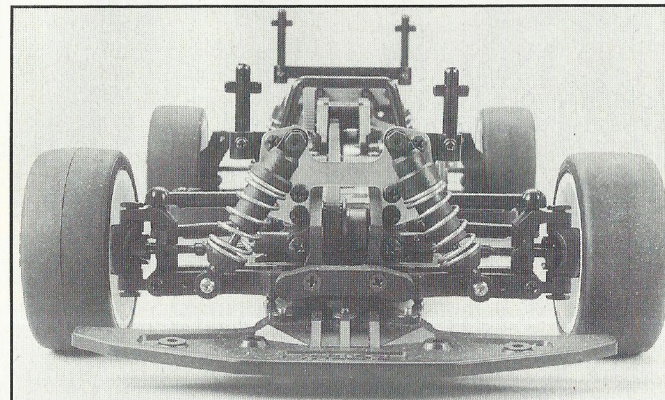
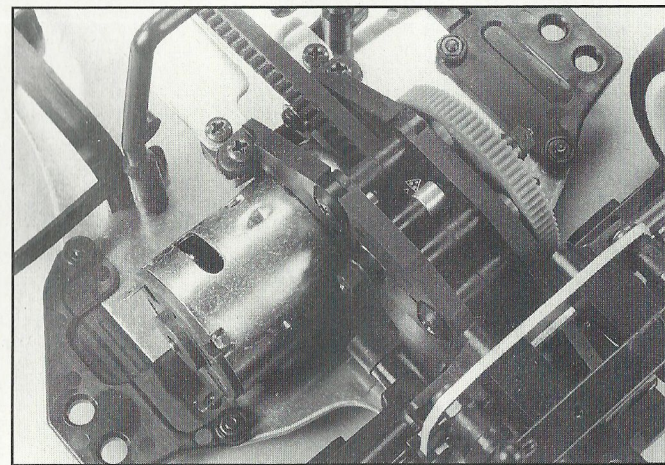
The front and rear suspensions are very similar in design. They incorporate a lower wishbone and a fixed length top link. Again, this makes the car so easy to build, wasting no time getting the camber links correct. On beginners cars, very often you will see incorrect camber settings, which has a detrimental effect on the handling. With this method, the chances of the wrong settings are completely eliminated. The bottom wishbones have a hole in which an extended grub screw fits to. This can be screwed in further to reduce the ride height. On extremely smooth tracks, it can be lowered substantially, but on the road, it would be best to raise it a little.

The rear hubs are carried over from a previous off road Kyosho model, as are the front caster blocks and steering arms. Its therefore not necessary to question either the design or the strength of the individual items. Again, bushes are fitted to the inside of these hubs, and so support the outside driveshaft. Dog bones are used instead of expensive universal joint driveshafts. They do have draw backs compared to U/Js, although its definitely less critical in the on road applications.

Shock tactics

The shock absorbers are very simple, yet effective in their design. No oil is used to dampen the spring but instead, the damping comes from the friction of the shaft running up and down the internal washer. The washer is in the position that you would normally expect to find a seal or seal cartridge. Because of the tight fit, the shock shafts require quite a little effort in order to pass through, and this then creates the damping effect.

With springs fitted to the shocks, the overall feel is very good, feeling very suitable for the on road situation. Quite strong springs will stop the car from rolling in the corners, so corner speed will be high. Big



Top; The main drive gear and motor location. Next; the front of the car shows shock mounting angles and wide front bumper. Detail; 4WD drive means that tiny driveshafts are used to power the front wheels. Above; impressive pre-set length track rods and top suspension links work very well.

bumps will make the rear kick a bit, but this would be expected anyway.

The bottom of the shock absorbers are attached to the wishbones via ball joints. The top shock towers are made of aluminium, which means that they will bend rather than snapping. These shock towers also provide a fixing point for the body mount posts.

Steering

The steering mechanism is designed around a centre drag link, which creates the Ackermann effect. This is where the inside wheel turns more than the outside. Most of today's cars either have this fitted, or have it as an option. Plastic bushes are used in the steering which is actually very neat and tidy. The two arms pivot on two uprights that are screwed directly to the chassis, in much the same way as the popular Yokomo method. More fixed length links are used between the inboard steering linkage and the hub and steering arms.

Bodyshell

With the steering fixed, the car is nearly complete, except for the fitting of the impressive looking body. The shell is based around the current shape Toyota Supra bodyshell which incorporates the huge rear wing.

Spraying is quite easy, requiring just the three colours to finish the basic design. Lights and wing mirrors are supplied with the shell to be fitted at a later date. The wing screws to the bodyshell after spraying, and adds to the impressive final look of the kit.

A sticker sheet is last to be fitted, and adds the all important detail. With it all complete, I can say that Kyosho have done an excellent job of producing an economical but superb quality model. The bodyshell simply adds to the model's detail, and in keeping with today's looks.

