

KIT REVIEW

Report by Matt Benfield



1:10 scale Touring Car racing is the new class; a place for the RC Car hobby to grow. Manufacturers are now releasing cars almost weekly and the latest comes from Yokomo - the YR4 Special

A TOUCH OF CLASS

Paintwork Richard Delves

Tamiya started it all off many years ago with the idea of fitting a saloon body shell onto a model car; the public could then relate it to cars that race on the track. This has rapidly developed into a very popular section of the hobby, with many other manufacturers like Yokomo following suit.

The proper name for the class is "Scale Saloon" they are based around a four wheel drive transmission and are true 1/10th scale. Off-road cars are also 1/10th scale, but they have pushed the rules to the maximum, and are therefore wider and longer. As a result, Scale Saloons tend to look very narrow, but with a detailed body shell, there is little doubt that they look the business.

The Scale class, has its own series which runs alongside the Touring Car Championship, a sign of its growing popularity. Yokomo, Tenth Technology and Schumacher have all made important contributions to the Touring Car class and have followed this with development of their own Scale cars. Yokomo led the way a few years ago with the launch of the original YR-4, but since then, a number of modifications have taken place, and the release of a revised range has occurred. The "Special" is in the middle of the YR-4 range, with the "Sport" as the base model and the "MC" becoming the definitive YR-4.

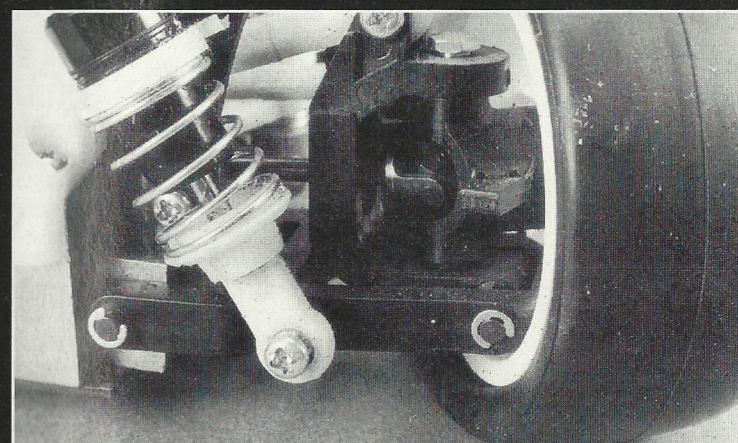
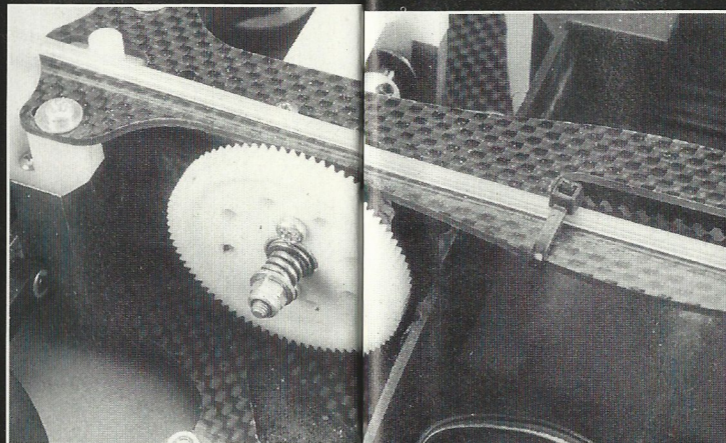
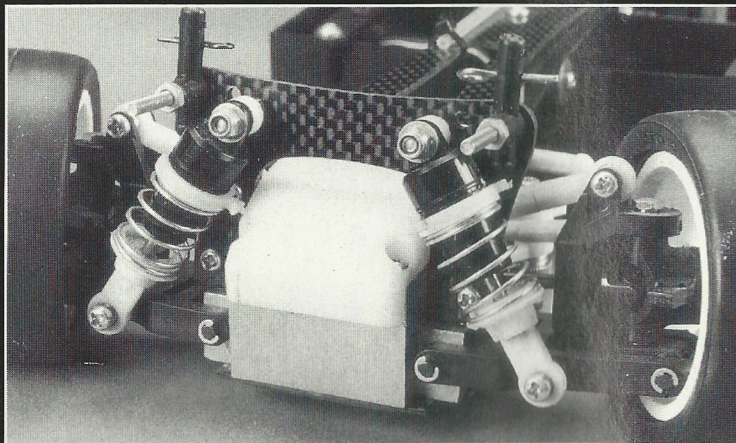
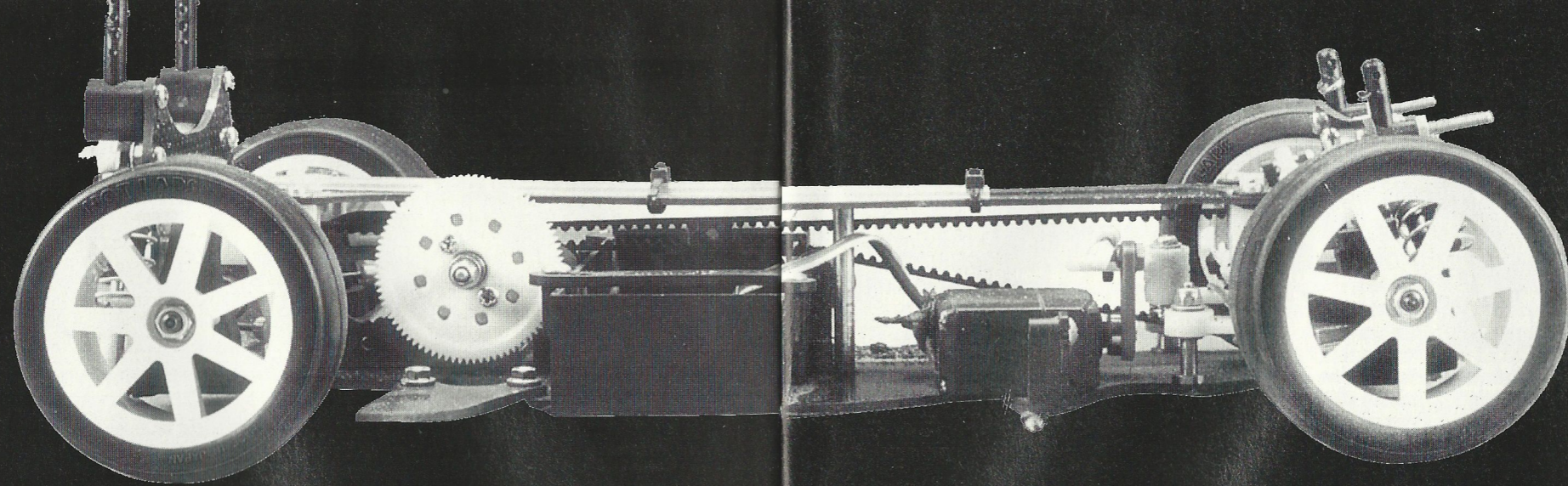
Yokomo have based the "Special" around high quality carbon fibre chassis components and is one of the advantages of owning either the Special or the MC over a Sport. Furthermore, with the Special, you get a kit which contains 24 ballraces rather than bushes which help the durability and the efficiency of the transmission.

All together, the YR-4 Special has an impressive specification, with few upgrades that can be fitted. It is important to distinguish at this point both the Sport and the Special are based around stick batteries, while the MC is designed to be used with saddle versions. At a push, saddles will fit in the battery tray, although a few small modifications may have to be made.

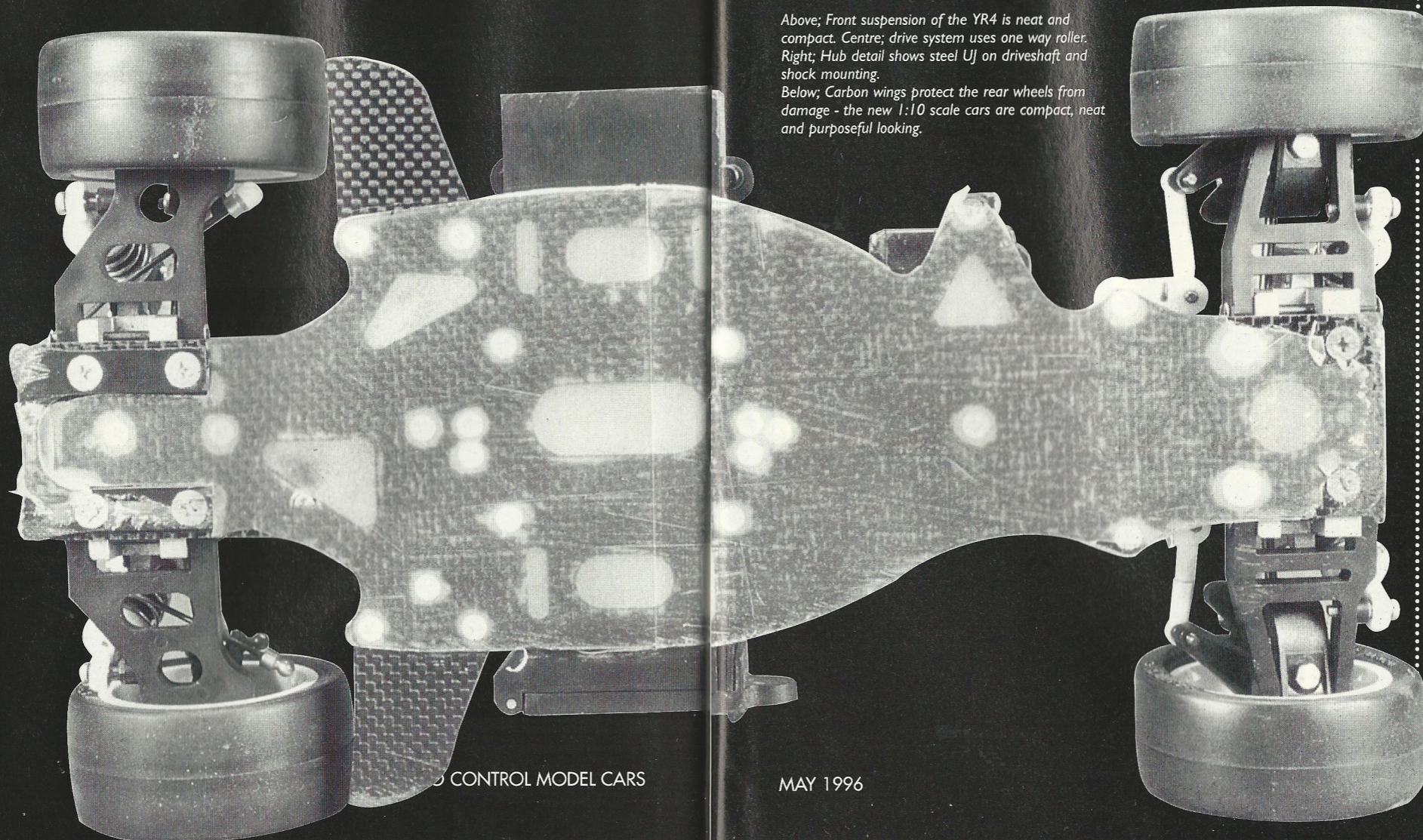
The build

To begin with, the front and rear plastic differential housings are screwed securely to the chassis, as is the very light magnesium motor mount. The mount doubles up as the support for the centre lay shaft, acting as a very rigid centre piece for the transmission. Heat from the motor can be dissipated through the mount, and if required, more holes can be drilled through the magnesium mount to increase cooling and air flow.

The front and rear differentials are based around the design of the Works 93, using diff halves of equal length even though the current World Championship winning YZ-10, uses a narrow front differential. This keeps the car very simple and less confusing. Differential pulleys are different front to rear, but they are clearly identifiable.



Above; Front suspension of the YR4 is neat and compact. Centre; drive system uses one way roller. Right; Hub detail shows steel UJ on driveshaft and shock mounting. Below; Carbon wings protect the rear wheels from damage - the new 1:10 scale cars are compact, neat and purposeful looking.



Compared to off road, loads are greatly reduced and so half the amount of diff balls are used in each of the diffs.

Once constructed and the tension of the diffs have roughly been set, the remaining parts of the transmission can be installed, including the ultra smooth one way bearing and pulley which attaches itself to the lay shaft. Benefits of running a one way adapter is that as soon as the throttle is backed off, the front wheels instantly become independent of the rear wheels and are therefore unaffected by the slowing down or drag affect of the motor. Most people feel that this can improve the amount of steering, although as a

direct result, stability under braking is lost. At the end of the lay shaft, is an easy to change spur gear fixing which requires just the removal of two small screws. This type of fixing allows the owner to use any number of other manufacturers spur gears.

The next area to be covered in the instructions is the internal steering linkage. Yokomo have stuck with their tried and tested design incorporating the wire link. One side of the steering arm can be ballraced, by removing the plastic bush, but the standard parts are very smooth and free anyway.

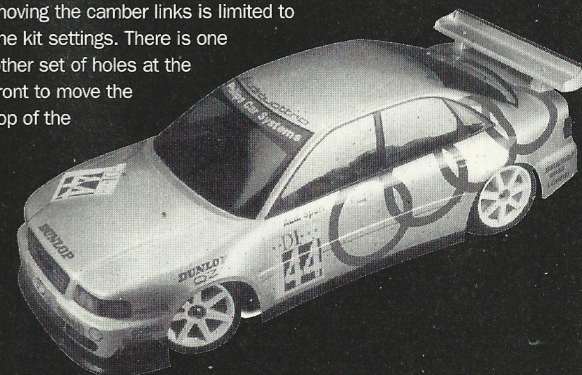
Fitting the gearbox tops and the upper chassis brace completes the transmission and main chassis, locking everything into place. While fitting the top deck, the tension of the main belt can be set. The method of adjustment involves pulling the front gearbox back, compressing the chassis and so reducing the loads on the front diff and lay shaft. The ideal setting for the main belt is to run it as loose as possible without it slipping. It's possible to test this by holding the rear wheels and turning the front wheels back. If there is a clicking noise, then the belt will need to be tightened. The rear belt is not adjustable; if it begins to click, then it should be replaced.

Suspension

In order to run within the set Scale Saloon rules, the track or width has to be a great deal narrower than a normal Touring Car. For this reason, the wishbones and turnbuckles need to be very small indeed. In fact some of these turnbuckles or track rods actually required the ball joints to be cut down a little, in order to achieve a suitable camber and toe-in settings.

All links are adjustable as you would expect with a top of the range race car which can allow an element of fine tuning. Shims can be positioned at the rear to adjust the track and further tailor your requirements.

As stated before, all chassis parts are carbon fibre, which includes the front and rear shock towers. Different holes for adjustment are kept to a minimum while moving the camber links is limited to the kit settings. There is one other set of holes at the front to move the top of the



shocks but that is really all the possible changes that can be made.

The body posts fit neatly to the shock towers providing a sturdy and secure hold for the body. A little lateral movement is catered for by the body posts, which can allow for inaccuracies when fitting the body shell.

The YR-4 retains the same rear hubs, caster blocks and steering arms as the YZ-10, so therefore, there is nothing to worry about in terms of strength or durability. The wheel bearings are the same type, although Yokomo have adopted a new bearing which comprises of a rubber seal on one side. This allows easy lubrication by simply popping the seal out and then replacing after the treatment.

A further advantage of the Special over the Sport is that universal joint drive shafts are employed at both ends of the car instead of just at the front. This is a much more respected design to the dog bone principle and is a further indication of where the money has been spent between the two kits.

The shocks have hardly changed at all over the years, and so it's no surprise that the Special comes with the standard shocks. After they have been constructed, filled and bled, the shock absorbers are very smooth. And, for once a manufacturer has packaged a suitable weight of shock oil in the kit. When combined with a spring and fitted to the car, they feel nice and supportive, not over sprung or over damped as many other manufacturers end up. Shock travel is very limited, yet bumps are easily soaked up, while keeping body roll to a minimum.

Drive to the wheels is executed with a hardened pin which passes through the drive shaft. This is different to the older Yokomo design of using a drive hub or the Tamiya method of a hexagonal hub. As a direct result, CML/Yokomo will be offering a converter, which will allow Tamiya style wheels to fit. The reason behind this is that the Tamiya fixing has virtually become the Scale Saloon standard of fixing for which everyone else works to. Tyres are of slick design, and utilise a foam insert to produce a soft tyre that is well supported.

Up until this point, the car is complete as far as the kit is concerned. Motor, speed controller, radio and body shell all need to be purchased if you do not all ready own a set. All major makes of radio will fit, although an electronic speed controller is required.

Once the radio has been installed, a narrow/scale body shell needs to be sprayed and fitted. Keeping up with the principle of a new kit, it was decided that a new Parma Audi A4 should be used, sprayed and stickered up in the works colours. This is very simple as the Audi is essentially silver all over. Parma also supplied the corresponding decal sheet which finishes the shell of nicely. The YR-4 now looked like a true racer and its performance was not to let it down.

Unfortunately, the rules for the class in this country, require tyre widths to be the same at the front and at the rear. The YR-4 comes with wide rear wheels and tyres and so the stock items are not compatible with the British regulations. For the purposes of the review, the car was run as standard with wide rear tyres; changing to legal rears would only have a very small effect to the handling.

Street scene

The Special was equipped with very popular radio and electric's, although in the interests of safety, a new hole was drilled for the aerial instead of laying it along the top deck as the instructions recommended. A 13 turn motor was fitted with the kit pinion. Stick batteries were installed and were only 1300SC's. Even though, the performance was impressive with a good turn of speed and very safe handling. It did feel like it needed a touch more lock on the steering and is something that would take only a few minutes to do.

At a race meeting, the YR-4 would certainly not disgrace itself with even 1300 batteries and the kit pinion. Handling was sharp yet forgiving and it was difficult to get into trouble. Overall, the car handled well, was easy to build, and remained strong and resilient. This is the sort of car that would give a beginner a good insight into the on-road racing scene while at reasonable cost. The upgrades that are available would only make incredibly small differences while others are not even worth it like the slipper clutch.

Thanks must go to CML Distribution who are the UK importers of Yokomo and all associated products.



Below; Suspension on the YR4 Special is limited as the car is aimed at flat on road use. The travel can be seen here, small adjustments are available to the racer to tune the car to various tracks. Yokomo alloy dampers are used with the option of differing piston set-ups.

