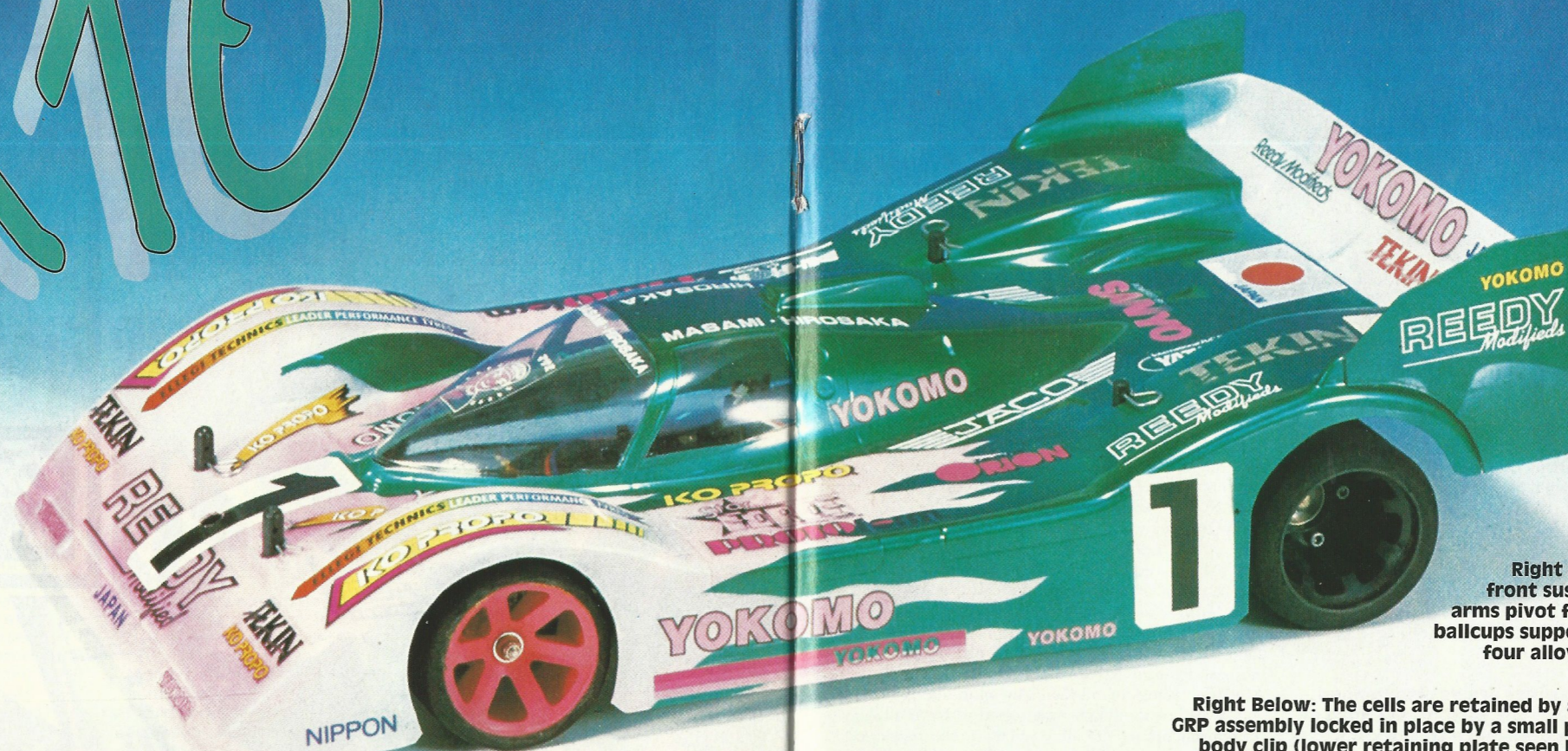


YOKOMO YRX10

Masami's World's Winner

Built, Raced and Reviewed By The Editor



During the Summer of 1994, Yokomo joined the select Club of manufacturers that have won a World Championship in more than one Class, Masami Hirosaka not only setting the TQ, but winning two of the three Pro 10 World's A Final legs to take the overall win with a completely new Yokomo car in its prototype form.

Designed by the 'dynamic duo': Masami and his father, Masaki, the car featured the cells mounted longitudinally, a twin spring/damper rear end and long 'wishbone' suspension at the front. It looked a little strange, but its performance was something else! The World then had to wait eagerly for the kit version to arrive...

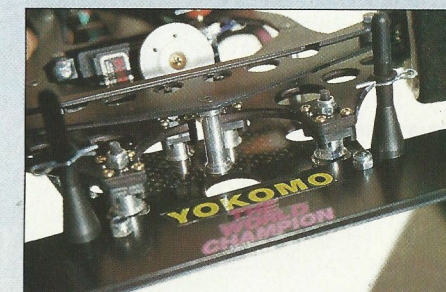
The rear pod's longitudinal and roll movement is controlled by the two coil spring/damper units. These aren't conventional 'shock absorbers' in the true sense of the word, relying instead on a silicone 'O' ring rather than oil to damp the piston's movement. The 'O' ring is inserted into the damper's cap, lightly lubricated with silicone grease, then the cap is lightly screwed on to the damper body. After completing the damper's assembly, gently nipping up the cap squeezes the 'O' ring against the end of the damper's body, therefore tightening its grip on the piston shaft and increasing the damping action. Very simple, but also very effective!

The front end is unusual in that it doesn't use an angled top link system to achieve a reduction in the static castor angle (a feature now incorporated on literally every competitive 1/10 On Road circuit car), instead the kingpins mount to very stout GRP suspension arms pivoting upon four captive balljoints supported by alloy pillars, those at the rear positioned very close together (their positioning dictating the change in the castor angle). The smallest upward movement of the suspension arm therefore results in a reduction in the castor angle, so as the standard setting is just 2°, only a small amount of suspension depression reduces the angle to virtually zero. Again, more on this later...

The springs are positioned around a separate 'spring post' inboard from the kingpin, bearing

Right Top: The front suspension arms pivot freely on ballcups supported by four alloy pillars.

Right Below: The cells are retained by a sliding GRP assembly locked in place by a small post and body clip (lower retaining plate seen here not supplied in kit). The chassis could possibly have been made just a little wider...?



The Production Version - The YRX-10

There is little real difference between Masami's prototype and the kit now available to all; the shape of the main chassis plate has changed, and GRP has been substituted for carbon (graphite) for the rear pod plates, top brace and wishbones, whilst Yokomo's own adjustable dampers replace the prototype's 'Delta' units. Graphite items are available from Yokomo as 'tune-up' goodies, although it would have been nice to see them included in the kit. Cost obviously dictated the economies.

Supplied in a colourful box, on the underside of which is printed a result time sheet from the World's (Yokomo definitely have something to brag about there!), the car's components were all contained in sealed plastic bags, numbered to coincide with each stage of the kit's construction. Everything is supplied apart from a bodysheet and the electronics, cells, motor etc, so a rolling chassis will be the end result. The instructions

The YRX10's rear suspension endows the car with massive rear end grip. Not only does the rear pod 'rock' upon the rear ballcups, but the 'parallel roll plate' also flexes between the inner and outer pivots.

suggest either a Protoform P-35 or Associated Nissan shell, together with suggested motor winds and gear ratios etc for 4 minute races. Ignore these if you're racing in Britain!!

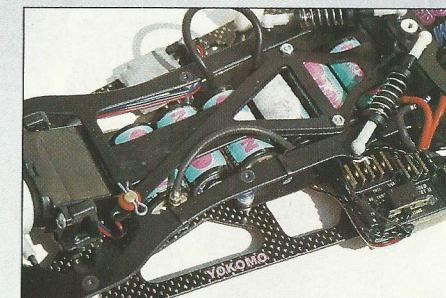
Let's Get It Together

I first rounded off the edges of all of the graphite and GRP components, then treated them to a dose of the superglue and black marker pen treatment, leaving them sealed and altogether very smart before beginning to put A to B.

The English in the instructions is a little quaint, but anyone could actually build the car successfully just by following the illustrations. I didn't appreciate the allen key supplied for the countersunk chassis screws rounding off too easily, but apart from that, the chassis went together very well and exactly as per the build-up sequence. All of the alloy spacer posts (and there are quite a few of them!) were very nicely machined, with well tapped threads making the assembly quick and easy.

The Suspension System

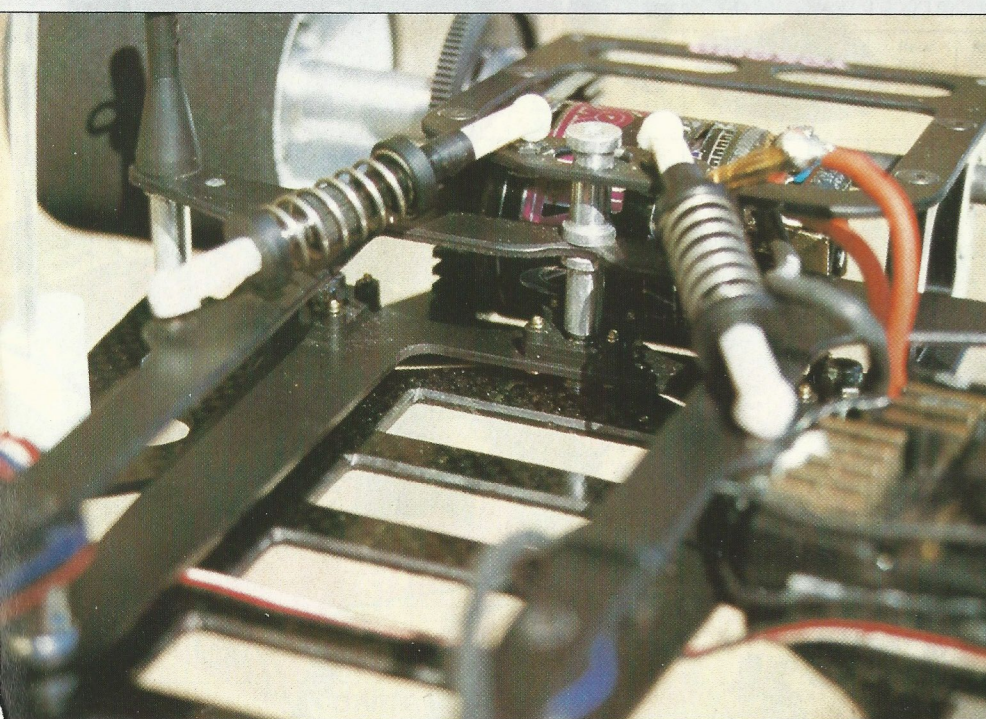
The rear suspension system hinges around (pun intended!) a large GRP 'U' shaped 'parallel roll plate', which allows the rear end to both twist in roll and to travel vertically up and down. In addition to this, the rear pod rocks upon the rear ballcups, giving even more suspension travel. More on this later...



against a narrow strip which crosses the top chassis plate. This plate is spaced up from the top plate using thin washers, and can in fact be set to differing heights to achieve negative camber (the higher the plate, the more negative camber). Having said this, doing so reduces the ride height, so limits somewhat the usable tyre size if using wheels of the diameter supplied in the kit. The more common 50mm dia wheels solve the problem.

I made some small mods during the assembly, repositioning the 'O' ring intended to go above the spring plate below it on the spring post to act as a damper, together with discarding the upper white nylon spring saddle on both sides as well as reducing the height of the lower saddle to allow more suspension travel.

The differential's smooth action is due to accurate machining and good support for the drive plates.





Power Supply

The rear end is a conventional 'flat pan' power pod design: a base plate, two uprights and a top plate. Supplied in the basic kit were two alloy uprights, the right hand version slotted etc., to serve as the motor mount. Unfortunately, these uprights don't allow the use of alternative ride height bearing carriers, so I opted to purchase the optional and really trick lightened and anodised optional plates to use from the outset. The deeply finned heatsink motor mount is well worth buying just for its looks anyway!

The differential is the most free running diff it has ever been my pleasure to put together! Thoroughly conventional in design and appearance, its superb action must be due to highly accurate machining and the fact that the diameter on which the balls run on the diff rings is supported by large shoulders on both the axle and the diff hub. To date the car has taken part in three race meetings, and the diff is still as smooth as it was when first built. Very nice indeed!

Running Gear

The YRX10's chassis design leaves no option but for the speed controller to slightly overhang the edge of the chassis plate if it's mounted horizontally, but thankfully there is just enough

room for the receiver to sit flush. I may well make up some small carbon 'stub wings' in the future to ensure the electronics don't get wiped off in a sideswipe.

The equipment installed in the YRX10 was a KO FET 1002 servo, a Futaba 40Mhz Micro receiver, and a Tekin 411 G2 speed controller. For motive power, a Corally 15 double slotted in nicely, as did some Orion Sanyo SP cells.

The kit's 48 d.p. spur gear was swapped for a StarForce 64 d.p. version, then the whole lot was topped off initially by a Protoform P-35 Nissan, with an Associated Nissan waiting in the wings to be tested.

To The Track...

The YRX10 received its baptism of fire at Round 7 of the RRC On Road Series at the new look Ashby track.

The front springs are easily changed. Adjustment of the spring's pre-load makes a big difference to the car's characteristics.

Worth buying just for their 'poseability', the optional alloy pod uprights offer both the facility to adjust the ride height and additional motor cooling.

It soon became clear that the car needed firmer springs at the front, as it felt nervous and tended to 'tuck in' when cornering, so Robin Hammett kindly lent me a set of 'Hard' front springs and suggested softening the damping on the rear a little. The car was so much better for the Final that its lap times were second only to those Robin was doing with his fully sorted YRX10, moving up from 8th on the grid to 3rd before a major league dump on the last lap saw the car drop to 5th. As Fred Singleton reminded me afterwards: "To finish first, first you've got to finish!"

So, it was nearly there. Following Robin's advice, I reduced the height of the rearmost front suspension pillars to increase the castor angle to 4° (inserting spacers underneath will then return the angle to the kit's 2°). This modification, in conjunction with raising the spring plate, also increased the negative camber to 2°. A set of 'Medium' springs found their way on to the front end, and the ride height was raised to 6mm all round, machining the alloy pillars at the front having made this much easier. To tweak the dampers, Associated 1/12 .20 gauge front suspension springs were dropped over the shafts to help prevent the chassis bottoming out, and a 1mm hole was drilled behind the spring collars to prevent the dampers 'pumping up', after which their action became even smoother!

RRC Round 8 at Stafford was the next outing, and boy, was the YRX10 dialled! Despite a small speed deficiency compared to the TQ man, Jimmy Davis, the car was superb through the tortuous Stafford infield and brought forth many favourable comments from onlookers. The end result was a time close to 26 laps and a win in the Final when Jimmy had problems. The tyres? Firm TRC Greens all round. Additive? Racer's Choice TQ (the standard variety) applied full width front and rear.

So...

The YRX10 goes together very easily, and, when set-up as described, develops awesome grip, turns in very well, and once settled in a corner doesn't scrub off speed, maintaining a chosen line well. The best thing about it though is that you don't have to be as talented as Masami to do well with the YRX10, although it would help!

The Yokomo YRX10 Pro 10 car is imported and distributed to the trade by CML Distribution, P.O. Box 3563, Rednal, Birmingham. Tel (0121) 457 7549. Fax (0121) 457 7759.

