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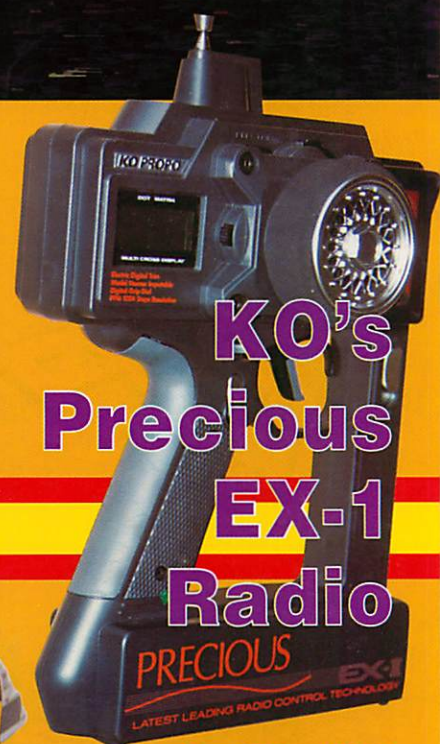
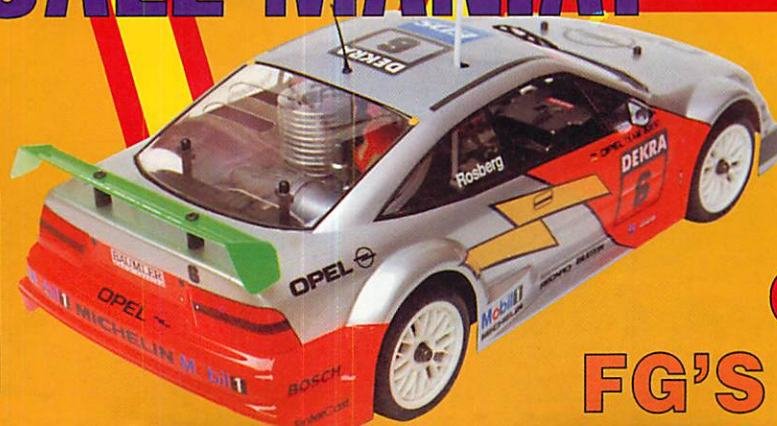
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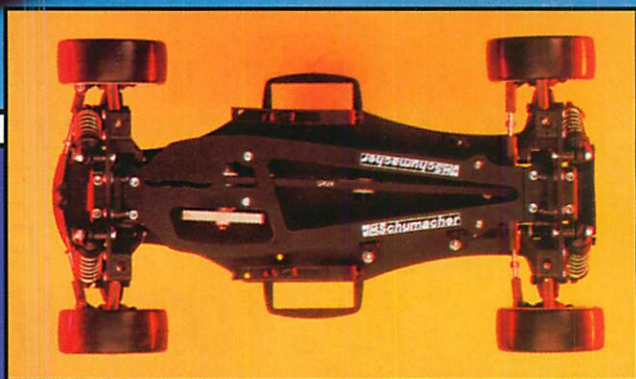
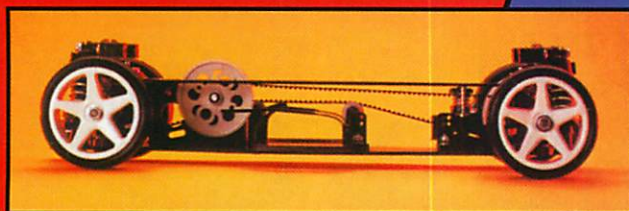
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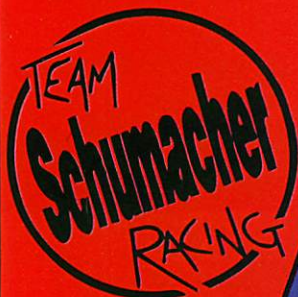
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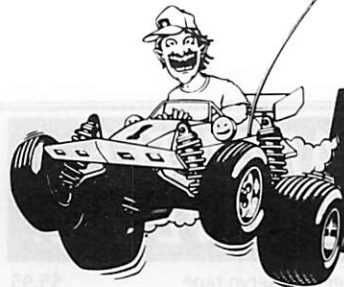
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Postal Address:

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Phone: (03) 9338 5696 or (03) 9330 3740

Fax: (03) 9330 3751

Editor: Lance McDiarmid

Advertising Manager: John Rogers

Subscription Manager: Robyn Pitt

Newsagency Distribution:

Network Distribution Co.

Printed by:

VIP Printing

Artwork and typesetting by:

Ropomod Productions Pty. Ltd.

New Subscription orders and Renewals
should be sent to:

P.O. Box 30, Tullamarine, Vic., 3043.

SUBSCRIPTION RATES

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Australia:	\$25.00	
New Zealand:	\$32.00	\$38.00
Other Countries:	\$36.00	\$43.00

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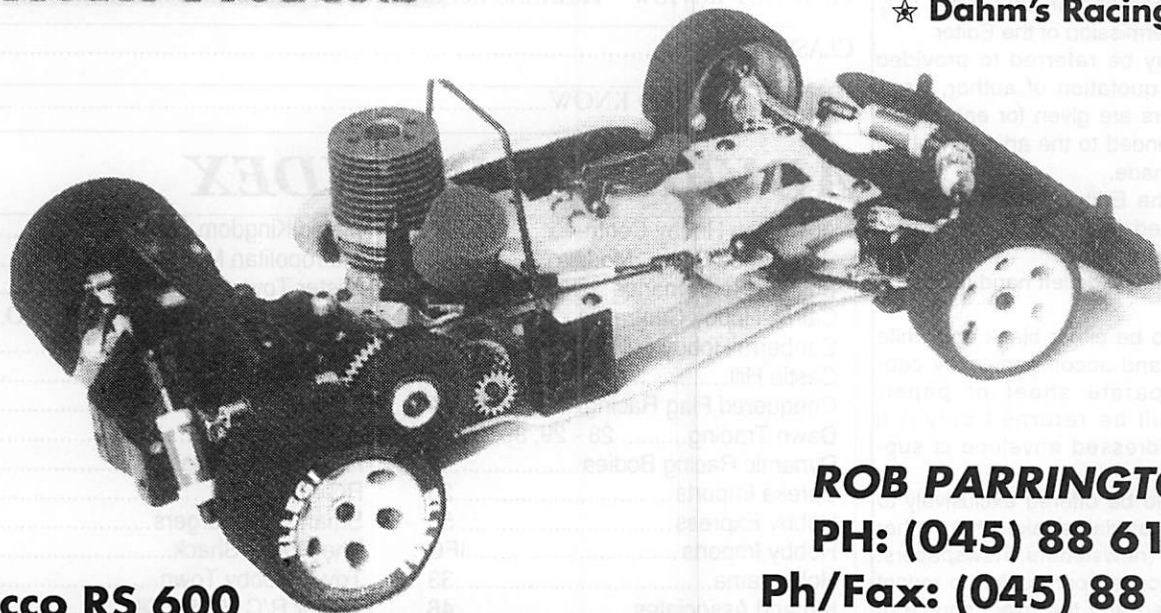
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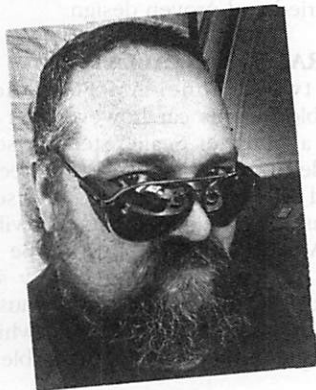
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FROM THE DRIVER'S SEAT



Guday from the editors desk.

Well it seems that a few clubs and tracks have taken up the offer of having their club listed in our free listing (*check it out this issue*) A letter from the **Alice radio control car club** letting us know

what is happening in Central Australia is published in the **Q&A** section.

An interesting concept is happening along the east coast with the introduction of **Motor Class Racing**. In Off Road racing the introduction of the **class 20 motor** (originally introduced for the over 30's) that is replacing the 05 stock motor at several major meetings in **New South Wales** and **Victoria** and is proving quite popular. In **Queensland** a **16 turn** machine wound motor is being used to a great extent to lower the cost of racing. Both of these classes are allowing good close racing and therefore creating a stronger hobby. Lets hope that they don't fight against each other. By using modified motors it allows you to **legally** open up your motor and true the commutator therefore increasing the life and efficiency of the motor.

This issue has the news we have all

been waiting for, the entry form for the **Kyosho World Challenge** for 1/10th scale **Internal Combustion engine** cars with qualifiers in all states of **Australia**. Look out for the kit review in this issue.

Word has it that there are some **big movers** out there in the RC car world we are talking really **BIG!** What is it? You will have to wait and see in the next couple of issues. We have to wait until we can get a double page spread to fit it in (*no it is not a picture of me*)

500 laps of an on-road track would take how many meetings, would you believe only 1. Yep, a 500 lap Enduro for Australian Touring Cars. You will have to wait till next issue to find out more about what happens. Let's see, on average I do 15 laps per race at Melton in 4 minutes, therefore I will need to have.....

Toys they're not.

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BMT 1/5 Scales Now Available	\$Call



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And if you don't believe that gas on-road is the fastest and most exciting form of R/C racing, come and see us at the new, world class Helles Park racing facility off Helles Ave, Moorebank! Racing held 1st and 3rd Sundays.

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BMT'S ONEFIVE Radio Control On-Road Racer



installation of the radio equipment and the assembly of the wheels and tyres. More on these later. The first impression of the chassis is it's sheer size and it's similarity in design to the current breed of 1/10th scale racing chassis's. It looks like a 1/10th 2WD car only double in size! This chassis breaks new ground in regards to other brand 1/5th scale chassis's, but to me is a logical progression from a tried and proven design.

RADIO INSTALLATION.

Any two Channel AM/FM radio is acceptable for this car however you will require a "Quarter Scale" steering servo to handle the very high loads of directing a 9 odd Kilogram projectile. The servo saver inserts provided in the kit will fit FUTABA, MULTIPLEX AND JR type servos. An upgraded receiver battery such as a 5 cell 1700 Mah pack is a must to cope with the high current drain, while a high torque throttle servo is advisable.

SUSPENSION.

This is double wishbone front and rear with adjustable castor, camber and

1/5TH SCALE MANIA COMES DOWN UNDER

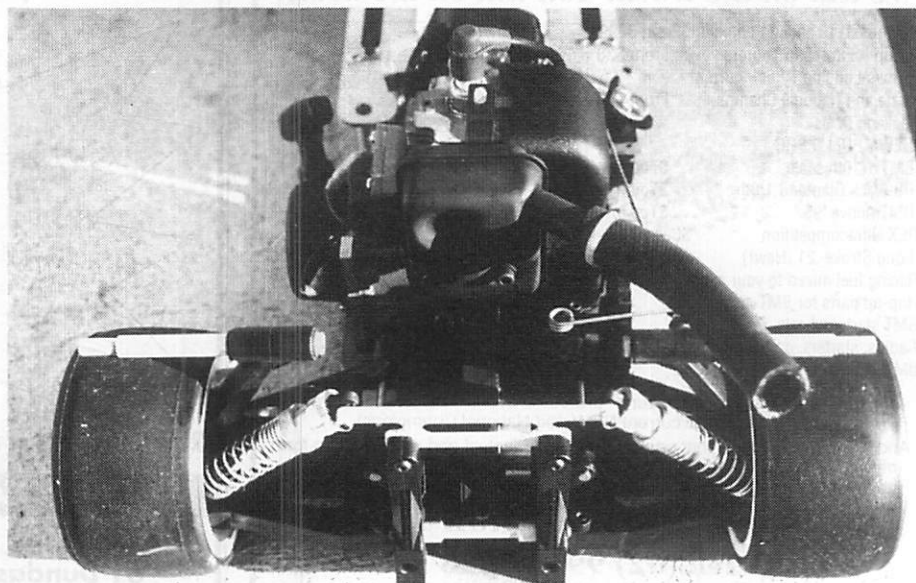
by Ric Bartolozzi

After seeing these monoliths being demonstrated at the recent I.C. NSW on-road Champs, I must admit I was more than a little interested. Making their debut at the newly built Helles Park Raceway at Moorebank, these 1/5th scale race cars promise a much needed return to the concept of budget racing. Although initially more expensive (not by much if we compare to a fully set up 1/8th scale car including motor, starter, spare tyres etc). we can expect to have a much reduced running cost keeping in mind the low cost of unleaded 2 stroke fuel, real racing rubber tyres, and a motor which is detuned to maximise its longevity.

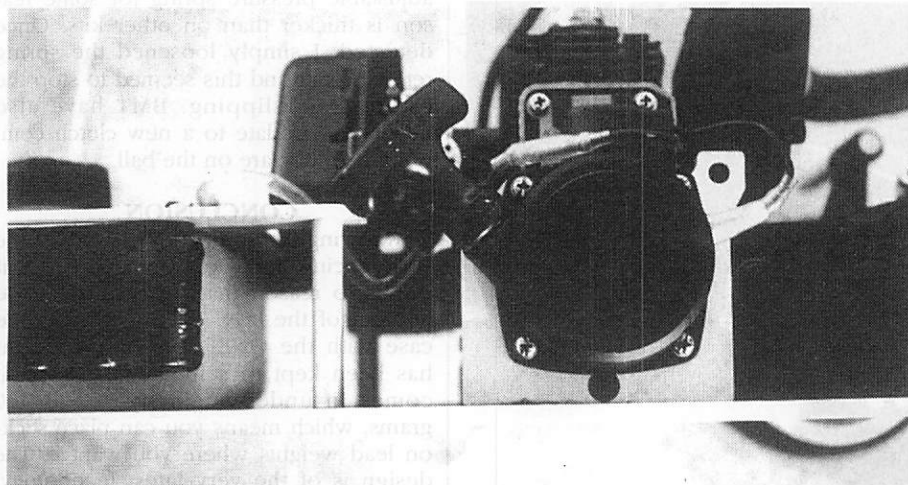
Knowing that BMT'S version was to be released in June, I was eager to be the first kid on the block with one. I keenly accepted the challenge to write this product report. When it finally arrived, I was taken aback by the size of the huge carton. This thing is about 1mtr by 1/2 mtr by 1/2mtr. Inside it and securely braced by styrofoam slats sits an excellent version of a BMW M3 racing body straddling

a partially built chassis. What I mean by partially built is that the chassis is basically built with the exception of the

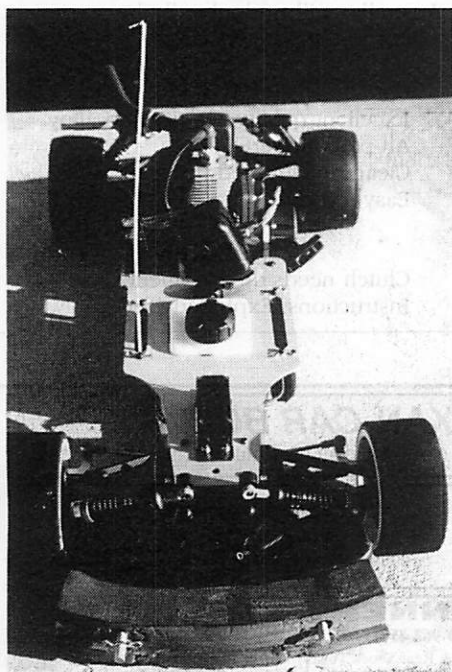
toe for the front, and adjustable camber and toe for the rear. Adjusting front camber is by screwing the ball link in or out



Rear end is simialar in looks to a current 1/10 size car...only it's twice as big.
Don't ya love the exhaust.



Power comes from a 23cc Zenoah two stroke pull start motor via an adjustable "Speed Grip" centrifugal clutch.



Overall chassis shot showing oversized steering servo required to handle the high leads as well as a well endowed front bumper that fits behind the body shell out of view.

on the top (or bottom) using a 3 mm hex wrench. Adjusting toe in/out is by lengthening or shortening the steering linkage.

For the rear, the bottom wishbones have double ball links and adjusting toe in/out is by screwing in or out the front ball. Camber adjustment is by screwing in/out the top single ball link. Both front and rear suspension have anti-roll bars with the front being a massive 5mm unit and the rear, 3.5 mm. High volume coil-over shock absorbers control the damping and springing is 2mm coil front and 1.6 mm rear. Adjusting ride height is made simple by screwing up or down the collars on the threaded shock bodies.

A gear diff is included standard with this car however an adjustable ball diff will soon be available as an option.

ENGINE/DRIVE TRAIN.

Power is provided by a "ZENOAH" G230PUH 23 CC 2 Stroke pull start air cooled engine and this provides power to the ground via an adjustable "SPEED-GRIP" centrifugal clutch. A single speed interchangeable ratio gear drives to a layshaft then via a belt to the gear diff and this proven method of power transfer assures minimal drag and loss through the drive train.

TYRES

As far as I am led to believe, the tyres provided are the first which do not require gluing to the rims. They are moulded to fit the "3 piece" rims and securely clamp to them. The fronts are a firm compound and rears are "sticky" and are provided with a foam liner

insert. LATE MAIL: Soon to be released will be standard type rims which will accept tyres from other manufacturers.

BODY

The body included with this kit as mentioned earlier is a BMW M3 racing body. This body has been the centre of some controversy as when it was submitted for homologation by EFRA, it was approved. This, however was not to last as after some revaluation, the approval was reversed due to some technical imperfection. The end to all this is that the body will be allowed to run in competition until the end of 1996. Optional bodies are a Alfa 155 Martini or a Ferrari F40. The Alfa is legal for competition.

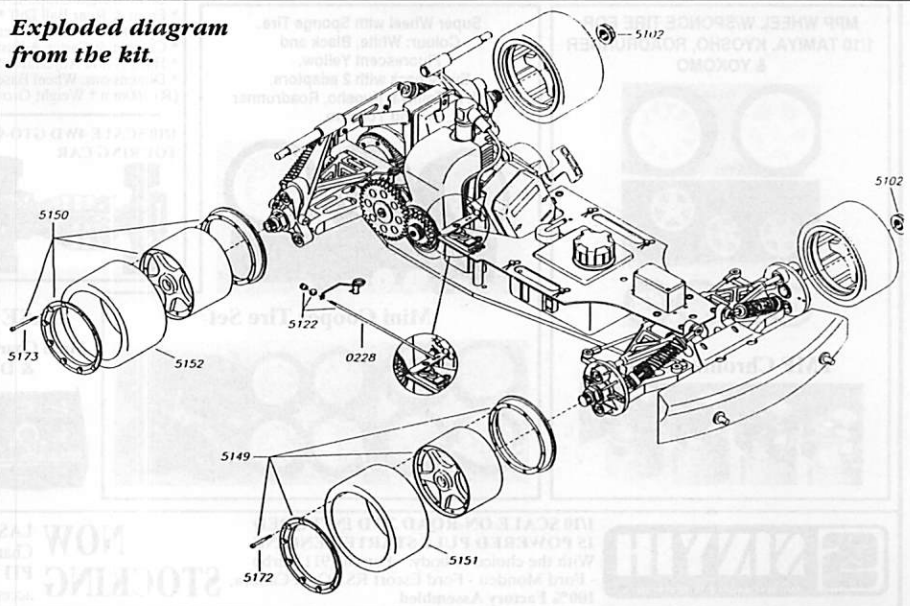
CONSTRUCTION

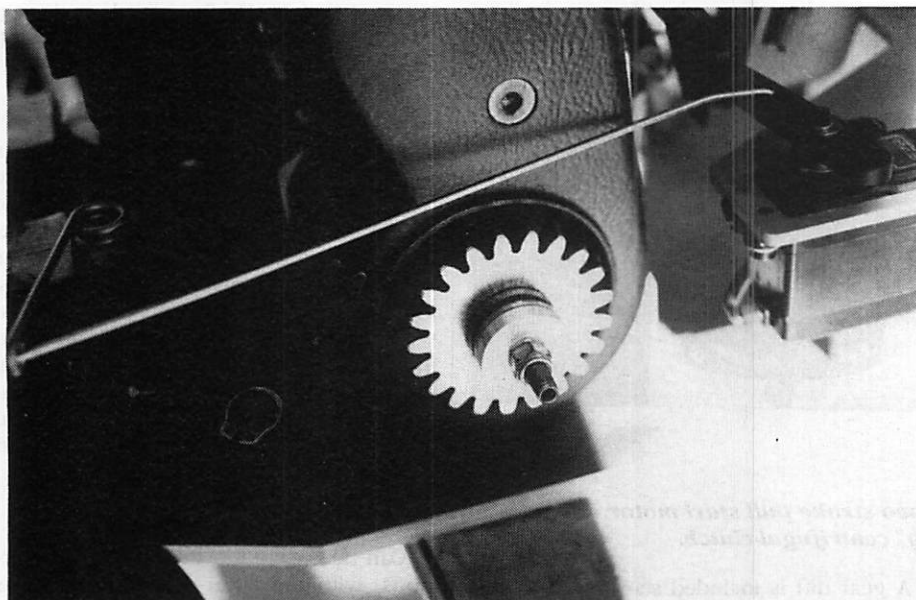
Can be ordered in built or unbuilt versions, with the latter being cheaper. As this article goes to press 2 kits are being built in Sydney and thus far with no problems. Comments received have been positive in relation to the quality of plastic parts and the ease of construction.

DRIVING THE CAR

The BMT's first outing occurred at Sydney's Helles Park Raceway at Moorebank, on their regular raceday for 1/5th Scale racing (4th Sunday of each Month). I had come out on the previous day to run in the engine and to get a feel of driving the car. Importer Rob Reade from Model Motorsports International, had had some conversation with BMT's spokesman and Team Driver in Italy, Fabio Domanin and his explanation of their philosophy was to make this car easy to drive, which it certainly is. Unlike other brands, it sits very flat through the corner with minimal of body roll. In fact for me, It has a tendency to understeer

Exploded diagram from the kit.





Clutch Spur gear and pinion.

which, for the average driver, is good but for the more experienced, a little cumbersome. It seems the cause of this understeer is a combination of the front tyre compound, and the massive 5mm anti-roll bar fitted to the front lower wishbones.

Since this meeting, I have filed down

the bar to 4mm and we understand a new tyre compound is on the way as this report goes to print which should go a long way to curing this minor problem. Some teething difficulties have been encountered with the clutch but this seems to be isolated to my test car as on further investigation, it seems the

adjustable pressure spring for some reason is thicker than on other kits. Once detected, I simply loosened the spring retaining nut and this seemed to stop the clutch from slipping. BMT have also decided to update to a new clutch compound so they are on the ball.

CONCLUSION

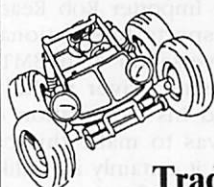
Knowing the competitive nature of the BMT Racing and Development Team, it stands to reason that this car would be fast out of the box. This is certainly the case with the ONEFIVE. Excess weight has been kept to a minimum, in fact it comes in underweight by 300 to 400 grams, which means you can place stick-on lead weights where you want it. The design is of the very latest technology, the single disc brake works well and once this car has been developed here in Australia, will undoubtedly be a constant visitor to the winners circle.

LIKES

Excellent quality plastics and alloy
All parts fit perfectly
Clean, uncluttered design
Easy to drive

DISLIKES

Clutch needs development
Instructions, Exploded views only



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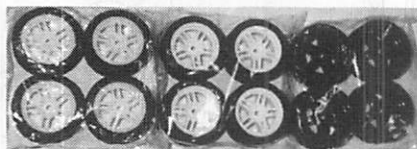
TMF Chrome Wheels



Super Wheel with Sponge Tire.
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Every pack with 2 adaptors.
For 1/10 Tamiya, Kyosho, Roadrunner
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Mini Cooper Tire Set



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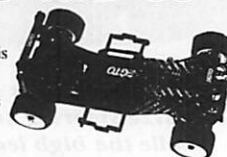
Modified parts for
Tamiya, Kyosho,
Yokomo & HPI etc...



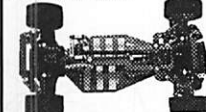
ROADRUNNER GTO 4WD '96

1/10 MINI COOPER GTO-962 4WD

- * Light Weight Graphite Front & Rear Shock Tower
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MINI GT0962

Cooper

4WD

by John Hawkins

For the committed racer, this little device is quite a pleasant surprise when compared to what else is available in the 1/10th "scale" segment of the market. It is well engineered and, apart from a couple of minor options, is about as fully featured as you can get.

The chassis is full length double deck and of high quality carbon fibre. It is a very stiff unit in all axes.

The suspension is the usual unequal length and non-parallel double wishbone setup, with the bulk of the load taken by the very substantial and stiff lower wishbone. The upper links are not adjustable for camber, but with the judicious use of a sharp hobby knife and some very short turnbuckles this is soon overcome. Rather than brittle styrene type plastic or some of the very rubbery nylons seen on some other brands, all the plastic components in this car are moulded from what appears to be engineering grade nylon. Offering the best compromise between crash resistance and component rigidity I've seen in this class, the car has impressively robust suspension.

The rear end has toe-in and anti-squat built in, and caster at the front is tuned by adjusting the rear link in the upper wishbone.

The shocks are nylon-bodied oil filled coilovers, with a choice of one, two or three hole pistons. Ride height is set with clip-in spacers. Optional spring packs containing a variety of rates are available as are antiroll bar sets.

As can be seen from the photos, drive is by toothed belt from a centre layshaft to ball diffs front and rear. All shafts are ballraced as a standard feature, an option worth up to a hundred dollars plus on some other cars. Unlike some other cars on the market, the rear dogbones do not exit the diff rearward at large angles, and offer an immediate advantage in straight line speed and durability.

The dogbones feature universal joints on the outboard end on all four corners to improve rolling resistance. Belt tension is not adjustable, but as the pulleys wear in a little the transmission frees up very well. Slotting (very slightly) the holes at one end of the upper deck is an easy

modification if all else fails.

The only options you might wish to consider are some form of one-way roller clutch for the front transmission, and ball racing the steering bellcrank system. However, in the extremely slippery conditions one usually finds in most car parks, the additional braking power of the stock setup may be quicker.

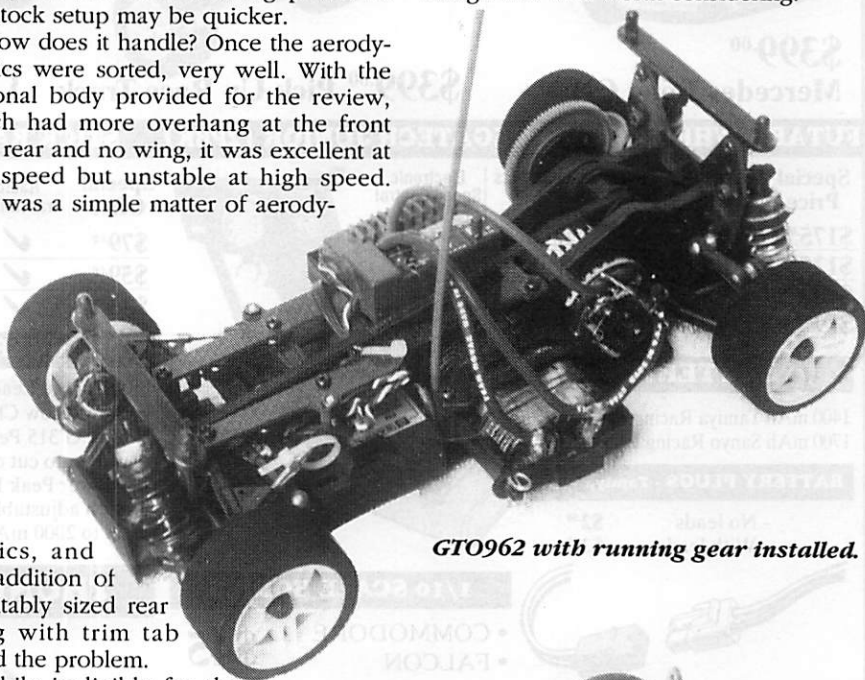
How does it handle? Once the aerodynamics were sorted, very well. With the optional body provided for the review, which had more overhang at the front than rear and no wing, it was excellent at low speed but unstable at high speed. This was a simple matter of aerody-

Hill. Unfortunately time constraints prevented a head-to-head comparison on the race track, but it is clear it has the potential to cause a few upsets. So far, it has taken TQ a number of times at MECA. Combining high level features, quality materials, and very intelligent design it is well worth considering.

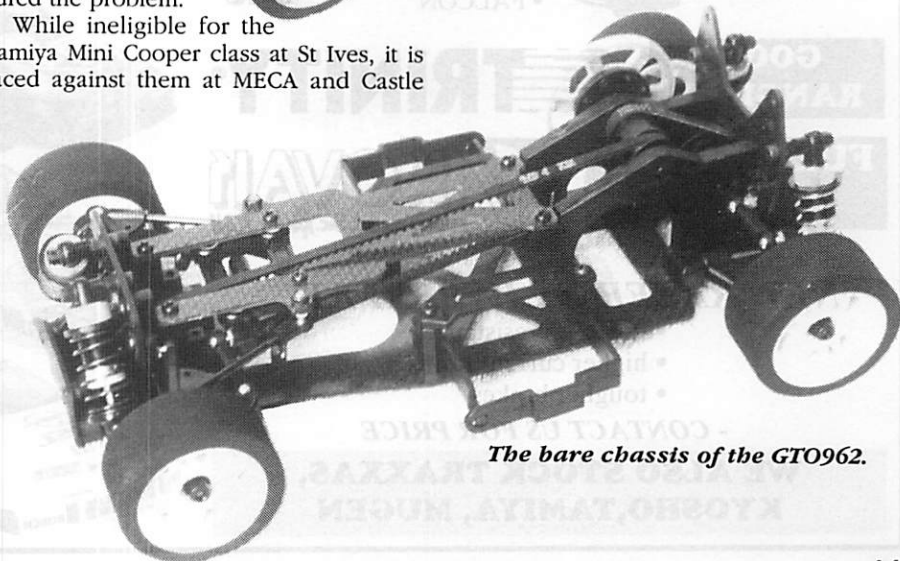
namics, and the addition of a suitably sized rear wing with trim tab cured the problem.

While ineligible for the Tamiya Mini Cooper class at St Ives, it is raced against them at MECA and Castle

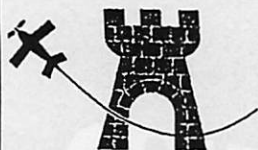
1/10th Scale On Road Race Car



GT0962 with running gear installed.



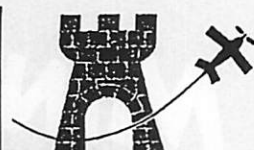
The bare chassis of the GT0962.



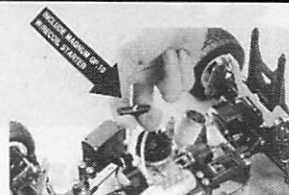
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\$35.00	✓	✗	✗

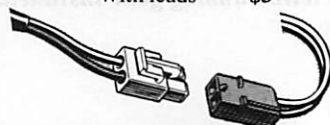


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1/5 Scale

Track Test

by Steve Burgess



Gas Grunter

Reports from Europe indicate the growth area in RC cars is Large Scale. What is Large Scale?

Large Scale is 1/5th, 2 wheel drive, 23cc spark ignition, 2 litre class bodies, running on petrol. The first car to hit our shore is the FG from Germany. So what do you get? Now here's the best part, on opening the box you find a fully pre-assembled car (no radio gear) right down to the CNC machined fitted body.

So what do you have to do? Firstly, the radio tray is pre-formed to take two large servo's for the steering. (I used Hi-tec HS-705mg as these fitted perfectly). The throttle servo area is also ready to accept either JR or Hi-tec. (In this case I used a JR4721 as you need at least 7kg torque to work the brakes). Secondly, you'll find the tyres are not fitted to the rims. The tyres are

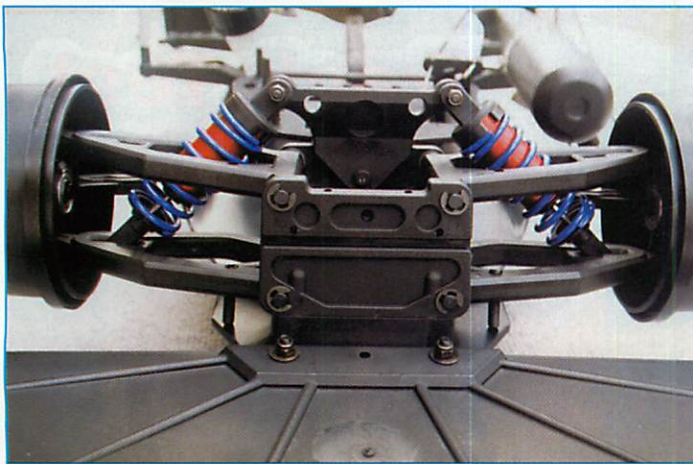
rubber just like the full size but instead of air they are filled with a special foam inner. The tyre edges are then superglued to the rims. Various compounds are available but at this stage the kit tyres seem ideal.

Lastly the body requires painting, so if you have a favourite team in the British Touring Cars or the Australian Supertourers you can copy the colour schemes for true scale racing, which is what Large Scale is all about. Decals for European teams are included in the kit. Various body styles are available such as BMW, Mercedes, Alfa and Opel Calibra (the test car is the Opel). The lexan bod-

The chassis exposed. Well made and solid add up to a great racer.



GO
FOR
A
SPIN
WITH
FG

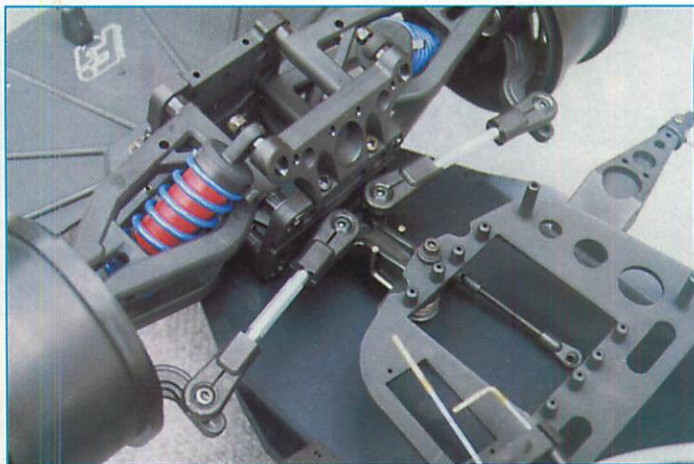


Above left: Front end has a huge (and useful) bumper.

Above right: Steering requires a 7kg torque servo.

Below left: Realistic spoke wheels.

Below right: Front end upper and lower wishbones.



An aluminium chassis with folded edges for strength supports nylon suspension components.

The front end consists of your typical upper and lower wishbones with basically no adjustments with the exception of toe-in or toe-out and the upper wishbone which can be slid back or forward to adjust caster (again I found the factory setting the best). Front and rear wheels are held in place by nyloc nuts on a ballraced

specifically design for large scale cars with a pullstart fitted (no more glow plugs and electric starters). A tuned pipe is supplied as standard.

The rules governing Large Scale state no modifications allowed to the motor, that should keep the racing close and the cost down. The drive train consists of centrifugal heavy duty clutch which is non adjustable. The nylon gears are also rather large and after many hours show no sign



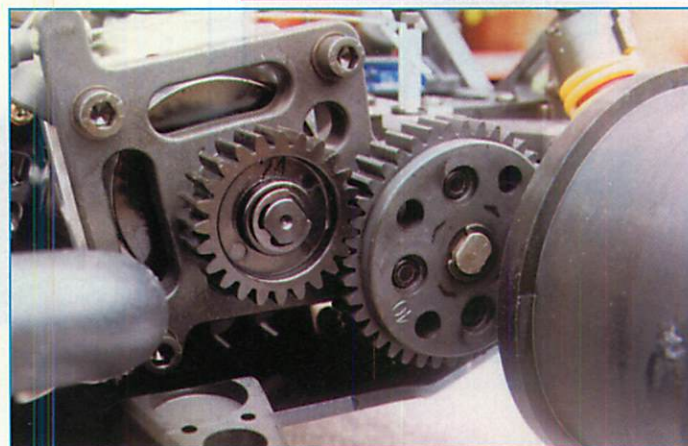
ies are made of two pieces. Most come with a detachable nose cone which means a cheap replacement rather than the whole body. The body is supported by an aluminum roll cage which adds strength in case of those nasty little accidents. This all adds up to dollars saved in the long run.

steel shaft. All pivot points are balljoints.

The rear end is a little more exiting and is fully adjustable. The top wishbone can be adjusted for camber (I found 2 degrees about right). The bottom wishbone can be adjusted for toe-in or toe-out. The engine is a 2 stroke 22.5cc Zenoah G2D model

Below left: Chassis is covered by an aluminium cage.

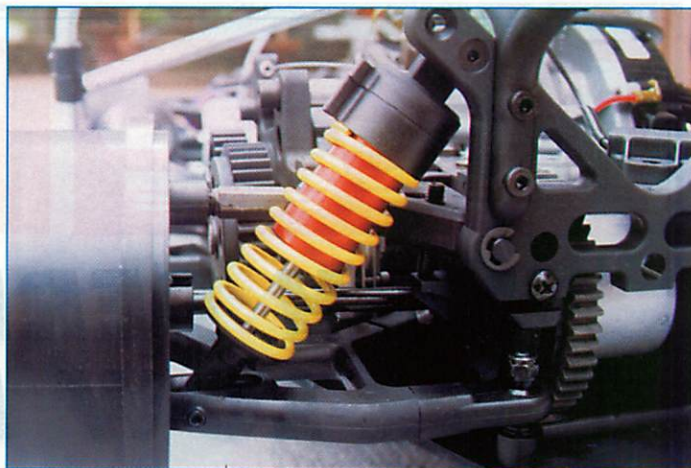
Below right: Huge pinion & spur gears could benefit from a cover, however no signs of wear after many runs.





Above left: 22.5 Zenoah 2 stroke motor with pull starter.

Above right: Fully adjustable rear end.



of wear. Various ratios are available but once again the kit ratios seem to be the best. The layshaft carries the twin disk brakes which I feel is the only weak point of the car. The car weighs 9.5kg and takes some stopping. Under the current rules (we follow the EFRA international rules) front disk brakes are an option. (I have fitted these brakes to the car and the stopping power is quite awesome). Steel gears transfer the power to a non adjustable geared differential.

Finally, off to the track so we can get down to some serious testing. The first thing you will notice is how easy the engine is to start, one pull with choke, choke off and your away.....we'll almost. I got to the first corner and promptly spun the car in complete circle. What's the problem? Cold tyres, just like the full size! You must proceed slowly on your first lap and get some heat into your rubber tyres. (I have completed 15hrs of testing on the same set and at about \$60 a pair that's cheap racing). The car performs quite well

out of the box with the exception of brakes as earlier stated, however the importer has informed me, as an option from July, that the cars will be supplied with front brakes at a price marginally dearer than the original cars. After running around for about 30 minutes another good feature was discovered. I had not been into the pits to refuel! The 700cc tank has a running time of 45 minutes, that's about 90 cents worth of fuel using quality oil, in this case NEO big red. My onboard tachometer (available from Chequered Flag Racing) which records highest rpm indicated 14600rpm. Not bad for a so called weed eater engine.

Racing is now scheduled on the fourth Sunday of each month at the NSWRCRCC Helles Park Complex, Liverpool. The format proposed is to run a 10 minute warmup round which is used to establish your fastest single lap which in turn gives your grid position for the first race. A total of 4 x 10 minute heats will then be run with your grid position determined by your position in the previous heat (fastest car position one). The finals must be of a 30 minute duration with no refuelling allowed. This rule makes it difficult for those people looking to bend the rules as a modified motor will not make the distance. A complete set of rules and race format is available from the club secretary.

So what happened at the race day?

Because these cars are virtually all the

same the racing was very, and I mean very, close. Once again just like full size you must race using your brain to look for your passing opportunities. One spin or bad move puts you well back and it takes a lot of time and good driving to catch up. Cubic dollars is not the answer in this sport. A full race reports will appear in latter issues of the magazine. All I can say is that everyone had FUN... and that word has not been around for a long time. The racing season in Europe has been running now for a couple of months with the FG by far the most common car on the track. The main comment passed on to me is the strength of the car. It will always get you to the finish line. The car has also had its fair share of victories in both standard and modified classes. The European Champs for 1/5 scale will be held in France around the 21st July so keep an eye out for the results as all manufactures will be represented.

Finally, what you get is a well thought out package that here for the long term. Large scale in Europe is taking off so get in early and avoid the rush. Some people may balk at the initial price, however once you start looking at the running costs of these cars you infact save money over your first six months of racing compared with other smaller gas car scales.

And best of allthey look great!

Below: Tuned pipes helps the Zenoah engine. Comes as standard.

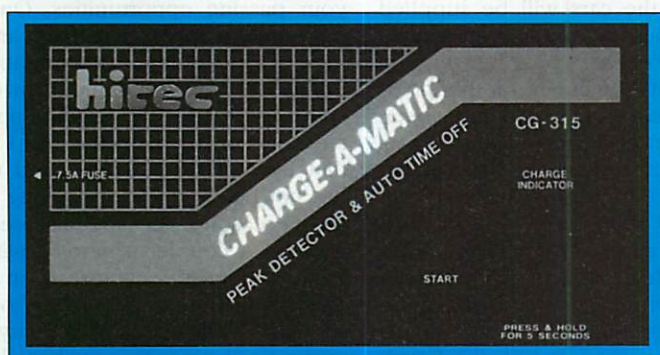


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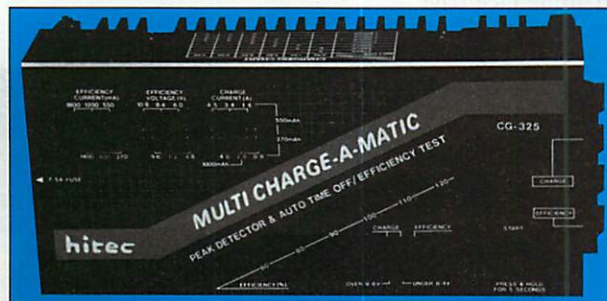
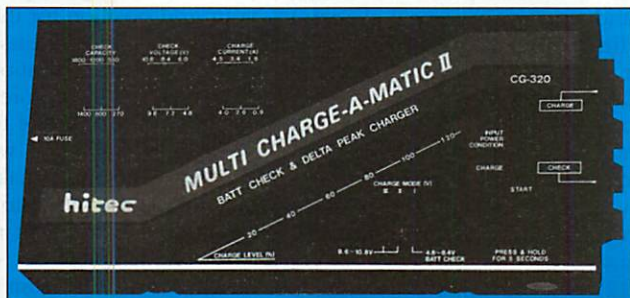
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What's in a name?

Track Test

by Tony Gray



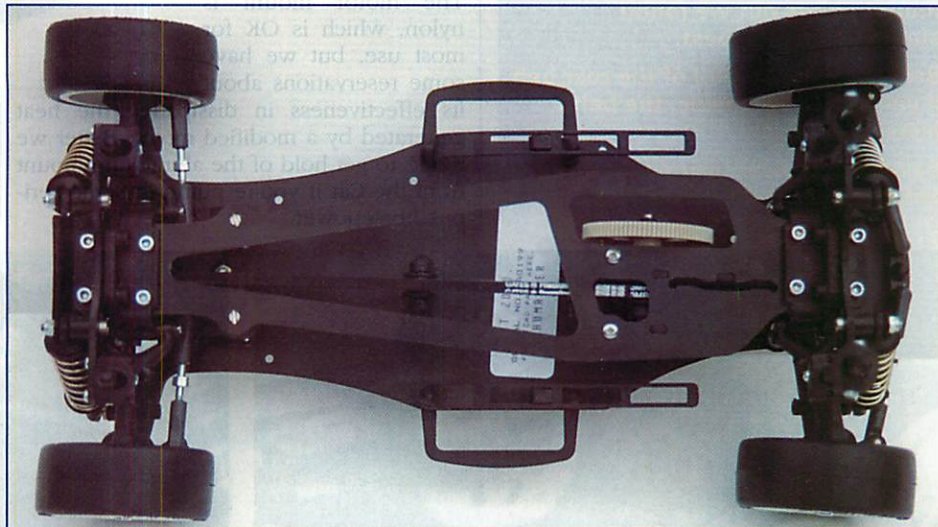
SCHUMACHER SST 2000

It was probably inevitable really that this would happen. Just about all of the major manufacturers (with the notable exception of Associated and Losi) had jumped on the Scale touring bandwagon, and with sales of these cars booming all over the world, it's not hard to see why. Everywhere you go now, Supermarket parking lots are buzzing on weekends and nights as the local lads get out with an electric Tourer and start tearing up the neighbourhood. Naturally enough, Schumacher saw what was happening, and thought they maybe they might like a little piece of the action as well. The result was the SST2000.

Now you'd expect something that's come from the house of Schumacher to be bristling with innovation, well that's not really the case this time around. Schumacher are smart enough to realise that they already had a fine basis for a

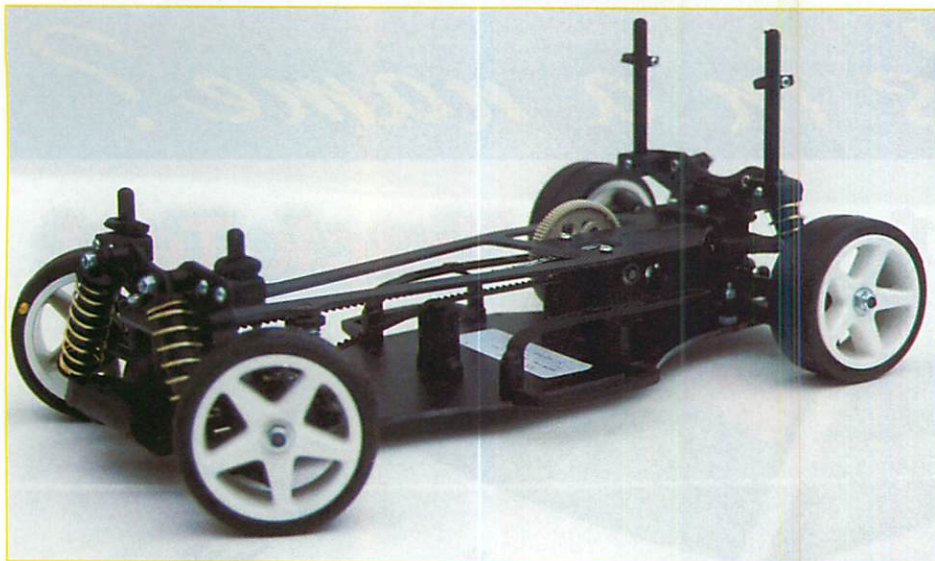
4WD touring car in their very own Cat 2000, and it didn't make any real sense to start off with a clean sheet of paper for the Scale Tourer. No, what Schumacher have done, is take the basic design of the Cat 2000's drivetrain, and utilise its best points

in an appropriate On-road chassis. For long time Cat 2000 owners, most of the SST will hold few surprises, and indeed, most of the drivetrain parts are fully interchangeable with the Off-road predecessor. The main surprise most people will get is



**Undressed for action the SST 2000
is a lean fightin' machine**

EVERYTHING!



when they open the box for the first time, and find that there is literally nothing to do, because the SST 2000 comes to you fully assembled. Yep, just a lick of paint on the body and bolt in the radio, and you can be up and running! This is surely a first for a serious Scale Tourer, and this fact alone will definitely attract many a first time buyer that may otherwise have been put off by the apparent complexities of assembly. This is a real smart move by Schumacher, and recognises the fact that not everyone wants to spend hours assembling a car in the first instance, and they would rather do a bare minimum m of work and just get out there and race.

Because its basic design is a carry-over, many of you will already be familiar with

Above: Almost a "Cat 2000 in drag" the SST hides its off road origins well.

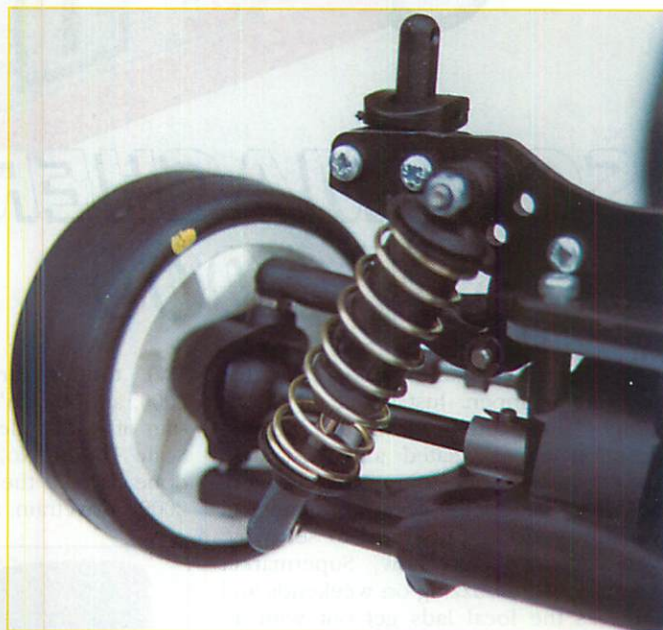
Right: There are several shock mount points but we found standard was the best.

Below left: Be careful of the rear belt if you get a rock inside, the belts history.

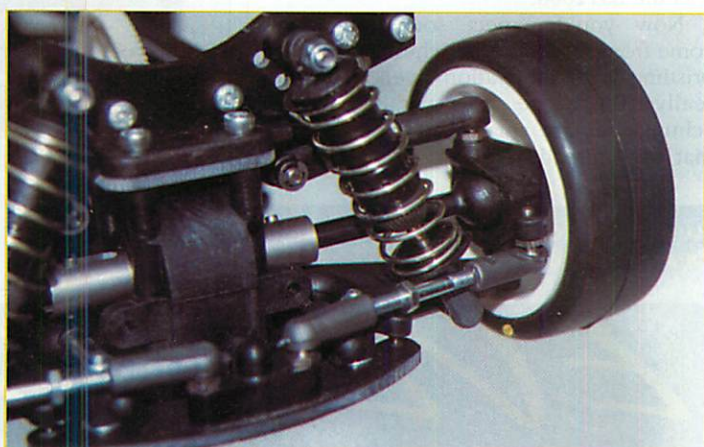
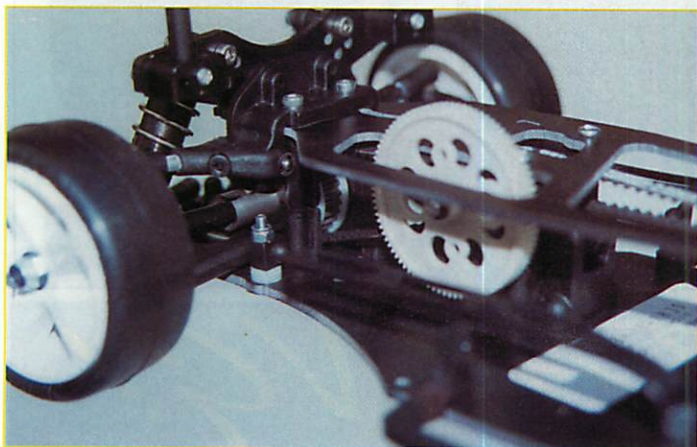
Below right: An unusual rear end setup, but it's fully adjustable.

how it works. If you're not, then read on..... A fibreglass Double Deck chassis does all the holding together work, and it carries a ball diff front and rear. The motor drives through a normal spur/pinion arrangement, direct onto the centre shaft, and the drive goes from there to the diffs via toothed belts. It's a time honoured method and results in a smooth, efficient 4WD transmission. The Cat2000 has a one-way device on the layshaft which only drives the front when necessary, but the SST has full-time 4WD fitted. If you want, a One-way can be fitted as optional. The motor mount is nylon, which is OK for most use, but we have some reservations about its effectiveness in dissipating the heat generated by a modified motor. Better we think, to get hold of the aluminium mount from the Cat if you're putting in some serious horsepower.

True to tradition, unequal length wishbones are fitted front and rear, and adjustable tie rods hold everything together up top. The ball joint cups are Schumachers latest 'Ball-Grippa' models, and if the trouble we had getting these things off is any indication, the days of ball joints coming off in the heat of the battle are now a distant memory. All the links have turnbuckles fitted as standard, so that's one less expense that you'll have, although titanium hot-up equivalents are available as well. Schumacher have fitted a tiny grub screw underneath the wishbones, which can be used to adjust the amount of 'droop' (the amount that the wishbones drop when the car is forced upwards) This feature is quite useful, and we haven't seen it on any other Scale Tourer so far. If its adjustment you want, then the SST has it in droves. Check out the list of standard adjustments...camber, caster, anti-squat, tracking, ride height and also the usual damping/spring alternatives



as well as extra damper mount positions. Schumacher certainly can't be accused of not offering us a 'tuneable' car, although we wonder if the average racer will ever even understand, let alone use all of the



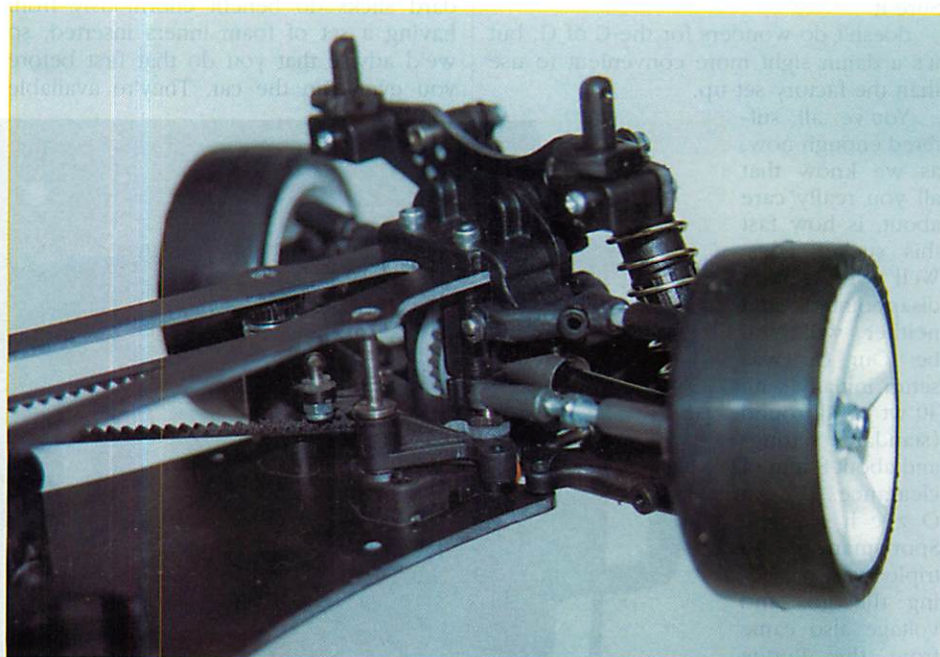
possible adjustments. Still, for those of us who can make use of them, will certainly appreciate it. The great thing about all this adjustability, is that the manual gives you a full description of each adjustment, along with a summary of what effect it will have on the car. The standard settings for all variables, are written in the manual as well, so it's easy to return to the status quo if you bugger everything up.

Shock absorbers are one area in which the SST shares nothing with its brethren. Apart from being about half the size, they're also made of plastic, although they do share adjustability functions. Unfortunately, ours were a tad on the leaky side straight out of the kit, which meant that we had to refill them before running. They still leaked a little afterward, which means that a new set of seals are going to be on our wish list pretty quickly. In fairness to Schumacher, ours was an early kit, and we'd imagine that once production gets into full swing, these sort of problems should be ironed out. We also discovered several other places where sloppy assembly had caused minor problems, so we'd advise any serious competitor to check out their car pretty thoroughly before committing it to the track. While you're doing it, you might like to strip apart a few things too, as you'll need to ballrace the car for competition use. The SST2000 comes with moly coated plastic bushes in standard issue although the centre layshaft is ballraced in the kit. If you're really serious, you can put a couple more ballraces inside the diffs as well, and the steering bellcranks have provision for them too. It takes about 30 minutes to fit the full set of ballraces, and we'd highly recommend it, as it makes a huge difference to the cars performance.

Actually, accessories seem to be the name of the game with the SST, as the list of 'Speed Secrets' is pages long. Most of the Cat bits fit, as well as a whole swag of specialist bits just for the SST. Oh, and by the way, Tamiya type hex drives are used for the wheels, so getting appropriate footwear won't be a problem.

Battery retention is via a neat little cradle, and although Schumacher say that both Stick and Saddle packs will fit, we couldn't get a saddle pack in. Maybe a bit of fiddling would do it but there is a separate chassis available for those want to take full advantage of the saddle type configuration. Drive shafts are nylon universal/dogbones and although they appear a little thin for the job, we have confidence that Schumacher will have done their homework in this area. If you're looking for the ultimate in drivetrain transmission, Schumacher's new 'Blades' are available for the SST and from all reports so far, they are sensational.

Schumacher knew that it didn't make much sense to re-invent the wheel when it



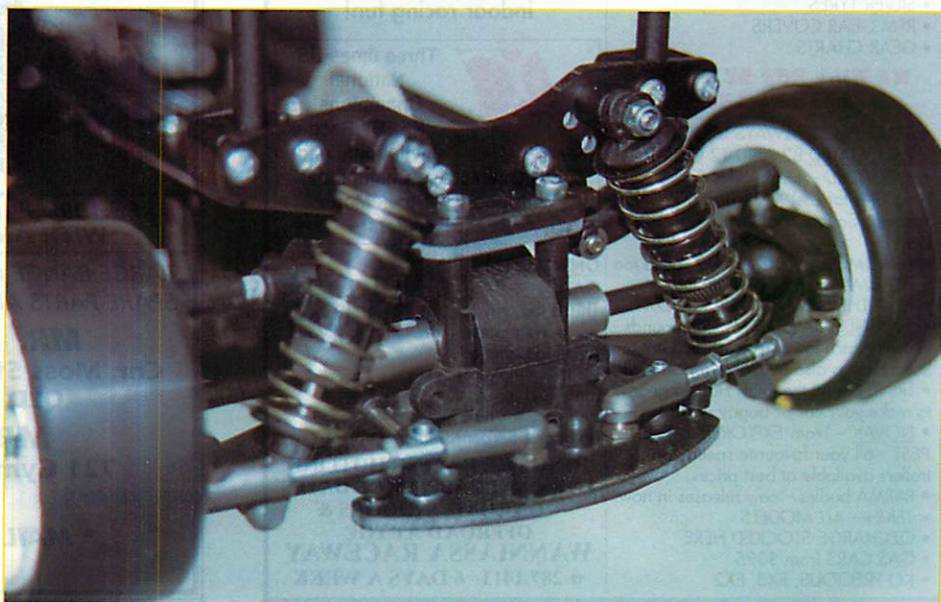
came to doing a bodyshell, and in the case of this car they called upon their friends at Parma to provide the necessary accoutrements in the form of a BMW M3 GTR body. It's beautifully moulded as per normal Parma practice, and fits a treat on the Schuey chassis. For that real mean BTCC look, drop it down as far on the chassis as it will go, and make all your friends envious..... It does look a tad strange around the rear wheel area, because of the enormous toe-in on the rear of the chassis which pushes the rear wheels at an odd angle. Schumacher do provide paint masks for the windows as part of the kit, and these do give a nice crisp paint edge. Don't however, do what we did, which was leave them on overnight, as we had heaps of trouble getting the adhesive off the window area afterwards.....

Fitting electronics into the SST is interesting to say the least. Receiver and servo pose no problem, as there is ample room

provided up the front part of the chassis, with the two items sitting opposite each other on the lower plate. The ESC, is a different matter, and the Schumacher solution, is to provide a little bolt on mounting plate, that attaches to the chassis just behind the battery pack, immediately adjacent to the spur gear. While this works, it's a veritable pain in the because you have to unbolt the ESC and its plate from the chassis every time you want to change the motor or your gearing. At best, we found it to be a poor compromise. We made a thin lexan plate that bolted to the upper chassis plate just above the battery.

Above: Access to the front differential is easy and you can have it out in 5 minutes.

Below: Plastic shocks leaked at first, but worked well otherwise. Boy are they short



Sure it

doesn't do wonders for the C of G, but it's a damn sight more convenient to use than the factory set up.

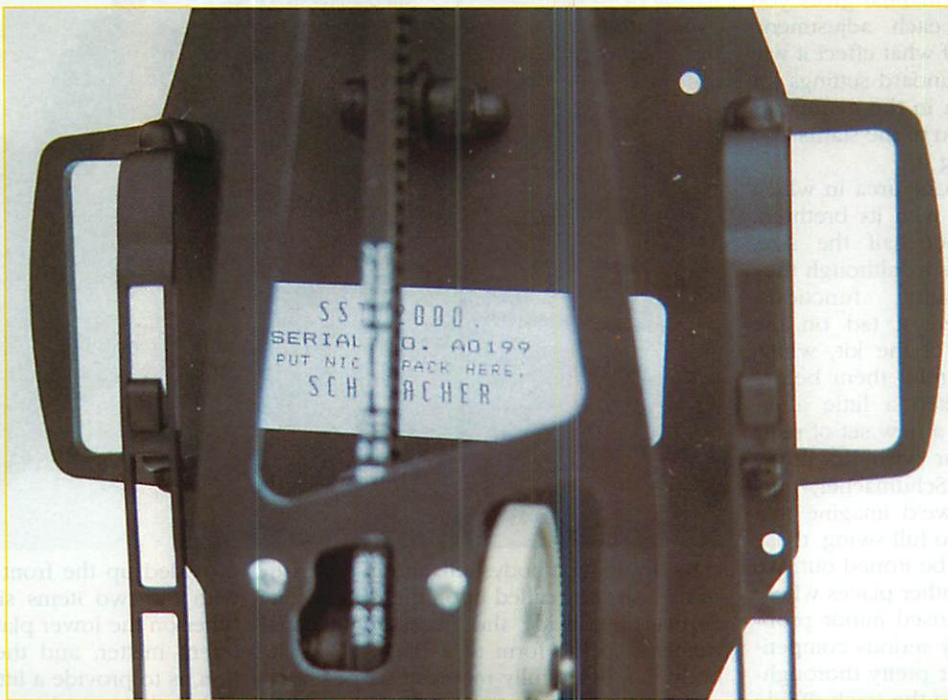
You've all suffered enough now, as we know that all you really care about, is how fast this sucker goes. Well we weren't disappointed, and neither will you be. Our car was setup initially with 40 wt oil all round (standard setting) and about 8 mm of clearance. An

O z c h a r g e Sportsman 16 triple was providing the go, and voltage also came from the Puttee stable. First off was with the standard Schumacher yellow tyres fitted, and even though these had a tad more slip than we liked, the car was

wonderfully predictable and held long controllable slides through many of the Melton tracks sweeping corners. The stan-

dard slicks do benefit enormously from having a set of foam inners inserted, so we'd advise that you do that first before you even run the car. They're available

with our favourite Elligi 24 foams mounted, and we now had limpet like grip, allied with wonderful control. The SST was cutting through the corners now with surgical precision, and it seemed like it was on the proverbial rails as it met every steering input with precisely the right amount of response. Throttle control was only a secondary consideration, as most of the corners needed only a brief let-off and then full noise right through the apex. If you hadn't already guessed by now, we had a lot of fun driving the SST, and even though we had almost no practice with the car, our first race yielded a lap time one full lap better than our previous 4WD best. If that's not a good recommendation, we don't know what is.....



Oh really! Did they need to tell us that!

from Schumacher, although we used Tamiya ones on our car, simply because we had a set handy. Back out on the track

Schumacher SST2000 provided by Greneger Enterprises.

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PUTTING SOME PIZAZZ INTO YOUR RACING

If you want to give your racing some pizzazz, then get into the new TK-1 truck from Flying Point.

The first thing you'll notice is that it's gas powered!. Yep, that's right, get used to the idea of noise and the beautiful smell of that special two-stroke brew!

The second thing that jumps out at you is that this 2WD stadium truck comes almost completely assembled, which makes writing a normal constructional type of article a bit tricky.

There's really not much to do to get the TK-1 ready for the road or track-paint the body, install your radio gear, fit the tyres, buy a glo-plug, a glo driver and some fuel, and go racing.

This mean machine is 1/10th scale and comes with a Leo .15 motor already fitted into the single piece tub chassis. One of the major benefits of a single piece chassis like this is that it's very strong.

You'll notice the motor is fitted with a pull-start cord, a bit like a lawn mower



really. Pull starts usually work quite well, but some people prefer the old system of a hand-held 12 volt starter applied to the motor's fly-wheel. You can buy an optional 7.2 volt mini start box for the TK-1, and a 12 volt version is in the pipeline.

If you want to do it the hard way, you can. The TK-1 chassis has a convenient cut-out for the fly wheel. Not only that, but there's an optional back plate available so you can take off the pull start and get a bit more horsepower.

Talking of options, if you want to get more grunt out the ever reliable kit supplied Leo, a larger head is available. So

to is a tuned exhaust pipe and matching "U" type manifold. You can get around a 20% power increase with these little items.

GETTING ON WITH IT

Of course, once you've bought this great machine you'll be keen to get it running, so let's go through the steps needed to make that happen.

Two channel radio gear will need to be installed in the chassis. You'll need a servo for the throttle and brake, and a second one for the steering. I find the servos which come with a radio kit are strong enough, but you could fit a hi-torque unit to the steering if you wanted.

Fitting the servos is no problem, and the chassis has a conveniently

drilled hole so you can get to the servo-horn screw. By the way, tape the servo leads to the chassis so they don't get caught on the flywheel, and wrap the receiver in foam rubber to reduce vibration damage.

The steering crank is a single piece unit and incorporates a servo saver, which is an essential piece of insurance for your servo gears! However, the tension on the unit supplied in the kit can't be adjusted.

The steering construction is extremely rugged and I really don't think you'll have much trouble with it.

The nylon transmission casing, wish-bone arms and bulkheads come pre-dyed black, which is a great colour because it doesn't show the dirt!

The internal colour scheme of the TK-1 is certainly bright - the chassis tub is anodised from a range of colours, which are coordinated and complimented by the shock bodies and mounts. They certainly stand out well!

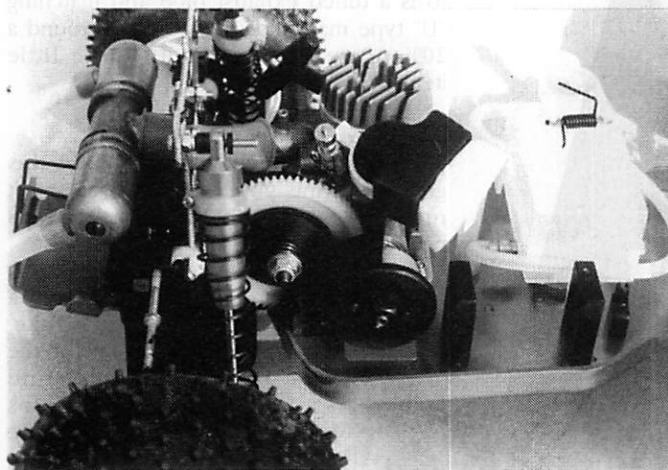
The suspension is fairly conventional; lower A arms link to the shocks while the top arm is a link with a turnbuckle to enable suspension adjustment.

The front and rear shock towers feature several mounting positions so you can adjust the suspension to suit your home track. The shock springs and shock oil weights can all be adjusted down the track to make the car handle to suit your driving style.

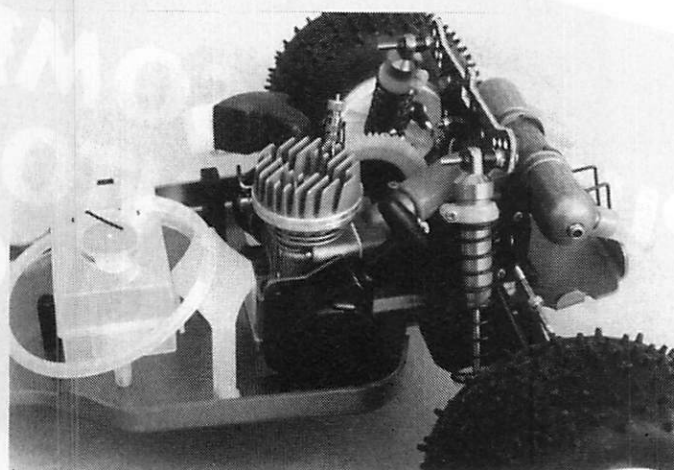
For example, I find the kit set-up has too much understeer for my liking but



The Pizazz TK1 is 90% race ready. Approx. One hour to install the radio gear.



Slipper clutch. Solid servo mount. Side mounted tank.



Leo .15 pull start with heaps of grunt. Convenient receiver holder.

that can be changed by softening the front end and making the back harder to give more grip on the front. But making adjustments that are too extreme will result in massive oversteer! It just takes some experimentation, and if all else fails, ask someone else at the track.

PUTTING THE POWER DOWN

As I mentioned before, the TK-1 comes with a factory fitted Leo 1.5 engine - just follow the kit's instructions to run it in properly and it will last you for a long time.

The engine drives a pinion gear through a slipper clutch, and this assembly feeds the power to the rear wheels through the differential.

The clutch is easily adjusted - just tighten the nut on the spur gear shaft, but don't make it too tight or the clutch won't slip at all!

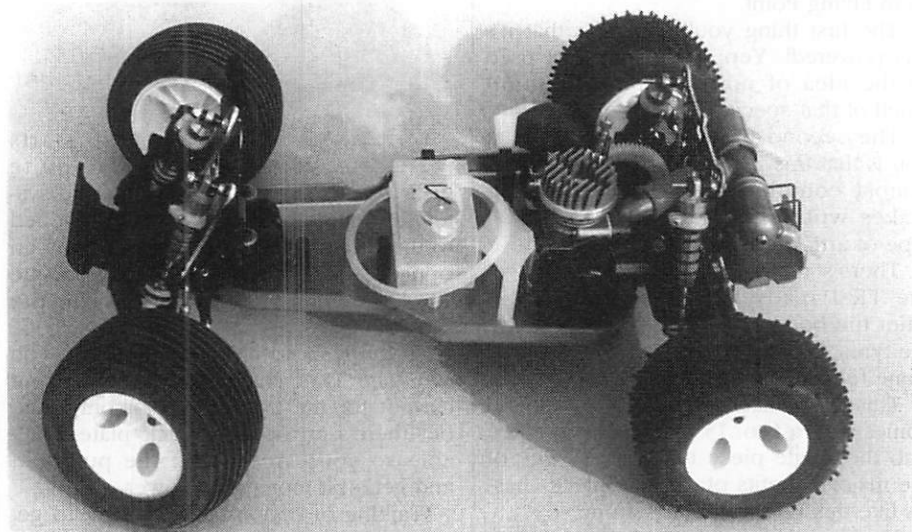
You'll need to check the pinion gear and the spur gear are properly meshed before you try driving. If they're not, you could end up doing some damage!

Adjustment is easily. Loosen the motor retaining bolts and slide a fag paper

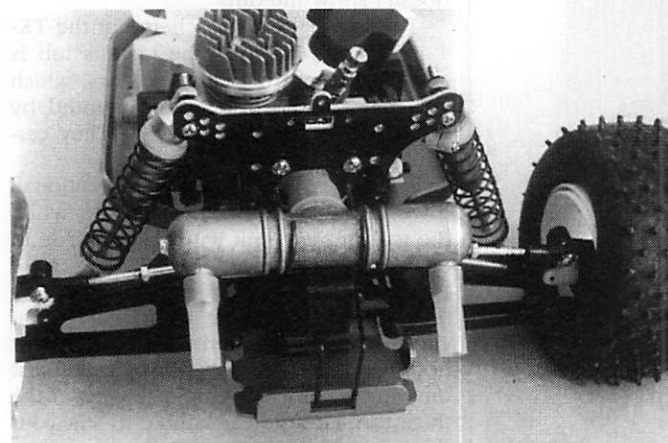
between the gears. Slide the motor in so the paper is held firmly between the pinion and spur, and then tighten the bolts securely. It's not a bad idea to use a thread lock so the bolts don't come

loose! Just turn the gears and the paper should come out.

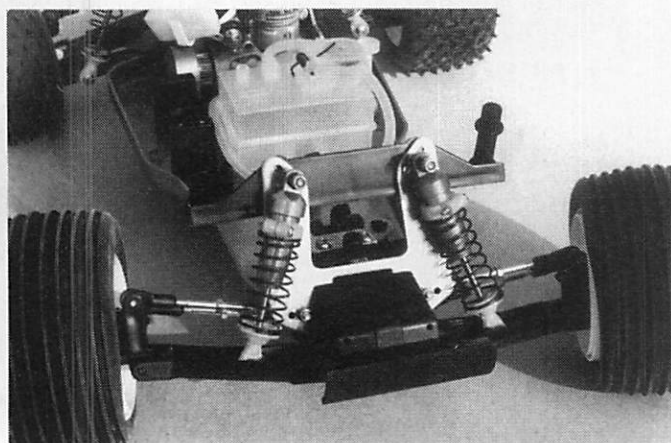
The diff uses a planetary gear set-up, and the gears are all real metal!. This is great as with care they should last longer



Super strong tub type chassis wide wheels for better track holding.

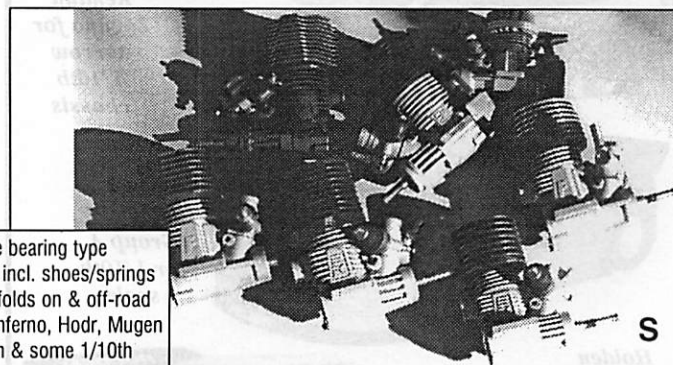
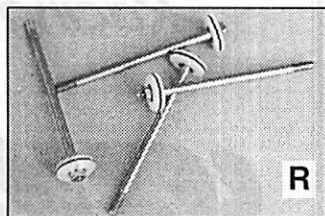
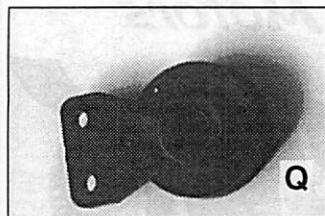
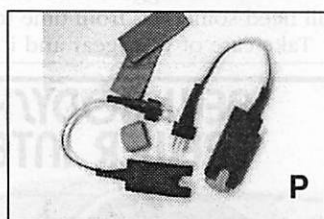
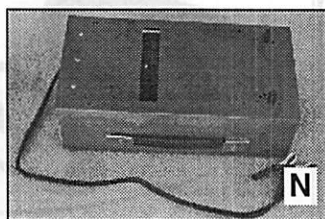
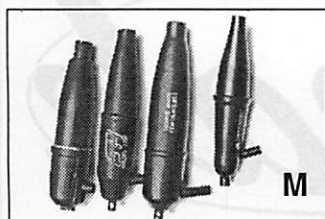
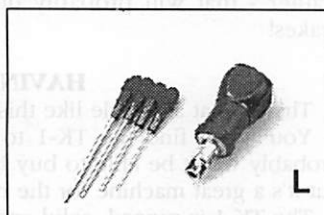
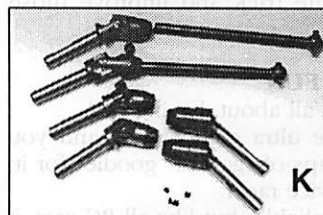
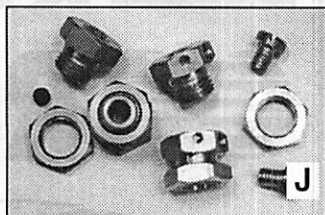
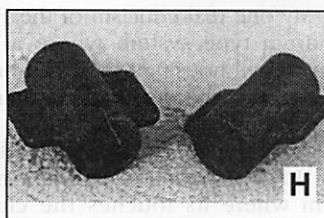
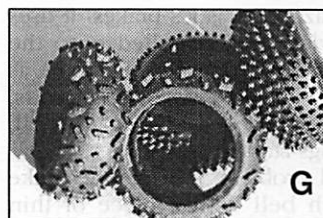
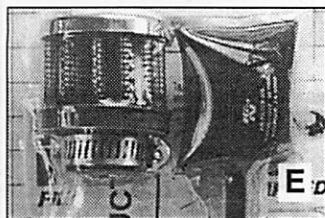
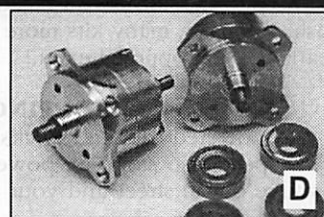
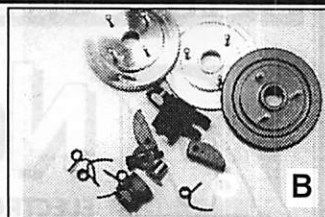
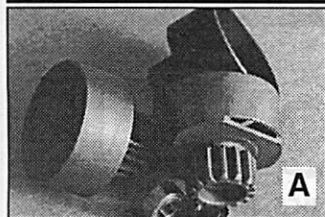


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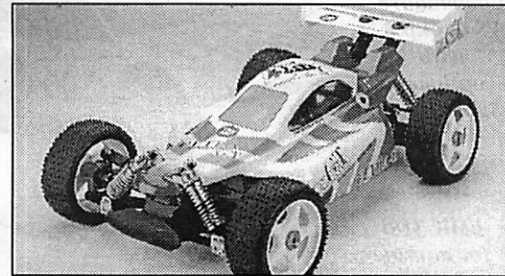
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H Wheel spanners for 17/19mm drivers
I Shocks 3mm & 3.5mm titanium coated shafts. Teflon coated body double sealed
J 17/19mm drivers Ultra, Hodr, Inferno
K F/Rear unis & CVs Ultra, Hodr, Probe
L Ratchet type hex drivers
M Tuned pipes for 1/8th & 1/10th cars
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O 90° air filter connector & fuel tube clips
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Q Servo saver for Sanwa, KO, JR, Futaba
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than nylon gears, which strip out very easily in some cars.

The power gets to the ground along telescopic axles. When you fit the wheels to the rear axle you might notice there's a bit of slop. This can be taken out by putting a thin washer between the wheel and the hub carrier.

The transmission is ball-raced, although the idler gear uses a bush. However, many kits more expensive than the TK-1 regard bearings as an optional extra!

STOPPING POWER

Gas powered cars and trucks can get up to some fairly awesome speeds, so stopping power is really important, especially if you're out in street and your truck is heading for the nearest drain.

My one real criticism of the Pizazz TK-1 is its brakes. It uses a drum type system where a nylon arm is pulled onto the clutch bell housing to act as a brake. This doesn't seem to be as efficient as the disc brake system you'll find on 1/8th gas cars, and I wonder about the choice of nylon as a braking material, because it gets very soft when things start to heat up.

However, none of that is a real problem; just line the brake arm where it touches the clutch bell with a piece of thin leather - that will probably do the trick and improve those brakes!

HAVING FUN

That's what a vehicle like this is all about, having fun!

You won't find the TK-1 to be ultra competitive, and you probably won't be able to buy heaps of "go fast" goodies for it, but it's a great machine for the novice racer.

The TK-1 is rugged, solid and reliable, but like all RC cars, it will need some TLC from time to time.

Take care of your gear and it will take care of you.!

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RUSTLIN UP A GOOD TIME

TRAXXAS RUSTLER

by Reg Varney

If you're talkin serious truck racing potential, then few people would dispute that one manufacturer that has an enviable pedigree in that area is Traxxas. Right from the start they have produced an awesome range of trucks in both the traditional Car crusher type, as well as the now more popular race truck. Results wise, Traxxas have figured pretty high up all along in local competition, and it has really only been the fact that lack of numbers has prevented an even better showing. Traxxas are renowned for producing quality cars as well as trucks, but it certainly seems to have been the trucks that captured the imagination of the buying public.

Last issue, we showed you the latest entry from Traxxas in the entry level car racing stakes, but this time around it's the turn of the truck aficionados, as the

Rustler takes centre stage.

As with any good vehicle, you can't get anywhere without something substantial in the way of a chassis doing all the hard work, and the Rustler has one of the best. As is common practice nowadays, the chassis itself is a large plastic moulded unit that has provision for a battery to be mounted down the centre, along with spaces down either side. The best thing about this type of chassis, is that its moulded configuration ensures that a high percentage of twist and bend resistance is inherent even when using cheaper plastic as the base instead of the more common composite. It means that you, the customer, get a good product, without having to resort to ultra-expensive materials to get it.

Up front, and the interesting looking steering mechanism that we saw first in the Bandit, also makes an appearance here. It's an innovative arrangement that sees the entire steering system mounted on a strengthener that fits in behind the

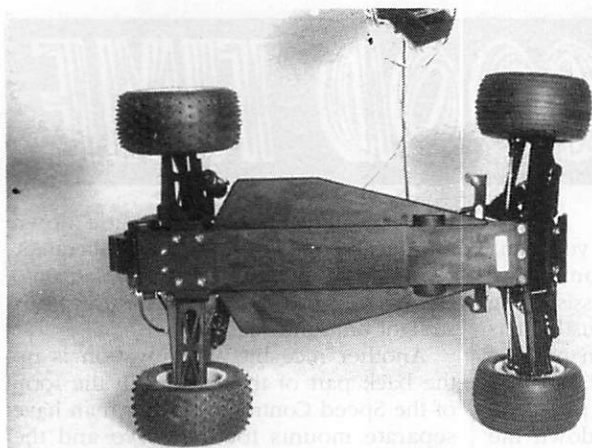
front bulkhead. It's all upside down during assembly, and all the bellcranks, levers and the servo get assembled onto the stiffener plate and the lot goes straight onto the chassis.

Another nice bit of innovation is up the back part of the Rustler, in the form of the Speed Controller. Rather than have separate mounts for the servo and the Speed Control, Traxxas have got around the problem by mounting the controller directly on top of the servo, thereby eliminating the linkages and such that we normally have to endure with a manual speed control set-up. It also gives you a nice little compact unit as well, which is another bonus.

Elsewhere, and the Rustler is nothing if not pretty conventional. The front end features nice, strong moulded lower A arms, with non-adjustable moulded upper links. The Shock tower shares the same moulded construction also, and as a consequence, it does flex just a little bit. Not enough to cause any real



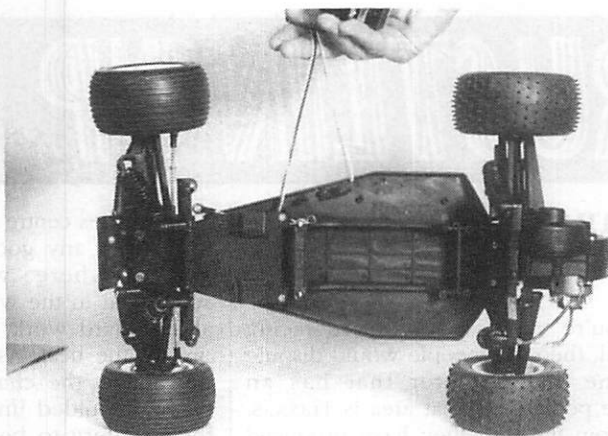
Ready to pounce, the rustler is one mean lookin' truck



Smooth underchassis leaves nothing poking out to snag on the ground.

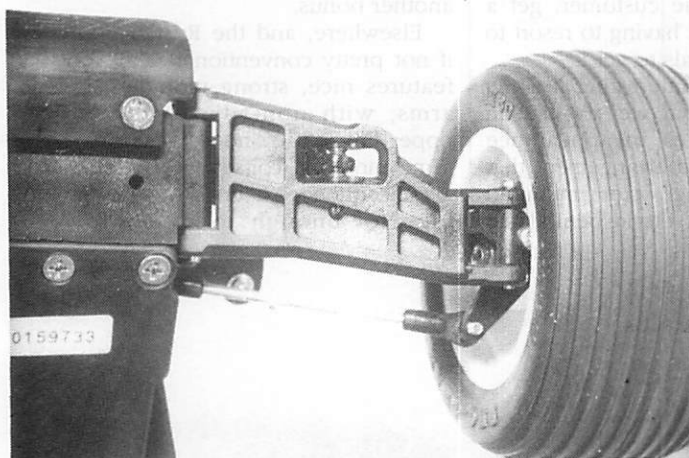
problems, but in a world of ultra-rigid graphite towers, it did stand out a bit to us. In fairness to Traxxas, we can't see it making much difference at all when the

know that they're well liked by the racing fraternity. This time around some of the materials have been downgraded slightly to fit into the Rustlers intended



The wide stance guarantees precise, easy handling.

Inside the transmission, lives a gear diff, and you really can't blame Traxxas for using one of these in a car like this. Treated with complete disregard for its

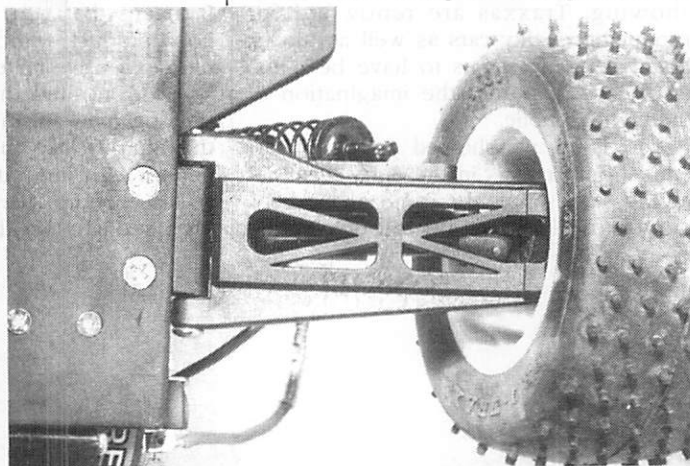


Wide front arms feature heavy ribbing for strength.

truck is actually running.

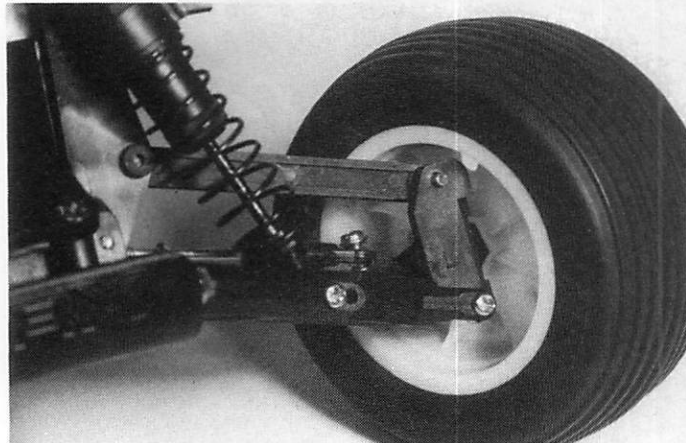
The shockers themselves are the usual Traxxas fare, and in this instance we mean excellent. Traxxas shockers have a reputation for really doing a top job, and we've seen their units mounted on the oppositions cars more than once, so you

price bracket, but apart from that, everything is normal Traxxas quality. They fit together beautifully, and when completed have a smooth, progressive action, which belies their 'budget' price. For duty on a racing truck, you could ask for no more.

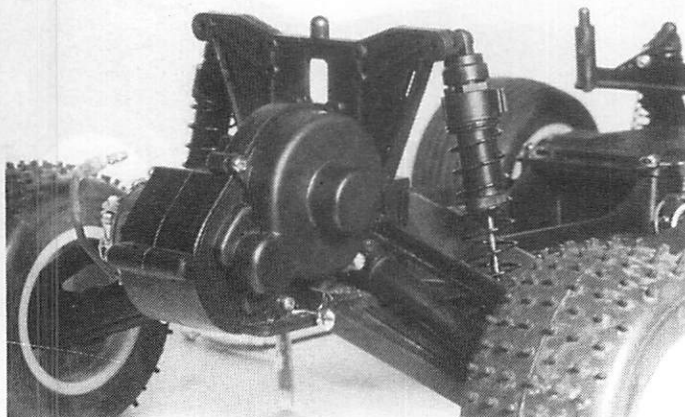


Rear arms mount straight to chassis. Toe-in is provided at the hub carriers.

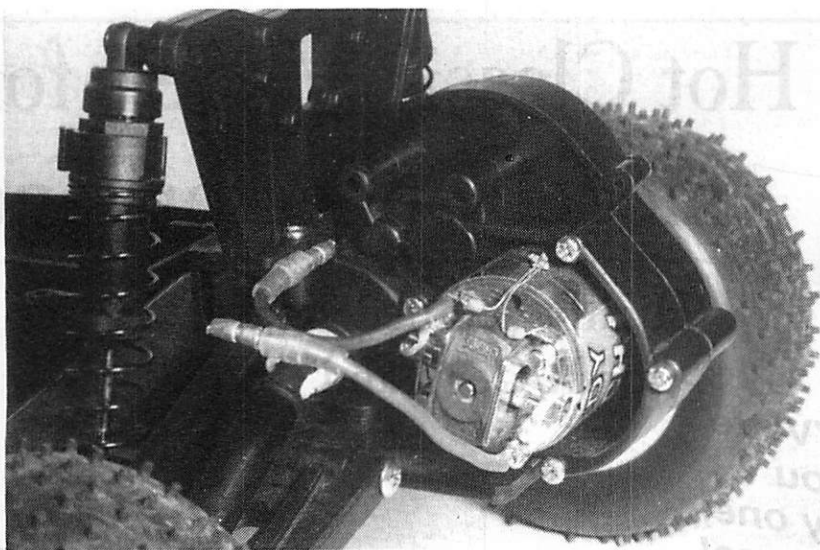
longevity, a gear diff will still be going years later. A ball diff will give up the ghost pretty quickly without proper care, so Traxxas have chosen wisely in this case. The transmission itself is also a gear type, and should also give many hours of faithful service. A slipper clutch is an



Adjustable links aren't provided, but standard settings are good anyway.



Motor sits up high, well out of harms way



Lots of space around the motor keeps cooling air at a maximum.

optional extra on the Rustler, and those of you wishing to install some serious horsepower in your truck, might be well advised to take this option on board. A set of the optional ballraces should also be on your shopping list, as the standard bushes won't take too kindly to the extra horsepower being inflicted upon them. Speed and run time will increase dramatically with ballraces fitted as well. Both a 78 tooth and 84 tooth spur gear are included in the kit, but for truck use, the 84 is the only way to go.

From the transmission, the power gets out to the wheels via a set of neat drive shafts, and then out onto the enormous wheels. If this is your first truck, you'll probably spend the first 10 minutes just playing with the wheels and mounting on the tyres. Take care to drop some super glue in between the tyre and the rim, as the sort of grip afforded by these big treads, will ensure that they slip on the wheels unless glued down.

One of the best parts of any truck kit is the bodyshell, and as usual, Traxxas have done themselves proud. It's loosely

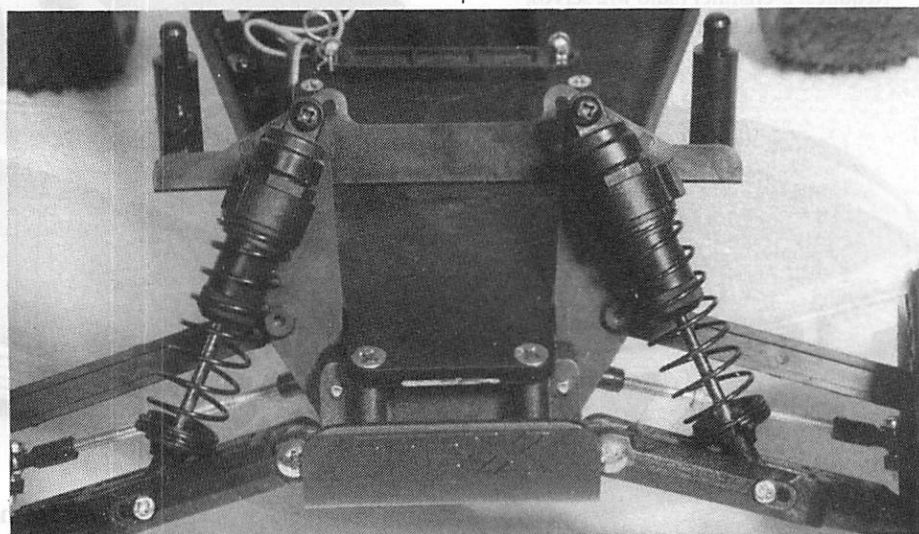
based on the popular Dodge Ram pickup, and it really looks horn. We reckon it's one of the better looking truck

shells start appearing on other trucks as well.

O.K. enough talk, how does it go? Well, not surprisingly, it does a pretty damn good job. As with most trucks, the wide stance and super grippy tyres mean that traction and handling are in abundance, and even a relative newcomer will have no trouble getting the Rustler to do what they want. Admittedly, the standard 540 motor doesn't exactly push out great gobs of horsepower, but it's adequate, and by far the best choice to start with.

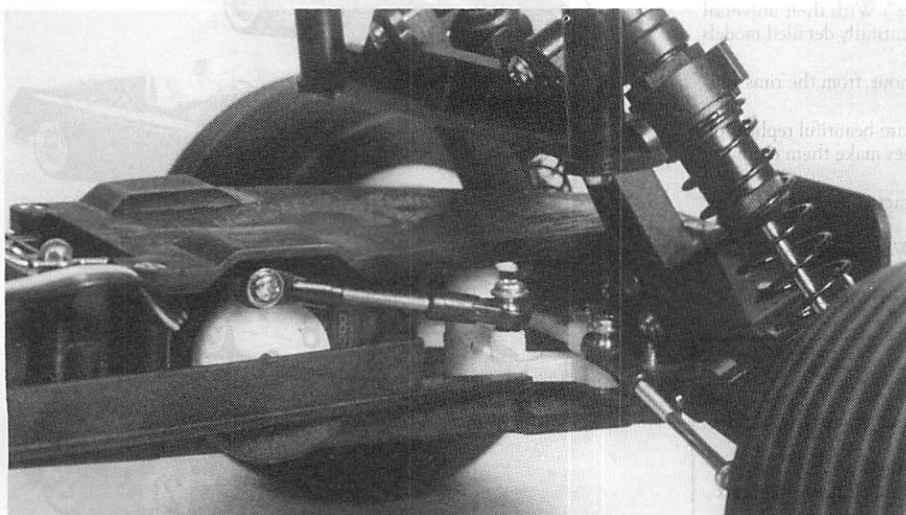
As an entry level race truck, it's hard to find fault with the Rustler, and even for the hardened Pro racer, it could easily be upgraded to make it competitive in the best of company. Our only advice could therefore be. "Rustle one up for yourself today"

Review Kit supplied by Hobby Imports (02) 9602 6153.

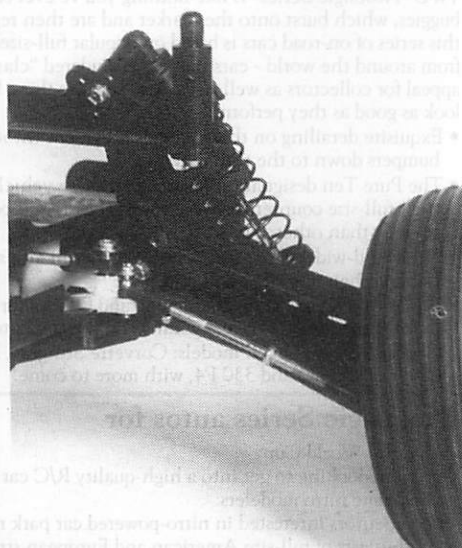


Long shocks are great, but the front tower can flex in extreme circumstances.

bodies we've ever seen, and it surely won't take all that long before these



The unusual steering set-up works a treat.



Lots of ground clearance keeps the Rustler well off the earth.



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Here's a lineup of R/C cars you can really have some sun with! The GP Spider 4WD "Nostalgic Series" is like nothing you've ever seen. Unlike typical R/C buggies, which burst onto the market and are then replaced in a couple of years, this series of on-road cars is based on popular full-sized sport and street machines from around the world - cars that are considered "classics". With their universal appeal for collectors as well as R/Cers, because these beautifully detailed models look as good as they perform!

- Exquisite detailing on these models is evident throughout, from the rims and bumpers down to the trim schemes
- The Pure Ten designation insures that these vehicles are beautiful replicas of their full-size counterparts. Narrower chassis and bodies make them more true-to-scale than other 1/10 scale R/C cars
- The world-wide recognition of these cars will also attract collectors who wish to build their favorite cars for display
- A powerful Kyosho GS-11X engine and GP Spider 4WD competition chassis make these classic cars real winners on the track, too
- Choose from 5 popular models: Corvette Stingray, MG-B MK-1, Ford GT 40, Ferrari 250GTO and 330 P4, with more to come!

Nostalgic Series autos for

- Kyosho World Cup
- anyone looking to get into a high-quality R/C car kit at an entry-level price
- first-time nitro modelers
- competitors interested in nitro-powered car park racing
- enthusiasts of full-size American and European street machines, sports cars and exotics
- collectors of memorabilia of a favorite car for display purposes

Choose from an exciting range of classic favorites:



'62 Ferrari 250GTO



'62 MG-B MK-1



'63 Ford GT 40



'67 Ferrari 330 P4

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Utilize the proven GP Spider 4WD competition chassis - Great for Racing!

- 4-wheel drive independent double wishbone suspension
- An efficient 3 belt 4WD system
- Strong, lightweight duraluminium construction
- Body posts that adjust easily with a set screw
- Large caliper disk brake system
- 75cc fuel tank
- Resilient plastic composite rollbar and front and side bumpers
- Narrow design that accepts most sedan or coupe body styles

The included Kyosho GS-11X engine boasts some impressive selling points of its own:

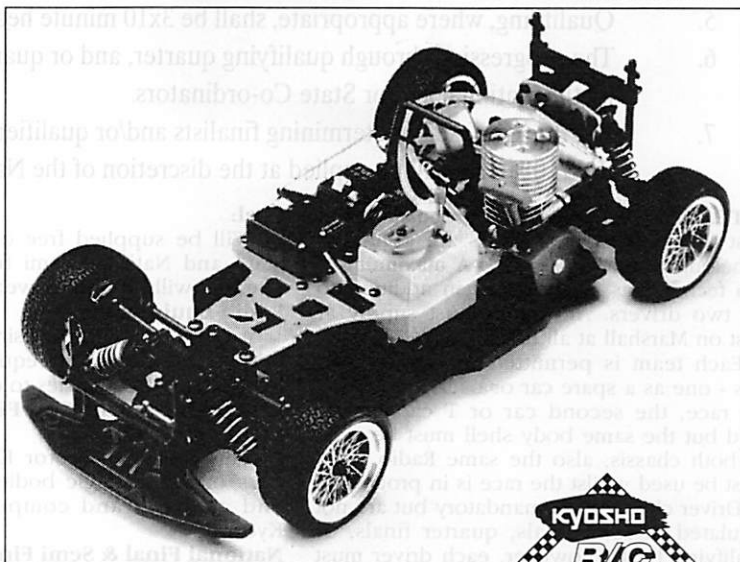
Recoil starting -
for ease of operation

A custom designed muffler -
that fits perfectly inside the chassis, for increased scale looks and realistic exhaust location out the back

Included heat sink engine head -
for improved engine performance and reliability

KYO 31571	'63 Ford GT 40
KYO 31573	'63 Ferrari 250GTO
KYO 31574	'62 MG-B MK-1
KYO 31575	'67 Ferrari 330 P4
KYO 31576	'67 Corvette Stingray
KYO 31622	Daytona Cobra

*All include
pull-start
engine!*



Nostalgic Series cars are perfect
car park racers!

- Easy to operate models have many performance features
- Nitro power adds realism to your races
- Create a "Classic Car" division, pitting Nostalgic Series cars against each other, for the ultimate in excitement

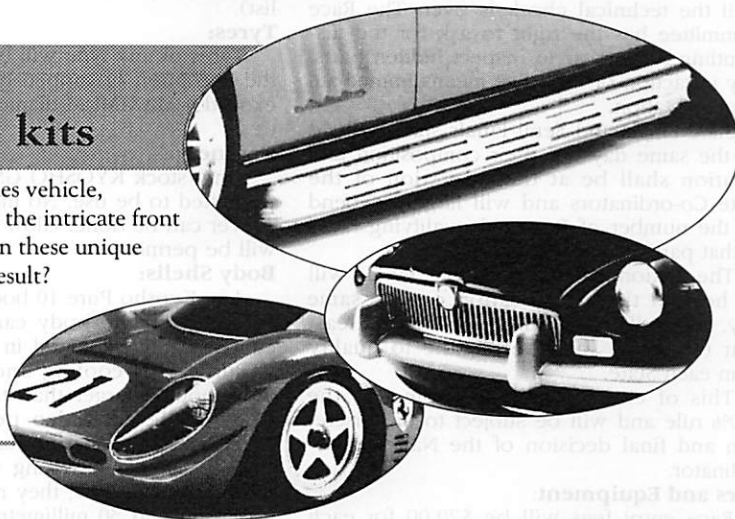
Injection-molding creates exquisite detailing on these kits

Beautiful scale touches are evident throughout every Nostalgic Series vehicle, from the chrome-finished side mufflers on the Corvette Stingray to the intricate front grille work on the MGB. Even the subtle curvatures of the bodies on these unique models have been painstakingly recreated, for added realism. The result? Breath-taking cars with all of the classic appointments of their original full-size counterparts, with authenticity rivaling that of the finest plastic and die-cast kits. But unlike those strictly static-display models, Kyosho's Nostalgic Series vehicles deliver heart-pounding radio control racing action as well!



The "Pure Ten" Designation:

"Pure Ten" refers to a style and size of R/C car that is closer to scale and much more detailed than any other body/chassis configuration. All Kyosho Nostalgic Series vehicles fall under the Pure Ten designation. Pure Ten chassis accept most "narrow" bodies from other manufacturers.



Parts compatibility with other GP Spider 4WD cars.
Option parts are also available.

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Western Australia: Robert Bennett.....(018) 096 905, Phone/Fax: (09) 246 3744
Victoria: Terry Dodds.....(03) 9887 0562 or Mobile: 015 369 730, Fax: (03) 9887 0945

General Race Rules

1. The finals will be for eight to ten teams at the discretion of the National and/or State Co-ordinators.
2. All finals should be of one hour duration with the team scoring the most laps being declared the winner.
3. Semi finals, where appropriate, shall be of 20 minutes duration.
4. Quarter finals, where appropriate, shall be of 15 minutes duration.
5. Qualifying, where appropriate, shall be 3x10 minute heats with the team with the most laps being the winner.
6. The progression through qualifying quarter, and or quarter finals, and/or semi finals shall be as determined by the National and/or State Co-ordinators.
7. For the purpose of determining finalists and/or qualifiers at any stage throughout the competition, the 110% rule will be applied at the discretion of the National and/or State Co-ordinators.

TEAMS: Each team must consist of at least two drivers. the drivers are permitted to belong to one team only. A maximum of two technicians is permitted in addition to the two drivers. All teams must supply at least on Marshall at all times.

Each team is permitted to register two cars - one as a spare car or back up. During the race, the second car or T car can be used but the same body shell must be used on both chassis; also the same Radio Band must be used whilst the race is in progress.

Driver changes are mandatory but are not regulated in semi finals, quarter finals, or qualifying heats, however, each driver must drive a minimum of one third of the time.

FINALS: Drivers must drive at least one third of the time. Driver changes must happen between the 15 minute and 45 minute period.

INSPECTION: Apart from inspection at time of registration, cars will be inspected immediately after races. Drivers are not allowed to come in contact with their car until the technical check is over. The Race Committee has the right to ask for the dismantling of any car to inspect hidden parts. Any infraction of the rules means immediate disqualification.

State Finals and Semi Finals shall be held on the same day but their composition and location shall be at the discretion of the State Co-ordinators and will largely depend on the number of Regional qualifying races in that particular State.

The National Final and Semi Finals will be held in the one location on the same day. Basically, it is intended that at least four (4) teams shall be eligible to qualify from each State.

This of course shall be subject to the 110% rule and will be subject to the discretion and final decision of the National Co-ordinator.

Cars and Equipment:

Race entry fees will be \$20.00 for each event.

Entry forms will be available through Dawn Trading, National and State Co-ordinators, Kyosho Hobby Dealers and selected RC Car Clubs.

State Co-ordinators are:

Queensland:

Johathan Borthwick
P.O. Box 286, Moorooka, 4105
Ph: (07) 3848 6722, (07) 3892 4986
Fax: (07) 3848 9355

John Pearce (Assist. Co-ordinator)
P.O. Box 154, Waterford, 4133
Ph: (07) 3200 9467 0419 733740
Fax: (07) 3200 8181

N.S.W.:

Chris Hebbard
P.O. Box 430 Gladesville, 2111
Ph: (02) 9816 2699, 018 213420
Fax: (02) 9817 2964

Ian Bannister (Assist. Co-ordinator)
17 Tenerden Road, Botany, 2019
Phone: (02) 9666 4999
Fax: (02) 9666 3404

NATIONAL

Victoria & Tasmania:

Lance McDiarmid
P.O. Box 372, Sunshine, 3020
Ph: (03) 9312 6182 015 852458
Fax: (03) 9312 5685

Terry Dodds (Assist. Co-ordinator)
2/63 Wadhurst Drive, Boronia, 3155
Phone: (03) 9887 0562, 015 369730
Fax: (03) 9887 0945

South Australia:

Mike O'Reilly
42 Maple Ave., Keswick, 5035
Ph: (08) 8293 3674
Fax: (08) 8371 0569

Western Australia:

Robert Bennett
27 Cornelian Cres., Carine, 6020
PH: (09) 246 3744, 018 096905
Fax: (09) 246 3744

Fuel:

Will be supplied free of charge for the State and National semi finals and finals. The fuel will be Cool Power, Fun Power 15.

Radio Equipment:

Any brand of Radio using 29Mhz is permitted. Each team is required to bring at least 2 band frequencies to each race.

Kyosho World Cup Final Phillipines February 1997:

This race will be for Kyosho Nostalgic Cars only. Nostalgic bodies must be used and all parts and components must be Kyosho.

National Final & Semi Finals:

This will be for Kyosho Nostalgic Cars only. Nostalgic bodies must be used.

Cars:

Kyosho Pure 10, Spider, Gas Powered, 4WD, Touring or Nostalgic Cars must be used. Stock dimensions of the Chassis shall not be altered. Only Stock parts will be permitted in Regional and State races. (There are some exemptions - refer options parts list).

Tyres:

Tyres of any type will be permitted (with the exception of capped tyres) and will not exceed a MAXIMUM diameter of 63 millimetres.

Engine:

Only stock KYOSHO GS-11X Engines are permitted to be used. No modifications whatsoever can be done. Glow Plugs of any type will be permitted.

Body Shells:

Any Kyosho Pure 10 body, either Touring car or Nostalgic body can be used. Body cuts are only permitted in the FRONT SIDE windows for cooling and fuel input and must not be larger than the body window lines. Holes are also permitted for the ANTENNA but must not exceed 10 millimetres in diameter. Cooling vents may be cut in the rear window, they may be 5 millimetres wide and 30 millimetres long (no more than three allowed).

Wings & Body Accessories:

All body accessories like wings, wipers, grills, door mirrors etc., must be installed on the body. Only standard wings for a particular body can be used eg., Toyota Supra Wing must only be used on a Toyota Supra Body.

Option Parts:

In the national semi finals and final only Kyosho brand option parts, including wheels, are permitted to be used reference page 30 and 31 of the 1996 Kyosho Catalogue, with the exception of the Eagle parts mentioned below.

For all races other than the National Final and Semi Final, the parts used must be stock parts ie., included in the standard Kyosho kit, plus the following exempted option parts, namely:

Eagle Ball Races.

Kyosho SPW5 and LA43 Adjustable Steering & Castor Links.

Kyosho Shocks W5141, W5151, W5097.

Kyosho SPW52 Centre Mount.

Kyosho SPW58 and SPW55 Tensioners.

Kyosho SPW51 Steel Disc Brake.

Eagle Tune Pipe and Header.

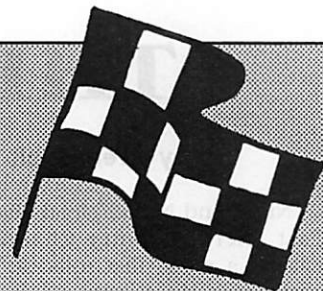
For the National Final and Semi Finals, any Kyosho "Hot Up" and/or option parts may be used in addition to the above mentioned Eagle parts.

Parts Interpretation:

Only those items as specified above may be used. Anything not specified cannot be used. The final decision of interpretation in this regard shall be the decision of the National and/or State Co-ordinators.

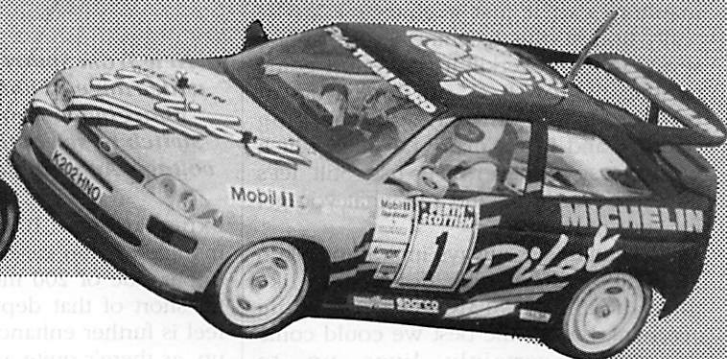
Circuit Layout and/or Location:

Any approved Kyosho stockist and/or model Rc car club shall be encouraged to hold a regional qualifying race. This shall be co-ordinated and organised through the National or State Co-ordinators. All qualifying races must have at least four teams.



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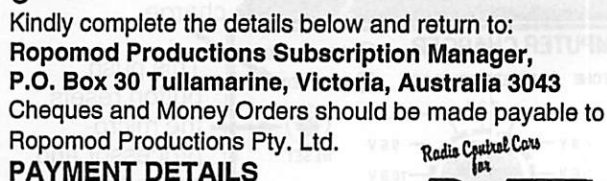
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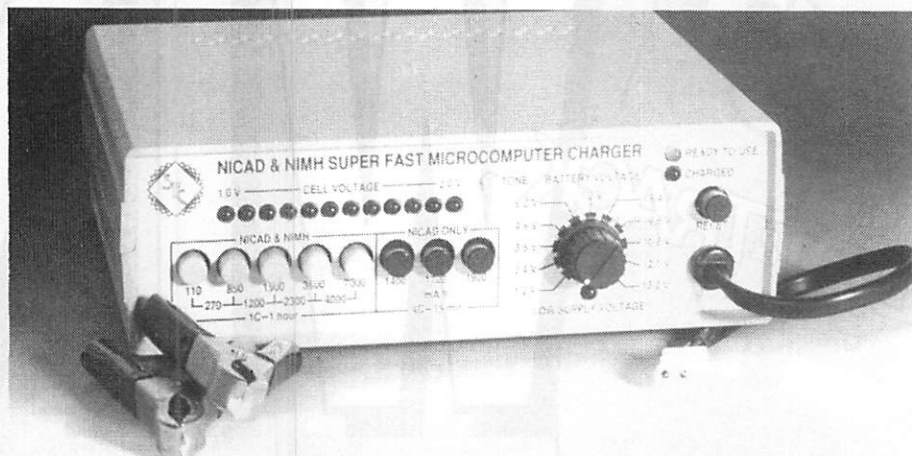
THE SMART CHARGER

by Sven Hoek

Nicad and Nickel Metal Hydride Super Fast Microcomputer Charger. It's not exactly a name that rolls off the tongue easily is it? In a sport where just about everything has a simple dynamic name, or at the very least, a half decent nickname, this particular unit is behind the eight ball straight off. Well, we'd all better start thinking about what we're gonna start calling this thing, because it won't be too long before they start appearing around the traps regularly.

What we've got here, is basically an absolute top-of-the-range Nicad (and NiMH) charging facility (it would be an insult to call it just a charger) To be really honest, this machine is probably a severe case of overkill if you're just going to use it for R/C purposes, as it represents the ultimate in charging stations, and it has many facilities which most of us will never, ever use. Still, let's have a closer look, and see what you get for your money.

Presentation is always important when you're flogging a high dollar item like this, and the NNSFMC (O.K. a boring acronym, but it's the best we could come up with!) certainly lives up to



New from Smart Fastchargers, this nicad and NiMH charger caters for a wide range of battery voltages and capacities and uses the patented Reflex[®] charging method. It has eight buttons to set the rate of charge, a rotary switch to select the battery voltage and a LED bargraph to indicate the cell voltage. An audible beep, at one second intervals, gives an indication that the main charge is still in progress.

expectations. It comes in a quality moulded nylon case measuring in on the upper side of 200 mm in width, and not far short of that depth wise. The quality feel is further enhanced when you pick it up, as there's quite a bit of weight to heft

around, although not so much that it causes any sort of problem.

The front plate has screened graphics, which thankfully are clear and easy to read. Unfortunately many manufacturers nowadays are prone to succumbing to

Smart Fastchargers

Input connectors. The input is protected against reverse voltage.

An audio cue tells you that the battery is being charged. Adjust the volume with the TONE control.

The READY TO USE LED comes on as soon as the charger is connected to a car battery or power supply.

The CHARGED LED Indicates the end of the main charge cycle and remains on when the battery is left on the charger during the topping and maintenance charge.

The CELL VOLTAGE display is active as soon as the battery to be charged is connected to the charger. It shows cell voltage normalised to one cell and indicates the discharge pulse.

Charge standard and NiMH batteries from 110mA/h to 7A/h. Minimum charging time 3 minutes, maximum only 1 hour depending on the depth of discharge. For battery capacities not indicated (mAh) use the next higher setting as per manual.

Fast-charge Nicad batteries from 1.4A/h to 1.9A/h. Minimum charging time 3 minutes, maximum only 15 minutes, depending on the depth of discharge.

Set the battery voltage to match the voltage of the battery to be charged.

This LED indicator lights up if the input voltage from the car battery or power supply is too low to charge the connected battery.

This push button resets the micro-processor and re-starts the charge cycle. Use it also to kick-start OV, totally flat batteries.

Connection for 1.2V to 13.2V batteries. Short circuit proof.

the whims of the fashion conscious, and give us trendy graphics that are all but impossible to read even though they look wonderful.... If you're the sort of person that values a product purely on how many knobs and buttons and lights it's got, then you'll love this one. There is a total of 15 super-bright LED's, 9 push buttons, and one rotary dial!! Even the most dedicated button pusher/LED freak will have trouble complaining about the looks of this beauty.

Connections to the selected power source (12 volt minimum/30 volt maximum) are through a decent length of substantial gauge wire, with some major size crocodile clips on the end. An AMP's connector runs from the charger to connect up to your battery, although you'll need to change this to match whatever system you use. We run Corally connectors on our packs, so we opted for small croc clips to do the job for us.

O.K. it's time to get something happening, and with all the appropriate connections made, the first course of action is to select a charge current setting. At this point in time, the only light that will be on, is the green LED indicating 'Ready to use' For our R/C purposes the most common setting will be the 1400/1700 mA/h, so all you need do is push the appropriate button to set

the correct rate. Next up, go to the rotary dial and set the battery voltage. 7.2 volts takes pride of place at the very top of the dial, and that's where we set ours. Hook up your intended victim. er battery, and the appropriate cell voltage indicators will light up, indicating that the charge sequence is underway. If need be, you can alter both the charge current and battery voltage settings for up to two minutes after beginning the charge. That's all there is to it, and the initial settings will normally be the same for each battery as far as we're concerned so you will usually skip that part of the sequence. When it's all said and done, the 'charged' indicator lights up, and a tone sounds alerting you that the charge sequence is finished, and the charger switches off. By the way, the tone has volume control, so you don't have to annoy everyone in a 100 metre radius!

After all this you will be rewarded with a nice fully charged set of cells, and if so desired, you can hit them again to get a bit extra in, just like most other chargers. The best aspect of the NNSFMC is that it not only does complete packs, but will also do receiver packs, single cells, and basically charge almost any rechargeable battery or set of batteries that you might have lying around the house. You can charge up your laptop, your video camera, and anything else all

from the same source!

For those of you with a couple of packs hanging around that might have seen better days, the NNSFMC has a special feature that will work for you. Quite often these old packs will charge up O.K. but fizzle out when you're attempting to use them. More often, they simply won't charge at all, leaving them useless even as a practice pack. With this charger, you just hit the reset button when starting the charge, and this 'kick-starts' the cell into life, and will often restore some degree of usable performance back to the cell. We brought back two three year old packs from the dead, and they're now doing a sterling job in providing useful practice time. Indeed, Smart Fastchargers (the manufacturers) have on file many letters offering glowing testimonials to this very fact.

As usual, we've left the best till last, and in this case, the fact that this charger is wholly made in Australia in wonderful downtown Devonport is the best recommendation that we can possibly make. You pay a bit more for your NNSFMC, but the extra versatility certainly justifies the expense. You won't find them at your local hobby shop either, so get on the phone/fax to Smart Fastchargers if you want one, (004) 921368. Oh tell 'em D & T sent you.

SMART FASTCHARGERS

Brings you advanced technology at affordable prices



This REFLEX® charger charges your single cells or battery packs from 1.2V to 13.2V and 110mAh to 7Ah.

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AVOID THE WELL KNOWN MEMORY EFFECT.

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PRODUCT REVIEW

KO Precious EX-1

by John Hawkins

We test drive the latest in computer radios for cars

The name is a little weird - but the ergonomics are excellent and the flexibility is impressive.

The lessons learned from the EX-10, a joint venture with Japan Remote, have been put to good use in this latest update to an old favourite and, as expected, KO again lead the market in radios for R/C cars.

WHY FM?

FM is nothing new to KO, having been introduced with the previous model EX-1.

The principle advantage is a much greater resistance to interference and electrical noise compared with AM, thanks to an inherent signal locking effect. The receiver locks onto the stronger signal to the exclusion of any other, even if a competing signal is on the same frequency.

There is a chance that someone on your frequency could take over your car completely but in practice this rarely happens, as there is plenty of warning before disaster strikes and always more than you get with AM.

WHY NOT PCM?

KO has chosen to stay with the well proven and conventional pulse modulation (PPM) system of FM.

While PCM (pulse code modulation) offers almost totally bulletproof interference rejection, the extra signal processing load introduces response lags which are unacceptable in model cars, where instant response is required. Nearly all drivers I am aware of who have (had) PCM radios have switched them back to PPM.

LOOK AND FEEL

The transmitter casing is very similar to the previous EX-1 and, apart from the change in the colour of the graphics, could easily be mistaken for the earlier unit. However, there are few other similarities.

In the place of the covered panel of adjustment posts to the left of the steering wheel is an eight character by two

line LCD display, and on the right where the analogue battery meter used to be is a six button key panel.

While on first impression it may seem limited, it is quite effective in giving easy access to setting any aspect of the radio's operation. More on that in a moment.

Weight is similar to its predecessor. So is the feel of the steering wheel and trigger, with little apparent change to spring rates.

A COMPUTER IN A RADIO

The logic and functionality is controlled by a sixteen bit, 8MHz CPU - approximately the same throughput as a 286 AT personal computer. The programming and setting selections are stored in an EEPROM chip, which retains its memory even with the power off. The unit is fully digital, with 1024 steps resolution. As a result, there

should be no minor variations in settings required between individual R/C units.

The new model reverts to a three channel configuration, and gives you a choice of whether to switch channel three off, assign it to the grip dial (thumbwheel) or the the button beneath.

The new KR-294F receiver uses exactly the same casing as the previous model, as does the KT-394 transmitter module. Unfortunately, transmitter modules are not compatible with earlier versions. The receiver is two channel, with a three channel unit still in development. Only two channels are legal in most rac-

The transmitter. Nor more thumb-fingered fiddling of adjustments with tiny screwdrivers on the drivers' stand.

ing classes, but for recreational drivers it could be quite useful, (switch on the lights for night racing, pop the drag 'chute', or self-start) and is expected to find a popular place in boat racing for fuel mixture adjustment.

WHAT'S ON THE MENU, WAITER?

All the normal features found in a top end non-computer radio are there, but where this radio really shines is in the extra features and customisability that only a computerised system can offer.

The number of features has the potential to be quite intimidating! It is quite straightforward once a basic familiarity has been gained, but keeping the 28 page manual with you at the track is recommended if you use some of the more exotic functions and are prone to occasional brain fade.

A noted, the six button keypad is easy to use and dispenses with the need for that little screwdriver you always lose. Just let your fingertips do the walking. After a short learning period, access to adjusting the features is faster via the menu than the traditional screwdriver and trim pot method.



The receiver.



The servo plug has changed. Convert your old equipment using the optional plug blocks to avoid damage from reversed polarity.
New plug above - Old plug below.



and trim pot method.

There are three types of menu: direct, function mode and system mode.

Direct mode allows quick two-key access to: •throttle curve; • steering curve; • left and right steering end points; • model selection (up to six); • and your choice of one of the function mode features (called the "custom key")

System model allows you to set: • which functions are allocated to the thumb wheel, the button beneath it, and the custom key; • model names; • steering and throttle subtrims; • steering and throttle servo reversing; • sensitivity of trims; • LCD display.

Function mode covers everything else. Some which I expect to become popular are: •Steering turn-in and return speeds,

- Traction control mode (high or low throttle side) - great for overpowered cars,
- Throttle and brake "punch" - great for underpowered electric cars such as the 540 classes.
- Stopwatch and timer functions (button must be assigned to the stopwatch under the system menu).
- Partial throttle starts ("automatic start").

Other routine features accessed through the function mode menus are: • Steering travel (aka steering rate), • Throttle and brake end points, • Display of positions of trims and thumbwheel.

See the adjacent diagram reproduced from the manual for a complete list of what you can do with this radio.

WHAT'S IT LIKE TO DRIVE?

Very good. Upgrading from the previous FM version is no trouble at all, with the only difference being marginally faster servo response. The older AM radios have much stiffer springs which will require a little more time for the driver to adjust from, but the "foreign" feeling disappears quickly with use.

The faster servo response can be a mixed blessing. If using one of the really fast servos such as a KO 1002 FET and you're the kind who drives hard rather than smoothly, it can unsettle the car on corner entry in high traction. The answer is easy: use the steering speed function to slow down the servo if you find yourself in these conditions, and adjust it back for normal racing.

Assigning brake end point to the thumbwheel and steering rate to the custom key has been a bonus for me as a gas car driver. While brake fade has not



The all new module.

been a problem with my BMT, the ability to compensate for changing traction conditions or rain over the course of a 30 minute final without having to stop has been very useful.

The stopwatch feature is easy to use. Once it's engaged, just pick the spot on the track where you've got the least work to do and squeeze the button under your left thumb as you go past. No longer will you have to coax another driver away from the job to time laps when setting your car at major meetings. You can review each of the last forty laps - and keep the information to yourself.

CONCLUSION

This radio does not fall into the "must have" category for every R/C car enthusiast, mostly on the basis of cost.

It does, however, add significant value if you take racing and competing in official events seriously.

It is clear that a considerable amount of thought has gone into selecting the features to include. Once a basic familiarity has been gained their ease of use is quite good, although some time will need to be devoted to learning how to make the best use of them on the track. The instructions warn drivers that they should make sure they have extracted 100% from their chassis before using the throttle response features.

Since making the change to FM I've been much less susceptible to other drivers on the same channel inadvertently switching on in the pits, and it has given me time to shut my car down before any damage was done. Except for the rare failed servo I've never had a hint of any interference from other sources, ever. Reliability has so far been 100%, as one should expect. This reviewer would not go back to AM unless forced.

Highly recommended for the serious-minded racer.

Hits: Comfortable feel.

Crammed full of useful features.

Reliable and interference free.

Misses: With so much choice it takes some time to learn the menu structure, so be prepared.

The name!

Review sample supplied by Model Motorsport International, Telephone: (08) 356 8698.



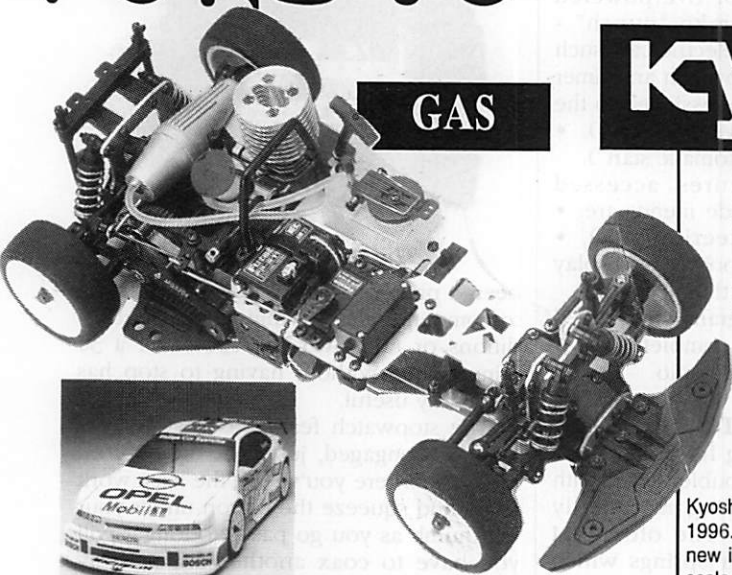
Digital trims mean different settings can be securely maintained for each model without any chance of being disturbed when your transmitter is switched off and in the pound.

PURE 10 PURE GENIUS! PURE SCALE

from

KYOSHO

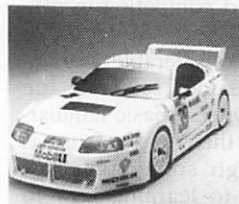
GAS **ELECTRIC**



Opel Calibra V6 DTM No. 31408 *



Nissan Skyline GT-R No. 31523 *



Toyota Supra (SARD) No. 31407 *



Porsche GT-2 No. 31522 *



Mercedes AMG No. 31524 *

Kyosho's new Pure Ten Spider series offers the best combination of performance and scale good looks that this company is famous for. Rather than take an existing buggy chassis and fit a scale saloon or rally body to it, Kyosho have created a new chassis, combining all the best elements to make one of the finest road running engine powered 4WD's available today. Supplied in kit form, the cars feature a full time belt driven 4WD system coupled to twin geared differentials, a 2mm thick aluminium plate chassis with an aluminium upper deck for increased structural rigidity and are supplied complete with a GS11X pull start engine. Each car used double wishbone suspension front and rear coupled to friction, sprung shock absorbers for effective damping over rough surfaces. Fixed length one piece upper suspension arms and steering linkages mean no-fuss connections and ensure that the wheel and steering geometry is in the optimum position. A highly detailed polycarbonate body shell is included for each car, complete with detail parts and full sponsor decals.

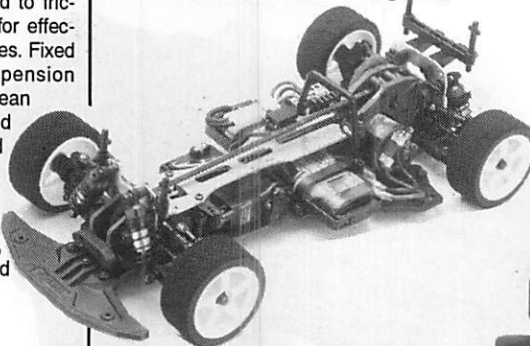
*** Suitable for World Cup Competition**



Kyosho's EP Spider 4WD series is new for 1996. They represent the beginning of a new ideal at Kyosho - to create more true scale replicas of some of the most attractive racing cars seen in the world today. Featuring a full time belt driven 4WD system running through two geared differentials, each EP Spider has the race winning potential of a champion. The gearboxes are split top and bottom, rather than left and right, allowing for much easier gearbox maintenance. Double wishbone suspension and friction type sprung dampers ensure maxi-

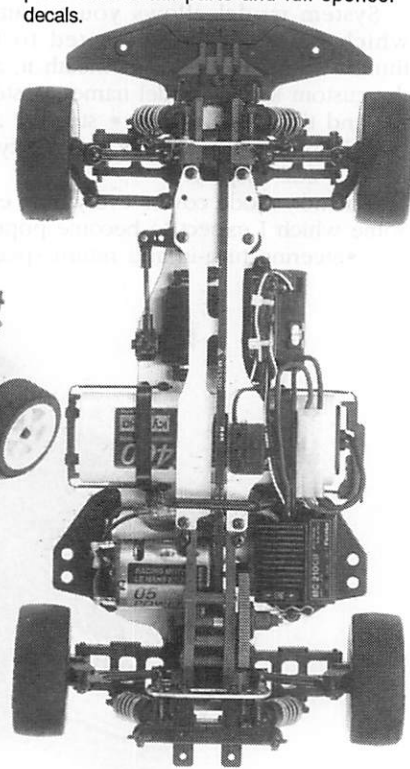
mum roadholding, whatever the weather. Each car is supplied with a 540 class motor, which runs through a 'sidewinder' style transmission. 48DP gears are used throughout and Kyosho offer variety of optional pinion gears to further race tune your car. The complete drive train is bolted to a 2mm upper deck/radio plate for added rigidity and strength. A highly detailed polycarbonate body shell is included for each car, complete with detail parts and full sponsor decals.

Spider TF-2 Chassis Kit



THE TOP-OF-THE-RANGE RACER

The TF-2 chassis is the ultimate refinement of the Pure Ten EP Series. The majority of its components would normally be option parts. This is a dedicated full-time belt driven four wheel competition racer for the discerning driver.



Pure 10 EP Chassis

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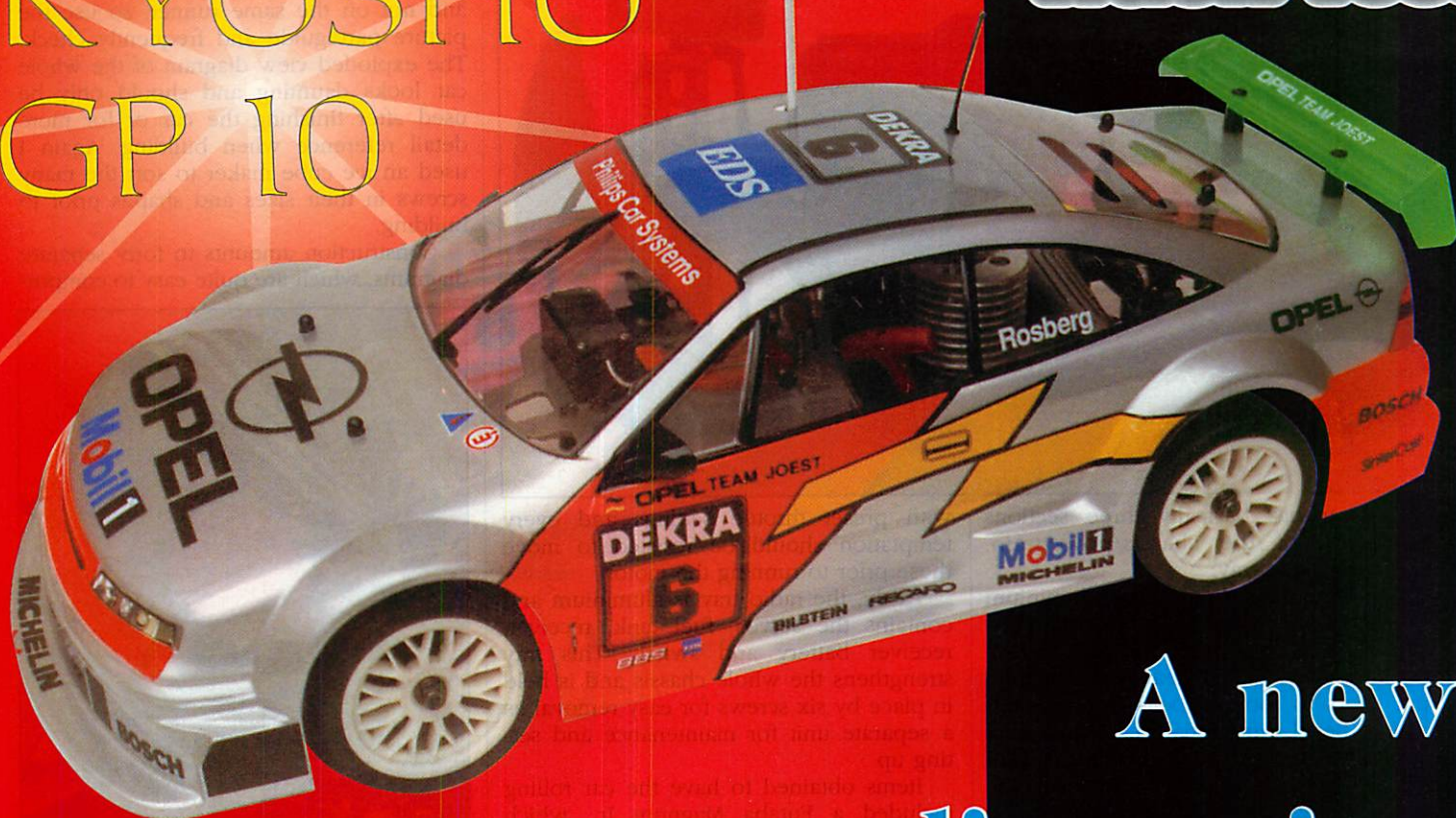
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KYOSHO GP 10

Track Test



Review by John Dennis

Scale 2 litre Touring Class is thriving at electric On Road tracks around Australia at present and this is partly due to the exposure given to the full scale racing on television, of events in England and more recently in Australia. Hobbyists and spectators alike can easily relate to the models that they see racing around the tracks and carparks at the weekend.

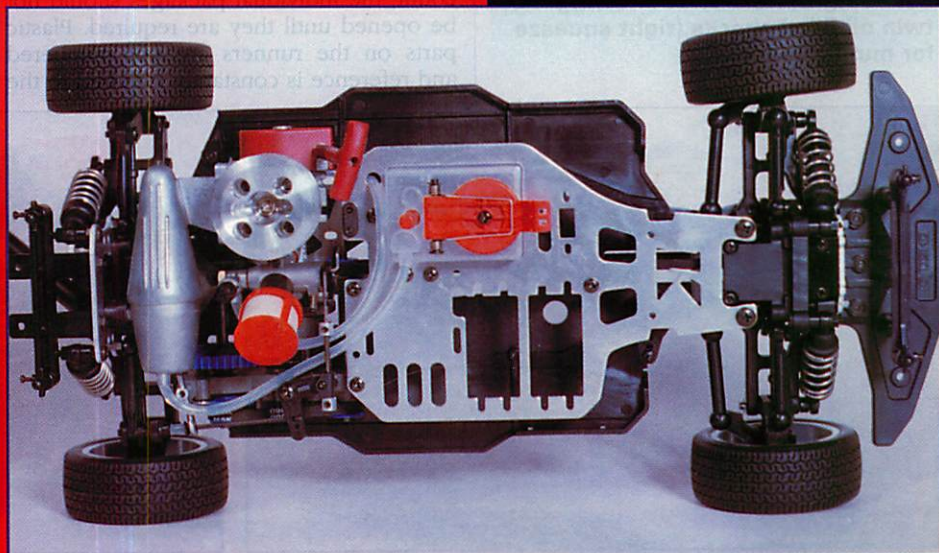
Kyosho have now added another dimension to this type of racing with the introduction of their Pure Ten Scale Touring Car series featuring a .10 size gas motor. The GP 10 is an entry level 4WD on road racer designed to give first time gas racers the opportunity to build such a car that is dependable and a joy to drive at an affordable price. It gives you the basics to familiarise yourself with the operation of the car and the option to upgrade for competition.

It is not an ARR (Almost Ready to Run) package and requires building from the differentials up. The building process has been made as simple as possible and the construction goes together in a quick and logical manner. This is even made easier if the builder has memories of putting together any of Kyosho's elec-

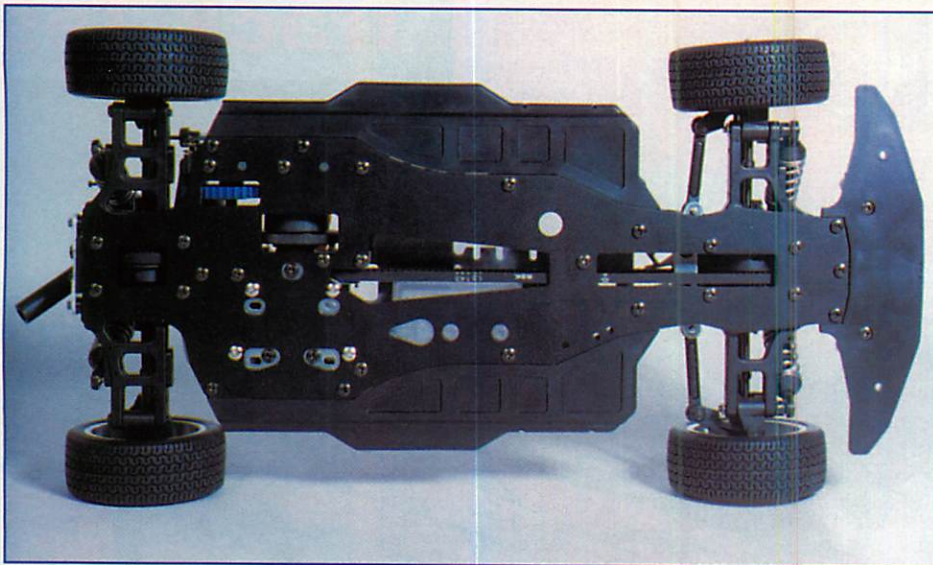
tric 4WD off road vehicles in the past.

Packaging for the series includes a standard chassis and wheels over a range of distinctive body shapes that are easily recognised. Faithfully reproduced in great detail are the Toyota Supra, Opel Calibra, Nissan Skyline GT-R and Porsche 911 GT-2. Features include windscreen wipers, side mirrors with reflective film, scale radio antenna and full decals to represent the respective full sized racing version.

A new
dimension
in scale
gas cars



Right: Ultra neat chassis layout top view.



The car has basically three sections comprising of the chassis/powertrain, motor and radio tray.

The chassis is 2mm thick aluminium with four wheel independent double wish-bone suspension, oilless coil over plastic shockers. Drive is via geared pinion and spur gears to toothed belts through aluminium bevel differential gears and dog-bone drive shafts to the four wheels. Ball bearings are not included, however the metal bushings provided can be upgraded at a later date as costs allow.

The heart of the little beast is the Kyosho GS 11X motor which comes complete with pull start and all fittings required. A muffler with a flexible exhaust pipe, glow plug, assembled clutch and bell housing and a foam air filter complete this package. Of note is that the motor comes

with preset throttle settings and every temptation should be resisted to move these prior to running the motor.

Lastly, the radio tray is aluminium and contains the servos, fuel tank, receiver, receiver battery and switch. This tray strengthens the whole chassis and is held in place by six screws for easy removal as a separate unit for maintenance and setting up.

Items obtained to have the car rolling included a Futaba Magnum Jr., which comes with two SP148 servos, a FP-R112JE receiver and a receiver battery pack. Batteries comprised of four AA Alkaline cells for the receiver and four D cells were wired in parallel to produce a fairly strong 1.5V output for the glow plug. Powermaster 5% nitro fuel, which is a mixture of synthetic and castor oils, was used for running in. Miscellaneous items were a fuel bottle, a long reach glow plug connector and polycarbonate paint finished it off.

Instructions are comprehensive and the builder should familiarise themselves thoroughly with these and the parts before construction begins. Due to the high part count, the individual packages should not be opened until they are required. Plastic parts on the runners are not numbered and reference is constantly required to the

individual sheets supplied in the kit. Some parts for particular assemblies look alike and not on the same runner, so use the picture part guide and frequently check. The exploded view diagram of the whole car looks daunting and should only be used after finishing the car or for more detail reference when building. Again I used an ice cube maker to sort the many screws in their sizes and shapes prior to building.

Construction amounts to forty separate diagrams, which are quite easy to compre-



Top: Clean lines of undercarriage including access to motor flywheel.

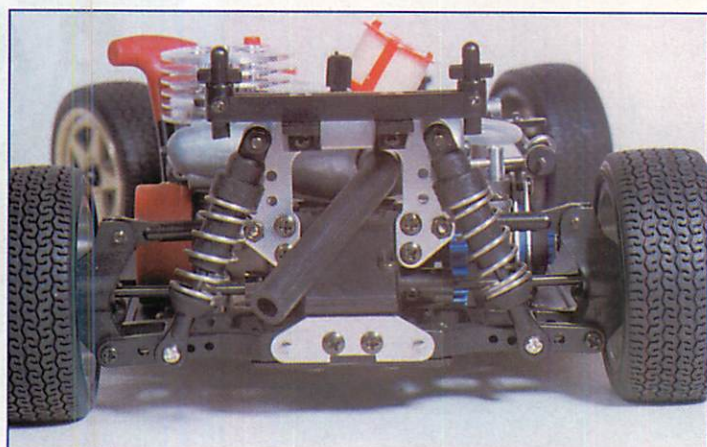
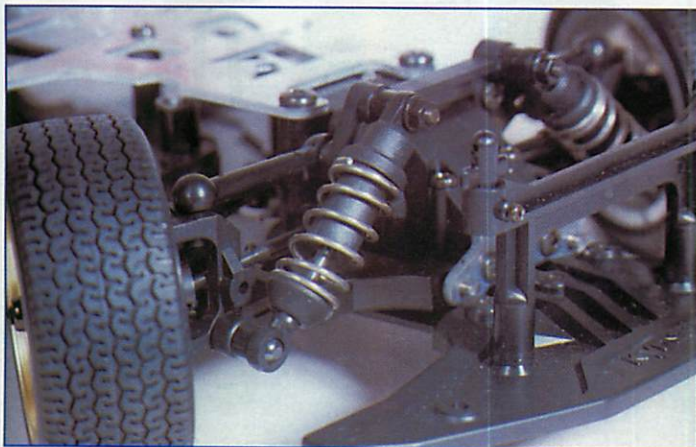
Right: Super smooth belt drive to front transmission.

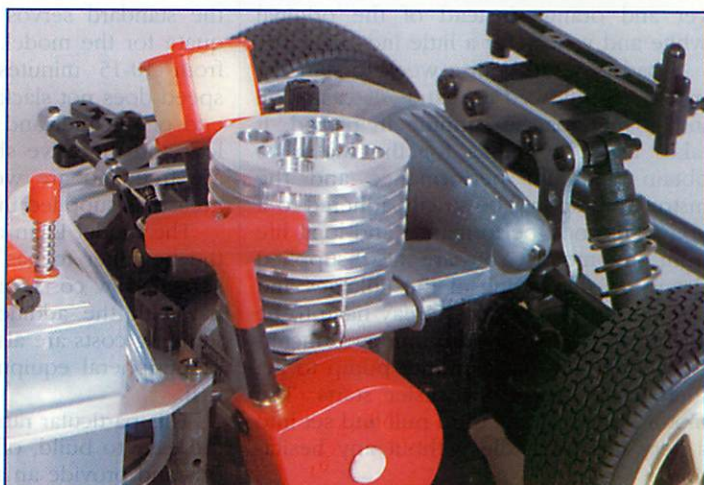
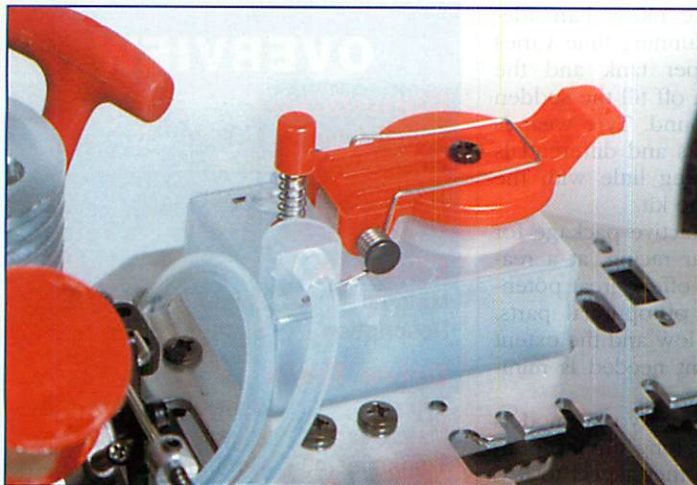
Below left: Oil filled shocks non-adjustable upper tie rods.

Below right: Rear view showing twin oil filled shocks (tight squeeze for muffler pipe).

hend, but a few items do require special attention.

The 5mm dimension at Step 4 installing the brake pad is not to scale and will have to be measured by other means. You will be left with a tag on the side of the plastic collar in Step 5 after it has been removed from the runner and it should be cut flush with the collar surface for it to fit correctly against the main gear. Before screwing the centre mount in Step 12 to the chassis, install the other belt pulley and the shaft





I did apply a thin coating on the screws attaching the motor to the engine plate.

Building time amounted to about seven hours with painting an extra 2-3 hours. Take as long as you like in applying the decals and details for a great looking model. The test model was painted in sil-

Top left: Quick fill fuel tank.

Top right: Easy to use pull starter.

Left: Solid front steering units.

Right: The full Opel. Note the vent holes in the rear and side windows. (Trim to act as scoop)

pin on the outside first. Don't overlook the fitting of the set screws in the inside of the lower wishbones as these act upon the main chassis to set the ride height. The springs are a little short with the ride height set as recommended, and were slightly stretched to overcome the hiatus. There are no adjustable linkages in any part of the suspension, making the settings easier for the beginner, but care should be taken to fit the correct rods to each part. Part 68 in stage 24 is the bottom part of the shocker and slightly tapered. It is marked so that it can be inserted correctly. The instructions do not call for threadlock, but



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ver and orange instead of the original white and yellow for a little individuality.

I had to wait about a week to start the motor and allowed an extra 3% castor oil in the fuel for the running in period. It takes about 10 tanks for the motor to obtain optimum performance and the instructions should be strictly adhered to if you want good performance and long life from the motor. You are also supplied details on the setting of the linkages and throttle settings, but these may have to be altered to achieve good running characteristics. The tank has a primer pump to get fuel to the motor for easier starts. The motor started on the third pull and set into a very nice rich idle without any hesitation.

The test model has now had about 15 tanks of fuel through it and the motor is really beginning to show good performance with the 10% nitro fuel now being used. Acceleration of the line is not startling compared to an electric model, but has very useable power when the car is at speed. Handling is adequate for the power available and where it is lacking in certain situations it can be overcome by the use of the 4WD capabilities of the car. Braking is surprising, considering the size of the single disc when compared to the weight of the car. All four wheels can be locked up at speed if the driver gets over anxious. Receiver battery life is about 3 hours and

the standard servos are more than adequate for the model. Running time varies from 10-15 minutes per tank and the speed does not slacken off till the sudden end of the fuel and sound. Tyre wear is low and the drive shafts and differentials are free and are wearing little with the grease as supplied in the kit.

The model is an attractive package for the beginner to gas car racing, at a reasonably low costs, and offers great potential with the addition of optional parts. Running costs are also low and the extent of peripheral equipment needed is minimal.

This particular range of Kyosho models are easy to build, offer long driving periods and provide an another aspect to R/C car racing with sound and the exciting odour of burnt methanol and nitro. The sight of a field of these models in the forthcoming Kyosho World Cup Competition will be something to experience, and I would recommend that you look out for the venues and attend.

The chassis and drive train are also common with the fabulous looking Nostalgic Series featuring a 67 Corvette Stingray, Ferrari 330P4 & 250 GTO, 62 MGB and, my favourite, the 63 Ford GT40. These are also eligible for the Kyosho World Cup Competition.

Kit and accessories courtesy of Macks Hobby Link and Dawn Trading.

OVERVIEW

Dimensions

Overall length	470mm
Wheelbase	260mm
Track(F/R)	168mm
Weight	1550gm

Chassis

Material	2mm Aluminium
Description	Stamped plate

Drive Train

Type	Rear/Belt driven 4wd
Main Gear	Clutch/bell : Spur gear
Transmission	Dogbone/axle
Bearings	Bushings

Suspension (F/R)

4W Independent double wishbone w/plastic coil over dampeners

Wheels/Tyres

One piece plastic spoke
Rubber on road slick w/foam insert

Powerplant

GS-11X w/pull start.	
Pipe	Resonate chamber
Carburettor	Rotating Barrel
Fuel Tank	75cc plastic w/primer.

METROPOLITAN

MODEL & HOBBY

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Track Test

By John Hawkins.

1/10th scale on road race car



PB

The original Apollo was among the first on the market after the pioneering Serpent Impact and, like the rest of the cars in this class, has undergone considerable evolution in four years since its introduction. The initial version was quick and light, but suffered in the durability department and with basically only shocks and tyres being adjustable was somewhat limited in its tunability.

No longer is either limitation true with this latest version, the Apollo Pro. It bears little resemblance to the original - only the wheels, shocks and front stub axles carrying over from that first car. In addition to

demonstrates that good looks can be successfully combined with winning on track performance.

Front Suspension

The front end is the major change from the Apollo Vari. It uses the same reactive caster system as its larger brother, and differs from the BMT and Picco in that the kingpin inclination is straight up and down rather than inclined away from the tyre contact patch. Shock absorber geometry provides for greater progression than either of these cars.

The wishbones are made of black anodised and milled aircraft aluminium

APOLLO



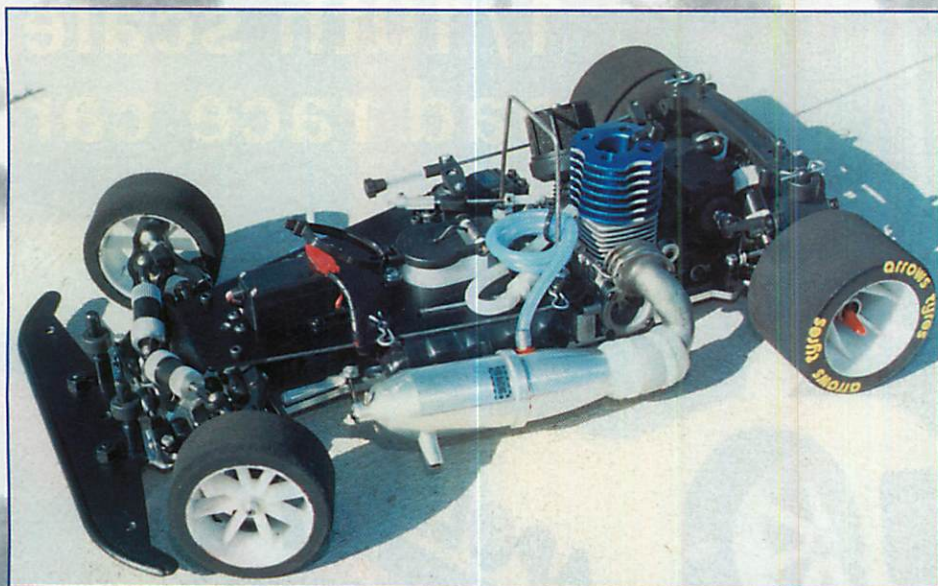
fully adjustable suspension, it is the logical progression from the Apollo Vari. Sporting heaps of features, it is extremely appealing to the hard core competitive racer as well as the enthusiast.

Borrowing heavily from its larger 1/8th scale stablemate the Black Diamond, it

alloy instead of plastic. Replaceable delrin bushes are used to prevent metal to metal contact with the pivot pins and provide a cheap means of eliminating slop over the life of the car.

The pivot pins run through a built-up metal bulkhead which looks extremely strong. Adjustability of camber and track is catered for by the usual screw-in pivot balls and, to prevent them unscrewing out of the metal wishbones (no self-clamping effect, remember) a thin lock nut is used. A mild (and I mean mild!) thread-lock is also recommended, to provide 100% bullet proofing.

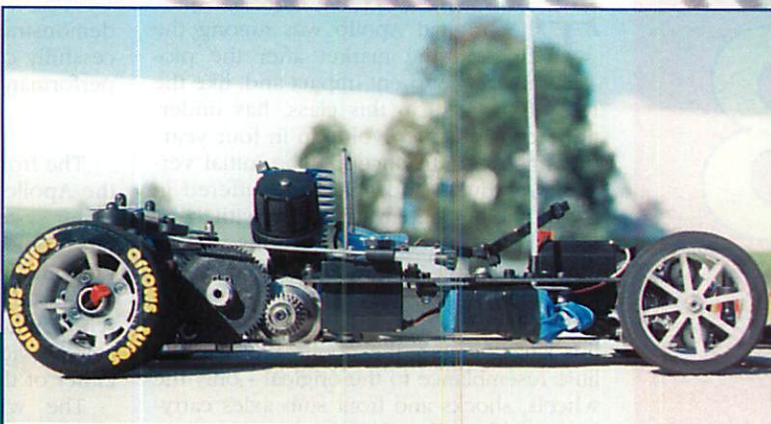
PRO



The shock absorbers are nylon and provide a beautifully smooth and leakproof action. I have been using this type of damper for the last three years on my BMT, and a recent comparison with a brand new set showed to my very pleasant surprise that the original four have worn not a bit, feeling absolutely identical to the new set. Try that with anodised alloy units!

The usual rubber membrane provides the required volume compensation for movement of the piston shaft.

They are extremely simple to fill and bleed if the instructions are followed properly. Different pistons and a wide variety of PB oils are available to tune the dampening

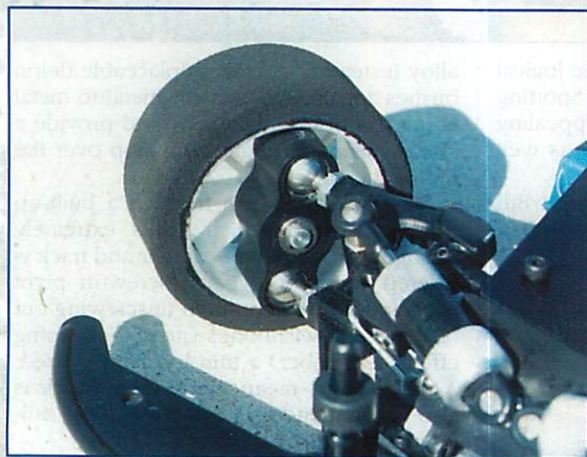


Top: Easily mistaken for a 1/8 scale, the Apollo Pro draws heavily from its larger brothers heritage.

Middle: Side view shows low centre of gravity for good road handling.

Below left: Front suspension wishbone are milled & anodised aluminium – not plastic. Delrin brushes prevent slop in the front end.

below right: Nylon shocks are very smooth.



effect.

The antiroll bar is the usual rod-and-ball-cup seen on almost every gas car and springs are of the torsion type. Some bending is required to get the required ride height, and by experimenting with the difference in the amount the two short legs are bent down, different progression effects can be achieved. As a rule, after putting the springs on the car and loosening all the travel limiters, the long end of the spring should be bent up by half the amount the ride height needs be reduced. It may take a couple of attempts.

Droop limit screws are fitted as standard to the lower wishbones and are an important part of tuning the car's road manners, as is caster which is adjustable by way of clip-in spacers on the lower wishbone.

Axle blocks are moulded from a super tough nylon, and are a cheaply replaced part designed to fail before damage

is sustained to the alloy components. I liked the fact that right and left blocks are reversible, as are the wishbones.

Rear Suspension

Following the same route as the front, the rear suspension is virtually a straight transfer from the Black Diamond. Toe-in and camber are adjusted via the inboard pivot balls in the top arms, and track with the lower outboard one. Black anodised machined alloy arms with replaceable plastic pivot pin bushes feature again, and are suspended from a very trick pair of milled side plates.

The springs are of the same style as the front as are the shockers. The shockers mount up through the middle of the upper wishbone well out of harms way. Tweak and ride height are adjusted with grub-screws in the lower suspension arms, as is rear droop travel. The rear roll centre is adjusted by selecting from one of three options for location of the upper outboard pivot pin.

Like the front, the outboard axle block is moulded from toughened nylon and is cheaply replaced in the unlikely event of damage from a major shunt and, along with the wishbones, can be swapped from left to right.

Like most other cars on the market, the body mount at the rear is attached direct to the stub axle blocks to maximise the effect of the shell's downforce on the tyres, although for sedan shells the importer recommends that the optional chassis

mount is used.





Chassis

The super thick lower plate is made from milled 5mm T6 alloy, and is lighter yet stiffer than most other cars on the market with their 3mm chassis. The upper plate is 2mm black fibreglass. I am very pleased that the front bulkheads are very much more robust than the previous offerings and will vastly improve both crash resistance and the ease with which the car can be stripped down in an emergency. However, the posts at the rear of the upper plate could be more substantial, and I have to admit it escapes me why they have been lightened to such an extent at the base, where the tube's wall thickness is less than a millimetre. Much more bulletproof (and cheaper!) to have left them untouched. Nonetheless, it forms a very stiff unit.

There is no brace between radio plate and the rear of the chassis, but on a closer examination it appears to be unnecessary. In addition to a full-depth chassis rib running through the engine bay, the tension on the brake spring is matched by compression on the throttle. This reviewer found the car behaved perfectly, with no evidence of the chassis twisting under the heaviest of braking and no evidence of flex in the gear mesh. However, should the racer still feel the need, there is a tapped M3 hole in the side of the right bulkhead to allow a balljoint and turn-buckle style brace to be fitted.

Drive Line

The kit clutch is upgraded from the Apollo Vari, being a simplified version of the Serpent Centax. It features a 19/25T clutch bell, which for once was absolutely

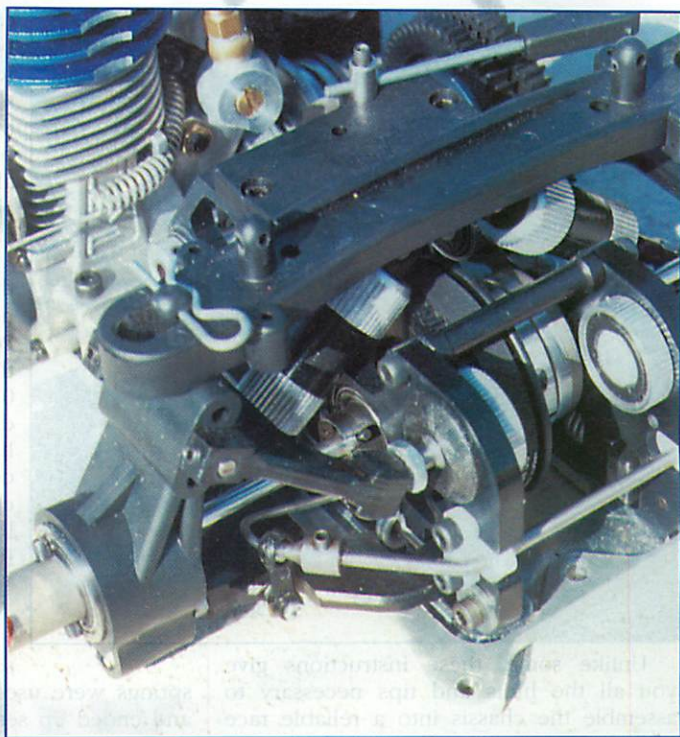
perfect for our circuit at Moorebank. The teeth are of a finer pitch, making for a more efficient transmission and a more accurate choice of ratios for a given circuit.

The gearbox is the spring-loaded pawl type favoured by BMT and Picco, and is reliable and easy to adjust. We did find that the supplied spring was too large in diameter, and substituted a BMT spring which completely cured the problem. (To be corrected in subsequent shipments). Both gears are retained on their carriers by substantial circlips, and the entire unit is retained on the layshaft by a substantial setscrew collar. The shaft has been beefed up from 4mm to 6mm diameter. Spur ratios are 60/56T. Drive from gearbox to differential is by the well-proven and reliable toothed belt method.

The ball differential is a neat, externally adjustable unit. Featuring drive cups made from engine crankshaft grade steel, if they don't last forever I will be very surprised. The centre axle comes pre-hollowed for light weight, and the stiffness of the action is tuned by the tension on the tangential bolt on the split collar surrounding the unit.

Fuel tank

The tank is the legal 75cc capacity quick fill type. The lid seals very well once



Above: torsion bar suspension on the rear end with shocks neatly tucked away.

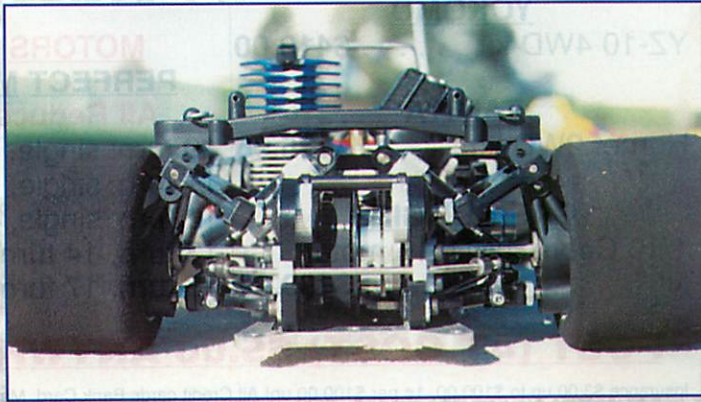
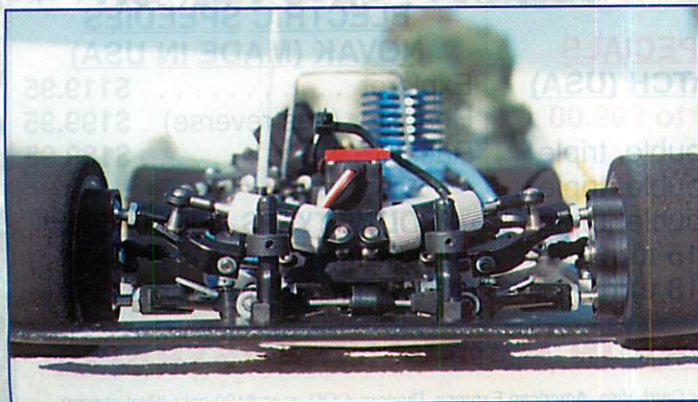
the spring tension is tweaked up. The engine gave a slight cough about a lap before the tank ran completely dry, a feature that will find favour among hardcore racers.

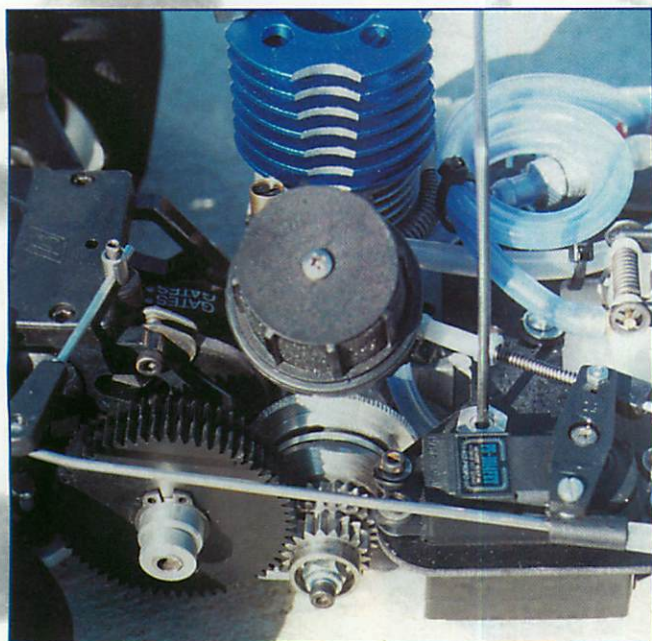
Engine

The car comes with blocks drilled and tapped for the Novarossi CX15 which, judging by race results around the country, is the package to have at the moment. Deals including Apollo Pro, engine, pipe and manifold should be finalised by the time this goes to print.

Instructions and parts fit

The instruction manual, while slightly wordy, is the best I've yet come across for a gas car. It is well worth reading through at least twice before first picking up a screwdriver. If followed, the car goes together very well. If not, you've only got yourself to blame for the results!





Unlike some, these instructions give you all the hints and tips necessary to assemble the chassis into a reliable race winner. However, the notes on chassis settings we found to be off the mark for our circuit, with the car initially tending to handle on the nervous side in the conditions on the day. With stiffer springs and oils on the front, and softer on the rear combined with more rear down travel the car was much better mannered.

Parts fit was excellent. As with most

cars, the pivot bushings benefited from being reamed lightly with a very slightly oversize drill, in this case a 4.05 or 4.1mm bit. Slight cleaning up of all the clutch parts was also necessary and is covered in the instructions.

It should be noted that the screws in this car are not Phillips - they are Pozidrive. It is well worth the \$10 to buy a number 0 and 1 Pozidrive screwdriver from your local hardware store as they offer a much superior engagement and are less likely to strip than Phillips.

How did it go?

Once some more reasonable shock oils and springs were used the car looked quick, and ended up setting TQ before winning the final against the some of the country's best 1/10th drivers. Needless to say, the level of interest from fellow drivers afterwards was quite high!

Review car supplied courtesy of Model Motorsport International (08) 3 568698. Trade enquiries are welcome.

OVERVIEW

While it is too soon for the Apollo Pro to have been tested in major competition, it clearly has the goods. Once the distributor, Model Motorsport International, gets more feedback from team drivers around the country, a database of setups for all the major circuits will be freely available, either direct or through local agents.

The best thing about the car is that there is obviously more to come. Tyres, toe, track width, camber, and caster are areas we have yet to touch on and combined with more work on the shocks and roll bars it is clear that this car will be a force to be reckoned with.

Hits

- ✓ Appearance
- ✓ Handling
- ✓ Suspension design
- ✓ Parts fit
- ✓ Instructions
- ✓ Strength and reliability.

Misses

- ✗ Setup notes
- ✗ Rear radio tray mounts.

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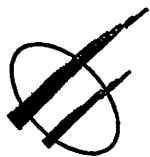
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Grange, S.A.
Ph: (08) 8356 8698
Fax: (08) 8356 2079**

Hey, I have been in this business a long time, in fact almost since the beginning of organised or competition racing of radio control cars in Australia. I have seen many changes in the evolution of product design and a lot of people come and go on the business side. Today, I have to say, I am enjoying the racing and the business more than ever and I am looking forward to spending many more years in this business. I know that I can offer a lot to potential and current racers, not only through the World Class products that I import, but a wealth of knowledge gained from many years of "hands on" experience, particularly in "gas" cars. If any of the following is of interest to you give me a call and let's have a chat to see if I can help you. For your convenience I do no mind after hours calls up to 8pm at night Monday to Thursday on (08) 356 8698.

ARROW Bodies and Tyres from Italy

I have been importing ARROWS products since 1985. ARROWS were the first to introduce long life tyre technology to the World. I have long life tyres for 1/12, 1/10 and 1/8 in all the right degrees of shore hardness, plus glued and trued tyres on rims for BMT BLITZ 1/10 and 1/8 cars and the PB APOLLO. ARROWS now produce bodyshells in both short and long tail versions. Both provide top class handling and are superb quality. Another very useful product from ARROWS is a Gurney lip adjustable trim tab to allow you to tune you bodyshell downforce. Price list available on request.

BMT BLITZ/ 1/10, 1/8 and 1/5 Cars from Italy

The really big news here is that the BMT BLITZ 1/5 cars have finally arrived. Being the new kid on the block in his class means BLITZ have been able to scrutinize their competitors products and then utilise all their triple World Championship winning experience of 1/8 scale to build the most compact, light weight yet strong car, possible within the rules. The benefits of the BLITZ design are the lightest weight and hence best power to weight ratio within its class, effective braking without any complicated systems, and exhaust system which is virtually impossible to damage, low tyre wear and less stress and strain on the whole car and therefore low running costs. It is also very pleasing to note that a lot of the spares are quite cheap in their price too! Unfortunately time has been against us in getting a "road test" into this issue but look for Multiple Australian Champion Ric Bartolozzi's review in the next issue. In the meantime you can call him on (02) 9948 3803 for his views on this product. So much for the car, what about the class. Well, all I can

say is wow! These cars are easy to drive, are very controllable, can be held in power slides, can be run bumper to bumper down the straights and door handle to door handle through the corners. They look fantastic, the racing is very close and therefore exciting and they will run for over half an hour on one tank of (cheap) petrol/oil two stroke mix. It is easy to see why this is currently the fastest growing "gas" class of all in Europe. BLITZ are continuing to refine and develop the 1/8 ACTIVE race car and there are now some upgrades available, some for even greater performance and some to further enhance reliability. Info is freely available on request. I have been importing BMT BLITZ product since 1991 and in that time there have been many great race wins by BLITZ race cars around the country, in fact I reckon, that BLITZ racers in both 1/10 and 1/8 have either top qualified at, or won at, just about every major race meeting in Australia for a while now. BLITZ products are winners and I want to help you become a winner. Give me a call.

FREWER Bodyshells and Tyres from New Zealand

I have known Kevin Frewer a long time, in fact I have been importing his product since 1979. I well remember staying with Kevin in Christchurch in 1980 because I won the South Pacific Championship for 1/8 circuit racers held there at that time, a title I reckon I still hold to this day as I do not think the event has ever been run again! I have seen Frewer grow from humble beginnings to a World Class highly respected manufacturer today. No I have a fantastic range of Frewer bodyshells for 1/12, 1/10 wide and narrow and 1/8. the biggest range is in 1/10 which includes Alfa, BMW, Commodore, Falcon, Lotus, Mazda, Mercedes, Mondeo, Nissan, Peugeot, Porsche, Renault, Toyota and VW. That is just a few, then there are all sorts of different wings, tyres suitable for 1/10 electric (number one choice in England) and or course the well known 1/10 buggy and monster truck tyres. Just released is a new 1/10 buggy "fuzzy" (coded 720). This tyre was developed from the 1996 New Zealand Nationals where Frewer tyres dominated, taking out six of the eight classes. Frewer tyres also have another big advantage and that is PRICE! Call me now for a price list or the name of your nearest stockist.

KO Diglace Radio Gear, the Racers Choice

I have been selling KO radio gear since 1980. I always have stock of EX-1 and EX-5 radios, chargers, nicad battery systems, crystals and servos etc. Give me a call if you require anything from the KO range.

Novarossi 2.5cc and 3.5cc engines from Italy

I have been importing Novarossi product since 1985, the beginning of the Novarossi Company In Italy. These engines set a new standard for car motors in 1985 and nothing has changed today, the 1996 range of motors are still the best, to the extent that Novarossi car motors in all their various forms dominate the competition market World Wide. Novarossi have worked closely with all the top drivers in Europe to create not only the most powerful motors, but also motors which have linear throttle response, consistent and reliable performance and ease of tuning. They have won so many major championships including the World Championships that it is impossible to list. Here in Australia the story is the same. Over the years I have developed a close working relationship with Novarossi. Last year I was able to arrange engine sponsorship for the entire Australian team competing at the 1/8 circuit World Championships at Phuket in Thailand and this year I have been able to arrange the same for the Australian team of Nick Drygalla, Tom Drygalla and Don Martin who will be competing at the 1/8 buggy World Championships in England in August. There is a Novarossi motor to suit just about every application for competition use, be it buggy or car and that includes price as well! I probably carry more competition buggy and car motors in stock at any one time than any other comparable importer in Australia, so give me a call now to see if I can help you. Prices start from a low \$199 and price lists are available.

PB 1/10 and 1/8 cars from England

Last on the list in alphabetical order but not last in any other way. I have been importing PB cars from England since 1977. PB was a winner then, in fact the product was so good then that it got me started in this business and it is still a winner today. Elsewhere in this issue there is a "road test" of the latest PB APOLLO "PRO" 1/10 circuit racer. This car has been getting rave reviews overseas and it looks set for a very big future. Equally its big brother, the 1/8 "BLACK DIAMOND" circuit racer has been doing very well in England and Europe. Watch out for a review of the "BLACK DIAMOND" soon, in the meantime "winning" deals are available on both cars, so give me a call now. Oh, and as always, our "SPECIALS" list is constantly being updated and I usually have some good second hand cars and gear available too!

I am looking forward to being able to help you, happy racing and best regards.

Rob Reade.

1996 NSW 1/8 and 1/10 Gas On-Road Championships

by John Hawkins

The TQ Hoodoo continues in a weekend of uspets as Gil Evans and Chris Reade take the 1/10 and 1/8 titles.

Spectacular good weather was forecast and, for a change, the weathermen were spot on. The weekend was smoothly run and incident free, the atmosphere a tremendous improvement over the sometimes controversial re-run of last year's rain affected race. While interstate numbers were down, a fast growing local membership swelled numbers to the highest level for some time, with 14 entrants in 1/8th scale and 34 in 1/10th.

TRENDS

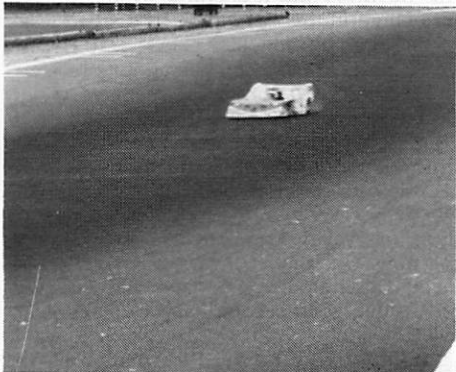
Rising temperatures and humidity during the day put engine tuning skills at a premium in 1/10th scale, with new settings required every run for most competitors. Traction gradually built from good to excellent over the weekend, although lap times were down slightly on previous times.

Hard tyres were the hot setup, with around 40 Shore fronts and 35 rears being typical amongst front runners. Novarossi-built engines in a number of guises dominated the finals, forming 90% of the 1/8th scale main event and 100% of the 1/10th scale. Elfins of various manufacture seemed compulsory for 1/8th drivers, while the Frewer Group C Porsche 962's grip on 1/10th was broken only by the handful of Dahmas Spice GTP shells found on the Piccos. Adjustable Gurney-lipped trim tabs were essential in both scales.

As an indication of how quick these cars now go, Stewart Grant's data logger typically clocked 116km/hr top speeds and a highest of 118km/hr on his 1/8th car. 1/10th is not much slower.

QUALIFYING

A total of five rounds were held from

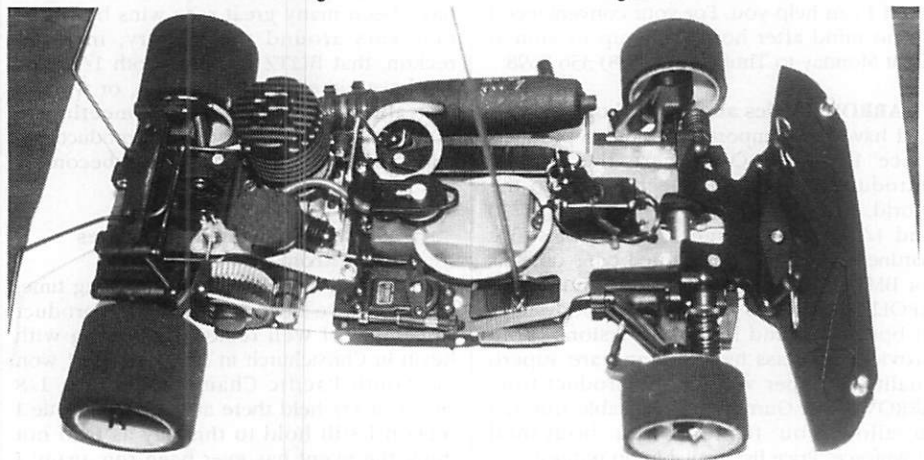


Bartolozzi had a substantial lead in the early stages of the 1/8th scale final.

RACE RAP



A Few of the entrants - come and join us!



1/8th TQ Stewart Grant's Serpent Excel.

Friday afternoon through all of Saturday.

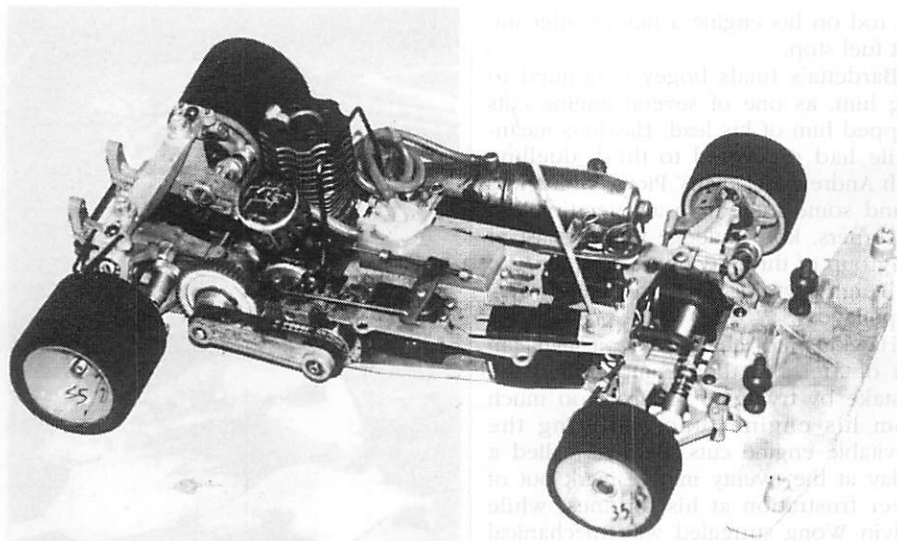
A certain amount of lexan trading went on in the early rounds as some of the less experienced learned how to let the faster drivers through on the challenging circuit, with many not getting in a complete ten minute heat until the later rounds. The large distances marshals needed to cover on this huge track made tidy driving more important than ever, especially near the high kerbs which easily tipped over errant cars.

Serpent driver Stewart Grant, as usual, was the man to beat in 1/8th scale. Information gleaned from the data logger during practice had proved very useful. Chasing with fierce determination was current National and defending NSW champ Ric Bartolozzi with his BMT, but radio problems consistently dashed his chances at the eight minute mark in most heats. The interference was later traced with the assistance of Stewart's dad, John Grant, to the method of mounting the

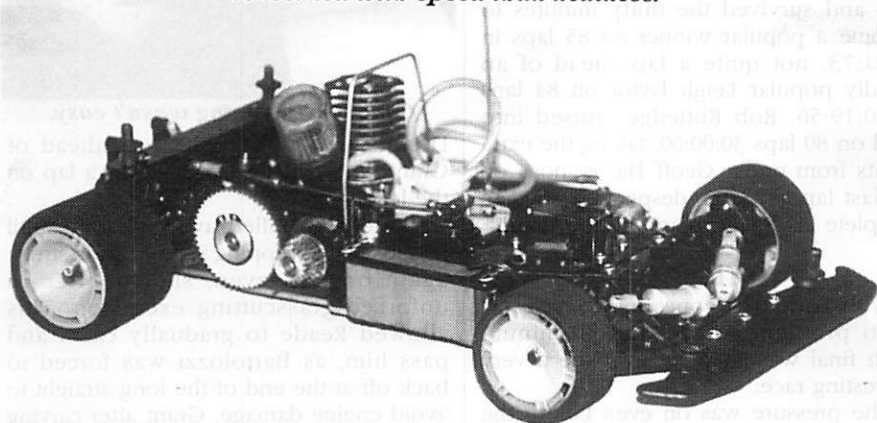
receiver.

Fellow BMT driver Chris Reade was hot on his heels and succeeded in snaring second qualifying positions, followed by Victorian David Dean's Serpent. A relieved Bartolozzi snatched fourth from Dennis Garlick with his one good run, but with only three wheels for the last three laps. Exciting stuff! That earned him the right to sit out the semis and go straight to the main event. Western Australian David Braund qualified sixth after tracking down his radio troubles to transmitter nicads. Victorian title holder Michael Stavropolous, having switched chassis brands for the seventh time since 1992, never seemed to get in the groove with his Picco and most times lapped more than a second off the pace.

1/10th scale was a pitched battle between the BMT of Andrew Bardetta and the Serpent of Rob Verdich. Bardetta had the better of it in the early rounds, and managed to surpass a round three



1/8th winner Chris Reade's BMT Active 96. His refueller was obviously more concerned with speed than neatness!



1/10th TQ Andrew Bardetta's BMT. When will this man win one?

challenge from Verdich to re-take and keep TQ in round four. A number of drivers including Gil Evans, Leigh Dytor, John Hawkins and Kelvin Wong all lifted their game with last round efforts to take third through sixth places respectively and push Victorian Picco driver Andy McLellan well out of the top four. This class is getting so competitive that the top times were equal to or better than almost half the 1/8th field.

ELIMINATION FINALS

Sunday morning saw the high humidity of the previous day continue. The usual "Christmas Tree" system of elimination would be used to determine the remaining six starters in each of the ten car - 30 minute main events.

1/10th scale elimination started with 15 minute quarter finals where only the top three from each survive into the semis. From the Odd quarter, Canberra's David McInerney led the enthusiastic Rob Power of Nowra and Manny Macedonio into the next round, cutting out youngster Cameron Webby who continues to improve. The Even quarter was a much closer affair, with Zsolt Szekeres,

Victoria's Greg Smith, and Alan Salisbury edging out fellow ACT compatriot Matt Vanderplatt.

The single 20 minute 1/8th scale semi was a war of attrition amongst these high horsepower missiles, with the top six getting the nod. Dennis Garlick drove a clean and quick race to win from David Braund, Michael Stavropolous, Flavio Puccinelli, Paul Karatzas and Tai Loy



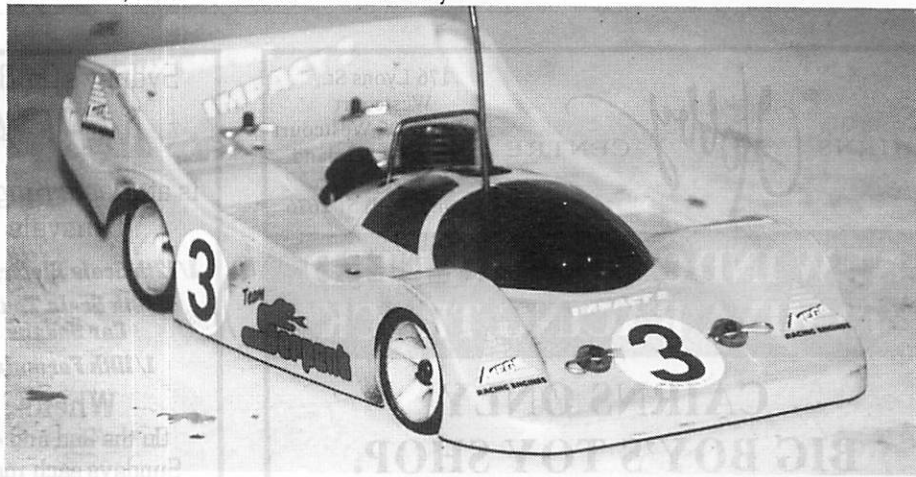
1/5th scale was demonstrated and drew a lot of interest.

Wong.

The first 1/10th semi was a ripper with the top half of the field on the same lap for the first eight minutes. Anthony Gatellaro was the surprise early leader until a major collision with a stationary backmarker. Picco driver Andy McLellan was stalked by John Hawkins' BMT, who in turn battled the Serpent of Bob Young before pulling clear with a passing move in pit lane. Newcastle's Rob Rutledge lurked in the background, moving up into contention when Bob Young retired shortly thereafter with chassis problems. Until that point, the top four were still on the same lap.

Hawkins' patience was rewarded as he began closing on McLellan, who then flamed out and handed him the lead shortly after the last fuel stop. Hawkins eased the pace to conserve his car, taking the win some five seconds ahead of Rutledge and a very relieved McLellan, who fortunately had a few laps on the hapless Craig Hawkins who struggled unsuccessfully to make his Picco match McLellan's.

The second 1/10th semi was a Kelvin Wong benefit. Victoria's Geoff Harris was just keeping in touch until some loose rubber on the rear of his Serpent forced conservative tactics. Aggressive driving from the 1/12th scale National Champion Alex Koussas put his BMT in third until some late time off the track allowed a consistent Matt Brunner, also driving a Blitz, into contention for a place in the



1/10th winner Gil Evans' Serpent Impact 2.

final. ACT driver Ian Buckham lurked in the background waiting for the off chance, but steady driving from Brunner kept him at bay until a late flameout destroyed Buckham's hopes.

Kelvin Wong's winning time was just quicker than Hawkins' from the first semi. Some distance behind, Harris survived the twenty minutes ahead of Brunner who managing to hold off a late challenge from Koussas, exceeded his wildest expectations to make the final.

THE FINALS 1/10TH SCALE

The 1/10th final was shaping up to be no cakewalk, with nine of the ten laps within half a second of each other.

The usual first lap melee caught John Hawkins in spectacular fashion, leaving him upturned with a stalled engine while the rest of the field snaked off after the leader. Verdich passed into the lead as Bardetta's gearbox stuck in second for a few laps, but was passed again when Bardetta's problem cleared up. Verdich's race finished shortly after when he blew



Pit lane action in the warm up before the final. BMT drivers were highly visible.

the rod on his engine a minute after the first fuel stop.

Bardetta's finals bogey continued to dog him, as one of several engine cuts stripped him of his lead. Hawkins meanwhile had recovered to third, duelling with Andrew McLellans' Picco, which had found some incredible acceleration out of corners. Rob Rutledge was the last of his group of three trying to close the gap on Leigh Dytors BMT and Gill Evans' Serpent.

Hawkins, not hearing his pit man, ran out of fuel and then compounded the mistake by trying to squeeze too much from his engine tune, suffering the inevitable engine cuts. Bardetta called it a day at the twenty minute mark out of sheer frustration at his fortunes, while Kelvin Wong struggled with mechanical problems.

Gil Evans' meanwhile quietly built his lead and survived the thirty minutes to become a popular winner on 85 laps in 30:21:73, not quite a lap ahead of an equally popular Leigh Dytors on 84 laps in 30:19:56. Rob Rutledge cruised into third on 80 laps 30:00:60, taking the extra points from under Geoff Harris' nose on the last lap as Harris desperately tried to complete his final lap around the circuit.

1/8TH SCALE

With Bartolozzi appearing to have his radio problem solved, the 30 minute 1/8th final was shaping up to be a very interesting race.

The pressure was on even before the flag dropped on the start, with TQ man Stewart Grant calling a ten minute delay, as permitted under the rules to fix a broken front suspension after collecting a barrier in the warm up.

Succeeding in making the start, the unplanned distraction was just the start of Grant's troubles. A first corner misunderstanding put him into the grass. The ensuing tangle of cars saw Rick Bartolozzi rush through into the lead followed by Chris Reade, David Dean,



Concourse judging wasn't easy.

Dennis Garlick and the rest ahead of Grant who had lost almost half a lap on the leaders.

Bartolozzi pulled away steadily until his jinx with stripping second gear struck again on lap seven, shortly after an unforced grasscutting excursion. This allowed Reade to gradually catch and pass him, as Bartolozzi was forced to back off at the end of the long straight to avoid engine damage. Grant after carving his way back through the field, was soon on him as well and then set about pulling in the leaders. Slick pit work by dad John Grant saved a vital few seconds, and he continued to chip away at Reade's lead each lap.

Paul Karatzas lapped a second or so off the pace, but he continued to circulate reliably for what would be his highest finish yet. the troubled Michael Stavropolous lost too much time shuttling between track and pits. Grant had mean-

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while worked through to the lead, stretching it to a lap over a hard working Reade just before the third fuel stop.

Bartolozzi's luck continued when a concentration lapse while lying third left him with a broken rear suspension. A blown glow plug in Grant's Mega engine allowed Reade back in front and dropped him into Dennis Garlick's clutches as his pit crew lost several laps fitting a replacement. At the 21 minute mark the price of Grant's earlier involuntary off-track trips was paid when the rear drive belt shed its teeth, handling the race on a plate to Reade who was now comfortably in the lead, sticky gearbox notwithstanding.

In a slightly anticlimactic cruise to the finish, Reade conserved his car to take the win by over two laps on 94 in

30:17:54 from Garlick on 91 laps 30:04:14 and a never say die David Dean on 89 laps 30:05:28.

CONCLUSION

With the largest field for some time, and plenty of exciting racing in spite of the tricky atmospheric conditions, the organisers did a splendid job of keeping the meeting running efficiently and with good humour. With no promotion at all, the number of spectators coming through the gates was impressive and begs the question as to what can be done with a little more work in this area.

Congratulations to the New South Wales club and to race director Les Robinson especially, a highly motivated driver who sacrificed racing in the meeting to run the event. Thanks also to

Geoff Booth, Jackie Robinson, John Hallard, Steve Burgess, and the rest of the troops for their help. In particular the club would like to thank the interstate competitors who made the trek and extends and open invitation to gas racers around the country to come join us again next year - entry forms will be available through your local club.

1/8th SCALE

Pos.	Driver	State	Car	Laps	Time
1	C Reade	NSW	BMT	94	30:17.54
2	D Garlick	NSW	SERP	91	30:04.14
3	D Dean	VIC	SERP	89	30:05.28
4	D Braund	WA	SERP	85	30:08.85
5	M Stravropolous	VIC	PICCO	78	29:28.70

1/10th SCALE

1	G Evans	NSW	SERP	85	30:21.73
2	L Dytor	NSW	BMT	84	30:19.59
3	R Rutledge	NSW	SERP	80	30:00.60
4	G Harris	VIC	SERP	80	30:58.35
5	A McLellan	VIC	PICCO	77	30:17.20

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Racing is being conducted on the front straight of the Brendale gas track with a 31 metre (3/4 of a scale 1/4 mile) track for 1/10 electric and gas cars. The Inaugural July 5th meeting drew 25 entries - 11 juniors and 14 adults. Cars ranged from stock Tamiya buggies to 1/10 gas cars fitted with 3.5cc engines and two speed gearboxes. A best time of 2.2 seconds from an electric car (Scott Tapsal) a speed of 83.7 kph from Brendon Polditch's gas car. Handicap starts provided some close finishes during the night.

Next meeting is being held on the 3rd of August. Meeting are planned for at least a monthly basis and a Championship late in the year. For further information ring Richard on (07) 3356 5581 B/H.



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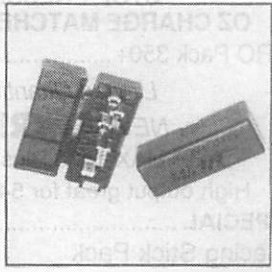
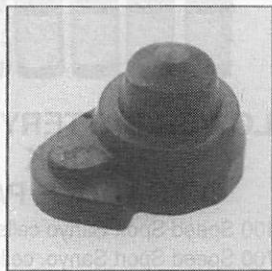
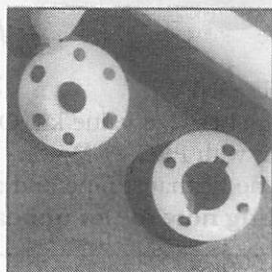
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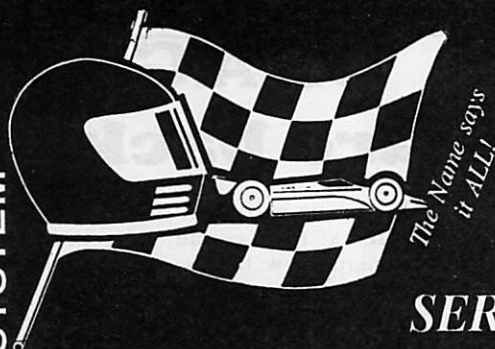
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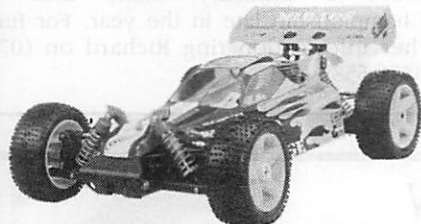
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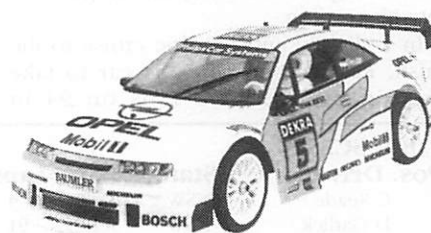
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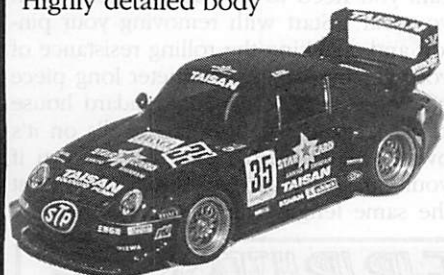
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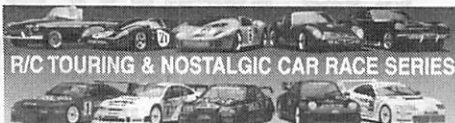
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LAZER V MANTA-RAY

I am thirteen years old and have just bought a Kyosho Alpha Lazer (off road 4wd). I am happy with it, I just need your advice so I can beat my friends Manta-Ray and get an Ok placing in the club. Is there anyway I can improve the acceleration and or top speed without spending too much cash? My friends Manta-Ray and my Alpha Lazer both cost pretty much the same but his excels in power, acceleration and top speed. I just want to beat him once. HELP. Also my car was meant to have a "Major Upgrade" with a Leman's motor and new gear system.

Adam

YOU WANTED TO KNOW



Quite a few questions Adam, first up, yes both cars are about the same in box stock condition the main difference being the drive system to the front gearbox (Lazer-belt, Manta-ray shaft) Traditionally a belt drive system is more efficient than a shaft but creates a little more drag (make sure they are not too tight) Having so many variables between both

cars you need to go back to basics with your car. Start with removing your pinion and checking the rolling resistance of your car by placing a 1 meter long piece of wood on a couple of standard house bricks and seeing how far it rolls on it's own (do not push) This will tell you if your car is free, if it does not roll at least the same length past the board then the

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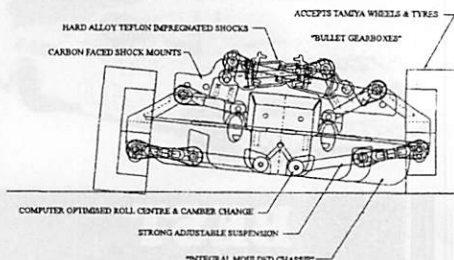
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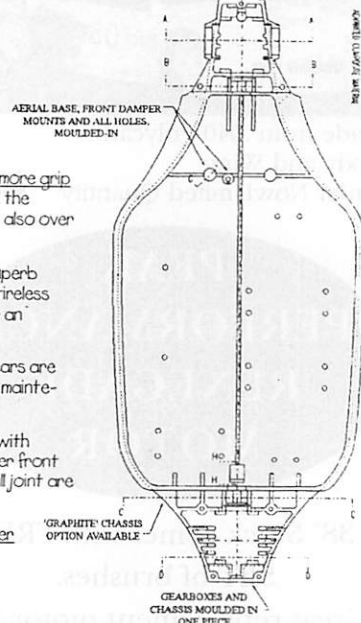
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TRADE ENQUIRIES WELCOME

car is binding somewhere and is robbing your car of power. Always make sure that you have the gears meshed properly when you put the pinion back on (not too tight) Bearings also help to make your car go better, and make sure that your bushings are lubricated and clean. The standard motor in the Manta-ray is slightly quicker than the Lemans motor. Start with these and let us know how it goes.

JACCS CIVIC

I have recently bought a Tamiya Jaccs Civic 1/10th radio control Front wheel drive and a Sanwa 2 channel radio. I was wondering if the car is a good one to race and a good one to start off with. Would a Sanwa radio be good enough to race with. I would also like to know if this car is suitable to put options on and where I can race it.

Nicholas

You have made a good choice with the Jaccs Civic and the Sanwa radio. There are many options available for your car (check out past issues of D&T) Also check out the Club and Track directory in this issue on where to Race in Sydney.

TIME TO UPGRADE

I am seriously planning on buying a Traxxas Nitro Stampede or an Associated RC10GT or RC10B2. The only thing that turns me away from gas motors is that they can be very loud and they are harder to clean. I would like to have a 4WD car if possible. I would also like a car that is very strong and can take a hammering! Which car would you recommend for me? Can a tuned muffler be fitted to the Nitro Stampede?

Hugh.

Both the Traxxas and the RC10Gt are excellent choices for entry into gas powered racing and I agree that they are Loud (but not as loud as Dads Lawn mower or Chainsaw) but that is one of the draw cards of Gas racing. They are not too hard to clean all you need to use is some Methylated Spirits a spray bottle and a brush, Always remember to wear good eye protection when using sprays of any kind. As to tuned pipes and servos, yes you can fit a tuned pipe (muffler) to the Stampede and standard servos will work but heavy duty ones are better.

OFF ROAD RALLY CAR

I am thinking of purchasing an electric R/C buggy or truck (Off Road) and I would like to ask a few questions. Is it possible to mount an on road euro touring car or rally car shell to a buggy of the same scale without any major structural changes? What does the amount/No. of turns on a particular motor mean. eg. 12 turn quint and a 15 turn dou-

ble. What's the difference? What engine would you recommend for me as I wish to put a higher power engine in what ever I purchase, so I can do some real hooning! I don't want to spend much but I don't want to compromise on power or torque. Great may be the way! Keep up the good work.

Ricky.

Yes it is possible to mount a Touring car body on to a buggy without changing too much although you will have to use a wide body car. Silicone tubing on your shocks will lower the ride height and shorten the travel. Q2. A 12 turn quint motor has 5 strands of wire all the same length wrapped 12 times around the armature together. A 15 double has 2 strands of the same size wire wrapped 15 times around the armature. Normally a double turn motor will have more torque than a quint while the quint will have more top end. Q3. My suggestion is to learn to drive the car/buggy with the motor that comes with it then progress up to a hotter motor. remember to ask your local hobby shop as to what motor your new car can handle.

OPEL CALIBRA V6 DTM

I am considering buying a 1/10 scale electric amiya Opel Calibra V6 DTM 4WD touring car. Is this car good enough to start R/C racing with and also could you give me a rough price on how much this car will cost with a Radio Controller, Battery and a 15 minute charger.

Luke.

The Tamiya Opel Calibra would have to have to be one of the best looking cars on the market and is an excellent 4wd touring car to start with and the Tamiya manuals are the best. Check out the deals by the hobby shops advertising in this issue to get the best price and when you make an inquiry remember to tell them you seen their ad in D&T.

RC10 GRAPHITE

I am considering whether to buy an RC10B2 or a Losi XX. In your March - April edition, I go the impression, both car were very similar. With cars coming and going, with improved technology, there must be a choice. I find my car behind in technology, but up with others in speed. I would like some help from you in a choice of any 2WD off road cars, which is electric and a real winner.

Andrew.

Both cars are now very similar in price and performance and are both very excellent choices. if your RC10 Graphite is still competitive why not look at keeping it and upgrading your motors, batteries, speed controller or radio. This may help to extend the life of your car.

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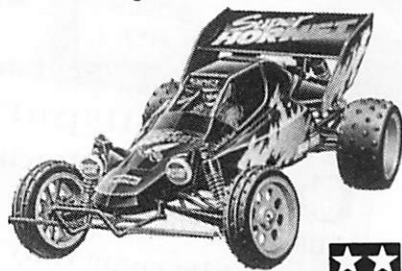


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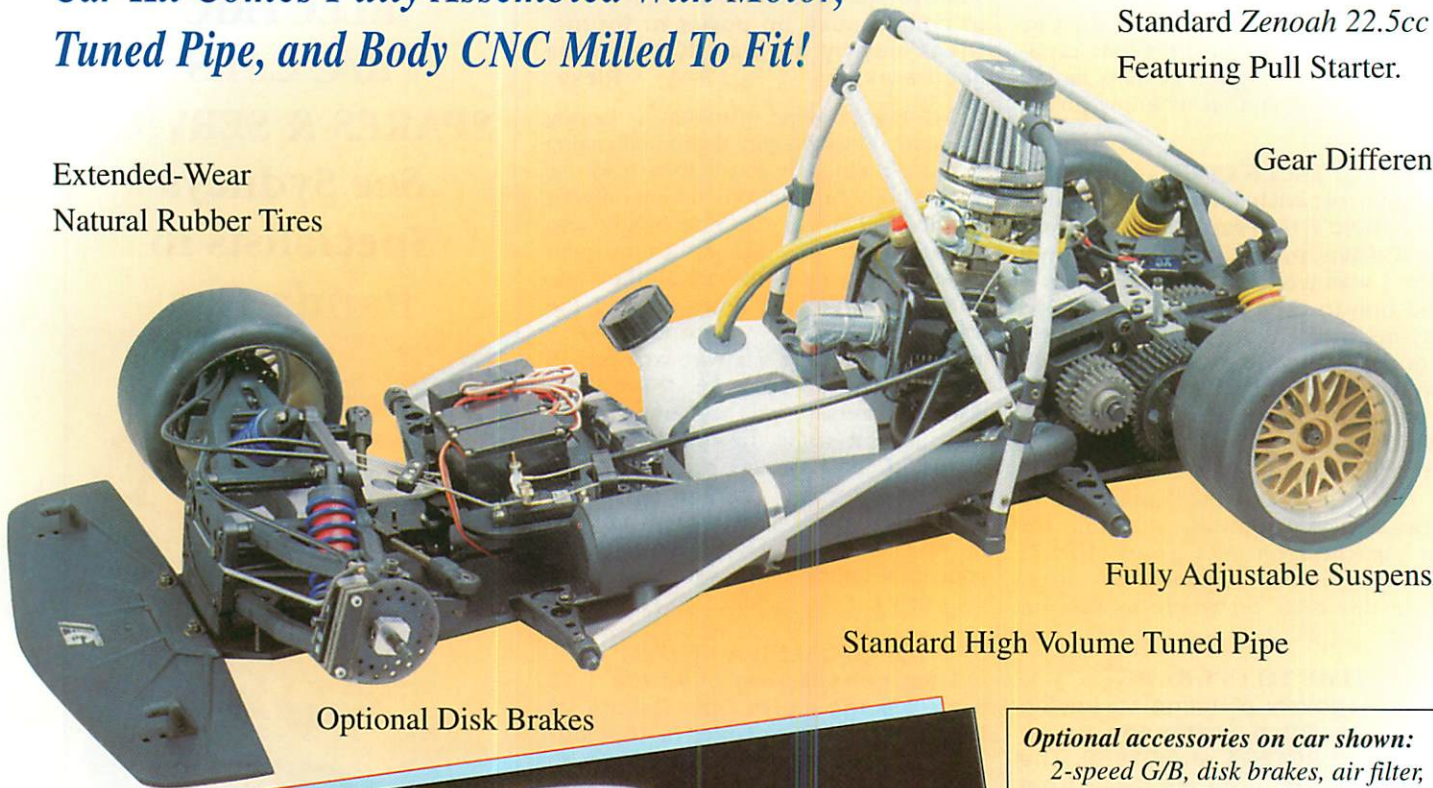
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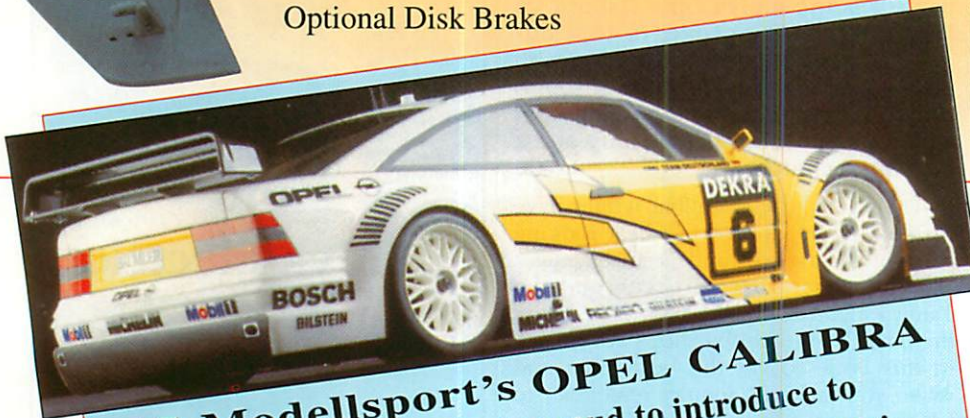


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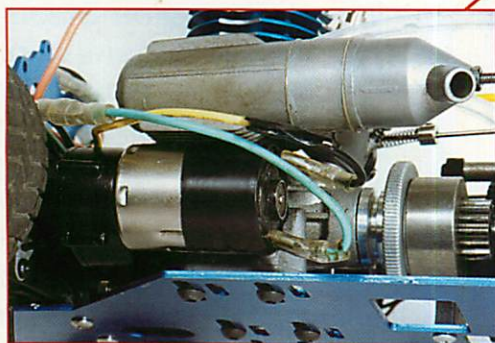
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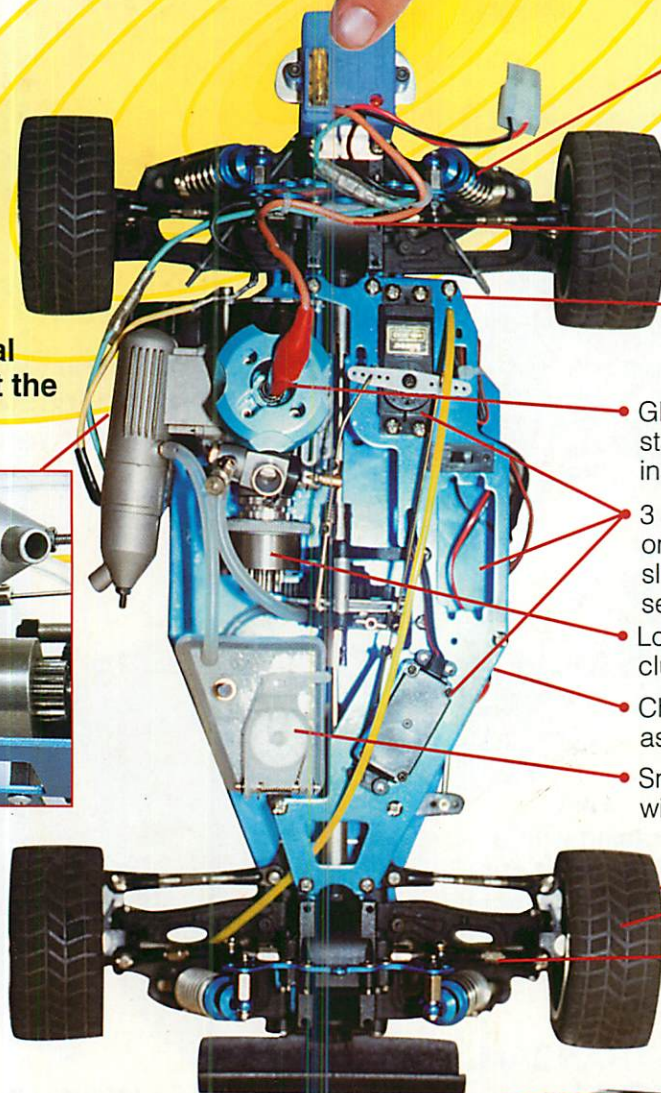
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