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XRAY'S XII

SPECIAL TRACK REPORT: FLORIDA WINTERNATS '09

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BY TERRY ATKINSON

GOING WITH THE FLOW!

Xray XII 1/12th Circuit

When Xray announced the release of a new 1/12th car everyone got very excited. After all, Xray are renowned for their attention to detail and use of exotic materials, along with their excellence in precision when it comes to making such R/C models.

Everyone was expecting something different and revolutionary that would change the face of 1/12th racing and bring some fresh designs into the scene. But this time, Xray seem to have one thing on their mind... winning! And it seems to have worked.

Going with a more 'traditional' approach to their design and sticking with the more well-known 'T-bar' chassis design has certainly worked for Elliot Harper. He has dominated the 1/12th scene this year using the XII to take many wins in both the open/modified and the stock championships.

Along with this, the car's first outing at the World Championships was a success, with Teemu Leino achieving some of the fastest laps when the conditions suited the selected tyres and making the A-Final on its debut.

So, have Xray just 'Gone with the flow' or is there more to the XII than at first seems?

X WHAT?

Just to clear it up, a lot of people are getting confused about the name of this car. Well it's simple really, just look at roman numerals and check out the number 12. XII, pronounced "Ex Eye Eye". That's it, simply called '12' in roman numerals. Cool hey?

PRESENTATION

Xray's presentation is always second to none. They want their models to stand out and true to form the XII lives up to the reputation. With a beautifully decorated box and excellently illustrated instruction manual,

Nosram's electricals, Jaco foams and Savox servo fitted, ready for the shell

long with a full set-up guide with all aspects of 1/12th set-up covered.

Upon opening the box I was amazed at how little there actually was to a /12th kit. These cars are one of the simplest cars to maintain. The costs are ow and the excitement is high! Once I had looked through all the bags I was little disappointed not to have any of the nice orange anodised parts that e had all been teased with on the Worlds cars we had seen pictures of. But f it goes fast and handles well, then I suppose it doesn't matter what colour he components are really.

READY TO RUMBLE

First things first, I'm relatively new to 1/12th. OK, I've done a bit of 1/10th on car and lots of years of F1's, the proper 2WD ones before they died a WD death. So I'm more used to building cars with lots of bits and bobs, like ourers and buggies, so to see a tiny box with so little in it was a bit of a shock t first. Once I got over it, I looked through the instruction manual just to miliarise myself with the build.

First up is the chassis preparation. Some people say that you don't need to mooth all the edges of the carbon if you run on carpet, but some people do. o to play it safe, I did it anyway. This is a time consuming and tedious part of the build, but once done it is very satisfying to see the finish that your hard work has produced.

Make sure too that the battery slots are chamfered properly as this kit doesn't have plastic cell holders like some cars. You don't want the cells to protrude below the chassis and rub on the carpet or else your cell tape wont last very long and your cells will part company with the car very quickly. Make sure that the tape slots are rounded off nicely too or the chassis will cut through the tape. Although the chassis doesn't come with cell inserts, it does have some little 'T' shaped adjusters to position the cells in a forward or rearward position. They just simply attach to the chassis via one screw and can be changed very quickly.

There are two versions of the chassis. The kit comes with a 2 mm thick version, but there is a 2.5 mm thick version coming out too. The kit chassis is ideal for club tracks where the grip is low and the 2.5 mm version is better suited for higher grip tracks like you find at national events.

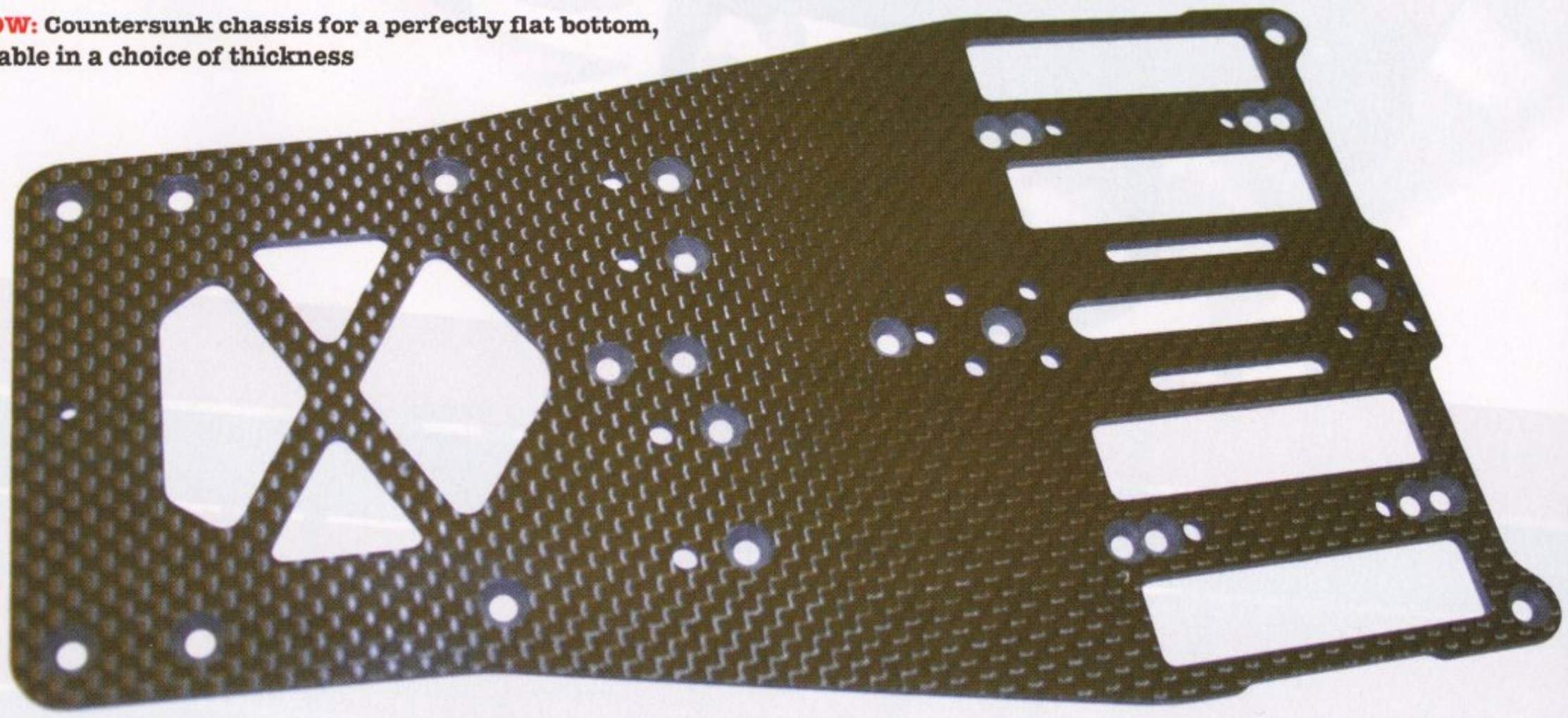
SUSPENSION – FRONT

The front suspension is very similar to most types of suspension you'll find on other 1/12th cars. The lower composite arms are fixed and the upper

Typical Xray, beautiful box art, manual, components and packaging

The faultless Nosram Matrix Evo Stock Spec for brushed and brushless control

BELOW: Countersunk chassis for a perfectly flat bottom, available in a choice of thickness



BELOW: Front suspension assembly with extreme range of castor geometry

are the ones that provide the movement. These are fixed to an arm mount, and through this goes the hinge pin which holds the upper suspension arm in place. The pin is held in place by two grub screws, allowing the arm to provide the movement itself, these fitted perfectly and both suspension arms dropped freely without any fettling at all. The camber is adjustable by means of a spring steel turnbuckle, linking the arm to the pivot ball. Through the pivot ball goes the kingpin, this makes up part of the steering assembly and suspension action along with the steering block, the spring and the numerous washers that alter the pre-load of the spring. Ride height can be altered by inserting or removing shims under the whole suspension assembly. The front axle is made of their excellent spring steel, and fixes through the steering block to be held in place by an M3 lock nut. The spring supplied is the softest that Xray produce for this car.

The static caster of the front suspension is altered by inserting the supplied clips along the hinge pin either in front or behind the suspension arm, leaning the king ping forwards or backwards. This just alters the amount of 'static caster' which helps tune the car for entering and exiting corners. The front suspension also has 'reactive caster' adjusted by inserting oval inserts into the suspension mounts/bulkheads. Reactive caster is there to adjust the amount of caster angle as the car enters a corner and the suspension compresses. Increasing it will make the car more responsive or aggressive, whilst reducing it will make the car more forgiving and smoother to drive. Shared between the inserts and the clips there is a total caster adjustment from 1 degree all the way up to 14.5 degrees!

Who'd have thought there could be so much adjustment in such a little assembly?!

Steering is direct from the servo via turnbuckles and a servo saver. There is a servo saver supplied in the kit and it has small inserts to suit most popular types of servo. We used a 1/12th specific Savox SH-1350 digital servo for maximum speed and resolution, so it was fitted with the Futaba designated horn insert.

SUSPENSION – REAR

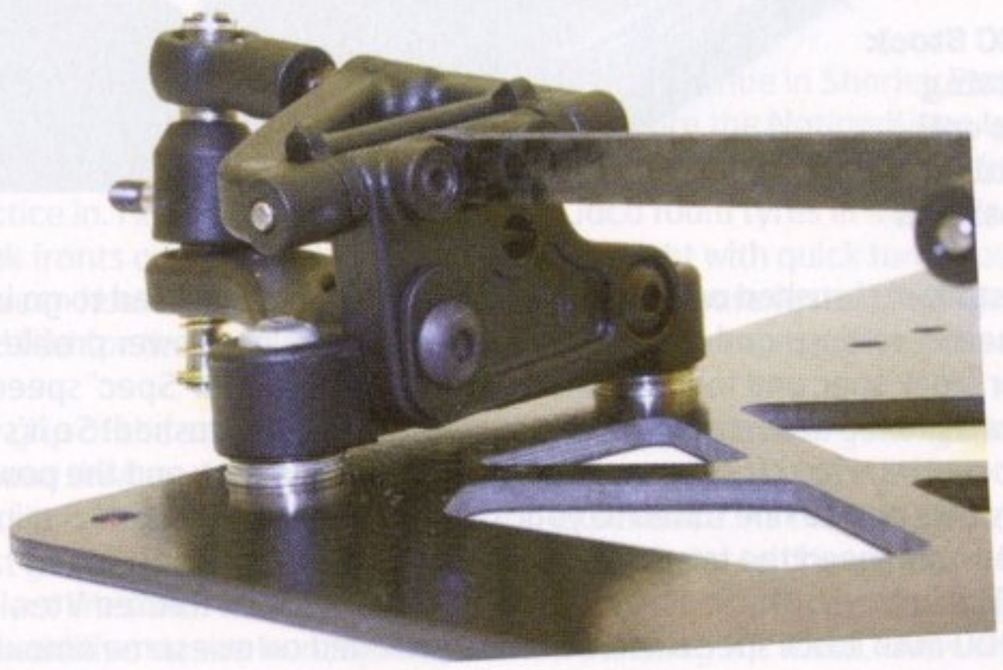
Rear suspension is all about T-bars. No, not the fancy places you get in town centres where you can go for a nice warm drink, but a T-shaped piece of fibreglass that controls the amount of flex and twisting movement of the rear pod. The kit version is a wide version and there is a narrow version available, allowing more twist.

The movement of the T-bar is provided by the pivot balls mounted to the T-bar and can be controlled in two ways. There is the double pivot ball installation, which is the expert option and gives you total control over the tweak on the chassis. There is also the single pivot ball option that fixes the front pivot ball and is aimed more at the novice way of racing, making for a simpler chassis set-up. Up top on the rear pod is the damper unit and roll movement is controlled by applying damper grease to the friction plates. The centre carbon plate is fixed to the motor pod, and the two plastic discs are fixed to an alloy post, which is attached to the main chassis, through the rear pivot ball. Thicker grease will reduce the amount of roll on the rear end and will make the car run flatter and more predictable. If you put grease on that is way too thick it will make it loose and harder to control. Obviously by putting lighter grease on it will provide more roll, but make it too light and you may notice the car lifting the front inside wheel in corners.

In the kit it says to put diff grease on the damper, at first I thought this would be a little light, but once running on track it seamed fine. Included in the kit is a bottle of 35wt shock oil for the rear shock, which is an excellent little unit that goes together very well. This is the usual design with a two hole piston, an internal bladder and a threaded alloy outer body for fine tuning of the pre-load on the rear pod. The pod has plenty of room for brushless motors and has a large gap on the 'wire end' for easy installation and free movement. I've seen lots of ways of directing the wires to the motor, but I eventually decided to keep it simple, going under the shock and over the front of the rear pod, which provided sufficient free movement and no problems with body clearance. Bodyshells hug the chassis and electrics very closely on a 1/12th car so it's always a consideration.

DRIVE

The rear drive axle is a carbon unit, which is fixed into the motor pod via bearings and plastic ride height adjusters, and then uses an alloy clamp type hub to hold it all in place. Make sure that you don't push the clamp on too tight as the bearings will bind and add drag to the rear end. There are five eccentric rear ride height adjusters included in the kit with differing amounts of offset. The kit also has three different thickness



Close-up of the suspension, note the eccentric geometry adjustment inserts

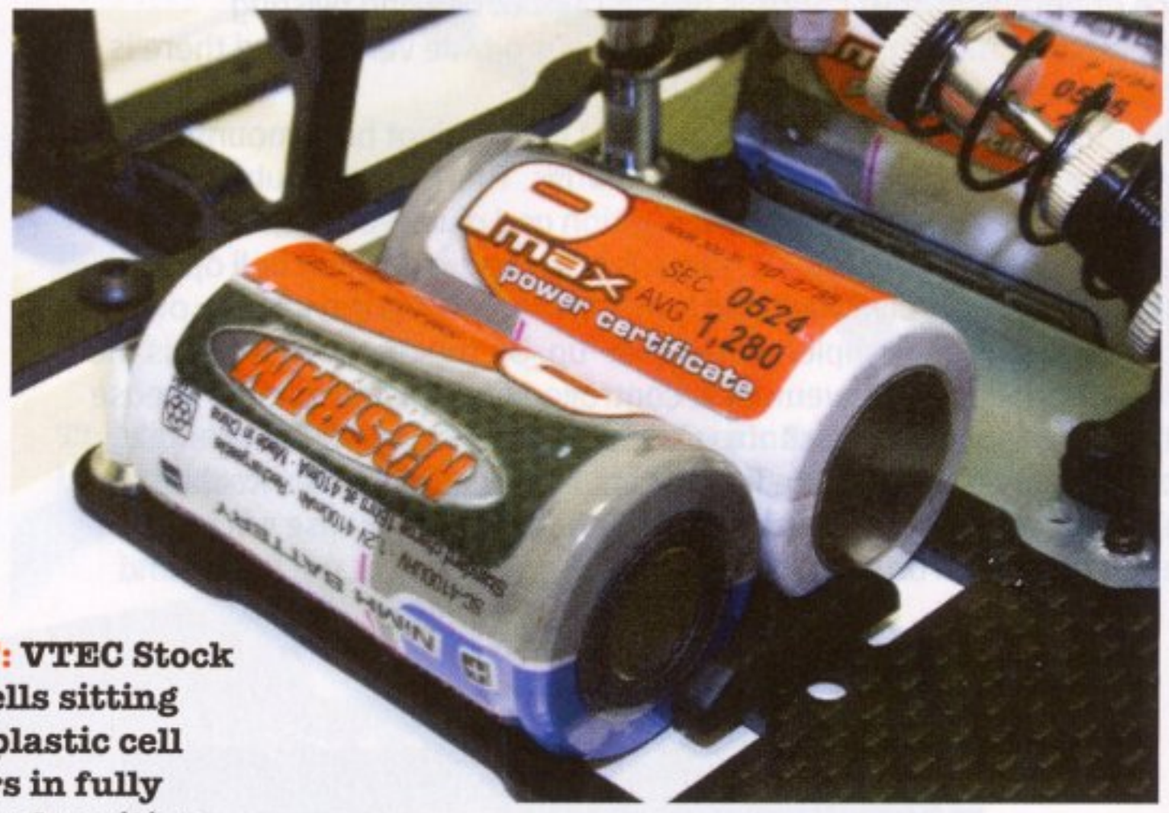
Rear pod and damper post shows space for wiring brushless motors

Complete front end with carbon brace fitted

Rear damper plate components, the grease weight depicts handling characteristics

Stripped shock reveals its component parts

Completed diff unit, hub and thrust race



RIGHT: VTEC Stock Spec cells sitting in the plastic cell locators in fully rearward position

wheel spacers to tune the rear track width. On the axle you have the differential, which includes twelve carbide diff balls, which along with the tiny thrust-race and supplied diff grease the diff proved to be very smooth. Maintaining the diff is one of the most important jobs to do on cars such as this. If the diff is not running smooth or doing its job properly then the car will not handle or drive like it should. The amount of 'slip' on the diff is an important tuning set-up so you need it to slip just a tiny amount when checked by hand, giving enough slippage not to spin the wheels as you nail the throttle, but not too loose that you will end up with no drive out of the turns as the diff balls will soon turn square! The kit is supplied with a 64dp 96t spur gear, which is a good starting point for most tracks.

ELECTRICAL POWER

Mirage kindly included the electrics for this kit review and they are looking to concentrate on the stock racing class, which is exactly what I was going to run.

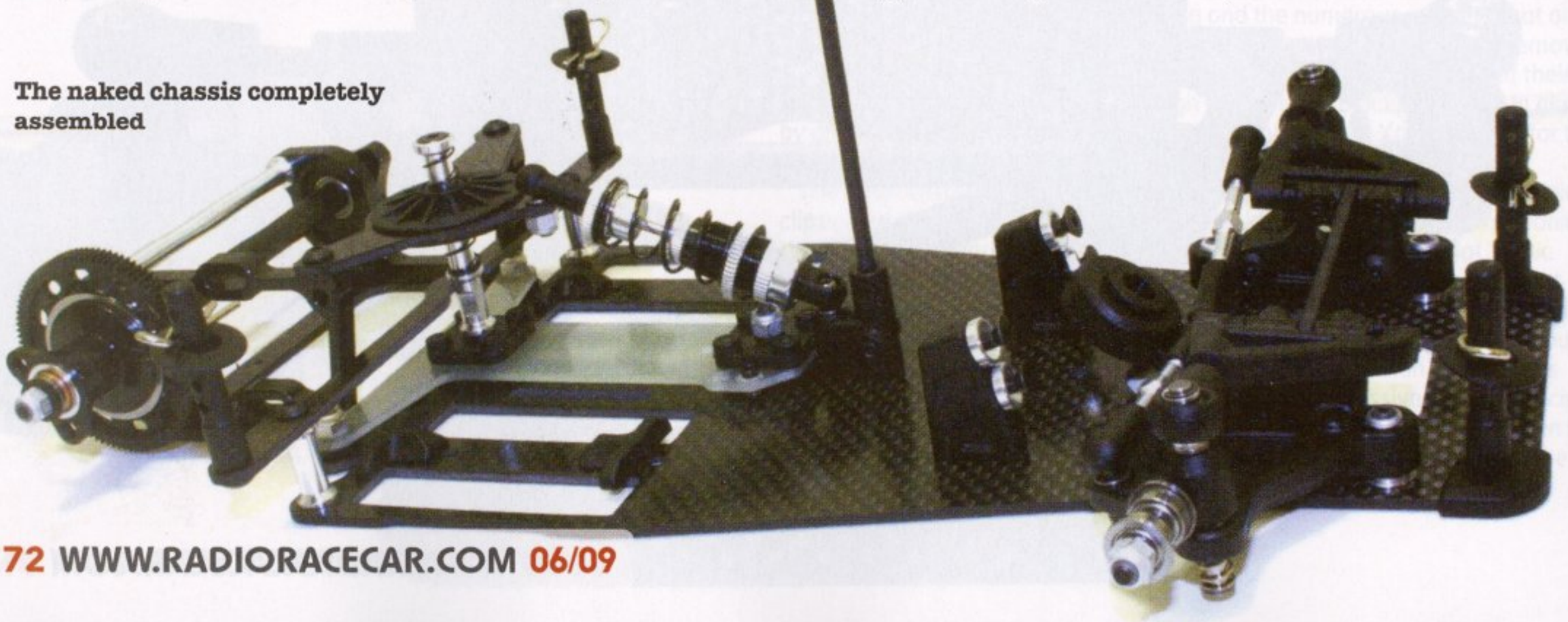
A new release for this review came in the form of the Nosram 'Spec Racing' Matrix Evolution. This looks very much like any other Matrix Evo on the market, but it is aimed at stock racing and provides more power for the stock spec motors, so should get you up to speed faster than those that just use 'normal' speedos. It has a very clever motor recognition system that automatically detects whether you have installed a brushed or a brushless motor, so you don't need to go into the speedo settings and altering the set-up. It has eight power profiles, four for stock spec and four modified. Yes I know that it's a 'Spec' speedo, but it will handle down to 3.5t brushless motors and 5t brushed! So it's ideal no matter what class you are racing in. Set-up is easy and the power profiles can be fine tuned to your style of driving in less than 5 min, and you don't need the transmitter switched on to do it either.

The batteries for this test were the Nosram P-Max treated Vtec 4100 mAh stock spec NiMH cells and provided an awesome amount of punch with their higher voltage, specifically aimed at stock racing and performed faultlessly on the test night. Motor wise there was only one choice to complement all the other lovely red Nosram equipment; the Storm Evolution 10.5t brushless, which is the equivalent to a 19t brushed motor as used in the 1/12th stock championship. It has a 12.3 mm sintered rotor that is black in colour along with the shaft which along with the blue ring on the can makes it easy to check whilst it is in the car without having to take the motor out.

BODYSHELL

The bodyshell we were to use was the new Moorespeed 908 as used by the Mirage Team leader who ran one with great success all night and it certainly looked good on track. This shell is a closed cockpit shell so is only good for using in club events. If you were to run at National level you

The naked chassis completely assembled



On track, keeping the tight lines. The mean and sleek Moorespeed 908 bodyshell keeps the chassis planted to the track

would probably look at getting a Hot Bodies Reynard. I decided to paint it in colours that were easy to see on track so went with a simple white front end going to a bright red rear.

RUN TIME

For the test I ran the car at a club night at the CARS venue in Sharley Park leisure centre, Chesterfield. This was a weekend before the National was to be held at the same location, so there were a few quick people there getting some practice in. I kitted the XII out with some Jaco foam tyres in the form of double pink fronts and yellow rears. It was a busy night with quick turn around times between heats but I got enough run time to compare fastest laps and get a good feel for the car, which was excellent from the moment it hit the track!

With low grip at the start of the meeting it was more a case of getting used to the car and driving styles, but it quickly came to me and I began to turn some good laps in and get some close racing experience. As the grip came up the car just got better and better, and actually got easier to drive, making it easy to select lines with confidence. The only change I made was adjusting the amount of additive on the front tyres. I started off using 1/2 width, and went on to use 3/4 width by the end of the night, giving me a good amount of turn in, but not too much.

The club didn't run 'finals' so all I could do was compare fastest laps and how the car felt during the racing. Geared on a 34t pinion with the kit 96t spur the 10.5t motor seemed one of the faster stock motors in a straight line. I was losing speed to the modified drivers in our mixed heat, but the XII made up for that in the turns and was more than capable of keeping up with the fastest in our group over a 'clean' lap. By the end of the night I was confidently running fast, regularly lapping other cars and in our last run I managed to finish 4th! I can also vouch for the XII's strength, after getting a bit 'over confident' through the chicane and hitting the track marker so hard, it actually broke the track marker, but the XII just dropped back onto the track without a single fault.

OVERALL

For my first taste of 1/12th circuit racing I couldn't have asked for a better car or electrical equipment, and I think I have found a new favourite class. It was just like old times, as the thrills and challenges of 2WD circuit racing came flooding back. The XII was taken straight out the pit bag with the kit set-up and it performed brilliantly. All the Nosram equipment was faultless and ran without so much as a glitch. Just to compare, my XII was running with a 'stock class' motor, and Mirage team leader Ben Cosgrove was running modified and my fastest lap was only 1.1 sec slower on a fast flowing track more suited to the faster motors. Which I don't think is too bad considering I've never run 1/12th before!

Xray have taken an existing well tried and tested design layout, added their own flair and made this car a winner. It's difficult to write reviews on kits that go together with such little effort, but this is one of those kits. Nothing needed persuading to fit into another part and no parts needed filing etc. to move freely. It just all fitted perfectly. Although this car has not blown people away with its revolutionary design features, Xray take pride in the materials and dimensional accuracy of all the components used in the kit and the quality is second to none. **RRCi**

QUICK SPEC

Class: 2WD 1/12th Circuit
Type: Self-assembly Chassis Kit
Manufacturer: Xray
Price: £175.99 RRP

REQUIRED AND RECOMMENDED

ESC: Nosram Matrix Stock Spec
Radio: Futaba 3VCS
Servo: Savox SH-1350
Motor: Nosram 10.5t Storm
Cells: Nosram VTEC 4100 Stock Spec
Charger: Orion Advantage
Wheels and Tyres:
Jaco Prism Double Pink front
Jaco Prism Yellow rears

DISLIKES

No orange anodising as per prototypes

LIKES

Out of the box performance
Simplicity
Ease of maintenance
Handling

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