

RRCi KIT REVIEW XRAY 808E RALLYCROSS BUGGY KIT

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SSCCHHUUSSHH...

1/8th Rallycross is one of the most popular off road racing sections. It's certainly the oldest. But with the ongoing developments into noise pollution and emission tests the days of the Nitro fuel powered R/C engine could be limited! If you have been looking into this area of the R/C market then you may have noticed that virtually every manufacturer of 1/8th scale buggies have made an alternative 'electric' version of their new or most recent models.

In the States electric 1/8th is huge and runs alongside their national series with great success. However, here in the UK there is a more pensive approach towards the electric powered cousins of Nitro buggies and the die-hard fuel junkies are not ready to share their series with any 'non-fuelled' cars on the national scene. Most Rallycross clubs will let you race electric in their club series, so there are places to run them if you want to. But if you want to make a big impression on the national scene, then you will have to bide your time, and wait for the inevitable to happen.

XRAY'S-VISION?

The Xray 808 has been around for a while now in one form or another. So it was only a matter of time before Xray saw the way the market was going and released an electric version of this excellent model. Is it vision or a perfectly timed move into an ever-growing market? Well, rather than just offering a 'conversion' for their existing model Xray have gone down

a different road and redesigned the alloy chassis to accommodate the electric power plant and change the weight distribution of the whole car.

Xray have been known for their perfectionism for a long time now and the 808E doesn't break that tradition. It comes in a handy sized box which is wrapped in a gorgeous cardboard sleeve with a fantastic bit of artwork on there, which would really catch your eye over a shop counter and instantly make you want one without even seeing the car itself.

Inside the box are the usual quality Xray components. The kit itself (of course), diff oils, shock oils and a host of paperwork including the full colour manual, the ownership certificate and an extra supplement detailing the changes that occur during the build of the 'E' compared to the 808 'Nitro' version. As ever it's all top quality components and perfectly bagged and packaged.

PLEASURE OR PAIN?

First up and I'm going to get those niggly parts of the build out of the way. My pet hates are building shocks and differentials. So I look through the manual and start building these parts first. Although it's a pain building these parts, it does give you a sense of pleasure once they are done and they work properly. As it happens, the diff's are the first part of the build anyway! The diff's have large steel main gears, bevel gears for the front and rear diff's and a more normal style spur gear for the centre diff.

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QUICK SPEC

Manufacturer Xray
Type Rallycross Self-Assembly Kit
Price £399.99 RRP
 (excluding electrics and tyres)
www.rcdisco.com

Scale 1/8th
Power 4WD Brushless Electric
Length 490 mm
Width 308 mm
All Up Running Weight 3409 g
Wheelbase 319-330 mm

IT'S OH SO QUIET!

These are screwed to a composite diff gear case that contains two steel bevel gears paired up with four satellite gears for the usual strength and reliability. All three diff's have single rubber 'O' ring seals on the inside of the cases along with a large shim which covers, and seals the out-drive once coated with the supplied grease to avoid any leakage of the diff oils. The supplied diff oils are 20000cst in the front diff and 10000 in the centre and rear diff's. I filled the diff's as recommended in the manual, which tell you to fill the diff's until the satellite gears are completely covered by the oil. A gasket finally seals the diff's once everything is put together and completed. On the Nitro 808 the diff bearings are 8x14x4 items and are then sealed with a dust/dirt cover hub, but on the electric version Xray supply you with some 8x16x4 bearings. These will be a little more reliable than the smaller previous bearings of the Nitro version, but they will not have the protection of the covers to prevent dust intrusion.

The pinion gear on the 808E's gearboxes is coupled directly to the CVD of the centre propshafts at both ends and uses the standard method of using a grub screw to retain the drive pin. The pin is then retained by the new larger bearings that will prevent the pin from exiting the CVD should the grub come loose. The pinion gear then has a bearing collar fitted, which is sandwiched by the two bearings, and the whole assembly is then placed inside one half of the composite gearboxes. The pinion gears and bearings are then held in place by three 5 mm screws to stop the pinion gear moving around. Don't over tighten the screws though as it is possible to pinch the bearings and cause them to bind, causing resistance and creating heat build up. The diff is then put into place, using shims to correctly align the gear for perfect meshing. If this is not done properly it will cause damage to the gears so spend a bit of time to making sure it is done properly.

I did find it difficult to get this just right, as you can't actually see the meshing of the gears inside the gearboxes. Then just combine with the second half of the gearbox case and you have two identical looking

gearboxes for the front and rear. The only way to tell them apart is the fact that the rear propshaft is shorter than the front.

PLEASURE AND PAIN... PART 2

The next part of 'my' build was the shocks. These huge big bore items are now the standard for all 1/8th Rallycross cars nowadays. They help soak up the bumps associated with the rough terrain in off road racing. New items incorporated into the shocks are the shock boots and the rubber 'O' ring on the pre-load collar. The lower cap has a groove on the outer edge for the boots to locate into to stop them falling down during races. Inside the lower cap Xray have done away with a felt washer that used to be on the Nitro models. So it now has a twin 'O' ring seal separated by a shim. Xray obviously know that this is enough to keep the oil from the shocks inside.

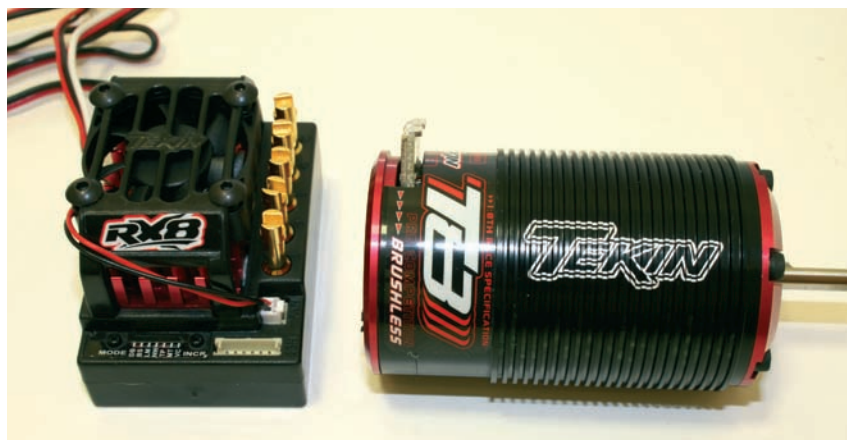
The shocks come with a choice of pistons, 1.1 mm 10-hole, 1.2 mm 8-hole and 1.3 mm 8-hole so you can tune your shocks to many different tracks and surfaces. The pistons are fixed to the shock shafts with a 2.5 mm lock nut. Try not to over tighten the nut or else it will pinch the plastic and the shocks won't work smoothly. The kit comes supplied with 600cst and 500cst weight oils with the lighter oil going in the rear. The shock top has a bleed hole for perfect bleeding every time. The cap has a rubber bladder in place so it's possible to achieve a greater range of rebound and the instruction manual gives a detailed description and tips on how to achieve various amounts of rebound on the shocks. Once they're completed they give a satisfying feel and are mega-smooth throughout the whole range of travel.

...AND RELAX

So with those horrid parts of the build out of the way it's time to get on with the rest of the build. With the gearboxes fully constructed we now have to attach all of the suspension parts to them and get this car looking

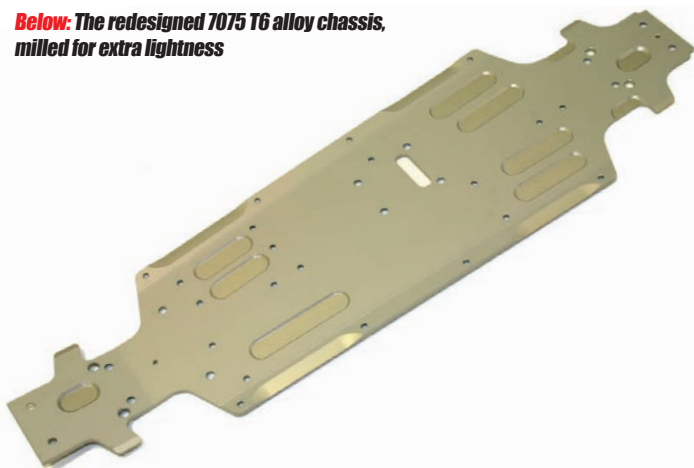


Above: The Tekin RX8 speed control comes with a huge cooling fan that needs fitting before use



Above: The RX8 T8 speedo – motor combo ready for installation

Below: The redesigned 7075 T6 alloy chassis, milled for extra lightness



Above: Shock internals on display

more like a 1/8th buggy. The gearboxes have the 4 mm shock towers mounted on top of them, the shock towers have six adjustment holes for shock position and four holes on the rear. There are a further three holes on the front for roll-centre adjustment so there's plenty of scope for perfectly tuning your 808E to any track condition.

Once assembled the gearboxes create a solid unit with the suspension arms and the holders attached to them down below. This is where a little bit of a moan comes from me. The suspension parts are fixed in place via long screws which hold the suspension holders in place. The wishbones are then fixed in place with a long pivot screw which goes through the suspension holders and through the wishbones and then tightened into place with a lock nut. All of this 'clamps' the gearbox halves, so when it comes to performing any form of maintenance on the differentials or gearbox internals, you have to strip all of the suspension arm components down just to access the gearbox. I know this is based on a previous model, but a little bit of thought and it could be possible to strip the gearboxes down without all the hassle of removing suspension parts. At the end of the rear wishbones you have a single piece upright and at the front you have a two-piece 'C-hub and knuckle' arrangement on the steering. These are all held in place with a pivot screw fixed through the wishbones. Take care not to over tighten the lock nut on the pivot screw and make sure that all the suspension components move freely and drop under their own weight once the units are complete.

All the upper camber links are the unique Hudy Spring Steel type and have that distinctive brassy brown colour to them causing you to instantly recognise that this car is an Xray. All the links were built up as per the manual measurements and once fitted to the rest of the car were absolutely spot on in terms of camber measurements... this doesn't happen on many cars that you build. Usually there are some 'post-build' adjustments needed once everything is complete. Also making up part of the suspension are the anti-roll bars, 2.6 mm rear and 2.4 mm front. These are identified by the white stripe markings that are printed onto them, making it easy to just look into your pit box and see straight away which one you're picking up. The driveshafts are again made from Spring Steel for extra strength and durability.

The CVD joints are constructed without using any grub screws as they are captured CVD's. Basically the large bearing holds the drive pin in place, so there is no need for any grub screws that may come loose



Above: One of the three diff's stripped out for all to see

during a meeting and ruining your day. The wheel hex mounts onto the axle with the help of a 3 mm drive pin and an M5 grub screw. Make sure that you use plenty of thread lock on this screw or else you may have a missing wheel during your races. The final part of the gearbox structure is the rear wing mount. This mounts onto the rear gearbox and through the rear shock mount, creating a mega strong fixture. The top part of the wing mount has two adjustable plates with plastic cross struts and is adjustable for four different positions.

CONVERSION TIME

The only major change to the 808 is the chassis and this is the point in the instructions where you move away from the Nitro manual and start referring to the supplement sheet for the electric additions. This has been redesigned to accommodate the conversion to an electric power plant and LiPo batteries. It has a bit of a strange look to it as the central gearbox is mounted off to the right-hand side just like its Nitro brother. This is to get everything as close to centreline as possible, making it

a very well balanced chassis. The chassis is 3 mm 7075 T6 aluminium and is milled down in a number of places to make the chassis as light as possible while still retaining the strength. At this point in the build we start mounting things on the main chassis. The rear gearbox bolts straight onto the chassis and is supported by a large plastic chassis/gearbox brace.

The front gearbox incorporates the front bumper when it is bolted onto the chassis along with a short chassis/gearbox brace. Up next is the servo saver, which is mounted directly to the alloy chassis and then supported on top by a carbon fibre brace that fixes to the gearbox. The arms are plastic mouldings with an alloy centre adjustment sleeve. The adjustment collar has a rubber 'O' ring mounted inside to prevent the tension of the servo saver loosening off due to vibration. The steering plate is carbon fibre and has two ackerman adjustment holes. Once the servo saver was complete and mounted onto the chassis it amazed me how close the steering plate is to the gearbox. There is only about 1 mm (if that!) between the carbon steering arm and the casing. If this car has a heavy nose first landing then I can see those components coming into contact with each other and possibly causing a bit of damage to the steering parts.

MOUNTING PERFECTION

The motor mount on the 808E is a work of genius in its simplicity. It creates part of the central gearbox/diff housing which supports the centre diff. These parts have been redesigned to accommodate the 550-size motors. The mount is basically a simple slide action adjustment. You have a rectangular motor plate with a couple of ridges that slot into grooves in the mount. Two screws fit through the top of the mount and screw into the motor plate. Then you simply slide the motor plate across to get the correct gear mesh then you just tighten the two screws up and you're done. When you tighten the screws there is no movement in the meshing at all! This is great as not many designs of motor mounts keep the mesh as you tighten the screws and you have to guess where the mount is going to move to once the screws are tightened... not on this car.



Above: Carbon fibre is used for the shock towers as well as the servo and radio plates

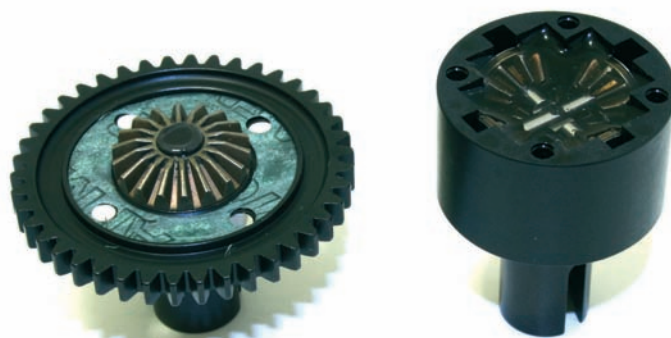
Below: Hudy Spring Steel is used throughout the 808E



Above: Roll bars are supplied and marked for easy recognition

The chassis has a large battery mounting plate mounted down the left-hand side that stretches the whole length of the chassis. It is designed to accommodate 4S LiPo cells and they are held in place with plastic 'L' plates and Velcro straps, then it mounts the brushless speed control onto the back of the plate. The wires from the speed control then feed over the rear propshaft to the brushless motor. The servo mount has also been redesigned and is on its own up front with the radio tray mounted to it via alloy posts. The kit comes with various different mounting plates for different makes of servo so whatever servo you have to put into the 808E you will have the correct mounting for it.

The radio box is mounted just behind the servo and is fairly large so should accommodate any receiver on the market. The box is sealed and looks pretty waterproof when complete. However, once everything was put onto the chassis it became apparent that the motor we have has a longer armature shaft than normal as the shaft rubs against the radio box. Xray have noticed the problem and have now come up with a motor shim, which moves motors with longer shafts rearwards and stops them from rubbing against the radio box.

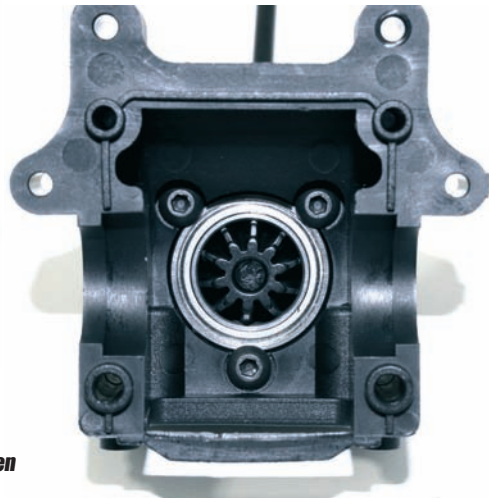


Above: Diff's filled to the required level, just fill so that it's just over the gears

Below: All three diff's complete and ready to go



Above: The diff pinion bearings are a new size with a spacing collar



Above: Pinion gear bearings in place

Left: Use the holes in the pinion gear to tighten the grub screw, it's a bit more accurate

Right: Three screws hold the pinion in place, be sure not to over tighten

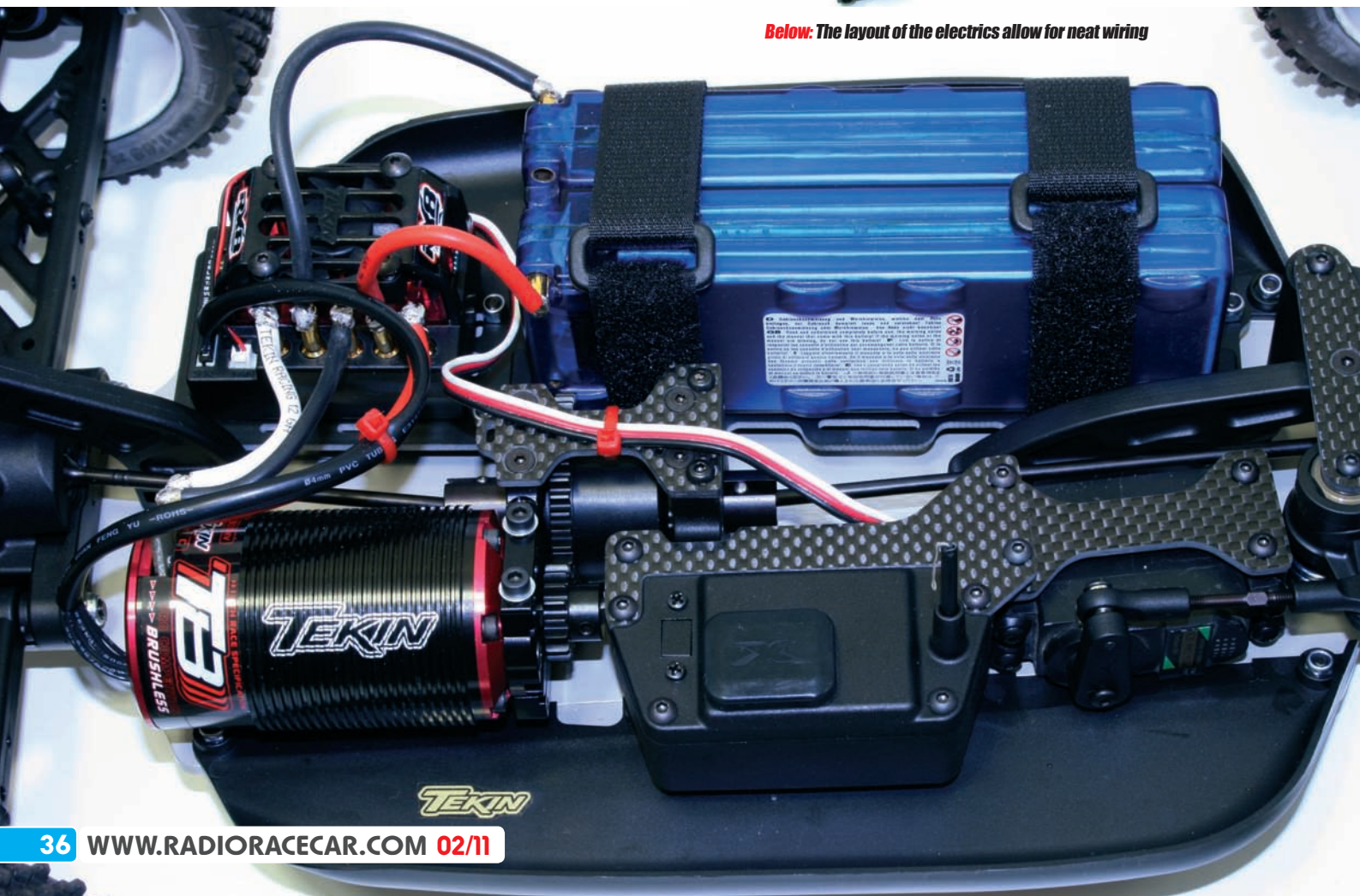
"The motor mount on the 808E is a work of genius in its simplicity. It creates part of the central gearbox/diff housing which supports the centre diff. These parts have been redesigned to accommodate the 550-size motors"



Above: The driveshaft CVD pins are captured by the bearings, so no need for grub screws

Right: Front and rear gearboxes with the shock towers in place

Below: The layout of the electrics allow for neat wiring





Above: The front suspension brace looks like plastic but contains a steel inner brace for strength

Right: Rear gearbox, wing mount and suspension components form a strong assembly



TEKIN POWER!

The very first electronic speed control I ever bought was a Tekin, so to get the chance to work with a new range of Tekin equipment was a bit of a blast from the past. A big thanks goes out to Randy Pike and the Tekin crew for providing the magazine with a full 1/8th combo for me to use in this review.

The RX8 T8 brushless system is designed specifically for large scale off road electric models and has a fairly large speed control which measure in at 1.5 x 2.2 x 1.4 inches, which is not the smallest. It has a 6S LiPo limit and a 6 V BEC. Its set-up parameters are huge with set-up for drag brake, brake strength, current limiter, neutral width, seven throttle profiles, motor type and finally the most important on a model using twin 2S LiPo is voltage cut off, giving you seven different profiles for this parameter.

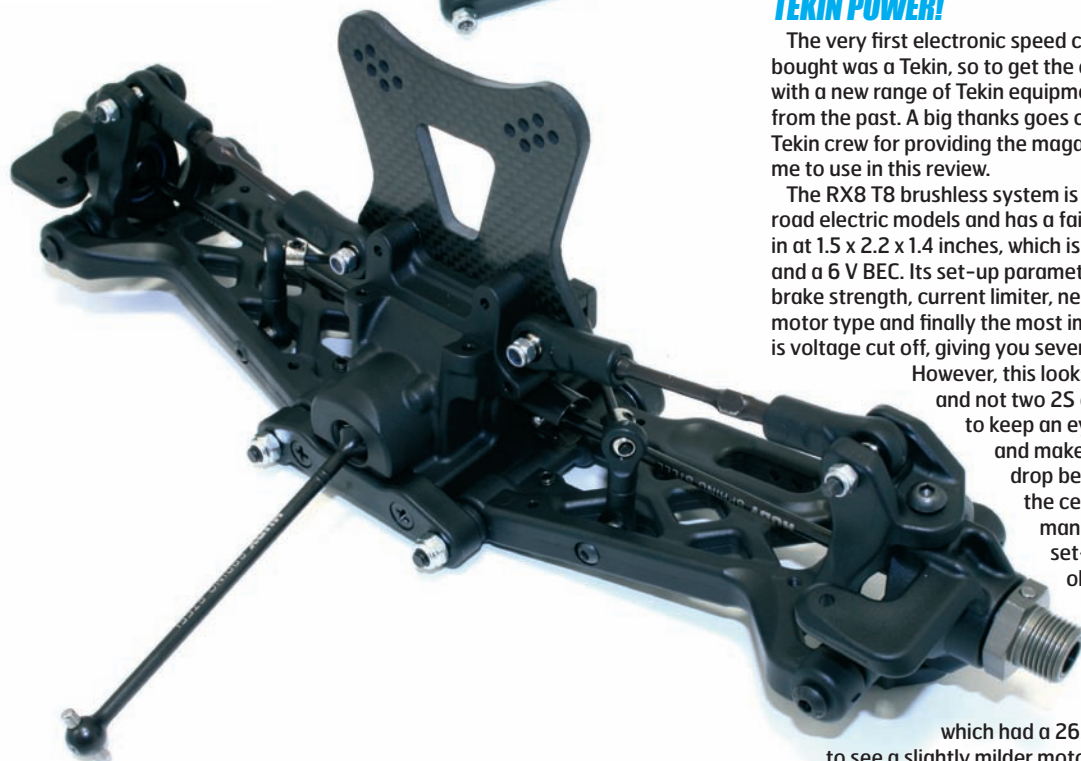
However, this looks like it takes the voltage as a 4S brick and not two 2S cells. If this is the case then we will have to keep an eye on the voltage of both the LiPo's and make sure that one of the cells doesn't drop below the critical voltage, ruining one of the cells. The RX8 provides you with either manual set-up mode using the one-touch set-up on the speedo itself, or you can obtain a 'Hot Wire' link and software package which allows you to fine-tune the RX8 from your laptop.

Accompanying the RX8 ESC is the 1900 kV T8 motor. After running a brushless 1/8th buggy previously,

which had a 2650 kV motor, I was somewhat relieved

to see a slightly milder motor in this package. 1900 kV should be just about right on 4S as the 2650 kV was a little bit mental and provided a bit too much power. The T8 motor is finished in a nice cool looking black and red can which is finned to provide an element of cooling as these motors can run fairly warm. Backing the RX8 T8 system up with power and steering I ran my trusty KO servo and LRP 5300 40C 2S LiPo's. The kit comes complete with a 17-tooth pinion but Xray now do a full range of pinions for the 808E.

Below: The servo saver sleeve with new 'O'-ring adjustment collar

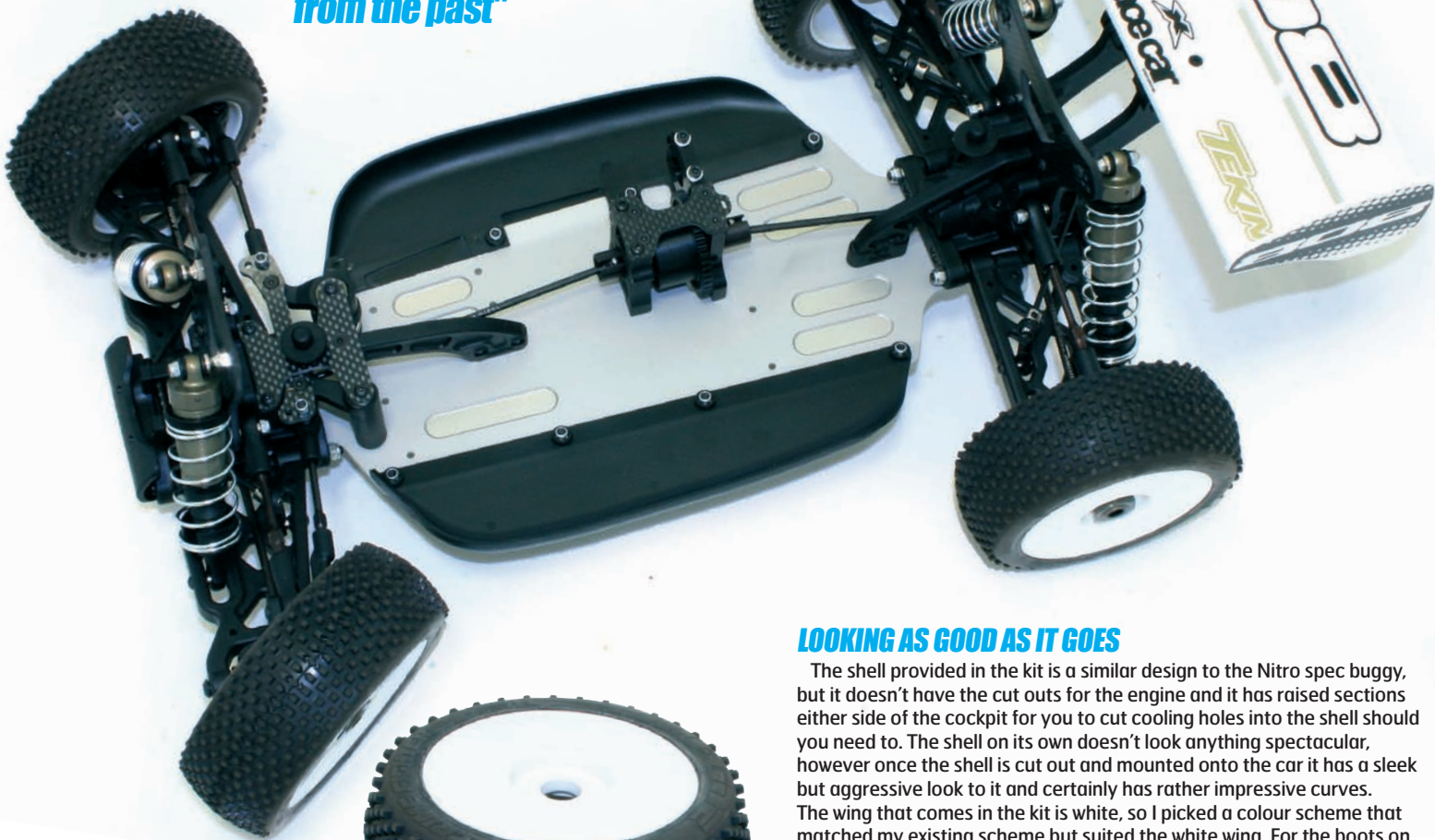


Above: Front gearbox complete and ready for mounting to the chassis

Below: I always arrange the screws into sizes during a build so that I can see instantly which I'm looking for



"The very first electronic speed control I ever bought was a Tekin, so to get the chance to work with a new range of Tekin equipment was a bit of a blast from the past"



Above: Now with wheels and the centre gearbox installed

Right: We used Pro-Line pre-mounted Crime Fighters for the tyres of choice

Below: The servo and radio plates combine together

LOOKING AS GOOD AS IT GOES

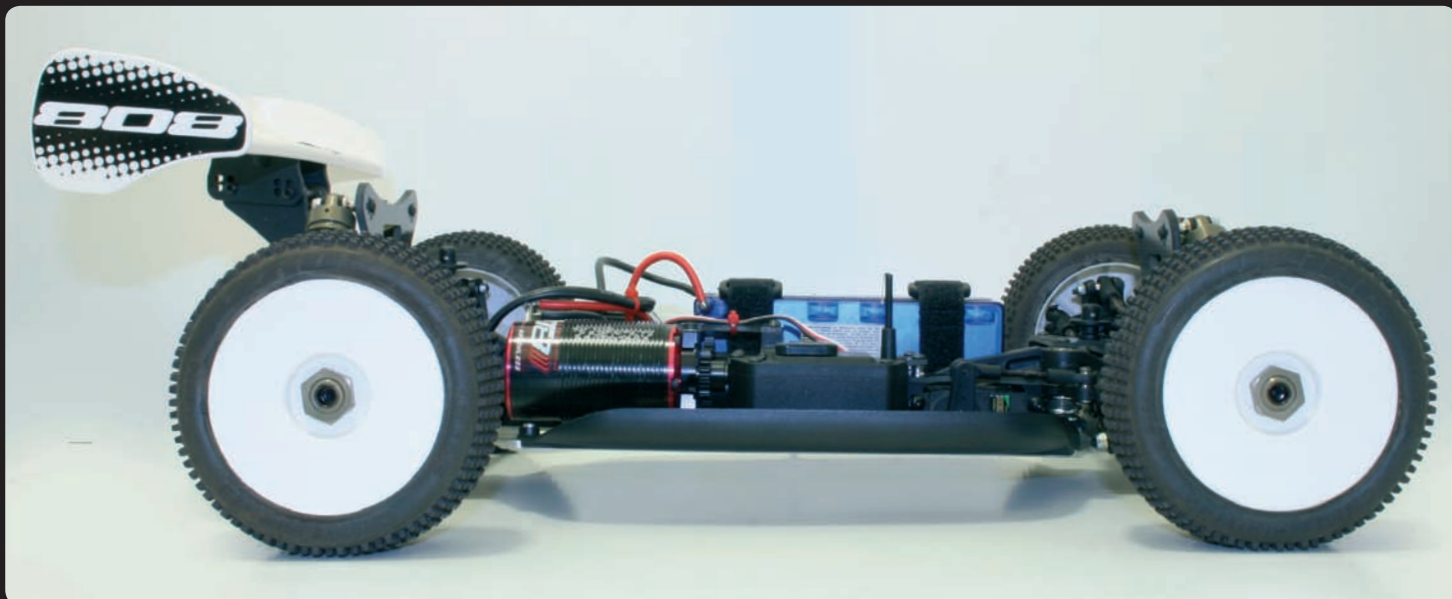
The shell provided in the kit is a similar design to the Nitro spec buggy, but it doesn't have the cut outs for the engine and it has raised sections either side of the cockpit for you to cut cooling holes into the shell should you need to. The shell on its own doesn't look anything spectacular, however once the shell is cut out and mounted onto the car it has a sleek but aggressive look to it and certainly has rather impressive curves. The wing that comes in the kit is white, so I picked a colour scheme that matched my existing scheme but suited the white wing. For the boots on this car I went for Pro-Line Crime Fighters which were pre-glued onto white Pro-Line rims. These should be suitable for most surfaces and have proved themselves as a tyre of choice in the past.

TESTING?, TESTING?...

...Or not, as the case may be. We were due to test the Xray 808E just as the heavy snow hit the UK. We chose one day, but the snow was pretty bad. So we thought, well, we'll just go tomorrow, only to wake up and be greeted by about another 21 inches of snow. So obviously testing was postponed until the weather got better. Sorry. We will bring you an update of how it performs... very soon, so keep an eye on the RRCi website and the magazine for Part II.

But until then here are my final thoughts: Electric Rallycross is growing every day, and there is definitely a market out there as it increases in popularity. Everyone just needs to embrace it and take it seriously. The Nitro boys seem to see it as something that people just buy to mess around with in the park without all the noise, when in reality, they just see the inevitable approaching. Electric Rallycross will take over as the main 1/8th scale off road racing class eventually. Maybe not this year, maybe not next year, but it will take over.

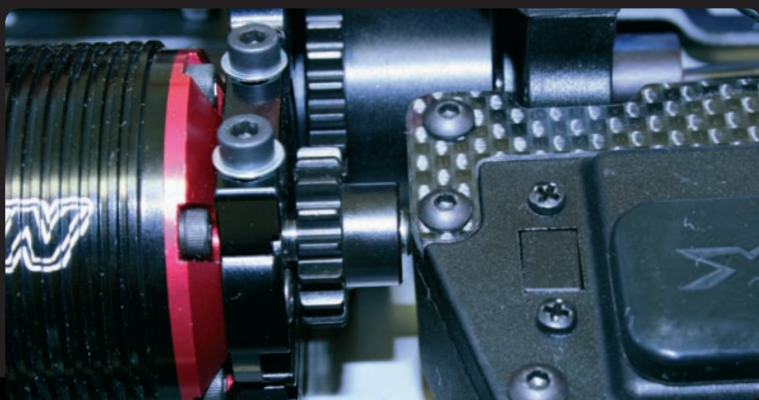
Xray have seen that this is the future and have joined the many manufacturers creating electric 1/8th scale buggies to add to their range. The 808E being based upon the excellent 2010 spec Nitro buggy is going to be one of the leading contenders for any championship which accommodates the electric revolution. With excellent looks, superb build quality and superb performance on track this will be a definite winner. But first, the UK needs to accept 1/8th electric as a class on its own and start letting it join in with the national series. Then you can take the 808E onto many victories... just as Xray intended! Besides, what have the Nitro guys really got to fear? **RRCi**



Above: With all the electrics installed the centre of gravity is super low

Right: The motor shaft fouls the radio case. Xray have now designed a motor shim to move the motor rearwards

Below: Out of the dark of winter emerges the future of Rally X



TECHNICAL SPEC

REQUIRED TO RUN

Tekin RX8 Brushless Speed Control
T8 Tekin 1900 kV Brushless Motor
Spectrum DX3R Radio
KO PDS2364 ICS Steering Servo
LRP 40C 5300 mAh 2S LiPo's

LIKES

Xray's renowned quality and design
Motor mount and perfect gear mesh
Race proven chassis
It's electric!

DISLIKES

Diff access fiddly for maintenance
Larger motors may foul the radio box

CONTACT

www.rcdiscos.com



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