

SPEC: 4WD ALLOY CHASSIS CLASS: OFF-ROAD COMPETITION COST: £408.99

# She's Electric

*Using the extensive knowledge and experience gained from developing the 808 nitro buggy, the 808E is Xray's new electric-powered version and has been released with all the necessary tweaks and parts to run with a virtually silent motor and battery set-up*

Over time, the racing classes supported by the BRCA seem to gradually grow and decline by noticeable amounts, but with almost no pattern or predictability whatsoever. In the early to mid-90s, 1:10 electric off-road was huge, but growth in that class was stunted by the emergence of 1:10 electric touring cars in the late 90s. Over the last few years, it has been the 1:8 off-road class that has seen a sustained period of growth and it is now the most popular off-road racing section in the UK. The period of growth has been helped by the migration of drivers from other classes, many of which have come from electric off-road.

On a global scale 1:8 off-road is now the most reported and documented class and as a result all of the major manufacturers want a slice of the action. The market has almost become saturated with chassis', engines, fuel brands and other products associated with the cars, and while it has given consumers the widest choice they've ever experienced, one can't help but feel that the current trend can't continue forever.

## NEW AVENUES

When markets begin to get saturated, manufacturers often look at branching out into new areas and target markets with their products to maintain sales revenue and company growth objectives. These sideways steps can also be instigated by the law and legislation relating to the use of products, so in a way it can also be viewed as natural change.

With the ever-growing focus on noise pollution and emissions, many clubs have come under threat from local government and residents associations and are being forced to look into alternative venues or different power sources aside from nitro engines.

Most of the major 1:8 nitro buggy manufacturers have reacted to the global changes described above and now produce electric versions of their nitro buggy chassis'. These electric cousins can be raced alongside their nitro counterparts on the same tracks, and in the United States this has been done with great success. In the UK, uptake has been somewhat slower and at most club events you'd be lucky to even see a heat of electric-powered 1:8 buggies running. Our BRCA National series is usually full so the potential for electric buggies to run alongside it is limited unless the format of the British Championship changes to accommodate them. The consensus from most is that the noises and smells associated with nitro buggies are what define the class and people seem somewhat reluctant to even consider the alternatives. Perhaps if electric 1:8 buggies are destined to enjoy similar levels of success as they have in the States then it will be a forced change on this side of the Atlantic, rather than a choice that racers make themselves?

## THE PRODUCT IS THERE

Whether the above changes are on the horizon or not, what's happening elsewhere in the world has ensured that there are products already in existence to support it if it does happen. We got hold of Xray's electric challenger, the 808E, to see if there is more to the cars than merely a change of power source compared to their nitro cousins.

## ROLL WITH IT

There seem to be two distinct approaches to the market in this category. Some manufacturers choose to release conversion kits for their existing nitro buggies to allow them to be converted for electric power, while others produce a complete kit for



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A high-performance Hot Bodies servo was used for the steering

Metal to metal here with the .1 module gears

Motor connections to the speed controller allow for easy maintenance

Team Orion's carbon cased 14.8V 5100mAh 40C LiPo

Carbon fibre is used for the towers, radio tray and more

Like its nitro relative, the rear hubs are secured by hinge pins with nuts for security

## RACER TIPS

As with most Xray kits, if you follow the instructions to the letter you won't go far wrong. Be careful that the speed controller doesn't interfere with the body shell though and we had to reposition the Castle unit to avoid this. Pay close attention to the screws used to retain the bearings inside the diff casings; over-tightening these will bind up the drivetrain.

Although this set-up looks all plastic, there are inserts in the steering arms for the king pins to screw into

Castle Creation's Mamba Monster speed control is a proven unit for this application

the class. Xray has chosen the latter with the 808E, although the car actually shares the majority of its parts with the tried and tested 808 nitro platform.

The suspension and drivetrain have been lifted straight from the nitro-powered 808 and mounted on a different chassis plate that has been optimised for the different power plant and weight distribution. The diffs themselves are standard units similar to those seen on most 1:8 buggies; a moulded composite casing houses the steel planet and sun gears with single O-ring seals on the inside of the casing. A gasket forms the seal between the casing and steel crown gear which screws onto the main casing using four self-tapping screws. The diffs

sit on 8x4x16mm bearings, which have to be fitted right at the start of the build. They don't include the plastic dust covers found on the nitro version, but their larger size should make them more resilient to the rear bearing failures suffered on earlier versions of the XB8 buggy.

A neat feature of the 808's drivetrain are the diff input pinion gears. Not only is the input shaft and pinion gear manufactured as one single part, but the centre drive shaft coupling is also a part of this component. The CV joint pins are retained with both a grub screw and the inner race of the support bearing, so it is actually impossible for the pin to work loose even if the grub screw falls out. This

whole arrangement is contained within the outer diff housing, the result being a simple yet reliable design that requires minimal maintenance. The only thing to watch out for in this area are the screws used to retain the pinion assembly in the housing. Over-tightening these results in resistance in the drivetrain, so the best thing to do is back off the screws a bit once they are tightened so as not to crush the bearing.

The front and rear diffs are identical in appearance; the only way to tell them apart on the bench is that the front diff has a longer prop shaft. The centre diff utilises a steel spur gear in place of the crown gears of the front and rear diffs and is

A neat rubber access bung allows access to the receiver

## OPTIONAL PARTS

- XR355103 XB808 Active Centre Diff
- XR352303 XB808 Alloy Front Lower Suspension
- Holder Set
- XR355265 Wheel Nit with Cover (2)
- XR352226 XB808 Alloy Caster Block - 10-degree (left)
- XR352216 XB808 Alloy Caster Block - 10-degree (right)

obviously contained in a different outer housing. Unlike the nitro buggy, there are no brake discs or pads as all the braking on the car is done using the speed controller and the motor. This makes the centre diff assembly significantly simpler and less fiddly.

## AIN'T GOT NOTHIN' NEW

After building the diffs, it's time to attach the wishbones and other suspension components to them. As previously mentioned, the suspension on the car is identical to that found on the nitro 808 buggy, so there's nothing new in this area. High-quality moulded parts adorn each corner

of the car and include a few nice design features not often found on cars of this type. The steering blocks are made from moulded plastic, but have threaded aluminium inserts inside to prevent the screw threads from stripping. These inserts do not extend right to the bottom of the screw holes though, so there's still some plastic for the screw to grab, preventing it from working loose during use; a similar principle to a nyloc nut. It's little details like this that often define the quality of Xray's cars, making them appealing to all.

One thing that's always differentiated Xray's 1:8 scale buggies from many of their competitors is the use of carbon fibre shock towers. It makes sense

to use carbon fibre for this part because it doesn't bend and bent shock towers are so often the root cause of an ill handling car. There is of course the risk of them delaminating or snapping completely, but this seems to be very rare and certainly not a problem with the Xray cars. The 808E of course uses carbon fibre shock towers at both ends as well as having many of the parts on the chassis made from the same material instead of them being moulded plastic items like those found on other cars.

## COME TOGETHER

The last thing to touch on about the suspension is the hinge pin holders. It was mentioned in our



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## ON TEST

We took the 808E to a local park to put it through its paces. The chosen location has plenty of bumps and a few hills, which would allow for some airtime to test the strength and durability of the car. The first thing to impress us was the responsiveness of the power delivery. Upon pushing the throttle stick, the power is there instantaneously with none of the delay or bogging experienced when using a nitro engine. The throttle felt nice and crisp and was more like that of a 1:10 electric buggy than a big heavy nitro car. It is often stated that the lack of bottom end torque in nitro engines is compensated for with a higher top speed, but the Castle system just kept on pulling and the top speed was almost as impressive as the acceleration! On an enclosed track the car might be harder to drive than if it had a nitro engine fitted as the power delivery isn't quite as progressive as most drivers would like, but there can be no doubt that the raw speed is there. We wouldn't mind betting that with a bit more development, electric systems could embarrass even the top spec racing nitro engines! The biggest drawback of using electric power is of course the limited runtime. When a nitro engine runs out of fuel you just fill up the tank and go for another run. Batteries need to be charged though, and although we easily got 20 minutes of running out of the car, there's no way you'd be able to do an hour long final at a race meeting without one or two battery changes. This has always been the limiting factor with battery power, and a battle that will always be won by a fuel powered engine.

As for the car itself, it stood up to all of the punishment we gave it and showed no signs of letting up. The only problem we experienced was a wheel nut working loose. The nuts do not have serrated rear faces, so be sure to fully tighten them to avoid losing wheels. The performance of the car in a race setting is relatively easy to assess as the car is almost identical in basic design to the nitro version, so it would no doubt handle very similarly on a track. The car feels quite safe to drive on the flat and if anything pushes a little during cornering. Obviously this could be dialled out with set-up changes if necessary, but we feel that the car's general feeling would allow a driver to attack the track without being punished heavily for small errors. One-eighth buggy drivers are notorious for being aggressive, so perhaps a slightly safer car would suit their style. One thing we noticed is that the car has a tendency to be a bit unstable on landing after big jumps and we experienced the same thing with the nitro version of the car when we reviewed it. Upon compressing the front suspension, the front wheels scrub inwards, effectively narrowing the front track width and this occurs due to the fairly large angle of the front wishbones relative to the ground when the car is at rest. When the suspension compresses, the wheels effectively follow an arc when viewed from the front, thus moving towards the centreline of the car. Perhaps this narrowing of the front track width accounts for the instability of the car on landing? The effect is definitely more pronounced than on several of the 808's competitors.

review of the 2010 spec 808 nitro buggy that these are made from moulded plastic. The wishbones are retained using a long shanked nut and bolt arrangement that literally squeezes the hinge pin holders together around the wishbone. This is really useful from an end float adjustment perspective and negates the need for shimmying the wishbones properly, which obviously takes time to get right. However, it must be said that on a car of this specification that it wouldn't be unreasonable to expect alloy hinge pin holders to be included as standard. They are of course available as optional extras, but the use of plastic holders in the kit does detract from the overall feeling of good quality and high precision that consumers have come to expect from Xray products. The plastic holders do have steel inserts for added strength though.

## I WONDER WHY

Following completion of the diff and suspension build, the build manual focuses on the installation of the motor mount and other parts specific to the 808E. For parts of the build such as this that detract from the 808 nitro car, supplementary sheets are included in the kit to replace the nitro specific parts of the manual. This aspect of the 808E kit came as a bit of a surprise, as Xray's manuals and documentation are usually second to none. It's understandable that producing an 808E specific manual would have incurred extra cost to the manufacturer, but surely it would have been better for customers not to have to keep switching between the manual and separate paper sheets?

With regard to the 808E specific parts, most of these relate to the brushless motor and LiPo battery installation. Nitro engine and fuel tank mounts are



clamped together using two screws to create a solid and easy to adjust area of the car.

The only issue we experienced with the motor installation was that the shaft on our Castle Creations motor was quite long and almost touched the back of the radio box. The grub screw flat also stopped slightly short of where it needed to, to allow normal fitment of the pinion gear. The problem was easily solved by mounting the pinion backwards on the shaft to achieve the necessary gear mesh. Xray has since produced a shim that mounts between the motor and motor mount to sufficiently space the motor back from the radio box and prevent the risk of it rubbing.

The radio box looks to be the one used on the NT1 nitro touring car and mounts in front of the motor. It's nice and large so there's plenty of room for almost any sized receiver and all of those long servo leads to be tucked away inside. The steering servo is mounted in the same orientation as on the nitro buggy and the kit is supplied with a range of different offset mounting blocks to suit all servo types.

## SUPERSONIC

Horizon Hobby UK were kind enough to supply us with a Castle Creations Mamba Monster brushless motor and speed controller system to use for the thrash test, while a high power 4S LiPo battery from Team Orion was used as the power source.

Castle Creations may not be a brand name that is very familiar to some, but they are in fact one of the largest electronic speed controller manufacturers in the world. Their products are very popular in marine and flight applications and they also have an extensive line of products suited to 1:18 scale cars. The speedos supplied with most of HPI's RTR electric



*"It's little details like this that often define the quality of Xray's cars"*

vehicles such as the Savage Flux are also based on the Castle system, so even if you haven't heard of the name, you've probably encountered their products without realising it!

The Castle motor and speedo was easy to install, with bullet connectors meaning the use of a soldering iron wasn't required. Everything simply plugs together; easy! We did notice however that the speed controller is reasonably tall, so it was necessary to make sure that the body shell didn't interfere with it. After a bit of repositioning and re-routing we managed to fit everything in neatly.

## SOME MIGHT SAY

The body shell itself is of the same basic shape as the 808 nitro version, except for a couple of air scoops on either side of the cockpit. The 808 shell is quite sleek and low slung, but we felt that the addition of these intakes made it look somewhat bulky and overweight. They almost seem like an afterthought, the work for which obviously didn't include much thought for styling and aesthetics. This is of course purely cosmetic and more of an opinion than anything else. Some might say they like it, but it's the way a car looks that often makes the difference between somebody buying it or not.

We got the shell sprayed by Alan Smallwood, the

man behind AS Airbrush up in Leicestershire. Alan is a great guy and offers his services at very reasonable prices, so he's worth considering if you'd like a flash paint job without spending the earth.

## GO LET IT OUT

In all the 808E represents what has always been good about Xray's cars, a rugged, solid design that focuses on function over form. The car has been designed and manufactured with strength and reliability in mind, and the fact that most of the parts cross over with the nitro version of the buggy means that spares back-up will never be much of a problem. The niggles that we've picked up on such as the plastic hinge pin holders and the body shell styling are mostly cosmetic. In the areas that really matter from a function perspective there are some features that have been well thought out and implemented; the motor mount and diff input shaft assemblies being two of the main ones. The 808e does exactly what it says on the tin, and you can't really ask for more than that.

After completing the assembly of the 808E we took it out for a customary Thrash Test. The panel inset tells of how we found the buggy and what our overall opinion was. ■

## VERDICT

⊕ Rugged design / Simple drive train  
Carbon fibre shock towers  
⊖ Body shell styling  
Supplementary instruction sheets

**Racer Rating:** ★★★★★

## WHAT WE USED

## Electric Kit

**Transmitter:** Sanwa Exzes-X 2.4GHz  
**Receiver:** Sanwa RX-451R  
**Servo:** Hot Bodies DSJ-1SS  
**Speedo:** Castle Creations Mamba Monster  
**Motor:** Castle Creations 2200kV  
**Battery:** Team Orion 5100 40C 14.8V LiPo  
**Wheels/Tyres:** Pro-Line

## SPECIFICATION



**MODEL:** XRAY XB808E  
**SCALE:** 1:8  
**CLASS:** OFF-ROAD COMPETITION  
**APPLICATION:** ELECTRIC  
**POWER:** ALLOY  
**CHASSIS:** 4WD  
**DRIVETRAIN:** SHAFT  
**TRANSMISSION:** GEAR  
**DIFFERENTIALS:** OIL-FILLED/THEADED BODIES  
**SHOCKS:** BEARINGS  
**BEARINGS/BUSHES:** BEARINGS

## TECHNICAL DATA

**LENGTH:** 490MM  
**WIDTH:** 308MM  
**HEIGHT:** 180MM  
**WHEELBASE:** 319-330MM  
**FRONT TRACK:** 300MM  
**REAR TRACK:** 310MM  
**WEIGHT:** 3410G

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