



# XRAY'S 1:8 EP OFF ROAD BUGGY

XRAY have entered what is fast becoming a flood of manufacturers joining the 1:8 EP off road sector of the market, with the release of their 808e buggy. We asked **SCOTT GUYATT** to look over the 808e and see just what XRAY are bringing to the game.

**IF YOU'RE** interested in 1:8 EP off road, then your world is exploding with choice right now.

Almost every major RC manufacturer is offering a 1:8 EP off road buggy option—some in ready-to-run form and others in full house competition oriented kits.

XRAY joins the latter group, bringing the electrified version of their 808 1:8 buggy line to take on the competition.

## THE SHORT STORY

AT THIS early stage in the development of the 1:8 EP market, XRAY join what is the most common approach, in starting with the proven

platform of their XB808 GP buggy and adapting it to the unique high power demands of electric power.

The XB808 packs a very high competition oriented specification, so basing the 808e on that platform is no bad thing.

The 808e shares its full drivetrain with its well established sibling.

That means a typical 1:8 off road setup of three oil filled differentials, steel crown wheel and pinion gears and six universal joint driveshafts.

Also shared across the 808 platform is the suspension layout and geometry and XRAY's latest big bore shocks.

While there is plenty in

common, the differences are obvious.

A new centre diff housing doubles as the electric motor mount and a revised chassis provides a home for LiPo batteries and electronic speed controller (ESC).

A small radio tray and receiver box sits between the right hand rear mounted motor and the 808's laydown steering servo, while battery and ESC run down the left hand side of the chassis – raised above the 7075 T6 anodized alloy chassis on a composite fibre battery tray.

XRAY are well known for the quality of materials and the 808e is definitely no exception

to that standard.

Carbon fibre shock towers, an abundance of HUDY spring steel components, XRAY's inhouse hard coated alloy and moulded composite pieces that are a nice balance of weight, flexibility and strength make up the high quality componentry.



## THE BUILD STORY

**THE 808e** is a competition oriented offering and as is typically the case in the racing sector, that means it's offered as a build-it-yourself kit.

XRAY's instructions are usually of a high standard and the build process flows easily.

The 808e differs slightly in that XRAY don't offer a dedicated instruction manual, instead providing the XB808 manual and an insert covering the different components of the electric specific car.

It's not a big deal but it does force the builder to switch back and forth between the two documents.

Otherwise, there is nothing but trouble free building ahead.

XRAY know how to design an RC car and the 808e is a pleasure to assemble.

Parts quality and tolerances are first class.

Everything fits as it should, and looks outstanding.

Construction starts with the three differentials.

An internal ratio of 4.3:1 combined with 43 tooth centre diff crown gear mean that pinions in the range of 13-17 teeth will be most commonly used with motors designed for 4S LiPo batteries.

Front and rear diffs mount in composite housings, with the centre diff mounted between two alloy plates—the rear plate

doing double duty as the motor mount.

XRAY have opted for a neat and effective two piece motor mount, making it easy to adjust pinion/crown gear mesh and lock the motor in tight.

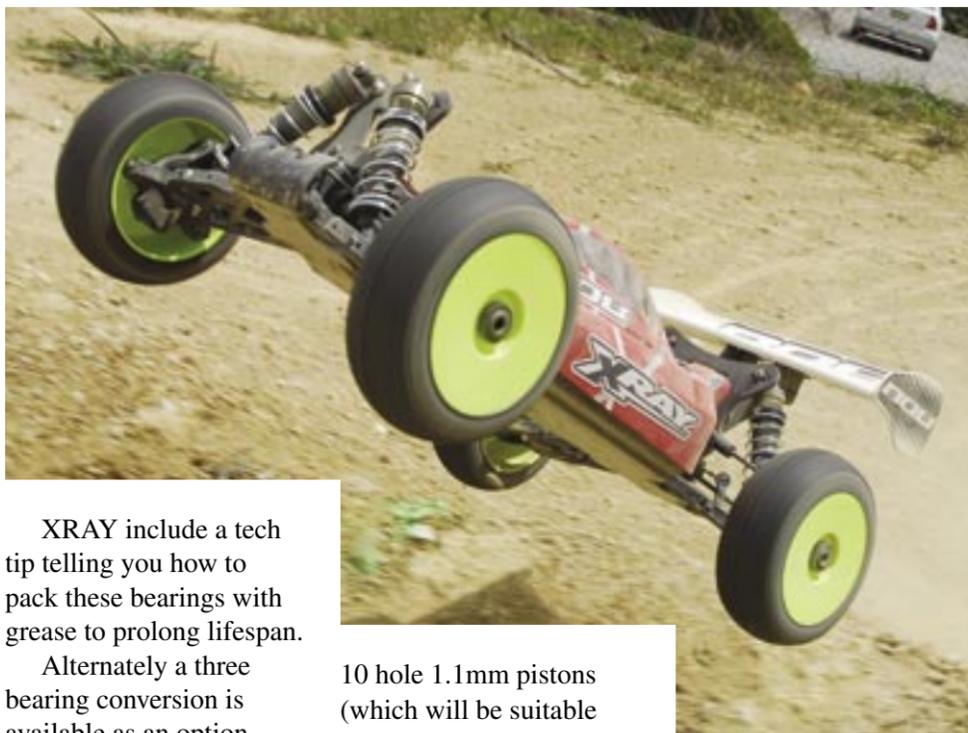
The standard oil set up in the 808e diffs is an unusual 20000 front, 10000 centre and 10000 rear.

While we'd normally expect to run something a little lighter than that, we were happy to trust XRAY's recommendations and built the diffs with the supplied fluids as a starting point.

As we mentioned earlier, the drivetrain is topped off with a full set of universal joints including a direct drive connection into both front and rear pinion gears.

The pinions are mounted on two bearings each, with a spacer in between the bearings to provide support.

Both these joints operate at an angle due to the off-centre drive train (allowing weight of battery to be more central), and the loads are enormous.



XRAY include a tech tip telling you how to pack these bearings with grease to prolong lifespan.

Alternately a three bearing conversion is available as an option.

We've started with the standard components, but will consider the three bearing option if we strike trouble.

The rest of the construction is pretty much as would be expected.

Suspension operates smoothly with very precise tolerances and no hand fitting required.

XRAY's 18.5mm big bore shocks are beautifully machined and went together well.

There are a couple of optional pistons supplied, we fitted the standard

10 hole 1.1mm pistons (which will be suitable for most conditions) and built up the shocks as recommended.

The supplied Silver springs seem a touch on the soft side and XRAY's Australian driver, Ari Bakla, confirmed that switching to the slightly firmer Blue-Grey spring might well be an option worth trying.

We built the car with the Silver springs and the supplied fluids (600 cst front, 500 cst rear) but made sure we had the Blue-Grey option springs on hand for our test.

Electronics installation

was simple for us but can be an issue with the 808e.

Steering servo installation is fine, the servo installed in a laydown orientation.

Likewise speed control mounting is straightforward, with room for even the largest of the currently available ESC options and plenty of space for the 4S hard cased LiPo packs that we use in this class.

Where things get tricky is with the motor and receiver box.

For some motors, it's no problem and the 808e swallowed our LRP motor no problem.

For other motors with longer shaft lengths (including Tekin and Hobbywing at least), the motor shaft hits the receiver box.

There are at least three options to solve this issue.

The first is to cut the motor shaft, shortening it so that it doesn't hit the receiver box.

While that sounds drastic, it's reasonably easily accomplished using a Dremel and these motors have quite a long shaft, so losing a little length isn't a big deal.

The second option is to cut the receiver box to allow clearance, and the third is to ditch the receiver box altogether—mounting the receiver directly on the radio plate (not a good idea though if you're likely to run the car in wet or muddy conditions).

XRAY have belatedly released a spacer plate to fit between motor mount and motor, specifically for those longer shafted motors—so that makes choice #4!

We think this is an unusual design failure from XRAY.

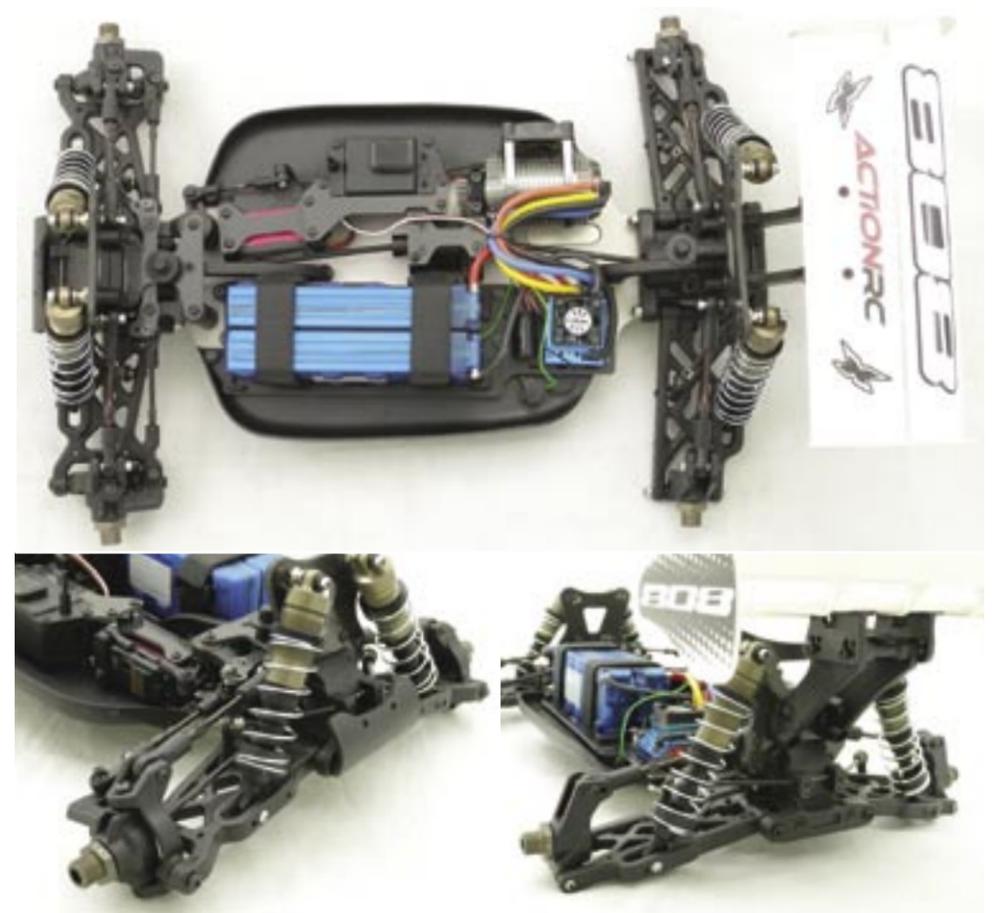
The motors that don't fit are some of the most popular in the market at present and for the car not to accept the motor in standard condition is a mistake.

It's not by any means a show stopper, however we think XRAY could have done better to ensure that the most commonly available (and used) motors fit the car out of the box.

To some degree, this kind of situation reflects the embryonic stage of 1:8 EP off road.

Motors, ESC's and batteries are far from standardised in the way that 1:10 scale competition motors, batteries and ESC's have become.

With manufacturers offering motors (and batteries) in different



sizes and formats, it's something of a nightmare for chassis designers to make sure everything fits.

In any case, the 808e accepted our LRP ESC and motor package without any modification and we cut the shaft down on the Hobbywing system we fitted later in our test process.

Just remember that depending on your motor brand, it might take a little trial and error (and some judicious modification) to get everything installed and aligned.

## THE FINISHING STORY

**XRAY** top off the 808e with a high downforce wing and stylish lexan bodyshell (lifted straight from the XB808 if we're not mistaken—including

the markings for nitro engine cutout).

The shell does provide plenty of clearance around the motor and sufficient vertical real estate to allow the 808e to swallow our pair of LRP 2S 5300mah LiPo packs with no trouble.

Typically for a competition oriented

chassis, the 808e doesn't include wheels and tires.

HEI were kind enough to supply us with a set of Pro-line Holeshots pre-mounts—a tire we're still quite fond of on hard packed surfaces.

## CONCLUSION TO THE STORY

**THE 808e** is a worthy addition to the very competitive EP 1:8 Buggy field.

While the market is far from mature at this stage—and the 808 represents more of an interim solution using an existing platform—it definitely delivers on track.

Add in XRAY's legendary quality and motor/radio box issues aside, this is a Buggy that will delight.

Just keep a good close

eye on those gearbox bearings.

## Our thanks

Our thanks to XRAY and their Australian importers HEI for the 808e and Pro-line tires used on test and also to LRP and their Australian agent, Hobbies Australia, for their brushless motor and speed control.

All these products are available from your local hobby shop or ask them to contact their respective Australian agent for more information.

## THE DRIVE STORY

**WE HAVE** to confess to being more than a little excited about putting the 808e through its paces.

The car looks like it means business and the flawless build had us pumped to get to work on the test track.

We started with a shakedown run at a friend's backyard test track and finished things off at the 2010 Tasmanian Championships at the excellent Latrobe raceway in Launceston.

All the usual superlatives apply when testing an 1:8 EP buggy.

The massive bottom end grunt and astonishing top end is always thrilling.

The 808e deals with the power well.

The heavier than expected diff fluids help to tame all that EP power and ensure it's evenly distributed to all four corners of the car.

Power down on our test track was excellent, the 808e hunkering down and blasting out of the tighter stuff, never getting out of shape and never losing drive through an open diff.

Turns out XRAY knew what they were doing!

The aggressive diff set up provided us with plenty of turn-in and just a hint of corner exit oversteer in the slipperiest parts of the track.

The 808e was, as would be expected with such a heavy front diff, very stable under brakes.

Jumping a 1:8 EP buggy is an exercise in adrenaline rush and the 808e matches up well.

Superb bottom end grunt means even off a minimal run up, big air is the rule, rather than the exception.

Mid-air control depends on the brake set up of your ESC/motor, however we definitely had no trouble keeping things just right.

Latrobe is blessed with

a couple of very big air opportunities and we definitely gave the 808e its wings, landing from ridiculous heights and coming back for more.

Those Silver springs mentioned in the build story did end up being just a little on the soft side for our liking.

While they worked well through the rough stuff, we found the chassis slapping off the jumps more than we would like.

The switch up to the Blue-Grey springs made a subtle but significant difference—the car landing off jumps better and still working well through the rough stuff.

If anything, smooth track performance was enhanced.

It's a change worth considering if you're setting up an 808e.

Mechanically, the 808e has been faultless during our test period.

No breakages, no undue wear (though to be fair, it's early days) and everything

working just as it should.

The highlight of our test period was definitely the chance to run the 808e in the first AARCMCC Tasmanian 1:8 Off Road Championships, lining up in the small EP Buggy demo class.

On a superbly prepared Latrobe raceway, the 808e was a delight to drive all weekend long.

I managed the fastest Buggy times I've ever put in at Latrobe and found the car well suited to the track.

Even in close to standard trim (springs aside, we ran the car with kit set up all weekend, just fine tuning ride height, camber and toe to make the car behave just the way I wanted it to).

Up against more experienced 1:8 off road pilots, the 808e managed the fairytale debut win and elsewhere in the country, Ari Bakla has been racking up wins to show the true potential of the 808e.

