

# BUILDING & RACING XRAY’S 808

**ZAC RYAN** puts his Losi down and builds XRAY’s well credentialled 808 2009 Spec 1:8 Buggy as he continues his journey building and racing the world’s best GP off road buggies.



**THE ABUNDANCE** of competition buggies on the market certainly makes the choice all that bit harder when looking into the 1:8 off road racing scene. Trust me, I have been there and it’s seriously hard to decide!

One buggy which has always looked very appealing to me is the XRAY 808 with the trade mark luxury stamp, the design and manufacturing quality is known throughout the racing community to be exceptional. I have now run a large range of manufactures over the years in my racing and it’s certainly interesting to see the manufacturing quality and the level of building ease. With delight I received the 2009 spec model of the XRAY 808 in a rather small but colourful box. Opening the kit I was greeted with what is the best packaged kit I have ever seen, this isn’t your normal kit! Parts bags are sealed in each build steps along with

a full colour 3D perspective instruction manual. I decided to have a quick read through the manual before sorting the bags into order. At first the manual is a little overwhelming with the amount of information it contains but you must remember some newbies might not realise the importance of Loctite on

specific screws or the amount of tension on each hinge pin etc. This is certainly the most in depth instructions I have seen before and once you work out each step convention you will be surprised out how useful it is—well done XRAY. If only other brands could use such in depth instructions. As with all 1:8 buggies the

first step is the diffs which are your typical oil filled o-ring sealed gear diffs. The casting of the gears is perfect and I was very surprised at just how smooth they were once together. Usually with gear diffs you are required to run the diff in before the gears bed together and everything starts working efficiently. These diffs in my opinion don’t require running in. Each diff is supported by rubbed sealed bearings, captured with interesting plastic covers which are used as a form of shimming for the diff in the diff case. The manual even suggested the order of tightening the diff screws so that the main bevel gear on the crown or spur gear sits flush with the planetary gears. The centre CVD’s are the next step in the build which I believe are inspired from an on road touring car design. Each pinion is secured inside the diff case by a rubber sealed bearing for the external cover and steel sealed for internal strength. Each diff is shimmed appropriately from the plastic covers which bed together correctly due to appropriate

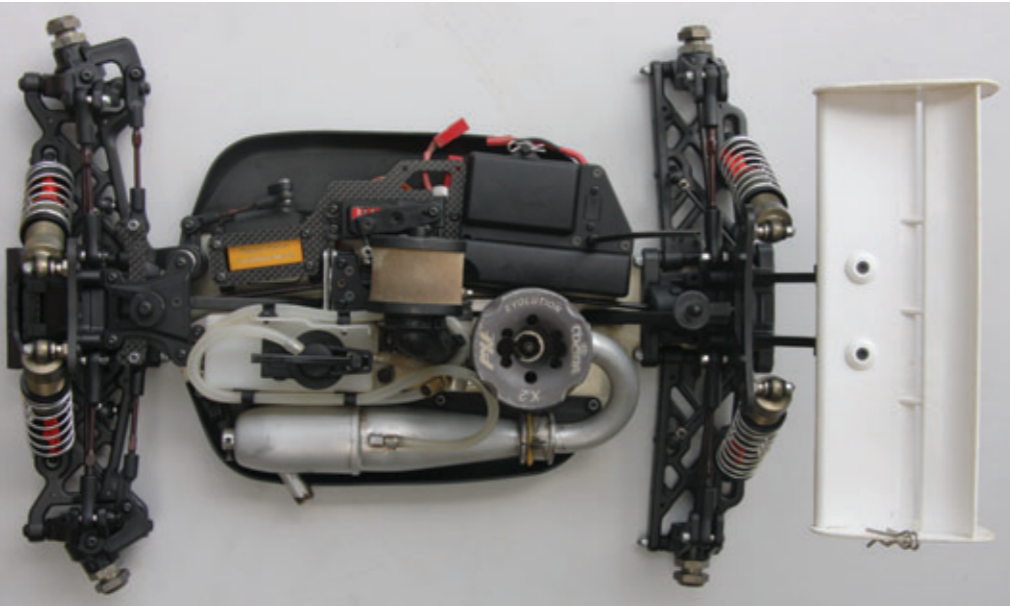
tolerances from XRAY. Bearing captured Hudy spring steel CVD’s are also used to transmit torque from the outdrives to the wheels, this is another nice touch as it eliminates one less grub screw. Above the CVD’s are also Hudy spring steel turnbuckles, these can be bolted into various roll centre adjustment holes on the carbon fibre shock towers to allow to set the car up for any track condition. As a good starting point I decided to follow XRAY’S initial starting point as this is suggested as the easiest to drive. Both front and rear ends follow very similar construction steps and work in sequence through the building process, allowing for quick assembly. Sway bars are attached to both front and rear bulkheads with a little instruction on appropriate sway bar movement in the bulkhead. This is usually one part of the car which is overlooked so this allows you to make sure the sway bar is extremely free so that it’s not binding and working against your suspension. The front end uses a c-hub style spindle carrier which is seen on a number of latest generation buggies and is certainly a proven design. Keeping up with the ever changing times is important to provide a buggy which will be on pace so this is a good move from XRAY. With both ends of the car now bolted onto the hard coated Swiss 7075 T6 alloy chassis, they are then reinforced with plastic chassis braces. A ball raced steering assembly accompanies the front end with a lightweight carbon fibre Ackerman plate. There is no doubt that XRAY have tried to minimise weight wherever possible yet the strength and size of all the parts are certainly adequate to withstand the abuse of 1:8 off road racing. Next the centre diff is assembled, this supports laser cut steel brake pads rotating inside of Ferodo composite pads. Appropriate brake pad float is given along with front and rear cam post length so that

your brakes will be consistent and the bias is correct. This completes the centre diff mount and it is secured to the chassis by four counter sunk screws. Due to the new gear ratio used, a smaller diameter spur gear of 42 tooth is used which has allowed for an increased clutch bell diameter of 16T. This allows for large bearings to reside inside the clutch bell giving longer life to both the bell and the bearings. A typical three shoe aluminium clutch is used which allows the opportunity to tune from various spring rates to get your engine tuned to the amount of grip. The engine is secured to two lightweight machined alloy engine mounts which sit above a machined section of the chassis to allow the engine to sit lower and thus reducing the centre of gravity. Neatly in front of the engine a skinny fuel tank with a molded splash guard is secured by rubber grommets on top of plastic posts. Opposite to the engine an interesting curved radio tray configuration is used with a flat style receiver pack to bring all the weight closer to the drive line. Basically the radio tray follows the centre CVD’s so that the width of the buggy can be reduced. Finally oil filled shocks are the remaining step which use a threaded alloy shock body and finally come with rubber shock boots. I believe the original 808 didn’t come with boots and this is a nice touch to finish off an exceptional well built buggy.



### The Specs

<b>Manufacturer</b> XRAY	shock bodies with aluminium shock caps, zero kingpin steering geometry with adjustable composite suspension arms front and rear captured by threaded hinge pins, threaded Hudy Spring Steel turnbuckles and 4.0mm carbon fibre shock towers.
<b>Model</b> 808 ‘09 Spec	
<b>Type</b> 1:8 GP 4WD Buggy	
<b>Importer</b> Custom Model Cars	
<b>Dimensions</b> Wheelbase.....319~330mm Total Width.....308mm Length .....490mm Weight (race trim) approx .....3350g	
<b>Technical Chassis</b> CNC machined from high quality Swiss 3mm 7075T6 hard anodised aluminium, CNC machined 2.5mm carbon fibre radio tray, composite bulkheads and chassis braces.	
<b>Suspension</b> Oil filled machined threaded	
	<b>Transmission</b> Three oil filled gear differentials, cast aluminium internal diff gears, hardened Hudy Spring Steel outdrives (ball raced), Hudy Spring Steel CVD drive shafts, machined steel pinion and crown gears, hardened 42T spur and 16T clutch bell which holds a standard three shoe clutch.
	<b>Required gear</b> Radio system, engine, starting gear, fuel bottle, fuel (we used 25% AT Racing fuel).



# HITTING THE DIRT

**I FINISHED** building the luxury 808 09 buggy kit and now had the feeling that I had joined the Rolls Royce club of RC.

There is no doubt that the build quality was exceptional but the next big question on the list was, how it would perform on the track?

To help provide a consistent benchmark I decided to race the kit at Brisbane Dirt Racing.

This is of course my home club where I have raced a range of chassis, allowing me to compare kits on their lap times and consistency.

Track groove and condition will obviously play a large part in lap times, however a good benchmark of around 39 seconds a lap is generally the target.

The first step I do before I run any car is check the ride height as this is critical to how the car will perform.

A quick drop test on the bench and one of the suspension arms didn't move.

What's going on there I frown?

Well to my surprise, the zig zag shock boots were actually creating airlocks between the outer and inner boot.

I decided to throw the boots away and go back to my trusty water balloons which worked a treat.

A few laps posted on the board demonstrated the car had serious pop over the jumps, mainly due to the total weight of the rolling chassis (50 grams over the minimum weight limit).

I could easily make jump sections by taking tight lines with very little run up which impressed me a lot.

The turn in was, however, quite aggressive at high speed and the buggy had the tendency to go on two wheels around some

corners.

There is no doubt that the standard setup was on the little aggressive side of things and a few adjustments were required to tame it down.

Grip levels were quite high during my test session so I decided to lay the shocks over, lengthen the camber links, add one more degree of negative camber all round and go thicker in the front diff oil from 5k to 7k.

This settled the buggy down which also brought my consistency down.

The buggy was now lapping in the 39 second lap bracket which meant it was on pace after only a few adjustments.

A good benchmark for the day was Kyle McBride who managed to crack into the 38's with his Associated.

After our 20 minute final I ended up second behind McBride which, for my first time with the 808, wasn't bad.

In the end consistency was the only reason for the second place as the general lap speed between us was very similar.

In my opinion the car is very light which makes it nimble and very quick between corners, this also helps during jump sections giving you an advantage in the tight sections.

The downside would be that XRAY have gone extremely light which does make the car harder to drive for the beginner.

To elaborate, the XRAY rolling weight is approximately 3250g whereas the Losi 8ight or Mugen MBX-6 is approximately 3450g or the even more stable Hot Bodies is around 3550g!

My verdict is that if you're after a car which will test your skills and which can be super fast if you drive it correctly, then the XRAY is your car.

