

RACE CAR CLINIC

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INTRO
 Now For The Good Bit...

Our first patient is without doubt a VIP, this very special Rallycross car has set a new standard for design and quality, and has the standard Xray No Compromises!!

Next we cross the pond, and travel south for a look at another Revo-lution, we race and pass judgement on the new Traxxas REVO.

Now we lose two wheels, and try one-wheel drive. The Thunder Tiger Ducatti 999 is a real Devil, a Red one!

Back to the USA again, and Off Road once more, but this time with a Ready To Race, almost ready to run Rallycross car, it was Mayhem!

And yes another American, this time from California, and he brought a friend too!! The Hot Bodies RR Lightning is ready built and ready for fun, with a big block motor, it's Instant Lightning.

Finally, we take a quick peak at the RR's much bigger brother, The Stadium PRO. This extra long 'Truggy' is ideal for racing, but just as good for fun, and it too has a big block motor.



46



54



62



70



76



84

COMING NEXT MONTH

Hopefully we will have a wide selection of cars, trucks etc. One guaranteed entrant is the brand new Losi LST, a Monster truck that will set a brand new standard. We check it out and take it racing....



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TEXT: Chris Deakin
PICTURES: desawadigital.co.uk

No Compromises!

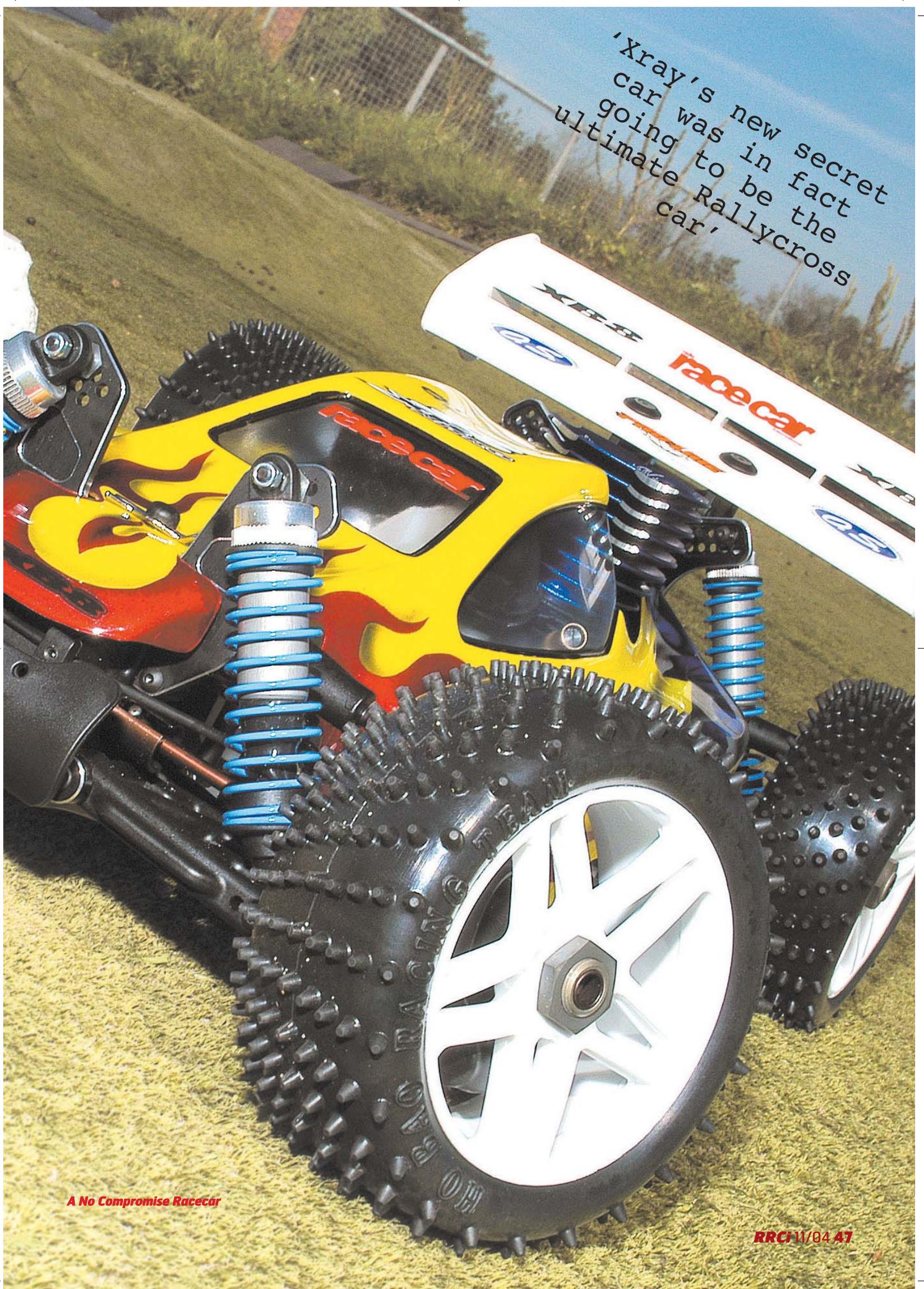
Team Xray XB8/OS VZ-B On Test

When Team Xray announced on the Internet some months ago that they were going to produce a brand new and secret Nitro powered racing car, the whole R/C world took a deep breath and hoped it would not enter the sector of the market they were in. They knew if Team Xray were going to make something new it was going to be very, very good.

Although Team Xray have pro-

duced high quality Electric powered cars so far, the man who developed and styled the XB8, Dipl. Eng. Hudy Juraj has built and raced several 1:8th circuit cars in his home in Slovakia with some degree of success, which of course began the relationship with Serpent Racing Cars, and the formation of Hudy Performance Parts. What was a surprise however, was that Xray's new secret car was in fact going to be the ultimate Rallycross car!!

'Xray's new secret car was in fact going to be the ultimate Rallycross car'

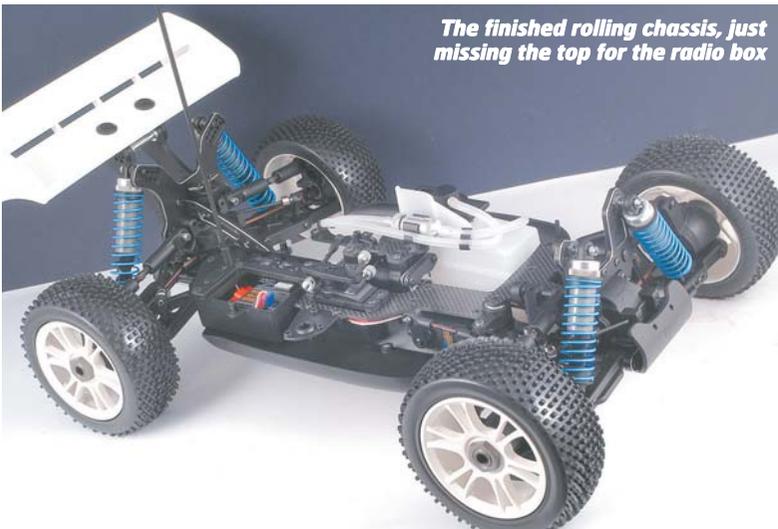


A No Compromise Racecar

RACE CAR CLINIC



Ready to crush the opposition



The finished rolling chassis, just missing the top for the radio box

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All the parts come in correct build order, quite a refreshing change



Xray even supply this excellent tool kit from HUDY

NO EXTRAS REQUIRED

From the outset it was clear that Team Xray had as usual packed all their legendary engineering skills and quality into the XB8. From the very first pictures that came from them, and the technical details, this car had been designed and detailed to give the driver one of the strongest and most tuneable cars on the market today.

All the best materials have been used be they Carbon Fibre, hi-tech Swiss aerospace T6 7075 aluminium, and of course you can't forget the legendary Hudy Spring Steel® which is used throughout the drivetrain. By cleverly using various inserts you can change, caster, roll centres, toe angles and the wheel-base, without the need to

purchase a single option part, they all come in the very big box.

CONVENTIONAL

As regular readers you will no doubt know there is a pretty standard set of design parameters for a successful Rallycross car; it has to have 4WD, shaft drive, three differentials, a strong chassis, good shock absorbers and disc brakes. The XB8 has all that, and then some. By sticking to this very conventional route Xray have been able to include a myriad of special features without adding to the price.

SPEC CHECK

XB8 Specs:
Dimensions
Length: 482 mm
Width: 306 mm

The shock piston on the left has a tapered hole, by altering its direction you can vary the bump and rebound characteristics



“this is where the XB8 really does score big numbers”



When parts are this well made, they are almost art. A DIY shock absorber



Fill the shocks to this level and you won't be far off

There is a bleed hole in the shock caps so it's easy to get perfect dampers each and every time



Height: 180 mm
Wheelbase: 321-327 mm
Weight: 3350 g
Available Adjustments:
Camber, Caster, Toe-in, Front Inboard Toe-out, Wheelbase, Front Anti-dive, Rear Anti-squat, Front and Rear Roll-centre, Ackermann
Gearing:
Pinion/Spur: 13/40
Primary Ratio: 3.33:1
Internal Ratio: 3.54:1
Final Gear Ratio: 11.79:1

CHASSIS

The 3 mm thick silver anodised Swiss 7075 T6 chassis is machined strategically in low stress areas to be as light, and as strong as possible. Excess material below the engine, fuel tank, and diffs has been removed to allow for the lowest possible Centre of Gravity, and the obvious improvement in handling.

Two very strong aluminium chassis braces make for an ultra stiff chassis platform. Machined from extra stiff 5 mm 7075 T6, this dogleg shaped brace is keyed on to the rear shock tower and guarantees total chassis stiffness. The radio tray, front upper deck and disk brake deck are all machined from high quality black graphite, and feature countersunk holes for perfect alignment. The radio plate continues the low C of G theme by having a lay-down steering servo. Adding even more rigidity are the front and rear moulded diff housings, which all the suspension parts mount too. Easy access to both front and rear differentials makes maintenance amazingly easy.

SUSPENSION

The XB8 features a revolu-

BUILD TIPS

- 1) Don't over tighten the screws holding gears to the diff housings, the plastic is quite hard and it does take a lot of effort, but go too much and they will strip!!
- 2) Fit the bearings to the diff cases first, they won't fit over the output cups.
- 3) Add threadlock to all the grub screws in the driveshaft U/Js.
- 4) Make sure the anti-roll bars move freely after you set the adjustment screws, it is very easy to pinch them up.
- 5) Take care when shimming the end float for the bell housing don't set it to the absolute minimum, if it is too tight you will get bearing failure; as they overheat.

POWERPLANT

As the XB8 doesn't come with an engine you will have to buy one, obviously! Attending the recent World Championship I was more than impressed with the performance of the new O.S. VZ-B V-Spec-T (P), which was to be found in many of the Kyosho MP777 racing cars, including most of the American Team.

O.S have refined this all-new .21 quite a lot, they have made use of, according to their press details, a high-silicon steel piston, which was a surprise as aluminium is the more accepted material for a piston. This does mean there is a totally different rate of thermal expansion and thus an expected better gas seal. Because of this a new-hardened ABC liner has to be used for added wear resistance. A totally new crankshaft design that's considerably slimmer, reduces the rotating mass quite a lot for an improved pick up, but is stronger than any O.S. crankshaft ever made. And for the very first time it utilises a turbo or conical glow plug, something, which was only thought to work in on-road engines.

Matched to a brand new long, tuned pipe (which we didn't have) it would be interesting to see how it performed, after all O.S. have won more Rallycross World Championships than any other engine builder. For more details contact Irvine engines here in the UK.



tionary and innovative I.S.S. (Integrated Suspension Settings™) design. All adjustment parameters are completely integrated via offset inserts that allows total set up changes without swapping or replacing any parts – no need for optional caster or toe-in blocks.

Xray's very stylish black with silver edging, front and rear shock towers are again CNC machined from high-grade Swiss T6 aluminium, but 4 mm thick this time. Both shock towers are strategically lightened to reduce weight without compromising their strength. Multiple shock positions allow for numerous suspension settings. The front shock tower also benefits from the same type I.S.S., with composite eccentric bushings that enable quick and easy adjustment of front upper arm angle to compensate for lower arm anti-dive settings.

All the suspension mountings blocks are CNC-machined from more high-grade 7075 Swiss T6 aluminium, but 5 mm thick for extra strength. Each block again

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All three diff assemblies have the same high quality internals, just look at the tooth pattern on the planet wheels, stunning!!



Xray supply a receiver battery, which is neat, the battery and radio receiver have more than enough room so you can do a very neat installation

features I.S.S composite bushings that allow anti-dive, anti-squat, and toe adjustments. The front 'C' hub suspension blocks enable declension suspension settings for progressive damping. All the wishbone mounts feature hardened 4 mm

hinge pins and are completely captured, so they shouldn't fall out as you bounce around the track. This neat feature does mean there are no C-clips anywhere on the car. The long suspension arms themselves are rigid enough to



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The installed power plant with matching exhaust, you may have to trim the mounting wire, ours was around 4 mm too long, but that will depend on the pipe

provide a responsive feel, yet soft enough to survive extra long finals.

C-HUBS ARE BEST

The XB8 features a unique, and revolutionary C-hub suspension with Integrated Adjustable Caster® (Xray patent) that enables you to adjust the kit supplied C-block through the entire caster angle range. No optional caster blocks needed! The C-block features an inclined kingpin design for increased steering and stability. Super lightweight composite steering blocks are a genuine innovation in design and functionality. Each block features an inset steel bushing that is moulded-in into the steering block. This concept enables the king pin screws to be firmly held

in the steel threaded bushing while the end of the screw is self-locked in composite to prevent the screws from loosening during racing. The steering blocks are moulded from the lightweight yet very strong and durable special composite. Fully adjustable turnbuckles for camber and toe adjustments are made from premium Hudy Spring Steel®, a handy turn-buckle wrench is included in the kit for adjusting them.

DAMPERS

These feature CNC-machined hard-anodised shock bodies with aluminium caps, and have soft volume control diaphragms. Rubber boots prevent dirt ingress to the twin seals. You even have two different spring hardnesses to choose from! The

The finished car, very early one morning, the paint is by Mall Roberts, who has replaced Wes Miles as RRCi 'paint man'





A three shoe alloy clutch does give amazing bite, Xray include two sets of springs to tune the bite point

piston set includes three (1.3, 1.4 and 1.5 mm, parallel hole) pistons, which are installed on heavy duty 3.5 mm piston rods made from Hudy steel. Also Xray supply pistons with conical holes so you can vary the pack, bump and rebound of the dampers, which is a first. This does mean you should be able to attain perfect damping at every track, no compromises!!

The dampers are mounted on heavy-duty shock towers front and rear, by using the mounting holes in the lower wishbones, multiple shock angles are possible, these have been thoroughly tested and developed in both virtual reality, as well on the racetrack. This guarantees sufficient suspension travel and the best set up for either flat European tracks or large bumpy US tracks.

DRIVETRAIN

By exclusive use of Hudy Spring Steel® Team Xray claim to have the world's lightest 1:8 off-road

drivetrain, and who can doubt them!! This guarantees reduced rotating weight and increased performance. All the drivetrain parts (driveshafts, diffs, and brake outdrives) are strategically weight-reduced and finished in the well know Hudy bronze colour. Wheel axles and wheel nuts are made from aircraft light aluminium, and hard anodised for increased life and low wear.

Rubber sealed composite differential housings are manually precision ground after the moulding process to guarantee a perfect fit with no vibration. Three quad gear sun and planet wheel differentials motivate the XB8. Differential gears are made from pressed steel, heat treated, and machined for ultra-precision and smooth operation. Main gears use Hudy steel (Spur, Pinion, Crown gear and Clutch bell) and are machined individually using a precision gear machine.

The front and middle diff have added tuning options in the



Two covers go over the receiver and the battery box should be close to watertight

shape of 'O' rings, which act as friction dampers. All the driver shafts have what you may say are chunky U/J style joints instead of CVD types, Xray say they will last longer without needing replacement, and are smoother, but they would wouldn't they!! And of course you do get a full set of blue seal Teflon sealed bearings just like the on-road cars, these are incredibly velvety, and add no stiction to the drivetrain at all.

ENGINE FITTINGS

Xray supply a very high-grade CNC-machined engine mount set, black anodised and then milled to create the stylish Xray luxury look, which circumvents the whole car and helps to dissipate engine heat. The flywheel is also CNC-machined from high-quality aluminium, and as you would expect is hard anodised for increased life. The clutch features 3 lightweight aluminium shoes and two sets of springs to choose from to set the ideal clutch engagement (0.9 mm and 1.0 mm).

BRAKES/ MISCELLANEOUS

The ventilated brake disks are laser cut, heat treated and ground on both sides to guarantee a vibration free operation. The brake pads feature high quality Ferodo friction material, and in the case of our sample kit were bonded to the steel pads, a messy



Xray supply these no-cost options to tune the chassis of the XB8

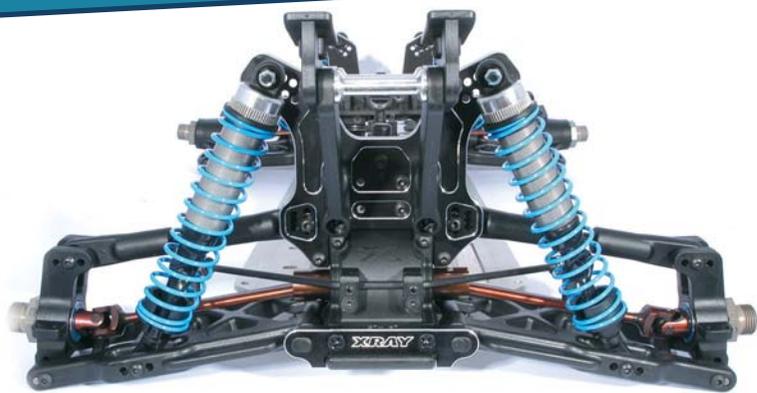
job at the best of times, well-done Xray!! The front-to-rear brake bias can easily be adjusted via brake linkage, which has two knurled nuts locked on to the pushrods.

The fuel tank includes an integrated stone filter and splash-guard to protect the brakes from fuel. The tank is mounted using rubber grommets to absorb vibrations. A large capacity aluminium fuel filter is included as standard; the fuel filter is different from others as it is captured in a holder and will not turn as the result of vibration. Small composite holders secure thick 5.5 mm silicone fuel tubing, which is another very neat idea.

The smooth flowing, very effective air filter is made in two parts, and can be cleaned very easily. Air filter oil is included as standard. The universal rubber allows it to fit any standard 1:8th buggy motor.



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Fully assembled rear suspension, note the relief on all the alloy parts, gives the car a look of class. Note the I.I.S.@ bushes in the lower suspension mount

STEERING

This is a conventional system using two vertical bellcranks; these are ballraced for smooth operation. The right-hand bellcrank has an integral adjustable servo saver, and to ease the assembly this came pre-built. An alloy steering cross plate is precision machined from 7075 Swiss T6 aluminium with black finish and stylish XRAY silver edging. The steering plate features 3 different Ackermann settings for precision steering setting, but oddly is not ballraced, which is a strange omission on a car of this undoubted quality!!

BODY/WHEELS

The aerodynamic rear wing is moulded from a very flexible and virtually unbreakable composite mixture; well that's what the press release said!! At critical areas, all edges are reinforced to prevent breaking. The rear wing holders feature aluminium braces and the wing holders are mounted firmly to the substantial rear shock tower. The holder offers many different wing-mounting positions to guarantee the optimum setting for different tracks.

A Proline Crowd Pleaser bodyshell is included with the car, which does like the Kyosho pattern one which was designed by Mark Pavidis. Stylish Xray Starburst wheels are moulded from light but very durable material. No tyres are supplied, which is a good thing, as it is unlikely that somebody buying this car is not going to race it, and each track in the UK has very different needs to say a dirt track in the USA.

ELECTRONIC INSTALLATION

The well made carbon fibre radio tray features a laydown steering servo and upright throttle/brake servo arrangement; both servos are placed on the chassis centre-line. Clever Xray laydown servo mounts can be mounted in three different positions to accommodate different make servos. Heavy-duty steering horns are included

to withstand long mains and abuse.

The large moulded radio box features a clean design and layout that places the weight in key areas for a balanced car. Xray even includes a FREE XRAY 1200 NiMH 5-cell 6.0V receiver battery pack and receiver harness. For racers not using a radio switch, a handy moulded cover is included to guarantee a leak free radio box!

The tight antenna holder will make sure the antenna tube stays attached even if the car is flipped.

BONUS PARTS

The XB8 kit includes a smart set of Hudy profiTOOLS for easy and comfortable assembly and servicing of the car. The set includes 1.5 mm, 2.0 mm, and 2.5 mm hex wrenches, and a Philips screwdriver. The kit also includes a universal tool that will fit on all nuts and turnbuckles, and a separate 17 mm wrench for the wheel nuts.

BUILD

Now this is where the XB8 really does score big numbers, Team Xray do produce the absolute best in build manuals. The CAD created illustrations leaves you in no doubt of the build order, parts you need, and in most cases the orientation of the part. Also all the parts are bagged in the correct build order, so you are not left hunting part xyz from bag F3 or F4. Which does make a major change.

Although this car is not really designed for the absolute begin-

'C' hubs, long arms, stiff alloy parts, a recipe for success



ner, just about anybody who can wield a screwdriver can build this car and very well. It just slips together like a glove, most of the greases, oils you need to build the car are included, but not any threadlock. Also I found that there were several areas that did require threadlock but wasn't highlighted by the instructions!! This car is a real pleasure to build.

One thing you will have decide early in the build, is the set up. Now Xray do provide a baseline setting which does look pretty middle of the road. I knew I would be racing the car at the Slough BRCA National, so I increased the caster and ant-squat, but kept the stock shock oil and diff greases.

THE DRIVE

Now with this class of car, the set up does indeed make quite a difference, well a huge difference in fact. Our nominated test track as many of you will know is the Bagginton facility next to Coventry airport. This is an all weather track, i.e. astro turf, and is very bumpy, and the tyre which works well here is the HoBao Angle Spike. These tyres come pre-mounted to HoBao wheels, which gave us a problem, when tightening the wheel nuts we found the internal stiffener of the HoBao wheel fouled the upright, as did several wheels we tried, so be aware.

In the end we had to use a worn set of Medial PRO Whoops tyres to do the testing.

Now the O.S. engine was very tight and proved to be a challenge to start, which did mean it had to be run in very well...eer not!! Sorry Irvine, but it didn't seem to harm it, but this is not recommended we were under pressure to get the review done, that's my excuse.

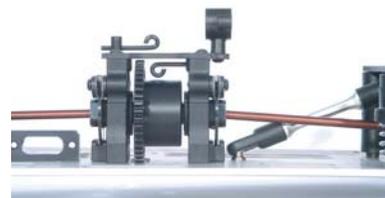
BALLPARK

Having tested several Rallycross cars at Bagginton I had a baseline performance to work from, or so I thought!! The first thing that grabs you is the response from the steering, the car turned hard and fast, with a high caster setting it should not have done. It went into the corner on fire, had a little mid corner understeer, and then simply powered out to the next bend.

The XB8 does drive like no other rallycross car I, and 'our' lens man Dez Chand had driven before, in fact it felt more like an on road car, off course it is an Xray!! Over the rougher parts of the track the long silky suspension travel soaked up the bumps very well, but it did slap down hard after most jumps, which did suggest we needed more pack (more initial damping), which was very easy to achieve.



This dog leg brace is amazingly strong, there is now way this chassis will flex, so the suspension can do its job!!



Centre diff mounted to the car, you can see it is mounted as low as is physically possible



Note the insert in the lower wishbone; this is what adjusts the caster angle

By fitting the Xray supplied cone shape shock pistons downhill you restrict the oil flow on bump, but not on rebound, so the brakes still work well. This did improve the 'landing' quite a lot, just check out some of the photos!!

The level of forward traction was quite a surprise too, as you accelerate gravity does take-over, and weight is transferred to the rear wheels and the front lifts, often resulting in front wheelspin, and a loss of power. The XB8 never displayed this trait once, it just leaped forward like a striking lion!!

The side bite was a little too much, and the car did grip roll a couple of times, moving the lower shock mount out on both front and rear lower wishbones, softened the initial roll a little. I didn't want to disconnect the anti-roll bars as the change of direction was pretty stunning, and fast.

Although the XB8 only has two disc brakes it did stop very well, I made several minor, but quick adjustments, until I got the desired front to rear balance, which means the rear just helped 'steer', without the front wheel locking and causing understeer.



The diff housing are actually ground for a perfect fit and seal

QUICK SPEC

CLASS: 1:8 Scale Rallycross
TYPE: Self-assembly Kit
MANUFACTURER: XRAY Model Racing Cars, P.O. Box 103, 91150 Trencin, Slovakia, Europe
PRICE: £549.99 srp

WHAT YOU GET

Full Rolling Chassis Kit. 4WD. Shaft Driven. Triple Differentials. Fully Ballraced. Swiss T6 7075 Alloy Chassis. Twin Disc Brakes. Three Piece Alloy Clutch Shoe Set. Hudy Spring Steel® Drivetrain Components. Carbon Fibre Radio Plate. Carbon Fibre Steering Brace. C Hub Front Suspension With I.S.S.®. Double Wishbone Front Suspension. Lower Wishbone/Top Link Rear Suspension With I.S.S.®. Heavy Duty Alloy Shock Towers. Moulded Radio Crate. Supplied NiHM Receiver Battery. Hard Anodised Oil Filled Coil Over Dampers. Spare Shock Pistons (Symmetrical/Asymmetrical Damping). Twin Bellcrank Steering. Moulded Wing Mount. Moulded Wing. Front & Rear Anti-Roll Bars. Spare Coil Springs. Spare Clutch Springs. Hudy Profi-Tools Supplied.

WHAT YOU NEED

- 2 Channel radio
- Steering servo
- Throttle servo
- Engine

- Exhaust
- Glow Fuel
- Tyres

- Paint
- Starter box
- Glow heater
- Superglue

WHAT WE USED

- KO Vantage Esprit R
- Sanwa ERG-VX
- Sanwa 991
- O.S. VZ-B V-Spec-T (highly recommended)
- O.S.
- Tornado Race 25
- Proline Crime Fighters/Media Pro Whoops/HoBao Angle Spikes
- Pactra
- Hot Bodies
- Fastrax 4500
- Proline

LIKES

- ✓ Incredible build quality
- ✓ Very high specification
- ✓ High quality materials
- ✓ Excellent design
- ✓ Tuneability

DISLIKES

- ✗ The car's faster than me!!

CONTACT DETAILS

Mirage RCE, Units 1-3 Queens Drive, Swadlincote, Derbyshire, DE11 0EG
 Tel: 01283 226570
www.teamxray.net
www.mirageracing.com

Speed wise the lightweight transmission could indeed be felt, running on a 13T bell housing the XB8 had predigest acceleration, far more than another car we had running, which has very similar gearing. The alloy clutch was set up using the hardest clutch springs, and with the obvious bottom performance of the O.S. gave a very good impression of an Exocet missile. In fact after several hours of running the car for pictures

and testing I really could not find fault with any area of the XB8, and I did try!

RRCi

VERDICT

Whenever we get a new product from Xray you just know it's going to be good, they simply don't make bad cars. There standards of quality and engineering excellence is known worldwide. With the XB8 they have created a 'real' luxury race-car. It builds incredibly well, is incredibly strong, and has a chassis which can be tuned to the nth degree without purchasing a single part; no other car in the sector offers this level of performance!! This is simply a NO Compromise racecar, and has set a totally new quality standard for Rallycross cars. **RRCi CAR OF THE YEAR 2004** RRCi would like to thank Greg Hill of Mirage RCE for his help with this review, and also Mark Wood of Irvine Engines for arranging the engine at very short notice.

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