

# HARDER. FASTER.

# BIGGER...

## Associated RC8T raises the bar

**T**he truggy racing scene is a fully established worldwide phenomenon, so it's no surprise that all the top manufacturers have developed a truggy version of the buggies that were previously the premier off road nitro formula. As predicted, the tide is slowly turning towards the more forgiving but equally exciting truggy class, the increasing number of truggy heats at every club race around the country finds beginners and professional drivers alike discovering the thrills that these mammoths have to offer. You might believe that a truggy is just a buggy wearing bigger monster truck wheels, and indeed that is how the class got started, but that is not the case with the RC8T as the laminated carbon shock towers, CNC 7075 alloy chassis plate, longer drive shafts, propshafts and titanium turnbuckles, stronger hub adaptors, strengthened steering linkage and one-piece CNC alloy steering brace are all unique parts to the RC8T.

### ONLY THE BEST IS GOOD ENOUGH

Based on lessons learned from the successful RC8 which has won the BRCA National Rallycross buggy championship two years in a row in the hands of multiple British and Worlds Champion Neil Cragg, all the team and driver feedback has gone into the development of the truggy version. In the USA team drivers including Ryan Maifield, Ryan Cavaliere, and Richard Saxton have supplied real world testing and hard earned race

data, to fine tune the RC8T. Recently, rising star Jared Tebo went on to take pole position and win the Pro Truggy class at the Pro-Line Max Challenge, where he literally walked away from the field in each of the main events, adding the buggy victory to his weekend's trophy haul into the bargain. With all these top names behind the RC8T it's not surprising to see that the Factory Team RC8T comes with the one-piece aluminium top plate and steering link previously released as optional upgrades for the RC8 buggy.

The black 3 mm hard anodised 7075 aluminium chassis has a deeper CNC machined pocket to lower the engine and clutch bell and reduce the centre of gravity. A chassis brace jacks up the centre diff mounts, to keep the larger 54T spur gear above the chassis lower face. Strengthened steering blocks and rod ends found on the RC8T will no doubt filter back to the buggy as option parts, as their development goes hand in hand.

### BIGGER IS BETTER

Buggy drivers discovered that truggy shocks improved their handling by virtue of their bigger bore, and the size has been spiraling upwards with every new kit release. Following this trend, the RC8T was designed around 16 mm big bore shocks from the outset, as the race scene gradually becomes aware that larger capacity shocks are also more reliable when the going gets rough. The larger bore equates to a larger internal capacity so the stroke of the Nitride coated 4 mm piston rod will have



# BETTER!

less effective volume change and the compensating bladder can better control the oil to minimise the rebound pressure for a smoother, dare I say even 'plush' ride.

## TIME SAVER

As the shocks, diffs, tie bars, link rods, turnbuckles and chassis braces are all pre-assembled in the box, with relevant oils supplied for you to fill each appropriately, Team Associated have saved you an enormous amount of time and helped to speed up the build. While the RC8 buggy chassis arrived fully assembled and 'ready for radio', the RC8T truggy is a self assembly kit, but these useful sub assemblies means the majority of the hard work has been done already, whilst still allowing you to build the chassis and get to know it better as a result.

Unusually, all three diffs are designated to be filled with the same 7000 weight oil; the rear is usually lighter than the front and the centre diff would be the heaviest of all to ensure an equal spread of power to all four corners. Likewise the enormous big bore 16 mm shocks are supplied with a 50 weight oil for use all round, and you get spare pistons with no holes supplied in the kit, so you can drill your own custom pistons if you feel the need for a specific hole size or pattern at a particular meeting.

Although they are pre-assembled, the diffs are built dry so remember to dip each differential cross pin in the diff oil and smear each thrust washer before re-assembling. Don't just split the diff cases and pour

oil in, you won't get the same effect as building it properly. Remove the main gears within the diffs before pouring a little diff oil over their thrust washers, then fill the empty diff case with oil before dropping in the main gears and four planetary gears on their cross pins, allowing them to sink into the oil and chase all the bubbles out for you. While the diff gears are sinking through their very heavy oil you can fill the shocks with 50 weight oil. Give each piston a good pumping, moving the piston rod through a few full strokes before storing them vertically on a shock stand while they bleed any air bubbles out, by which time the diffs will be ready to top up and assemble. By the time you have tightened all the diff case screws, your shocks should have bled sufficiently to screw their bladder filled top caps on tight. Remember to compress each shock slightly before tightening down the top cap, to chase out a bit of oil from the breather hole and carry away the last few bubbles, but also to prevent the shock becoming pre-loaded by virtue of excess oil and affecting the rebound adversely.

The manual is comprehensive as you'd expect from Team Associated, and the pre-assembled diffs and shocks mean you can skip straight through to the eighth page to assemble the chassis. Be aware of all the components that need greasing and thread locking; the manual is full of useful information and assembly tips, just bear in mind that if you skip any of these important tips your RC8T will not be as reliable as it could be. Nitro engines induce a lot of vibration to every single component



**Above:** Milled 3 mm black hard-coated 7075 aluminium chassis has deeper engine and clutch bell pockets

**Below:** Centre diff sits atop a centre chassis brace. Brakes are simply awesome and require no servo effort at all. 'FFC' Free Float Calliper brake system eliminates the possibility of unwanted brake drag while on throttle



**Below:** One-piece alloy steering brace is a lesson learnt from the RC8 buggy



throughout the chassis and they need all the help they can get in order to serve you properly throughout a race meeting, maybe even providing trouble free action throughout a whole season if you build it right first time.

## NO GRUB SCREWS TO LOSE

Assembling the drive shafts and propshafts you appreciate the fact that all their pivot pins are retained by either the inner race of a bearing or by an external spring clip, so there is no need for retaining with grub screws which can let you down at the most in opportune moments. Because there are no clamping grub screws there are no flat areas ground into the cross pin so it remains as strong as possible, so well done to the Team Associated 'Area 51' designers for keeping the RC8T design simple and effective.

Assembling the king pin pivots into the steering blocks you'll notice that the hardened steel inserts are machined with a triangular key to latch into the matching recessed hub carrier. You have to be careful to get them in the right way up and use the slotted end to drive them down into the hub carriers, checking they are fully seated and locked into place before tightening the king pin bolt. The benefits of this system is that the spacer rotates with the hub carrier at all times so the king pin bolt remains completely unaffected by the steering action, and once thread locked into place will never let you down again.

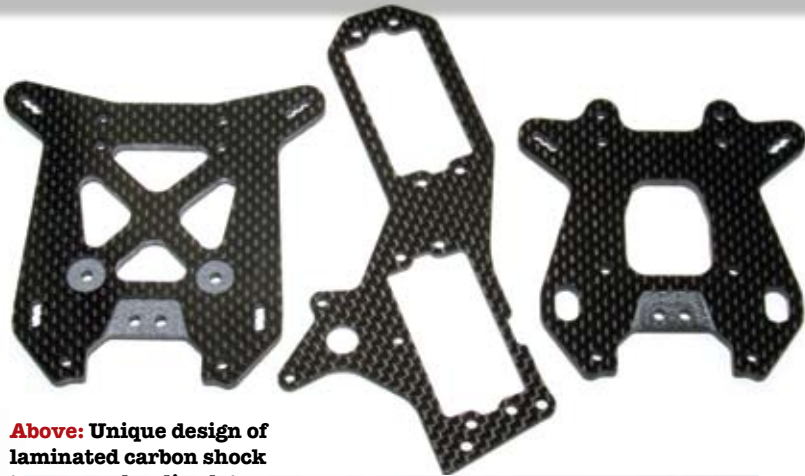
Like the RC8 on which this truggy is based, the shocks lean at a very shallow angle, but each lower suspension arm incorporates a raised mounting block to increase the effective shock angle and hence improve the shock/wheel ratio. As well as ensuring a lower centre of gravity, a low shock angle means a shorter shock tower, which is inherently more crash resistant. Pure genius, maybe it's just the design engineer in me but I get off on little design details like this. Yummy!

## HOW GOOD ARE YOUR EYES?

The castor geometry is set by little inserts in the front hub carrier, and you get a set of components to install 14, 16 and 18 degrees, though telling the different parts from one another will require a magnifying glass. The numbers moulded into each part are absolutely miniscule, certainly too hard for my eyes to differentiate 16 from 18 in figures less than 0.5 mm high. Get the right pair inserted, the right way round (blue at the front, red at the back) and the right way up (a chamfer follows the form of the hub carrier) and you will have the perfect castor set up each time. Once you have identified the correct pairs of inserts using a magnifying glass, mark them up for easy identification and spare your eyesight when you are in a hurry to change castor angles trackside. I simply used a permanent pen to add a stripe to the 18's and a spot to the 14's and left the nominal 16's clean. Now I can tell at a glance what I have fitted, and know which ones to grab from my spares box should I need to make any adjustments in a hurry.

With a shim washer to pre-load their main bearings for an accurate gear mesh, installing the front and rear differentials into their cases can be done either way round, you can get it wrong, but due to the ring gear recesses milled into the main chassis plate, you can only fit the gearboxes to the chassis if you have the diffs in the right way round. So it is idiot proof after all.

Like the RC8 the front and rear diffs are easy to access, and similarly the centre diff wears the twin brake calliper assemblies, which remain unaffected by the removal of the four main screws to gain access to the middle diff. The brakes enjoy the same design as the buggy right down to the sintered discs with metal inserts, clamped between metal pads by eccentric cam levers. The 'FFC' brake system uses linkage travel limiters as per the buggy design, preventing over travel



**Above:** Unique design of laminated carbon shock towers and radio plate suit the extended truggy geometry



**Above:** All tie bars and linkages are pre assembled, but will need adjusting to get correct geometry before you hit the track



**Above:** Factory assembled differentials save a lot of time...



**Above:** ...but you still have to strip and lubricate each gear, pin and thrust washer before you run the truck



**Above:** Tools and tuning options included. Clutch spring tool is a nice touch, as are pistons with no holes for a custom job



**Above:** Driveshafts have captive pins within bearing inners or spring clips. Nice with no grub screws

**Below:** Anti-roll bar linkage is adjustable from below, shock lower mount enhances angle and geometry. Droop screws included in all lower arms



# ASSOCIATED RC8T 1/8TH NITRO TRUGGY

Castor insert markings are hard to read...



...so mark them up in pairs for easy identification in the pits



Castor angle is defined by the lower hinge pin running in the matched pairs of inserts. Blue front, red rear



Below: Rear hub carrier showing joint assembly, joint grommet and inner bearing shield plus extended axle to increase track width



on full throttle inducing any brake drag for maximum speed and minimum brake wear. Unfortunately the larger central spur gear requires that the chassis is milled out locally, whereas the buggy chassis remains closed off in this area to reduce primary drive grit ingestion.

The rear drive shafts have an over boot to stop the front tyres flinging grit into their universal joints and shortening the working life. To get these rubber boots on to the drive shafts simply insert a pair of long nose pliers and open them up enough to push the drive cup through; you won't get them fitted any other way without risking tearing the soft rubber material. The larger inner axle bearing gets extra protection in the form of a shield added to the axle before insertion, to keep the bearings own rubber seals protected in even the most severe conditions for an even longer working life. Another simple piece of design to keep you on track and off the bench, I love it.

Both front and rear axles are extended by 14 mm with blue anodised alloy offset hex hubs, adding 28 mm to the overall width of the truggy at a glance, for stability and extra cornering speed.

## BIGGER TANK, SMALLER ENGINE

The fuel tubing is held captive below side guard loops and a tidy installation is ensured by the inclusion of pipe clamps to keep the hose from getting caught in the steering system or primary drive gears. Strangely there is no fuel filter included in the kit, presumably the sintered metal filter inside the fuel tank is deemed sufficient to prevent any dirt entering the carb. The RC8T fuel tank has the same footprint as the buggy version, but it is a little bit taller so it gets a capacity hike to 150 ml, (without the capacity limiting spacer fitted) which is 20 ml larger than the buggy tank, for a useful run time extension.

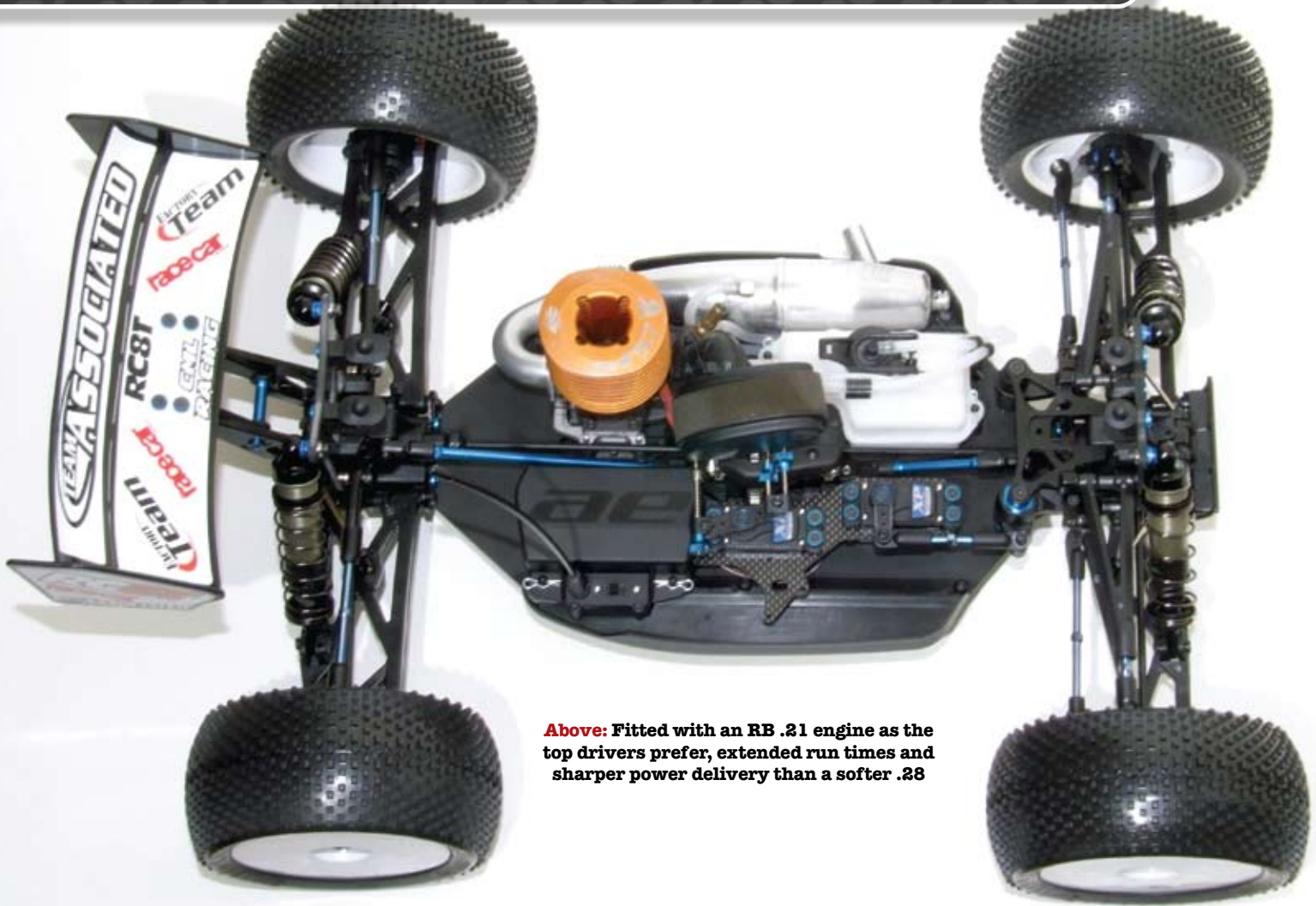
My RB WS7 'III' engine has done sterling service in my RC8 buggy, but as that is now converted to LiPo and Brushless (see September '08 issue 298) this reliable workhorse went straight into the RC8T. As the alloy clutch shoes and springs supplied in the kit were the same as the items already installed from the RC8 buggy, I simply changed the clutch bell from the 16T buggy item to the new truggy specific 14T and bolted the engine straight into its new home. This .21 RB engine is a real rocket ship, providing so much power in my buggy that most track layouts meant I could barely get my trigger off before I was into the next corner and back on the brakes. Like most top truggy drivers on the National scene I'm expecting this engine to be right at home in the slightly heavier truggy, which has the stability to allow me to explore the potential of the engine better. Running Byron Gen 2 nitro fuel and such a large capacity fuel tank I expect some pretty amazing run time, let alone lap times.

All built up, radio and engine installed I stood back to admire my handy work. Maybe it's the slim chassis making the wheels look like they are a long way out from centre line, but it was amazing to see the over width of the beast, measuring over 42 cm across! I can only imagine the cornering stability and how this will float over the worst terrain I could possibly attack on a race day. I haven't driven it yet and my confidence is already soaring; this truggy will not have to swerve around ruts and potholes any more, that's for sure!

Finally ready to run, equipped with a receiver and radio battery, carrying 150 ml of fuel, the RC8T weighs in at just 4.25 kg. The kit white dished wheels, equipped with my chosen Pro-Line Crime Fighter 'LPR' tyres and their moulded foam inserts, weigh 895 grammes as a set of four, which puts them among the lightest truggy tyre assemblies I've ever measured, improving the acceleration and braking by reducing the rotating mass.

Below: Front hubs are improved, stronger with triangular keyed pivot bushes that key to alloy casting





**Above:** Fitted with an RB .21 engine as the top drivers prefer, extended run times and sharper power delivery than a softer .28

## TRACK TEST

To get some testing in ahead of the busy winter season, we visited Coventry's excellent facility at Baginton, home of the popular Midland Astro Masters championship. The initial lengths of all the pre-assembled steering and camber linkages hadn't set the geometry accurately so we had to dial that in properly, so while we dialled in the suspension we ran four 10 minute race simulations, and at the end of it the receiver battery took 1100 mAh to re-peak so we knew we were somewhere near the end of our duration and could benchmark 40 minutes of run time for future race meetings. On the full AstroTurf Baginton circuit the RC8T felt a little under geared on the 14T clutch bell, so we might go up one tooth for the winter series. On the new dirt track it was massively under geared and screaming for mercy on the very long main straight. I figure it would

require an extra two teeth on the clutch bell on the dirt track, so we might go back to the 16T RC8 buggy clutch bell for that come the summer.

We went looking for the legendary steering of the RC8 family, so we changed to the minimum 14 degree castor inserts to sharpen the front-end. We also wound off the front anti roll bar pivot screws to reduce its effect a little and wound all the droop screws right off to allow maximum suspension travel to induce a lot more chassis roll for even more weight transfer across the axles mid corner. On top of that we felt the steering servo saver was a little soft, so we wound on a couple of extra turns and backed it up with thread lock to stop it unwinding mid race. With a steering servo as strong as the XP 1015 we were confident that we didn't need to run such an extreme amount of protection, and this did the trick;



**Left:** Pre-assembled 16 mm big bore shocks with 4 mm shafts and over boots can take the punishment  
**Right:** Huge wheels and high speeds demand top spec servos. Fit the XP servo horns instead of the kit ones as they suit the XP spline pattern





## QUICK SPEC

**Class:** 1/8th 4WD Nitro Truggy  
**Type:** Self-assembly chassis kit  
**Manufacturer:** Associated Electric  
**Price:** £409.99 RRP

## REQUIRED & RECOMMENDED

Engine: RB WS7 'III' and pipe combo  
 Fuel: Byron Gen 2 25% Nitro  
 Starter Box: Fastrax 'King'  
 Tyres: Pro-Line 'Crimefighters'  
 Glue: Pro-Line CA  
 Servos: XP 1015/1313  
 Radio: 2-channel  
 Receiver battery  
 Glow start  
 Fuel bottle  
 Lexan Paint: TelsShells

## DISLIKES

No waterproof radio switch cover  
 No fuel filter included

## LIKES

RC8 lessons learnt  
 Alloy steering brace and crosslink  
 Nyloc wheel nuts  
 Titanium turnbuckles  
 Even the steering is ballraced!  
 Pre-built sub assemblies

## CONTACT

CML Distribution, Tel: 01527 575349  
 or visit [www.cmldistribution.co.uk](http://www.cmldistribution.co.uk)

the lap times fell from 32 seconds to mid 27's at a stroke. We found that none of the three kit supplied servo horns suited the XP servos, and we stripped a few out, bringing the session to a premature halt, but once we fitted the dedicated servo horns that came in the XP servo packaging we had no further problems.

With the 8 mm venturi fitted in the carb, we found limiting the throttle to 60% on the transmitter end points didn't affect lap times but saved enough fuel to run an 11 minute race simulation and still get back to the pits without flaming out. Opening the throttle fully simply used more fuel, which shortened the run time and while it certainly felt quicker to drive the lap times didn't reflect this at all; it was simply wheel spinning away all the extra power beyond what the tyres and track condition had to offer.

Balancing the wheels took a lot of lead tape but made the world of difference when revving the truck on the starter box. With unbalanced wheels the truck was threatening to leap off the starter box but once I'd taken a little time to get the wheels within a reasonable balance, the truck would simply sit there and rev happily without shaking the suspension about wildly, so that has to pay dividends on track also. The less work load you pile onto the shock absorbers and suspension pivots, the longer they will last between rebuilds, and the more chance they have of handling the ruts and bumps of the circuit properly, plus you will go faster along the main straight as a consequence. Balancing might be a black art to many, but well worth looking into.

## AN EYE ON THE THRONE

The RC8T's main weapon is the amount of steering it generates to cut tight lines and save time corner after corner. Couple that with the simply stunning brakes, which can be applied with minimal servo force yet bring the truck to a rapid halt and the competition certainly has a new benchmark. The RC8T design and construction means it is definitely going to be up the sharp end at any level of competition. Having built, driven and experienced the RC8T truggy for myself I expect to see it figure heavily in the 2009 BRCA Truggy Nationals, the only question is who will be driving the winning truggy. Expect to see a new team announcement on the CML website soon as drivers flock to join the Factory Team in order to chase the crown. RRC

