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Magnets. The new Reedy "C4" high-strength magnets are at least **15% stronger** than any stock motor's magnets on the market today, providing "explosive" power!

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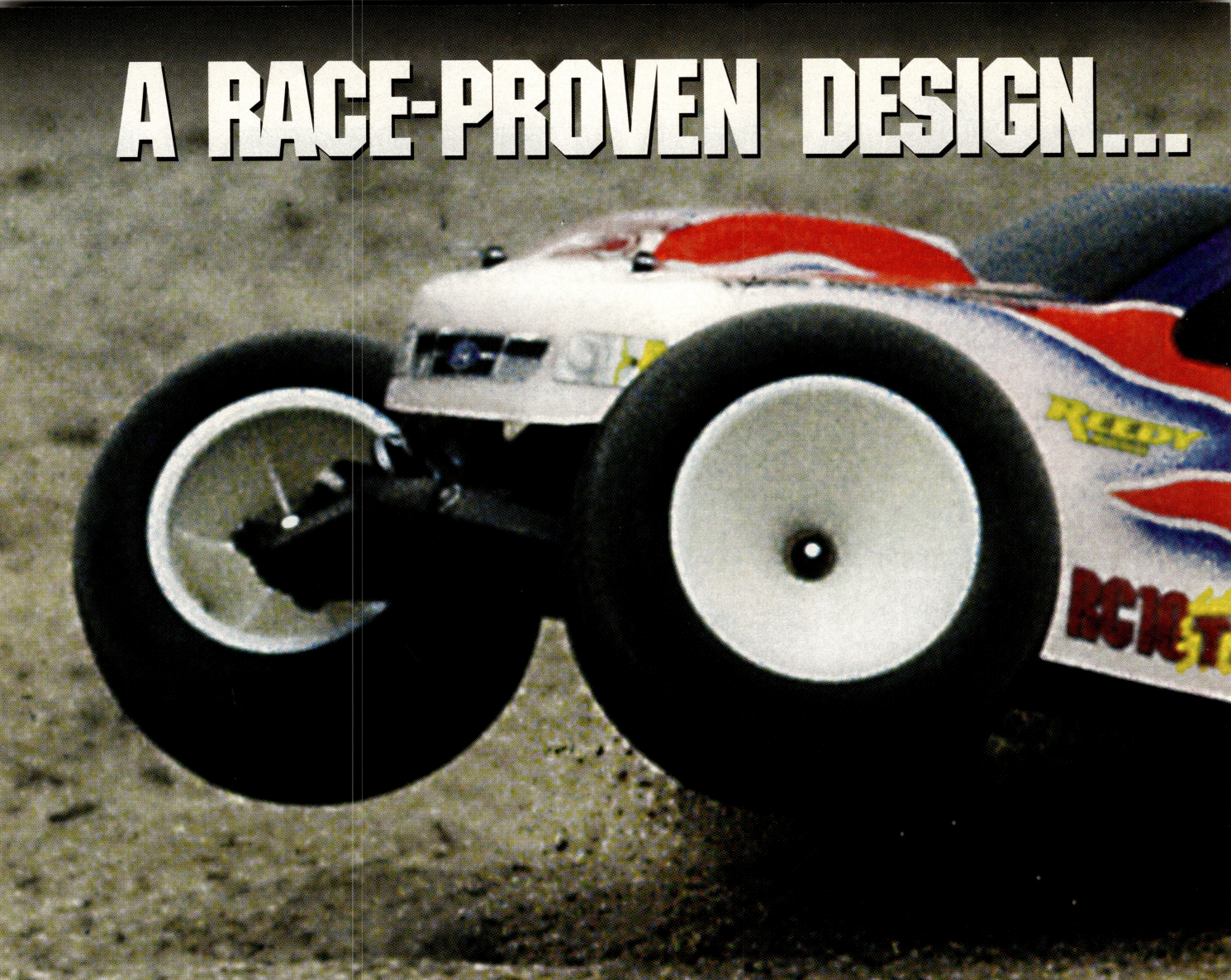
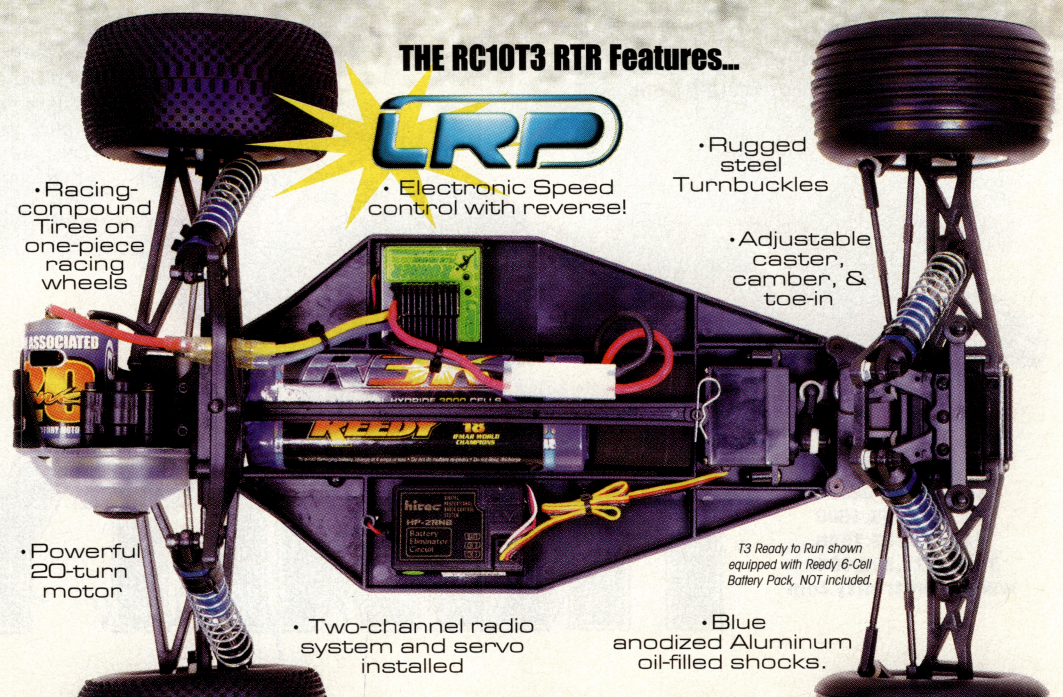


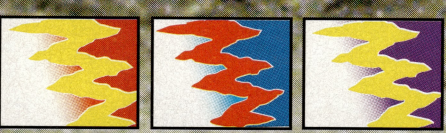
Factory Assembled

Since its introduction, Team Associated's RC10T3 truck has been the dominant force in electric truck racing, winning three consecutive NORRCA World Cups, the 1998 ROAR National Championship, and too many other national and regional races to count. Now the Team introduces the RC10T3 "Factory Assembled" for those who want the performance of a true racing truck in a track-ready package. Fully upgradeable, shares most components with our RC10T3 kits, and includes genuine LRP Speed Control, 20-Turn motor, and 2-channel wheel radio installed!



TRACK-READY IN MINUTES!

T3 RTR



• Pre-painted body...
Three different color schemes available!
(Custom painted body shown in photos... actual pre-painted bodies may vary slightly)

• High-quality two-channel wheel radio system installed
May include Hitec (shown) or equivalent system

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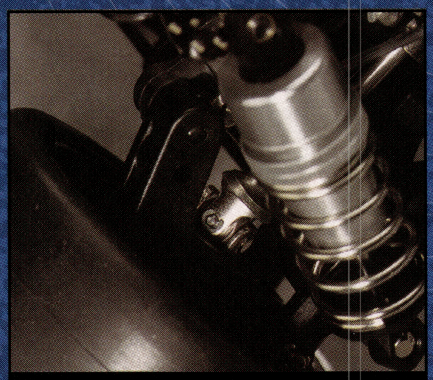
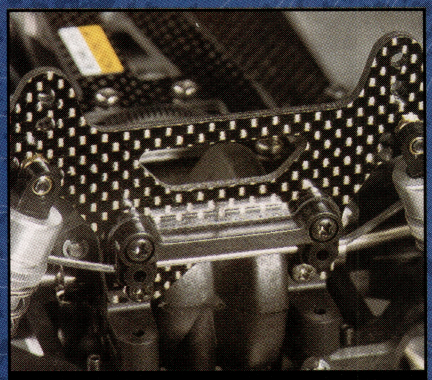


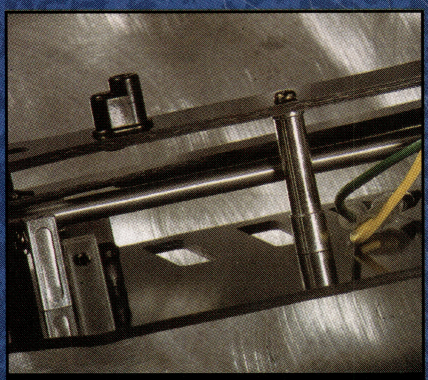
Threaded, aluminum shock bodies are fully adjustable, allowing complete control over your car's handling ability.



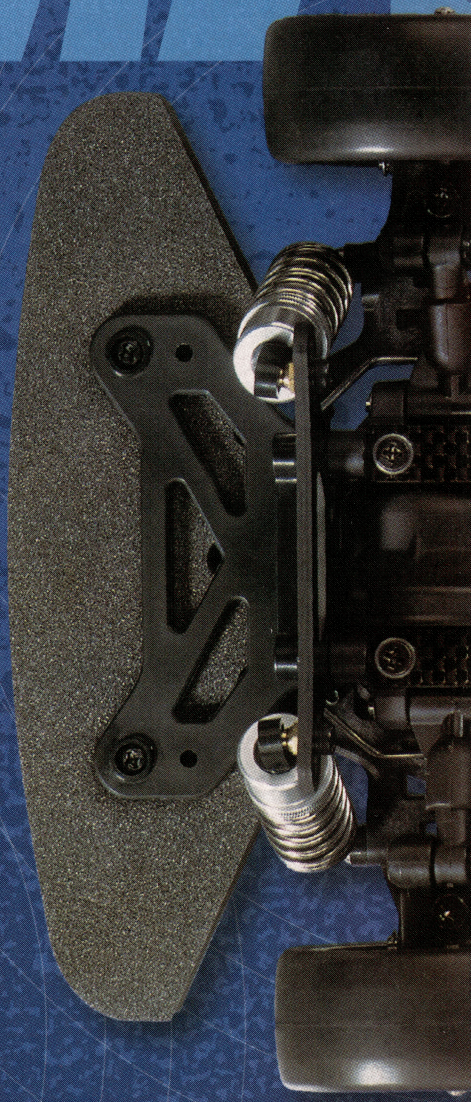
Carbon fiber shock towers are lighter and stiffer, providing better support for your car's suspension.

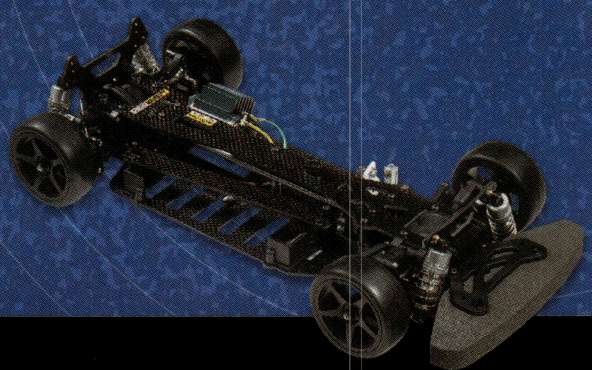


New compact differentials allow for a lower center of gravity for quicker response and razor sharp transitions.



An aluminum center drive shaft provides for lower rotational mass and harder acceleration.

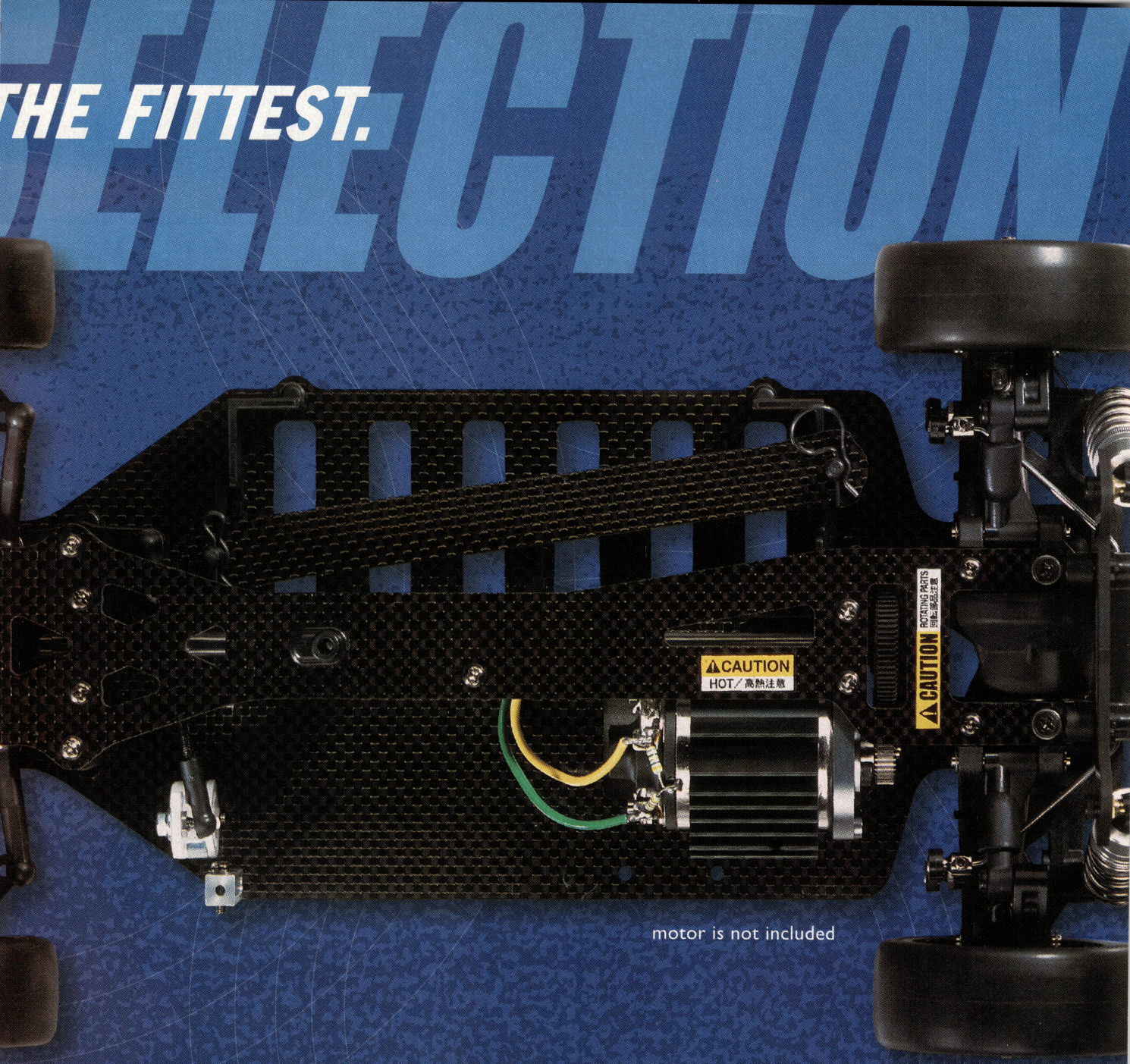




1/10 RC TB EVOLUTION CHASSIS

TB Evolution chassis **kit number 58267**

THE FITTEST.



motor is not included

Get ready for the next step in evolution – the TB Evolution from Tamiya. This limited edition racing chassis has combined the best of the gas-powered racing scene with all that you want out of your electric. To start with, we've used the differentials from our TGR gas model – ball in the back, one-way up front – to improve power usage, ensuring more torque hits the ground. You can also tune your racing machine more precisely and more quickly with the threaded aluminum shock bodies. Aluminum drive shafts, motor mounts and heat sinks all make sure your car is as light and as responsive as possible. This baby also includes five different spur gears and A-type reinforced slick tires. We could go on and on about how superior your performance is going to be because of the carbon-fiber shock towers and the front and rear sway bars, but you probably want to go buy one already. So get up and get to your local hobby source today – found at www.tamiya.com – before they're all gone.

TAMIYA

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It Looks Like We've



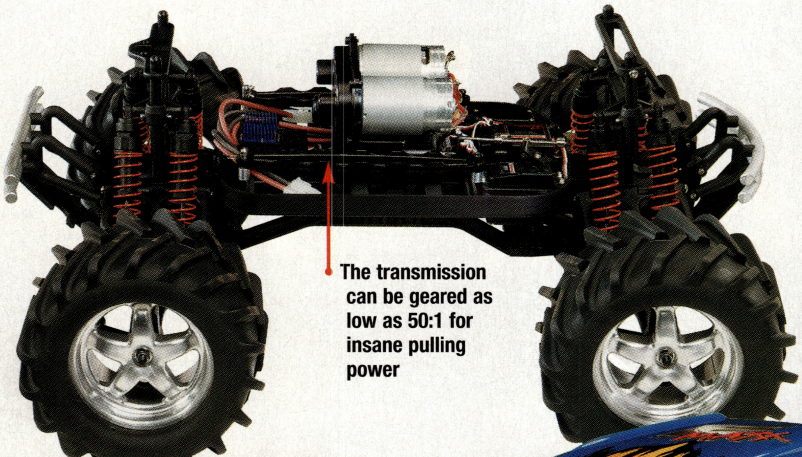
The T-Maxx started a revolution in R/C and now it's finally got some high voltage competition. Traxxas E-MAXX. The E-MAXX is everything that a T-MAXX is, but with gut-wrenching, wheelie popping, electric motor torque. Twin Titan™ 550 motors, trick 14.4 volt ESC power system, and shift-on-the-fly 2-speed transmission all put the E-Maxx in a class by itself. If you want the best, most innovative electric monster truck there is, look no further. E-Maxx breaks the rules and beats them all!



- Big Block motors: Twin Titan™ 550 fan-cooled motors have 30% longer armatures than a 540.



- More power: The all new MOSFET VX-12 forward-reverse electronic speed control delivers a whopping 14.4+ volts to the motors from dual 6-cell battery packs*. That's twice the power of ordinary R/C models! Plus, it's backed by our limited lifetime electronics warranty.



The transmission can be geared as low as 50:1 for insane pulling power

Shift on the Fly...

from your transmitter! Select low gear for monster climbing muscle, then power shift to high gear for unbeatable top speed.



*Batteries not included

ProGraphix™

- The awesome new E-Maxx includes a 6-color painted and trimmed body. Choose from 4 different base color schemes.



E-MAXX

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Visit www.TRAXXAS.com for tons of pictures and video of the new E-Maxx!

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THE WORLD'S PREMIER MONSTER TRUCKS

Created Another Monster!



- Bellcrank Steering: The bellcrank steering geometry virtually eliminates bump-steer for precise control!



- Hardened Steel Gears: Tire-shredding power is transferred to the wheels with these efficient, hardened-steel ring and pinion and differential gears. They provide maximum strength during rigorous 4WD off-road pounding.



- High Torque Steering Servo: Turning the massive 5.75"h x 3.5"w tires is a breeze with this little torque monster.



- The double-shear mounted wishbones of the fully independent suspension minimize body roll and maintain negative camber, stabilizing the E-MAXX for exceptional traction and control. Pivot ball type axle carriers provide durability, performance, and ease of adjustment.
- Incredible T-Maxx suspension delivers 4 inches of maximum ground clearance and over 3½ inches of super plush suspension travel with 8 oil-filled shocks.
- Real quality! The E-Maxx includes 28 precision ball bearings

The Original Monster!

R/C Car Magazine Truck of the Year!

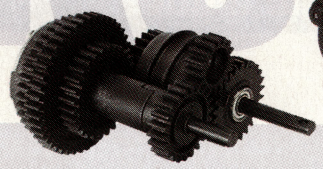
It's the big daddy of them all! When T-Maxx was unleashed, the monster truck world was turned upside down. Never before had anyone seen a Nitro truck with two speeds and reverse that shifted from a 3-channel transmitter! 3½ inches of seemingly endless suspension travel is dampened by 8 oil-filled shocks. This big, mean, drive-over-anything nitro breathing monster has become the benchmark for all others to follow. It's tough, serious R/C that's made for the way you like to play.



- Pro .15 nitro power with EZ-Start one button starting
- Nitro with reverse, that's shifted from the transmitter
- Autoshifting two-speed transmission works in forward and reverse. 30+ MPH in high gear!
- Fully assembled and Ready-To-Run®
- Full-time four wheel drive
- Hardened steel differential gears
- 30 precision ball bearings
- Four inches of ground clearance
- Oversized disc brake provides powerful 4-wheel braking

Nitro with Reverse!







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Issue 6.6 • Mar/Apr 2001

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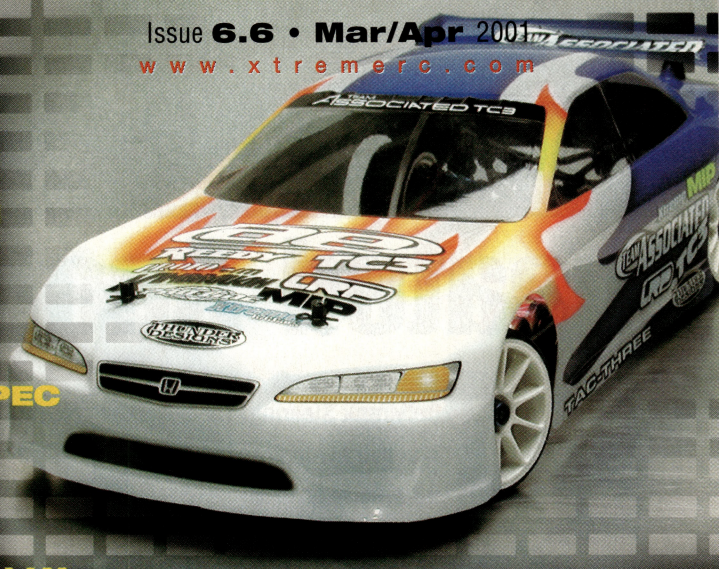

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Take your pick: Buggy or Truck



76 • HPI SUPER NITRO RALLY
The fastest shovel we've ever tested.

56 • Associated FACTORY TEAM TC3
First Cleveland, now the World.

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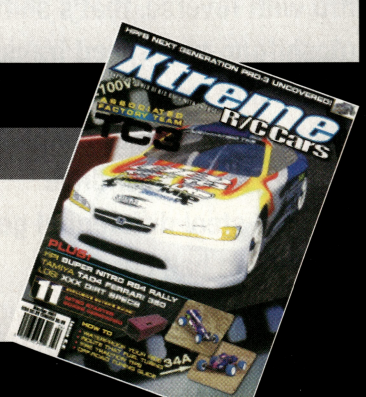
Other stuff in this issue:

After the shock of those beautiful ladies last month, this month is tame by comparison. Doesn't mean it's not funny. There are plenty of off-color references, you just need to look for them.

Cover Photos by: Elliot Crabtree



Need your Dirt Girl fix? Go buy a T-shirt.

The Winning Team



WORLDS XX4 EDITION

'99-'2000

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- ROAR NATIONAL CHAMPION
- EURO-CHAMPION



XXX

'99-'2000

- MODIFIED NATIONAL CHAMPION
- STOCK NATIONAL CHAMPION



'2000

- MODIFIED NATIONAL CHAMPION
- STOCK NATIONAL CHAMPON



TEAM LOSI XXX

'2000

- NORRCA NATIONAL CHAMPION
- ROAR REGIONAL CHAMPION



XXX NT

NOW APPEARING AT A HOBBY SHOP OR TRACK NEAR YOU.

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Always Racing Towards The Future.

Xtreme R/C Super Series

In motorcross and in other forms or motorsports, the top circuits use points series' to promote their particular sports and determine who the best of the best is. In R/C off-road electric (and almost every other R/C racing class for that matter) we have a National race and then other races around that country that have traditional importance and significance. In off-road electric, the Reedy Invitational, Florida Winter Champs, Cactus Classic and other races are usually well attended and carry with them some major prestige for the winners. Coupled with a ROAR or NORRCA Nationals and you've got an unorganized type of series. If these races were organized as a series it would be great. Imagine a Super Cross type series that R/C could call its own with these pre-existing races. If someone or some organization were to start this type of series from scratch it would be a tremendous undertaking. That's unnecessary. These particular races would keep their titles and significance for the privateer racer that makes it there on his own dime. For the winners in the modified and sportsman classes the prestige of winning that particular race would be all theirs. Next create a separate, true Factory class with a limited number of entries for guys like Kinwald, Pavidis, Francis, etc. Let's face it. How many of us want to travel to a race only to have five or six top factory guys in your heat race? Nobody wants that. A separate factory class with a limited number of drivers would be a great solution. Make this Factory class a true points series. At the end of the season a series championship is awarded. This factory class could be an exhibition for the drivers and spectators. With this type of national series carrying the prestige of established race events and a banner title, something like "R/C Super Series," it would be more easily marketable in local areas when the series comes to town. I think something like this would help energize the sport of R/C racing. This summer, companies are going to spend tens of thousands of dollars on sending drivers to an Air Force base in South Africa (Sorry, don't mean to offend our South African readers, just trying to make a point.). Wouldn't that money be better spent on building some type of significant series here in the States? An idea like this is not new and has been echoed for years around the industry. I think it's time some action is taken. With all the new participants in the R/C hobby by way of RTR's, I think now is the time for the industry to make a push and turn these hobbyists into racers. Tell me what you think. Any convincing ideas or opinions will make it in next month's Xtra Stuff.

Email me at mikev@xtremerc.com.

Mike Velez
Publisher/Editor/Racer

It's about time Mike takes a stand on an issue.

Xtreme R/C Cars

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Printed in the U.S.A

NEW BODIES





911 Turbo
#7335 Porsche 911 Turbo (190mm)
#7435 Porsche 911 Turbo (200mm)

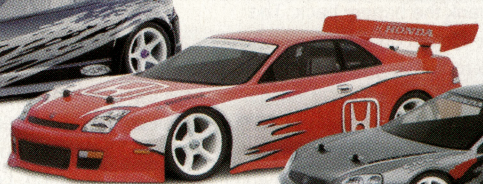


ELISE
NEW #7333 Lotus Sport Elise (190mm)
#7433 Lotus Sport Elise (200mm)



COUGAR
#7437 Ford (Mercury) Cougar (200mm)

NEW #7356 Ford Mondeo BTCC 190mm



PRELUDE
#7449 Honda Prelude (200mm)



CIVIC COUPE Si
#7338 Honda Civic Coupe Si (190mm)
NEW #7438 Honda Civic Coupe Si (200mm)



CELICA
#7340 Toyota Celica (190mm)
#7440 Toyota Celica (200mm)



Stratus
#7316 Dodge Stratus (190mm)
#7416 Dodge Stratus (200mm)



Mercedes-Benz AMG
#7443 Mercedes-Benz AMG S-Class (200mm)



ECLIPSE
#7451 2000 Mitsubishi Eclipse (200mm)



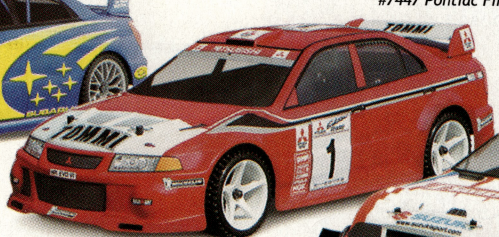
PONTIAC Firebird
#7447 Pontiac Firebird Trans Am (200mm)



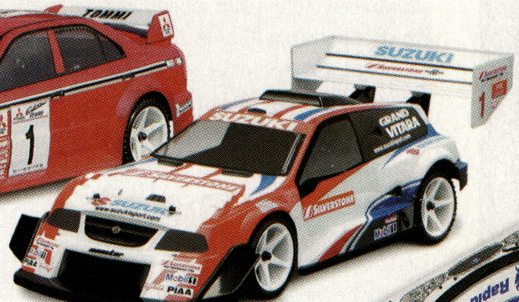
BMW M5
NEW #7450 BMW M5 (200mm)



IMPREZA
NEW #7553 Subaru Impreza (WB 300mm)



LANCER Evolution
#7348 Mitsubishi Lancer EVO VI (190mm)
#7448 Mitsubishi Lancer EVO VI (200mm)
NEW #7551 Mitsubishi Lancer EVO VI (WB 300mm)



SUZUKI ESCUDO
NEW #7552 Suzuki Escudo Pikes Peak (WB 280mm)

MX-1
NEW #7161 MX-1
(fits Nitro MT & Nitro Rush)





Free vinyl decals complete with headlights, tail lights, window lines and logos are included with each body.





Painting bodies is easier with our full-color painting tips, step-by-step decal instructions

GT-one

HPI

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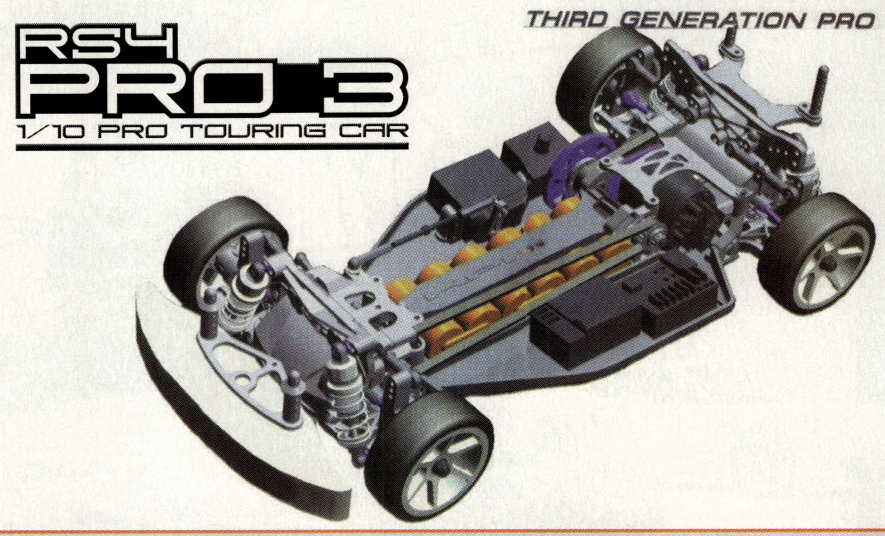
New Blood Line!

If you've paid any attention to HPI over the years, you know they have a tendency to let their cars evolve from one version to the next. Many new HPI kits have used pieces and components found on earlier versions. However, HPI is departing from their normal evolutionary process with the new RS4 Pro 3. Gone is the double-deck graphite chassis of old. In its place is an all new, molded composite chassis. The chassis as raised sides, and the 6-cell battery pack and motor mount in the center of the chassis. The electronics flank the battery pack. The dual belt system drive train uses lay shafts to route the main belt next to the battery pack. The dual belt system distributes power to all four wheels. The Pro 3's suspension system is completely redesigned and features more adjustments than ever before. The new chassis will be decked out with all the bells and whistles you'd expect on a pro kit – universals, bearings, anodized aluminum, etc. Look for the Pro 3 to be in stores this April. Expect a complete review very soon. For more pics of the new ride go to www.xtremerc.com.



New Ride For Saxton

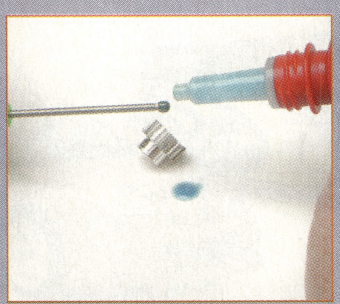
Multi-time ROAR and NORRCA National Champion Richard Saxton will be running the new Mugen MBX-4 XR Works 1/8-scale rig this new racing season. The new kit is similar to the MBX-4 RR but has some different suspension geometry and added pieces. For the past couple of years, Richard has been running and developing the Thunder Tiger EB-4. Although Richard found plenty of national success with his EB-4, both Thunder Tiger and Mugen took a back seat to Kyosho and the MP7.5 at the recent Worlds in Vegas. Both Mugen and Richard are hoping the new match up will bring success once again for man and machine.

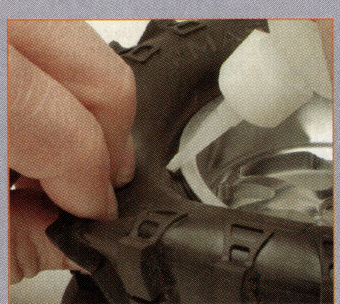


Extra! Extra! E-Maxx Service Bulletin

Based on dealer and customer feedback, Traxxas has made the following recommendations. Both of these issues will be addressed immediately in E-Maxx kits currently in production.

- The set screws that hold the pinion gears on to the motors can loosen without the owner knowing. If only one pinion becomes loose, the entire drive train becomes dependent on just one motor. This dependency can burn out the motor that's doing all the work. Check the pinions and place a small amount of liquid thread-lock on the threads of each set screw.
- There's a simple fix for E-Maxxes that won't pull wheelies. First, tighten the slipper clutch all the way, then back the nut off 1/4 of a turn. Next, glue the tires to the wheels. In the E-Maxx instructions, tire gluing is covered. Go back and follow the instructions. This almost always results in an E-Maxx ready to wheelie.





By the time you read this most E-Maxxes will have tightened pinions and glued tires.

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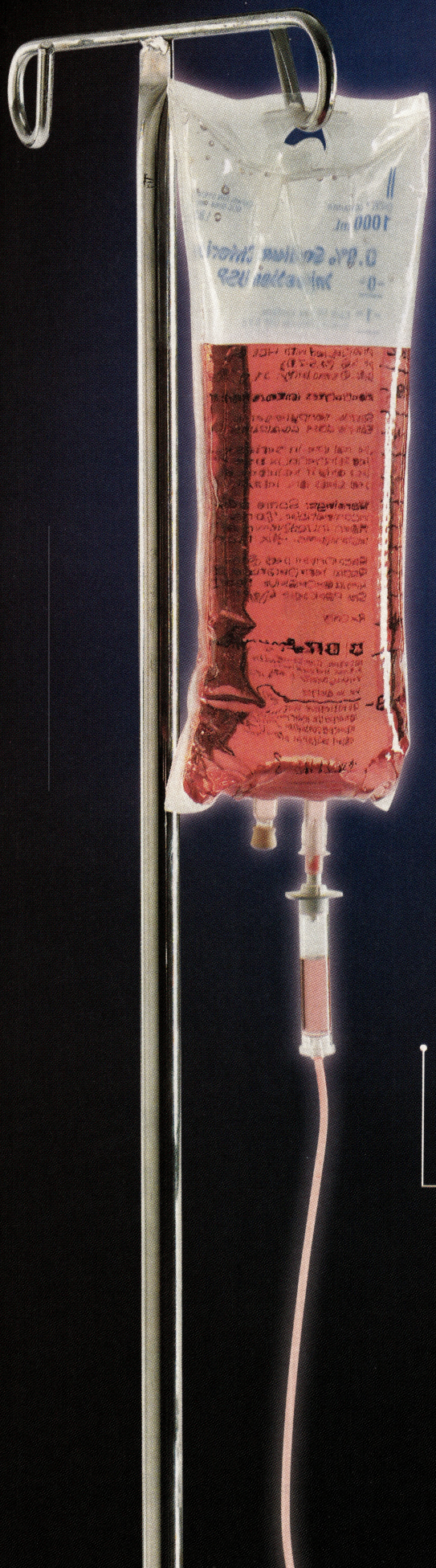

FOR THOSE BORN WITH NITRO IN THEIR BLOOD

Red Alert's race-tested blend of castor and synthetic oil provides optimum engine performance at a price suitable for everyday use. Available with 10% or 20% nitro in quarts or gallons.



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THE LEADER IN AWESOME R/C™

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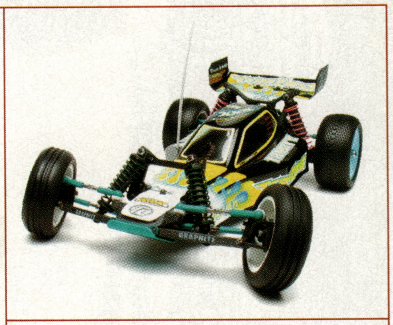
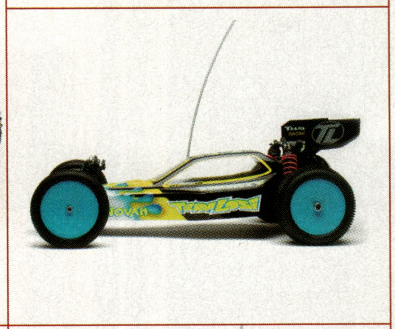
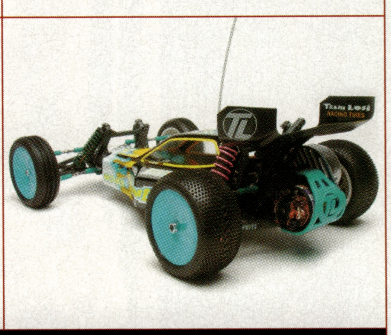






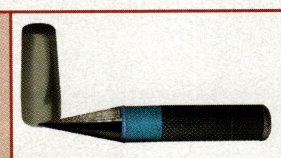
Kinwald goes XXX

Back in "97 after winning their first world championship with the Double-X, Team Losi introduced the Double-X Kinwald Edition. The Kinwald Edition was the first off-road R/C kit to come fully raced out with graphite everything and all the hop-ups used to win a World Championship. Although Team Losi has yet to win a Worlds with the relatively new Triple-X buggy, they decided to pull out all the stops with the new Triple-X Kinwald Edition. The new kit will again come with all graphite, titanium nitride-coated shock shafts, lightened top shaft, titanium turnbuckles, blue wheels, MIP CVDs, Phobia body, and everything else you'd expect on a kit adorned with the name of one of the best drivers in the world. We weren't expecting to see this kit until next holiday season so we were pleasantly surprised to find out the new kit will be on the market as early as March, in time for this year's racing season. We can't wait!

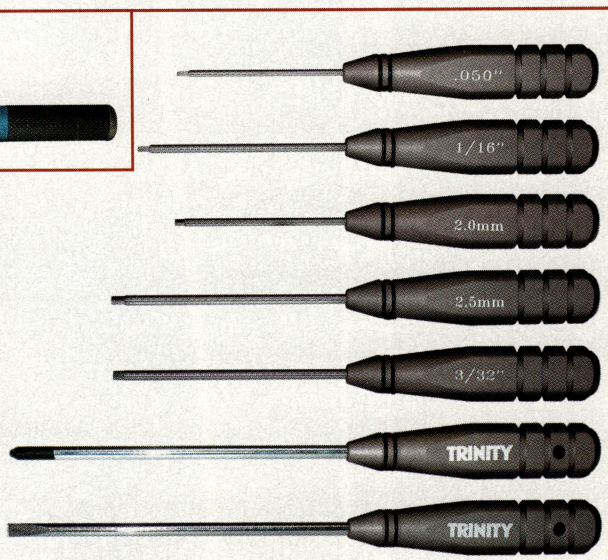
Trinity Team Tools

Trinity is expanding their tool line up to include all new Pro Wrenches. The new wrenches come with scratch-resistant, hard-anodized handles with palm spinners and flat sides to make threading screws less stressful on the hand. The sizes will include popular metric and standard Allen head sizes. A #2 Phillips head and flat head will also be included. To make precise body holes every time, a new body hole reamer is also in the works. The reamer features a hardened steel tip and a carbon fiber handle. The Pro Wrenches are reasonably priced at between $10.99 and $11.99, but the Body Hole Reamer will set you back $36.99. Look for these new tools on the market now.

Also new from Trinity is After Burn oil. After Burn is after-run oil made to lubricate nitro engines between runs. After Burn will come in a 4 oz. bottle and will go for $5.99/bottle.







If you have a new Kinwald Edition you'll have no more excuses for not winning.

WHILE MOST COMPANIES ARE BUSY MAKING THEIR CARS LOOK PRETTY, WE'VE BEEN BUSY BUILDING WORLD CHAMPIONS!

THE NEW GT-4

1/10th GAS TOURING CAR



The GT4 is the best gas touring car I have ever driven!
-Chris Tossolini (ROAR National Champion)

This is an awesome car right out of the box!
-Barry Baker (National and International Champion)

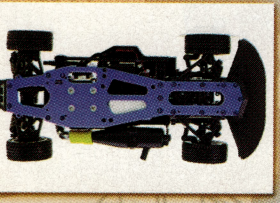
Years of development make this the best gas car available!
-Masami Hirosaka (10 Time World Champion)

PROTOTYPE SHOWN
visit our website for final version specs.

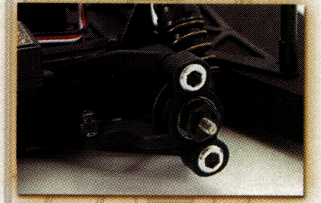
A new generation of nitro turing cars

Rather than transforming an electric touring car into a niro powered version, the all new GT4, was specially designed to handle the power of today's high output nitro engines. Built from the ground up as a purpose built competition nitro touring car, the GT4 was also designed to be user friendly for a wide range of users. Whether on a parking lot or race track, beginners and racers alike will be able to enjoy the world class performance and workmanship of the all new GT4.

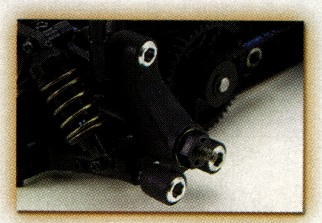
KEY FEATURES



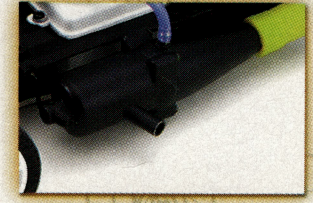
3MM DURALUMINUM CHASSIS



BALL ADJUSTABLE FRONT SUSPENSION



BALL ADJUSTABLE, REAR SUSPENSION



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Associated Introduces New Breed of RTRs

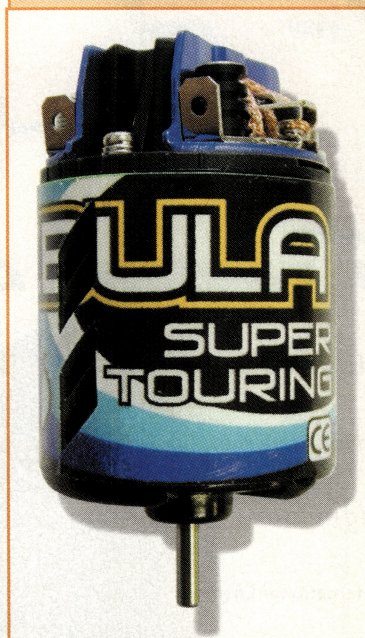
Team Associated just announced their new "Team-Built" concept. Associated will offer both the RC10GT and RC10T3 trucks in a built version. These trucks will be basically Associated's team level kits, which means they're ready to go racing. Features will include Pro-Line racing tires, blue-anodized shocks, full bearings, universals (possibly MIP CVDs), and pre-painted bodies. The idea is to bridge the gap between ready-to-run kits and full blown racers. Associated shocked the world when they announced that both kits will come with an MSRP under the price of the comparably-equipped Team kits. Presumably the street prices will also be lower. Associated expects to release both trucks in the Spring of 2001.



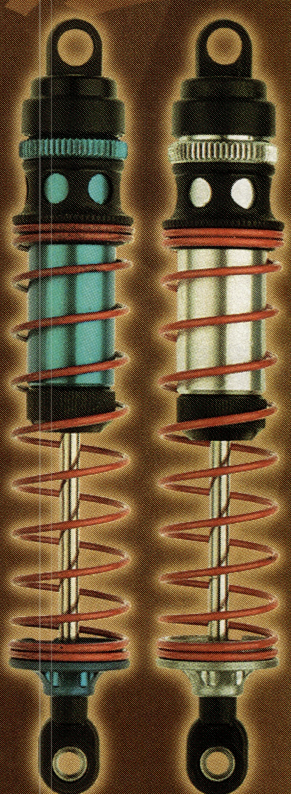


Look To the Stars Grasshopper...

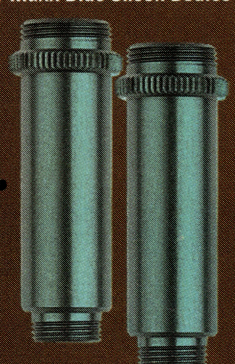
Every racer has thought to him or herself at least once in their career "if only I had what the team drivers have..." Well Orion is now giving you a chance to prove yourself. Orion's new Nebula Super Touring winds are fully blue-printed and speced to the exact same standards that drivers like Greg Hodapp and Rick Hohwart use in their touring cars. The motors are timed and tuned for absolute maximum performance. Expect to cut the comm often, but Orion says there's nothing faster on the market. The Nebula ranges in winds as low as a 6-turn single all the way to a 13-turn double.



New Traxxas Aluminum Shock Components Work With Your Stock Parts!



T-Maxx Blue Shock Bodies



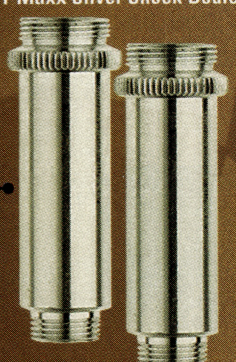
CNC machined, blue anodized aluminum shock bodies, sold in pairs. RRP 8511

Aluminum Upper Spring Retainers



Machined upper spring retainers, sold in sets of 4. RRP 8530 8mm, RRP 8520 4mm

T-Maxx Silver Shock Bodies



CNC machined, natural silver aluminum shock bodies, sold in pairs. RRP 8510

Blue Lower Spring Retainers



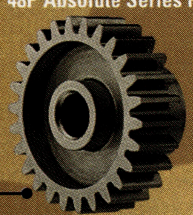
Machined, blue anodized aluminum retainers, sold in pairs. RRP 8516

Silver Lower Spring Retainers



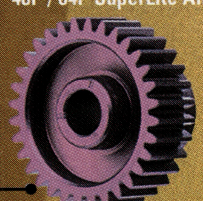
Machined, natural silver aluminum retainers, sold in pairs. RRP 8515

48P Absolute Series Pinions



Super hard, lightened and cut with unmatched precision. Great with any spur, but with an Absolute spur, even on-off noise is gone! Available in 48P in 16T thru 28T sizes. RRP 1416 - RRP 1428.

48P / 64P SuperLite Aluminum Pinions



They're lightened, hard coated and precision cut. Available in 48P in 16T thru 28T, and 64P in 24T thru 38T. RRP 30XX (48P) and RRP 31XX (64P). Only $5.25

48P Hard Nickel Plated Steel Pinions



These precision cut gears have an extremely hard coating that makes them really last. Available in 12T thru 35T. RRP 1012 - RRP 1035

www.robinsonracing.com

Pro-Line's In the Hummer Biz

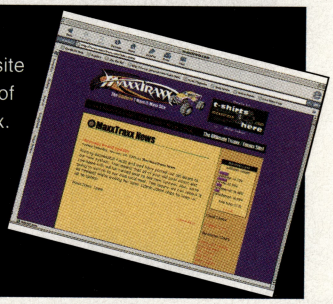
Hummers seem to be en vogue these days. Pro-Line is now in the Hummer business with two new bodies for the Traxxas E-Maxx, T-Maxx, and other monsters. The new Humm-Vees come in both an original Army issue version (the Militia), and a soccer mom version (the Urban). Both bodies are molded from 0.40 thick Lexan for maximum strength and rigidity. Both bodies come with decals and window masks. The Militia also comes with longer rear body posts.





MaxxTraxx

Check out a very cool site on the web for owners of the T-Maxx and E-Maxx. It's called www.maxxtraxx.com. It has tips, reviews, videos, chats, and more.





1999 World Cup and National Champion

"I only care about performance, and that's why I run Robinson Racing gears and slipper clutches exclusively."

— Richard Saxton

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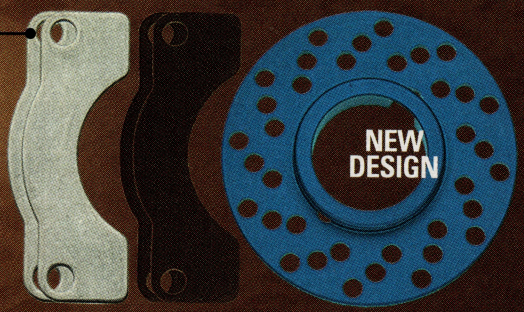
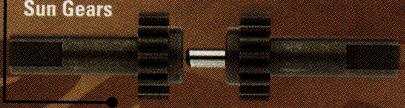
NEW T-Maxx Aluminum High Performance Brake Kit



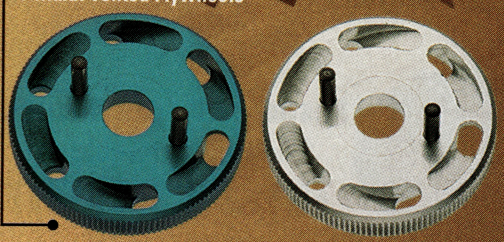
New, lightweight aluminum high performance brake kit, includes bigger, more aggressive brake pads and steel backing plates. One piece vented rotor minimizes side-to-side wobble. RRP 8560

Rustler/Stampede/Bandit/Sport Nitro/Electric Sun Gears



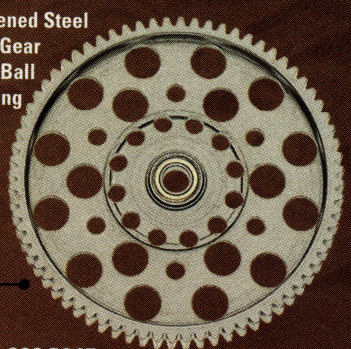
CNC Machined from bar stock, these hardened, Sun Gears will last longer in your Traxxas machine. RRP 8500

T-Maxx Vented Flywheels



Aluminum vented flywheels move air over clutch bell, improving performance and cooling. RRP 8551 Blue, RRP 8550 Natural Silver

Hardened Steel Spur Gear With Ball Bearing



Precision CNC machined from solid steel, and then hardened, these spurs will last and last. RRP 8572 T-Maxx and Nitro Rustler, RRP 8565 Nitro Stampede

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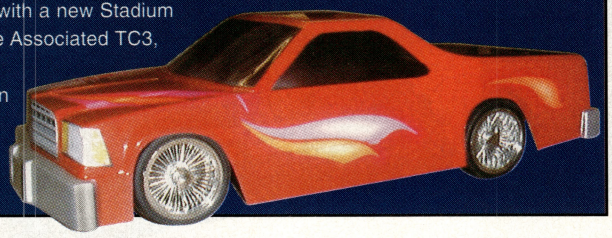
Parma Goes Retro

Feeling kind of seventies? No other pick-up/car hybrid says disco pimp like the '78 El Camino. Parma's giving you what you want with their new '78 El Camino in 200mm width. You can mount it to just about any touring car on the market. If that realistic look isn't what you're looking for, Parma is coming out with a new Stadium Truck body designed to fit the Associated TC3, Traxxas Nitro Rustler, and DuraTrax Maximum ST. Be on the lookout for these new bodies in stores by the time you read this.

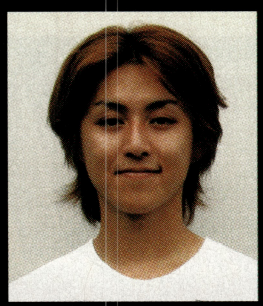


BILLY EASTON WINS REEDY INVITATIONAL

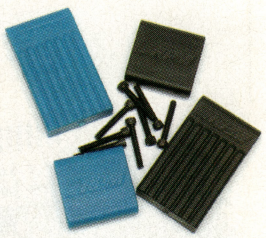
Billy Easton came away with the overall win at the recent Reedy Invitational Race of Champions in Saugus, CA. Drivers from around the country made it to Hot Rod Hobbies to duke it out. Unlike years past, the Invitational class was made up of 2WD buggy and 2WD truck instead of 4WD. For complete coverage, photos, and Open Class coverage, check out the next issue of *Xtreme R/C Cars*.

NEWS FLASH!

Current IFMAR On-Road TC World Champion, Atsushi Hara is now running for HPI Racing. That means Hara will be running the new RS4 Pro 3. This new driver acquisition adds plenty of credibility to HPI's racing program.

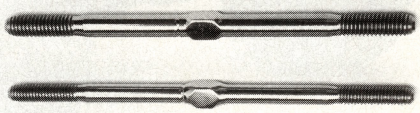


Brace Yourself



RPM's got a better mousetrap when it comes to bracing the E-Maxx and T-Maxx bulkheads. The new RPM braces not only add rigidity, they add more strength than any other bulkhead brace on the market thanks to their unique design. The RPM braces run the entire length of the bulkheads making for a firm connection with absolutely no flex.

Also from RPM and Lunsford are a new type of turnbuckle and cup. Lunsford is making new Super Duty titanium turnbuckles that are thicker than standard Punisher turnbuckles. RPM is making Super Duty ball cups to fit the new turnbuckles. The two items combined will make the strongest turnbuckles/ball end connection you can buy.

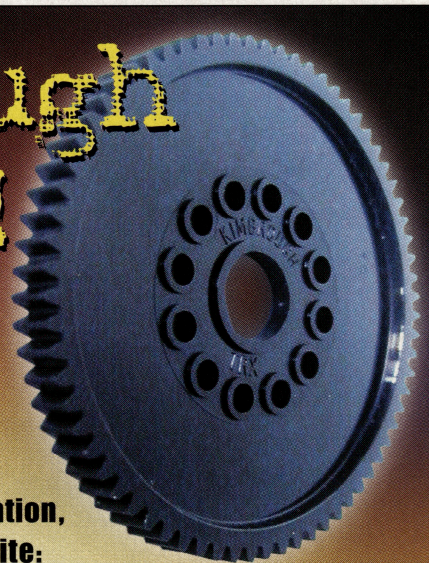


Gears Tough Enough for the MAXX!

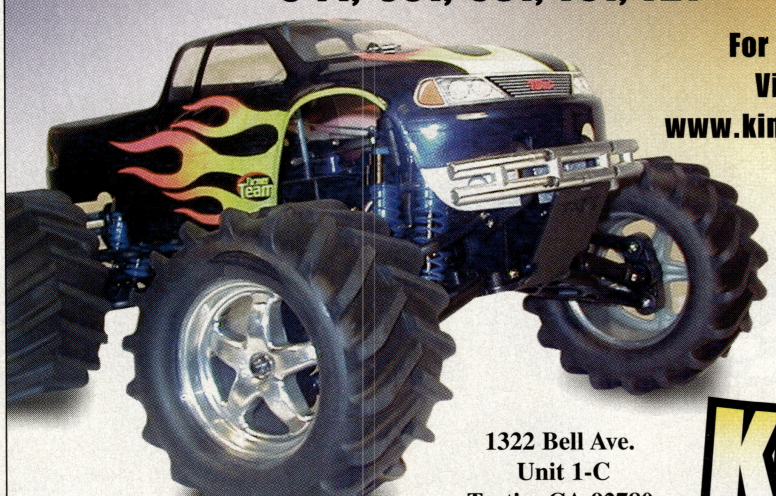
Choose the gears used by the best drivers in the world for your T-MAXX or E-MAXX Truck. Made of the finest materials to exact tolerances, these impact-resistant 32-pitch gears are MAXX Tough!

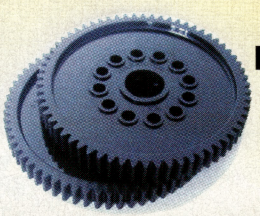
T-Maxx and E-Maxx Gears...32 Pitch Available in:

64T, 66T, 68T, 70T, 72T



For More Information, Visit our Website: www.kimbrough-products.com





Rustler and Nitro Rustler... 48 Pitch Available in:

78T, 81T, 84T, 87T

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SMC

superior matching concept

These packs are packaged in pairs for the **Traxxas E-MAXX** or in singles for any other vehicle.

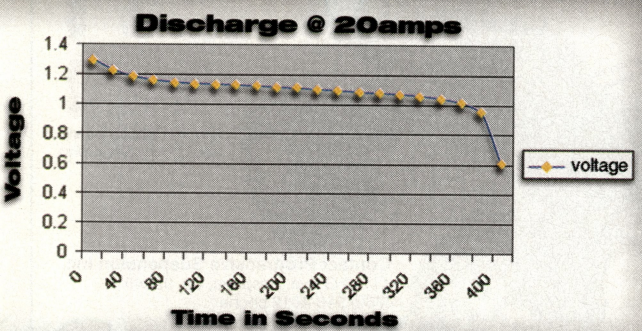
PUSH YOUR E-MAXX TO THE MAXX!



SPEED MAXX uses high quality Sanyo 2000 mAh nicad cells. This pack offers great power with good runtime. See the graph for proven results!
SMC2002-SMX • 2 per package • Retail $84.95



ENDURO MAXX uses high quality 3000 mAh Ni-MH cells. This pack offers great runtime with good power!
SMC3002-EMX • 2 per package • Retail $134.95



In an effort to support the hobby shops and tracks we only sell our products through qualified R/C distributors:

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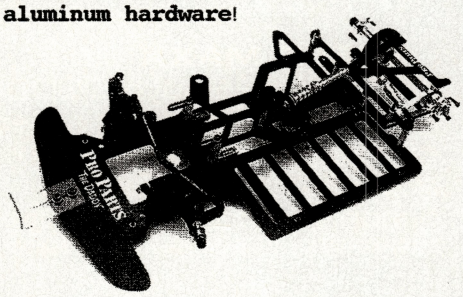
We hold nothing back, We sell what we RACE!

"THE DADDY" 1/10-Scale Oval Competition Race Car
Dominate the circuit with the absolute best out-of-the-box oval car money can buy.

Features:

- 0.100" woven carbon fiber chassis and components.
- Adjustable battery tray.
- Adjustable Tee-bar for roll center adjustments.
- Adjustable servo mounts.
- Built-in transponder mount.
- Super strong body posts.
- Strong front bumper with adjustable body brace.
- Irrgang rear axle with Kimbrough spur gear and precision bearings.
- Associated front suspension with in-line axles.
- Lunsford titanium turnbuckles.

Comes completely assembled with aluminum hardware!

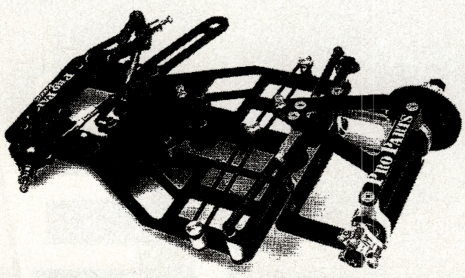


"JUNIOR" 1/12-Scale On-Road Competition Race Car
Or, if Road racing's your speed the Junior is biggest little car in the World!

Features:

- 0.080" woven carbon fiber chassis and components.
- Parallel battery placement for optimum weight distribution.
- Quick and easy O-ring battery holding system.
- Adjustable Tee-bar for roll center adjustments.
- Built-in transponder mount.
- Adjustable super strong body posts.
- Irrgang rear axle with Kimbrough spur gear and precision bearings.
- Associated front suspension with in-line axles.
- Lunsford titanium turnbuckles.

Comes completely assembled with aluminum hardware!



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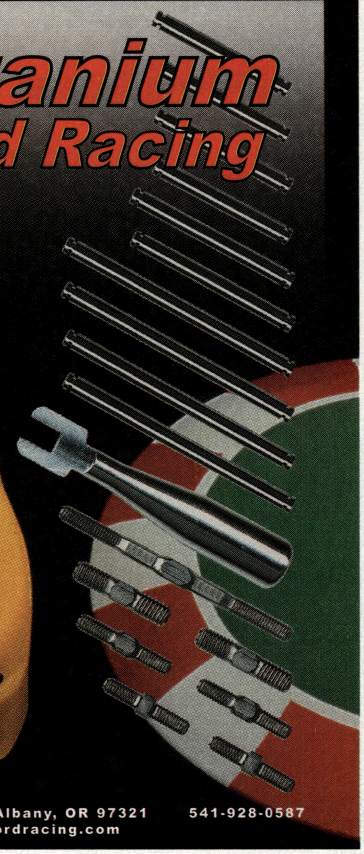

HEY! Your brother plays with your car and accidentally gets it demolished by a passing street sweeper truck. Oh, what to do? Locate your injured Punisher turnbuckles, if any, and return them for guaranteed replacement.

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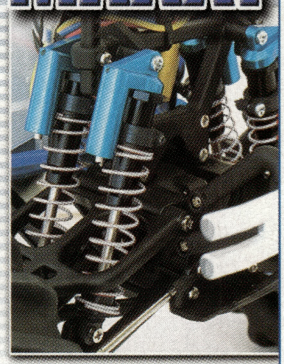
Take it to the MAXX!

New shock kit for T-MAXX and E-MAXX!.



The Ultimate T-MAXX/E-MAXX Shock Absorber Kit includes a complete set of 8 EDC-2 shocks with reservoirs and springs. These special progressive rate springs were developed specifically for the T-MAXX and E-MAXX. EDC-2 Shocks feature massive 3/16" diameter shafts, 4-position external damping adjustment and our race proven Piggyback reservoirs.

Shocks feature precision machined aluminum bodies and Reservoirs, Teflon pistons and closed cell foam volume compensation for consistent performance. Reservoirs are polished and anodized in six different colors, Gold, Purple, Black, Blue, Red and Clear (Silver).

SRP .. $294.95 .... set of 8.

Progressive Rate Springs for EDC & Associated Shocks
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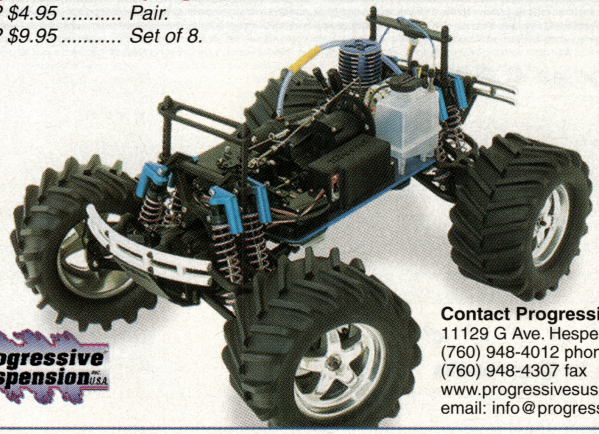



Reservoirs are polished and anodized in six different colors.

Progressive Suspension USA

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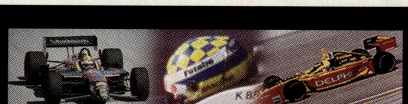
Futaba is a proud sponsor of high performance racing professionals such as Kelley Racing, Patrick Racing and the 1999 Indy 500 winner Kenny Bräck



quick TIPS

No More Flakes

If after a bad hit your car's body has more flakes than the star of a Head & Shoulders commercial, you've got problems. Paint flaking or paint separating from your car's body can be easily prevented the next time you paint a body. Clean the body just as you normally would, then mask off the windows and other areas. Next, pick up some steel wool or an SOS pad and lightly scuff the inside surface of the body. The Lexan should have a slight haze to it. (Don't worry, the haze will be gone once you paint.) Then, grab a clean terry cloth towel and rub off any Lexan dust that might be inside the body.



Paint the body just as you normally would. By scuffing up the painting surface, the paint will better adhere to the Lexan without distorting the painted finish whatsoever.

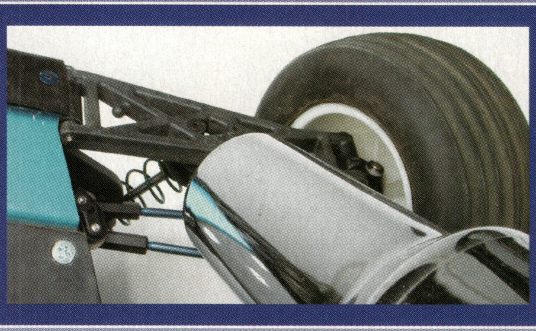
Pick a Spot

Applying large sticker sheets on to bodies can sometimes be a daunting task. Exact placement is critical if you want a good looking body. Many times large decals can tear or become dirty from removing and reapplying during placement. To make life easier, grab some standard window cleaner or rubbing alcohol in a spray bottle. Cut the decal out just like you normally would. Peel the backing off of the decal and spray some cleaner or alcohol on the adhesive side of the sticker. When you're placing the decal, you'll be able to move the decal around slightly so that it can be placed exactly where you want it. Once you're happy with the decal's placement, take a paper or cloth towel and squeegee out any cleaner that's under the decal. Press firmly on the center of the decal and work the cleaner out around the edges of the decal. If you're left with any air bubbles or bubbles of cleaner that you just can't seem to get out, poke the bubble with the tip of a sharp hobby knife. Once the air and/or cleaner is gone, press the decal bubble onto the body completely.



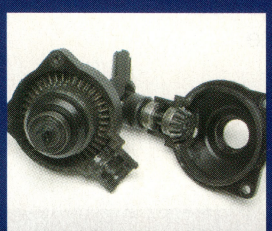
Cold Weather Cure

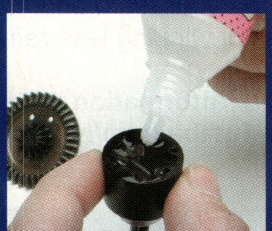
It's that time of year again. Cold weather has hit most of the country. Unfortunately cold weather can take its toll on some vehicles. Cold weather (below freezing) can actually cause the moisture that is in some materials to freeze. This change in chemical structure weakens the material and can cause it to become brittle. A car going around the track with a brittle front A-arm can only spell disaster sooner or later. Before running your car under these conditions, grab a blow dryer or heat gun and warm the car up first. Running a blow dryer over and under your car for four or five minutes will be just enough to save you from the cold weather. Don't get the heater too close to the car; you could melt the plastic. You only need to warm the plastic, not cook it. If the weather is really cold, preheat the car or truck between every run.



Posi about that?

Traxxas has a spool piece that replaces the stock differential in the rear of the T-Maxx and E-Maxx. This spool effectively gives the rear of the truck full time posi-traction. Just like a full-size truck, having a posi-traction rear end means more forward bite when accelerating. That's good for dragging and pulling, something many monster truck owners have been known to do. The downside is a truck that's more difficult to turn and will have a tendency to spin out. You can find a happy medium by thickening up the grease in the rear diff in your E-Maxx/T-Maxx. First pick up some heavy diff grease from Mugen, Kyosho, or other 1/8-scale manufacturer; 5000 or 7000 thickness works fine. Remove the rear gear box and the drive yokes that attach to the differential outdrives. Next open the box and remove the four screws that hold the diff gear onto the differential. Remove the diff gear and thoroughly flush out the grease that's inside with high-quality, plastic-safe, motor cleaner. Once all the grease is gone, fill the diff housing with the lube of your choice. The more lube or higher viscosity the less differential action and more forward traction. The less lube or lower viscosity and the more differential action the rear end will exhibit. Experiment with different viscosity lubes and the volume of lubricant to achieve the desired effect.





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* HITEC dual conversion crystal required.

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- DCX 3-Channel Dual Conversion Receiver

Pro System
75MHz part#123753
- Lynx 3D with Nicads and Charger
- DCX 3-Channel Dual Conversion Receiver with 4 Crystals
- Spectra 75 MHz Frequency Synthesizer Module *(never buy another transmitter crystal again!!)*

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Go From READY-TO-RUN *to* READY-TO-RACE

By Nathan C. Miller



Ready-to-run (RTR) kits are more complete than ever these days. In many cases, you don't even have to paint the body before you can have your car ready to go. There is, however, a difference between a car that is ready to play around with and one that is competitive on the race track. But with a few carefully chosen upgrades, you can take your vehicle from the backyard to the track and be able to run with any other car out there – with some practice, of course.

The Essentials

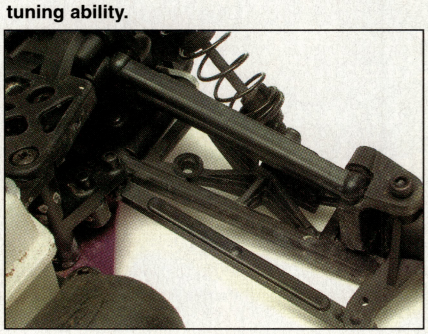
Since I just mentioned this stuff in the last issue, I'll be brief with the things that are a must for racing. To make your car more efficient, get a full set of bearings, and a forward-only or reverse lock-out ESC. To help get the handling dialed in, grab a few sets of different shock springs and some different weights of shock oil. Check ahead at the track at which you plan on racing to see what kind of tires is the hot ticket. Since tires are expensive, try to keep the number in your pit box to a minimum. Also, if your car doesn't have adjustable control links, replacing the fixed pieces with titanium tie-rods will let you dial your car in and make it more durable. The handling items are all things that will work on both electric and nitro vehicles. If you have an electric vehicle, plan on putting out some cash for some better quality battery packs and a motor that conforms to the rules for whatever class you plan on running in. Upgrading a car with a nitro engine is a stickier situation and I'll get to that later.

Receiving the Signals

Most RTR kits come with simple but effective AM radio systems. While there is nothing wrong with these systems, they generally lack important adjustments like throttle EPA and steering sub-trims. Also, many systems packaged with RTR kits are 27mhz, which limits the number of frequencies from which you can pick. The biggest drawback to kit-included radios, though, is the servos that come with them. While standard servos do the job, faster and more powerful servos will improve the responsiveness of your vehicle. A stronger steering servo will turn the wheels with more authority, and a faster throttle/brake servo will give you quicker throttle response and put the binders on faster. If you have a nitro vehicle, I strongly suggest an FM radio because they are less prone to glitching caused by interference. Look at what is out there before settling on a new radio; a better unit doesn't have to cost an arm and a leg. Get a radio that will suite your needs. If you plan on using the radio with several cars, a radio with model memory is a good idea. When you get a new radio, you will want to get an extra set of crystals so you can change frequencies if needed. Also, hang on to the system your RTR came with. You never



Above: You can see that adjustable turnbuckles allow for lengthening and shortening of suspension and steering geometry.
Below: Fixed links don't offer the same tuning ability.



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THUNDER DESIGNS

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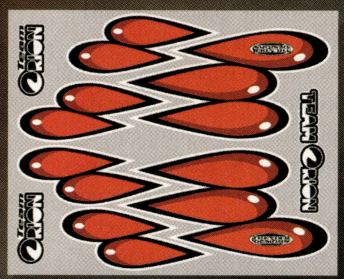



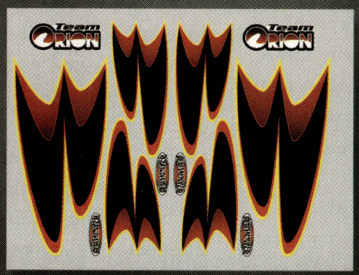

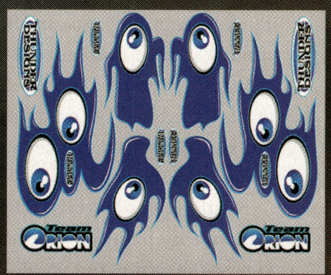

Want a cool paint scheme? Look no further than Thunder Designs Internal Graphic Sets! These internally applied decal sets let you paint your own bodies quickly with professional results! Making them a must for all the "do it your selfers" out there.

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know when you might need a spare servo, and radios like this are great for bashing-only cars where performance isn't all that important.

Get Tough! Lose Weight! Look Good!

Racing is tough on vehicles, and part of winning is making sure your car can last to the end. As I mentioned already, titanium turnbuckles are a good place to start. Not only do they allow you to adjust your car, but also titanium is lighter and stronger than steel. Stronger ball cups and ball ends prevent mechanical failure, and decrease your odds of getting a DNF caused by a cup popping off a ball. I suggest RPM ball cups, as they are tough, have a strong grip, and, for those of you interested in making your car stand out, come in a variety of colors. Several companies, like MIP, make titanium ball studs that can replace the stock steel components.

If you have a touring car, odds are you can practically replace the entire suspension with aluminum hop-ups. At the very least, I suggest installing aluminum hub carriers and steering spindles. These parts take a lot of abuse, and are usually the first things to give in a crash. The hub carriers and steering spindles in off-road vehicles often suffer from the same problem. Aluminum replacements are available from some manufacturers, and stronger composite pieces are offered by RPM.

After you gain some experience, you may want to consider replacing the plastic parts on your ride with graphite components. Not only is graphite lighter and cool to look at, but it is also more rigid than standard composite pieces. But bear in mind that rigid does not necessarily mean stronger; graphite is more brittle than regular plastics. Hold off on graphite stuff until you have some experience and aren't hitting things on a regular basis.

Lastly, if you have an RTR with the same factory paint job as every other person who has the same model of car as you, get a new shell and learn how to paint. It's a skill you'll need eventually, and a body is a good way to express yourself.

Power Plant Upgrades

There are a lot of factors to consider when thinking about a new engine for your ride. The first thing is, do you really need a new engine? If you race and your track mandates a .12 engine, ask if they would consider an "Outlaw" class for motors over .12 since most RTR kits come with .15 or larger engines. If the track owners won't consider an Outlaw class and they don't have a class for larger displacement motors, you will have to buy a new power plant to race legally.

If you find you don't need to replace your kit engine to be legal, consider that you might be able to get stronger performance out of your kit mill for far less than the cost of a new engine.

- First, if you can, ditch the pull-start or electric starter. These add weight and rob engines of power. You will need to find a new way to get things crankin', however, either by using a bump starter or a Yank Eliminator by Hammad Ghuman.
- Single-needle carbs can be replaced with dual-needle models to increase performance.
- Don't forget to look at the engine's head. A light aluminum model will cool things much better than the cast pieces many kits come with.

The Big Picture

Don't go too far. If you find that you need to buy a new engine to be legal at the local track, it's time to look at the big picture. If you factor the cost of a new engine in with the cost of the other upgrades I mentioned in this article, you could feasibly be looking at a total price tag that would cost as much or more than a new kit with all of these things included. Nitro engines are no small investment, and this other stuff isn't cheap either.

The same thinking applies to electric vehicles. If you have an RTR that comes out of the box close to what a team or full version of a kit does, you don't have many upgrades to purchase to be competitive. But if you find you're basically replacing every part on your ride, think for a minute. Is it really worth it? If a new pro-level kit would be cheaper, I strongly recommend the new kit. In most cases, competition kits come from the box with all the stuff you need to get into victory lane.

PIT STOP HOW-TO Glossary Of Terms

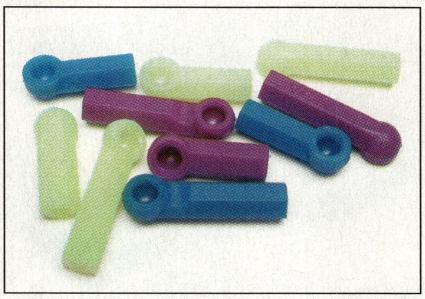
Ball Cups: Plastic pieces that are threaded onto the ends of turnbuckles. This ball cup then snaps over a ball end. The result is a solid connection that can pivot with almost a full range of motion.

DNF: Short for Did Not Finish. Referring to not finishing a race.

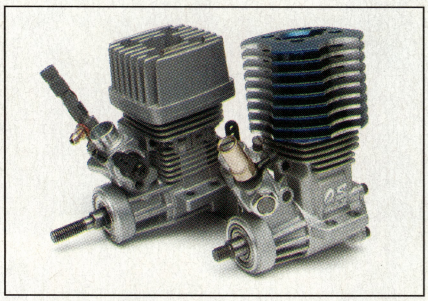
Reverse Lock-Out ESC: An Electronic Speed Controller that features reverse, but will not allow the vehicle to go into reverse until the car has come to a complete stop.

Throttle EPA: Short for Throttle End Point Adjustment. An adjustment on many radios that allows the user to determine the amount of servo or speed control range in the throttle channel.

Tie-Rods: Threaded rods that allow for quick lengthening and shortening of the point they connect depending on the adjustment of the ball end attached. Tie-Rods that are threaded in different directions as to allow for shortening and lengthening by simply twisting the tie-rod are called a turnbuckles.



These ball cups from RPM are more durable than other cups I've used.



Now which engine looks faster to you? I'm going with the one with the big blue head.

If you want to go fast you've got to dress the part.

MAXXimum Fun!



Ford F-350 SuperDuty*
#3096-00 *fits Traxxas T-Maxx*



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MAXX Masher
#1075-00 *front or rear T-Maxx tire, fits original wheels and Outback wheel*

Outback Weld Wheel
#2656-01 *fits T-MAXX or E-Maxx, for use with original tire, and MAXX Masher #1075-00*
***Available in Chrome only*

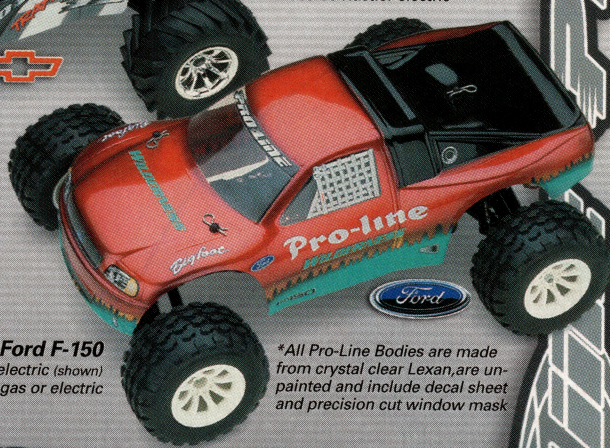


Chevy Silverado
#3088-00 *fits Stampede gas or electric (shown)*
#3089-00 *Rustler electric*



Masher 2000
#1074-00 *front or rear all-terrain tire, fits any 2.2" truck wheel*
***shown mounted on Chrome Agitator wheel (sold separately)*

Agitator Truck Wheel
#2651-04 *Stampede/Rustler electric front*
#2652-04 *Stampede/Rustler electric rear*
#2653-04 *Stampede/Rustler gas front*
#2654-04 *Stampede/Rustler gas rear*
***wheels are White, add (01) for Chrome*



Ford F-150
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#3083-00 *Stampede gas or electric*

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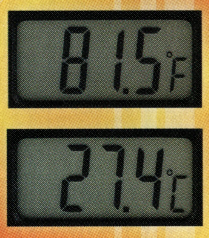

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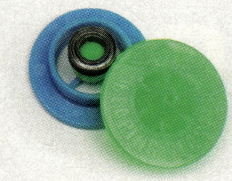
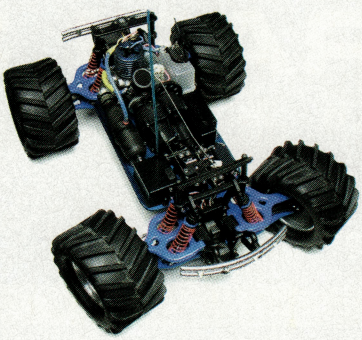


Bearings get dirty, blast them clean with the RPM Bearing Blaster #81170



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- Guaranteed not to break.
- Stronger than stock arms.
- No modification needed.
- Available in three colors.
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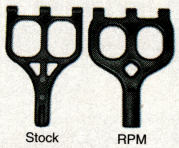



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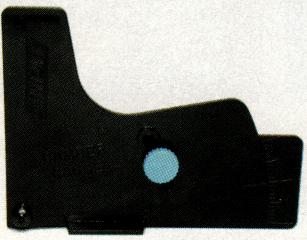

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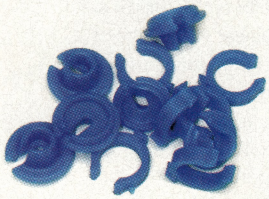

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TAMIYA TA04 FERRARI 360

modena challenge

by James Revilla

ERRARI 360 MODENA CHALLENGE TAMIYA FERRARI

As if the 360 wasn't good enough, Ferrari decided to create a limited edition 360 Modena Challenge. This special version was created to give those Ferrari customers (lucky bastards!) who like to race something they can take straight to the racetrack with no modifications necessary. Where would they race their cars? Answer: the Ferrari Challenge Pirelli Trophy, a championship fought out around the world by Ferrari F355 and now 360 Modena Challenge owners. Yup, if you are rich enough to buy one, you've got to be rich enough to race it around the world.

Tamiya has its own 360 Modena Challenge, albeit in 1/10-scale and at a much lower price. However, Tamiya's version is based upon their TA04 tub chassis, which in turn is based on the TA04-Pro chassis.

Hits:
- Performs like its Pro brother.
- Shares the best stuff with the pro.
- You can't beat the looks of that body!
- Takes both stick and side-by-side battery packs.

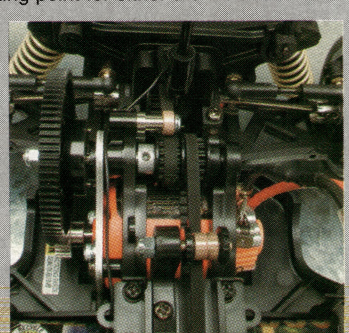
Misses:
- No bearings for the axles.

Instructions	5
Parts Quality/Fit	4
Durability	4
Tunability	4
Overall Performance	4
Value	3

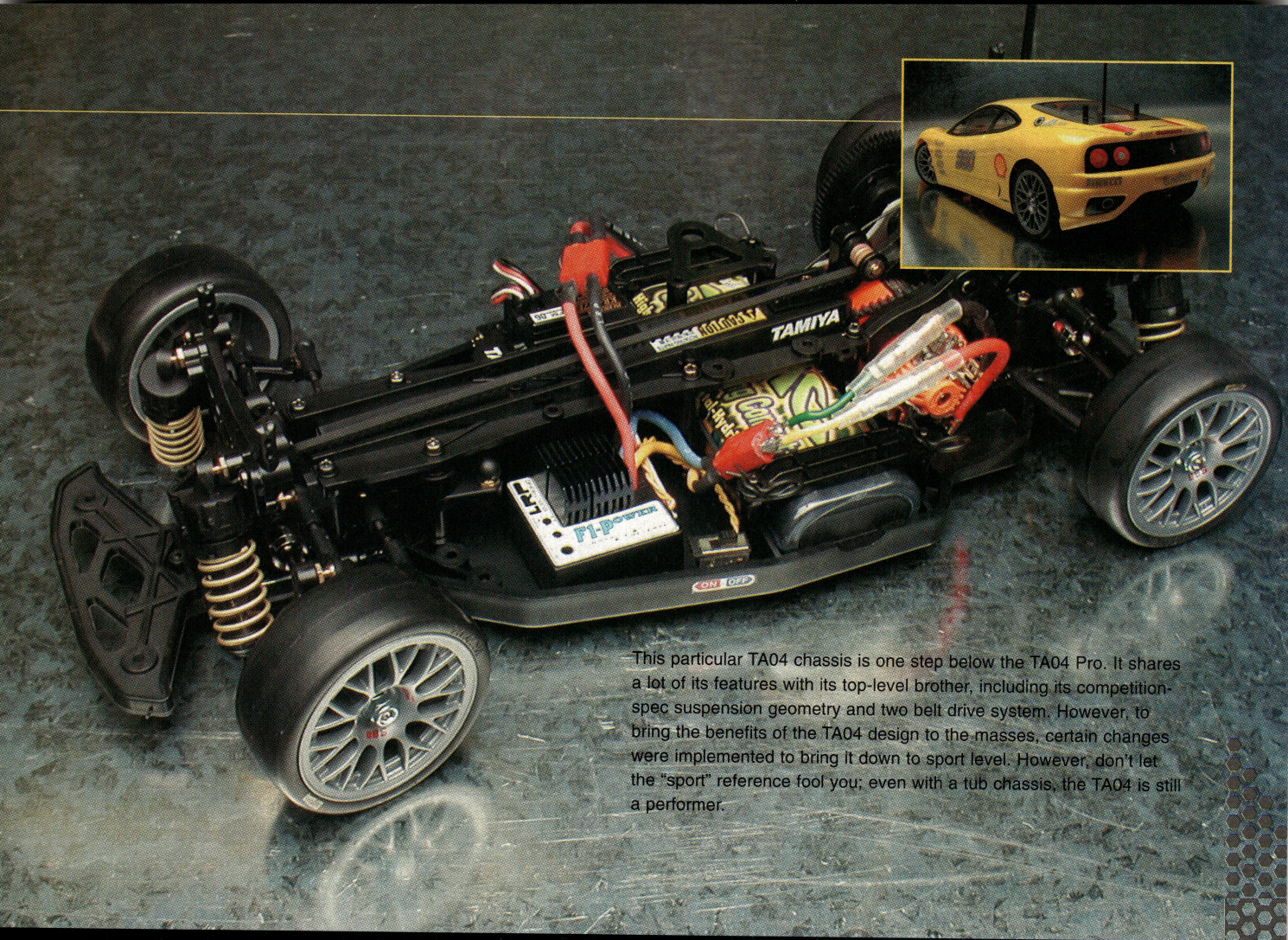
Drive Train and Transmission

Just like the Pro, this version uses Tamiya's new two-belt drive system. Two belts run from the top shaft to each end of the TA04 chassis. Small, lightweight conical-gear differentials utilize steel outdrives and dog bones to channel the power to the wheels. Praise Tamiya for providing ball bearings for the entire drive system inboard of the axles. Yes, the top shaft and diffs are equipped with ball bearings, so upgrading to a full set calls for just the replacement of the easier-to-access outboard axle bushings. Standard hex adapters allow you to use practically any wheel of your liking.

Both front and rear bulkheads are molded units, as are the layshaft and motor mounting assembly. A separate metal motor plate provides a sturdy mounting point for either the included Mabuchi-Johnson 540-type motor or your motor of choice. An 83-tooth molded spur gear and 25-tooth pinion gear are standard equipment. Note: the gear pitch is 0.6 module; however, practically any 48-pitch or 64-pitch gear sets should work fine with the TA04.



Ferrari's are over-priced Fiats if you ask us.



This particular TA04 chassis is one step below the TA04 Pro. It shares a lot of its features with its top-level brother, including its competition-spec suspension geometry and two belt drive system. However, to bring the benefits of the TA04 design to the masses, certain changes were implemented to bring it down to sport level. However, don't let the "sport" reference fool you; even with a tub chassis, the TA04 is still a performer.

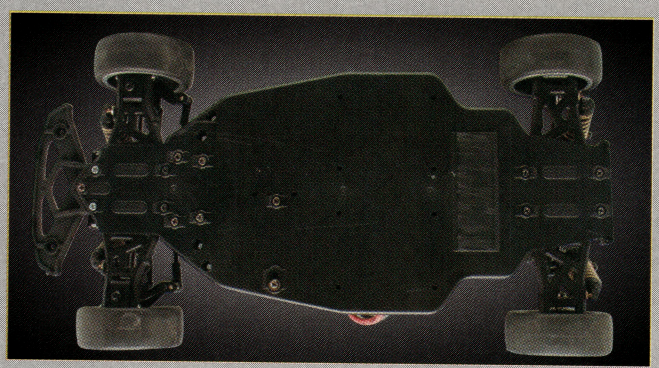
MODENA **CHALLENGE** TAMIYA **FERRARI 360** MODEL

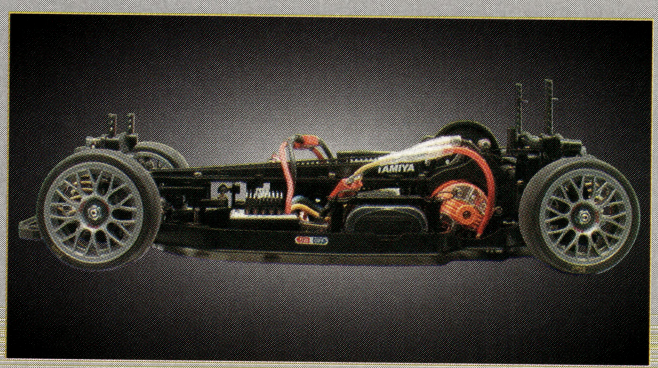
Chassis

Unlike the FRP double-deck chassis of the TA04-Pro, Tamiya chose to adorn this version with a new molded tub chassis. Forget the classic "dust collectors" found on its ancestors the TA-03 and TA-02; the new tub is shallow and it features thick but short side reinforcement walls. Gone are the web work of channels and braces; the only reinforcements this chassis needs are two ˜ one running the length of the chassis up to the battery mounting area and one running horizontally just forward of the motor position. The underside is practically flat, save for the screw mounting holes.

The upper brace is also molded, and has mounting holes for the transponder mount, front belt tensioner, and the included 3-step mechanical speed controller. Ten screws hold down the upper brace, and when completely assembled the chassis is stiff, much more so than other tub chassis we've seen.

Let's get back to the battery. Two molded braces attach to posts at either side of the chassis. These braces are held down by ordinary body clips, making battery changing easy. One thing to note when comparing the tub chassis to the FRP chassis of the Pro version ˜ the tub chassis will accept a side-by-side or saddle pack battery. Don't let the short, curved braces in the battery compartment trick you- they are positioned perfectly to clear a side-by-side battery pack.





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Other Features

Suspension • Most of the suspension components on the TA04 are lifted directly from the Pro version. A pair of heavy-duty molded front and rear shock towers feature multiple shock and camber arm mounting positions. The front and rear upper arms also use ball-ends and a threaded rod, just like the TA04. The molded lower arms position the hubs as far away as possible from the chassis. Molded blocks capture the inner suspension hinge pins, positioning the lower arms for both toe and anti-dive/anti-squat. Where's the sport reference now? With the suspension system a virtual clone of that found on the top-level TA04 Pro, you know this setup has a lot going for it.

Tamiya didn't skimp on the shock department either. Like the Pro, their tried-and-true CVA oil-filled dampers are found on each corner. Bladder and silicone O-ring seals, stainless steel shock shafts, three different piston choices, new gold springs and Tamiya shock oil round out the package.

Steering • The steering system is also shared with the TA04-Pro. A bell crank steering setup mounted high, just underneath the upper deck, brings the steering rods closer to level for a minimal possibility of bump-steer. Two servo fittings are included for practically all servo types. Best of all, the steering bellcranks ride on silky smooth ball bearings.

Body, Tires, Wheels • The TA04 features a very sweet Ferrari 360 Modena Challenge body. The lines accurately depict the real car, from the oversized air inlets on the nose to the mesh rear panel in the rear serving as a playground for Ferrari's famous prancing horse. The Challenge version comes complete with authentic decals simulating the full-sized, race-ready Italian machine.

You can't put whitewalls on a Ferrari! Where the actual car features high-performance Pirelli P-Zero slick tires, Tamiya equipped the 360 Modena with a set of their equally impressive medium-narrow Type-A compound racing slicks. I say impressive because for kit tires these slicks feel very sticky. (We'll see during testing.) Molded inserts and a set of gray molded BBS-type mesh wheels complete the footwear.

A molded urethane front bumper is included, as well as a transponder mount and a rear belt stay. A front belt tensioner is also standard fare, but unlike the Pro version you use a pair of bushings instead of bearings. No biggie.

Testing

Test Gear • I kept the kit Mabuchi motor, Tamiya tires and wheels, but I added on a Ko Proro EX-11 Presto FM radio and receiver, Futaba S3003 servo, SMC 3000 mAh matched stick packs and an LRP F-1

Building Tips

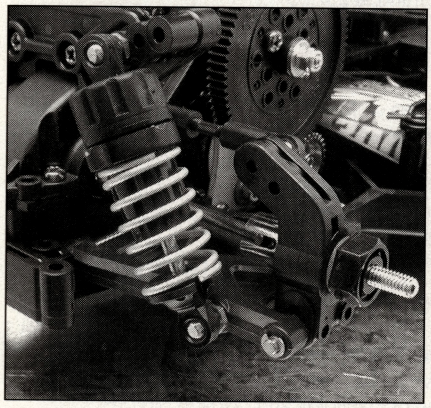
- **Step 6, page 6 (and Step 10, page 8):** In both steps, don't forget to insert the foam spacer (MA23) into the diff outdrives. These spacers keep the dogbones from falling out.
- **Step 11, page 8:** Do not overtighten the lock nut that holds the spur gear mount (MB6) or you might break the topshaft. Just tighten it until the nut just bottoms out.
- **Step 16, page 11:** Don't forget to place the height limiters on the shock shafts before placing them into the shock bodies (V3 and V11).

The Real Deal

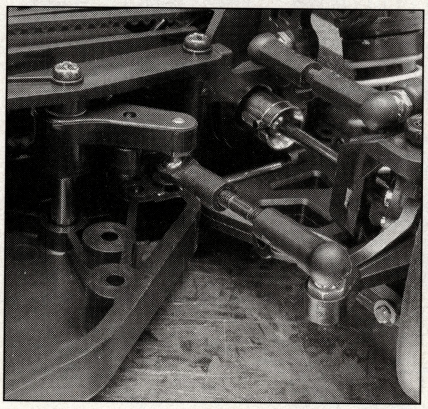
Ferrari 360 Modena Challenge Specifications:



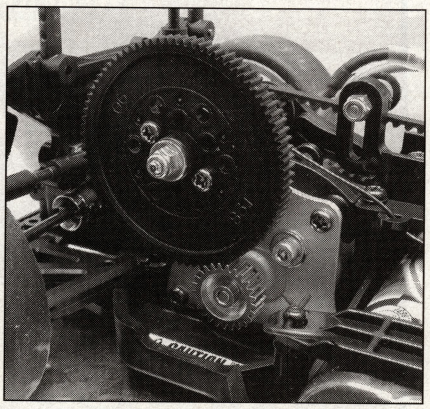
- 8 cylinder 3.6-litre 400+ horsepower engine.
- F1-style paddle shifter.
- Digital instrument panel by Magneti Marelli.
- On-board data acquisition system.
- FIA standard 100-liter fuel cell.
- Automatic fire extinguisher system.
- Racing seat with six-point harness.
- FIA specification full roll cage.
- Pirelli P-Zero racing slick tires.
- BBS one-piece rims.
- Shell oil and lubricants.



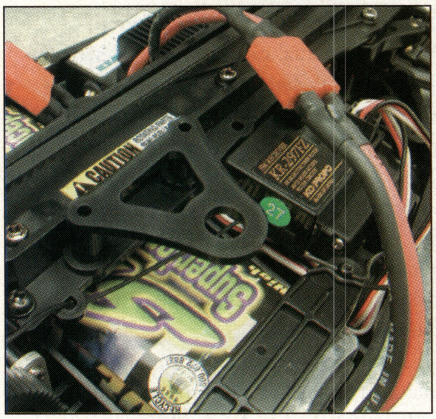
Adjustability was high on Tamiya's list when it came to designing the TA-04 chassis. Multiple shock and camber locations are available.



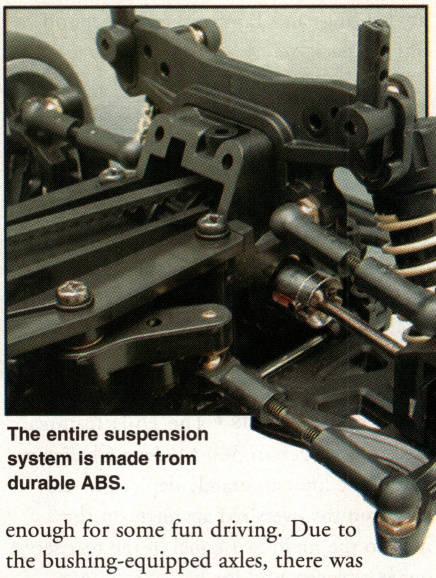
To make front toe adjustments you'll need to pop the ball cup off to turn the tie-rod.



A standard 48 or 64 pitch spur gear can be bolted on without any modification.



When a transponder mount comes standard you know you've got a race capable car on your hands.



The entire suspension system is made from durable ABS.

Power ESC. Out of the box, shock piston size, wheel camber, and front toe are adjustable, but I kept all settings as specified in the instruction manual.

Acceleration • Acceleration was brisk, not as quick as a stock motor-powered chassis, but you have to take in consideration the Mabuchi's not-so-fast reputation. With the kit gearing, the TA04 was moving quick enough for some fun driving. Due to the bushing-equipped axles, there was a little more noise than from a full ball-bearing equipped TA04-Pro, though nowhere near as loud as some other manufacturers full bushing-equipped chassis. The kit tires held well when accelerating.

Braking • Under heavy straight-line braking, the TA04 would stay on course. Through stop-and-go type situations (tight, multiple corners, etc.) chassis dive was barely noticeable. Even with the nose down a little, the rear end would stay connected to the pavement, regardless of how hard I punched the brake. Again, Tamiya engineers should get props for the excellent suspension setup. Thankfully, Tamiya didn't skimp on the tub version TA04.

Top Speed • Again, the combo of Mabuchi 540 power and kit gearing hindered the top speed of the TA04 a bit. However, the chassis felt pretty stable, with no twitching or veering to one side. Judging from its top speed with the Mabuchi, I swapped the stock motor for a Trinity Speed Jems 16-turn modified motor and dropped the pinion a couple of teeth. The car was a road rocket and handled the extra power with ease.



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Hard Drive

Race Secrets

COOL RACER, FRIDAY, GOT SPEED?

GOT SPEED?

From: COOL RACER (fastguy@gotspeed.com)
To: JOE RACER (joeyr@racenut.com)

YO JOEY,

Bro, at the next club race, get ready to see how it's done. I got the new "SPEED SERIES" body from DEANS. That's right they're finally here!!!

Here's the view I'll be seeing during the race. You'll see it in the pits. Sorry dude, I didn't get a shot of your view, you know THE BACK OF MY TRUCK!

Gotta charge bro – Gotta make room on the shelf for this weekend's trophy.

Later,
Cool Racer



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The Specifics

Item Info
Part# 58266 (Tamiya TA04 Ferrari 360 Modena Challenge), MSRP $334
Estimated street price: $220 - $240
Manufactured in Japan.

Chassis Type
One-piece molded shallow tub design with molded upper deck. Molded urethane foam bumper.

Wheels and Tires
Tamiya mesh-type design, 2mm offset, one-piece molded gray wheels. Tamiya Type-A slick tires with one-piece molded inserts.

Transmission Type
Two belt driven four-wheel drive, conical gear differentials, steel out drives, axles, and dogbones, and ball bearings for the top shaft and differentials.

Suspension Design
Independent suspension, with adjustable-length upper arms and molded lower arms, steel suspension shafts, individual shocks.

Suspension Dampening
Coil-over, oil ˆfilled shocks with molded shock bodies and caps, o-ring and bladder seals, gold springs, ball cup mounts, molded shock towers.

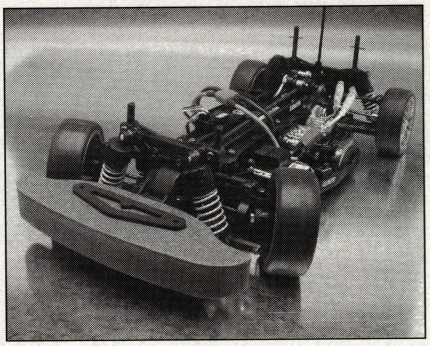
Vehicle Type
Electric motor powered, four wheel drive belt-driven touring sedan.

Other Items Needed
6-cell stick pack battery, 2 channel radio with two servos (or one servo and an electronic speed controller), Lexan paint for the body and CA glue for the tires.

Test Gear
KO Propo EX-11 presto FM radio system, SMC 3000 mAh matched packs, LRP F-1 Power ESC, and Futaba S3003 servo. All settings are factory spec as stated in the instruction manual.

Main Competition
Yokomo MR-4 TC, HPI RS4 Sport 2, Associated TC3 Racer

The Last Word
The TA04 performs, handles, and responds better out of the box than many other "sport" chassis I've driven. Sound familiar? That's because what's true for the Pro (where the statement came from) is true for the "Sport." The tub-equipped TA04 is just a hop (up) away from being as good as its world-class brother, the TA04-Pro.



When all else fails a nice big front bumper comes in very handy.

Tight Turns • The TA04 tub chassis had a pretty tight turning radius. The suspension felt really good during this drive, as I could point the front wheels in any direction and the rest of the chassis would follow without a hitch. 90 degree turns, 180 degree turns... it didn't matter. The TA04 held its line honorably. Other manufacturers' sport versions may handle well, but not this good!

Handling • Low-speed handling was great. The TA04 tub chassis felt just like its Pro sibling ˜ almost a given when you consider that the two share suspension components. Even on semi-dusty pavement, the TA04 was very neutral; it didn't push and it didn't burn donuts everywhere either. The body stayed nice and flat; no leaning (which would mean chassis roll) from side to side when I flicked the steering wheel back and forth.

True to the real Ferrari, the TA04 took all I gave it and didn't even flinch. I would drive at top speed, then do a quick S-turn (simulating an avoidance maneuver) and the four Type-A tires held on to the pavement. Full speed sweepers were like cake to the TA04; in fact, I almost forgot I was driving a tub version of Tamiya's racer! Give another hand to those kit tires for keeping their grip no matter what I had them do.

Maintenance

If you're talking about ease of maintenance, the Tub version TA04 shares the same easy access traits of its double-deck brother. Like the Pro, the CVA shocks are mounted on ball ends for quick shock removal. The open tub chassis doesn't have many places where dust and pebbles can hide. In fact, the only thing I didn't really like was the fact that to remove the top chassis plate you had to remove a total of ten screws. However, these screws aren't overkill; they in fact help in keeping the TA04 tub chassis as stiff as possible.

Damage Report

Although I didn't slam the TA04 into a curb or flip it over on its lid, the chassis looks like it can handle some rough driving. The front urethane bumper is nice and dense. The suspension pieces are all high quality, and all four shocks are mounted in a position that they do not stick out farther than the tires.

Value

To tell you the truth, there's not much different between this car and the Pro version. Sure, you lose the FRP chassis, ball diffs and eight axle bearings, but you get the same suspension, same shocks, same drive system, same ball bearing steering, plus a sweet Ferrari body! The kit included motor and mechanical speed controller go a long way for newcomers to the hobby. Although not the best choice for racing, the inclusion of these components mean less money to lay out at the start.

Conclusion

Regardless of the changes in standard features, the bottom line here is that the TA04 Pro handles and performs practically identical to its upper class Pro version. Don't let the molded chassis fool you. Throw on a body and most observers will probably never know that you're running a tub chassis (unless you turtle it on the track, of course).

Tamiya had one word in mind when designing the TA04 ˆ win. With the tub-chassis TA04, I don't think that word is a far reach at all. It went together smoothly, the parts and manual were all top-notch, and the drive shows exactly what this chassis is capable of doing. So, you're not that interested in world domination? Would you rather conquer the local parking lot and look good doing it? Well, I can't help you if you're ugly, but with a sleek Ferrari body covering a very good performing chassis, most people will be too busy watching your car in the lead!

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Nitro-powered GP Alpha Series racers ratchet up the realism with a recoil-started GX-12 engine, factory-installed. Like the EP versions, they're nearly 100% ready-to-run. Just finish detailing the bodies, add radio batteries, and head to the track!

Upgrade and replacement parts for Kyosho Alpha Series models are available now — ready to keep your vehicle running at its very best. For a free brochure and the location of the dealer nearest you, please call 1-800-682-8948 and mention code number 2339B.

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EP Alpha 4WD

- *4-wheel single belt drive, with rear-mounted X-Speed 600 motor.*
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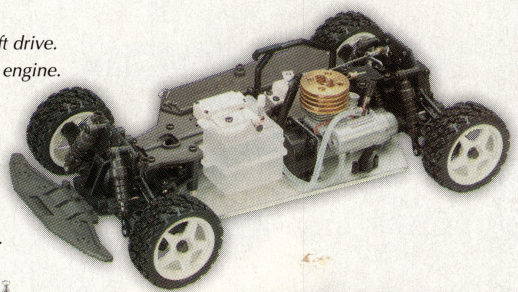
- *One-touch battery holder for fast pack changes.*
- *Electronic speed control (Honda S-2000 only – also includes 6-cell NiCd battery and AC charger).*

GP Alpha 4WD



- *Reliable 4-wheel shaft drive.*
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performance TEST

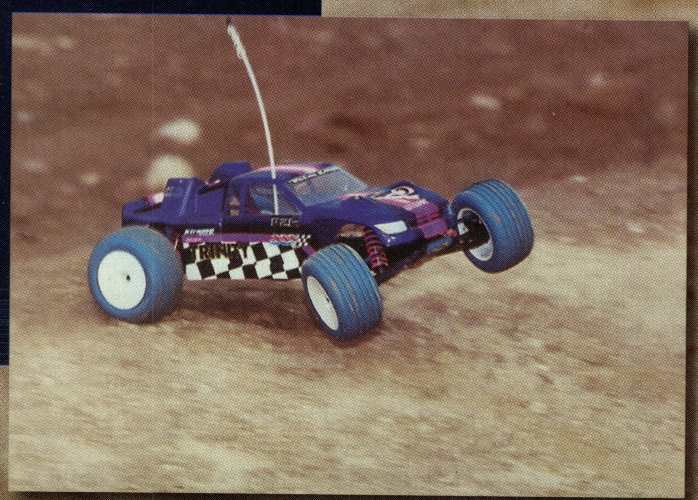
TEAM LOSI XXX DIRT SPECS

buggy & truck

Hits:
- Filet Minon performance at chopped liver price.
- Cars win right out of the box.
- Same innovative features as found on standard XXX kits.
- Helpful setup tips in the instructions.

Misses:
- Spec tires on the XXX buggy only work on limited surfaces. (If spec rules are observed this becomes a non-issue)

Instructions	4
Parts Quality/Fit	4
Durability	4
Tunability	4
Overall Performance	5
Value	5



DIRT SPEC TEAM LOSI XXX DIRT SPEC TEAM LOSI X



Spec classes have proven successful in on-road racing.



X DIRT SPEC TEAM LOSI XXX DIRT SPEC TEAM LOSI



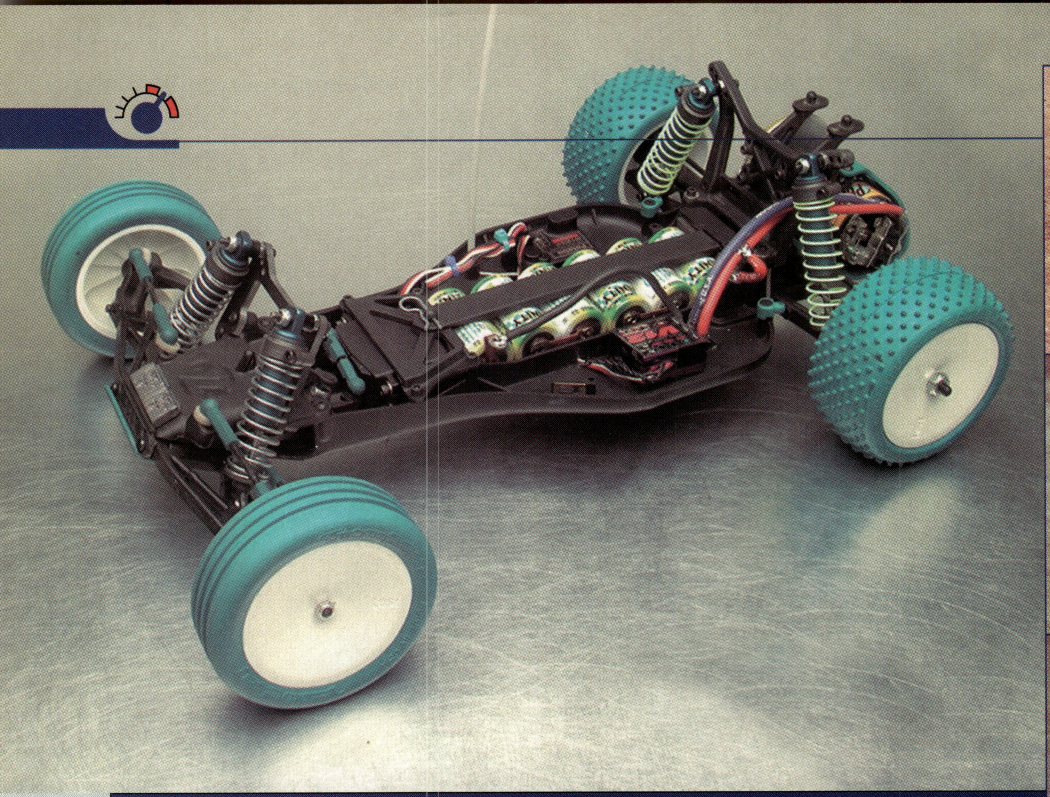
What do SCCA Spec Ford, Formula Atlantic, and the Neon Challenge all have in common? They are all racing series that pit drivers against one another mano-a-mano in identically prepared cars. The theory of spec racing is two-fold; by enforcing strict rules, the cost of racing is kept to a minimum, and because the cars' performance is closely monitored, the best drivers will rise to the top.

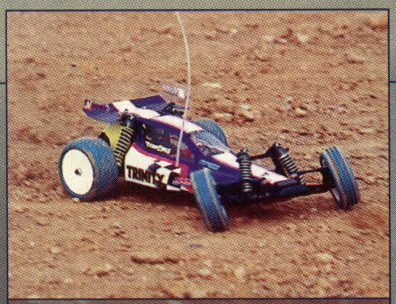
The R/C industry has quietly and politely tried applying the concept, with mixed results. Tamiya has their TCS series, where races are held regionally, then nationally. Trinity offers both Street Spec and Chameleon spec modified motors. But until now, off-roaders have been left out in the cold.

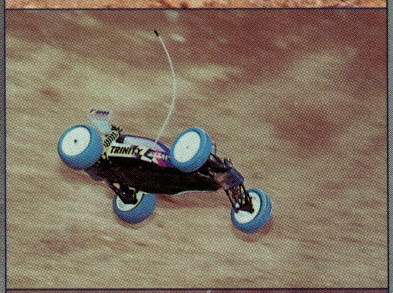
Team Losi has introduced their Spec XXX cars, hoping to create a new class and bring some new blood into R/C racing. The Spec cars set out to keep the racing close and the cost low. But the Spec cars are equipped with blue tires and (gasp) bronze bushings in all of the axles. Blasphemy! However, Team Losi claims the Spec cars are almost as fast as the full-blown XXX racers. We were skeptical too...

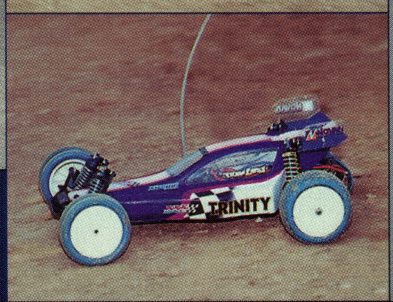
by Mike Henry

The XXX-Spec idea is a huge step in cost-controlled racing.









Buggy Dimensions
Wheelbase: 10.6"
Width: 9.82" Front, 9.84" Rear
Length: 14.875"
Weight: 3 lbs., 7 ozs.

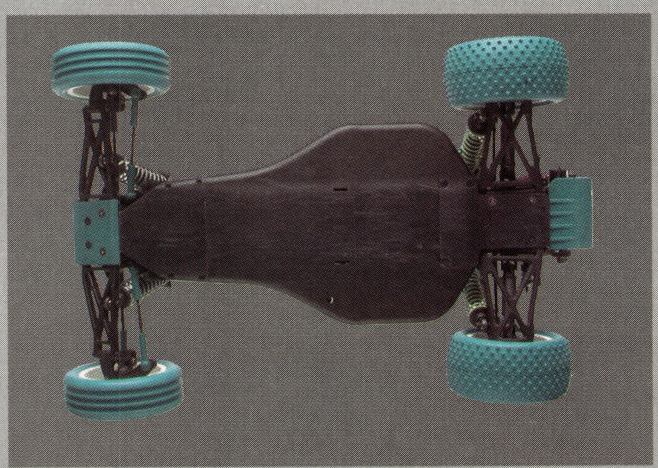
TEAM LOSI XXX DIRT SPEC TEAM LOSI XXX DIRT SP

First it was Blue's Clues; now it's blue tires.

The Specifics
Part #'s:
A-0002 (XXX Buggy)
A-0006 (XXX-Truck)
MSRP:
$259.95 (buggy)
$269.95 (truck)
Estimated Street Price:
$150-160
Manufactured in U.S.A.
Vehicle Type:
Electric motor-powered, rear-engined 2WD competition off-road buggy/truck.
Chassis Type:
Molded Stiffezel composite tub chassis with rear mounted drivetrain.
Transmission Type:
2WD 3-gear transmission with adjustable ball differential, dual-disk slipper clutch, plastic telescoping drive shafts, and ball bearings in the transmission case.
Suspension Design:
Independent, molded composite lower arms and adjustable upper control links with steel turnbuckles.
Suspension Dampening:
Coil-over, oil-filled shocks, blue anodized hard-body shock bodies, and steel shafts.
Wheels and Tires:
Losi off-road dish wheels, Front Blue Directional and rear Blue IFMAR Studs with foam inserts (XXX-T), Losi off-road dish wheels, Front Blue XTRA-Wide and rear Blue IFMAR Studs with foam inserts (XXX buggy)
Who It's For:
Spec racers or entry-level racers who want a competitive car out of the box.
Build Time:
About 4 hours, not including trimming and painting the body.
Main Competition
(Buggy) Associated RC10B3, Kyosho EP Ultima RB Type R
(Truck) Associated RC10T3, Kyosho EP Ultima ST Type R

Chassis

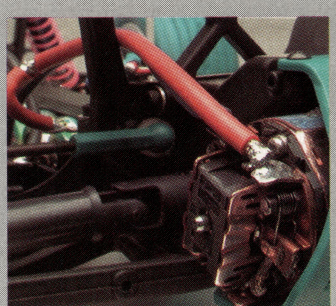
Both vehicles utilize chassis molded from Losi's Stiffezel material. The chassis are the same as found on the more expensive XXX kits, so they are blessed with the same features. Both the buggy and the truck use two foam battery spacers that allow for easy tuning. Ample space is provided on either side of the chassis for practically any size receiver and speed control. Of course, all of the holes on the under-

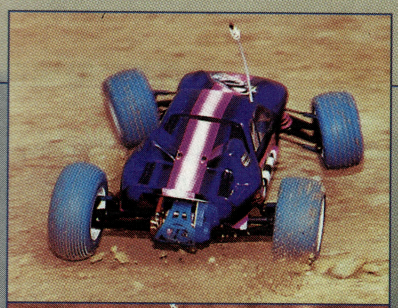


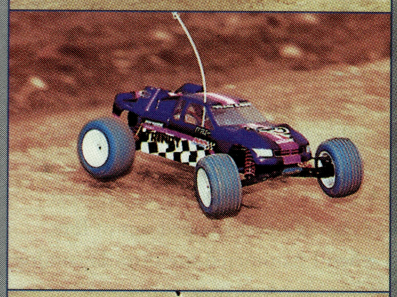
side of the chassis are countersunk, and the edges of the tub are rolled and smooth to decrease the chance of getting hung up on a tube. Blue plastic bumpers/skid plates are mounted to the front of both chassis.

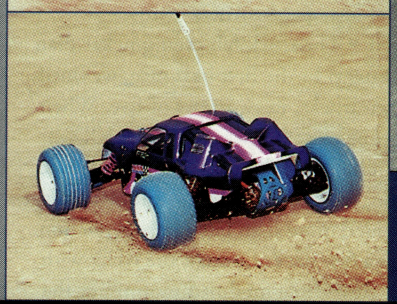
Drive Train

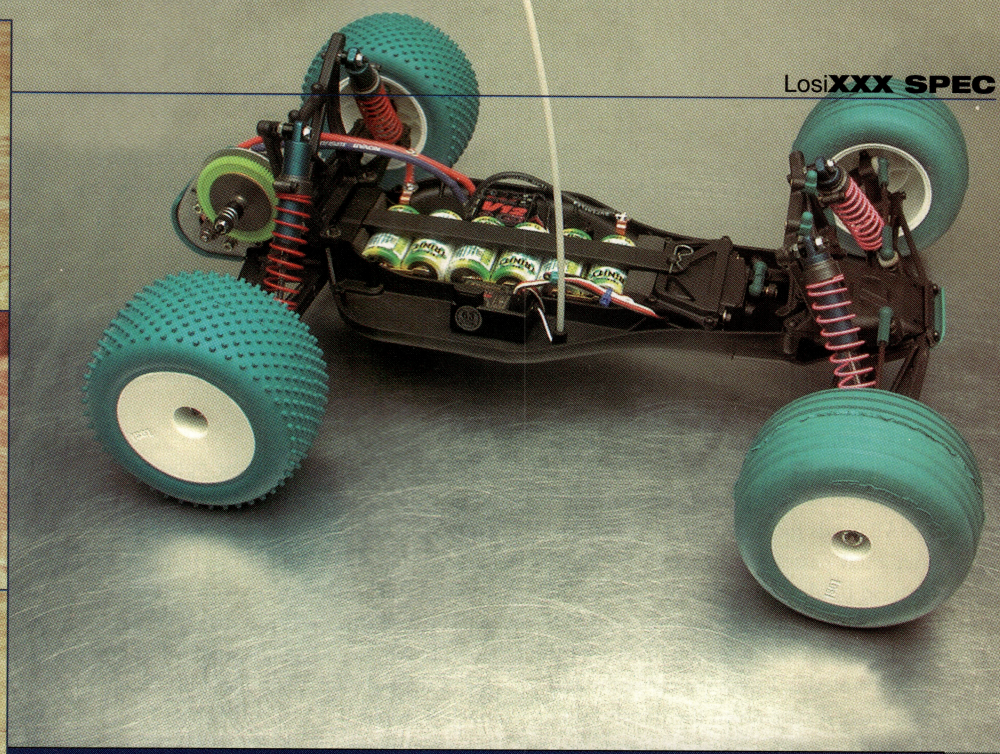
Much of the Spec car's drive train is carried over from the other XXX kits. The spec cars use the same three-gear transmission that yields a final drive ratio of 2.43:1. The top shaft, idler gear and the differential all rotate on ball bearings. The adjustable ball diff uses plastic bushings, rather than ball bearings. The differential







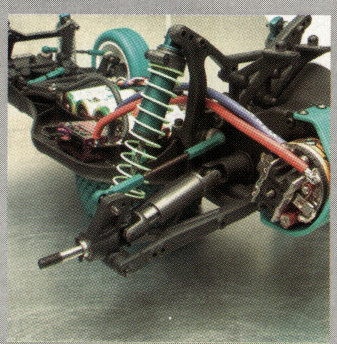




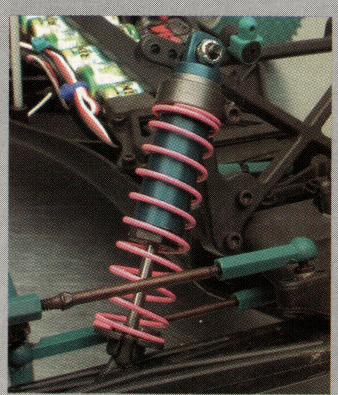
Truck Dimensions

Wheelbase: 11.050"
Width: 12.725" Front, 12.875" Rear
Length: 16.195"
Weight: 3 lbs., 14 ozs.

TEAM LOSI **XXX DIRT SPEC** TEAM LOSI **XXX DIRT SPEC**



features plastic out drives that actually terminate in universal joints. This is because both Spec cars use Losi's plastic telescoping universal drive shafts. The rear hub carriers use bronze bushings on both vehicles. The buggy spins an 82-tooth spur gear while the truck gets an 88-tooth cog. Losi's fine dual disk slipper clutch is used on both. A blue plastic motor guard protects the motor from unsavory racing contact.

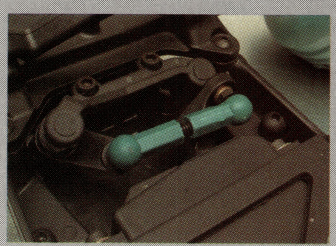


Suspension

All four of the suspension arms and both shock towers are made of Stiffezel. You aren't likely to run out of tuning options, as both Spec vehicles offer the same geometries and camber link/shock position choices as the standard XXX series. The Spec cars do, however, feature new blue anodized shock bodies. Both vehicles also share the same 30-degree caster blocks. The rear suspension mounts feature three degrees of toe in and four degrees of kick-up. The kit setups, including spring rates, shock pistons, and shock oil, are identical to the standard XXX cars. Steel turnbuckles help to keep the cost low and blue ball cups maintain the kit's "Richard Petty" blue theme.

Steering

Team Losi's revolutionary "Caster Correct Steering" is featured on both of the Spec cars. This system angles the bellcranks at the same angle as the kingpins for zero bump-steer. The chassis will accommodate practically any make/model of steering servo. The servo is firmly held in place by the top plate, which pulls double duty as one of the mounting points for the battery hold-down. As in the rear, bronze bushings are used in the front axle on the buggy. The Spec truck uses bushings in the front wheels. Blue ball cups connect the servo horn to the port-side bellcrank.



Wheels, Tires, and Bodies

The most obvious deviation from the standard XXX lineup has to be the blue Spec Tires. According to Team Losi, the blue compound is not comparable to any of the existing compounds. One smell will verify this; they emit a funky odor. The XXX Spec buggy uses blue IFMAR Studs in the rear, and blue XTRA-Wide rollers up front. The XXX Spec truck also uses blue IFMAR Studs in the rear and blue Directional tires in the front. Tires for both vehicles are mounted on white plastic wheels. Each kit comes with a clear, unpainted Lexan body, complete with decals and window masks.



Steve from Blue's Clues has decided to move on. He doesn't want to be typecast.

Testing

I had two objectives for testing both of the XXX Spec racers – to observe the on-track characteristics of each vehicle and to see how well they stacked up against full-blown buggies and trucks.

XXX Spec Buggy • I entered the XXX in stock buggy, blue tires and all. I powered the car with a Trinity P2K stock motor geared with a 22-tooth pinion. The track at Hobbytown is hard-packed, but I ran the IFMAR Studs for the first few heat races. After a few passes, the tires were notably worn, so I bolted on a pair of Losi X-2000s in red compound. I managed to take TQ, but the diff grenaded on the first lap of the main. Perplexed, I took the car home and completely disassembled the transmission and diff. One of the universal joints was binding, ever so slightly, but enough that it scored the diff screw. I replaced the universal joint, rebuilt the diff, and went back to the track.

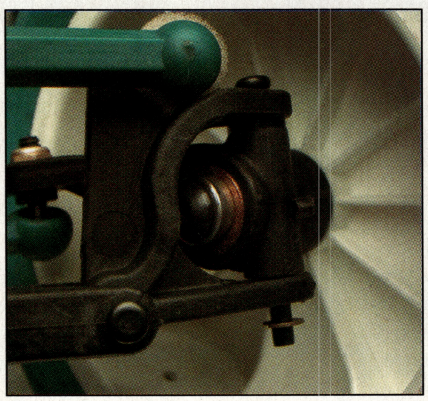
While I had the car apart, I decided to change the setup. Hobbytown is the home track for Team Losi factory pilot, Billy Caley, and he helped me find a more precise setup for the XXX. I worked my way to the fourth spot on the grid for the main. I jumped past two cars in the first turn, and capitalized on a later mistake to take the lead. I led the main until the second place car ran me off the track and went by. The bushing-equipped XXX finished in second place. Hey, that's racing.

Spec XXX-T • I only had one opportunity to race the XXX-T, but that was more than enough to convince me of its potential. I raced the truck in 100% stock form. Again, I used a P2K stock motor, with a 19-tooth pinion. The truck was just dialed all day long. Hobbytown regulars watched in horror as the big blue truck flew around the track. I set the TQ in the first heat race, but was trumped in the latter race by three tenths of a second. The main ended up as a battle between the XXX-T and the TQ holder. We swapped the lead a few times, but were neck-and-neck at the three minute mark. I did win the main, but mostly because of a demonstration of great sportsmanship. (Thanks for waiting Lee.) In fact, I thanked Lee by (unintentionally) running his truck over. Beating nine other trucks with the Spec XXX-T didn't suck.

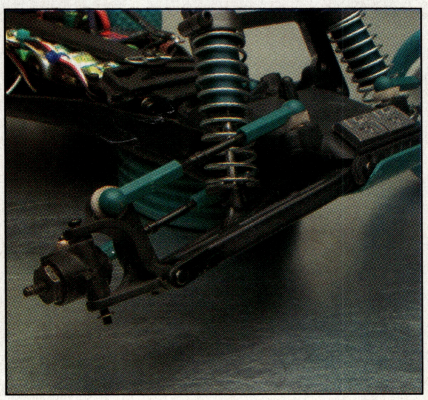
Acceleration

XXX • With the P2K strapped in, the buggy accelerated quickly. Stock races are often won or lost when the horn sounds, but the XXX was out of the hole just as fast as the other buggies I raced against. The IFMAR Studs, while not the ideal tire, do offer a ton of forward traction. The rear end of the car never stepped out of line, even when I hammered the throttle coming out of low-speed corners.

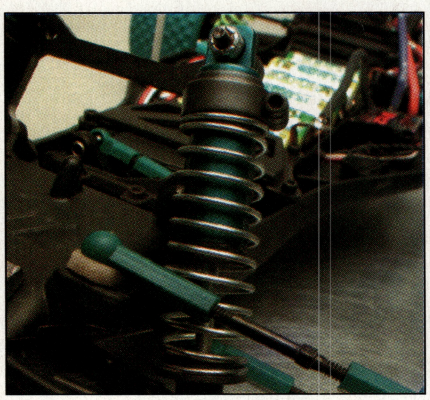
XXX-T • The truck felt even quicker than the buggy. In the first heat race, we lined up ten trucks, in two rows of five. When the tone went off, I watched the XXX-T pull a huge holeshot on the other trucks. Again, the big studs on the stinky blue tires provided more than enough rear traction. I ran a few packs through the truck with a 12-turn triple modified motor, but the results were similar. The rear end of the truck was firmly planted everywhere on the track.



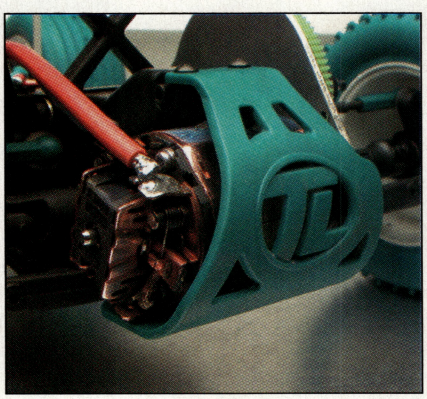
Even with oilite bushings, the XXX-spec was quick, fast, and competitive.



The same suspension geometry as the standard XXX and XXX-T is found on board both Spec vehicles.



Blue anodized shocks come standard on both the car and the truck.



The rear motor guard not only matches much of the vehicle, but keeps the motor safe at the same time.

Building Tips

Both of the kits build quickly with a minimum of hassle. The instructions are clear and concise, with logical text and useful computer-drawn illustrations. Both kits share the same instruction manual, so make sure you're building the correct vehicle. Also take note of the following:

- **Figures 6-8:**
Apply some thread-lock to any fasteners that thread into metal surfaces. While not as important on an electric vehicle, it could save you in the long run.
- **Figures 21 & 42:**
Use extreme caution when inserting the roll pin into the universal pivots. If the roll pins are not perfectly straight, binding will occur.
- **Figure 50:**
Make sure there is no flashing on the shock pistons. Carefully run a hobby knife over the sides of the pistons before you attach them to the shock shafts.
- **Figure 55:**
Use quality CA when you're gluing the tires to the wheels. I recently broke down and shelled out $7.50 for a bottle of Team Losi Tread Lock. This stuff flat out works. It's thick enough that you have a few seconds to set up the surface, and strong enough that you will never experience embarrassing premature separation.

Too late. That dork will always be "the guy from that kids' show."

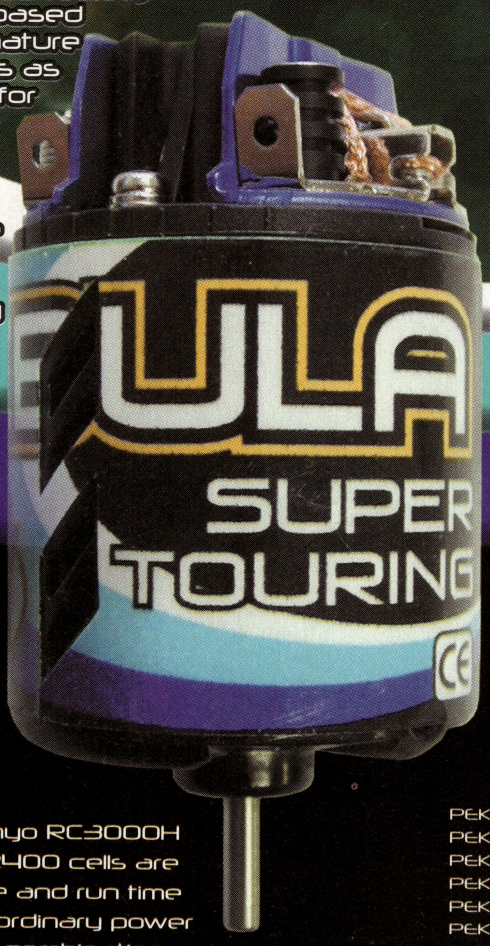
NEBULA

SUPER TOURING

No form of R/C racing, past or present, has required as much power or efficiency as modern day four wheel drive touring sedans. Taking this into consideration, Peak has developed a motor that exceeds the demands of these high tech road rockets.

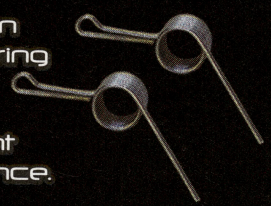
Peak's all-new Nebula super touring motor was designed with the serious touring car racer in mind. The TOP based Nebula's pattern wound armature features optimized wire sizes as well as a commutator sized for maximum power and efficiency. Revised timing settings, Viper 135° brush springs and 2151 high power, long wear brushes complete the equation.

Once again Peak's ingenuity and quality come together to produce a sure-fire winner.



PEK7361	Nebula 6x1	$95.00
PEK7362	Nebula 6x2	$95.00
PEK7371	Nebula 7x1	$95.00
PEK7372	Nebula 7x2	$95.00
PEK7381	Nebula 8x1	$95.00
PEK7382	Nebula 8x2	$95.00
PEK7391	Nebula 9x1	$95.00
PEK7392	Nebula 9x2	$95.00
PEK7301	Nebula 10x1	$95.00
PEK7302	Nebula 10x2	$95.00
PEK7311	Nebula 11x1	$95.00
PEK7312	Nebula 11x2	$95.00
PEK7321	Nebula 12x1	$95.00
PEK7322	Nebula 12x2	$95.00
PEK7331	Nebula 13x1	$95.00
PEK7332	Nebula 13x2	$95.00

The Nebula comes equipped with Peak's new Viper stand-up motor springs. Extra material at the brush/spring contact point provides improved cooling resulting in longer spring life and more consistent performance.



PEK2010	90° Viper Spring	$2.00
PEK2011	115° Viper Spring	$2.00
PEK2012	135° Viper Spring	$2.00
PEK2013	150° Viper Spring	$2.00
PEK2014	175° Viper Spring	$2.00
PEK2015	Viper Spring Set (5 pr.)	$7.00

Powerflo voltage enhanced Sanyo RC3000H and new generation Sanyo RC2400 cells are now available! Maximum voltage and run time coupled with the Nebula's extraordinary power output and efficiency make this combination a tough one to beat.



PEK49061	World Spec RC2400	$120.00
PEK49062	National Spec RC2400	$95.00
PEK49063	Club Spec RC2400	$80.00
PEK45061	World Spec RC3000H	$120.00
PEK45062	National Spec RC3000H	$95.00
PEK45063	Club Spec RC3000H	$80.00

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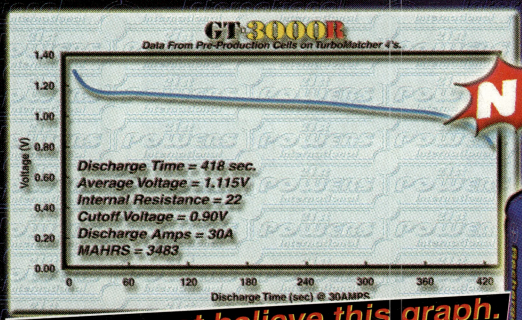
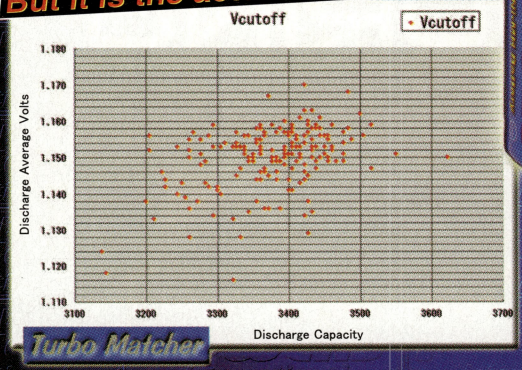
Peak

Get the POWERS!

NEW GT-3000R



You may not believe this graph.
But it is the actual data!





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Incredible high capacity, typical 3300mAh !

POWERED by POWERS

2000 Special New Items

System Choice Take Off NEW

CS Tire Series

NEW

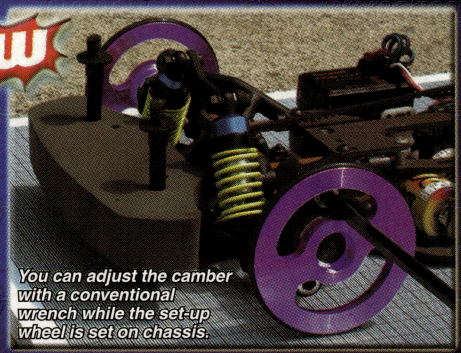
The concentration of the technology of the European Championship control tire for two consecutive years.

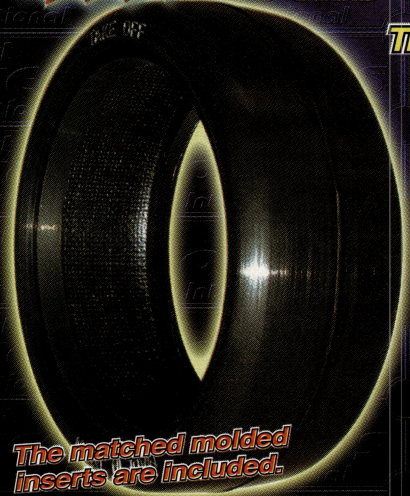
New Set Up Wheel

This New Set-up wheel enables an easy set-up with innovative Set-up Hole.

Unit: 4 pcs.
Material: Anodized aluminum

Color: TO340B Blue
TO340P Purple
TO340BK Black



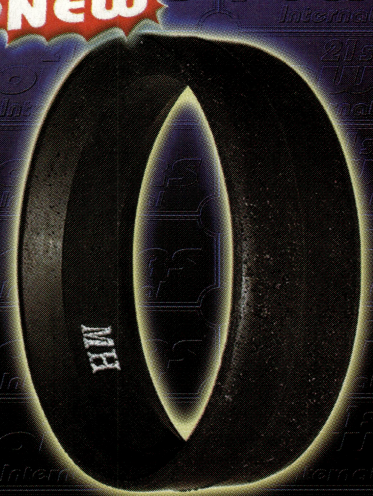


The matched molded inserts are included.

NEW

Transmit the power of Ni-MH to track surface.

Take Off, the winner of world major races, developed new CS-tire series in order to match high power of Ni-MH battery. You can push your car to farther limit with CS-tire. The tire is purely designed for dogfights, faster on straight and stronger on corners.



CS Molded Insert

The hardness of the CS molded insert in each bag (4pcs) is precisely matched in Take Off Factory.

CS matched molded inserts are developed based on special material for full size car. They are durable, ageing resistant and uniform quality.

Unit: 1 pair with matched molded inserts (CS-M : medium) .

CS-22	CS-27	CS-32	CS-37
under low temperature.	←———	———→	under high temperature.

Unit:4 pcs.

CS-MH	CS-M	CS-MS
for high-grip track.	←———	———→ for low-grip track.

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PIT STOP HOW-TO

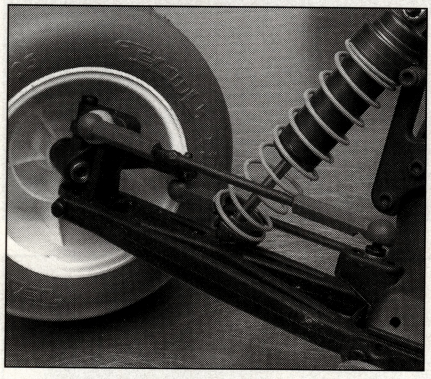
Know Your Gearing

• Begin by following the manufacturer's recommended gearing chart.
Most kits have suggested gearing for different types of motors. This is the best place to start if you're not sure.

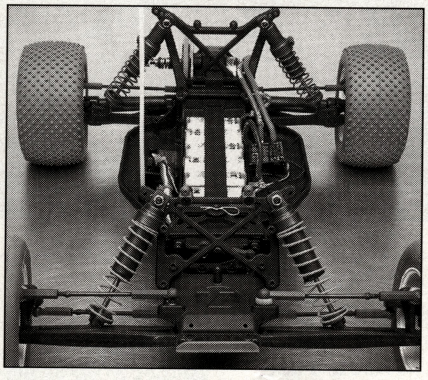
• Know the effect of changing the gear ratio.
Using a larger pinion gear will yield more top speed; using a smaller pinion will enhance acceleration.· Do not overgear your car or truck. By using too large a pinion gear, you risk over-heating the motor. This can at the very least burn the brushes, and probably the commutator as well.

• Gear for the corners, not the long straight sections.
Most tracks are made up of many corners and one or two long sections. Gear for the slower stuff.

• Proper gear-mesh is critical.
There needs to be a little bit of space between the spur gear and the pinion gear. Make sure you can rock the spur gear back and forth. If the mesh is too loose or too tight, you can over-heat the motor or damage the drive train.



Both spec kits allow the racers to look for that edge thanks to old-fashioned tuning and adjustment.



The XXX design is simple and well laid out, making adjustment and repair somewhat simple.

Top Speed

XXX • I was a little apprehensive about racing a car with bushings in all four axles, especially in a stock class. The motor in the car was strong, but I was shocked at how fast the Spec XXX was. I was certain I'd have to make up some ground on other cars, because of the bronze bushings. This was not the case. The buggy was as fast as any other on the track. The car felt stable and true at speed.

XXX-T • Read the above statement about the buggy, then apply it to the XXX-T. I was actually pulling other trucks on the back straight. My competition for the day was running a 36-degree stock motor, but you'd never know it watching the truck on the faster sections.

Jumping

XXX • The track layout was very technical and rhythm-oriented. This included a few really tricky jumps that had an adverse effect on my lap times if i didn't nail them. The XXX was very forgiving over all of the jumps, and confidence-inspiring over the tough jumps. Even when I approached them a little off-line, the buggy almost seemed like it would right itself while in the air. I managed to case a few jumps, but the XXX insisted on holding its ground.

XXX-T • The truck handled the jumps so well, it hardly seemed upset by them. One particular jump is a medium-size obstacle, that leads directly to a sharp 180-degree turn. To nail this jump, you have to turn the wheels just before the front wheels reach the ground. As long as I was on the driving line, the truck seemed to drive itself on this tough section of the track. With the modified motor, I was able to land the tricky double-step down jump almost every time.

Rough Track Handling

XXX • Even though the track surface was almost completely smooth, there were a few rutted sections. One was at the end of a short straightaway that led into a very tight 180-degree left hand turn. I was able to throw the XXX into this corner repeatedly and come out in good shape.

XXX-T • The truck, with its larger wheels and tires, soaked up the ruts and scaling as if they weren't even there. The angled bell-cranks aren't a gimmick; they really make a difference you can feel.

High-Speed Handling

XXX • When I first set the XXX on the track, it felt dialed on the high-speed corners. Fellow racers mentioned that with the kit setup, the buggy might exhibit a slight off-throttle push, but I just didn't feel it. After I torched the diff (which was my own fault) the car did in fact have a touch of push. The binding in the drive train was acting like a drag brake! Weird. I changed the setup, and the XXX was almost perfect. I was most impressed with the car's ability to hold a line. Everywhere on the track, on-throttle or off-throttle, it didn't matter, the car was composed.

XXX-T • The truck felt even more balanced than the buggy did, and I never deviated from the stock setup or tires! The fastest corner on the track is an increasing-radius turn coming off the back straight. No matter which line I drove, the truck was stuck to the surface. Getting around this turn with a modified is not easy. It requires just the right amount of steering input and braking. Somehow, the XXX-T nailed the corner with no braking. In fact, if I touched the brakes, the truck would get loose.

Low-Speed Handling

XXX • I really hated to ditch the IFMAR Studs on the buggy, but the surface was just too hard for them. The car felt unstable when the studs would begin to grab and slide and then grab again. With the stuffer setup and more appropriate rear tires, the buggy felt great. I was able to toss the car into a corner, wait for it to settle, then drive into the next section without really thinking about it. I feel with either a rear sway bar or using the 25-degree steering blocks the car would be perfect for my driving style.

XXX-T • The truck was actually pulling away from the field in the lower speed corners. Commend Losi for putting the Directional tires on the Spec truck. They work great on tracks with a little bit of fluff on them. The XXX-T has such a low center

Continued on page 71

Improper gear adjustment can ruin your motor, ESC, and your reputation.

THE BEGINNER'S OFF-ROAD TUNING GUIDE

by Mike Henry

For R/C racers, there's no better feeling than when your vehicle is dialed. We've all had that perfect race, when there was an invisible yet undeniable link between you, your transmitter, and your vehicle on the track. Whatever you asked of the car, it responded predictably and smoothly.

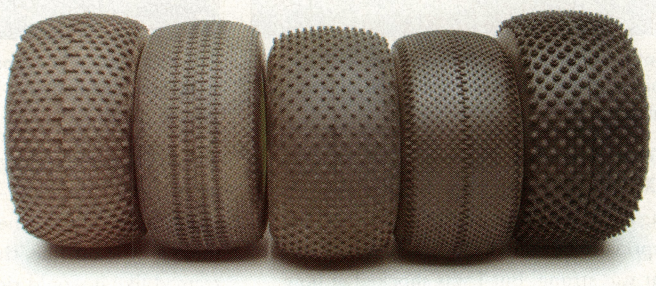
Contrast this with the inverse experience. You set the same car down on a different track for the first time. As you head for the first turn, your confidence melts down as your car plows right off the track.

What happened? As you probably know, most competitive R/C cars feature a plethora of adjustments. What you may not know is exactly how they affect your car. Getting your car or truck dialed can be one of the most frustrating or rewarding adventures you encounter. *Xtreme* hopes to help make it the latter.

Note: This How-To is intended as an introduction to setting up off-road cars and trucks. While most of the concepts will hold true with most vehicles, this article is not meant to cover every existing application.

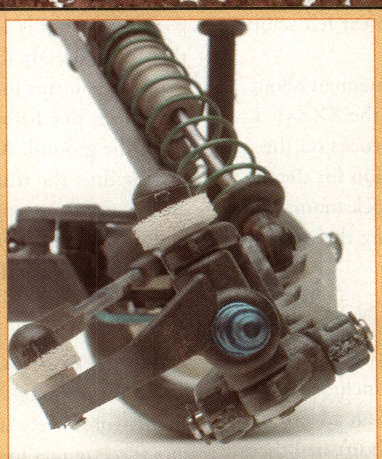
Tires

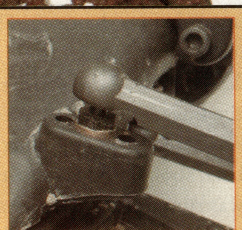
You should begin your journey by selecting the right tires for the conditions. Take a quick trip around the pits and see what other racers are using. There are no hard-and-fast rules for tire selection, but there are a few guidelines. Tracks with loose or loamy conditions usually require a tire with larger pins. If you want to go fast at some tracks, like K&M Raceway in Grand Terrace, CA, you absolutely need to have step pins. At the opposite end of the spectrum are hard-packed tracks that usually require tires with smaller pins. A good example of a hard-packed track is SRS, in Scottsdale, AZ. The harder the track surface, the more important proper foam selection becomes. Multi-stage foams usually work best when an abundance of traction is available. When in doubt, use the same tires the fast guys are using.

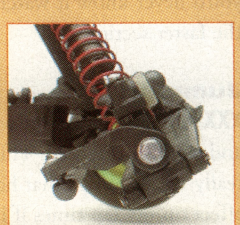


Steering

Caster is the angle of the kingpin in relation to the ground. Most modern off-road cars and trucks feature 25 or 30 degrees of caster out of the box. Changing the amount of caster you car has can yield dramatic results. The more caster a vehicle has, the more initial steering feel it will exhibit. Take the Team Associated B3 for example. The B3 comes with 30-degree caster blocks, but a lot of team drivers swap in the 25-degree units. Why? Because using the 25-degree blocks will take away some entry steering, but will make the car turn harder through the exit of the turn. The inverse is also true. If you're using 25-degree blocks and have plenty of mid-to-late corner steering but want more early in the corner, try using 30-degree blocks. If you race a Team Losi XXX or XXX-T, you can adjust the amount of steering your car has by changing the height of the front camber link ball stud. Adding washers will make the car feel more stable. Removing washers will make the steering feel more aggressive. Don't be afraid to experiment.



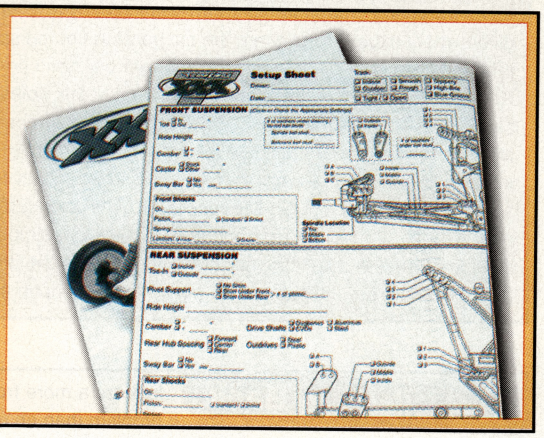




For more tire info check out the article on page 92 of this issue.

Baseline Setup

There's really something to be said for kit setups. Engineers and team drivers spend a lot of time finding a good setup that will work in most conditions. If you're totally lost, revert back to the kit setup. If your car is still all over the place or it's just not working the way it should, resort to the instruction manual.



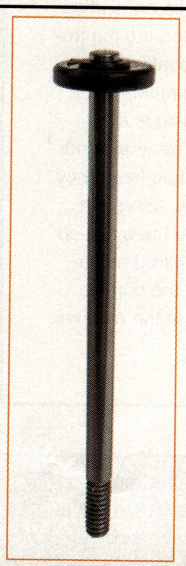
Maintenance

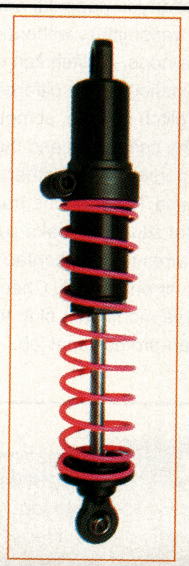
Take the car apart and check all of the pivot points and ball studs. Make sure the suspension arms move freely, but aren't waiting to fall off the car. Replace any E-clips that have ejected. Make sure all of the ball studs and camber link nuts are tight. If the shocks feel gritty or the oil looks more like mud from a health spa, it's time to rebuild them. In short, completely go over the car and put the kit springs and shock oil back on it. If it's still hemming and hawing or acting unruly, you may need to decide on a strategy.

Weight Transfer

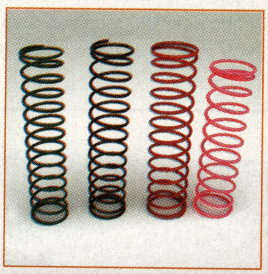
The key to a great handling R/C car is a good working knowledge of weight transfer. As a car accelerates, decelerates, and changes direction, the weight of the vehicle is distributed differently to each of the four wheels. But knowing how to slow down or speed up the weight transfer can have a dramatic effect on the car's handling. By changing the shock springs and/or oil you can't change how much your car weighs, but you can change how that weight gets put to use.

If you want more steering, you can speed up the weight transfer by changing to a lighter spring/oil in front or a heavier spring/oil in the rear. By making these changes, you're effectively unloading the rear tires faster, and adding more traction to the front of the car. More rear traction can be added by softening the rear spring rate and using thicker shock oil. Pistons can also be changed to alter weight transfer, but if you're a beginner stick with just changing oil and springs.



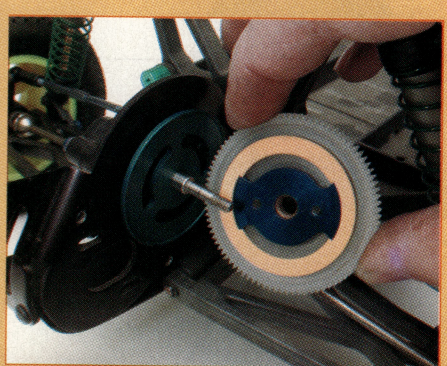






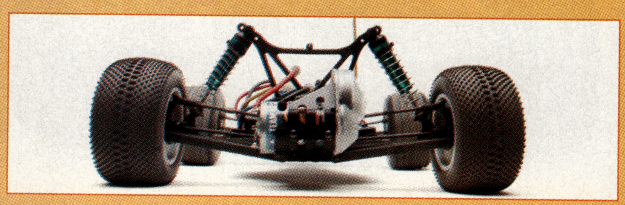
If The Slipper Fits

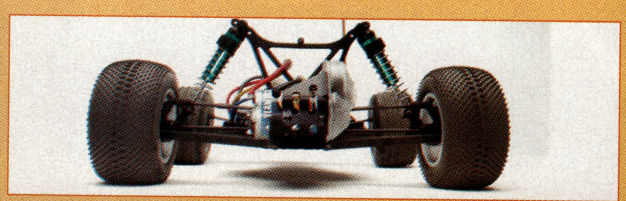
Most racers know what a slipper clutch does, but not everyone knows how it is properly adjusted. According to Team Losi, "the slipper, when properly adjusted, should not be set so that you can feel it when driving." You also shouldn't be able to hear it engaging. If you can, it's too loose. The purpose of the slipper clutch it to protect the drive train when landing jumps or driving on washboard sections. The slipper clutch isn't a tool you should use when your car is loose. That's what your throttle finger is for. A quick and easy way to check your slipper is to set the car on a sturdy table so that both rear wheels can be held. While holding the rear wheels, try to turn the spur gear by hand. If anything short of Charles Atlas force can turn the gear, it's too loose. If it does not turn and your thumb hurts like hell, it's properly set.



Ride Height

The standard ride height for most off-road cars is setting the preload so the suspension arms are level up front and the dog bones are level in the rear. By lowering the ride height in the front, you will notice a gain in steering. If you raise the ride height in the front, the car will have more rear traction. The concept also holds true in the rear. By raising the ride height in the rear, steering feel will increase. If you lower the rear ride height, more rear traction will be felt.

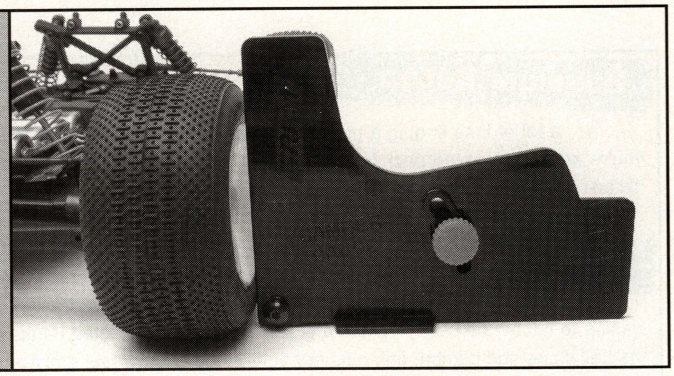




Ride height is one of the quickest, high-impact adjustments you can make.

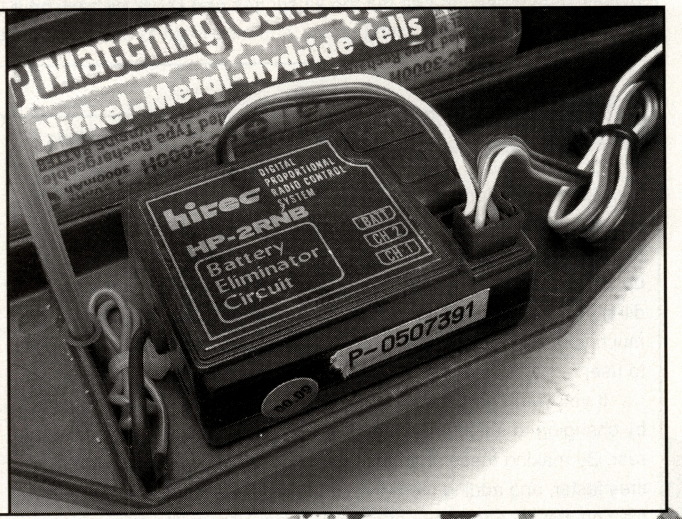
Camber Links

Camber links affect how much camber change a given wheel experiences when the suspension compresses or rebounds. So what do you do when the rear bulkhead on your Losi XX-4 has 20 (that's no joke, I counted) camber link holes? In most cases, a shorter rear tie-rod length will give you the most stability and handling on rough tracks. A longer rear tie-rod length will usually result in more rear traction. This will also work best on a smooth track surface. A similar concept proves true on the front end. A lot of off-road buggies and trucks use a kingpin/ball stud-style front end. In this case, using a longer tie-rod should result in more steering, but the car can be a handful on a rough track.



The Glitch is Back

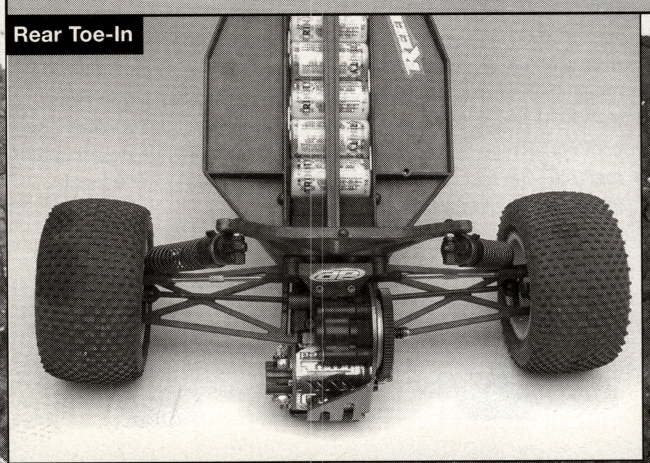
Is there a more frustrating problem than an errant radio glitch? Sometimes it is 100 percent someone else's fault. I can't offer you peaceful advice on dealing with people who turn on their transmitters without clearing the frequency first. However, there is hope. A glitch can usually be resolved by a process of elimination. Put a different motor in the car and run a few laps. If the glitch is gone, something is awry within the first motor. Check the capacitors and the general condition of the motor. If the glitch persists, try another radio frequency. If your car is still going Lawrence Taylor on the track, bring it in and take a look at the electrical situation. Make sure there are no bare wires showing. Are any wires making contact with graphite parts? Try mounting the receiver on its side. Check the connections near the receiver. If you've modified a plug to fit the receiver, you may have done a less-than-professional job.



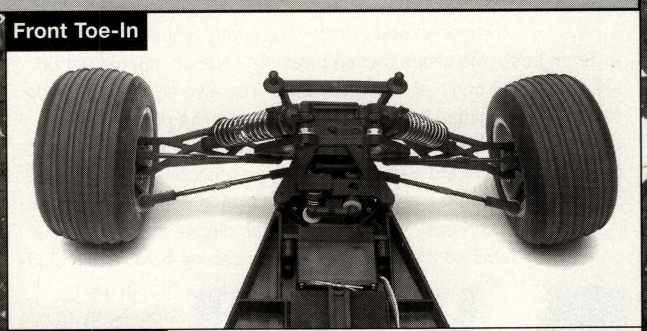
Toe-In/Toe-Out

Beginning in the rear, the more toe-in a car has, the more rear traction it will exhibit. Most off-road racers come out of the box with three degrees of rear toe-in. Decreasing the amount of rear toe-in will result in more steering from the rear of the vehicle. Moving up front, the best place to start is with 0 degrees of toe with both front wheels pointing straight. If you're racing on a slick surface, you can increase toe-in to one or two degrees. This will numb the steering entering the turn, but add steering when exiting the corner. If you're feeling bold, you can try running a little bit of toe-out in the front. This will increase steering by a bunch, but your car will probably wander on the straightaway.

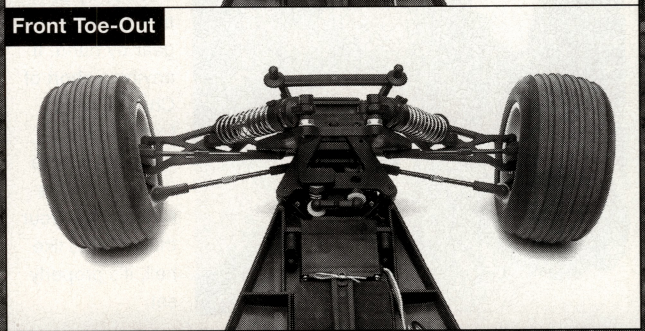
Rear Toe-In



Front Toe-In



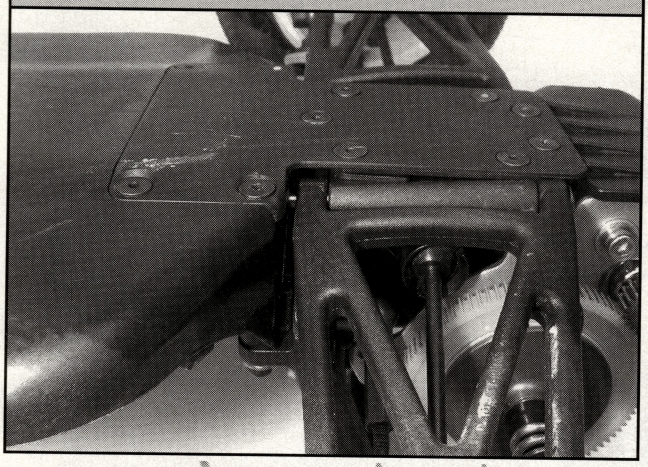
Front Toe-Out



Toe-out is never desired in the rear end of your vehicle.

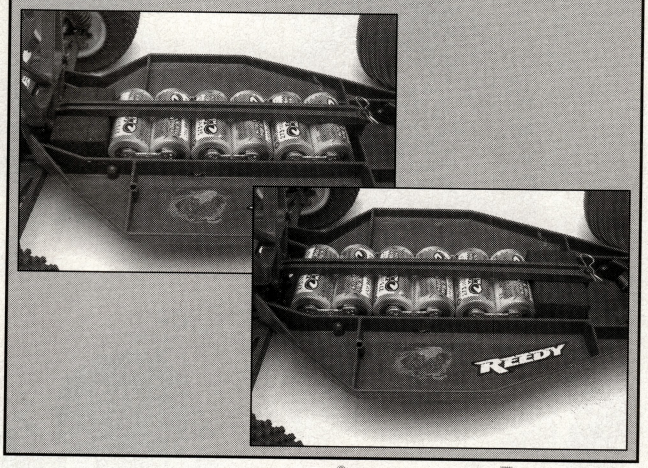
Anti-Squat

Anti-squat is the angle of the suspension arms in relation to the chassis. Most modern off-road cars and trucks build with three or four degrees of rear anti-squat, which works well on a lot of tracks. By increasing anti-squat, the car will rotate more freely in the corners. Decreasing anti-squat can be useful if you're racing on a bumpy track. This will make the rear end of the car kick up less when you're on power.



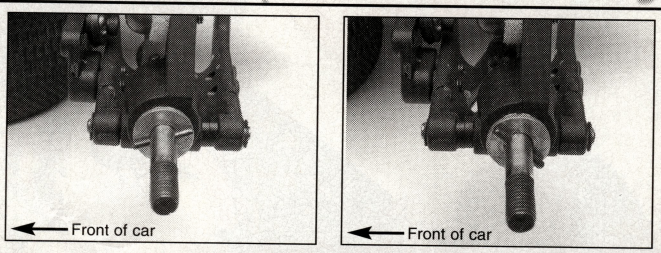
Battery Placement

What's the heaviest component on any electric-powered R/C car? It only makes sense that moving the battery can have a great affect on the way your car gets around the track. If your car is pushing or feels a little nose-heavy, move the cells toward the front of the vehicle. If you need to pick up some rear traction, try moving the cells to the rear. This is simple common sense, but it's also overlooked by a lot of racers.



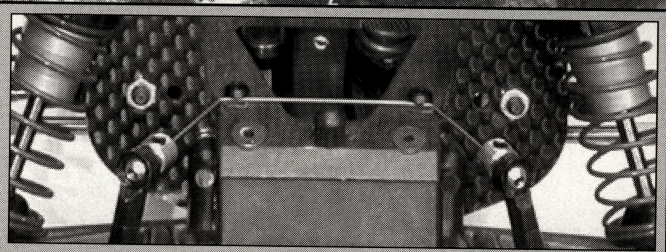
Rear Hub Placement

When you change the placement of the rear hubs, you're effectively altering the wheelbase of your car or truck. Throw common sense out the window and use the following guidelines. Move the rear hubs all the way forward for maximum rear traction. If the hubs are spaced to the rear of the vehicle, the result will be an increase in steering. Moving the rear hubs around is also another way of manipulating weight transfer



Sway-Bars

Sway bars should only be used on a mostly-smooth racing surface. Running a sway bar on the front of a car or truck will help decrease oversteer. Using a sway bar on the rear of a vehicle will effectively help rotate the car in the corners. Sway bars should be used to fine tune a car.



PIT STOP HOW-TO

Glossary Of Terms

Dialed: A slang word in all hardcore racers' vocabulary. When a car is "dialed" it's perfectly set to the race track conditions. It doesn't get any better.

E-Clip: Small metal clips that are made in the shape of the letter "E." These clips are often used to hold a shaft in place or to hold something onto a shaft. Have extras handy because they do get lost. Also note there is a smooth side and a sharp side to an E-Clip. Always have the smooth side facing any part it may come in contact with.

Glitch: Another slang word used to describe radio interference that causes your car to do something you don't want it to do.

Slipper Clutch: A slipper clutch is used to increase traction by absorbing any excess torque during acceleration. A slipper clutch is also used to cushion the mechanical strain put on transmissions in nitro racing. The slipper will help save the transmission when landing large jumps.

And Finally...

Now that you have a better understanding of how setup adjustments affect your off-road car, you can take some notes and see how they work in the field. Remember, no setup will compensate for bad driving. When all else fails, revert to the kit setup and make adjustments from there. Dig the instructions out of the bottom of your toolbox and study the tips and hints sections. Also, don't be afraid to ask your fellow racers questions.

Sway-bars are also known as anti-roll bars.

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RACING BUGGY

MBX XR WORKS



Other items needed to operate this model:
2 Channel radio with servos,3.5cc R/Exhaust Engine with muffler,manifold, starter,and fuel.

- Servo Saver(with bearing) • Center Universal Joint (S)
- Al.Tension Rod • Al.Center Diff.Mount
- Turnbuckle Tie Rod

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4WD GAS POWERED
RACING BUGGY

MBX R EX



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NITRO MTX-2

CHASSIS KIT
CHASSIS With MT12 ENGINE KIT



T0211
F/R Universal Joint Set



51601 Black Pipe S (12)
51602 Black Pipe L (12)

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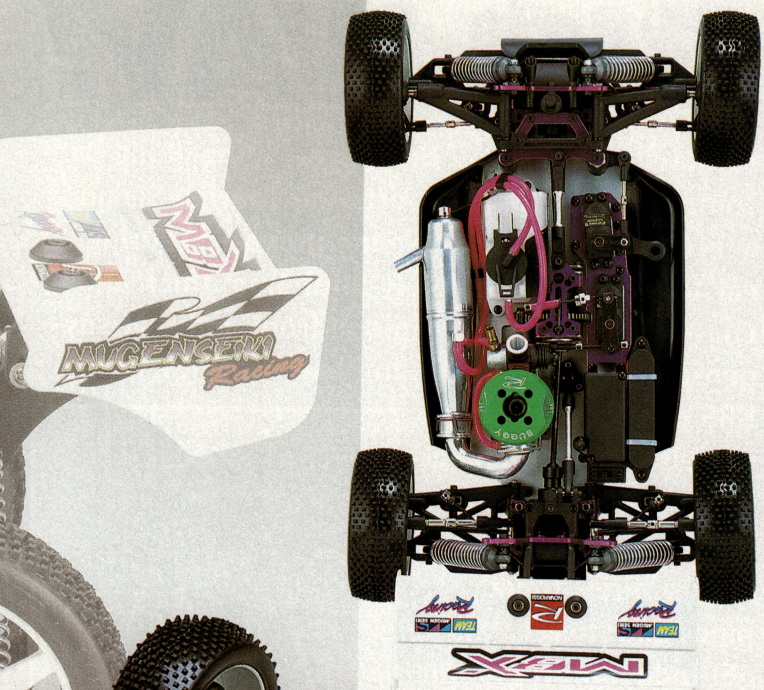

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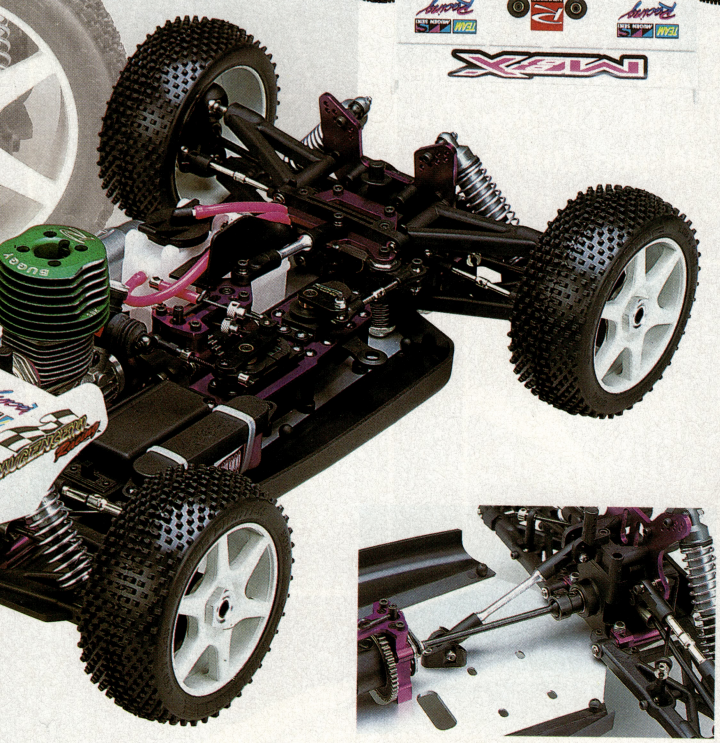
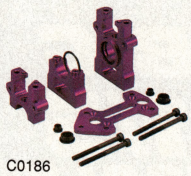
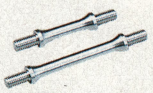
New MBX-4XR is changed a layout so that a load may span it on rear side. The loads to span it by this in rear tire are increased, and it increases traction drastically, and improvement in the acceleration performance in the corner escape and stability by the jump improve greatly. It contribute to the posture stability in the corner as well more, and the change of this weight distribution realizes more easy to drive and control. This kit is equipped with the verious option parts such as following:





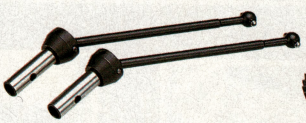
C0186
Al. Center Diff. Mount Set



C0193
Al.Tension Rod Set



C0192
Rear Upright



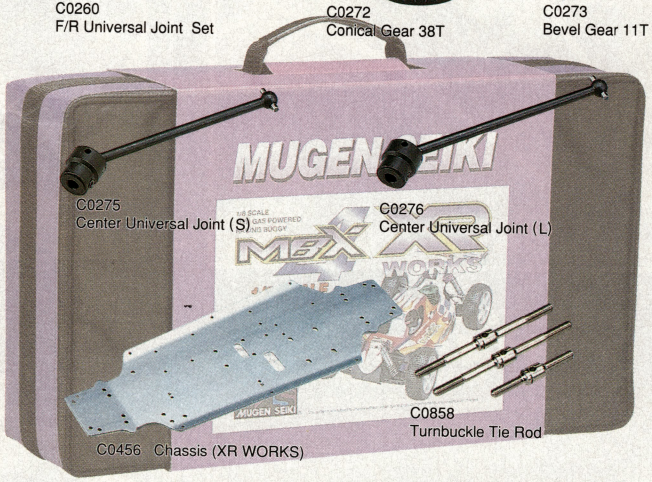
C0260
F/R Universal Joint Set



C0272
Conical Gear 38T



C0273
Bevel Gear 11T



C0275
Center Universal Joint (S)

C0276
Center Universal Joint (L)

C0858
Turnbuckle Tie Rod

C0456 Chassis (XR WORKS)

- Center Universal Joint (L)
- Al.Tension Rod Set
- Conical Gear 38T
- Bevel Gear 11T

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ODGE STRATUS KIT
9 ACCORD KIT

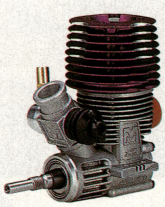
MTX-2KIT With MT12ENGINE
TOURING CAR BODY
TUNED MUFFLER
CARRYING BAG



MT12 Engine

NEW

MT12TS1 SG-Shaft, Slide Carb.
MT12S1 SG-Shaft, Slide Carb.
MT12R2 STD-Shaft, Slide Carb.
MT12S2 STD-Shaft, Slide Carb.



〈MT12 TS1 DATA〉
Cubic Capacity :2.1c.c.
Power :1.2H.P.
Rpm :37.000rpm
Bore :13.8mm
Stroke :14.0mm

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MRX-2



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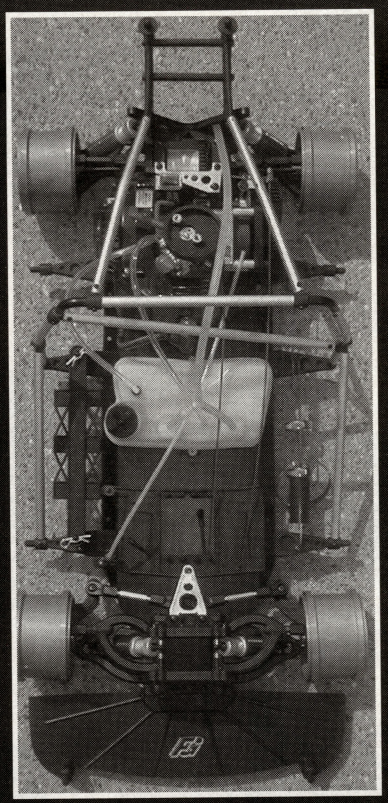

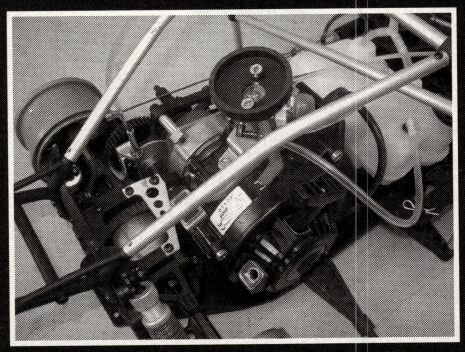

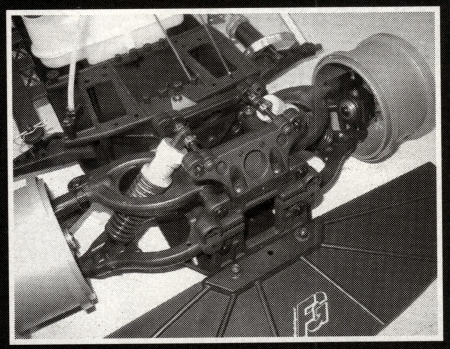

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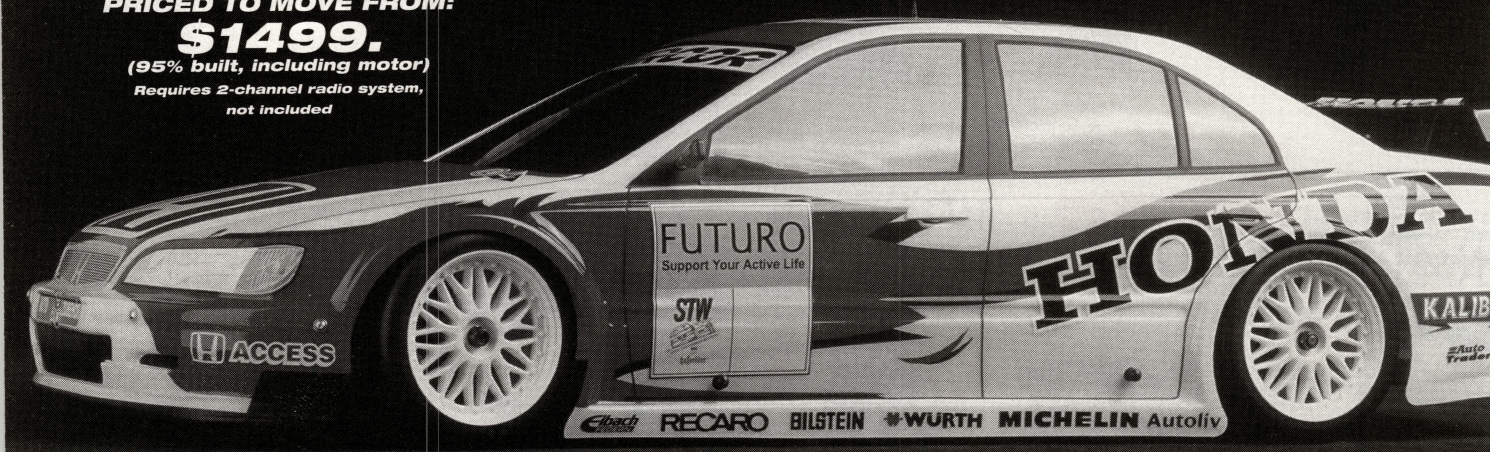
$1499.
(95% built, including motor)
Requires 2-channel radio system, not included



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TEAM ASSOCIATED FACTORY TEAM TC3

by Mike Velez

OCIATED **FT TC3** TEAM ASSOCIATED **FT TC3** TEAM AS

A race kit review without a Stratus body? What gives?

So far Team Associated has given the Factory Team treatment to their entire off-road line up, which includes the T3, B3 and GT. In case you don't know, the Factory Team treatment includes just about every performance enhancing part Associated makes for a respective kit. Associated has turned the Factory works department loose on their TC3touring car chassis. Last summer Mark Pavidis, Billy Easton, Craig Drescher, and Mike Blackstock shocked many by doing exceptionally well at the IFMAR World Championship in Japan. Associated is hoping you'll have similar success at the local parking lot track thanks to the Factory Team TC3 that comes fully loaded just like the cars that were raced in Japan.

Hits:
- Packed with every hop-up made.
- Extremely tunable.
- Consitent, sure-footed handling.
- High quality build and fit.
- Lots of blue pieces.

Misses:
- Still needs tires and wheels to get running.

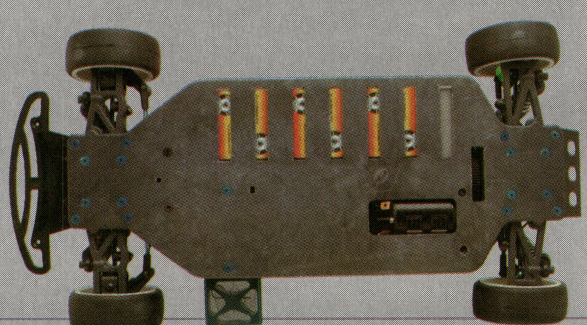
Instructions: 5
Parts Quality/Fit: 4
Durability: 4
Tunability: 5
Overall Performance: 5
Value: 4

Features

We reviewed the original TC3 back in January 2000 (Issue 5.4) so this time around we'll focus our attention on all the Factory Team hop-ups that adorn the kit version of the same name.

Graphite Chassis

The overall design of the TC3 requires a chassis that provides minimal flex and tweak. No other economically feasible material can provide the strength and rigidity of graphite. A kit-included molded graphite chassis is completely countersunk on the bottom and features cutouts for large cells, the motor, and the spur gear.



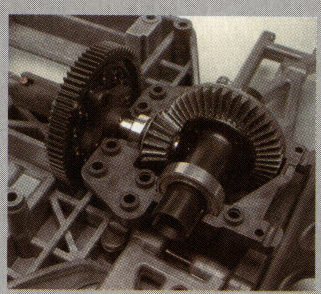
Blue Hardware

Where strength isn't a critical issue, Associated swapped out the standard steel hardware with lightweight, blue-anodized aluminum hardware. The blue screws add to the overall look of the vehicle and have a slight impact on weight reduction. In addition. for added aesthetics and continuity, the stock molded battery brace has been replaced with a machined aluminum, anodized battery brace.

OCIATED **FT TC3** TEAM ASSOCIATED **FT TC3** TEAM ASS

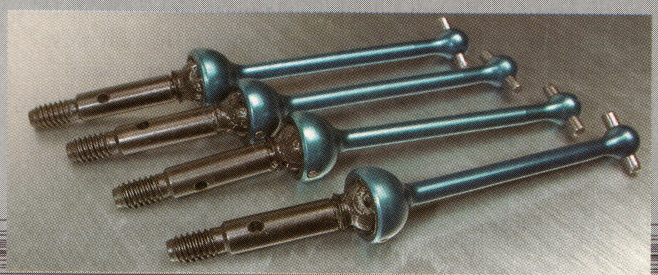
Composite Diff Halves

To fight inertia and rotational drag, the FTTC3 comes standard with lightweight molded diff halves. The diff halves weigh a fraction of the original steel diff halves. The reduction in weight cuts the car's rotational mass nearly in half, resulting in quicker acceleration and higher top speed.



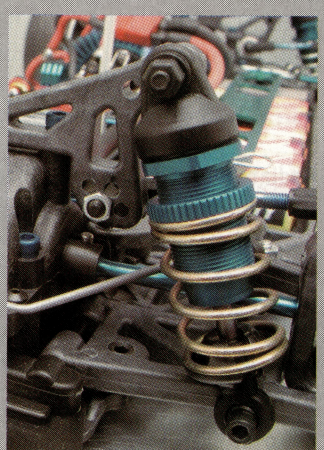
Blue-Anodized Alloy CVDs

Although the MIP Blue-Anodized Alloy CVDs made an appearance on the original TC3 Team kit, we felt it was important to point out their inclusion again on the FTTC3. The lightweight, free-spinning CVDs give the drive train added efficiency over the heavier, steel universals.



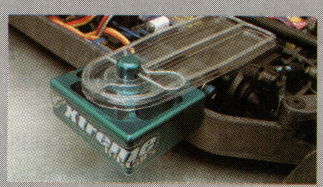
Threaded Shock Bodies

Thanks to the limited suspension travel and closeness of the racing surface on a touring car, suspension adjustment can often times be critical. Even the most finite suspension adjustment can make a difference. That's why Associated went with threaded shock bodies on the FTTC3. The threaded bodies allow the user to make suspension adjustments to a hundredth of an inch. The threaded shock bodies house the VCS shocks found on the original TC3.



Counterfeit Transponder

Practice makes perfect. So that you're practicing with a car that's setup according to sanctioned race conditions, Associated included their Counterfeit transponder. The blue-anodized aluminum Counterfeit is weighted the same as standard AMB transponders.



Counterfeit Transponder, somebody pulled the thesaurus out for that one.

Other Features

Graphite Suspension • With the exception of the ball cups, body mounts, shock caps, and servo horn, every other molded piece on the FTTC3 is molded from graphite infused composite. That means the tranny covers, shock towers, suspension arms, bat-wing braces, and hub carriers. Thanks to the added rigidity of graphite, the stiffened components help the car to perform on the track as it was intended on the drawing board (actually on the Silicon Graphics design system).

Unobtainium Shock Shafts • A smooth suspension is a good suspension. That's why the FTTC3 gets Unobtanium-coated shock shafts. The coating adds smoothness and wear resistance to each shock. The smoother shock shafts reduce the time between rebuilds and last longer than standard stainless steel shafts.

Titanium Turnbuckles • What would a truly race-ready kit be without titanium turnbuckles? Well, not really race-ready. The FTTC3 comes with blue-anodized, titanium turnbuckles that will keep your adjustments in check even when that barrier wall doesn't want to give an inch.

Anti-Roll Bars • Depending on track and surface conditions, the addition of an anti-roll bar can make a big difference as to how quickly a touring car can make it around a corner. The FTTC3 gives you the option of both a front and/or a rear anti-roll bar. The kit comes with the bars and all the hardware needed to mount them.

Radial Clip Heat Sink • In all racing situations, whether it be in 1/12-scale or full-scale, heat is an enemy. Heat indicates added drag or inefficiency. To combat the power-robbing effects of heat on the motor, the FTTC3 comes with a larger-than-original, blue anodized, aluminum motor mount heat sink. An extra Radial Clip heat sink clamps onto the motor to extend the cooling surface of the motor. Those two heat sinks coupled with the large cutout at the bottom of the chassis keep the motor running as cool as possible.

Revised Suspension Arms with Droop Adjustment • The suspension arms on the FTTC3 and all current TC3 kits include a droop gauge and adjustments to help set the car's droop. Droop equates to shock travel. On bumpy rough tracks, you should adjust more droop (suspension down travel); on smooth or high-traction tracks less droop will increase performance.

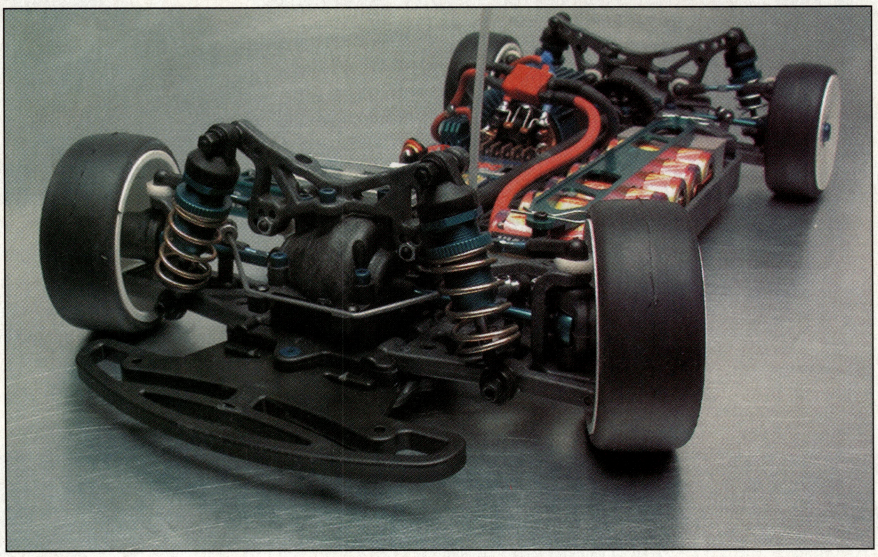
Urethane Foam Bumper • Racing can get a little hairy. To keep your car intact Associated included a large urethane foam front bumper.

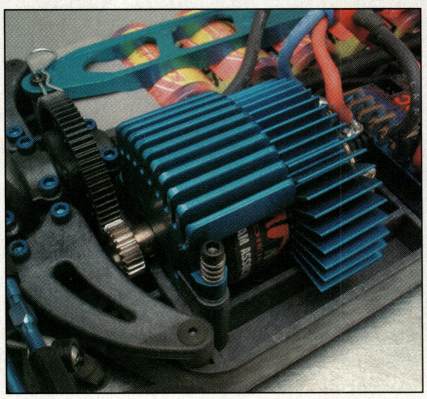
Revised Instructions • The setup advice that comes in the instruction manual of the FTTC3 is more complete than any we've seen. (Actually, the instruction manual is the same for all TC3 kits.) Six pages of the instruction manual are dedicated to tuning the car to the specific track conditions you might encounter. Each adjustment on the vehicle is addressed in detail.

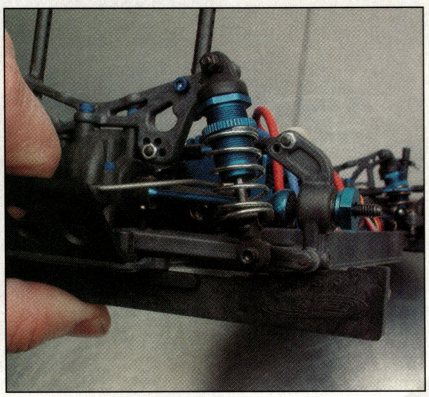
Building Tips

There isn't much to write about here. The instruction manual of the FTTC3 is pretty well refined. Only basic building precautions need to be taken.

- **Bag G, Step 5:**
Be sure that the O-rings that slip inside of the shock collars are completely seated inside the collars before you begin threading the collars onto the shocks.
- **Bag H, Step 3:**
Do not tighten the motor mount more than is prescribed in the instruction manual. Overtightening can affect performance in a negative way.
- **For testing:**
We used Pro-Line LP Slicks in S3 compound. We also used a PROTOform Honda Accord body painted by Thunder Wessels himself of Thunder Design and Team Orion.





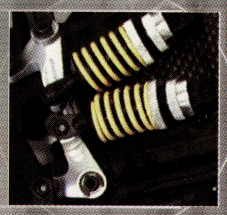


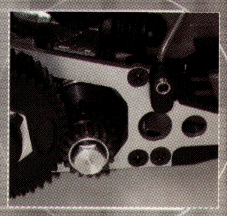
Top: The TC3 has an overall low-profile stance.
Above Left: Two extra cooling heatsinks help to keep the motor running right.
Above Right: The droop adjustment is easy to gauge and make on the fly.

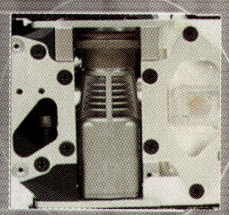
He said "droop" and "fly" in the same sentence. Hehe.

ARE YOU READY FOR THIS?

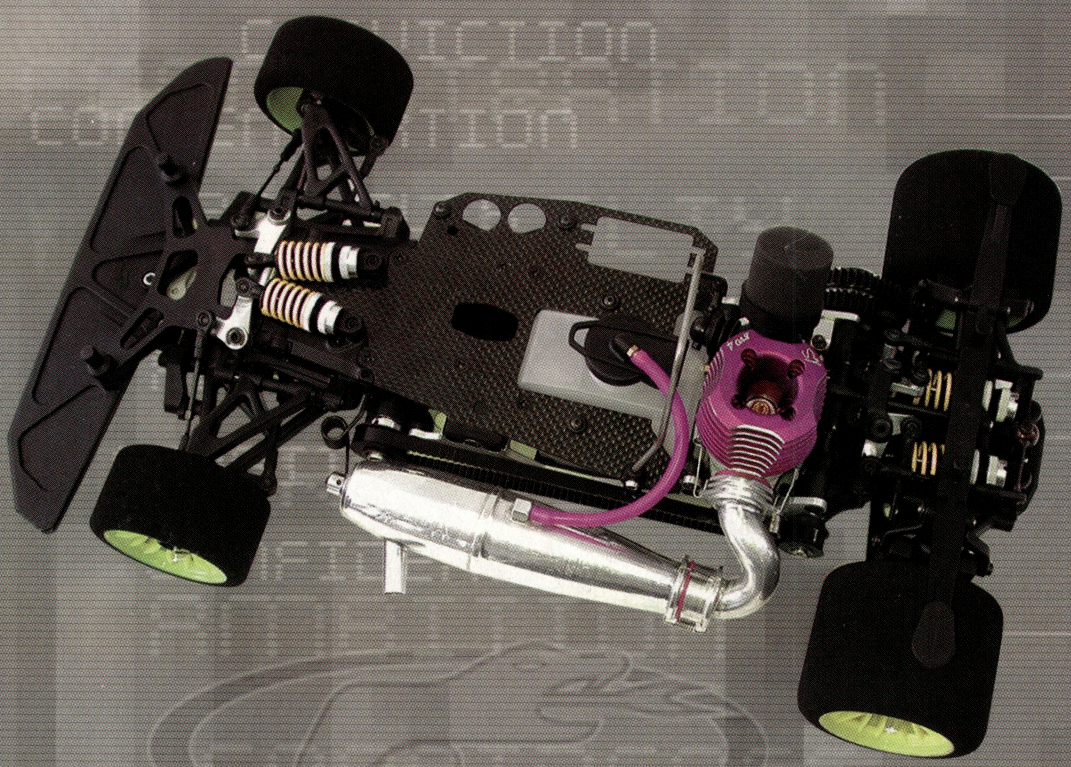
VETEQ











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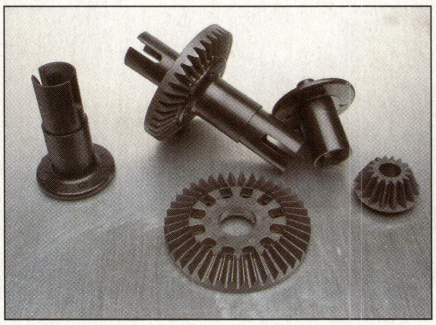
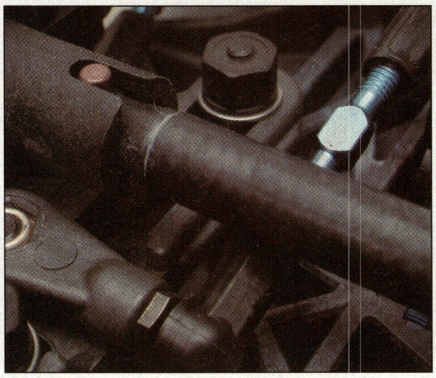


Overall the differential is extremely light. As light as anything on the market.



Before the TC3 no one had used a hollow graphite shaft in R/C.

PIT STOP RACE COVERAGE

TC3 Dominates Races



In the summer of 2000, Team Associated made an impressive showing at the IFMAR World Championships in Yatabe, Japan. The A-main was made up of five Yokomos, four TC3s, and one HPI RS4. Given the fact that the track was Yokomo's home track, the Associated team was pleasantly surprised with number of cars they had in the A-Main. In fact, Mark Pavidis missed the TQ by only 0.03 seconds. On the track, racers and observers noted the TC3's ability to accelerate harder than other cars when exiting the corners. In the end it came down to some controversy in the final race that made Atsushi Hara and his Yokomo world champion and Mark Pavidis first runner up. For the complete story on the race check out Issue 6.3. The TC3 was also dominant at the recent U.S. Indoor Champs in Cleveland. Billy Easton won Modified Touring while the TC3 also swept the entire Stock class. Coverage of Cleveland is in Issue 6.5

Wheels and Tires • These items are not included in this kit. You'll have to pick up what works at your local track.

Testing

Since the original TC3 has been my regular touring car ride for the last couple of months, I felt very comfortable with the Factory Team TC3 right from the start. My test area was a local hobby shop parking-lot track. The track is small, tight, and dusty.

Acceleration • With a Reedy Modified 12-turn triple Millennium Wind motor geared with a 22-tooth pinion, the FTTC3 was an absolute rocket. The car felt definitely faster than my original TC3. Before the day was over, I installed the same motor with the same gearing in my original car using the heavier diff halves. The difference in acceleration was noticeably quicker with the lightened halves of the FTTC3 versus the heavier halves with the stock TC3.



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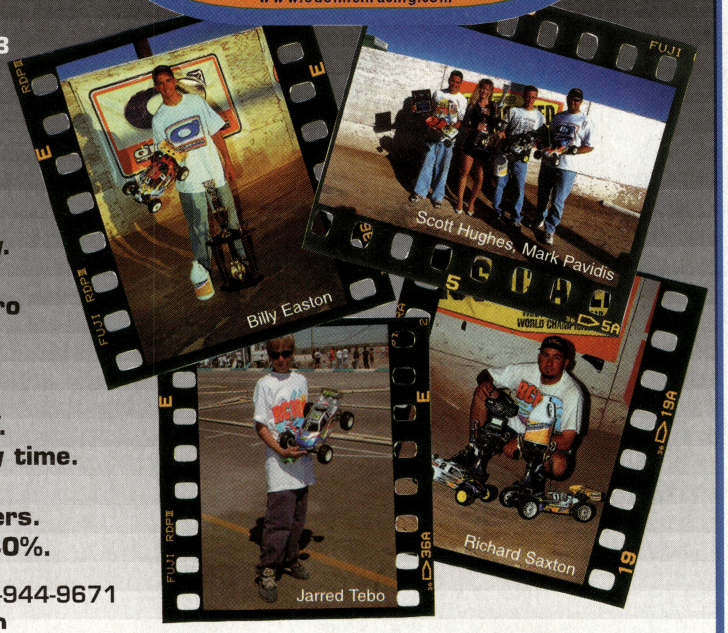

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3] **T-Maxx/E-Maxx Titanium Rear Skid**
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4] **T-Maxx/E-Maxx Aluminum A-Arms**
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5] **T-Maxx/E-Maxx Titanium Center Skid**
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6] **T-Maxx/E-Maxx Aluminum Chassis Braces** (pair)
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11] **T-Maxx/E-Maxx Titanium Rear Bumpers**
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12] **T-Maxx/E-Maxx Aluminum Wheels**
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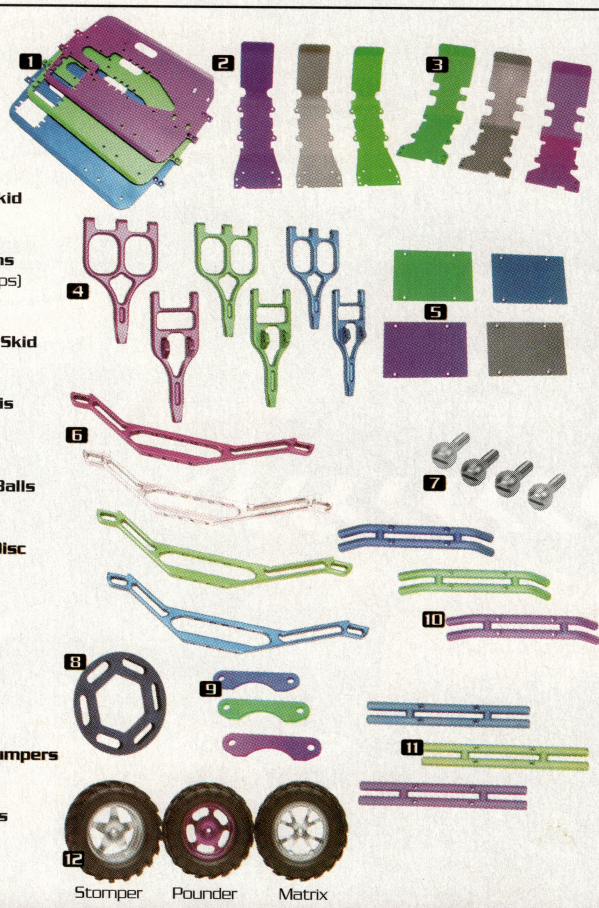
Pounder - HCR-003113



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The Specifics

Item Info:
Part # 3035
Estimated Street Price: $300

Vehicle Type
Electric-powered 4WD on-road competition touring car.

Chassis Type
Molded graphite tub chassis with molded channels for added rigidity.

Transmission
Type: Front and rear ball differentials with shaft transfer system.
Diff: Ball
Drive Shafts: MIP blue-anodized alloy CVDs
Diff Halves: Molded.
Drive Ratio:

Bearings/ Bushings:
Sealed bearings

Suspension Design
Type: Independent, molded lower arms with upper adjustable arms.
Damping: Coil-over with threaded shock bodies with volume compensating internal components.

Wheels and Tires
Not included.

Other Items You'll Need:
2-channel radio with 1 servo, receiver, electronic speed controller, electric motor, 190mm body, 6-cell battery pack, tires, and wheels.

Dimensions
Weight: 3 lbs., 2ozs.
Wheel Base: 10.25 inches.
Width: 188mm (front), 189mm (rear).

Top Speed • Because of the tightness of the track, it was difficult to gauge top speed. On the longest straightaway, the car never seemed to max out in speed. Based on the noticeable difference in acceleration performance, I'd venture to guess the top speed would also be improved.

Low-Speed Handling • At low speeds the FTTC3 was very controllable and predictable. At first the car took a little getting used to, teetering on oversteer. But after I got used to the stock setup, I was quickly threading the needle through the tight turns. Thanks to the lack of a one-way, coming off power into turns was very consistent.

High-Speed Handling • With a 12-turn motor installed, every turn seemed like a high-speed turn. Again the FTTC3 was very consistent and predictable. The car didn't do anything I didn't expect it today. On the straightaway I was able to easily negotiate around back markers. A few times I had to make some nervous corrections; the car maintained its composure even during those panic moments.

Braking • The LRP V7.1 ESC kept my overzealous throttle finger in check. When I needed to brake hard, the car quickly came to a complete stop. A few times the rear wanted to pass the front of the car, but not more than once or twice every ten tries. Overall, the car went very straight under braking.

Damage Report

Thankfully there was no damage to report. The few times I managed to tag a board, only superficial body damage was imposed on the car. The large front bumper kept the front of the car nice and safe. The dusty conditions didn't fare so well on the spur. A small piece of asphalt managed to get between the pinion and spur. Neither gear was damaged; they were just a little louder at one point in the rotation.

Maintenance

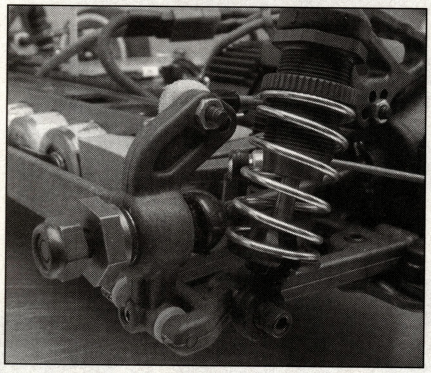
The same basic maintenance routine should be followed as with any other touring car. Check the gearing, shocks, tweak, and loose screws between race days or races. Throughout racing the diff remained just as I had set it.

Tuning

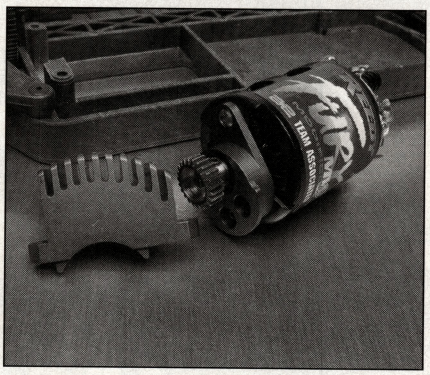
The FTTC3 has just as many, if not more, tuning points than any other competition touring car. I didn't stray much from the out-of-the-box setup. I changed to the front droop to 5 and the rear droop to 3 as prescribed in the Bumpy Track setup in the instruction manual. Also, based on previous experience with the car, I built the kit using 35wt Associated oil all the way around.

Conclusion

For drivers with decent driving skills, the FTTC3 will be one of the best-handling touring cars around. It does what you want it do. It's consistent, fast, and willing to win. Its precise handling characteristics may be difficult at times in the hands of drivers who aren't quiet used to that type of handling. Simple setup changes can be made to make the car less precise and a little easier to drive. The changes made to the Factory Team version versus the Racer or Team versions do make a difference. the lightened outdrives and threaded shock bodies are the most noticeable changes in my opinion. Now that all TC3 kits come with the revised suspension arms and droop gauges, droop adjustment adds a whole new adjustment to the mix. Associated has been known for making some of the best racing vehicles in the world. The FTTC3 only adds to that persona. Recently, Associated has also been making a name for themselves as a price leader. The FTTC3 comes into the market with a street price of less than $300. This is at or below comparably equipped kits from other companies. Once again the Factory Team treatment proves beneficial to another of Associated's previously proven kits.



The hub carriers can be placed in different positions to change wheelbase.



The redesigned motor clamp is slightly different from the first one the original TC3 came with.

TC3

The Car that ROCKED Yatabe!

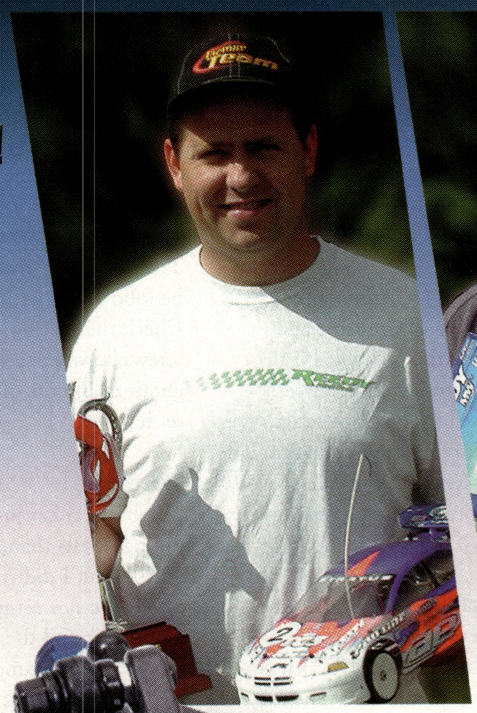
Mark Pavidis:
A-main finalist,
2nd overall
Fastest Single Lap

Craig Drescher:
A-main finalist,
4th overall

Billy Easton:
A-Main Finalist,
6th overall
Fastest qualifying round: 19/5:06.97

Mike Blackstock:
A-main finalist,
10th overall

Mark Pavidis



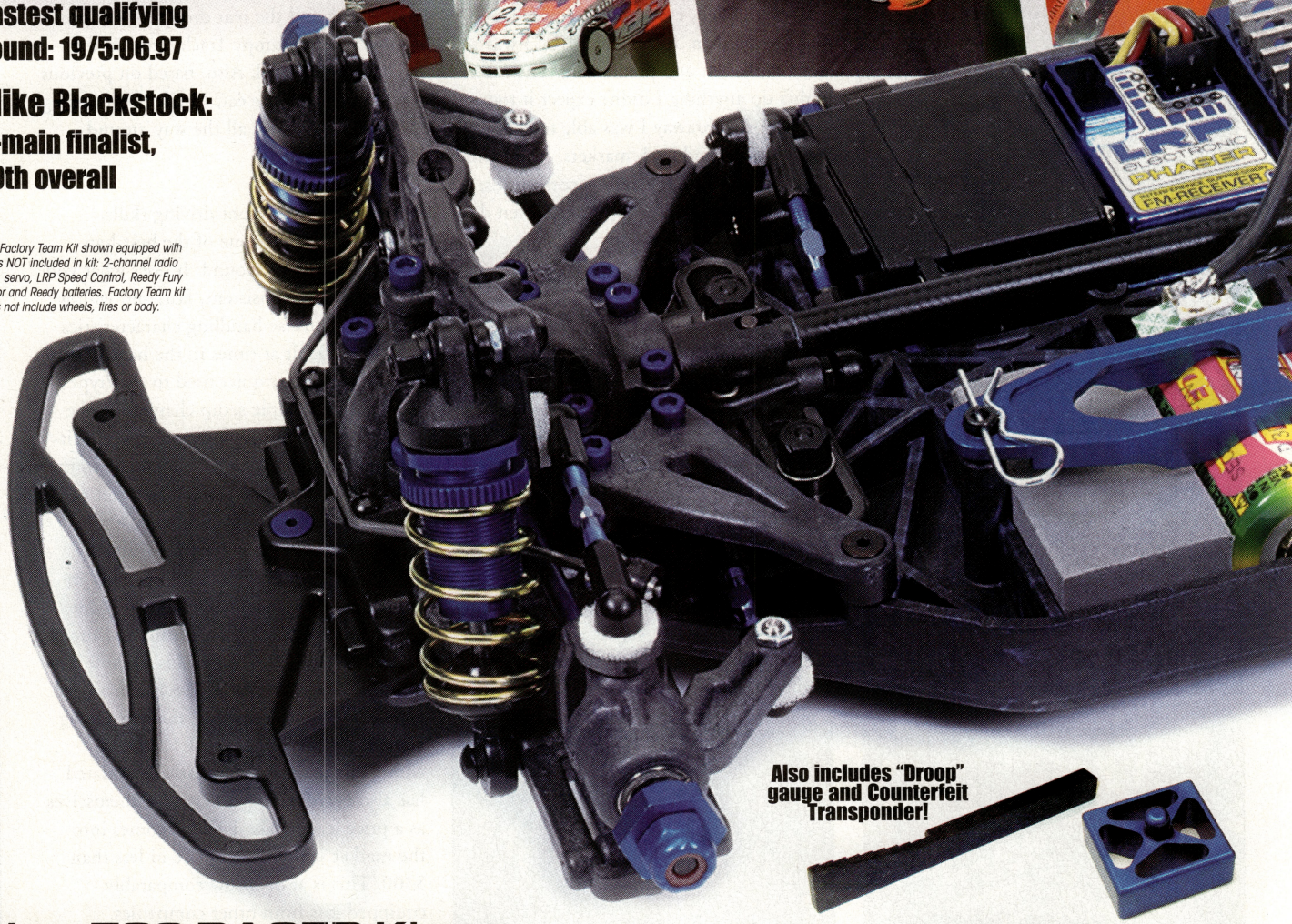
Craig Drescher



Billy Easton

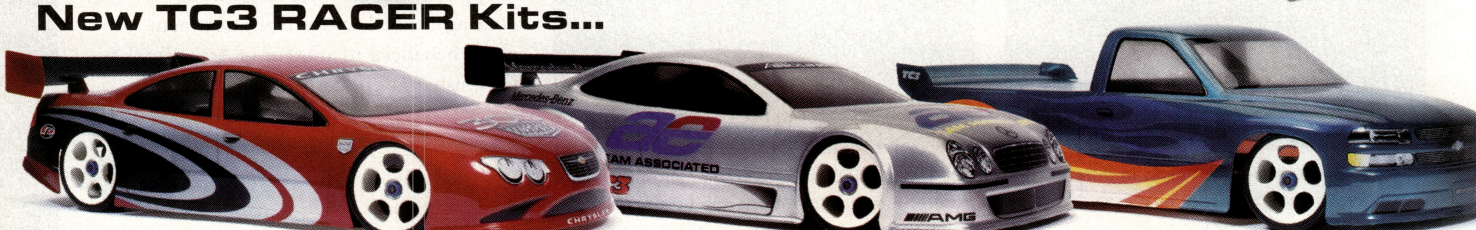


TC3 Factory Team Kit shown equipped with items NOT included in kit: 2-channel radio gear, servo, LRP Speed Control, Reedy Fury motor and Reedy batteries. Factory Team kit does not include wheels, tires or body.



Also includes "Droop" gauge and Counterfeit Transponder!

New TC3 RACER Kits...



#3015
Chrysler 300M

#3014
Mercedes CLK DTM

#3013
Chevy Silverado


Mike Blackstock
Totally Factory.
#3035
Factory Team
RC10TC3
TC3
FACTORY
Team
TC3
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• Includes all available Graphite chassis components
• Full set of Teflon-sealed ball bearings
• Factory Team lightweight molded outdrives
• New chassis and arms with droop screw adjustments
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• Factory Blue threaded VCS shock bodies
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Xipp DCX3000 Xapper

How would you like to be able to increase your battery pack's voltage with the push of a button? Well you can. Xipp's new DCX3000 Xapper claims increased discharge voltage from virtually any sub-c Ni-Cad or Ni-MH battery pack. The new Xapper is smaller, more compact, and less expensive than previous versions. Let's give it a try.



Previous version of the Xapper were many times heavier and took up a lot more space. The DCX3000 is much smaller and more convenient than previous models.

What It Is

The DCX3000 Xipp Xapper is a self contained zapping unit that can accommodate sub-c cell battery packs where the cell ends are exposed. That means any saddle or side-by-side battery pack. The box has a coated aluminum finish. The Xapper is fuse protected and powered by any 12V power supply. The Xapper is lightweight and can easily fit into anyone's pit bag.

What It Does

In simple terms what the Xapper does is send a large shock of voltage through the cell being zapped. The end result is a cell that has less internal resistance and produces higher discharge voltage. There is no doubt that this process works. Every battery matching company zaps new cells as they begin their matching process. The zapping processes does wear down after time. That's where the Xapper comes in. The Xapper allows you to maintain your pack's voltage and breathe new life into old and tired battery packs.

The Specifics:

Part #: DCX3000
Estimated Street Price: $135-$145
Manufactured in Taiwan.

Vital Info:
Xipp
1140 Centre Dr #E
Industry, CA 91789
909-444-2766,
909-444-2767 fax
www.xipp.com

Hit:
- It works.
- Less expensive than previous versions.
- Compact design.

Misses:
- Results wear off.
- Repetitive use will shorten battery cycle life.



The Last Word
If you race competitively and want an edge the Xapper will give you one. You will see a difference of performance on the track and in the lab. Continually using this process will shorten the life span of your battery packs. But hey, it's racing.

How To Use it

The instructions that come with the Xapper are simple and straight forward. They're in color and show step-by-step photos to put you through the process. There is very little guidance on how often to zap your battery packs. It's recommended that high-amp load racing would require zapping more often. A chart on the unit prescribes the appropriate voltage to use depending on how many cycles the battery pack has been through. That means how many times a pack has been charged and discharged. For that reason you should keep a note book and label each battery pack so that you know approximately how many cycles each of your packs have gone through.

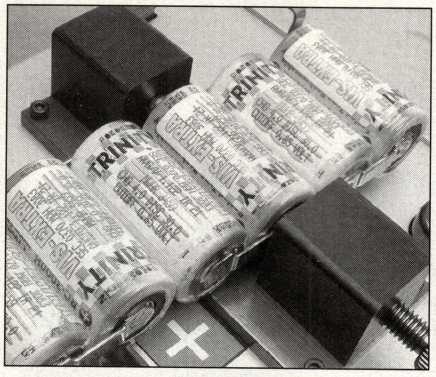
Testing

We tested the Xapper with Sanyo 2400 Ni-Cads, Sanyo 3000 Ni-MH's, and some old Panasonic Ni-MH 3000's that had not been cared for very well. We charged each pack at 5 amps using a Novak Millennium charger, allowed for equal time between charge and discharge and let each pack settle for 72 hours as recommended between zapping sessions. To read output voltage we used a Victor Super IQ3 unit.

Using the Xapper is very easy. It's a nice compact unit. Thanks to the instructions I was left with few questions. I followed every precaution outlined in the manual including wearing eye goggles. Occasionally the connection between the cells and the Xapper would arc, causing a small spark. Other than that little caveat, using the Xapper was easy. It was the testing that I couldn't wait to see. On the 2400's my average voltage before zapping was 6.60 volts at 6:44 minutes supplied at a 20 amp discharge. After the Zapping process and three days to settle, average voltage rose to 6.75 volts and 6:53 minutes. The increase in voltage was about 2.3% over the original voltage. On the track with a P2K stock motor installed in an Associated B3 the batteries felt more punch coming out of the corners. After

Don't try and stick a battery in a light socket thinking you can get the same result.





Whether the cell is by itself or in a pack the cell easily fits inside the Xapper's jig.

three cycles we gave the pack a day off and took another voltage reading. The voltage had dropped a bit to 6.70. Still, above where we started.

When testing the Ni-MH the percentage change was a bit lower. With a relatively new pack of Sanyo 3000's the change in voltage was 2.2% higher. Average voltage went for 6.37 to 6.51. The difference on the track wasn't as noticeable as with the 2400's. As with the 2400's the effects of the zapping wore off just a tad after three runs.

On both packs a second zapping produced and increase in voltage once again, almost at the original average voltage numbers we saw from the initial zapping.

The battery pack that saw the greatest increase in performance was the old pack of Panasonic 3000's we hadn't been taking very good care of. I guessed that this pack had been cycled at least 30 or 35 times so I only ran about 80 Volts through each cell. After zapping this old pack I saw a change in average voltage of 3.4%. This was a big jump and put some new life back into an old battery pack.

Conclusion

The nice thing about the Xapper is that it helps keep batteries running strong long after the packs come from the hobby shop. With a street price of around $135 to $145 the Xapper is relatively affordable considering what a really good pack of batteries goes for. The results of our testing were measurably positive. Results will definitely vary depending on the condition of the cells to begin with and the accuracy of the test equipment. If you have a lot invested in your batteries and race on a regular basis a Xapper is a wise investment. If you have a couple of buddies that will go in with you and split the cost of the Xapper you're money ahead.

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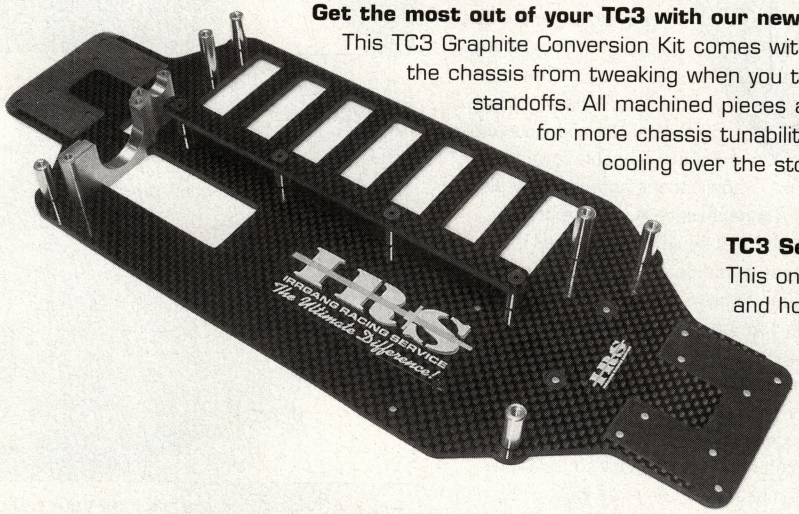
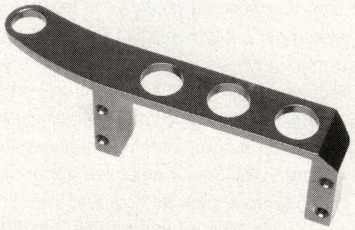


Get the most out of your TC3 with our new Graphite Chassis Conversion Kit (#IRS150)
This TC3 Graphite Conversion Kit comes with a machined aluminum motor mount that prevents the chassis from tweaking when you tighten the motor clamp and machined aluminum standoffs. All machined pieces are anodized blue. The center brace ads strength for more chassis tunability. Using this kit will also improve motor and battery cooling over the stock chassis. MSRP $179.95

TC3 Servo/Transponder Mount (#IRS148)
This one-piece machined aluminum mount is anodized blue and holds your servo and transponder in style.
MSRP $27.50



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WATER DAMAGE

Preventing & Repairing

by Jeff Eveleigh

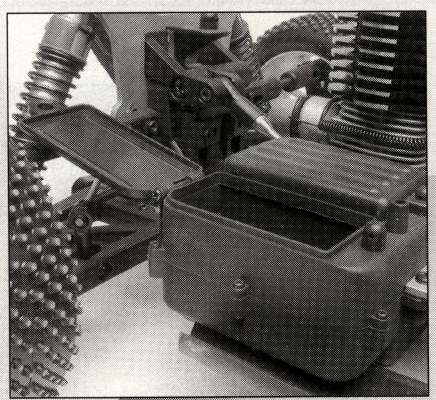
By now we are into the dead of winter. Along with winter comes snow and/or rain which isn't very healthy for any R/C car. So, with all of your expensive radio gear you should just store your sweet R/C ride for the season. I don't think so! If proper precautions are taken to keep your car clean and dry and the proper procedure is followed when water damage does occur, you can play with your R/C addiction all winter long. A simple misconception that often occurs is thinking that water will damage your electronics. It isn't the actual water that causes damage to your electrical R/C equipment; it is the corrosion that results from the water that renders your electronics useless. With this in mind, if your equipment does get wet you simply need to turn off all power and dry the equipment immediately to prevent damage. Before I get into how to solve a "soaked radio" problem, let's first discuss how to prevent the situation from the start.

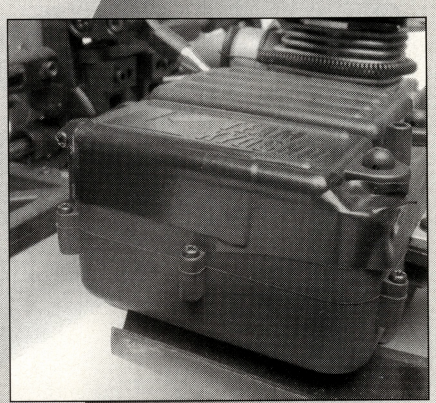
Stay Dry

Your number one objective is to keep your electronic equipment dry. The main components that need to be kept in mind are the receiver, servo, and speed control on an electric car and the receiver, receiver battery, and servos on a nitro car. How much work is necessary to fulfill your objective depends on many factors such as how wet the surface you are playing on is and how "sealed" of a design your vehicle has.

Many nitro cars now come with a sealed radio box to store the receiver and battery. These radio boxes usually aren't completely sealed so they may offer a false sense of security towards keeping water out. To ensure safety, go to a few extra lengths to eliminate the chance of water entering the radio box. You can use waterproof tape, usually available in the boat section of your hobby store, to seal the seam of the box. Waterproof tape is relatively inexpensive and is usually reusable for a few applications before a new piece is necessary. Another effective method of sealing radio boxes is a silicone seal. A thin bead of silicone around the box seam will prevent unwanted water from entering your goodies. The tape seems to be a little easier to use and since there is no curing time required it is quicker and cleaner. Many times it is a major advantage to still have access to your radio equipment in case any maintenance is required so the tape method makes this easier as well.

Most electric cars and some nitro cars don't have sealed radio boxes so extra precautions are necessary. A balloon or small bag wrapped around the receiver is usually sufficient. Use a small zip tie to tighten the opening of the balloon or bag around the incoming wires to the receiver. A small amount of silicone sealer will help ensure a dry radio when applied to the wires where they enter the bag or balloon as well.



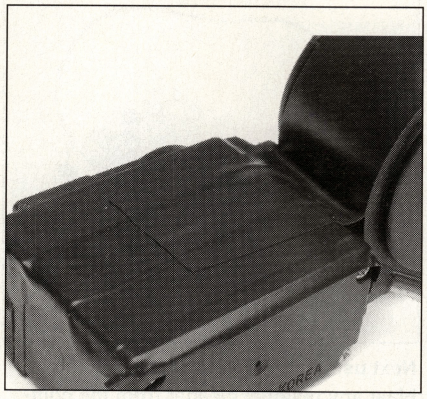


Top & Above: After you pack all your radio equipment inside the box run high quality electrical tape around the seam to seal it.

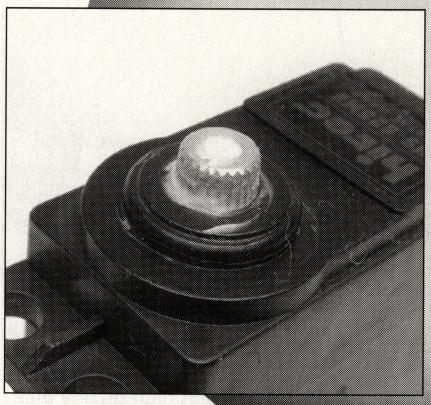
When Mike was a kid, he drove his second R/C car straight into a pool.



A balloon along with a zip tie will keep receivers and battery packs dry.



Electrical tape around the seam on servos will help keep them dry in wet conditions.



Lithium white grease around the output shaft and leads of your servo will keep water from penetrating into the servo.

The speed control is a tougher unit to make water-resistant. You can't really place the speed control into a bag or balloon because the heat sinks need exposure to the air for cooling. Some options that can be used to try and keep your expensive ESC dry are to mount it higher in the car, shield it as much as possible with Lexan guards made from scrap body parts, and ensure that your body fits well to keep as much snow and moisture out as possible.

On an electric car there is not much that can be done to protect an electric motor or battery pack so your best bet is to bring the car in for a quick pit stop once in a while to dry off those components with a towel. A little bit of water will not hurt things like the motor and battery too much anyway. The receiver, speed control, and servos are much more delicate and sensitive to water damage than the tougher cells and motor.

Servos Need Protection

Servos are a tough one to protect. Most servos are relatively water-resistant so there isn't a lot you can do here. Some very high-end servos have rubber seals as part of their design making it virtually impossible for moisture to enter the internal parts. If your servos require a little extra care in this department, there are a few areas that you should pay attention to. The area where the servo wires enter the servo case is a good place to start. Silicone sealing is your best bet here, a small bead of silicone around the wire and servo case will provide adequate sealing while still allowing the servo wires to flex. Use a piece of waterproof tape around the two seams of the servo case where the top and bottom halves of the servo join. The only other area of the servo that could allow unwanted water entry is the gap between the output shaft and the top servo case. There is not a lot you can do here since the output shaft must be able to move freely but the most effective seal would be a thin bead of grease around the output shaft. Don't use too much grease here and make sure the grease you use will not damage the plastic parts of the servo. White lithium grease available from a hardware store always seems to be a safe bet in this area.

Nothing's Fool-Proof

Regardless of how effective your seal is there is always a chance that some moisture has entered your electronic components. For this reason you should always remove the seal after your day of racing in the snow and mud is done to ensure that any moisture that did manage to get past your barrier or any condensation that developed can dry out on its own. Simply open up the sealed radio box or remove any balloons or sealing bags so all of the components have access to the surrounding air allowing any small amounts of moisture to evaporate. If you are in doubt and think that a lot of moisture has entered your equipment, you are best to take precautionary measures and follow the few steps labeled below on how to handle water damaged electronics.

Playing Lifegaurd

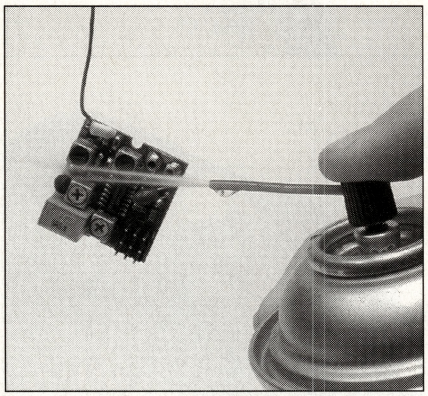
Prevention is much more effective than problem solving after the fact. But, assuming you've done all you can to avoid getting water on your electronics and they have still gotten wet, there are a few simple steps involved in solving the problem quickly with no damage. The only tools needed to prevent major damage are a dry towel, electrical contact cleaner (high-quality motor cleaner or Denatured alcohol), a hair dryer, and a little patience.

First off, as soon as you know your electronics have received the shower treatment, you should immediately turn off all power to them and remove them from the vehicle. Again, the important components to remove include the receiver, servos, speed control, batteries, and motor. Once you have all electronic components out of the vehicle they need to be disassembled to expose the circuit boards or vital electronic components of the unit. For the receiver and speed control, this

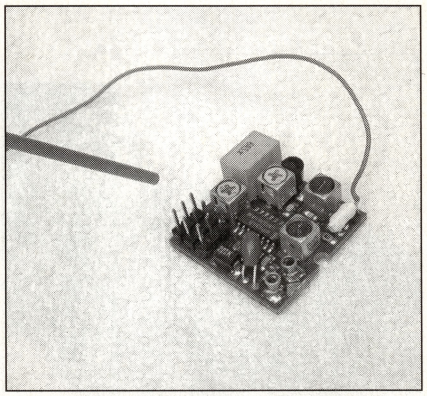


Before you attempt to repair water soaked equipment have the right stuff ready to go.

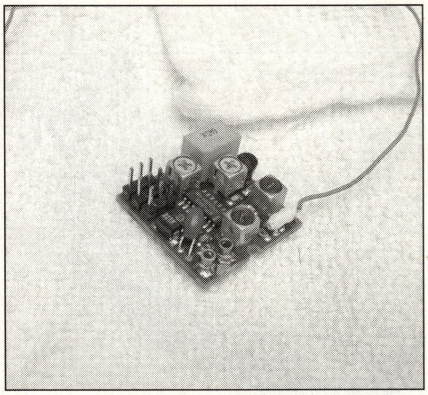
He returned it to the store saying, "I don't know, it just stopped working."



With the important components out of the case spraying them with high-quality plastic safe motor or contact cleaner



Next using non-moist compressed air, blast any residual cleaner from the components.



Allow the components time to dry. Don't contact any of the individual diodes or transistors with fingers or any tools.

usually involves removing small screws or unclipping small snap clips. Each unit is different so consult your instructions to ensure you are disassembling it properly. Servos are simple, just remove the four screws on the bottom of the servo case and remove the lower cover. This will expose the servo's motor and circuit board.

Once all of your vital components are disassembled you are ready to start the healing process. Grab some high-qualiy, plastic- and electronic-safe motor or electrical contact cleaner. Denatured alchohol in a spray bottle will also work. Now douse the electronics with the cleaner. This will force any water off of the component. Be catious, don't use Isoprophyl alcohol (rubbing alcohol), which contains water and defeats the purpose. Next, use a dry towel to dab dry as much of the moisture that you can from all of the components. Shake the units a bit to help remove as much water as possible with the towel before you move onto the next step. Now, take your hairdryer and set it to the low setting so you don't damage the delicate components with too much heat. Direct the hair dryer into each of the electronic units to completely dry them out. Use the hair dryer on the servos, receiver, and speed control separately to ensure that you have completely dried each item. This may be time consuming, but it is well worth it. Use every angle with the hair dryer to ensure that no moisture remains once you are finished.

After you have gone through each item with the hair dryer, lay them on a dry towel and allow them to sit over night while still disassembled to ensure that all moisture has been removed. The following day you can reassemble all of the components and test them to make sure everything is working as intended. Once you know everything works fine, re-install them into your car and you are ready to go again.

This process is not a fool-proof one. There is no guarantee that the components will work after they have been water logged, but if you follow the process outlined above you will greatly reduce your chances of having to replace any expensive electronic equipment. I can guarantee this: if your components get wet and you simply place them aside thinking they will fix themselves you WILL have to buy new ones. So keep this simple logic in mind when playing with your R/C car in the snow or rain: Don't get your equipment wet but if you do manage to get it wet, be sure to deal with the situation immediately.

Don't Play Baywatch

Keep in mind that this article does not give you license to go swimming with your R/C vehicle. It simply outlines some precautionary and preventative measures that should be taken when playing with your R/C car in the snow or moist conditions. Common sense must still be exercised to ensure that complete damage does not occur to your R/C ride. Other issues to keep in mind are the fact that water can damage your expensive bearings or cause corrosion on other car components. The basic principle to follow is this:Try not to get your car wet at all, but if it does get wet remove all of the electronic components, disassemble them, and dry them immediately. It may be necessary to provide your car with a lot more maintenance as well such as disassembling your car to clean and re-oil your bearings. If you are not willing to put in the extra maintenance necessary when your car gets wet, then keep it dry. Otherwise, go out in the snow and thrash out some sweet R/C action safely and with the option to do it again tomorrow.

That might fly at a toy store, but not your local hobby shop.

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Continued from page 47

of gravity, it's hard to see the suspension working when the truck is on the track. But whatever it's doing, it works. The Spec truck had a perfect balance of steering from the front and rear of the vehicle.

Damage Inc.

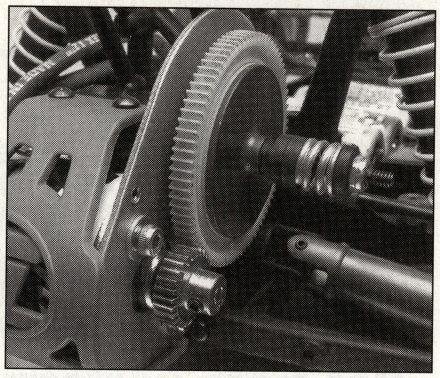
Both XXX Spec vehicles stood up well to the abuse I dolled out. The buggy did eat up a differential, but that was my own fault. Once the drive train gremlins were solved, it soldiered on without missing a beat. I did manage to bend one of the steering tie-rods on the buggy. Again, you can't really blame the car when the person driving it steers it right into a tube at full speed. The XXX-T was dead reliable. No graphite can be found on either car, which didn't seem to affect durability.

Tuneability/Maintenance

Making setup changes to either Spec racer requires a minimum of disassembly and time. Even when I threw the kitchen sink at the buggy, and changed every single setting, it only took about 30 minutes. Like their more expensive siblings, the Spec racers can be torn down in no time. The transmission still unbolts with only three fasteners. The telescoping drive shafts do take a little getting used to. They don't require any additional maintenance, but if you race in dusty conditions, keep an eye on them for dirt buildup. Periodically check them for smooth action. Rumor has it that some of the factory drivers prefer the sliders on smooth tracks. They weigh next to nothing and offer zero backlash. The diff can be adjusted through a small hole in the left-side outdrive.

Conclusion

I was literally blown away by the performance of both of these cars. When you consider the asking street price of about $150, Team Losi has a true bargain on their hands. Only time will tell if the Spec concept catches on, and if it doesn't, you can't blame Losi for not putting out a great product. In a perfect world, each track would design their own rules for spec racing. Ideally, rules would spell out a mandatory battery pack and motor to use in the class. This would challenge each racer to tune their car's suspension and gearing to extrapolate the best performance from it. But the Spec XXX series might also open the door to new racers who would otherwise be frightened away at the initial investment necessary to compete in R/C racing. No matter how you look at it, Team Losi has hit another home run.



Be sure to brush up on slipper adjustment in the car or truck's instruction manual.

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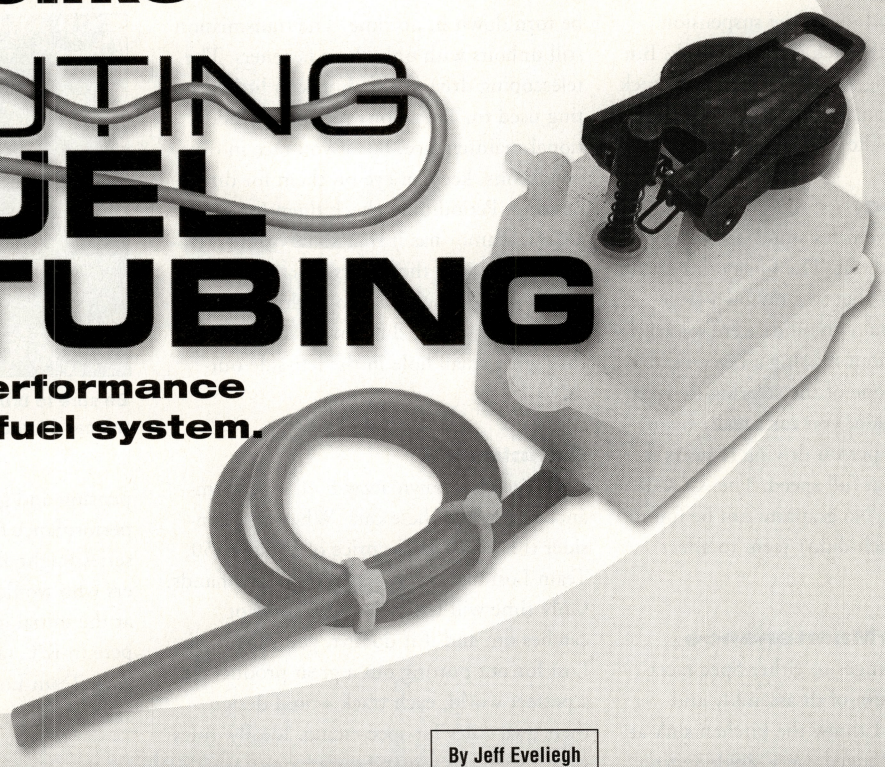
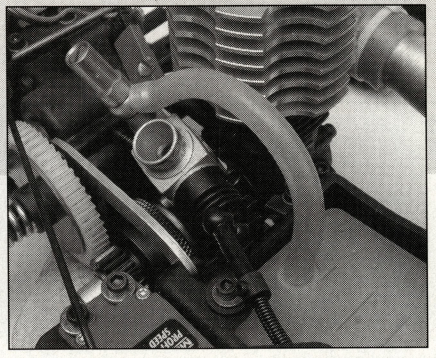
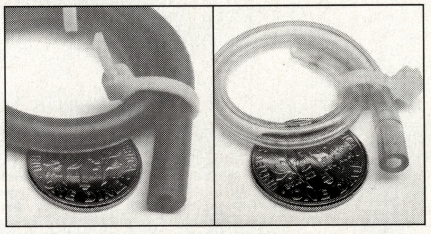


By Jeff Eveliegh

The routing of fuel lines and the fuel system in general in a nitro vehicle is probably one of the most boring topics one could discuss, making routing your fuel lines one of the most overlooked, performance-enhancing things around. Yes, I said performance enhancing. Most racers don't realize the benefits that can be obtained simply by following a few simple rules when setting up the fuel system of their nitro vehicles. It's time you come inside and watch us turn simple silicone tubing into longer run times, less engine maintenance, and fewer flame-outs on the track.



Keeping your fuel tubing away from moving parts in your car is very important.



You can easily see the difference between standard racing caliber tubing versus the thinner tubing that comes with some kits.

What's A Line?

There are two main fuel system lines in a nitro vehicle – the fuel line and the pressure line. The fuel line runs from the pickup tube of the fuel tank to the intake fitting on the engine's carburetor, and the pressure line runs from the fitting at the top of the fuel tank to the pressure fitting on the tuned pipe or muffler. Both lines play a major role in overall engine performance so it is vital to set them up properly and know how changes to them can affect performance.

Length Does Matter

Many people simply put the length of line necessary to join the two fittings together. This is not always the best possible scenario. The length of both the fuel and pressure lines will alter performance. Generally speaking, the pressure line should be between 12" and 18" in length. There are two reasons for a long pressure line. First, the piston action of a two-stroke engine causes pulsing in the exhaust system. This pulsing causes an inconsistent pressure to the fuel tank. By running a longer pressure line from the exhaust to the fuel tank, the pulsing is reduced. A more consistent pressure provides a more consistent fuel transfer to the engine. Second, the pressure fitting is located on the top of the fuel tank. During a crash, which overturns the vehicle, all of the car's fuel sits at the top of the fuel tank. Gravity will force the fuel through the pressure line and out through the exhaust system. This will not cause any damage, but if you plan on making a seven-minute qualifier and you loose 45 seconds worth of fuel out your exhaust you won't make time. By running a long pressure line you virtually eliminate the chance of fuel loss during a crash. The fuel would have to spool through 18" of line before it could escape from the system. By that time the car should be back on its wheels, allowing the exhaust pressure to blow all of the fuel back into the fuel tank.

Sometimes a few extra seconds could mean the difference between six pit stops or seven pit stops in a long race or it could mean the difference between running a pitless qualifier or having to pit once during a

Don't worry, fuel tubing wont melt if it comes in contact with your engine.

TCS
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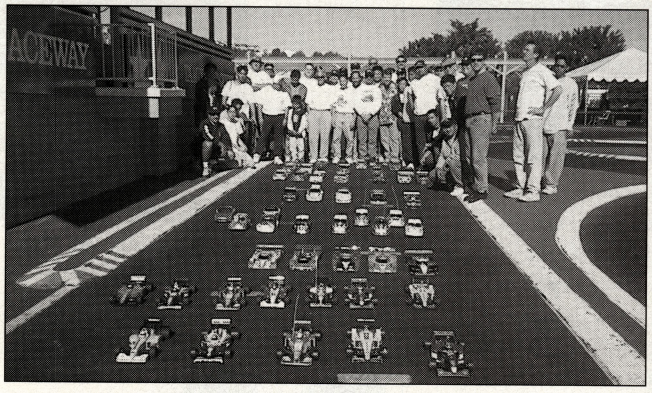
Championship Series

California Speed At Tamiya Raceway

Tamiya America, Inc. HQ was the site of the November 19, 2000 TCS Race.





Above: Racers show off their cars during the concours judging.
Right: The winners of TCS Race in Aliso Viejo, CA.

Super Touring GT1

1st Place	David Berger
2nd Place	Johnny Pun
3rd Place	Bob Dornboss
Best of Show	Sean Wu
Top Qualifier	David Berger

Touring GT2

1st Place	Jesse Shipiro
2nd Place	Johnny Pun
3rd Place	Ian Aquino
Best of Show	Ian Aquino
Top Qualifier	John Chiu

F-1

1st Place	Wen-Ping Chiang
2nd Place	Mark Rebek
3rd Place	Russell Johnson
Best of Show	Chad Geissler
Top Qualifier	Mark Rebek

M-Chassis

1st Place	Graig Richter
2nd Place	Brian Agito
3rd Place	Ray Payley
Best of Show	Carl Feltro
Top Qualifier	Craig Richter

TL-01 Spec Exhibition

1st Place	Ian Quino
2nd Place	Steve Strohm
3rd Place	Jasper David
Best of Show	Ian Aquino
Top Qualifier	Ian Quino
Top Rookie	Alec Toro

LeMans Exhibition

1st Place	Mark Rebek
2nd Place	Steve Williams
3rd Place	Dan CarruHuro
Best of Show	Dan Carrutturo
Top Qualifier	Steve Williams

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Hurry! ***Registration for Race #78 closes February 14, 2000, and registration for Race #79 closes March 14, 2000.***

Next Qualifier

☐ **TCS Race #79**
March 18, 2001
RC Outfitters
Hanover, PA

☐ **TCS Race #80**
April 29, 2001
HobbyTown USA
Overland Park, KS

Name_____ Age _____

Address_____

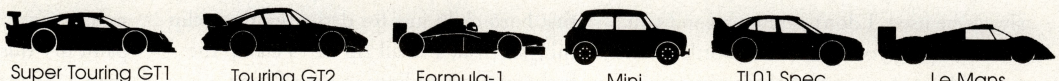
City_____ State _____ Zip _____

Phone #( )_____

Frequency (1)_____ (2)_____ (3)_____

(Minimum of 2 frequencies required)

Circle Class(es): (you can compete in a maximum of 2 classes)

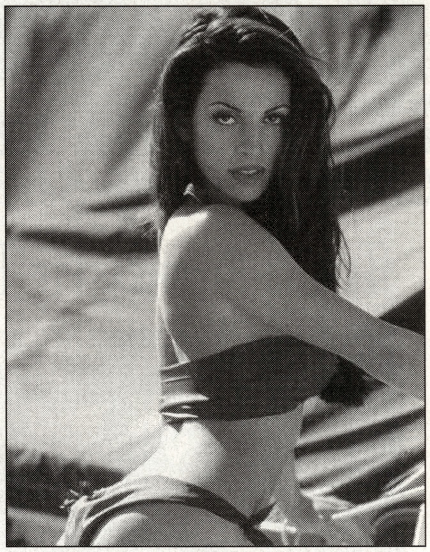


Super Touring GT1 | Touring GT2 | Formula-1 | Mini | TL01 Spec Exhibition | Le Mans Exhibition

PIT STOP HOW-TO

What's up with GAS?

Ever wonder what fuel is made of? Fuel is made up of three basic components. First is Methanol. Depending on the amount of Nitromethane in the fuel mixture, methanol makes up between 70% to 40% of fuel. Methanol is soluble in water and is hydroscopic - meaning, methanol absorbs moisture, and evaporates quickly when exposed to air above 65° F. The next component in fuel is lubricant. Lubricant makes up between 12% to 20% of most fuels. Today's fuel primarily uses synthetic lubricants, castor is also used. The lubricant helps keep the engine running cool and with as little wear as possible. The final ingredient in fuel is Nitro (short for Nitromethane). Nitromethane is an oxidizer which means nitro creates oxygen in the combustion process. This allows the engine to burn about two times more methanol. More fuel burned equals more power. For most applications 10% to 20% nitro will do just fine.



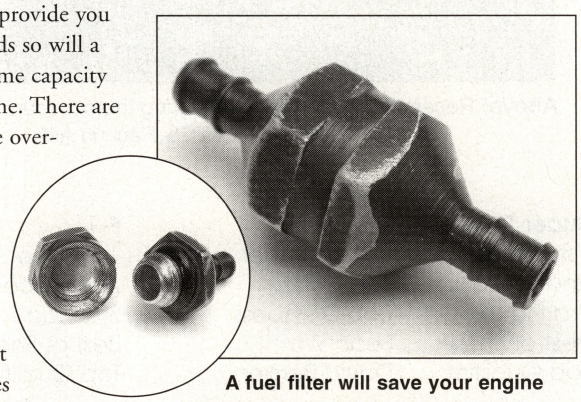
Yeah, yeah, fuel tubing...blah blah. *TUBE TOPS* - now there's an article.

qualifier. Whatever the reason, there are always times when we wish we had a little more run time out of a fuel tank. This is where the length of the fuel line comes into play. Just like with the pressure line there are two main advantages to running a longer fuel line. First, a longer line provides more volume in the fuel system offering longer run times. Second, during a crash the fuel sits at the top of the fuel tank and the fuel pickup remains at the bottom of the fuel tank. This means that while your car is on its roof it will only have a supply of fuel for the length of time that fuel remains in the fuel line (since it can't pick up new fuel from the tank). If you have an extra slow marshal on the job, your engine could run out of fuel and flame out. A longer fuel line offers a buffer zone of safety giving you a few extra precious seconds on life while lounging on your roof.

I would also like to clear up a misconception here about fuel systems. The fuel system in an R/C car does not work on gravity, it works on pressure. For this reason it doesn't matter where your fuel tank is mounted or how long the fuel lines are. The pressure from the exhaust will pressurize the fuel tank, forcing fuel into the carburetor. When it comes to the engine's ability to draw fuel, a longer fuel line will work in the same way as a shorter line. The only thing to keep in mind is that a longer fuel line will take longer to initially prime (fill with fuel). But, once the engine is running, the length will have no effect on fuel-drawing performance.

Filter This Pal!

A fuel filter is your best friend and should always be used. I don't care how good you are at keeping your car or fuel bottle clean, you will get some sort of contaminate into your fuel tank at some point and the only thing that will save your engine is the fuel filter. All that aside, there is another benefit to a fuel filter and that is extra run time. Just like a longer fuel line will provide you with much needed extra seconds so will a large fuel filter since it adds some capacity between the tank and the engine. There are many manufacturers that make oversized fuel filters offering that slight edge in the track time department. Keep in mind that some sanctioning bodies measure fuel capacity including the fuel tank, lines, and fuel filter so if you are racing at a track that closely follows rules like that, check your capacity. Most sport tracks don't care too much about overall fuel volume so the extra few seconds of run time could be a major bonus.



A fuel filter will save your engine from damaging debris. The screen inside requires only a small amount of maintenance.

What's the Best Route to Take?

The routing of fuel system lines is not a difficult duty, but even the best of builders has spent hours trying to figure out the best path. The concept is simple: Lay the lines in a way so that the most direct path between the tank and engine is followed ensuring that there are no kinks or erratic bends in the lines. Fuel system lines are made of silicone so they will not melt if they touch the hot engine components. But, you are best to avoid the line touching the engine simply to keep the intake fuel as cool as possible. Keep the lines neat. Coil them up around the fuel tank opening and use fuel line clips available from OFNA to make a clean job. (I would give OFNA my first born child just for designing these clip things.) Also, a small zip tie to clamp the fuel and pressure lines to each fitting ensures that they will never fall off. Remember as well that the fitting on the engine's carburetor is adjustable. You will have to check with your specific engine's instruction manual, but usually loosening the high-end needle valve assembly will allow you to rotate the fitting to any angle you please making the routing job that much easier.

Finishing Touches

That's it. You've now seen a boring topic transformed into the most interesting article you've ever read! Well, maybe not but you'll race a little bit longer and flame out a whole lot less with these new tips on fuel lines. Remember, line length does matter, fuel filters should always be used, you don't want kinks in your lines, and go kiss your mother, she does a lot for you. Tune in next month when we teach you how to watch paint dry (just slightly more interesting than a discussion on fuel lines).

But, do keep the tubing away from gears and other moving pieces.

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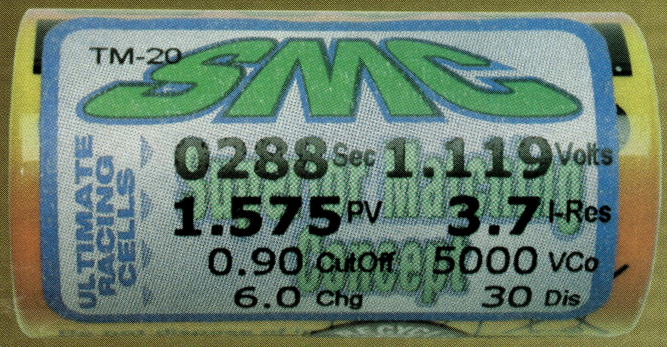
SMC2400-MSP	Matched Stick Pack w/sticker	$75





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HPI SUPER NITRO RS4 RALLY

by Mike Henry

SUPER NITRO RS4 RALLY HPI SUPER NITRO RS4 RAL

The Grand Vitara body makes an excellent shovel or cow catcher.

Escudo; this single word conjures up images of way too much horsepower, multi-stage forced induction, and styling that looks like it was drawn up by an 8th grader during study hall. Anyone who has ever played the Play Station game "Gran Turismo" is familiar with this race-only hill-climber that is loosely based on the Suzuki Grand Vitara. It is simply the incarnation of taking a concept too far, then taking it another 10 or so steps.

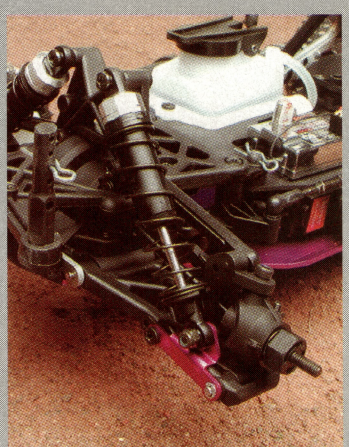
R/C rally cars have started surfacing at the track in recent months, but their sedan-based chassis and suspensions just aren't usually up to the task of circumnavigating courses intended for buggies and trucks. The folks at HPI put their thinking caps on and came up with what they feel is a viable solution – the RS4 Super Nitro Rally kit. The car makes use of mostly existing parts from the Nitro MT and the Super Nitro RS4. Think of the Super Nitro Rally (SNR) as a 1/9-scale, gas-powered, shaft-driven rally car. Does it work? Can it be raced? Follow along as we find the answers…

Hits:
- Unstoppable 4WD and shaft drive.
- Super-size suspension travel.
- Well-developed aftermarket.
- Outrageous body.

Misses:
- Nitro Star engine is getting long in the tooth.
- Outrageous body.

Instructions	4
Parts Quality/Fit	4
Durability	4
Tunability	3
Overall Performance	3
Value	4

Suspension



The SNR's suspension arms come from the RS4 Super-size on-road car. Molded plastic shock towers provide mounting points for the plastic-body, coil-over dampers. The big rally car lifts the front shocks from the Nitro MT kit, and uses them at all four corners. The front shocks mount to the suspension arms via small, purple-anodized pieces. These mounts are cleverly attached to the arms using the outer hinge pins and binder screws. The rear shocks also make use of the outer hinge pin on the arms. While this is Non-adjustable plastic camber links keep things simple at both ends of the car. The car builds with 2 degrees of rear toe in and 10 degrees of caster.

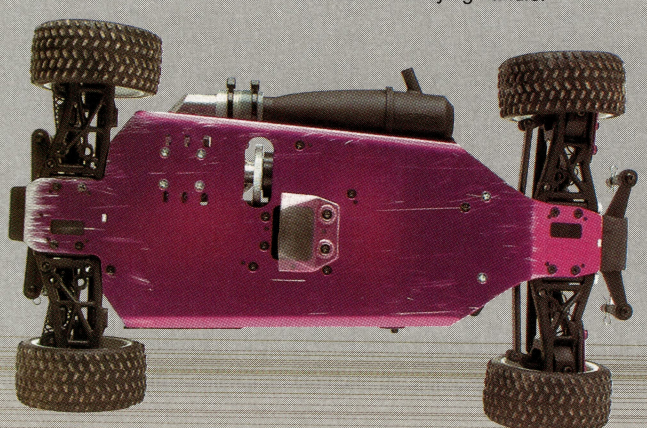


HPI SUPER NITRO RS4 RALLY HPI SUPER NITRO RS4

HPI has a knack for making full-size body designs popular in R/C.

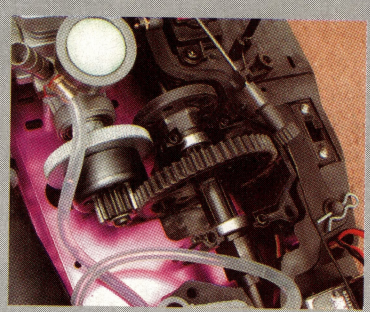
Chassis

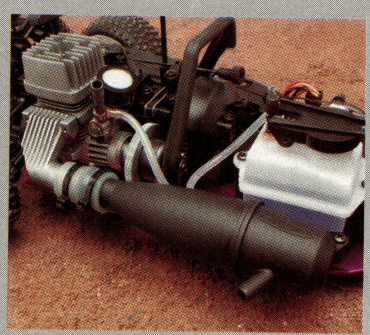
If the layout of the SNR looks familiar, that's because it's been borrowed from the successful Nitro MT. Everything from diff to diff is a carbon copy of the big gas truck. The 2mm purple anodized slab provides the groundwork for the car. The holes on the underside of the chassis are all countersunk. Two large cutouts provide clearance for the spur gear and the flywheel. The would-be exposed spur gear is protected by a Lexan flap, a la Nitro MT Racer. A long, sturdy plastic top plate bridges the front and rear bulkheads. HPI's signature swing-out radio tray makes another appearance on the SNR. This feature allows for quick, easy cleaning, as well as access to the receiver pack. The whole package melts into a convenient carrying handle.



Drive Train

The shaft-driven system features more carry-over bits from the Nitro MT. The standard 2-shoe clutch turns a 13-tooth clutch bell. Power then transfers to the 52-tooth spur gear, where it is evenly split between the front and rear diffs via long dog bones. HPI's proven gear differentials get the power to each of four axles by turning standard dog bones. Every rotating part does so within a sealed ball bearing. Stopping power comes in the form of two opposing metal brake shoes that squeeze a single molded plastic rotor. The SNR kit comes with HPI's Nitro Star 15FE pull-start engine. The Nitro Star emphasizes simplicity and reliability over all-out performance.

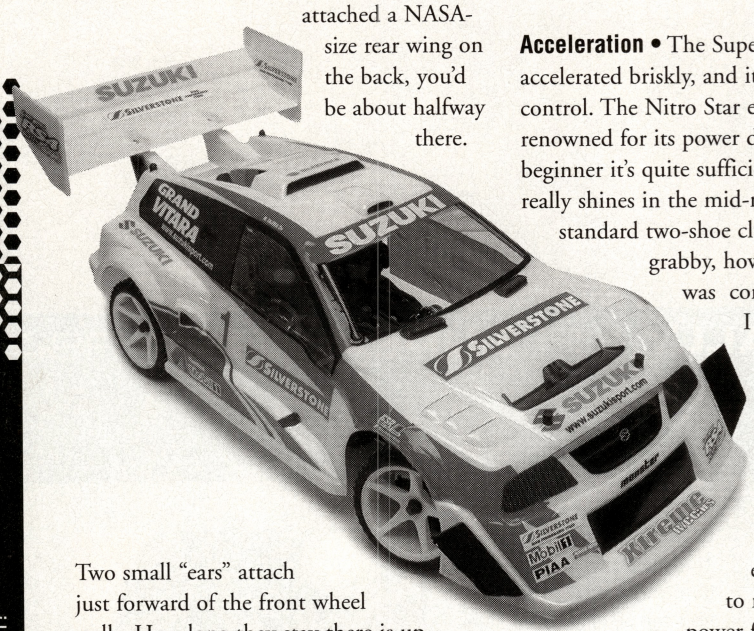




Other Features

Steering • The dual bellcrank steering system is identical to the system found on the Nitro MT. It rotates on plastic bushings and features a built-in servo saver. A pair of non-adjustable plastic camber links attach the bellcranks to the steering blocks. The steering servo mounts longitudinally just next to the fuel tank.

Body, Wheels, and Tires • HPI's Super Star wheels from the big on-road car make their appearance on the SNR. A set of M-compound rally tires wrap around the white hoops. Then there's the Escudo body. If you started with a Grand Vitara SUV, dropped it to the ground, grafted a cow-catcher from the front of a turn-of-the-century locomotive onto the front end, and attached a NASA-size rear wing on the back, you'd be about halfway there.



Two small "ears" attach just forward of the front wheel wells. How long they stay there is up to your driving skill, but more on that later. This body has more sills, NACA ducts, and flares than you're likely to find anywhere short of an import car show. It doesn't take a genius to figure out this body will provide a ton of downforce. At first glance, there's just no way the Escudo could survive on the track. Oh yeah, it comes with about 10 square-feet of decals and a set of window masks.

Testing

Rally cars need to be raced on a track, so I headed for the familiar confines of Hobbytown USA in Tucson, AZ. The track is relatively smooth and extremely technical. There are double jumps, a step-down jump, and even a scissor-jump, so your car had better be working right. Once the engine was broken-in and leaned out, I set the rolling-sideshow of a car on the dirt and went to work.

Acceleration • The Super Nitro Rally car accelerated briskly, and it was very easy to control. The Nitro Star engine isn't renowned for its power delivery, but for a beginner it's quite sufficient. The engine really shines in the mid-range area. The standard two-shoe clutch was a little bit grabby, however. But the car was controllable any time I was on the throttle.

Top Speed • The SNR reached top speed in about 20-25 feet. I did have to lean out the engine a few clicks to milk every bit of power from the car. All of the downforce that insane body created kept the car glued to the surface. The rally car includes a 13-tooth clutch bell to help compensate for the much smaller tire diameter on the Nitro MT. The gearing felt just right for the kit-included engine.

Jumping • The SNR successfully aired out every jump on the track. However, the Escudo body screamed out in protest each time. The body just has way too much frontal overhang for the steep jumps found on most off-road tracks. But the overhang didn't slow the car down either. The SNR jumped with a neutral attitude and landed without too much drama. The suspension was compliant, and the big rally car's extra travel really paid off.

Braking • There were only two braking zones on the track; both led into tight 180-degree corners. The first braking area had developed a slight washboard texture, and again, the cow-catcher on the front of the body didn't like it. The car actually stopped straight and true, but I cringed every time, anticipating the scrape-scrape that coincided with the deceleration. The brake rotor is molded plastic, but worked well without fading.

Low-Speed Handing • The SNR felt like it was on rails in the slower corners. Even with the harder-than-ideal M-compound rubber, it held its line with confidence. In a few places, the car would exhibit some mid-corner push, then transfer to slight oversteer. I'm sure some better tires would help solve this, but it didn't take too much away from the driving experience.

High-Speed Handling • At speed the SNR would scrub off some speed, then hold its line, and track out to the next section. Even in the smooth, rut-free corners I could hear the body rubbing on the racing surface. I

Building Tips

Like other HPI kits, the Super Nitro Rally includes a thorough instruction manual. The car can be built to a 280mm or 300mm wheelbase, depending on which body is in the kit. Our kit came with a one-page manual update. Make sure you reference this sheet while building the car. The following notes may speed up assembly:

Step 4 • The rear brace has three holes, whereas the front brace only has two. They are not interchangeable.

Step 6 • Apply some thread-lock to the 3x8mm screws that thread into the steering posts.

Step 10 • Since the caster blocks are borrowed from the on-road RS4, a small amount of material needs to be removed from each. If you skip this step, the suspension arms will not move freely. Use a Dremel or moto-tool, and wear safety glasses.

Step 17 • The included shock oil is not silicone based. I assembled two shocks using it, then decided to use some Team Losi 30 weight shock oil. Do your suspension a favor and use silicone-based oil.

Step 19 • Do not tighten the two tie-wraps that hold the exhaust pipe on until you have the engine assembly attached to the chassis. Line up the pipe brackets, then tighten them.

Step 32 • HPI includes a ton of accurate decals so you can match the photos on the box. In order to do this, you will need a few hours and nerves of steel. Applying a flat decal to a curved surface isn't for the weak-willed. Spray some soapy water on the body before you apply the decals.

• Also, before you throw down, break in the engine! Read the instructions, and take the time to do it right. Run at least two or three tanks through the engine before you set it down.

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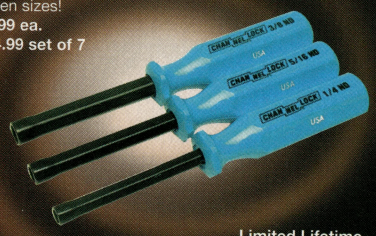

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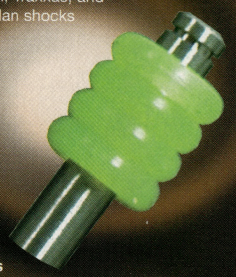

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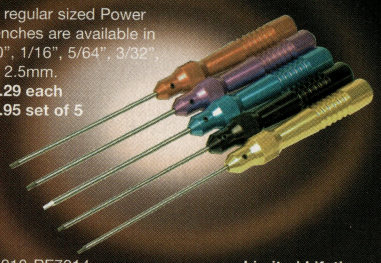

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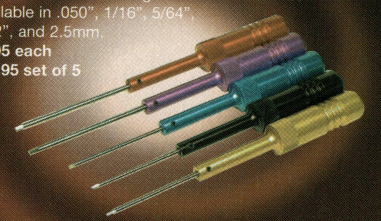

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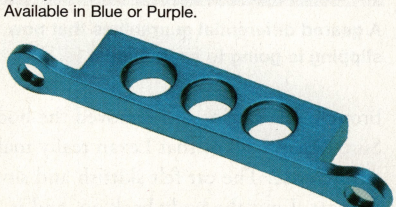

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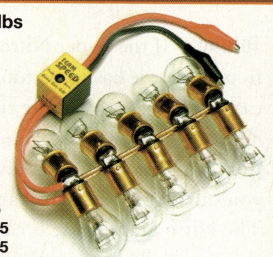
Discharge Bulbs

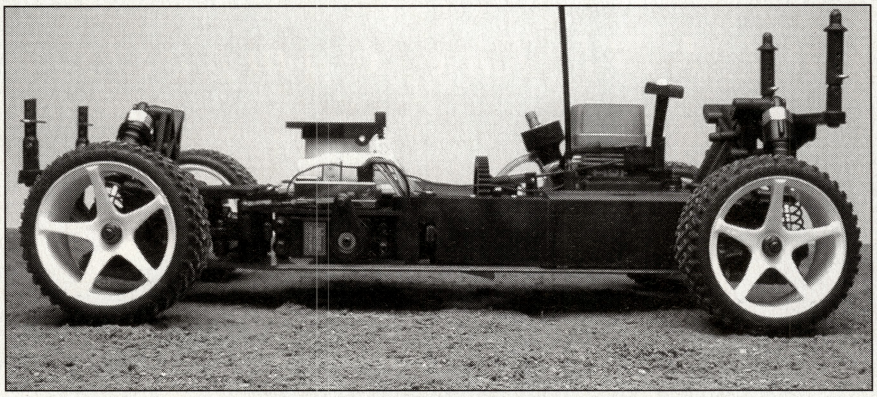


2A: A002 **$4.95**
20A: A020 **$17.95**
24A: A024 **$19.95**
Cutoff Only: 7098 **$17.49**
20A Bulbs w/cutoff: 7099 **$35.99**

Tool Center
Keep your tools in order with the tool center. Works perfectly with Racers Edge or any Allen and nut drivers. Anodized in bright blue.

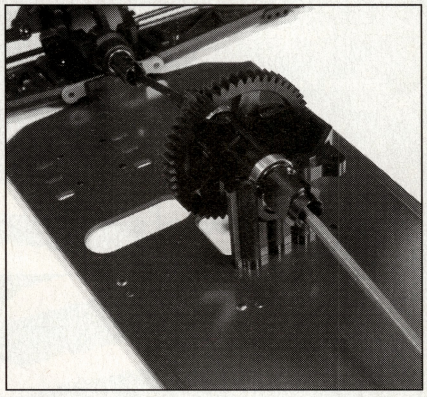


RE7024 **$12.95**

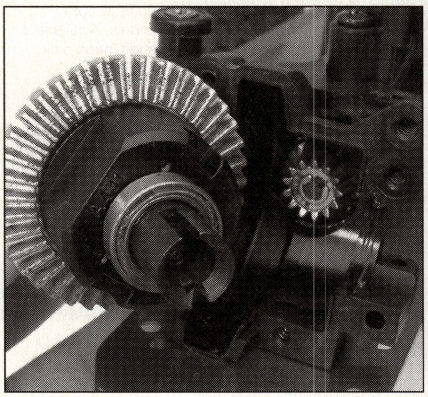




The .15-size engine produced enough power to keep us happy, but an aftermarket manifold will make us ectatic.



The basic design of the car shares the same basic concept as many 1/8-scale buggies.



A geared differential guarantees that now slipping is going to happen here.



Want long tire wear? Keep it off the street. These tires like dirt the best.

The Specifics

RS4 Super Nitro Rally
Part#: 461- Suzuki Escudo, 462- Mitsubishi Lancer Evo VI
MSRP: $510
Street Price: $290-310
Vehicle Type: 4WD Nitro-powered Rally Car
Scale: Super Size 1/10

Chassis Type: Flat Pan
Material: 2.5mm thick anodized aluminum
Transmission: Dual differential, 4WD 1/8-scale type system.
Differential: Two beveled gear
Slipper Clutch: No
Bearings/Bushings: Full Bearings
Suspension
Type: Independent lower arms with fixed plastic camber links.
Damping: Oil-filled, coil-over shocks
Wheels, Tires and Body
Wheels: One-piece white molded 5-star 57x35mm
Tires: All-terrain rally style, M-compound
Body: Super size Suzuki Escudo hill-climb edition

Dimensions
Weight: 4.2 lbs
Wheelbase: 280 or 300mm
Width: 223mm
Build Time: 5-6 hours, not including body trimming, painting and decal application.

Who it's for:
Entry-level to intermediate 4WD racers who want to tackle paved and dirt surfaces. See also: WRC fans.

brought the car in, and removed the body. Sure enough, all of that Lexan really makes a difference. The car felt skittish and slow to react. I put the body back on, and it regained its composure.

Rally cars also race on tarmac. (That's paved roads to us Yanks.) I dropped the rally car on Hobbytown's permanent road course and turned a few laps. The all-terrain tires surely aren't cut out for this type of abuse, but the car felt pretty good. The SNR did lean like crazy in the tight corners, but its overall handling was congruent with its performance off-road. If raced on a road course, the car definitely needs HPI's optional two-speed transmission. If rally ever becomes a true national class, I would like to see off-road and tarmac stages, just like the real WRC teams race on. Simply lower the suspension, swap some slick tires on the car and go for it.

Tuning • If the Super Nitro Rally kit lacks in one area, it has to be tunability. The camber links and steering tie rods are fixed. The only place you can adjust shock location is on the rear shock tower. Of course, you can change shock oil and spring rates. The Nitro Star engine is easy to tune, but that's partially because there is only one needle adjustment. This means any setting is really a compromise between high- and low-speed mixtures. On a positive note, many of the accessories from the Nitro MT Racer will bolt right on the SNR. The slipper clutch, top plate, and fiber disk brake are just a few that would make sense. Here's an added bonus: Standard buggy rear tires will fit the SNR's wheels.

Maintenance • No car is maintenance-free, but the Super Nitro Rally is pretty close. The gear diffs never really need to be touched. The plastic-body shocks did seep during testing, so you would be advised to check them after every few runs. Standard nitro maintenance applies to the big rally car: use of after-run oil, emptying the fuel tank after a day of racing, and keeping the clutch bell clean are some areas that jump out to me. HPI's cool swing-out radio tray makes dousing the chassis fool-proof.

We would love to see Rally become more popular here in the States.



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3-channel computer radios.

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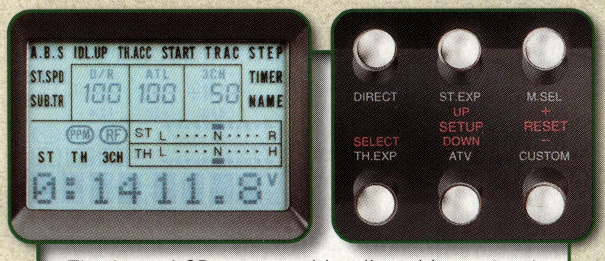
Your competition starts to sweat the instant you wrap your hand around Futaba's 3-channel 3PJS PCM or 3PJFS FM. The advanced CPU microprocessors translate your inputs into action with exceptional speed. The nearly infinitely expandable 8 model memories — and third channel you can use for remote starter activation, fuel mixture adjustments or gear shifting in a multi-speed gearbox — further sharpen your edge. Take a look at these systems' complete cutting-edge capabilities. Then picture yourself putting them to use in your next race.

Call 1-800-682-8948 and mention code number 2333A for the location of the Futaba dealer nearest you.



The large LCD screen with adjustable contrast offers easy visibility. Even during a race, the touchpad provides fast, push-button access to all programming.

More 3PJS & 3PJFS highlights:

Greater Convenience...

- *Servo reversing*
- *Assignable switches for choosing the functions that switches control*
- *Removable transmitter module for quick frequency changes*
- *Adjustable steering wheel tension*
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- *Adjustable steering servo speed*
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- *Traction control*

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- *Digital electronic trims — no need to reposition trims for each model*
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- *Sub-trims for precise throttle and steering set-up*
- *Programmable mixing between steering, throttle and 3rd channel*
- *Tilt mixing*

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PIT STOP HOW-TO

Nitro Engine Troubleshooting

- **Fresh Glow Plug**

Glow plugs do not last forever. Make a habit out of replacing them after every gallon of fuel. If your engine dies after you remove the igniter, change the glow plug.

- **Fresh Igniter**

If your glow plug is good and the engine won't fire, check the igniter. These two items are probably responsible for 90% of nitro engine problems.

- **Check the Flywheel**

If the flywheel is spinning but the engine isn't, the flywheel is loose.

- **Prime the Engine**

Don't forget to push the primer on the fuel tank. If your tank doesn't have one, put your hand over the exhaust pipe for a few seconds while turning the engine over.

- **Hydrolock and You**

If all else fails, the engine may be hydrolocked. Remove the glow plug, and turn the engine over a few times. Reinstall the plug and try again.

Damage Inc. • The car was rock-solid, even after running 7 or 8 tanks through it at the track. Surprisingly, the spur gear still looks like new. The under-side Lexan guard performed well and stayed on the car. The tires were visibly worn after testing, but this was after running on a dry track and taking some laps on the tarmac. The worst actual damage occurred to the body itself. The front end remained intact, but I managed to clip off one of the "ears" while cornering. The inside of the body got pretty nasty from fuel passing through the end of the pipe. Handy racers will figure out a way to divert the spent nitro fumes elsewhere.

Conclusion

As of right now, there's no such thing as a perfect R/C rally car, but HPI hasn't missed the mark by much. The RS4 SNR does everything it's supposed to, and quite well at that. Its super size provides more suspension travel, which is just what racers needed. The body has a tendency to catch on debris once in a while in rough conditions. For some, there's just no substitute for nitro power. The mini 1/8-scale shaft-driven system laughs in the face of dirt, mud, and other debris. Perhaps HPI will release a Super Nitro Rally Racer version that contains a slipper clutch, HPI's super shocks, and some softer compound tires. Save the Nitro Star engine for the RTR kits, and keep the street price close to $300. But for now the Super Nitro Rally is going to keep a lot of WRC fans happy, not to mention busy. R/C rally racers are a different breed. They're people who love putting square pegs in round holes. 2WD gas truck racers, you have been warned.

Atomic Hobbies is your R/C Headquarters
We Specialize in Nitro R/C!

Atomic Hobbies is a fully equipped hobby store catering to the enthusiast and the racer. Most parts for current race cars and fun vehicles are in stock. We carry a full line of Serpent parts for Impulse, Impact and Vector including tires and performance parts. We race what we sell and our expertise reflects it.

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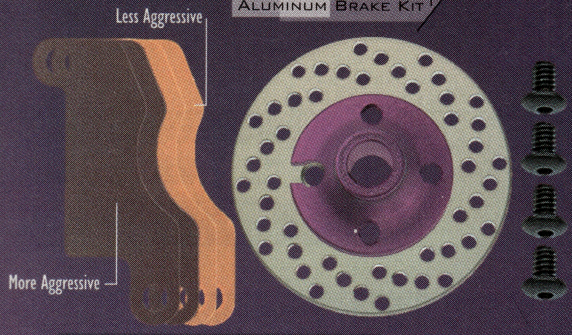
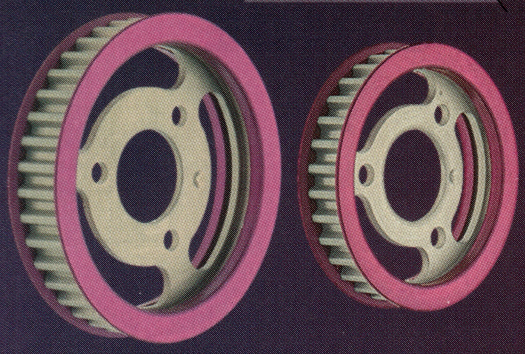
PERFORMANCE

HPI RS4 Nitro Aluminum Brake Kit



New, variable braking system. Lightweight aluminum. RRP 1575

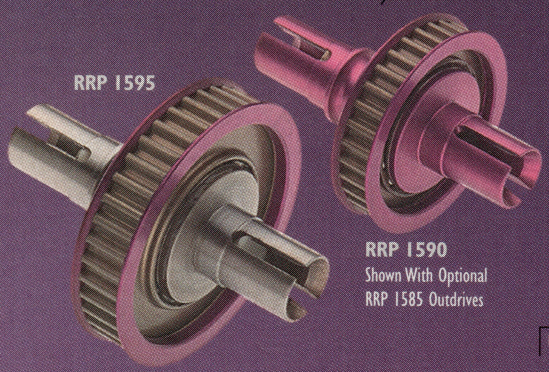
HPI RS4 Front One Way Diff Pulleys



Precision machined, hard anodized aluminum one way diff pulleys.
RRP 1540 fits HPI Nitro sedans. RRP 1529 fits HPI electric sedans.

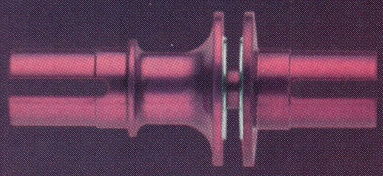
Performance from Precision

HPI RS4 Complete Ball Diff Units



Hardened steel outdrives, ground and polished thrust washers, 2 5x8mm ball bearings, and aluminum pulley.
RRP 1590 for RS4 Electric, and RRP 1595 for RS4 Nitro

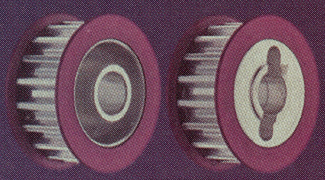
HPI RS4 / Pro / Pro2 / Nitro Lite Aluminum Outdrives



Purple anodized and 40% lighter than stock ball diff outdrives.
RRP 1585

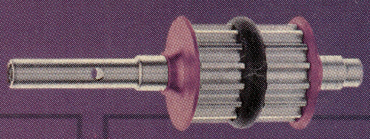
ENGINEERED

HPI RS4 Nitro Small Drive Pulleys



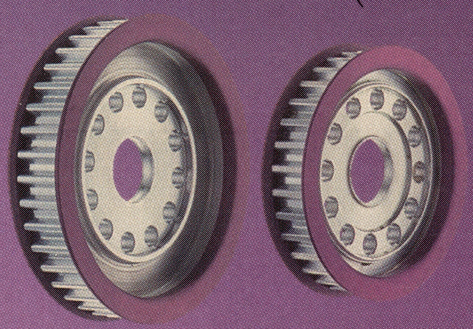
Drive pulleys sold in pairs. RRP 1538

HPI RS4 Top Shaft Pulley



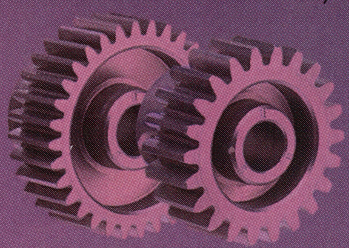
HPI RS4 Top Shaft Pulley: One piece pulley and shaft are precision cut and hard anodized. Purple anodized side flanges are pressed on.
RRP 1527

HPI RS4 Diff Pulleys



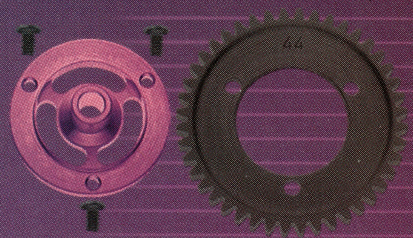
Precision machined, hard anodized aluminum diff pulleys. RRP 1539 fits HPI Nitro sedans. RRP 1528 fits HPI electric sedans.

HPI SuperLite Purple Aluminum Sedan Pinions



They're lightened, hard coated and precision cut.
Available in 48P in 16T thru 28T, and 64P in 24T thru 38T.
RRP 30XX (48P) and RRP 31XX (64P). Only $5.25

HPI RS4 Nitro Lightened Gear Adapter



This lightened gear adapter includes a machined nylon spur that is tougher than the stock gear and will last longer.
RRP 1535

An HPI RS4 Nitro 32 Pitch Conversion Kit is availble. RRP 1536

All performance accessories shown here were produced with precision CNC equipment. They're hard anodized where necessary, and color accents are added to help improve the looks of your machine. We spare no expense on the quality of the raw materials we use so that we can offer you only the finest in high performance drive train components. All RRP products are manufactured here in the USA.

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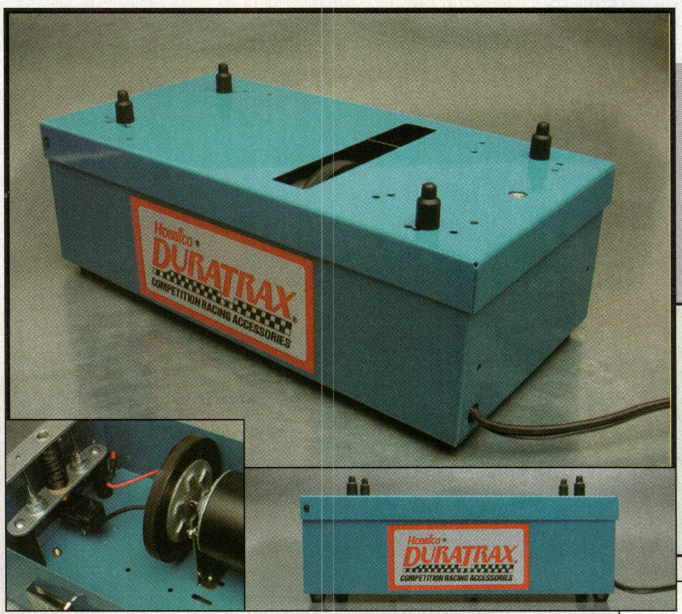
STARTER BOX

BUYER'S GUIDE

With nitro cars and trucks more popular than ever there's been an explosion in the number of starter boxes coming to market. To help you get through the clutter and find the box that's right for you we've put together this simple buyer's guide and compared the features we think are most important.

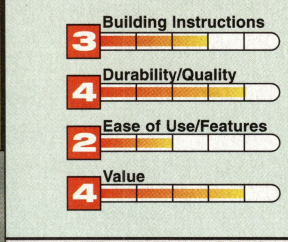
by the *Xtreme Staff*



DuraTrax Universal II

This is the mother of all starter boxes. It's old fashion and built like a tank. The Universal II uses a single large starter motor that looks more like the alternator from a small car. The switch system is as heavy duty as it gets. To power this bad boy you need to find a 12V battery. There's no room inside the box to mount a 12V gel cell. In the features department the Starter Box is weak, but it's very easy to use. When it comes to starting, this thing turns 'em over in an instant. Not even our highest compression .21 made this starter box break a sweat. It is heavy, big, bulky, not very sexy, but it gets the job done. Kind of like Oprah.

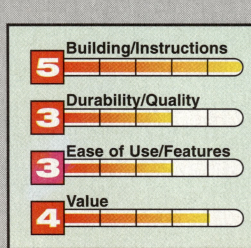
Part #: DTXP5000; EST: $85-$90



DuraTrax Universal Starter

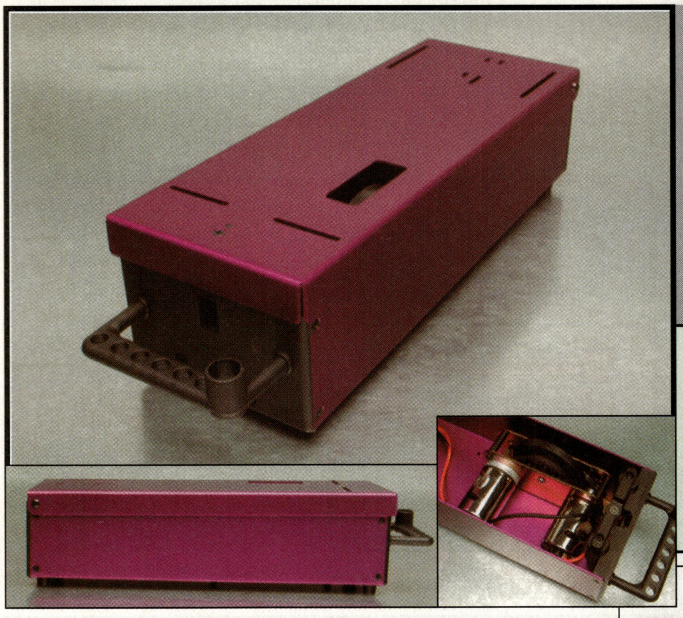
The Universal Starter is a nice box. The entire top deck of the box is pressed down to start the engine. The box is completely universal. The starter wheel can be placed in-line or side-mounted. There are also a huge number of different locations that the mounting pegs can placed in. This means that the right fit can be found for just about any car kit. This boxes uses a dual motor system along with two 7.2V battery packs or 12V battery. It also features an on/off switch. During testing this box started our engines .12 size engines with ease and struggled a bit with some of the .21's. The pegs that mount to the box and keep the car in place are a little too small. Building this box is easy – it's 90% built.

Part #:DTXP5700; EST:$70-$80



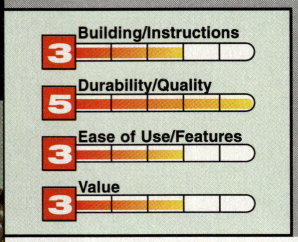


Phrases with "start:" Gentlemen start your engines...



MugenPro Starter RII

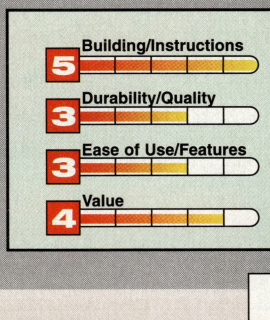
The Mugen Pro Starter RII is near the top of the list when it comes to quality and craftsmanship. The on the outside the box is a beautiful purple anodized aluminum. When the vehicle sits on the box the entire top of the box is on a lever. This makes it easier to get a solid connection between the flywheel and the starter wheel when you're in a hurry. Underneath the aluminum is a dual 540 motor system. The switch that starts the box is of a unique design and should prove fool proof hundreds of starts down the road. Brackets inside the box hold two 7.2V batteries. The box is compact, but fairly sturdy when in use. The RII places the starter-wheel in-line for most 1/10-scale cars and trucks. The box comes completely unassembled and takes about an hour to build. No soldering is needed.



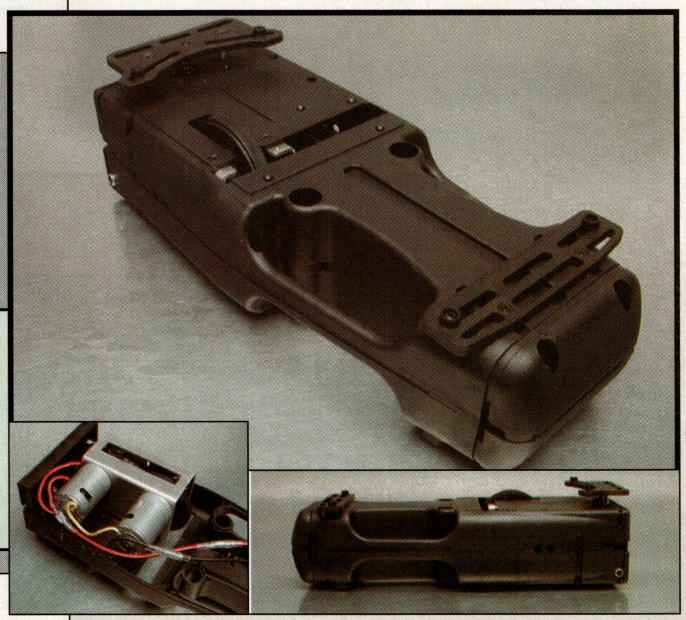
Part #: B0220; EST: $110

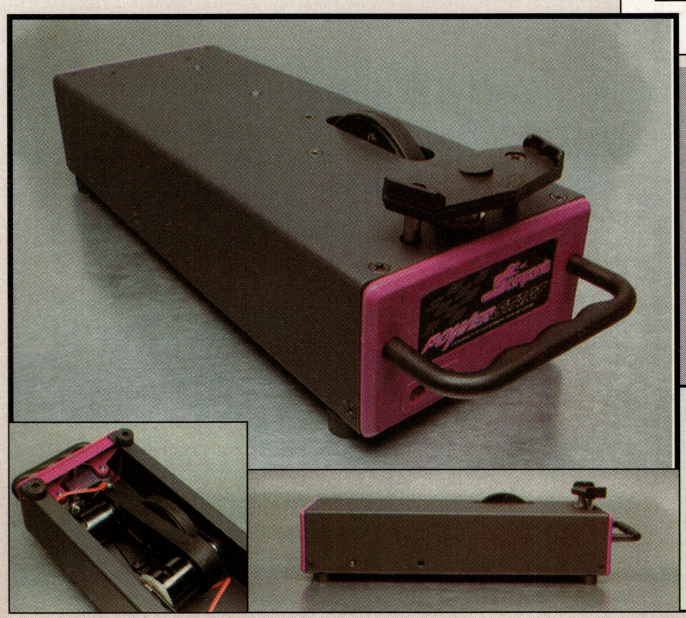
Integy/Eagle RacingHippo

The Hippo was the most unique starter box we tested. On the inside it's pretty standard. Two 540 motors turn the main starter wheel. The motors and wheel can be placed either in-line or opposed. The outside of the Hippo is what's unique. The box has a molded design that integrates handles on two sides. A cap at the end of the box comes off to expose a tray that holds two standard 7.2V 6-cell battery packs. The Hippo comes with universal mounts that allow the box to be adjusted to the particular car you're starting. The Hippo is 90% built and took us 5 minutes to build. In use the Hippo did a adequate job of starting both .21 and .12 size engines. Because of the box's small size the Hippo is a bit clumsy with larger 1/8-scale buggies.



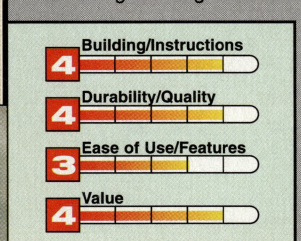
Part #: Hippo; EST: $85 - $95





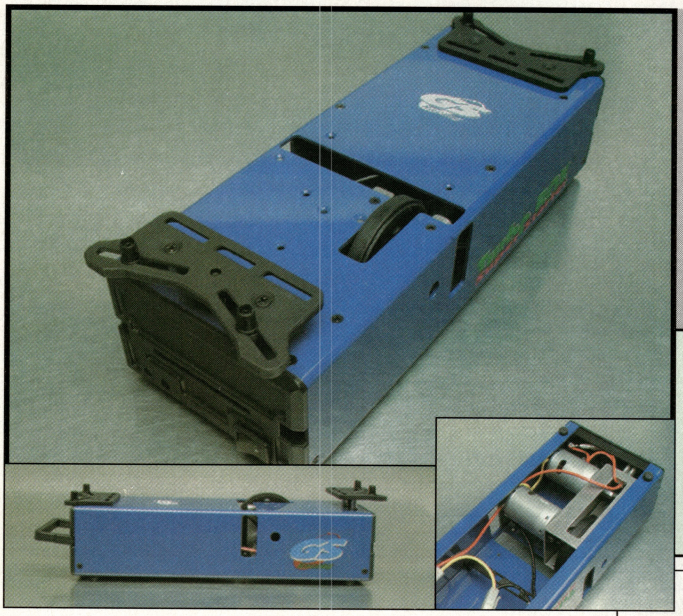
SerpentPower Start

Serpent was the first company to introduce the dual 540 motor starter box, and this is it. The Serpent Power Start is compact. It uses a heavy duty switch and is pretty solid. The Power Start is an in-line starter and is designed for .21 and .12 size power plants. The Power Start turned all of our engines over and proved durable when it was dropped from the work bench. We didn't like the fact that it only comes with the appropriate adapters for Serpent cars. Also, the small design does get a little clumsy with large 1/8-scale cars. Building takes about an hour. The instructions are easy to follow. The box can be found for between $99 and $109 at most hobby shops.



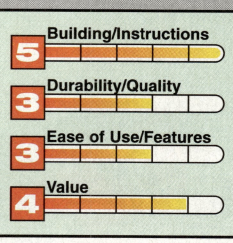
Part #: 1400; EST: $99 - $109

...you start me up, start smart, at the start, starting line, starter's gun...



GS Racing**Turbo Box**

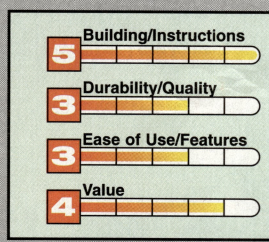
The Turbo Box is a nice package. It's compact, allows for the starting wheel to be mounted in-line or opposed, and comes with universal mounts. It also comes with a power switch which is useful for test lining different vehicles. The box also features power input jacks along with a handle. The nicest feature of all on the Turbo Box is the fact that it comes 90% assembled. It only took twenty minutes to go from out the box to starting. The Turbo Box uses two 540 motors and two 7.2V batteries to get things started. There were however a few things that caught our eye on the Turbo Box. The wheel only has about an 1/8" of rubber, that doesn't leave a lot of room for wear. The Turbo Box is definitely priced right, the street price is $99. Factor in the fact that the box is 90% assembled and has lots of features and it's a real value.



Part# GSS00020; EST $99

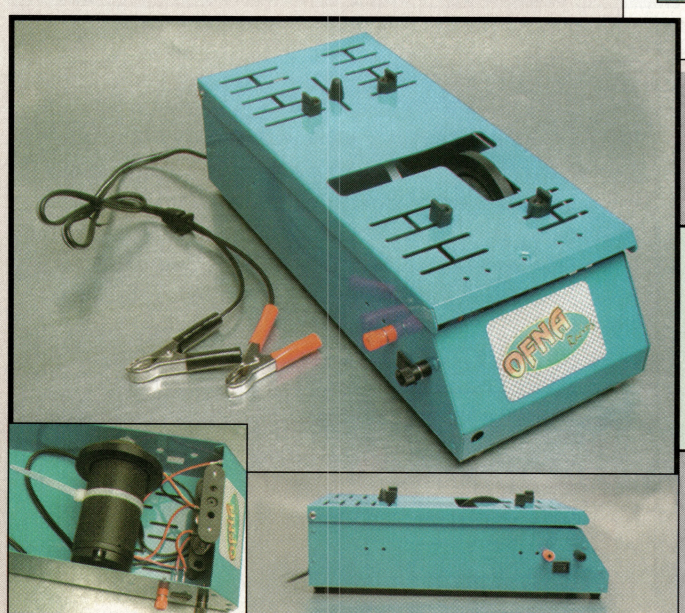
Dynamite**Ready Start**

The Dynamite box uses a standard dual motor design. It is universal and can start either in-line or opposed engines. It features a handle and a neat little deck on the front that allows you to store glow plugs and body clips. It features a switch, can use two 7.2V batteries or one 12V battery, comes preassembled. The universal pegs are small and can be missed from time to time. The starter wheel has plenty of meat on it and should last for a long time. The entire deck is depressed when activated, this is a feature we like. Overall it's a pretty solid box.



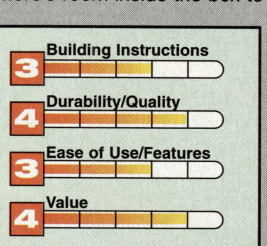
Part#DYN5610
EST $75





Ofna**1/8-Scale Box**

This box is as hardcore as it gets. It's big, which some racers will like. It uses a large single starter motor and a 12V power source. There's room inside the box to mount a 12V gel cell when the motor is positioned in the in-line position. The motor can also be mounted for opposed engines. The universal pegs are big and beefy. Building takes about 45 minutes and the instructions aren't the easiest we've seen. The box also features a switch and 12V power output leads. This box started every engine we put to it in just seconds. The 12V system has a torque and power advantage over the dual motor system. Bulk is the downside.



Part# 10250
EST: $75-85

...this topic is starting to suck, start – hell, this topic sucked from the start.

1/10 SCALE

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Mad Bison Upgrades

RC10GT RTR & Team Upgrades

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Nascar Tubular Chassis

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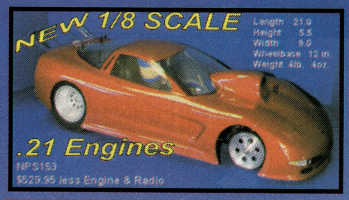
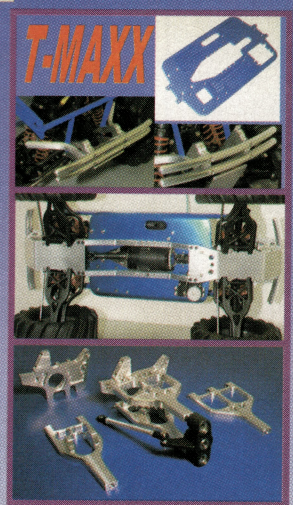






t Includes: MCT105 Chassis, MCT201
-MCT203, MCT204, MCT205, MCT207









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CT205 Rear Steering Eliminator	$24.50
CT207 Heavy Duty Steering Rods	$39.95
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CT301 Front Bumper	$39.95
CT401R Shocks w / Reservoir (SALE)	$65.00
CT402 Bearing Kit 20 piece (SALE)	$34.50
CT403 Right Angle Body Mounts (pr.)	$ 3.95

"CLOD" Options

CT420 Cantilever Kit (no Bearings)	$69.95
CT421 Cantilever Kit w / Bearings	$89.95
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HOT HOT HOT

F111 Top Fuel Lite	$399.95
S301 Stampede Skid Plate/Bumper	$29.95
S223 Stampede Wheele Bars	$39.95
F151 1/8 Scale Top Fuel (for21)	$559.95
S152 1/8 Scale Pro Stock (for21)	$529.95
X103 Traxxas NitroRustler Chassis	$39.95
F210 SS(steel)Brake w/Fibre Pads	$ 9.95

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TRM324 Front Bumper Supports pr.	$24.95
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TRM336 Frt or Rear Shock Tower	$38.00
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TRM107 3.2mm Ex. Main Chassis	$59.90
TRM321EX Rear Skid	$26.50
TRM123Engine Mount for Rear Exhaust .15 or .21Pull Start	$35.00
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1/10 SCALE UPGRADES



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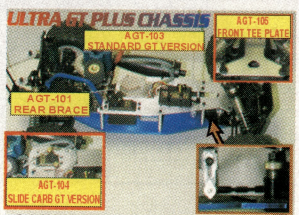
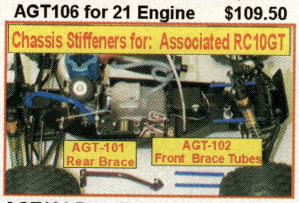
HPI Nitro MT & Nitro Rush Upgrades CALL



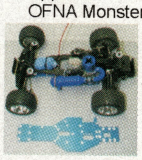
AGT103 Bi-Level Chassis $79.50
AGT106 for 21 Engine $109.50



AGT101 Rear Brace $21.95
AGT102 Front Brace Tubes $ 7.95



Upper Steel Tube Chassis for
OFNA Monster Blazer $169.95



Nitro Rustler and Stampede CNC Aluminum Upgrades

TRX103 3.2mm Alum.Chassis Plate (Rustler Only)	$39.95
TRS330 Front Bulkhead (Blue)	$34.00
TRS331 Rear Bulkhead (Blue)	$24.00
TRS332 Front Control Arms pr. (Blue)	$34.00
TRS333 Rear Control Arms	pr. $34.00
TRS402 Rear Arm Mounts	pr. $23.50
TRS403 Front C Shaped Hubs	pr. $24.00
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1/4 SCALE

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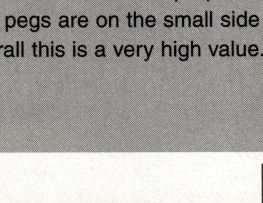
TRUCK & OFF-ROAD

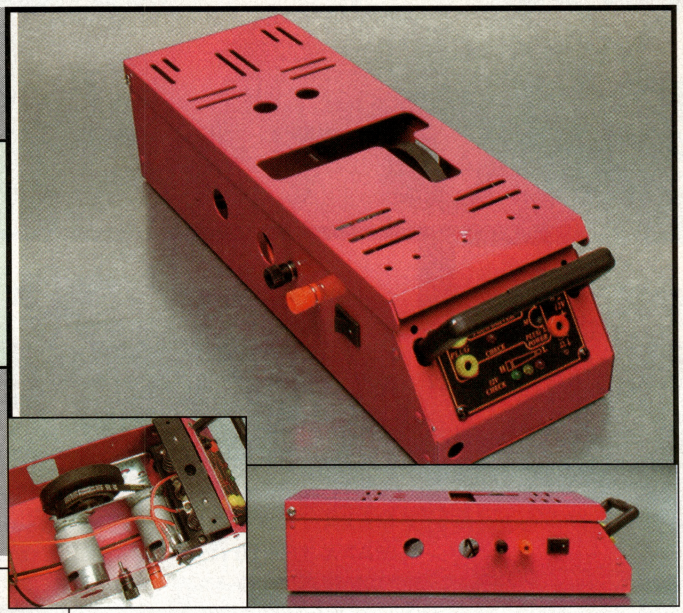


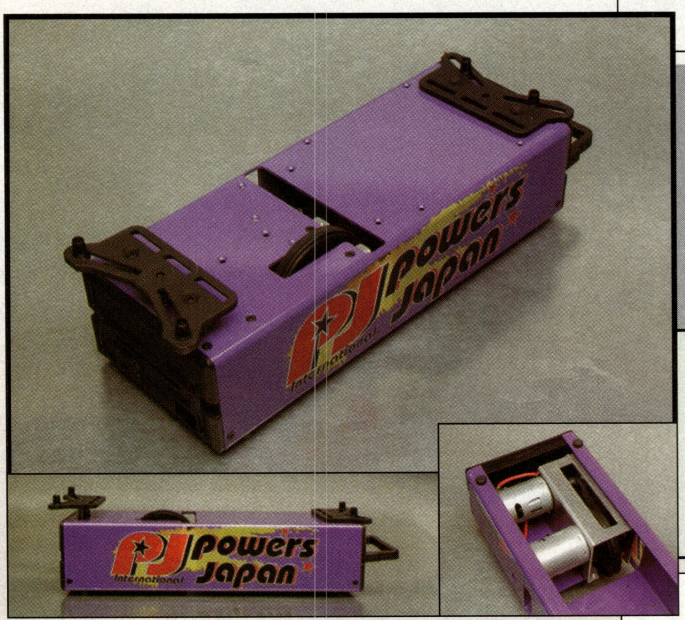
Ofna**Ready Start**

As far as small universal boxes go his one is the most feature packed. It's quality and construction is good while it also features an adjustable power panel, switch power output leads and comes 90% assembled. With all these features two 7.2V batteries can get a little tired by the end of the day so don't go crazy. The starting wheel has plenty of meat and the belts that turn the wheel are nice and thick. When this box goes to market it will be black. A nicer color than the purple our test sample came in. The universal pegs are on the small side and difficult to locate at times. Overall this is a very high value.



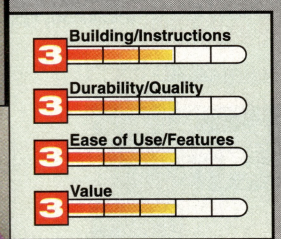
Part#:10256
EST: $59.95





Powers Japan**Starter Box**

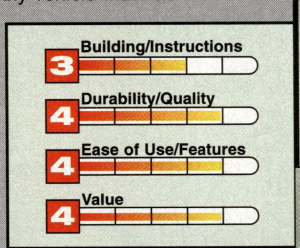
The Powers box is a very basic, dual motor starter box. It has a universal design that allows for just about any type of car to be started. The universal pegs are fairly easy to find. The quality of the box is good. However building this box was a pain. Building will take you over an hour. The box is completely unassembled and has no added features. It strains a bit with .21's but gets them going. It does have a large handle for carrying. Overall the box is not bad, it's just a tough one to build and doesn't have any added bells or whistles.



Part# ASP
EST: $99

Serpent**Power Start 90**

The Power Start 90 is the Power Start's big brother. The 90 is wider than the original and is designed for 1/8-scale off-road and on-road cars with opposed engines. The 90 uses a dual 540 design and is pretty heavy duty. The mounts that come with the box are universal and will adapt to almost any vehicle. Any vehicle that has the engine mounted transverse like a 1/8-scale buggy. The Power Start 90 we tested came with the optional Glowtronic glow plug ignitor. The Glowtronic brings the 14.4V of the two 7.2V battery packs to 1.5v to start any glow plug. When in use the 90 and the Glowtronic both did a good job of starting our engines.

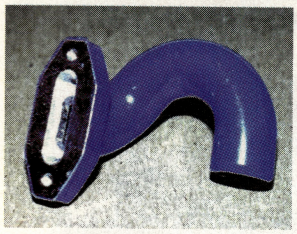


Part #1500
EST: $115



We are absolutely out of witty commentary.

TRAXXAS T-MAXX ALUMINUM



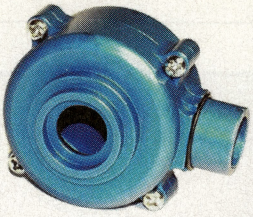
TMX13016 This manifold has a dark blue powder coat finish and is port matched to your exhaust. $30.00



TMX1014 This will help you to improve your stock chassis. These replace your orginals perfectly. $50.00



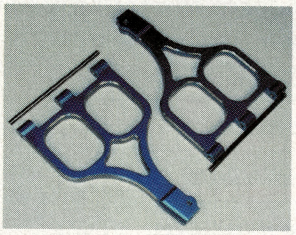
AF01 Has 45 Degree rubber boot, two zip ties and an outer foam pre filter. $15.00



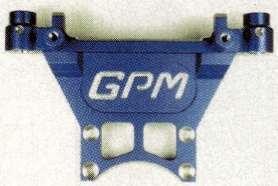
TMX1011 These are the first step to building a bullet proof drive train. You will need 2 sets for each truck. $65.00



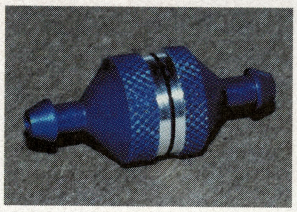
TMX1815 With 30% more cooling area and a large opening for easy maintenance. This is a must for longer engine life. Fits Pro 15 engine. $40.00



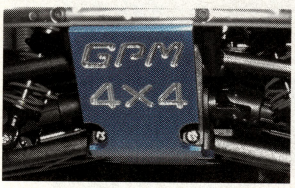
TMX1054 Set of 2 upper control arms. These are by far stronger than the original plastic arms. Includes pins and clips. $40.00



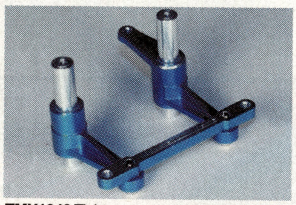
TMX1028 You will need 2 for each truck. These are direct replacements for the stock shock tower. Replaces original perfectly. $40.00



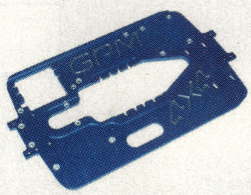
OF01 Filter comes apart to allow cleaning and is sealed with an o-ring. Fits standard size fuel tubing, common on all cars. $8.00



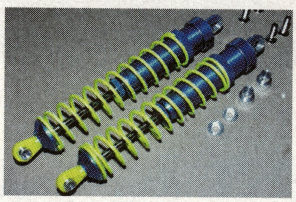
TMX1331F Don't be a poser, get one of these 3mm thick skid plates and be with the "in" crowd. $25.00



TMX1048 Tighten your steering slop with this. Comes with everything you see in the picture, as well as all necessary screws. $40.00

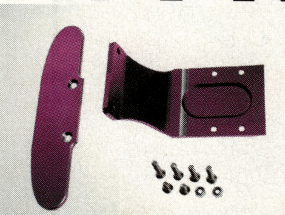


TMX1016 This 3.5mm thick main chassis features thick 4.5mm Ribs don't risk loosing power to a thinner chassis! It is a must for a more power engine hop-up. $75.00

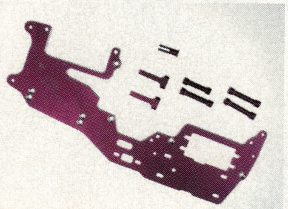


DP100 Threaded shock bodies are perfect for fine tuning your ride hieght. These are 4.125 inches long. $45.00

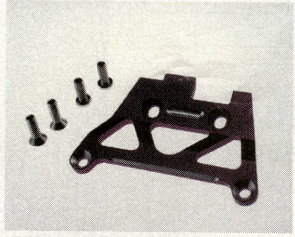
HPI NITRO MT PARTS



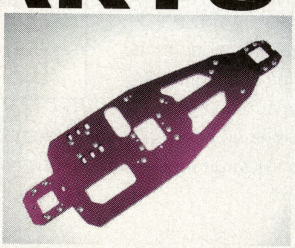
NMT4003 Is your bumper large enough? Install this bumper and matching skid plate for improved protection. $40.00



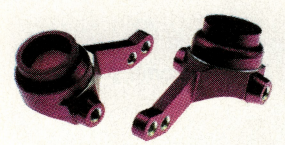
NMT4014 Customize your Nitro MT with an alloy radio plate. Includes posts and screws need to mount. $40.00



NMT4015 Keep your truck on the track and running strong with an alloy front top plate. $25.00



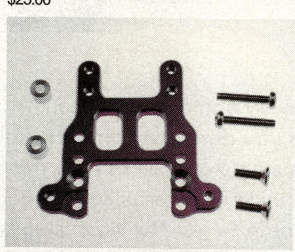
NMT4016 Set your truck apart from the crowd with a 3mm thick chassis machined from 6061 T6 Aluminum $55.00



NRS4021 Includes all parts needed to install. Improve strength and looks with a pair of alloy front knuckles. $25.00



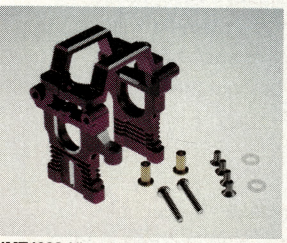
NRS4022 Keep the rear wheels pointed where they should! These hubs will remove the flex found in your stock plastic parts. $25.00



NMT4028 Improve both looks and durability with one of these front shock towers. $20.00



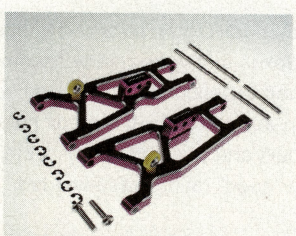
NMT4030 Did you break your shock tower, again? Replace it with this aluminum one! $25.00



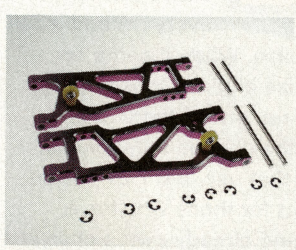
NMT4038 Alloy center gear mount replaces original perfectly. Keep your gear mesh in line with a rigid aluminum replacement. $45.00



NMT4048 Tighten your steering and improve straight line tracking with a ball bearing steering assembly. $40.00



NMT4055 Replace your fragile stock front control arms with a pair of sturdy aluminum ones. $35.00



NMT4056 Replace your fragile stock rear control arms with a pair of sturdy aluminum ones. $35.00

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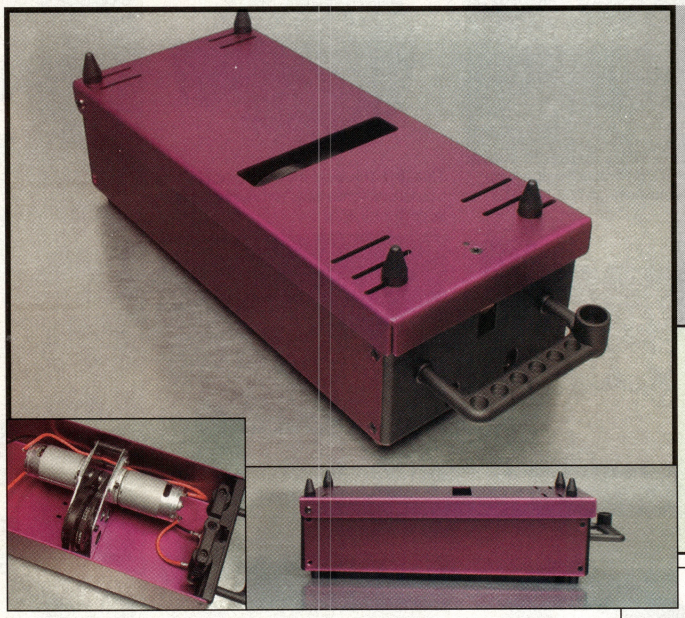
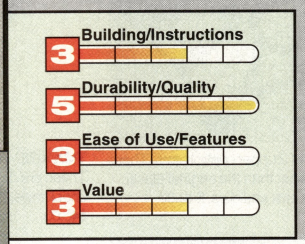
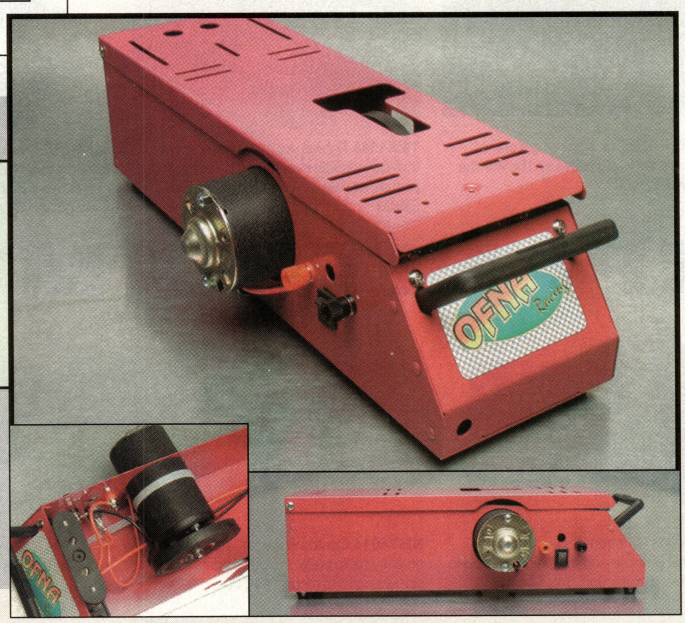


MugenPro Starter BII

The BII is the 1/8-scale version of the RII. It's a bit wider than the RII which is nice for 1/8-scale vehicles since the box can get more surface contact with the vehicle getting started. The universal pegs are big and easy to find. The power system inside the box uses two 540 motors. This is more than adequate for .12 size engines but gets slower with .21 size engines as the day wears on. Building this box is not difficult but takes some time, no soldering is required. The drive train must be shimmed upward so that the wheels extends far enough past the top deck. This box shines in the area of quality and ease of use.

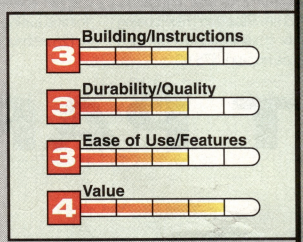


Part#: B0230
EST: $110



Ofna1/10-1/8 High Power

This box is unique. It's got a medium size and uses a large single motor for starting. It has a universal design. The deck can accommodate just about any car and the motor can be set for either in-line or opposed engines. When the motor is set in the in-line position a 12V gel cell can be mounted inside the box. The box comes un assembled and takes about 45 minutes to build. Thanks to the large motor, starting any engine is as easy as can be.



Part#10258
EST $85

How We Rated Them.

1 Bad
2 Poor
3 Average
4 Good
5 Very Good

Overall the boxes that we tested performed up to the task. Overall the dual motor boxes started every .12 and .15 engine with ease. When it came to starting .21 size engines these boxes started them up, but by the end of a full race day they began to labor. These boxes that use two 7.2V batteries are perfect for those who have been in R/C and already own a charger and battery packs. Boxes that used single, large starter motors started every engine with ease. If you don't own any R/C equipment, a single gel cell battery pack and trickle charger is a more economical route to go. The downside to these boxes was their large size and weight.

Building/Instructions

Boxes that were nearly assembled or had exceptional instructions scored well in this category. If the box needed to be built and the instructions were adequate a "good" rating was awarded.

Durability/Quality

This was somewhat subjective. We looked at material used, fit and trim, and weak points that we might become subject down the road.

Ease of Use/Features

Boxes that were easy to use, did a good job of starting engines, and aligned easy rated high in this category. Also, boxes that had lots of features also did well. Ready the summary of each box to determine why the box got the rating it did.

Value

With all other things taken it account estimated street price was factored in to give is this rating.

No more funny stuff. Watch a sitcom or something.



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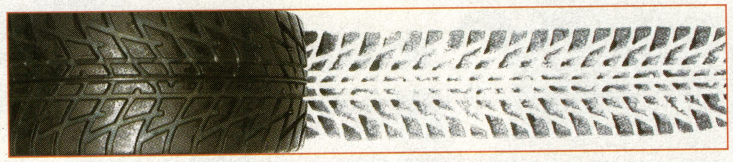
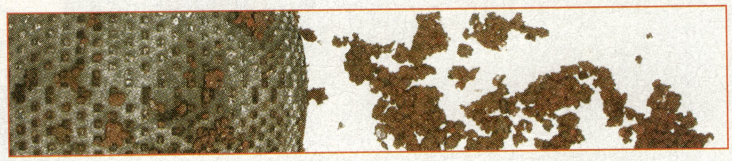
Finding TIRE TRACTION

by Mike Velez

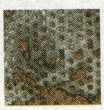




In all forms of racing, there is one limiting factor that governs how fast any vehicle can go – the amount of friction between the racing surface and the tires that flank the four corners of the vehicle. Friction translates into traction. The more traction a tire has the faster your vehicle can go around corners and/or accelerate before the vehicle's tires break loose. In R/C, picking the right tire from the start is key to getting the most traction possible. In addition to using the right tire, there are ways to improve traction on the tires you already have on your ride. In this article I'll show you how to pick the right treads and how to get more traction.

Choosing the right tire.

The easiest way to find out what tire works at your local track is to simply look around. See which tire tread and compound the fastest guys are using. If the hot compound is a big secret, just ask somebody at the track hobby shop. The popular compound and tread should always be your starting point. If you want to try and find an edge against the competition, experiment with different tread designs and compounds.



Off-Road

In off-road, most tire changes will take place in the rear end.

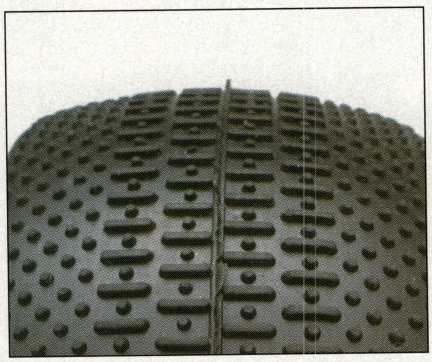
- On dry, hard-packed tracks, tires that have smaller pins or spikes will work best. Tires like Pro-Line Hole Shots or Team Losi IFMAR Pins work well on hard-packed tracks with some surface dirt.
- On hard tracks that have a low amount of dust, try the tires like Pro-Line Square Fuzzies or Losi X-2000's.
- On tracks that aren't quite hard packed but are also not quite loamy, a medium size pin will work best. The two most popular tires to fit this description are the Losi IFMAR Studs and Pro-Line Stubbies.
- On loamy (loose and fluffy dirt) tracks, larger pins that can dig into that loose dirt to gain traction are needed. Larger pins flex more than smaller pins during acceleration and cornering. For that reason companies employ a "step" design. This gives the pins a larger base for less flex. Both Losi and Pro-Line offer Step Pin tires that perform best in loose, fluffy conditions.



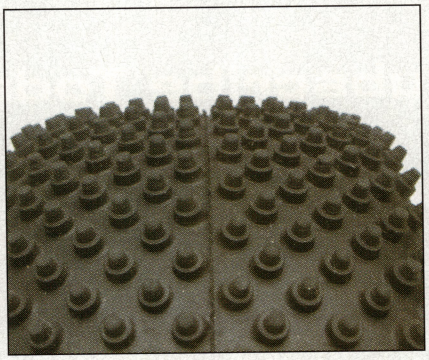
Touring Cars

On touring cars there are two basic types of tire designs. There is the standard slick which has no tread design and there are treaded tires which have a channeled pattern. Every tire manufacturer has their own tread designs, but, relatively speaking, almost all treaded tires work one way while slick tires work another way. The decision to run treaded tires versus slick tires depends primarily on track conditions.

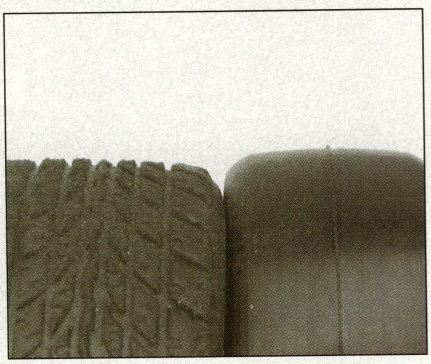
- If the track is relatively dust free, slick tires almost always provide more traction because of their increased surface area. If the track is too dusty, slick tires will only cause your car to slide out through turns.
- If the track is dusty, treaded tires will work best. The channels in the treads give the dust



Low profile knobs are perfect for hard-packed, low dust tracks.



Larger studs are perfect for loamy, fluffy, soft-packed tracks.



It's easy to see the difference between a treaded (left) tire and a slick (right).

Tire compounds and tread designs are constantly being developed.

somewhere to go. Also, the sidewalls in the tire treads add some side bite during cornering.

• You can mix and match treads depending on the conditions. Let's say your car has too much steering and the track is pretty clean. Try slicks in the rear with treaded tires up front. Experiment, until you find a combination that allows you go get around the track as quick as possible.

A Compound Problem

Every on-road and off-road tire on the market is available in different compounds that vary in their density. A more dense compound is harder while a less dense compound is softer. Softer tires offer more traction. The softer-compound tires can conform more to the road surface and provide more friction between the themselves and the ground. Harder tires conform less to the road surface resulting in less traction. So why doesn't everybody just use the softest tire available? Soft compound tires wear more quickly than harder tires. If cost is no objectn then hell, soft tires for everyone. But most racers can't afford the softest compounds. That means finding a compound that provides the traction you need and isn't quite the softest, shortest lasting tire is important. Experimentation is needed. Softer compound tires generally need foam or molded inserts that are more firm. Otherwise the tires would fold over themselves during cornering. See what compound and inserts are popular at your local track and go from there.

Tire Heating

In full-size Formula One racing, you'll often times see large blankets draped around the tires of those multi-million dollar machines. Those blankets aren't just keeping the car's tires warm; they're heating them up. The reason is simple: Warmer tires become softer and provide more traction. By warming the tires with tire warmers, the tires will reach their operating temperature sooner. In R/C, you can find tire warmers from companies like Trinity and Integy. These warmers plug into a standard battery pack or 12V power source and warm the tires. Tires that have been warmed before a race won't necessarily provide more power traction, but they'll perform more consistently during a race. The warmed tires will provide just as much traction on the first lap as they might otherwise provide on the fifth lap. Tire warmers are more commonly used in on-road racing, primarily with touring cars. That's because touring car tires run warmer than off-road tires.

The amount of voltage you're using with your tire warmers and the actual operating temperature of your car's tires will determine when to put the tire warmers on. If the track conditions are hot, say asphalt in 80° weather, you'll want your tires hotter than if you were running on carpet indoors. So if you want your tires very warm, use a higher voltage power source or leave the warmers on longer before race time. Since there are so many variables involved, it's really a good idea to try different voltages and times until you find a race-ready temperature that allows your tires to provide consistent traction from lap one to lap ten.

Rubber Traction Compounds

A traction compound is mixture of chemicals. When the traction compound comes in contact with the tire rubbe,r the traction compound begins to break down the tire rubber. The result of this simple chemical reaction is a softer tire. As you know, softer tire equals more traction. Traction compounds do work. Not only can traction compounds increase the tackiness of a newer tires, but they can also breathe new life into an old pair of tires. Tons of companies offer their own brand of rubber

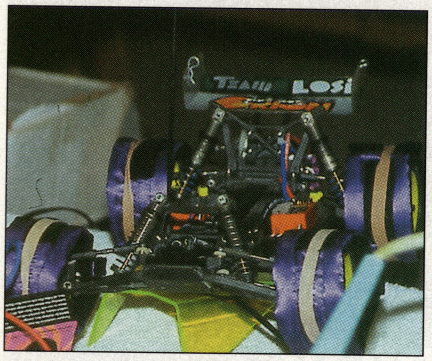


A toothbrush is all you need to apply compound to off-road tires. Clean the dirt off first.

traction compound. Essentially, all of the brands are made from the same basic ingredients. But, different brands to vary slightly so it's a good idea to try different brands until you find the one you like the best.

Traction compound should be applied to your tires about five minutes before your race. For off-road tires, you'll typically only need to add traction to the rear tires. Increasing front traction may cause the car or truck to over steer. If you're using a spray bottle, shield the body with a towel when applying the compound. I like to apply compound using an old toothbrush. Simply take the cap off of the bottle, dip the brush in the bottle, and run the bristles over the tires until you've spread compound over both rear tires evenly. Then just let the compound soak into the tires until it's time for your race.

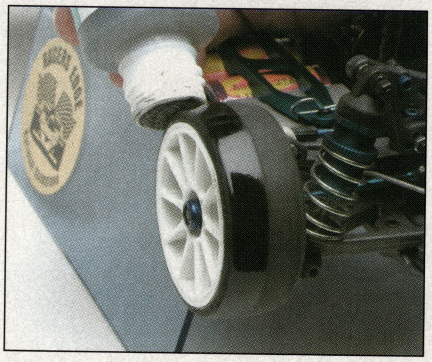
For touring car tires, most traction compounds come in bottles that have a bingo-type dabber or a little dabber tip. Apply the compound just like you would on an off-road tire. Run the dabber across the face of the tire while spinning the opposite tire until you see that the entire tire has been coated with compound. Apply the compound up to ten minutes before your race. Use a towel to rub



Tire heaters can be found for both off-road and on-road tires.



Traction compounds are available from a number of different companies. Experiment until you find the compound that works best for you.

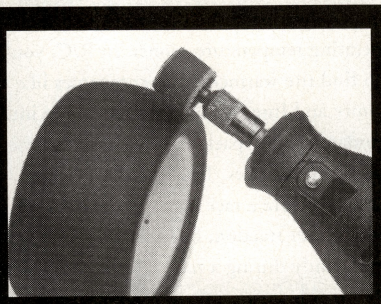


Don't soak your touring car tires. You only need to cover the surface of the tire.

In off-road the two most popular tire brands are Team Losi and Pro-Line.

Shave Those Pins

On some off-road tracks that are free of dust, you can try slick tires. That's right, slicks on an off-roader. Take a worn-out pair of soft compound tires and a Dremel tool. Using a sanding drum bit grind off the tread of each tire until you have a nice smooth slick. Next, soften the tires further by applying some traction compound and give the tires a try. In my opinion it isn't really off-road anymore, but sometimes it works.



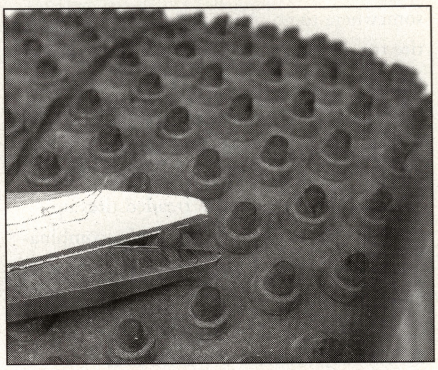
off any excess compound just before race time. Like off-road cars, it's more common to just use traction compound on the rear tires. If you're looking for more front traction apply compound to the front and rear, but not the front only. If you would like more traction all the way around, but don't necessarily need more steering try just applying compound to the inside or outside half of the front tires.

Foam Traction Compound

Using traction compound on foam tires is almost identical to using compound on rubber touring car tires. Use the same application method. Before race time it's extremely important that you wipe the tires down with a towel before hitting the track. Some tracks will have burn out areas where you can throttle the car to wipe off any extra compound.

Just a little off the edges

This last method of getting more traction from your tires works only on larger pinned off-road tires. As tires wear the pins go from nice and sharp to round and smooth. As the pins on the tires smooth over, the pins lose their side bite. Using a pair of Lexan scissors, clip just the tips of each pin. This will give the tires sharp pins once again and bring traction back to where it was when the tires were new. This trick only works once or twice depending on the original size of the pins. If your tires haves lost their edge, it's worth a try since you haven't got much to lose.



When clipping pins for more traction, use very sharp scissors; only clip the absolute edge of the pins.

Catch Traction

Finding traction can be difficult at times. Now you know how to find him, smack him around a little bit, and make him work for you. Good Luck.



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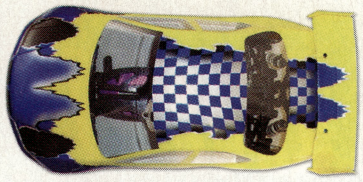

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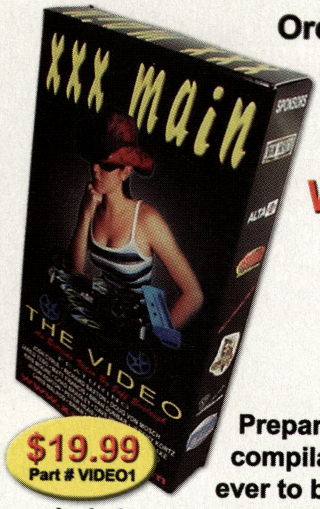

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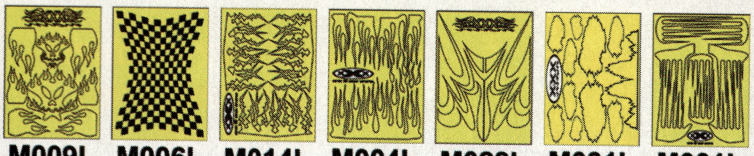

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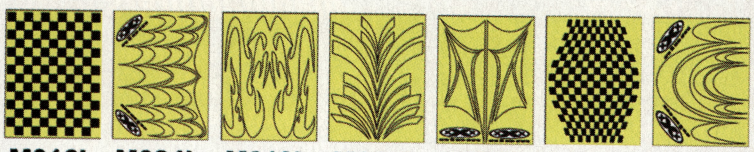

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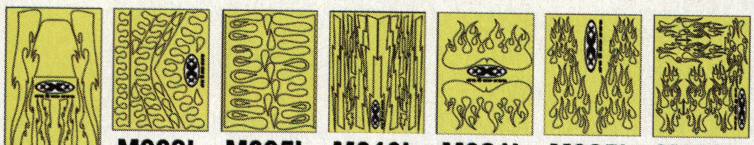

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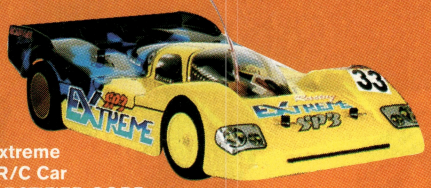

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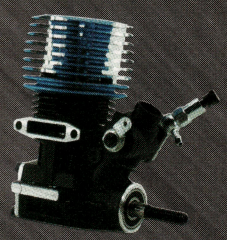

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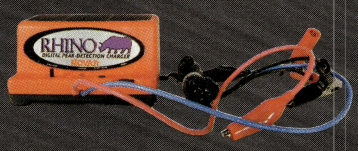

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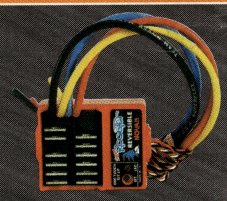

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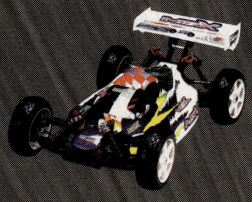

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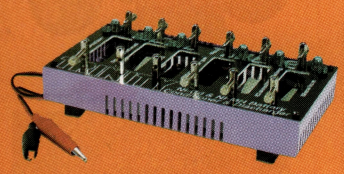

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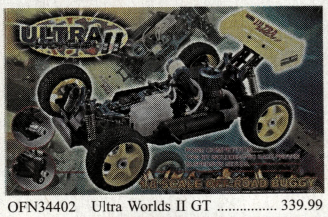

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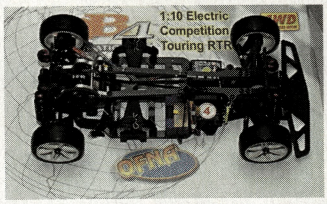

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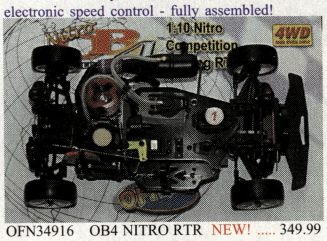

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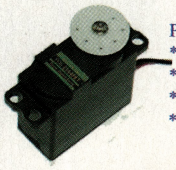

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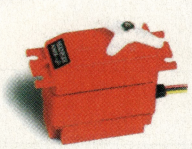

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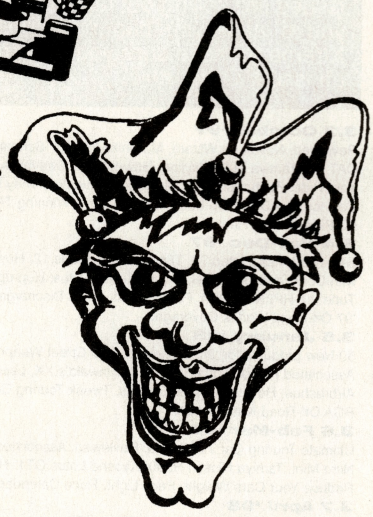

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3.3 October '97
Reviewed: Novak Pit Wizard, M.troniks Prodigi, Schumacher CAT SE, Tamiya TL01 Skyline. How-to: Use Swaybars to Tune Your Ride. Features: Motor Mysteries Revealed, They Call So Cal Home, A Close-Up Look At David Jun's Winning TA03. Also, B3 Pics, Worlds Results.

3.4 Nov-Dec '97
Reviewed: Associated T3, Trinity Switch Blade 12. How-to: Tune with Down and Up Travel, Mount Rubber Tires, Hop-up and Tune the HPI Nitro RS4. Features: All About Discharge Trays, '97 Off-Road Worlds Coverage.

3.5 January '98
50 New products for '98, Reviewed: Losi Street Weapon, Associated RC10L2. Inside Look at Kinwald's XX, Learn About Airbrushes. How-to: Rebuild Shocks, Tweak Touring Cars. NORRCA Off-Road Nats Results

3.6 Feb-Mar '98
Ultimate Touring Car Tire Guide, Reviewed: Associated B3, HPI Nitro Mini, Tamiya Nissan R390, Kyosho Lotus GT1. How-to: Reduce Your Cars Weight, Pack Light. Race Calendar

3.7 April '98
Reviewed: Losi XX 'CR' Kinwald Edition, Tech Voggerd T-10, Mugen Prime 12, Kyosho Super Sport 10 Learn How-to: Break-in gas engines, Turnmarshall, Convert your B2 to B3. Carpet Oval Nats coverage. Midnight 2 tested.

3.9 June-July '98
Reviewed: HPI Mini RS4, Losi XXT 'CR' Graphite Plus, Tamiya M-02L Porsches', Tekin G-10 Learn How-to: Use Caster, 24 Radio Glitch Fixes Features: '98 Winter Champs Coverage, Allen Driver Buyers' Guide. Evaluations: Xipp Power Jig, GM Discharge Box, Traxxas Free Wheel.

4.2 Sept-Oct '98
Reviewed: Associated L3 Oval, FSR Bullet Pro, TT VSpec. How-to: Cut 4WD tires, Stock Comm Cutting, Better Batteries. Features: MaxTec's Aftershock, ROAR On-Road Nats.

4.3 November '98
Tested: Schumacher Nitro 21 Xtreme, Tech Racing Voggered GT, JR Racing R-1 Radio, Tenth Tech. Streetwise Rally. How-to: Prep Stock Motors, Clean Tires. Features: ROAR Modified & Stock National Coverage.

4.4 December '98
Tested: HPI Nitro RS4 Racer, Kyosho Quad Rider ATV, Tamiya M-03 Rover Mini. Learn How-To: Start your own club, 10 Mototool R/C Uses. IFMAR On-Road Worlds Reports. Hook-Up: T3 & Street Weapon Guide to Pinion Gears. X-rattings: Team Cobra Probe 4000, Hitec CG-330 Charger, PSE Hood Tool

4.5 January '99
Tested: Losi NXT GP, Kawada SV-10, HPI RS4 Mini Pro, Tamiya SVT Lightning, GM GMVIS Commander. Learn How-To: Read Dyno Sheets, Build Your First Car. Tamiya TCS Nationals Coverage. What's New for '99

4.6 Feb-Mar '99
Tested: FSR Nitro Bullet V12, HPI RS4 Rally, Fox Team Losi R/C Racer. Learn How-To: 11 Tips to Better Decals, Use Camber to its Fullest Hook-UP: Associated B3 and Tamiya TA-03F Pro. First Takes: HPI Super Nitro RS4, Traxxas Nitro 4Tec, Tamiya Nitro TG-10, Losi IWC Street Weapon.

4.7 April '99
Tested: Yokomo YR4 M2 Pro, Traxxas Nitro 4-TEC, HPI Super Nitro RS4, Schumacher SST '99 Pro, Novak Millenium. Learn How-To: Choose and Use Nitro Fuel, Repair Broken Servos. Hook Up: Losi Double-XT. X-Ratings: Trinity Paradox, Take-Off Sedan Tires, INDI 16X2 Nitro, Parma Faskolor Paint. First Takes: Kyosho TF3-R Spider '99, Duratrax Maximum ST, HPI RS4 Pro 2.

4.9 June '99
Tested: Tamiya Wild Dagger, Kyosho '99 Spider, Kyosho MP-6 Int., Tamiya TA03R TRF, Lynx 3D Radio. Learn How-To: Mounting Electronics, Get a job in R/C, Anodize Titanium. Silver State Challenge race coverage. Losi Double-X and HPI RS4 RTR Hook-Ups .And More!

5.0 July-August '99
Tested: Tamiya Juggernaut, Associated 10L3 Touring, Yokomo Mr-4 Touring Car, Trinity 12SB "Spashett Edition." How-To: Rebuild and Bleed Shocks, Driving Strategies and Techniques, Engine Break-In. Hook-Up: Associated RC10GT. Reedy Truck Race Coverage and more.

5.1 September '99
Tested: Losi Triple-X, Traxxas Nitro 4-Tec Pro, Tamiya McLaren MP4/13. How-To: Charge Ni-MH, Hook-up your HPI RS4 Pro2. Race Coverage: ROAR Off-Road gas and Modified electric Nationals, Reedy Touring Car Champs. Feature: R/C and the Internet, Drag racing basics.

5.3 December '99
Tested: Kyosho F-150 Landmax, Traxxas Stampede, New Era Drag. How-To: Sedan Tuning, Using Multi-stage foam. Features: ROAR On-Road Nationals, Tire Glue Buyers' Guide.

5.5 February '00
Tested:Thunder Tiger EB-4, Tamiya M-04L, Traxxas T-MAXX, Schumacher SST Rally, INDI 16X2 Pro V2.5, Motor Saver Filters. Features: Budget AM Radio Buyers Guide, Histor of Xtreme, Losi Triple-X Hook-Up, The Science of R/C, U.S. Indoor Champs. How-To: Get your Nitro Race Ready, Buy Ssed on the web.

5.6 March '00
Tested: Losi XX-4 Worlds,Yokomo MR-4TC Pro, Associated GT RTR, DuraTrax Axis. Learn How-To: Rebuild Gas Engines, Sell Your Gear On The Net. Xtreme's Bible of R/C Terms. Industry Insider: Ernie Provetti. And More.

5.7 April '00
Tested: Kyosho TF-4 Type R sedan, Tamiya Mad Bison, Losi Triple-XT, Schumacher Axis. Learn How-To: Set Throttle and Brake Linkage, Dyno Tune Your Stock Motor. Features: Hook-Up Your TC3, Reedy Race Coverage, How Graphite Worx

5.8 May '00
Tested: HPI Nitro MT, Mugen MTX-2, Kyosho EP Ultima, Yokomo MR-4 MT. Learn How-To: Reduce Drag and Resistance, Prep a new nitro engine. Features: Florida Winter Champs coverage, Battery Bar Buyers Guide, David Katz Interview

5.9 June '00
Tested: HPI RS4 Sport 2, Associated FTB3, Kyosho GP Ultima, Tamiya TB-01. Learn How-To: Tune your Nitro Engine, Take your sedan from mild to wild, Pait like a pro with Thunder. How It Worx: R/C Oils. Features: Cactus Classic, Silver State Nitro Challenge.

6.0 July/August '00
Tested: Associated RC10FT, HPI RS4 Racer 2, Schumacher CAT 3000, Tamiya Stadium Raider. Learn How-To: Clean your Nitro, T-Maxx tips, XXXT Hook-ups, Race Coverage: Reedy TC Race.

6.1 September '00
Tested: Losi XXX-NT, Tamiya Juggernaut 2, Mugen MBX-4RR, Tamiya F103-LM, Buyers Guide: Budget FM Radios, How It Works: Becoming a Nitro Clutch Master, Race Coverage: On Road Nats.

6.2 October/November '00
Tested:Yokomo GT-4, HPI Nitro Rush, Associated Factory Team T-3, Atlas YM-34, T-Maxx Hop-ups from HELL!, How To: Take Care of Your Airbrush, Adjust Your Ride Height, Race Coverage: Off Road Gas Nats.

6.3 December '00
Tested Kyosho MP7.5, Ultima RB Type-R, Tamiya TGR, TA-04 Pro. Features: IFMAR On-Road Worlds Coverage. How To: Glow Plug Mania, Gear Soup, Track Etiquette, Touring car foam. Race Coverage: ROAR Modified Nationals

6.4 January '01
Tested: Schumacher Big 6 Nitro, ProParts Daddy 1/10-scale oval, Yokomo MR-4TC WC, HPI Nitro MT Racer. Features: IFMAR 1/8-scale Off-Road World Championships. How-To/How It Works: Hardware 101, How Not To Win a Race, Modified Motor Timing, Nitro Fuel FAQ. Under the Scope: MIP Temp Gauge 2, TA Emerald Nitro Clean, Powers GT-3000 cells.

6.5 February '01
Tested: Traxxas E-Maxx, Associated T3 RTR, Duratrax Max ST Pro, Tamiya TB-01 Evolution. Features: Cleveland Indoor Nationals Coverage, The Dirt Girls. How-To/Ow It Works: Charge Ni-MH, Restriction Nitro Engines, Tranny Rebuilding, Hook-Up the Losi XXX-NT with Adam Drake

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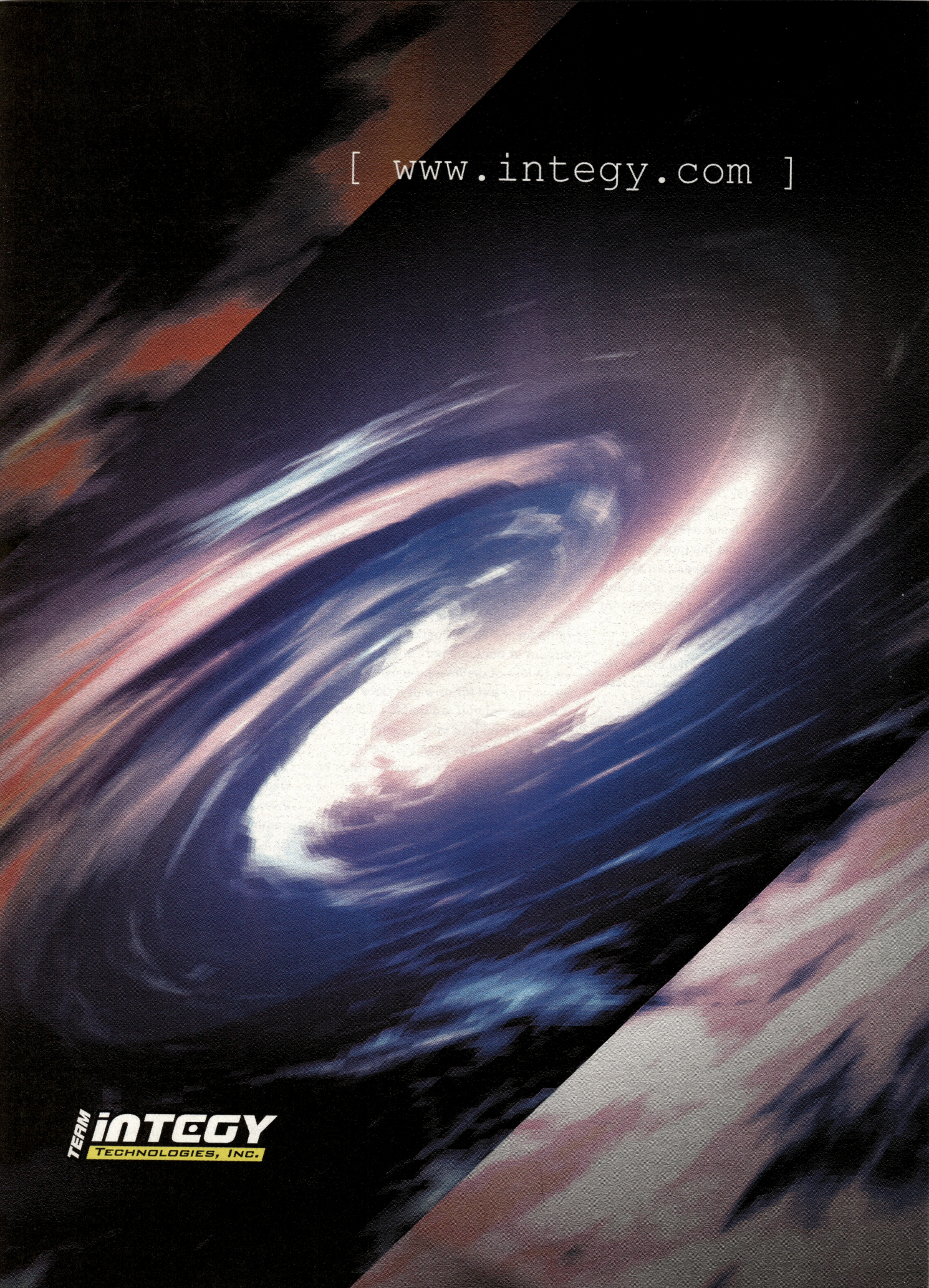
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A Little More Sucking Up Please!

Yo,
I just wanted to let you know what a great article your magazine produced in the January 2001 issue (HPI Nitro MT Racer review). It was the most complete article I have ever read on testing of an R/C vehicle. This is my first issue that I have picked up, but definitely not my last!!!

Furthermore, I posted on the "HPI Truck Forum" what a helpful article your magazine printed. This forum discusses many items that your article detailed. I found it very helpful, and I was sure that the rest of the MT owners would too. Check it out if you like. The truck forum is one of the best I have seen... very helpful. Thanks again,
Brian Kiser
via the internet

Stop, you're making us blush.

Are 5 Toes better than 3?

Dear *Xtreme*,
I have a question. 3° of toe, 3° of anti-squat. The toe-in angle is for better cornering traction and high-speed stability. The anti-squat angle counters the effect of weight transfer under power by limiting the rear of the chassis to go down in the rear. Would 5° of anti-squat induce better steering under power? (ignoring rear traction). Since rear hub carriers are adjustable on my T3 when should I use zero toe-in, or should I use it at all?
Thanks,
Dave Cowger
Seattle WA

Hi Dave,
5º of anti-squat would help give you more on-power steering. But, you'll lose traction through bumpy track sections. Most of the time 3º of toe-in will be perfect in the rear. But, as always, experiment. If you find your truck working worse then when you started – go back to the original setup. Good Luck.

It's All About the Benjamins'

Dear *Xtreme R/C*,
First off, I would like to say that your magazine is one of the best that I have read (keyword here is "read"). I have been heavily into R/C cars for about 2 years now and I really love it. I currently own a Traxxas Nitro Rustler with about $700 of hop-ups in it not including an engine. I have had the local cop use his radar gun on it once and it said that my car does around 55 wide open when I geared it like I did. I do a lot of jumping with my car too, I met the cop who shot my car with the radar gun when I had a ramp for the Nitro Rustler set up off the dugout at the local park (10 feet of air w/ 15 feet of distance). Anyway, enough about my stuff for now (If it does not bother any of you too much, I will try to talk my friend into taking some pics when I fire it up next so you can see this in action or put it in racers rides or something), I have a suggestion for some of the parts of your magazine. Most of us hobby level drivers do not have too much money to blow on our rides, so maybe when you test a kit or hop one up you could say in the black box with the stats how much total money was spent on your kit. My friends and I would appreciate this, so we could get a better idea of how money effects the total outcome of the test results. Just a suggestion from us readers; be kinda cool to see how much money you people dump into a car to race it.
If you would like to ridicule me for sending such a stupid-assed letter, My e-mail is: aj308win@yahoo.com.
Keep working hard and I'll buy your mag, but we need more women!
AJ
via the internet

Hi AJ,
Congratulations on spending $700 on Rustler hop-ups. It's good that hobby level drivers don't have too much to spend on your cars or else you'd have a $1500 Rustler. Thanks for the idea on the hop-ups. We'll try that idea in a Pit Stop from time to time. We'll leave the ridicule up to the readers.
Thanks.

Minute Pros, Minute Cons

Hi Mike:
With regard to this months editorial Insight (Issue 6.5). Your point is well taken and has been expressed many times over the years within our club. I really like the "tax bracket' analogy. Most people have to pay taxes but no one *has* to run Mod.

I remember when I was first attracted to 1/12-scale racing. We got to race for eight minutes not just four. Twice as much racing with only slightly more battery expense and the entry fee was the same. Adding a minute is a great idea. The batteries don't cost that much more and they will last at least until the next step in battery technology. It's RACING dude, step up or step back!

The bottom line is the racers have voted.
George Sellon

Dear Mike,
In last month's Insight you asked for comments on ROAR's new rule change. As someone who's been around R/C racing for almost twenty years I think I can speak with some authority. By increasing the race length in modified racing I think batteries will become a bigger issue and will force some drivers back down into stock racing. These drivers that should be in modified will be better drivers than those in stock and will end up winning. How would you like to be a stock racer who now has to compete with all these sand baggers who just dropped out of modified? Unfortunately I think that extra minute will hurt racing across the board.
Bill Stevens
via the Internet

Hello *Xtreme*,
I like the idea of having an extra minute. Batteries have gotten better and better. Since the premium paid for batteries

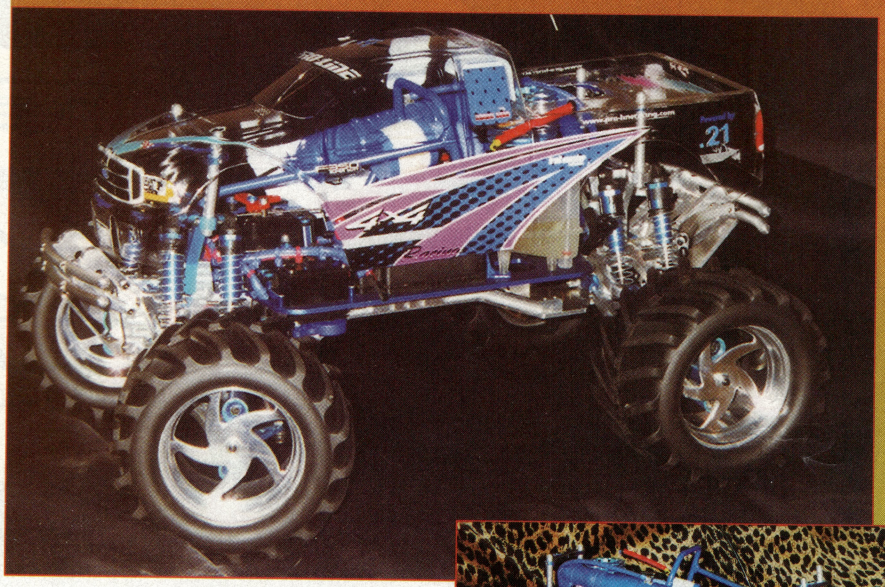
No body has correctly identified the movie reference last month.

The Pimp Daddy of All T-Maxx's

Xtreme,
These are picture of the T-Maxx of all T-Maxx's. I've taken it to the "Dirt", the Hemet (CA) track, although it never touched the dirt. I showed all the guys and they said it was the nicest T-Maxx they have ever seen! I've also taken it to many hobby shops, and they all said the same thing. I thought your readers would enjoy these photos.

It all started when myself and a couple of friends, whom also had T-Maxx's , would meet somewhere to go nitro. Each time we would look over one another's T-Maxx to see what new hop-ups the other person had and talk about it. I seemed to always be leading the pack but I still wasn't satisfied! So after going through an older issue of *Xtreme* and finding out all the cool hop-ups by different manufacturers, I decided to go ballistic and build the T-Maxx of all T-Maxx's! This is not a T-Maxx with a .12 or a .15, try a .21 with New Era's extended chassis! it really catches a lot of attention and has been a great R/C truck building experience. I hope you enjoy these pictures!

Mike Steele
Huntington Beach, CA





these days is for voltage and not run time I don't think the impact will be that bad. Drivers will just use slower winds to make time. I think the extra minute will only be good for racing.
Adam
via the Internet

We're Just Spineless

To bad you guys gave in so easily to Adam via the Internet (Issue 6.4, January 2001) about his problem with not enough T & A in your mag! Hey Adam, they make "special" magazines for that! I think the format now is great, professional and not smutty. This format is for serious extreme car hobbiests where a good amount of money is spent with your advertisers' products. If there is a lack of taste it infects your publication. There will no doubt be a different audience with less cash. If it's working, don't fix it!

Mike LaPoint
via the Internet

Hi Mike,
Thanks for the compliment – I think. But lighten up a little. The occasional trophy girl in a bikini is not a bad thing nor tasteless. Have fun. Thanks for reading.

List of Hop-Ups

Ofna Pico:
.21 Sport Engine

New Era:
Extended chassis
Motor mounts
Front & rear aluminum bumpers
Steel rollbar
Alloy front & rear body posts
Sway bar kit
Upper & lower suspension arms
Front & rear bumper supports
Sonic ripple pipe
High volume header
Rear shock tower
Shock springs
Front & rear skid plates
Aluminum bulkheads

Traxxas:
Aluminum pivot balls
Aluminum steering, shift servo mounts, & throttle servo mounts
Aluminum hex wheel hubs
Hardened anodized pivot balls

MIP:
CVD kits

Proline:
Ford F-350 body

Robinson Racing:
Spur gear w/bearings

GPM:
Alloy front and rear gear boxes
Alloy drag link plate and steering arms

Aero-Tec:
Aluminum rims

R/C Neon:
Head light, fog lights, brake lights

Trinity:
Front shock towers
Blue aluminum shocks

Futaba:
Servos

G&S
Steering servo saver

O'Donnell
20% racing fuel

Miscellaneous:
Steel braided gas lines
3PJ Super radio & PCM receiver

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1st Chris Bridgewater(TQ)
•JUNIORS•(9 of 10)
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1st STEVE BENTON



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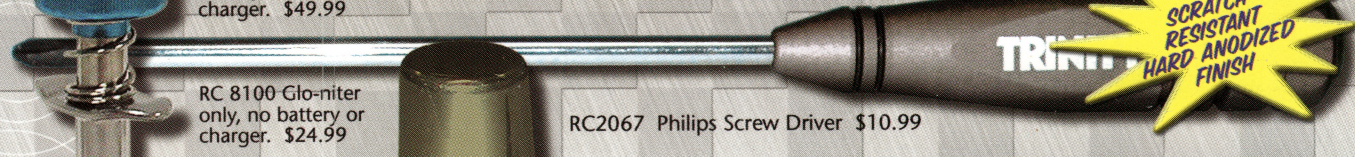

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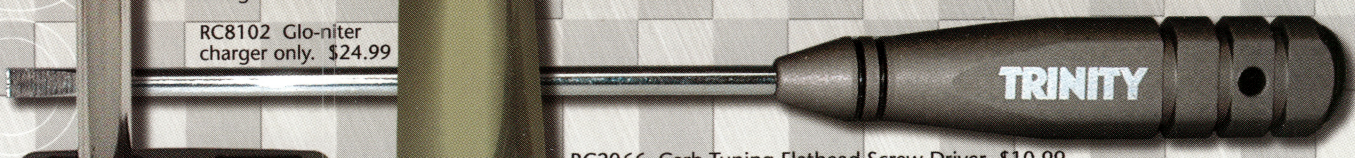

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