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PLUS:

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RC10T3 RTR

DuraTrax
MAX ST PRO

Tamiya
TB-01 Evolution

HOW-TO
Get A Charge Out of Ni-MH

RACE COVERAGE
Cleveland ROCKS!

HOW IT WORKS
NITRO ENGINE not making the grade?
Put It On Restriction

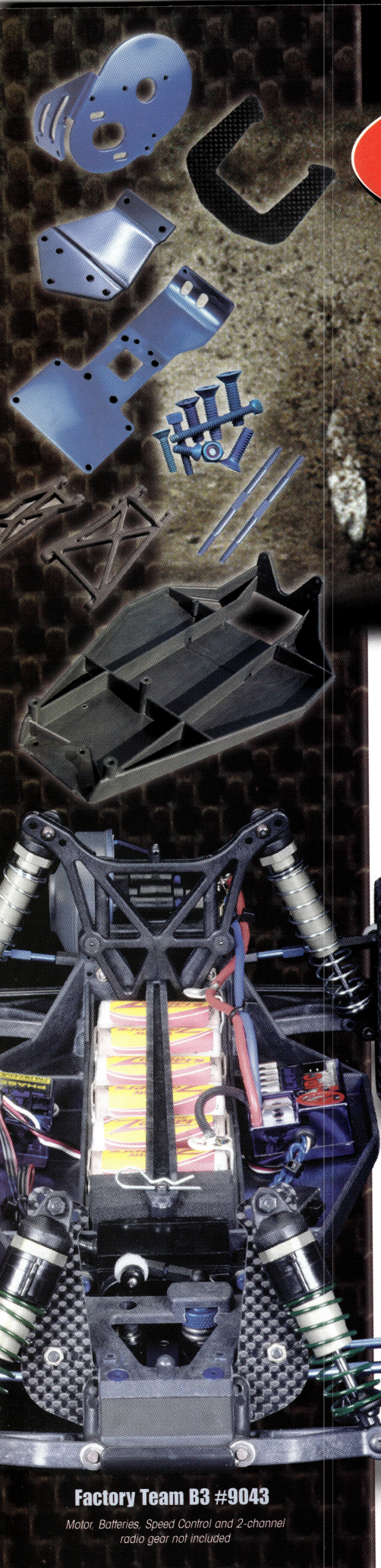
READY to RUN?



Racing *with* class. Tamiya's TB-01 EV
pg. 32

February 2001
A $3.99 CANADA $5.99
Issue 6.5

FACTORY Team B3





Fully Loaded, Ready to Rip!

Team Associated's RC10B3 buggy proved once again to be the "best on earth" by winning the 1999 IFMAR 2WD Offroad World Championship... the RC10's sixth IFMAR World Championship, and Team Associated's sixteenth World Championship. To commemorate this unequalled track record, Team Associated introduces the ultimate "factory ride"... the RC10B3 "Factory Team" Edition.

Fully loaded with all the most-asked for options, the Factory Team Edition B3 comes complete with all the features you'd expect from the reigning IFMAR 2WD Offroad World Champion. Both the Factory Team and the new updated Team B3 kits feature Pro-Line's lo-profile Deja-Vu Tu body, wide-body wheels, and racing compound tires.

The top offroad 2WD buggy in the world today, it's Team Associated's RC10B3 "Factory Team" Edition.



Over $100 Worth of UPGRADES!

Factory Team B3 #9043

FEATURES:

- Sealed Ball Bearings
- Factory Blue Titanium Turnbuckles
- Factory Blue Chassis Plate, Motor Mount and Front Kickup
- Full Graphite Chassis, Shock Towers, Suspension Arms... and more.

Send for your FREE RC10B3 Catalog

RC10B3 Team Kit #9032

FEATURES:

- Sealed Ball bearings
- New Lo-Profile Deja-Vu Body
- Hard-Anodized, Teflon-coated Shocks
- Pro-Line Tires, One-piece Wheels

NEW UPDATED!

Factory Team B3 #9043

Motor, Batteries, Speed Control and 2-channel radio gear not included

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For Better Performance

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Quicker Spool Up Than Standard
Double Winds For Touring Cars



Trinity Off-Road Shoot Out
2wd, Matt Francis
Truck, Adam Drake
4wd, Brian Kinwald

US Indoor Championships
1/12th, David Spashett
Touring, Josh Cyrul

Reedy Race Of Champions
Brian Kinwald

Florida Winter Champs
Truck, Matt Francis

Trinity On-Road Challenge
Touring, Josh Cyrul

Cactus Classic
2wd, Matt Francis
Truck, Brian Kinwald
4wd, Brian Kinwald

ROAR Carpet Nationals
1/12th, Josh Cyrul
1/10th, Josh Cyrul
Touring, Josh Cyrul

1/12th Euro Champs
David Spashett



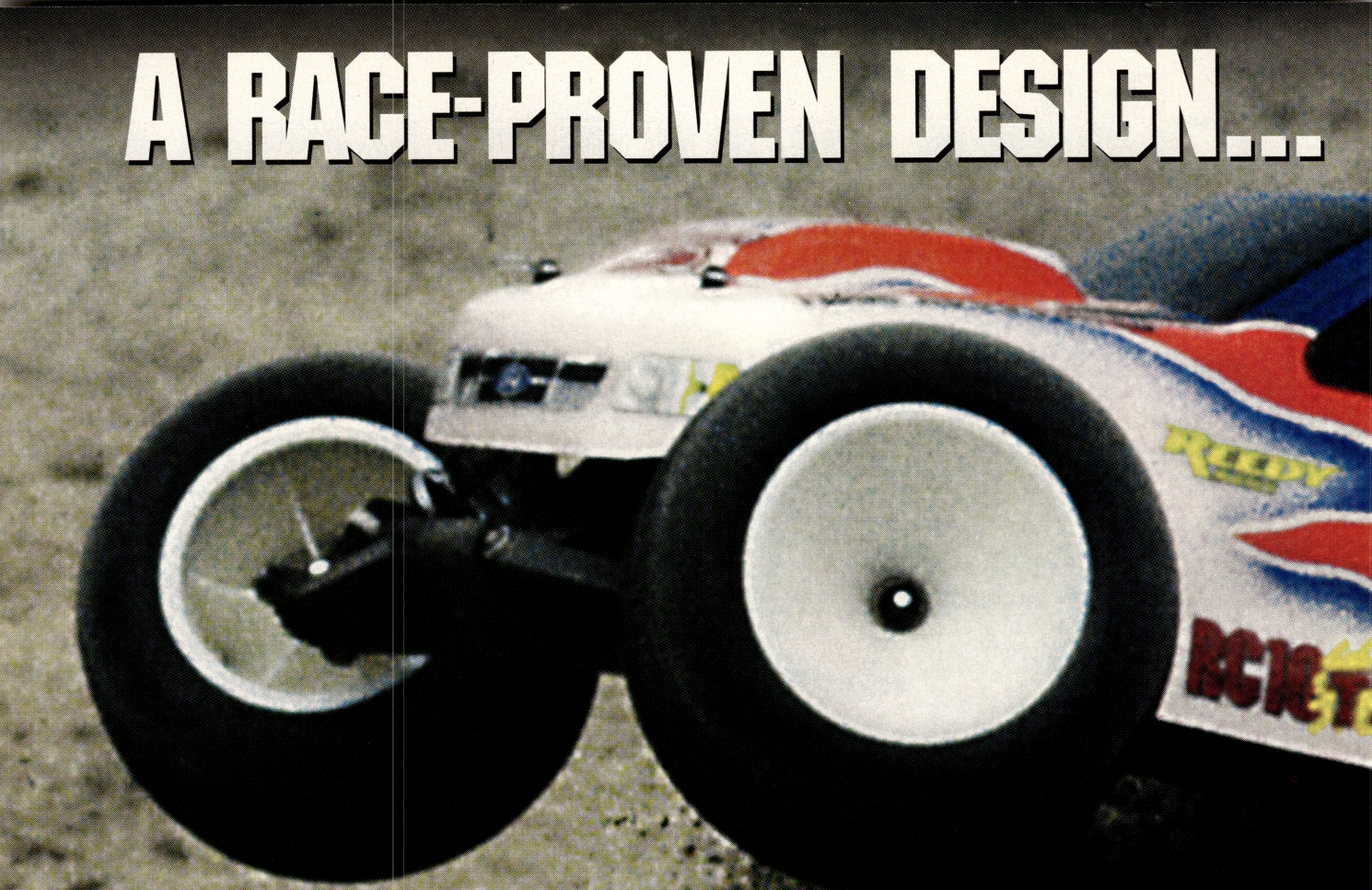


Josh Cyrul and Barry Baker celebrate their 1-2 finish in Modified Touring at the ROAR On-Road Nationals

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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!

THE RC10T3 RTR Features...

LRP

- Racing-compound Tires on one-piece racing wheels
- Electronic Speed control with reverse!
- Rugged steel Turnbuckles
- Adjustable caster, camber, & toe-in
- Powerful 20-turn motor
- Two-channel radio system and servo installed
- Blue anodized Aluminum oil-filled shocks.

T3 Ready to Run shown equipped with Reedy 6-Cell Battery Pack, NOT included.

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

RC10T3: Three-Time NORRCA World Cup Champion!



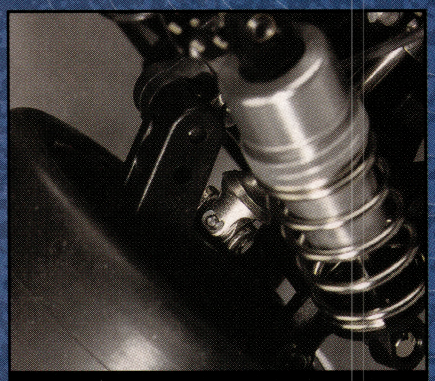
RC10 T3 RTR

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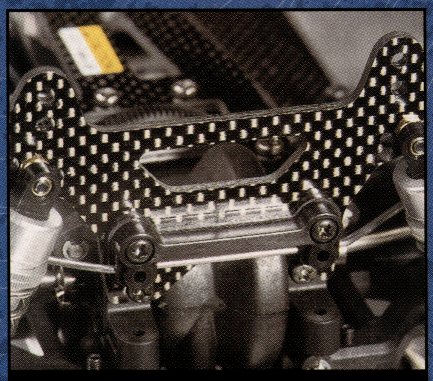
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NATURAL

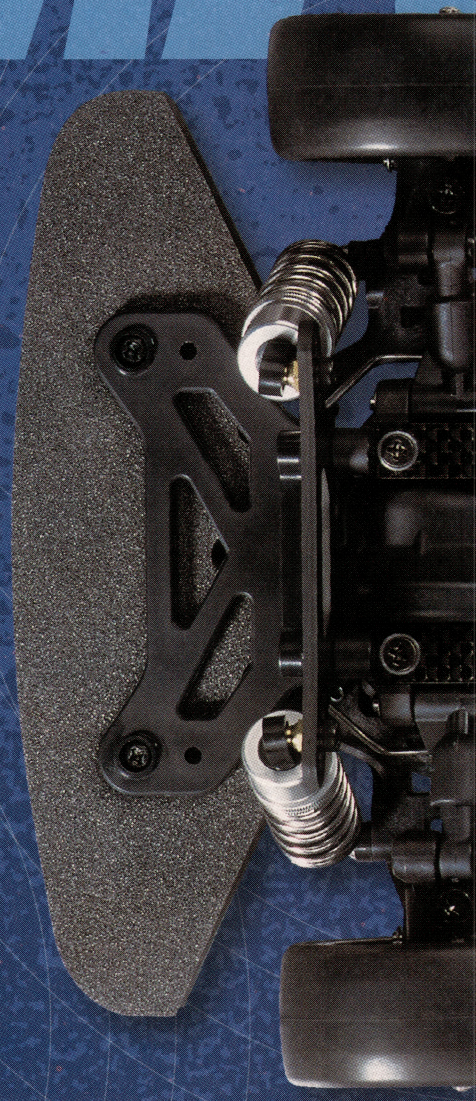
SURVIVE AS



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

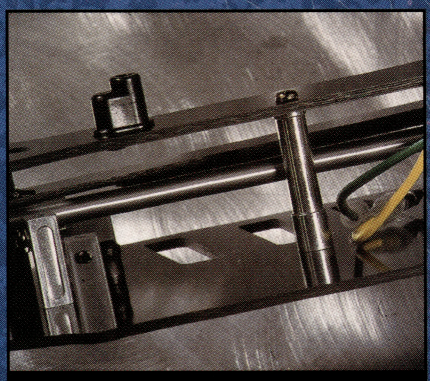


Carbon fiber shock towers are lighter and stiffer, providing better support for your car's suspension.

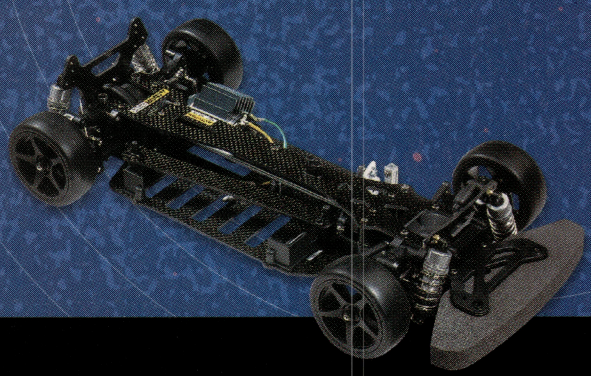




New compact differentials allow for a lower center of gravity for quicker response and razor sharp transitions.



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

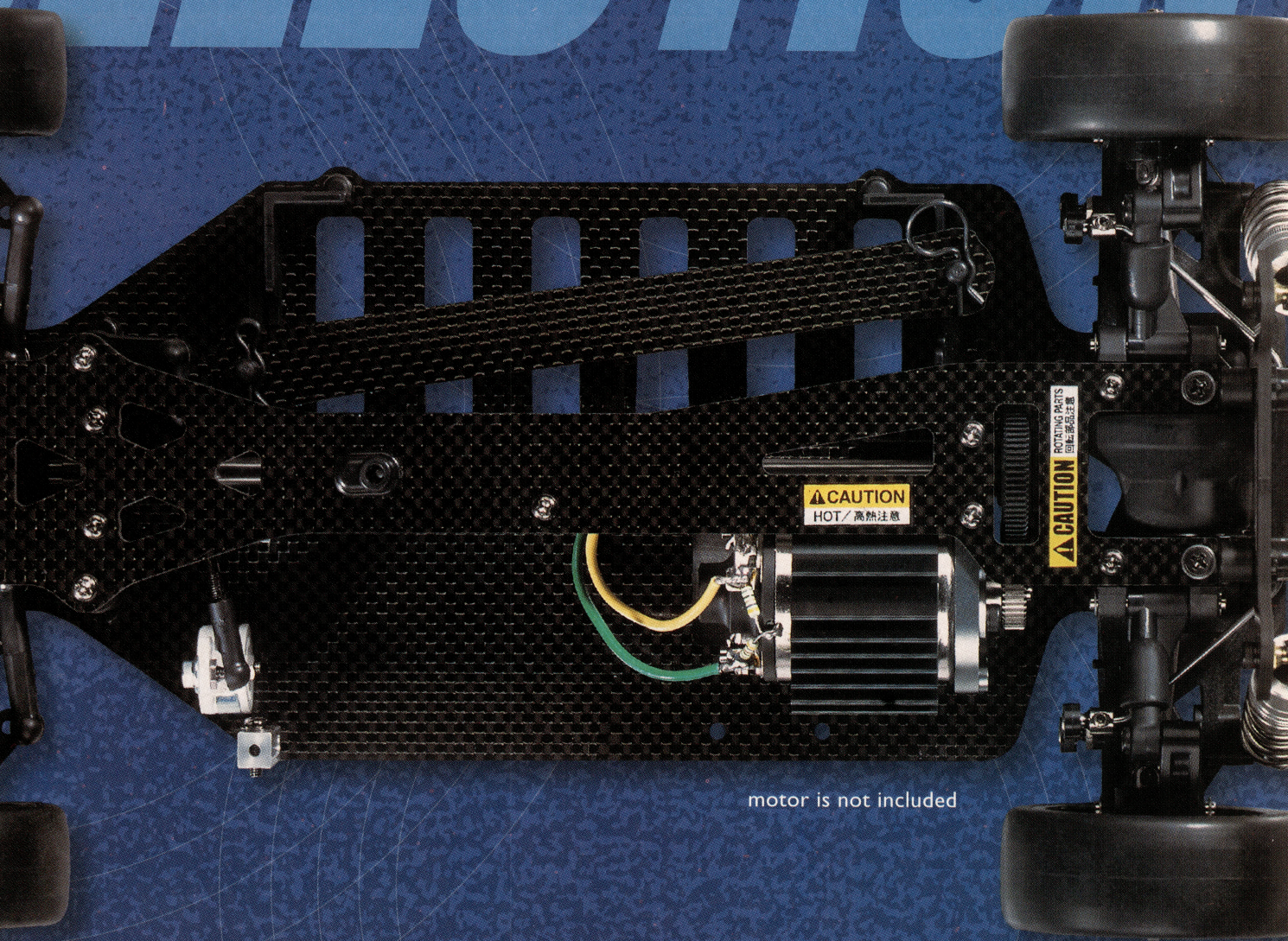


1/10 RC TB EVOLUTION CHASSIS

TB Evolution chassis **kit number 58267**

SELECTION

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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- Performance monster truck
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- Ball bearing transmission
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- Painted & trimmed body
- America's favorite Ready-To-Run® electric monster truck
- Available RTR with electronic or mechanical speed control



Actual ProGraphix Painted Bodies Shown!



NEW Rustler and Stampede With Electronic Speed Control

Powerful XL-1 Electronic Speed Control



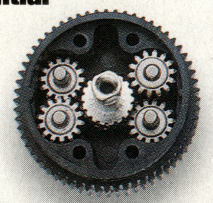
The XL-1 electronic speed control provides smooth, fully proportional control in both forward and reverse. Efficient transistors provide more speed and longer run times. It's standard on models 3606 Stampede and 3706 Rustler.

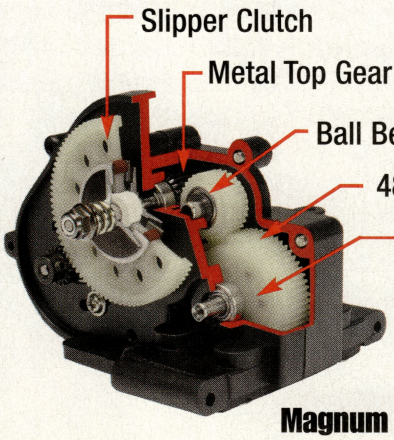




Stinger™ 20-Turn Modified Motor

Planetary Gear Differential





Magnum 272 Transmission



Oil-Filled Ultra Shocks



BEST SELLING ELECTRIC READY-TO-RUNS®

RUSTLER

- 2WD stadium race truck
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- Chrome wheels
- Slipper clutch
- Ball bearing transmission
- Bellcrank steering system
- Painted & trimmed body
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- Available RTR with electronic or mechanical speed control

Traxxas radio controlled models are option-packed for drivers who demand a high level of performance and style. There's no assembly, no painting, and nothing else like them. Each is equipped with the most popular options, such as a slipper clutch, ball bearings in the transmission, and a Traxxas exclusive ProGraphix™ painted body, in up to 6 hot colors. Rustler and Stampede are also available from the factory with the smooth driving XL-1 Electronic Speed Control. It's an unbeatable combination of style and performance. Log on to Traxxas.com to get all the details, colors, and performance specs for each model.

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- Ball bearing transmission
- Bellcrank steering system
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- Rigid nylon composite chassis
- Long travel suspension with X-tra long rear shocks
- Smooth oil-filled Ultra Shocks™



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Xtreme R/C Cars

Issue 6.5 • February 2001

www.xtremerc.com

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Other stuff in this issue:

Lots of cool cars, a couple of very pretty ladies, international film stars, bad jokes, R/C freestyle, Mad Maxx and much, much more.

Cover Photos by: Elliot Crabtree



We've got the Dirt Girls. What do you got?

The Winning Team



XX-4 WORLDS EDITION

'99-'2000

- IFMAR WORLD CHAMPION
- ROAR NATIONAL CHAMPION
- EURO-CHAMPION



XXX

'99-'2000

- MODIFIED NATIONAL CHAMPION
- STOCK NATIONAL CHAMPION



'2000

- MODIFIED NATIONAL CHAMPION
- STOCK NATIONAL CHAMPON



XXX

'2000

- NORRCA NATIONAL CHAMPION
- ROAR REGIONAL CHAMPION



XXX NT

NOW APPEARING AT A HOBBY SHOP OR TRACK NEAR YOU.

TEAM LOSI

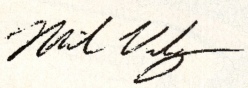
Always Racing Towards The Future.

Gimme just a Minute!

It seems like every time you open up an R/C magazine these days you're reading about a new battery about to hit the market. With each new cell that comes out it seems like the performance bar gets raised just a little bit. Sure there are large jumps in performance from time to time, but overall the increase in performance has been largely incremental. Valid comparisons can be made between this constant change in the battery landscape and the level of performance in the computer industry. Today two grand buys you a computer ten times faster than it would have three or four short years ago. Although the price hasn't come down much, what a dollar buys today is quite a bit more than it did a year or two ago. Thanks to this increase in technology, battery performance has played a smaller and smaller role in competitive racing. There used to be a time when the conventional wisdom said that you had to have the absolute best batteries in order to compete at your local club race. I personally disagreed with that idea, but that was conventional wisdom. That thinking has kind of gone by the wayside thanks to longer and longer battery capacities that made "dumping" a non-issue.

Recently ROAR had on their general ballot the option to make off-road modified racing, five minutes in length rather than four minutes (stock racing has been five minutes in length for some time now). ROAR, if you don't already know, is the most recognized sanctioning body in the United States. Most local club tracks adhere to the guidelines for racing set by ROAR. In the interest of full disclosure, I must let everyone know that I am on the ROAR Executive Committee, which is kind of like the Supreme Court of ROAR. With that said, the choice of longer race times was posed to the membership and the vote was in the affirmative to increase the length of racing. I think this lengthening of modified electric racing will once again make batteries a much bigger issue. I fear this could have a detrimental effect on the number of racers participating in electric modified racing. I hope I'm wrong. I like to use analogies whenever they make sense so I'll use this opportunity to throw one out. When the choice of longer racing was thrown out there, it was kind of like your boss offering you a small raise. At first glance you'd say, sure, who wouldn't? But that small raise kicks you into a higher tax bracket, and at the end of the day you've got less to show for it. I think it's going to be kind of like that in racing thanks to this vote. Modified racers will get another minute of racing, and three minutes total for a race night, but at the expense of keeping on the edge of battery technology once again.

Like I said, maybe I'm wrong, this is just my opinion. Maybe this will slow things down. Maybe those hot 8- and 9-turn motors won't make the five-minute cut even with the best batteries. What do you guys think? Is an extra minute in modified racing a good thing, a bad thing, or will it have little or no effect on things? Email me at mikev@xtremerc.com. I'll share the most well-put opinions in Xtrastuff as soon as we can. So let your voice be heard.



Mike Velez
Publisher/Editor/Racer

Issue Note:
In this month's issue you'll notice small Pit Stop sidebars throughout the magazine. These new Pit Stops will be included in reviews, features, and columns. The idea is to pass along some added information that is pertinent to whatever you might be reading about. We hope these Pit Stops will make reading *Xtreme R/C Cars* more enjoyable, entertaining and information packed.

Xtreme R/C Cars

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

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PULSE CHARGER

DTXP4100

DIGITAL PULSE CHARGER

DTXP4130





DELUXE PULSE CHARGER

DTXP4120



MINI PULSE CHARGER

DTXP4110

PEAK CHARGING, DISCHARGING AND CYCLING FOR NiCd AND NiMH BATTERIES!

(FOR LESS THAN SOME NiCd PEAK CHARGERS!)

If you regard computerized cyclers as expensive overkill, and sport chargers as features-challenged, an IntelliPeak Pulse Charger should be your next charger.

IntelliPeaks not only peak charge, discharge and cycle NiCd packs, but do the same for NiMH packs as well, using either AC or DC power. Choosing from fast charge, discharge and two cycling modes (single or non-stop) means pushing a button; adjusting fast-charge current requires turning a dial. Color-coding around the dial shows safe rates for NiCd and NiMH cells; pulsed (not linear) charging keeps your packs cool as they're packed full of power.

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That gives you a pretty good idea of what IntelliPeak Chargers can do for you. For an even better idea (and more details), see the DuraTrax web site at **www.duratrax.com**. And for the location of the dealer nearest you, please call 1-800-682-8948 and mention code number 2337B.

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HPI Power Fuel is specially designed for R/C cars or trucks. The custom-formulated 14% synthetic/castor oil blend delivers cool running, easier re-starting, and extra engine life. And, now you can find it in both gallon and quart bottles. Choose 20% nitro for break-in and normal driving. If you want a little extra power for on-road racing events, grab some 30% Nitro and hang on! Either way, HPI Power Fuel is the official HPI factory recommended way to keep your engines running cool and smooth. Give HPI Power Fuel a try, you'll be glad you did!



GALLON SIZE

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#74350 HPI Power Fuel 30% Nitro (1 Gallon)

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#74318 HPI Power Fuel 20% Nitro (1 Quart)
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GLOW PLUG IGNITER SETS

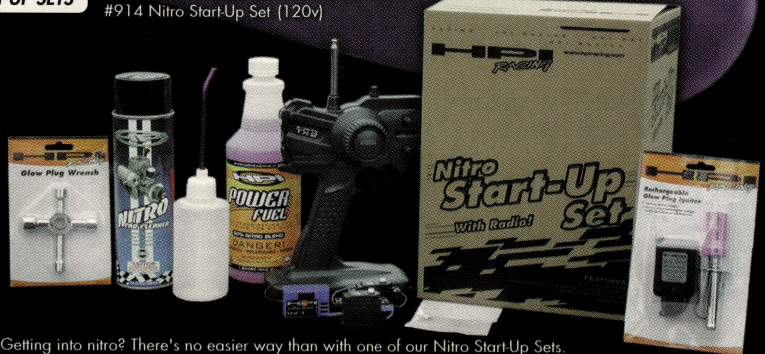
#74105 Glow Plug Igniter
#74108 Pro Glow Plug Igniter
(both sets include an AC charger)



HPI now offers two new glow igniters that get you started quickly and easily. Both of them come with a rechargeable battery for the hottest spark possible, and an AC charger. The long-neck design allows you to access the glow plug without removing the car body. The Pro model (#74108) has a built-in meter to show battery level.

NITRO START-UP SETS

#921 Nitro Start-Up Set with Radio (120v)
#914 Nitro Start-Up Set (120v)



Getting into nitro? There's no easier way than with one of our Nitro Start-Up Sets. Available with or without radio, each set has a glow plug wrench, Nitro Car Cleaner, a fuel bottle, a quart of HPI Power Fuel, a spare glow plug and one of our excellent rechargeable glow igniters.

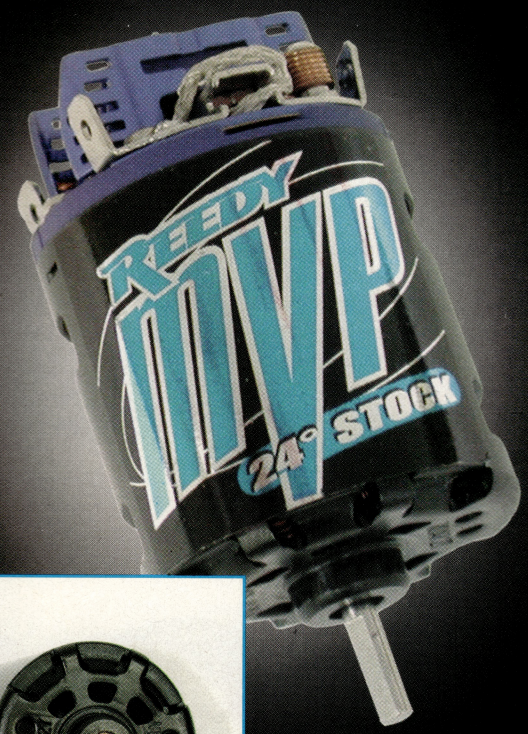
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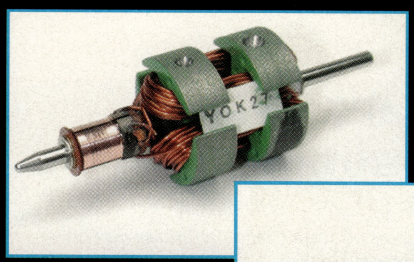
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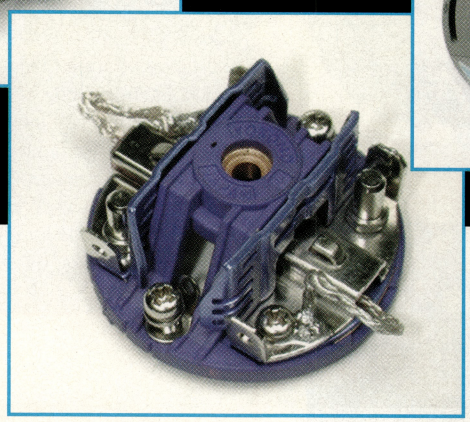
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Most Valuable Powerplant?

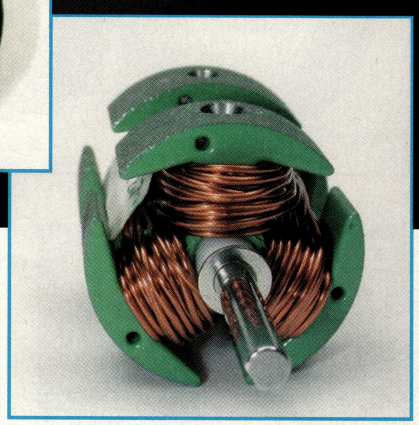
In Chicago we got a look at Reedy's new Titan stock motor. Since then Reedy has changed the name of that new Powerplant to the MVP. (Traxxas had already used the "Titan" moniker on their new E-Maxx motors.) Reedy's new MVP is designed to provide more torque then their popular Rage Type-R. The new MVP is a 24º stock available only in the rebuildable format. The new motor derives some of its increase in power and torque from the new "C4" magnets. Reedy claims the new magnets are at least 15% stronger than any other stock motor on the market. The armature uses a split-rotor design. The motor can has new venting routes to pull more air through the motor when in use. Lastly, the new MVP features a completely redesigned endbell that comes molded in blue to match the Factory Team Blue anodized heatsinks. The MVP is designed to meet all ROAR and NORRCA rebuildable specs. The MVP will be available in a standard version (#298) and a MVP Stock Plus (#299) that will come complete with a dyno sheet, serrated competition brushes, and is dyno tuned. Look for a complete test next month.











She might have that "GI-Joe kung-fu grip..."

But, she doesn't have the Death Grip. Death Grip is the new line of touring car traction conditioners from Trinity. There are three formulas available. One is a rubber cleaner used to clean rubber touring car tires before applying the actual traction compound. The next is a rubber formula that's used for actually softening the tire rubber and increasing traction. The last of the Death Grip line is the foam formula that's for foam touring car tires. Not for your tires, but equally deadly is Black Death.a new brand of comm drops from Trinity. Every year it seems Trinity updates there comm drop formula. This is the latest update.



Check out America's favorite trophy girls, the Dirt Girls in this month's Xtrastuff. Tune to page 113 to see more.

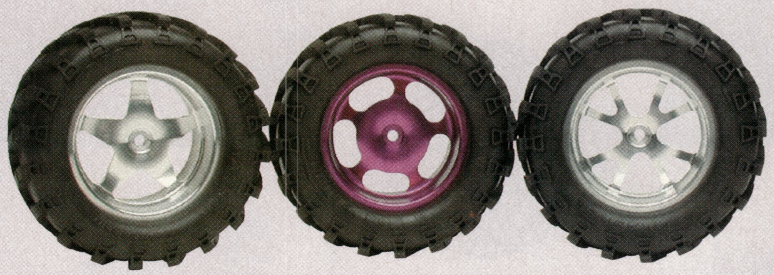


Did you get the Death Grip reference? It's kind of *Dennis Miller.*

HARDCORE = T-MAXX

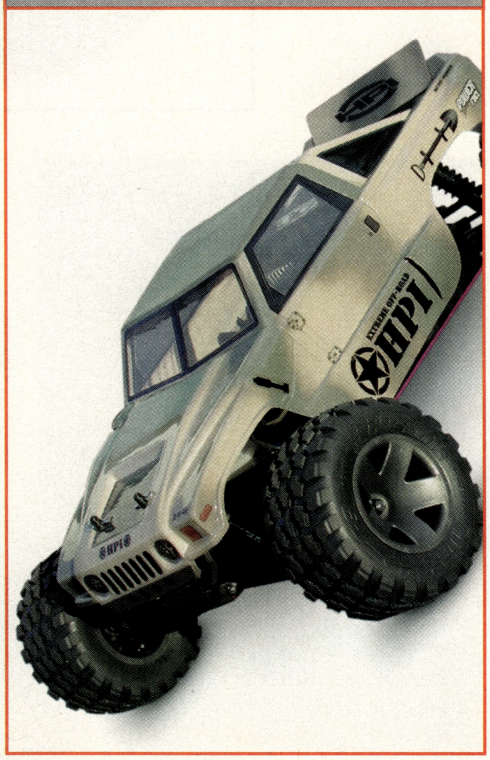
Make your E-Maxx or T-Maxx Hardcore from the ground up with three new wheels coming from Hardcore Racing. There are three different designs to start. A five spoke design called the Pounder, the next is a dish type design called the Stomper, the last design is our personal favorite called the Matrix. Each wheel is machined from 6061 T6 billet aluminum stock. All three designs will be available in silver, purple, blue, and green. Each are sold in a set of four. No one ever said quality was cheap, the wheels are sold in sets of four with a suggested retail price of $210. Look for additional designs from Hardcore in the not too distant future.





Start your engine scum bag!

You'll think you're a Marine after picking up the new MX-1 Truck body (#7161). It's for the all RS4 MT models and the Nitro Rush. The MX-1 is kind of like a Hummer pick-up. The new body is out now and comes with military style decals featuring a pick, shovel, rope, toolboxes, and more. Window masking is easy thanks to pre-cut vinyl window masks.



Got Traction?

DuraTrax is looking to corner the market on everything, accessories, car kits, charger, batteries, now ad traction compound to the list. new Renue-Grip (DTXC2469)comes in an industrial size 8.5oz bottle. Although it doesn't come with any type of application device we used an old toothbrush. When tested on some older off-road tires we had lying around, Renue-Grip did a pretty good job of softening them up and providing us with a little more traction.



Winning Hop-Ups

With the successful introduction of the Kyosho MP7.5 (we consider winning the Worlds as successful), you knew it wouldn't be too long before after market manufacturers would jump on board with some hop-ups of their own. One of the most popular off-road after market makers is MIP. They've gone with the CVD treatment for the MP7.5 along with shock bodies and the 4-in-1 clutch. All these items should be in stores now.



Favorite Vietnam movies: Full Metal Jacket, Platoon, Apocalypse Now.

Your high-tech ticket to "A" main glory.

Ultima RB Type R
Took 3 of the top 6 places at the 2000 NORRCA Modified Nationals!

KYOSHO
THE FINEST RADIO CONTROL MODELS



ULTIMA RB™ Type R



Lots of off-roaders can claim to be local legends. But to compete against the very best — and WIN — requires serious engineering that goes above and beyond normal expectations. The kind of technology you'll find on Kyosho's EP Ultima RB Type R.

This is no ordinary electric buggy. Kyosho has incorporated virtually every high-performance option available, resulting in a thoroughbred racer that will do you proud in the heat of top-level competition. It starts with a three-piece modular, bathtub-style chassis that absorbs major impacts. A centerline design positions the motor for optimum balance and a lower CG, so you'll enjoy handling like never before. The one-piece wheels and foam-lined tires are made by Pro-Line® — one of the top names in R/C components — and are attached to long travel FRP suspension arms that hold the wheels securely to rough roads.

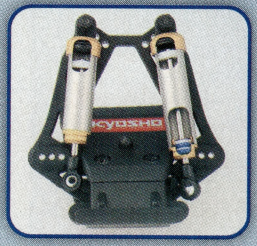
And it doesn't stop there. The EP Ultima RB Type R also features a large capacity ball diff with twelve 3/32" balls, for smooth performance and easy cornering. Adjustable tension on the servo saver, along with a transmission that uses a 48 pitch, pinion and spur gear to minimize power loss.

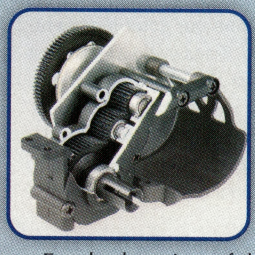
When you put it all together, you've got a 2WD terror that's the perfect match for your dedication to being the best. If you want to get on the fast track to the winner's circle, get the EP Ultima RB Type R racing buggy from Kyosho.

Specifications — KYOC0120
• **Length:** 14.7 in (373mm) • **Width:** 9.8 in (249mm) • **Height:** 5.7 in (145mm) • **Wheelbase:** 10.5 in (268mm) • **Front Track:** 8.3 in (212mm) • **Rear Track:** 7.6 in (195mm) • **Ground Clearance:** 1.2 in (30mm) • **Approx. Weight:** 3.4 lb (1540g) • **Requires:** 2-channel radio, motor, speed control, battery & charger

TC PRO SHOCKS
TWIN CAP PRO SHOCKS

The newly designed, large capacity Twin Cap Pro Oil Shocks are Teflon®-coated for durability and smooth operation. You can select pressure/non-pressure settings for excellent dampening on any track condition.





TR-PRO
Triad Pro Transmisson

Even with its compact size, the highly precise TR-Pro transmission offers tremendous strength and efficiency. The included slipper clutch — a super hop-up that's standard equipment on the Ultima RB Type R — can be adjusted without removing its protective cover.

It's the high-tech machine that will meet your high expectations!

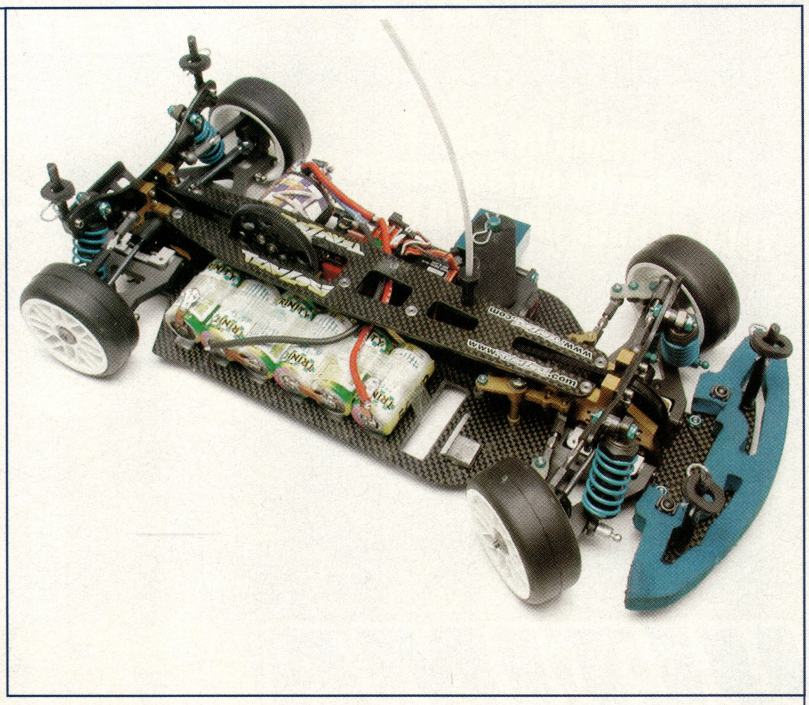
For the location of the dealer nearest you, please call 1-800-682-8948 and mention code number 2336S.

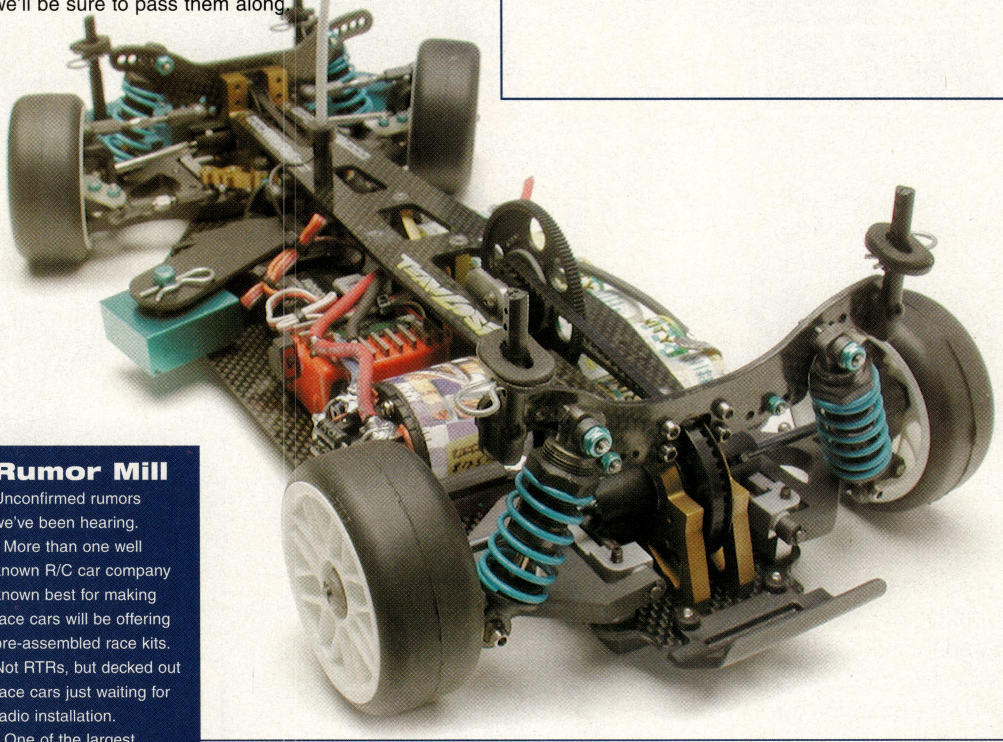
www.kyosho.com

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Secret Weapon Exposed

Back in the December issue we were the first magazine in the world to show you pictures of Team Losi's up coming next generation touring sedan. We've gotten our hands on some much better pictures and thought we'd might give you a better look. Keep in mind the final production version may look a lot different but the geometry and basic layout will more than likely remain the same. We expect the sheet graphite pieces will be replaced by molded composite pieces. The arm angles are unique on this car as opposed to the older Street Weapon. The single belt drive system is something completely new to touring cars. Although other companies have used single belts before, never has one been used without any other type of gear reduction. Check out the sway-bar mounts coming off the front shock mounts – pretty cool huh? Let's hope a production version hits store shelves by summer. That seems to be a safe bet at this point in time. As more production complete photos become available we'll be sure to pass them along.





Rumor Mill

Unconfirmed rumors we've been hearing.

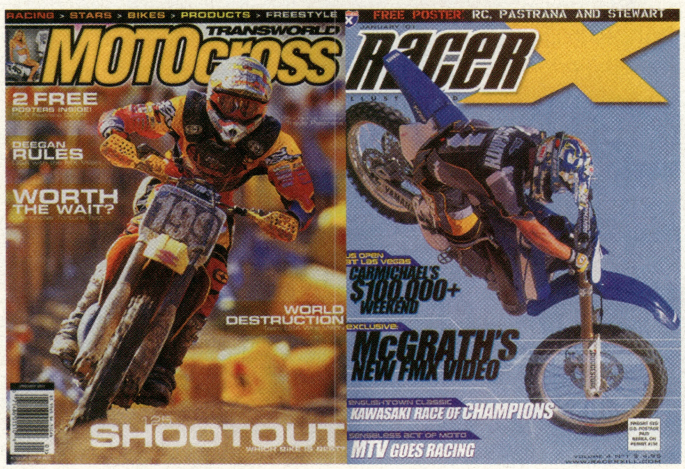
- More than one well known R/C car company known best for making race cars will be offering pre-assembled race kits. Not RTRs, but decked out race cars just waiting for radio installation.
- One of the largest motor/battery manufacturers might be buying out another. If this happens look for some pro-drivers to shuffle around from team to team.
- One of the most well known American nitro off-road racers is changing teams and might be coming out with a complete line of tires of his own.

Remember, these are just rumors. As soon as we get confirmation on any of these we'll fill in the blanks and make it official. Just remember you read about it here first.

RC = MX?

Some in the business say that R/C cars and motorcross go together. If that's true you'll love the newest MX magazine to hit the scene. It's from our good friends at Ride Publishing. *Transworld Motorcross* is kind of like the *Xtreme R/C Cars* of MX. It's packed with race coverage, product tests, killer photography, how-to's and beautiful women. For more info go to www.transworldmx.com.

Also, check out our other favorite MX magazine *RacerX Illustrated*. Lots of interviews, great stories, and race coverage. Check them out at www.racerxill.com



Anyone who thinks women gossip more than men doesn't know the R/C biz.

1/8 SCALE
4WD GAS POWERED
RACING BUGGY

MBX-4R

NEW



● Dimension ●

Length	: 480mm	Tread(F/R)	: 266/266mm
Width	: 307mm	Gear Ratio	: 10.95:1
Height	: 182mm	Drive	: Shaft Drive 4WD
Wheel Base	: 326mm	Weight	: 3390g

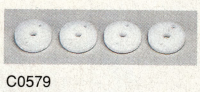
● Features ●

●3 Differential Shaft Drive 4WD ●4 Bevel Gears ●Steel Conical Gear ●Steel Spur Gear ●Differential Case (Nylon)
●Separate Al.Suspension Mount ●F/R Lower Arm ●Front Universal Joint ●F/R Anti-Roll Bar ●F/R Tension Rod
●Double Disk Brake ●F/R Damper w/Dust Rubber ●F/R Damper Spring ●A70-75(T6) F/R Damper Stay
●Al.Engine Mount ●A70-75(T6) 1/8 Inch Chassis ●3-pcs Clutch & Flywheel ●Fuel Tank w/Filter ●Fuel Tank Guard
●Fuel Filter Holder ●Fuel Pipe Holder ●Air Filter ●Box type Receiver Case ●Stone Guard ●Battery Holder for
6V5N-600mAh Receiver Battery ●Adjustable Wing Stay ●Nylon Wing ●Light-weight Spoke Wheel ●Ball-raced

MBX-4RR OPTIONAL PARTS



C0184
Rear Anti-Roll Bar ϕ 2.8mm



C0579
Damper Piston ϕ 1.3mm



C0568
Damper Cap

C0569
Damper Bush

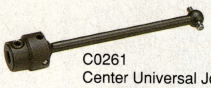
C0570
Steel Damper Mount

NEW

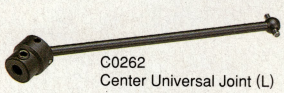
UNIVERSAL JOINT for MBX-4RR



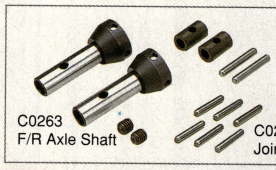
C0260
F/R Universal Joint Set



C0261
Center Universal Joint (S)



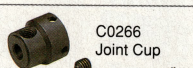
C0262
Center Universal Joint (L)



C0263
F/R Axle Shaft

C0264
Joint Shaft

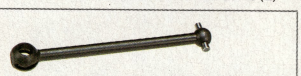
C0265
Joint Pin



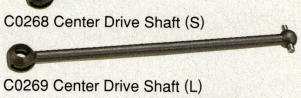
C0266
Joint Cup



C0267 F/R Drive Shaft



C0268 Center Drive Shaft (S)



C0269 Center Drive Shaft (L)

1/10 SCALE
GAS POWERED 4WD TOURING CAR

NITRO MTX-2

CHASSIS / CHASSIS With MT12 ENGINE KIT

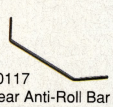
MTX-2 OPTIONAL PARTS



T0702 Al. Engine Mount



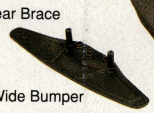
T0116 Anti-Roll Bar Link Parts



T0117
Rear Anti-Roll Bar ϕ 2.0



T0120 Al. Rear Brace

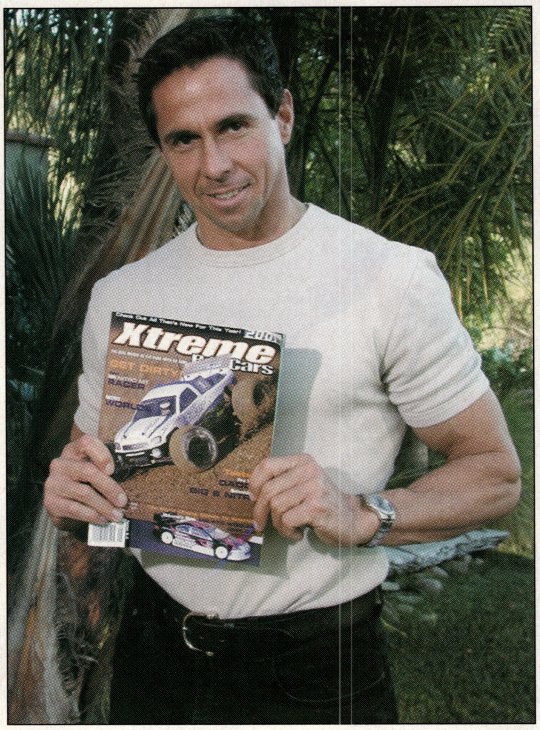


T0405
Front Wide Bumper

T0121 Al. Wheel Hub

MUGEN SEIKI Racing®

Mugen Seiki Racing Ltd.
20914 Bake Parkway Suite 106
Lake Forest, CA 92630
Phone: 949-707-5607 Fax: 949-707-5614
www.mugenseiki.com
support@mugenracing.com



What does international film star Peter North read when he's not *hard* at work? You guessed it. Xtreme R/C Cars magazine.

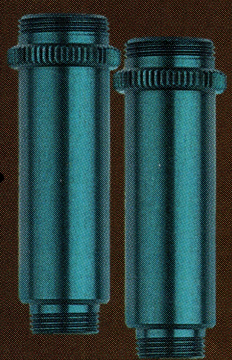
Enduro or Speed, Take Your Pick

Just in time for your new E-Maxx SMC Batteries introduces the Speed Maxx and Enduro Maxx battery packs. The Speed Maxx uses 2000 mAh Ni-Cads while the Enduro Maxx uses 3000mAh Ni-MH cells. The new packs are sold 2 to a pack. The Speed Maxx batteries retail for $84.95 while the Enduro Maxx packs retail for $134.95. Look for them in stores now.

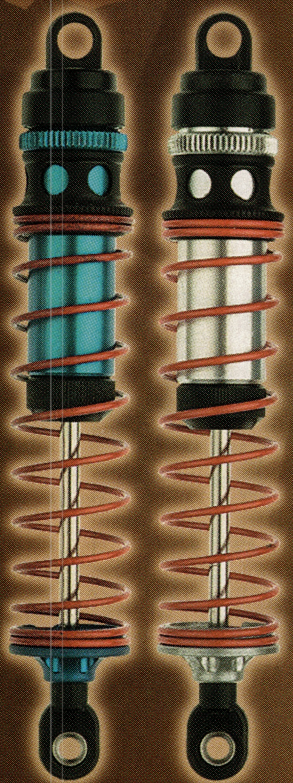


New Traxxas Aluminum Shock Components Work With Your Stock Parts!

T-Maxx Blue Shock Bodies



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

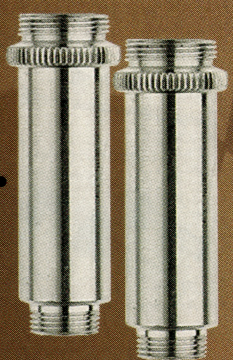


Aluminum Upper Spring Retainers



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



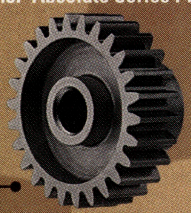
Machined, blue anodized aluminum retainers, sold in pairs. RRP 8516

Silver Lower Spring Retainers



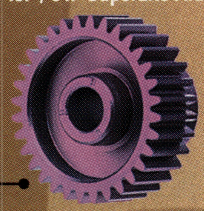
Machined, natural silver aluminum retainers, sold in pairs. RRP 8515

48P Absolute Series Pinions



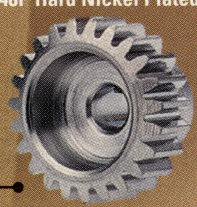
Super hard, lightened and cut with unmatched precision. Great with any spur, but with an Absolute spur, even on-off noise is gone! Available In 48P in 16T thru 28T sizes. RRP 1416 - RRP 1428.

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

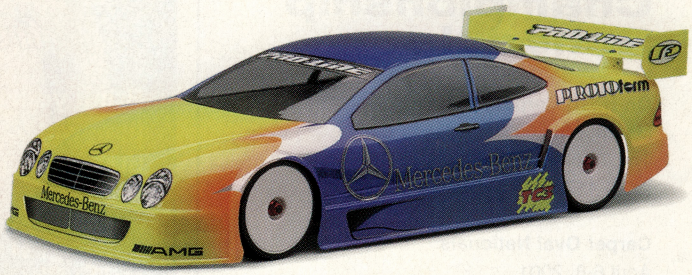
RRP

www.robinsonracing.com

ProtoForm/Pro-Line Bodies

Just in time for the new year Protoform is unleashing two new 190mm touring sedans. The first is a Mercedes CLK DTM which features all the modifications found on the full size. The body comes complete with add on wing, mounting hardware, window masks, and a detailed sticker sheet. Also new is a 2001 BMW 3 Series sedan complete with all the same accessories as the Mercedes. The BMW fits all ROAR, NORRCA and IFMAR specs and is ready for racing.

Drop the kids off at soccer practice with this monster Excursion from Pro-Line for the T-Maxx and E-Maxx. The Excursion bolts on and looks beautiful, complete with detail decals and window masks.









1999 World Cup and National Champion

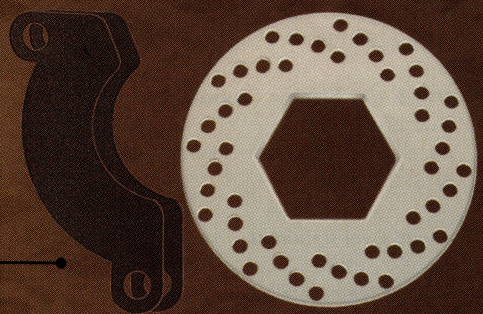
"I only care about performance, and that's why I run Robinson Racing gears and slipper clutches exclusively."

— Richard Saxton

RRP

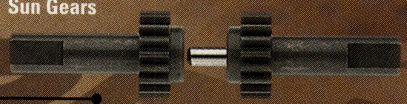
www.robinsonracing.com

T-Maxx Aluminum Brake Kit



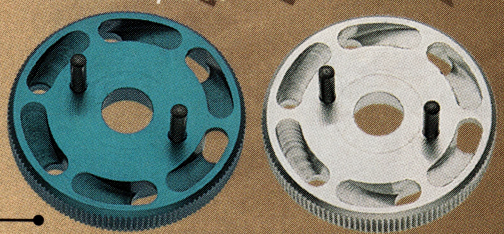
New, lightweight aluminum high performance brake kit, includes bigger, aggressive brake pads and backing plate. RRP 8560

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



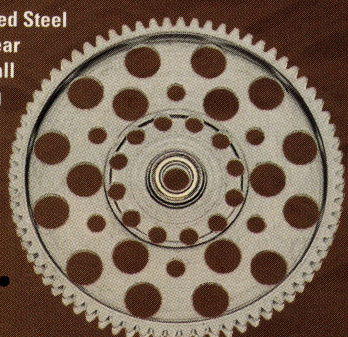
CNC Machined from bar stock, these hardened, Sun Gears will last longer in your Traxxas machine. RRP 8500

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

ROBINSON RACING PRODUCTS

4968 Meadow View Drive · Mariposa, CA 95338 · Voice 209.966.2465 · Fax 209.966.5937

2001 ROAR National Championship Schedule

On-Road Carpet Nationals
March 3-5, 2001
The Track - Gaithersburg, MD
(301) 417-9630 www.rctrack.com

Carpet Oval Nationals
April 6-8, 2001
Sandhills R/C Raceways - Southern Pines, NC
(910) 281 5844 www.sandhillsraceway.com

1/8 & 1/10 Fuel Off-Road Nationals
May 4-6, 2001
The Dirt - Hemet, CA
(909) 347-4707 www.thedirt.com

Fuel On-Road Nationals
May 31-June 3, 2001
To be determined

1/10 Modified 2WD 4WD & Truck Off-Road Nationals
June 29-July 1, 2001
Minnreg Club - St. Petersburg, FL
(727) 345 6905 www.minnreg.com

1/10 Stock 2WD 4WD & Truck Off-Road Nationals
July 15-17, 2001
Columbus R/C - Columbus, OH
(614) 529 1759 www.crcrc.com

1/12 & 1/10 Electric On-Road Nationals
July 27-29, 2001
Speedworld Raceway - Roseville, CA
(916) 983 8864

Paved Oval Nationals
Oct. 5-7, 2001
Spring Cove Speedway - Killen, AL
(256) 757 1564

Canadian On-Road Nationals
To be determined

Canadian Off-Road Nationals
To be determined

1/5-Scale Nationals
To be determined

For more information on ROAR National events contact the host track listed above. Be on the look out for complete coverage of many of these races in the pages of *Xtreme R/C Cars.*
Go to www.roarracing.com for more info.

Don't forget, the Off-road electric Worlds are this year in South Africa.





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-Chris Tossolini (ROAR National Champion)

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

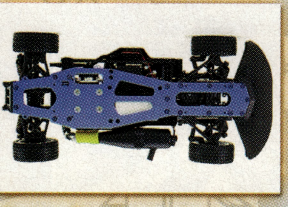
Years of development make this the best gas car available!
-Masami Hirosaka (10 Time World Champion)

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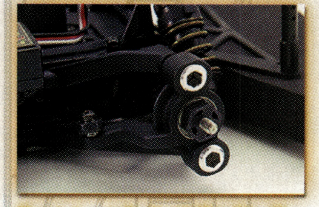
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Rather than transforming an electric touring car into a niro powered version, the all new GT4, was specially designed to handle the power of today's high output nitro engines. Built from the ground up as a purpose built competition nitro touring car, 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.

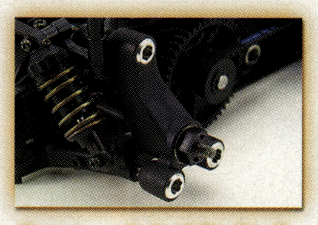
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quick TIPS

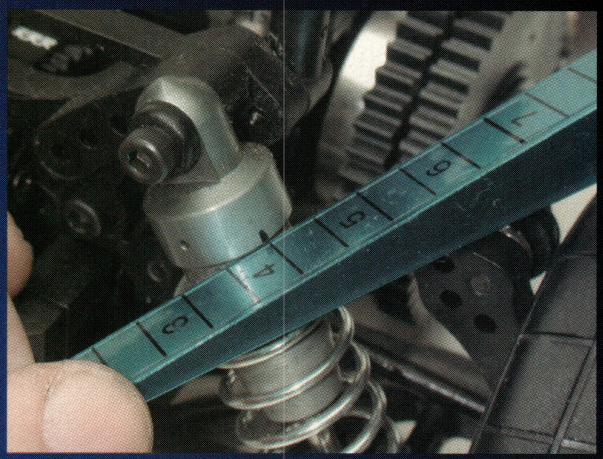
Man That's Tight!

The other day I was at the track. This one particular truck would nosedive to the right on just about every large jump the truck would attempt to go over. After the driver's run, I went over to help him find out what was the cause of this problem. At first glance, all looked okay. After lifting the front end a couple of times, I noticed that the front right arm didn't want to travel downward evenly with the left arm. After further inspection, I noticed some of the plastic surrounding the shock bottoms had turned white instead of black. It turned out that front right shock shaft was screwed in so far into the shock bottom that it was causing the link between the shock and arm to bind. Not allowing the arm to droop at the same rate as the left front shock, causing his truck to dive to the right on every jump. So the Quick Tip in this little story is that over-tightening things can be just as bad as not tightening things. When you build or rebuild your kit, stick to the instructions; don't over- or under-tighten. If you see your vehicle doing something weird on the track, pull over and examine things.



Check Yourself

With clamping-style shock adjusters or even threaded shock bodies, getting a consistent amount of pre-load on pairs of shocks can be difficult. To accurately measure the amount of pre-load, use a sedan ride height gauge like this one from Powers Japan to check pre-load. Move the gauge between the top of the shock collar and the top of the shock. Take a reading on the gauge of where the gauge is pressed between the collars. Now you have an accurate guide you can take to the shock on the other side of the car or truck to make sure that they match up.



Non-Slip Grip

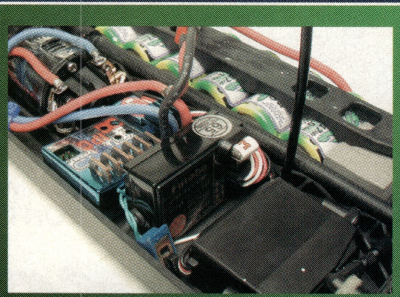
After a long day of racing, the amount of grease and grime that gets all over your hands can add up. This means hands that slip on things, things like triggers when you're driving your car. To reduce the chance of having an accident caused by a slip of the throttle or brake, do the following: Cut a small piece of fuel tubing and slip it over the trigger of your transmitter trigger. This will help reduce the chance of your finger slipping away from the trigger. It will also shorten the amount of space and time it takes your finger to toggle between throttle and brake.



Got a Glitch, Scratch It.

A radio glitch can be a terrible thing, a frustrating thing, and/or a destructive thing. Many times a radio glitch can be caused by some component on a car emitting a RF (Radio Frequency). This RF can interfere with the working of the receiver, not necessarily interfere with the signal coming into the receiver through the antenna. But the RF can interfere with a single component inside the receiver. To combat this, companies have come out with shielded receivers. With that in mind, you can fix a glitch with either a shielded or unshielded receiver by just changing the angle of the receiver to the item that's producing the unwanted RF. Try mounting your receiver on its side or in a different spot. Many times this will solve the problem and get rid of the glitch.





Got a Quick Tip? Send it in, win something.

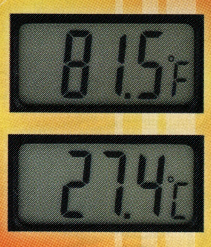
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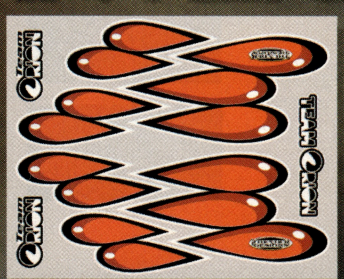
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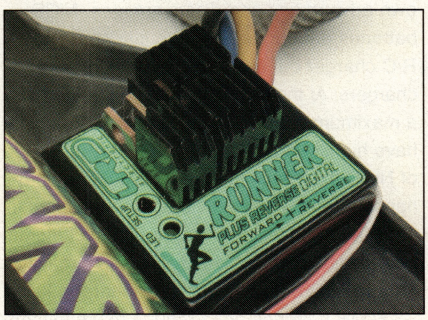
Xtreme R/C's TOP 10 Beginner Questions

By Nathan C. Miller

Beginners in this hobby have a lot of questions. Unfortunately, they don't always have someone to turn to get answers or they may feel embarrassed by asking what seems like an overtly simple or dumb question. With this article, I hope I can answer some of the most frequently asked questions from those of you out there who may be new to the hobby, or those who just may be a little confused by some terms you've heard thrown around.

10. I just purchased an R/C kit. What are some upgrades I should add first?

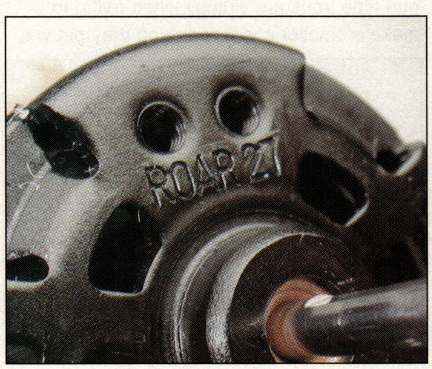
If you either didn't purchase them when you grabbed your kit or your kit didn't come with them, I'd have to say that the first things to get are bearings and an ESC. Both are a good investment for several reasons. First, ESCs and bearings are more efficient than the mechanical speedos and bushings they replace, which means more run time. Second, both require less maintenance, and less time at the workbench means more time driving. Also, these are upgrades that are a benefit no matter where you run your car, be it in the yard or on the track. Shop around and pick an ESC that suits your needs. If you plan on racing, you're better off with a unit that is forward-only with brakes or has a reverse disable feature.



Those of you with racing in mind should consider tuning aids. To make your ride handle its best, you'll probably have to replace the kit-included tires, springs, and shock oil. Save yourself some time and money by checking to see what setup seems to be working in the class you will be racing in. To keep up with the pack (and to be legal at many tracks), your kit motor will have to go, too. For beginners, I recommend a good stock motor. Stock motors have more than enough punch when you are just starting out. Also, better batteries than sport stick packs are important in racing. Lastly, you'll need to grab some different pinion and spur gears to adjust how much speed and acceleration your car will have.

9. What is the difference between a stock and a modified motor?

A motor is considered stock if it is built to conform to rules set forth by a sanctioning body, such as ROAR or NORRCA. For example, for a motor to qualify as stock under ROAR rules, it must use a bushing-supported armature, and have 27 turns of 22 gauge AWG wire wrapped around the arm. Also, timing for a ROAR motor is set at a permanent 24 degrees. The motor cannot be tampered with (outside of normal adjustments like different brushes and springs or having its comm cut). Rebuildable motors are legal, but you can only replace the parts of a motor with parts from the same manufacturer. You can't make a "Frankenstein" motor by mixing and matching parts. Examples of ROAR stock motors are Trinity's P2K and Green Machine 3 and Reedy's MVP and Rage.



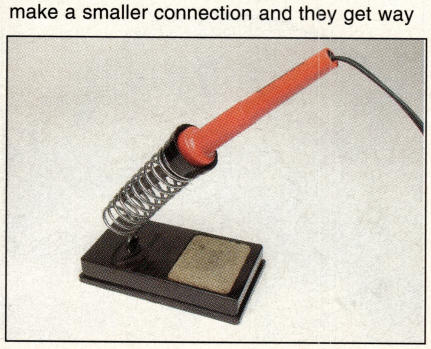
There are no stupid answers; only stupid people.

A modified motor is built with a bearing-supported armature, and can have a variety of different winds. Different winds are used for different applications. Also, the timing on a modified motor can be adjusted to make the motor perform better. Most places that run a modified class are pretty lenient with rules, and experienced racers actually can build a motor that suits their purposes. Check your local track to see what rules, if any, apply to mod motors.

8. Just starting out, should I spend a few more bucks for a peak detection charger or should I stick with a timer charger? With peak detection chargers becoming more affordable all the time, I would personally recommend getting even a budget peak model over a timer charger. The big reason is convenience; peak chargers offer simple, push-button operation. A peak charger is designed to sense when the voltage of a battery starts to drop instead of rise and shuts off. With a timer charger, 15 minutes is often not enough time to fully charge a pack, forcing you to watch the voltage yourself with a voltmeter. And, for a few bucks more, you can get a charger with adjustable voltage that can handle charging receiver packs. Look into models from Integy, Dynamite, and Duratrax. A charger is a piece of equipment that will be with you for a long time, so it makes sense to spend a little more here.



7. What kind of soldering iron should I get? Eventually, you will have to buy a soldering iron. For R/C applications, you will need at least a good 40-watt iron. Stick with pen models, as gun type irons are clumsy when trying to make a smaller connection and they get way too hot. Along with an iron, be sure to grab some paste flux and a few extra tips for whatever iron you choose. One last piece of advice: avoid propane torch/irons. These things get really hot and just don't work as well as a good electric unit.

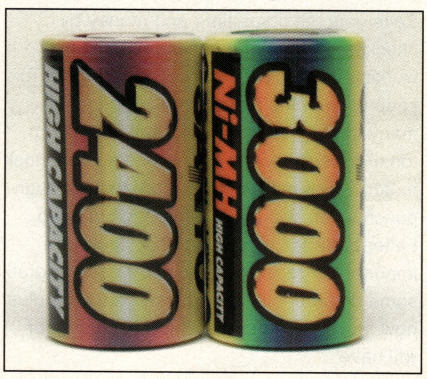


6. What other tools should I get? At the least, get a quality #1 and #2 sized Phillips head screwdriver, needle-nosed pliers, a wire cutting/stripping tool, vise grips, Lexan scissors, and a good hobby knife with a replaceable blade. When you get your kit, you can get tools that are specific to it, like nut drivers and hex drivers to fit the nuts and screws your vehicle uses. If you can swing them, I also recommend a good set of Allen drivers. These are much easier to work with and more durable than the small L-shaped affairs most kits include.



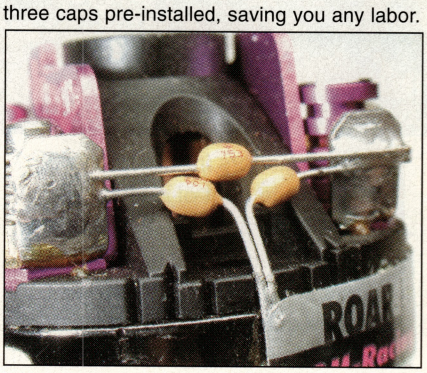
5. Which are better: NiCD or NiMH batteries? Which should I buy? Both types of batteries have their own advantages and disadvantages. NiCD batteries are compatible with just about any R/C charger out there and work with peak chargers. At the moment, NiCD batteries have a maximum capacity of 2400 mAh, but usually have higher voltage than NiMH. The downside of NiCD batteries is that they require maintenance after every run. NiCD batteries have to be discharged to avoid developing cell memory. A battery with cell memory loses capacity; it "remembers" that it wasn't discharged fully.

NiMH batteries don't require maintenance after every run, as they don't develop a memory. Also, NiMH batteries are the kings of capacity right now with 3000mAh. Unfortunately, not every peak charger works with NiMH packs like they do with NiCDs.



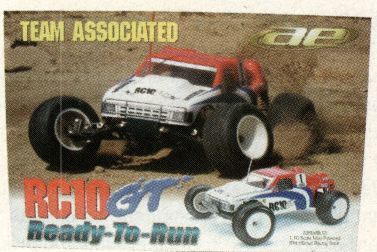
So which to get? It depends on what you're planning on using them for. If you want to race, the cost of NiCDs and NiMH's is comparable. Look at the numbers and see which is better for the type of racing you plan on doing. Do you need capacity or voltage? If you just plain bashing, I've said it before, and I will say it again, you can usually get three or four sport NiCDs like Trinity's 1500 packs for the same cost of one NiMH. It's up to you and your needs. For Ni-MH care, check out the article in this issue.

4. What do capacitors do, and how many should my motor have? Capacitors, those little square or round things on your motor's end-bell are there to reduce the "noise" that a motor generates while functioning. This noise can interfere with your radio signal, and make your car uncontrollable. As a rule of thumb, most ESC manufacturers recommend placing three capacitors on your motor – one from a positive lug to the can, one from a negative lug to the motor can, and a third one placed across the lugs. Some motors now come with three caps pre-installed, saving you any labor.



3. Should I start out with an electric or nitro vehicle? This is a question you will have to ask some questions of yourself to answer. How





The only dumb question is the one that isn't asked.

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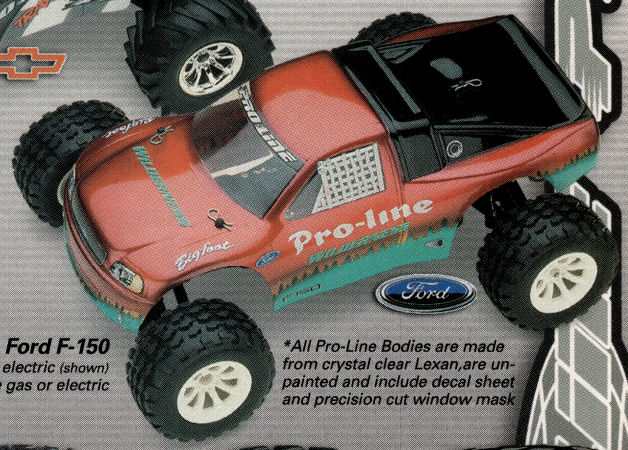


Chevy Silverado
#3088-00 fits Stampede gas or electric (shown)
#3089-00 Rustler electric



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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Speed Hawg #1080-00
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Gladiator
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2.2" truck front or rear tire

Dirt Hawg #1070-00
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Dirt Works #1072-00
2.2" truck front or rear tire

PRO-LINE PRO-LINE PRO

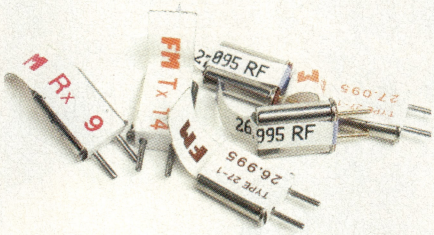
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mechanically inclined are you? For a novice, an electric kit offers the ability to throw a switch and go. Nitro motors require a little labor to make function properly, and if you have no mechanical skill, this can be difficult. Second, how much maintenance are you willing to put into a vehicle? While you should never just throw an R/C on the shelf when done playing with it, a nitro vehicle requires extra care to ensure the internal parts of the engine are kept in top order. Lastly, consider your environment. If you live in an environment like I do with cold, snowy winters, nitro might not be ideal. At least with an electric, if you have a track nearby, you can always run there. Also, getting a nitro mill to start in the cold isn't always easy.

2. Should I buy an AM or FM radio? If you have chosen an electric kit to start with, get an AM radio. However, if you've chosen to go nitro, grab an FM radio, and here's why; a nitro engine can cause interference with your radio's signal. An FM radio puts out a stronger signal than AM, and is less likely to suffer from interference caused by a nitro engine. The last thing you want is to lose control of a nitro vehicle, especially with the throttle wide open.



1. What do the crystals in a radio do? The crystals in a radio determine what frequency at which your system operates. This is important to know if you are racing with your buddies. You don't want two people on the same frequency at the same time or the signals will interfere with each other. Thankfully, crystals can be changed out and replaced with crystals of another frequency. Just make sure you purchase crystals that are compatible with your radio system, and are for the proper band, either 27, or 75. And always replace both the transmitter and receiver crystal at the same time.



I hope the answers to these FAQ's are helpful to you. And if you have any more questions, don't be afraid to ask a more experienced enthusiast. They were beginners once, too, and should be willing to help you out.



Need Results?

Winner:

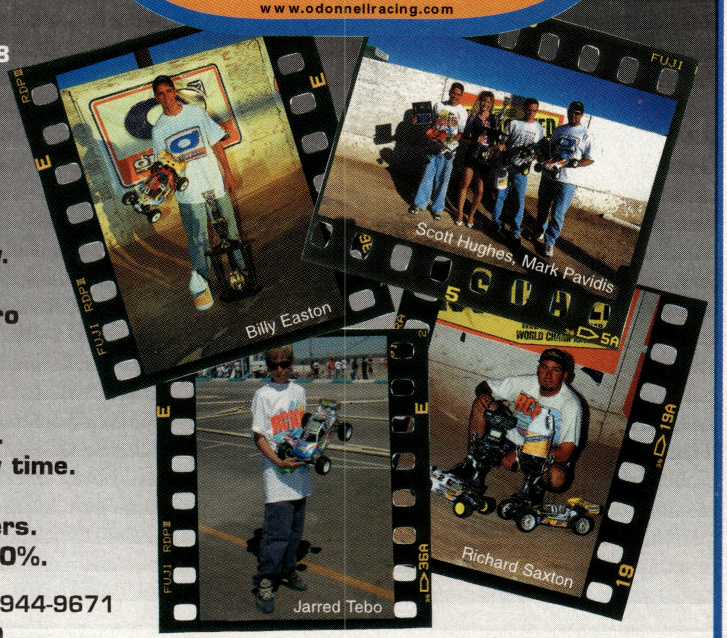
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- '99 Silver State Challenge 1/10 & 1/8
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- '99 Manufacturers Cup 1/10 & 1/8
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- '99 Kyosho Challenge 1/10 & 1/8
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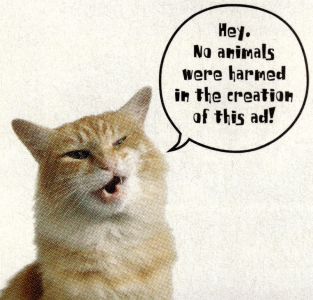


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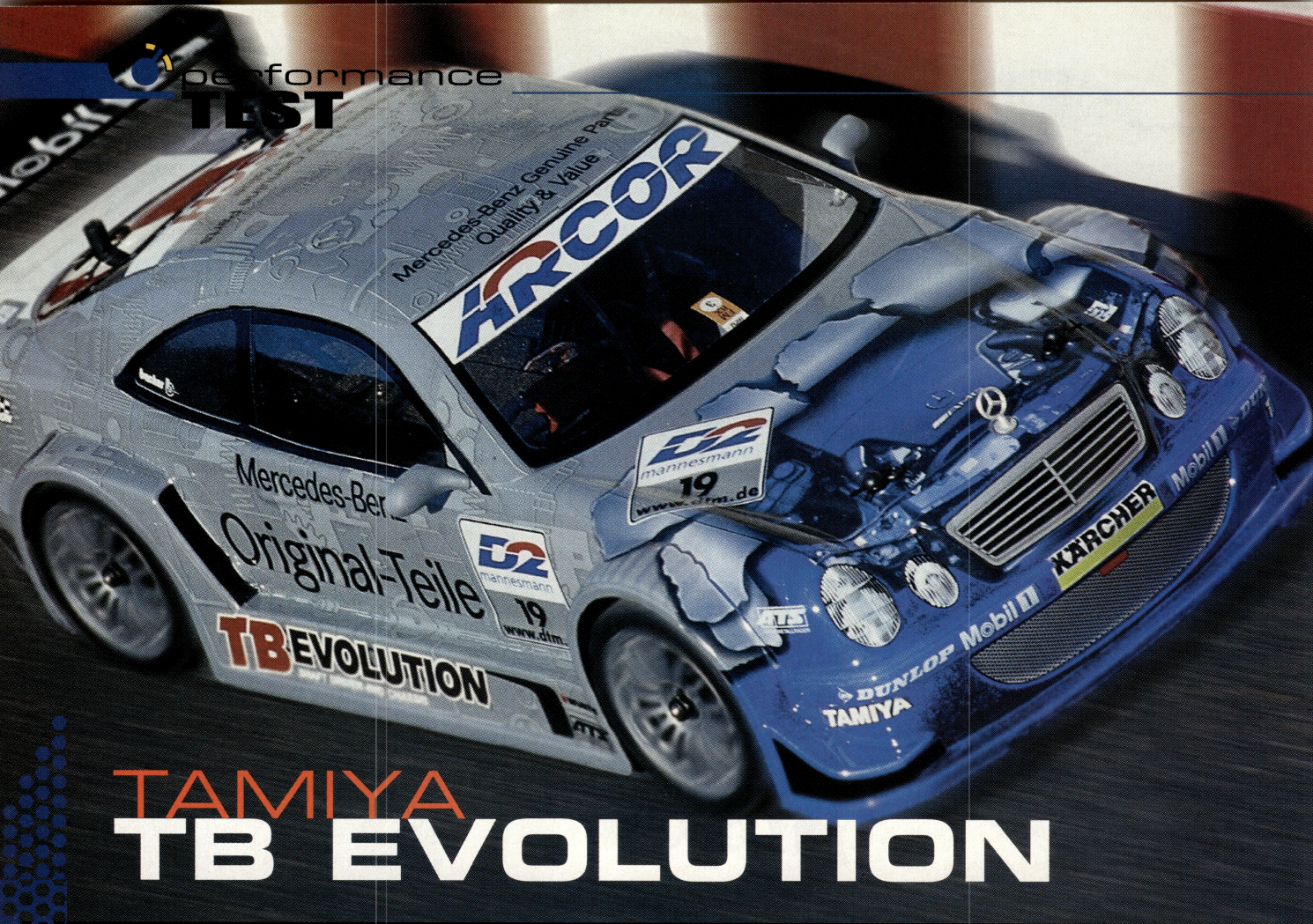
- Two HS-303 servos
- HP-2RNB two channel AM receiver
- Switch harness and dry battery box
- 75MHz version part #124751
- 27MHz version part #124271

LYNX SPORT with 1 servo

- One HS-303 servo
- HP-2RNB two channel AM receiver
- Switch harness and dry battery box
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TAMIYA TB EVOLUTION

TAMIYA TB EVOLUTION TAMIYA TB EVOLUTION TAMIYA TB E

by Richard Dee

The first sedans to hit the market were pioneered by Tamiya, and guess what, they were shaft driven. As time passed, more and more companies jumped into the sedan market and touted the virtues of a belt drive verses a shaft drive. The entire industry switched over to the belt-drive design philosophy that's been en vogue for years. Since then, the entire touring car market has evolved and it took some other companies like Tenth Technology and Associated to demonstrate that Tamiya's original shaft drive concept was viable. Now getting the shaft is en vogue once again. As the pioneer of this design concept, Tamiya has decided to show the world what a shaft-drive touring car is capable of doing. Is their new TB Evolution (TBE) the finest example of Tamiya race engineering to date? Let's find out.

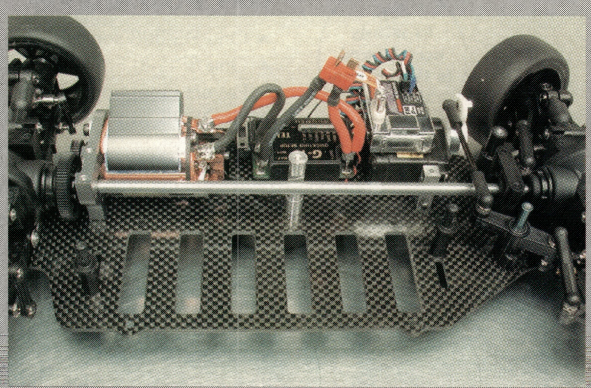
Hits:
- Quality materials.
- Accepts stick or side-by-side battery configuration.
- Plenty of tuning options.
- Easy to build.
- Handles well.

Misses:
- No non-one-way option included.
- No highly-detailed Tamiya body included. I know it's a pro-kit, but still...

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

Drive Train

Tamiya opted to use the shaft drive concept similar to that on their 1/8-scale TGR. The TB Evolution's shaft drive system is very efficient and requires less maintenance than belt driven cars due to the fact that the shaft will not wear out, stretch, and will not collect, debris that can disrupt the drive train. The shaft is directly attached to the front and rear differential housings. The spur gear is located just in front of the rear differential. Something that is very different is that the gearing is 64 pitched rather than the traditional metric, what I call Tamiya 0.4 pitch. I was very happy about this change because people in general would probably have more access to 64-pitch pinions



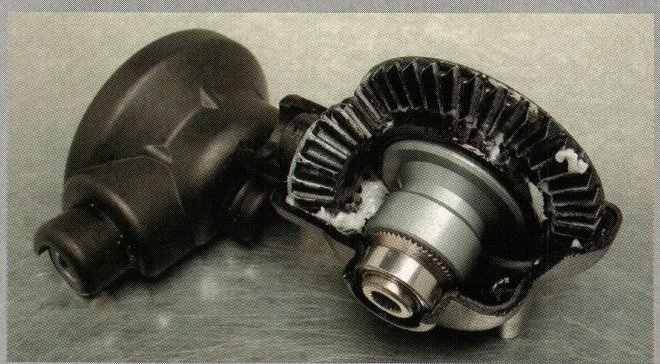
With the switch from shaft to belt back to shaft, the TBE comes full circle.

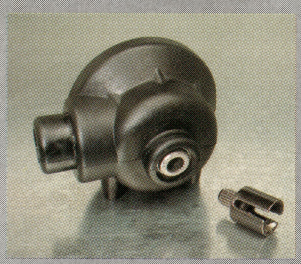


Chassis

The TBE uses carbon fiber lower and upper decks along with carbon fiber shock towers. The double deck setup provides a rigid platform for all the lateral forces such as torsion due to the shaft rotation. The 2.5mm carbon fiber lower deck can carry batteries in the stick pack configuration or in the more popular side-by-side design. If you were to choose the saddle pack or side-by-side configuration, you may need to do one of two things to make it work right. (See building tips sidebar.) All other electronics – such as the servo (with aluminum servo mounts included), receiver, speed control and the motor – are mounted on the opposite side of where the batteries are placed. The motor is bolted on an aluminum motor mount and the kit is supplied with aluminum motor heat sink.

LUTION TAMIYA TB EVOLUTION TAMIYA T

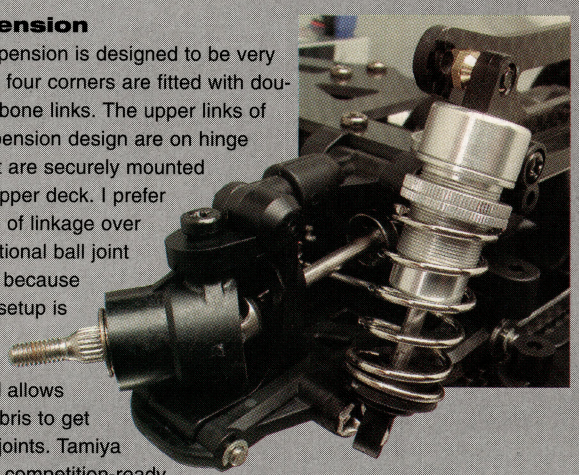




rather than the traditional Tamiya pitch. The rear differential contains a ball diff whereas the front differential has a built in one-way system. Although it is possible to have a ball differential system in the front assembly, the kit does not have the hard ware included to choose one over the other. Attached to both ends of the shaft are small bevel gears that turn the front and rear diffs. Power is then transferred to the wheels by the use of universal shafts.

Suspension

The suspension is designed to be very solid. All four corners are fitted with double wishbone links. The upper links of the suspension design are on hinge pins that are securely mounted on the upper deck. I prefer this type of linkage over the traditional ball joint and cap because the ball setup is prone to more slop and allows more debris to get into the joints. Tamiya includes competition-ready, Special Super Low Friction Dampers with threaded shock bodies for more precise tuning. Each shock has two-cylinder nut (collars) to ensure that spring adjustment won't change throughout the race. These shocks are mounted on carbon fiber shock towers that have three mounting options and two mounting options on the lower arm. Sway bars are included as an option, which are easy to remove or replace.



Tamiya went all out with threaded shock bodies, a Tamiya first.

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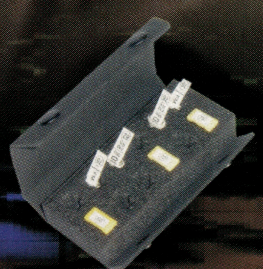
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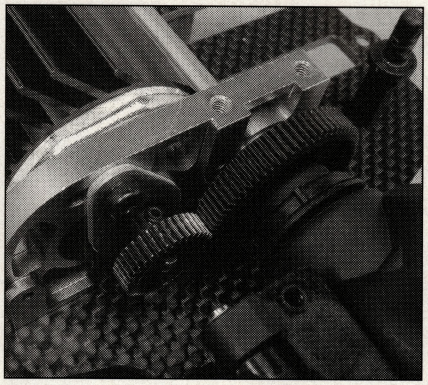
Deluxe Transmitter Wrist Strap Part # 99104

Building Tips

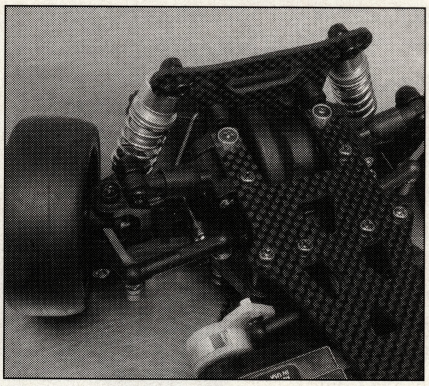
Spur gear installation
When installing the spur gear onto the drive shaft, make sure that the notches for the pin inserts towards the rear of the car. The spur will still fit if the pin insert faces the front. However, the spur gear will rub on the upper deck.

Chassis
If you plan on using a side-by-side battery configuration, before getting started on the kit file the battery slots about 30-45 degrees. This is so that the battery can be supported by the chassis against lateral forces. In addition, you might want to shave the battery holder walls a bit so that you can keep the holders when you use side-by-side packs. Without these modifications, it's possible for the batteries to slide out of the slots and come out of the car.

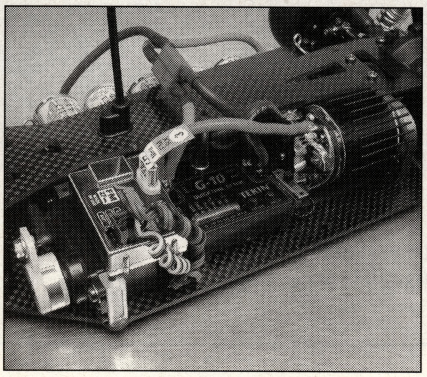
Connecting links (tie-rods)
Make sure to compare your assembly against the measured example in the instruction manual. Since the rods cuff and cover each other, it requires more work to readjust the rods after the car is built.

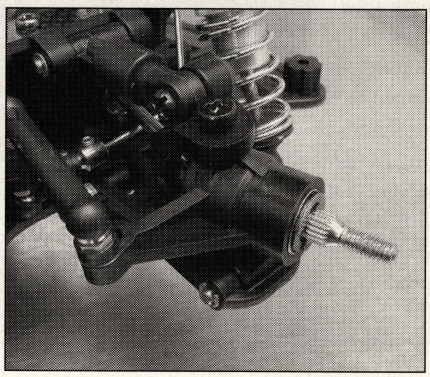


Above: Because of the position of the gearing, getting the right mesh takes a little getting used to.
Below: Radio gear mounts easily.



Above: The straight-forward design allows easy access to the servo and front end.
Below: No lost roll pins; the wheel hexes are splined.





Steering • The TBE uses a standard bell-crank steering system. Two molded bell cranks that rotate on ball bearings turns the wheels left and right. The servo saver has three tension springs to dampen shock that may be applied to the servo. Adjusting the toe requires removing the tie-rods due to no hex on the steering rods.

Tires, Wheels, and Body • As this is a competition kit, it doesn't include a body. That's too bad because we all know that Tamiya bodies are the best looking ones around. Showing the signs of the times, the 26mm sedan tires are out and 24mm Medium-Narrow Reinforced Slicks (Type A) with molded inserts are in. These tires are wrapped around 5-spoke wheels that have zero offset.

Other Features • This kit is packed with features that racers have always asked for. A carbon fiber battery strap is used to hold the battery in place. A urethane bumper is sandwiched at the front of the TBE by an upper and lower mount. An extra set of gears are included just in case one was to damage one of the gears or you would like to replace the one-way differentials with a ball differential. (Keep in mind that although an extra diff gear for ball diff is included, the actual hardware to complete another ball differential is not included.) In addition, two sets of spur gears are included – the stock 88-tooth spur and a 72-tooth spur oriented for less torque and more top end. Three of each type of spur gear are included so you don't have to go buy a new one if you ever strip one of these gears.

Testing

To test the TB Evolution, I went to Tire Shredders in Reseda, CA for some night racing. The track consisted of a long back straightaway and a technical infield section. I choose this track because it had a good mix of driving scenarios and I think that it would test the TB Evolution's tuning ability. For the first heat, I got a decent start and avoided most of the first turn carnage. I was jockeying between second and third for a long time. I had replaced the stock tires with Yokomo's medium Sprint tires with firm inserts, which really hooked up well. However, as the other cars get into their groove, the TBE seemed to be at a disadvantage. It just felt like the TBE didn't progress like the other cars did.

For the second heat, I had changed the gearing by putting on the smaller spur and taking off the rear sway bar. This time, I was sitting in the front row due to reverse gridding. I got a good hole shot along with the other car that was next to me. He and I were battling for most of the race until his car got stuck in traffic and got hung up on a pipe. I was able to maintain my distance from second place and take the win. The car ran great but I did a couple more adjustments for the mains. I changed the stock shock oil to Trinity's 40-wt oil. I also added about one degree of negative camber to the rear to put more rubber down during cornering.

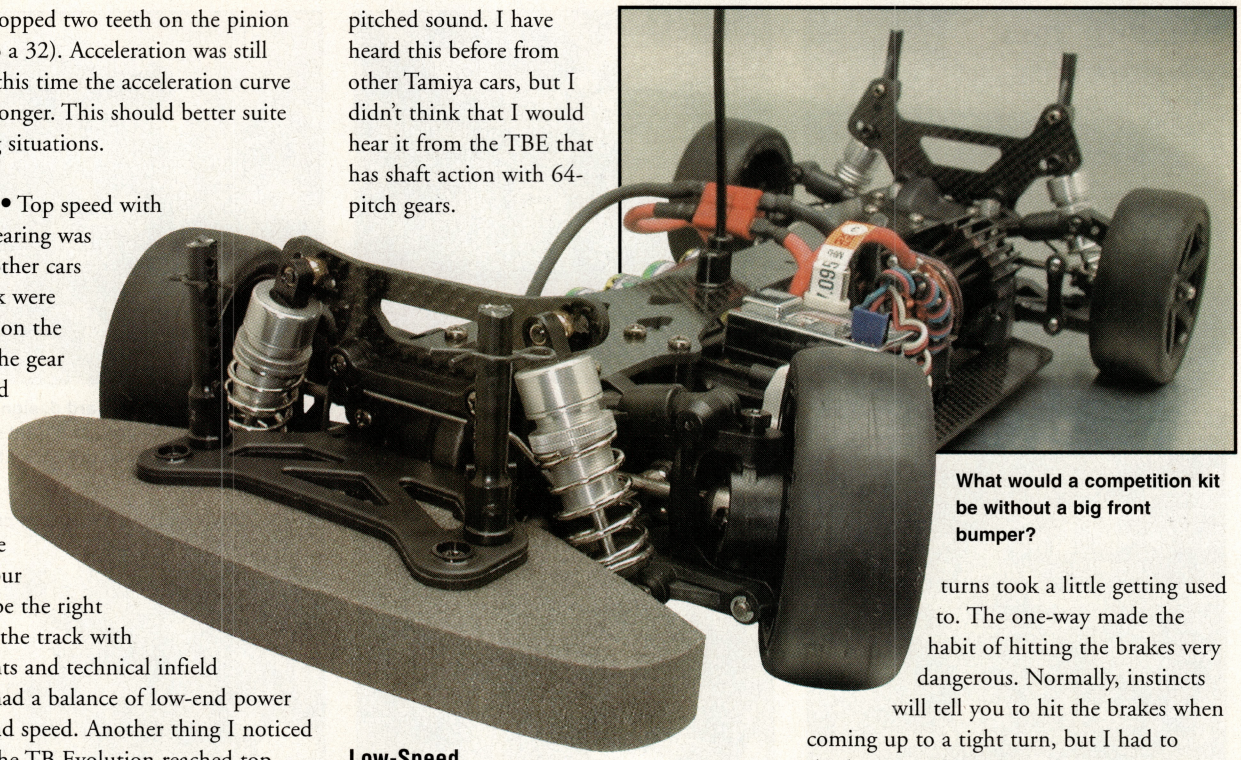
The start of the mains was ugly. I got tagged from behind and started a chain reaction. Fortunately I survived better than others. After the smoked had cleared, I was in fourth and started to work my way up. By this time I finally got used to the car and had the one-way action working for me. Before I knew it, the race was over and I settled for second. It wasn't bad for the first outing.

Acceleration • Once I squeezed the trigger, acceleration was quick, but I noticed that the motor reached top speed too soon. I believe that it had to do with the gear ratio. I changed the spur to the smaller 72-tooth

Samuel L. Jackson plays a great Shaft in the most recent *Shaft* flick.

gear and dropped two teeth on the pinion (from 34 to a 32). Acceleration was still quick, but this time the acceleration curve was much longer. This should better suite most racing situations.

Top Speed • Top speed with the stock gearing was good, but other cars on the track were passing me on the straights. The gear change I did previously from the stock 88-tooth spur down to the 72-tooth spur seemed to be the right gearing for the track with long straights and technical infield because it had a balance of low-end power with top-end speed. Another thing I noticed was when the TB Evolution reached top speed; there was the distinguishable high-pitched sound. I have heard this before from other Tamiya cars, but I didn't think that I would hear it from the TBE that has shaft action with 64-pitch gears.



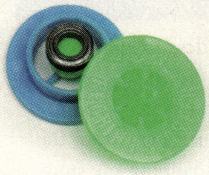
What would a competition kit be without a big front bumper?

Low-Speed Handling • Trying to negotiate through the turns took a little getting used to. The one-way made the habit of hitting the brakes very dangerous. Normally, instincts will tell you to hit the brakes when coming up to a tight turn, but I had to think twice. Throughout the race I just learned to let the car roll into the corner and

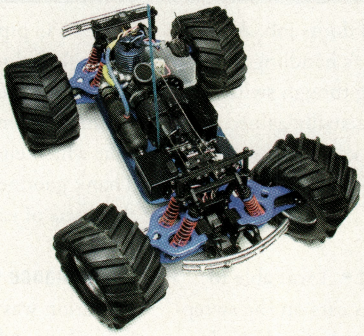


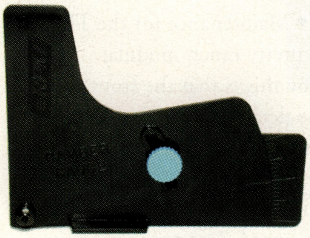


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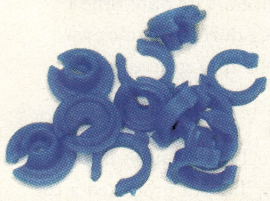


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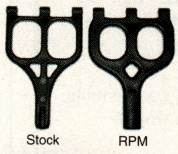


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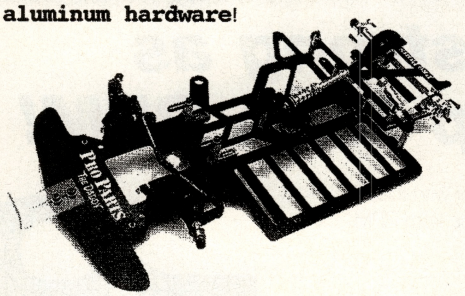
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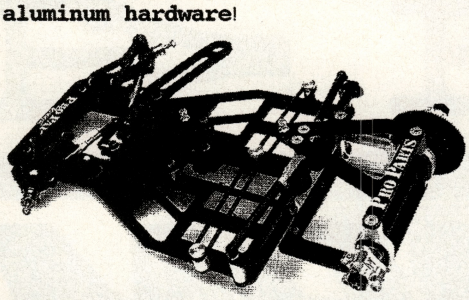


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- Adjustable super strong body posts.
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Chassis Type
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Black 5-spoke wheels with medium-narrow reinforced slicks (Type A)

Transmission
Type: Rear ball diff, front one-way diff
Diff: ball
Drive shafts: Aluminum propeller shaft/ Universal dog bone

Bearings
Sealed bearings

Suspension Design
Type: Independent molded lower arms with upper adjustable arms
Damping: Coil-over with treaded shock bodies, dual cylinder nut (collar)

Other Items you'll need
2-channel radio with 2 servos, receiver, electronic speed control, electric motor, 6-cell battery pack, 1/10 scale 190mm body, glue

Test Gear
Airtronics M8, SMC 2400 batteries, Trinity P2K Pro, Tekin G-10 ESC, ProtoForm Stratus for testing. Tamiya CLK for show.

Main Competition
Associated TC3, Yokomo MR-4, HPI RS4 Pro2, Team Losi Street Weapon, Kyosho TF-4 Type R

let the one-way action do its job. As soon as I got used to the car's handling, it was very responsive getting though switch-backs and hairpins. I actually gained some time among the other cars because the TB Evolution carried more momentum through the corner.

High-Speed Handling • I was able to catch up and even pass cars on the sweeping curves and slalom my way through the traffic without too much trouble. One adjustment that I did for my high-speed handling was I disconnected the rear sway bar to give me a little more independent suspension action through the sweeping curve. Throughout the night, I like the TBE better without the rear sway bar.

Braking • Forget about it!!! Well – not totally forget about it, but pulling the brakes with a car with a one-way is like pulling the E-brake while you yank on the wheel of your car on the freeway. All that is going to happen is the car will end up facing the opposite end. What I recommend is that if you have a programmable speed control, lower the brake value and increase the frequency of the brakes so that light breaking will be applied at a smoother force. That's what I did to my G-10 and it work out fine.

Damage Report • I know that I was testing this car, but I didn't test what it took to break it intentionally. Although I hit some PVC pipes considerably hard, nothing broke. However, I did make hard contact with another car that moved my motor adjustment farther away from the spur which ended up stripping my spur. Thank goodness that Tamiya included three sets of each spur.

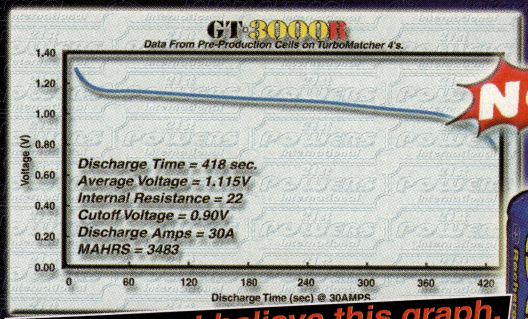
Maintenance • Maintenance for the TB Evolution was pretty much modular. What I mean by this is that the front and rear end can be detached completely from the main chassis. All that it took was the removal of the top and lower screws that held on the bulkhead and you have access to anything you need. The only time I had to take it apart during the race was when I changed the spur gear.

Conclusion

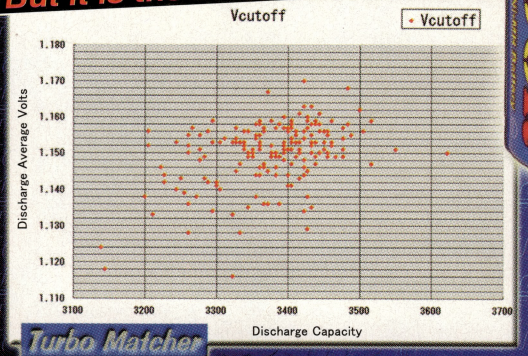
I like this car. The TB Evolution is just that, an evolution. Tamiya produced a car that has evolved from a car to bash around in the dirt into a racecar that has sophisticated design with high quality materials. This car will not doubt lead the evolution in people's mind when they think of a car to race in the expert and pro levels.

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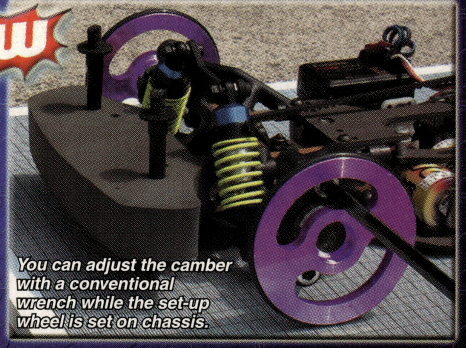
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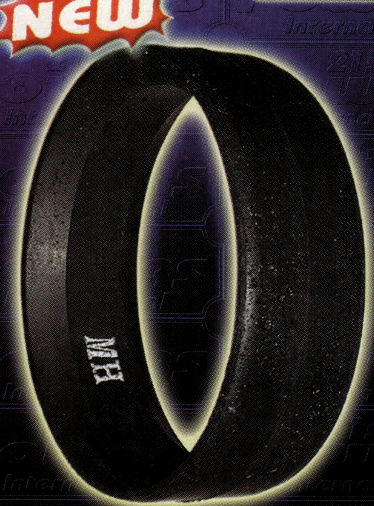


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Only about every five or six years does a new R/C vehicle have as big as an effect as Traxxas' T-Maxx did last year. Since its release, no other vehicle can boast the same level of phenomenal success. The T-Maxx has spawned aftermarket accessories from dozens of companies, has a loyal and growing following who have launched websites devoted solely to the T-Maxx, and created its own racing class. Well you knew it wouldn't be too long before the T-Maxx spawned something else, an electric version. Enter the E-Maxx. It's all T-Maxx with an E for electric. The new E-Maxx is just as big and just as bad, but a little quieter and easier on the environment. A couple of months ago, Traxxas let loose with some production prototypes for the media to test. Now the genuine article is here straight off the assembly line. We're ready to test the same E-Maxx you can now pick up at your local hobby shop. Let's see how it goes.

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- T-Maxx, but electric.
- Handles better than any other electric monster truck.
- Two batteries, two motors.
- Uses many existing T-Maxx parts and options.
- Manually shifting 2-speed.

Misses:
- Isn't offered without radio.

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

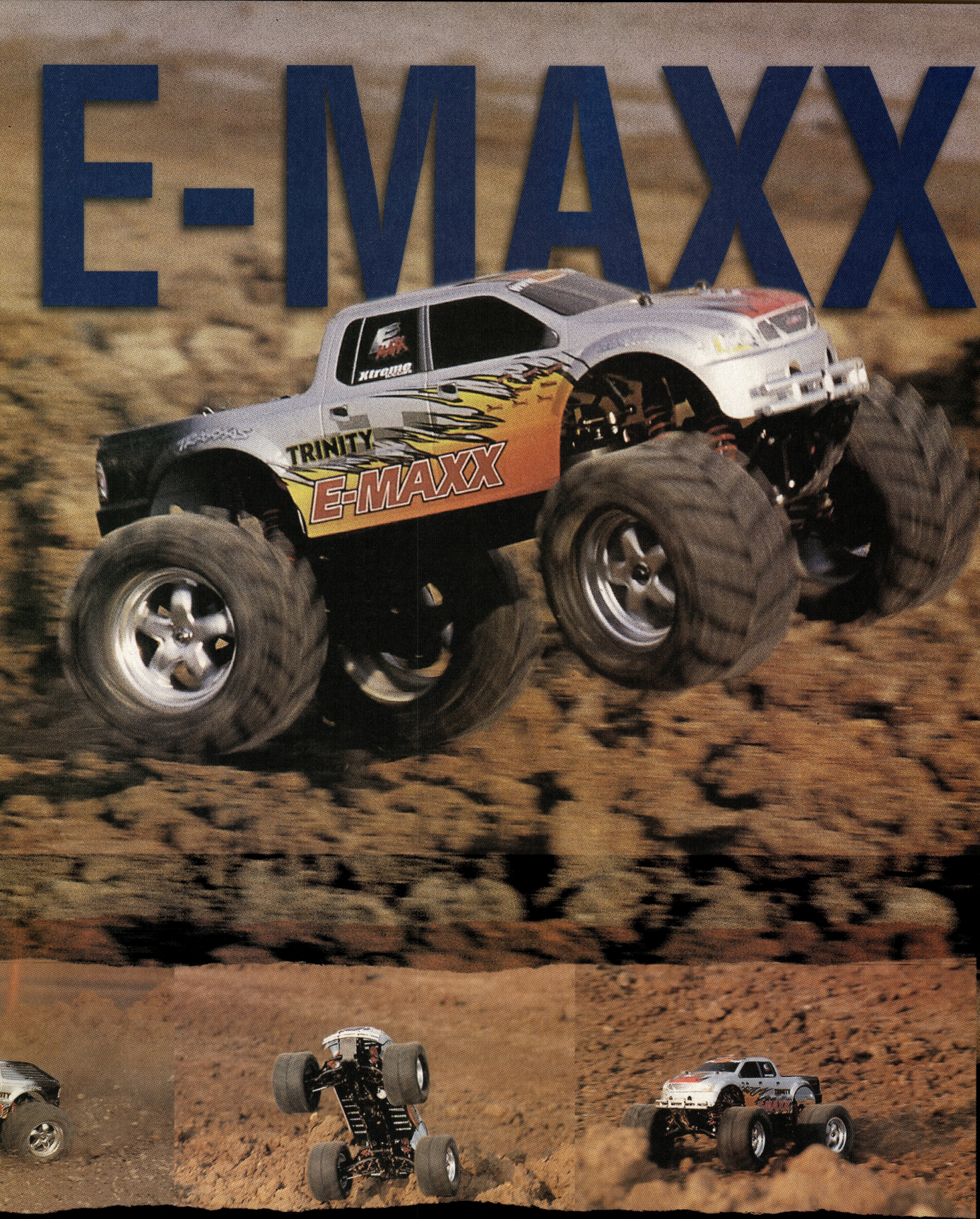
by Mike Velez







E-MAXX



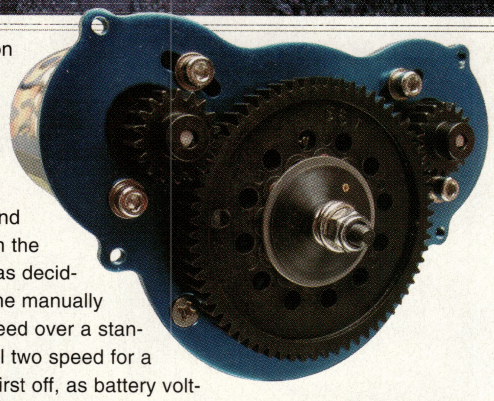
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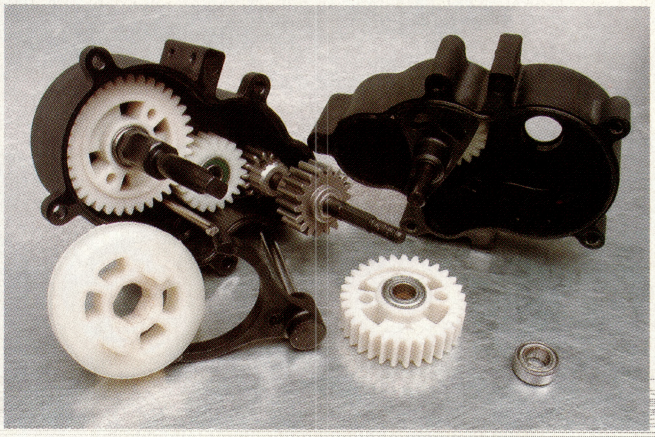


TRAXXAS **E-MAXX** TRAXXAS **E-MAXX** TRAXXA

Drive Train

The heart of the E-Maxx is its two-speed, manually-shifting transmission that's driven by two 550-size motors. The two motors mount to an blue-anodized, aluminum motor plate. The two motors drive a 66-tooth spur gear that's dampened by a slipper clutch. Both the pinions and spur gear are changeable so a huge variety of final drive ratios are obtainable, depending whether you're looking for super fast top speed or earth-shattering low end torque. Within the transmission is a series of gears that reduce the internal drive ratio to 2.77: 1 in first and 1.77:1 in second. Unlike anyother monster truck on the market, the E-Maxx's two-speed transmission shifts manually. The third servo that switches the transmission from forward to reverse on the T-Maxx now allows you to select between first and second gear on the E-Maxx. Traxxas decided to go with the manually shifting two-speed over a standard centrifugal two speed for a few reasons. First off, as battery voltage lowers it takes longer and longer for a centrifugal clutch to shift into second. Second, going off jumps takes a load away from the tires and allows a centrifugal clutch to spool up and shift into second, not exactly something that's ideal under most conditions. And last, I think that Traxxas just wanted to show the world they could do something no one else has; it's not like it's the first time they've made lots of new fans.





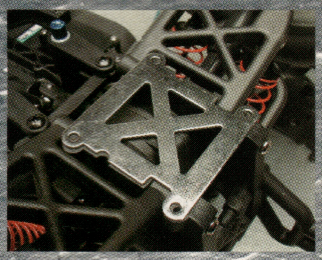
Radio

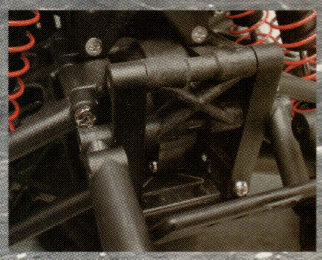
The TQ3 radio first seen on the T-Maxx is standard in the E-Maxx. The third channel is used for shifting between first and second gears. A high torque steering servo, standard shifting servo and a three channel receiver are mounted in the truck.

Suspension

The E-Maxx gets the full monster truck treatment first found on the T-Maxx. The entire suspension system is a carry over from the T-Maxx. That means two oil-filled, coil-over shocks at each corner (eight in total), upper and lower suspension A-arms, heavy-duty captured ball hub carriers, fiber molded shock towers, and complete toe and camber adjustability front and rear. Both the front and rear ends are identical. This makes parts replacement a snap.

Along with all the T-Maxx components found on the E-Maxx, Traxxas has made a few subtle changes that will soon be implemented as running production changes to the T-Maxx and will be found on all E-Maxxes. A bulkhead brace runs between the left and right side bulkheads. This brace helps to add rigidity to the front and rear suspensions and help prevent parts breakage. Also, in an effort to add strength, a metal skid plate is fastened beneath both the front and rear bulkheads. The T-Maxx featured this skid plate only under the front bulkheads.

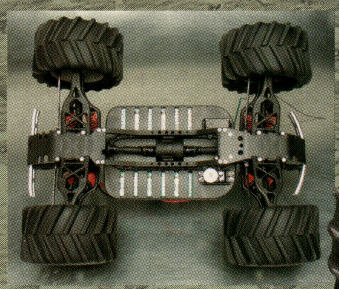




Chassis

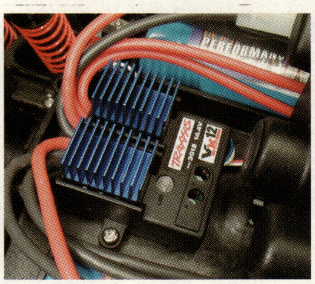
Sure you're used to seeing a touring car or oval car chassis with battery cutouts flanking one side or the other. But not too often do you see six cutouts on both sides of a chassis. To harness 14.4 Volts of power you need a lot of batteries and the E-Maxx chassis is made to accommodate. The chassis itself is molded from fiber-filled plastic. Battery boxes sit to the left and right sides of the chassis. The battery boxes have cutouts to accommodate either side-by-side battery packs or stick packs. The battery braces that hold the battery packs in place are reversible depending on what type of battery is being strapped in. Between the two battery boxes sits the transmission, motors, receiver, and speed controller. The steering and the transmission shifter servos both sit just in front of the two battery boxes.

For strength and rigidity the chassis has a number of walls molded in to the inner workings of the chassis. This coupled with the molded "I" beam like trestle braces that run down the center of the chassis make for a very stiff and sturdy torso.





E-MAXX TRAXXAS E-MAXX TRA S E-M



Electronics

The E-Maxx uses two 7.2 volt batteries and two 550-size motors. To harness all that power and make the best use of the two battery packs, Traxxas had to come up with an ESC design specifically for the E-Maxx. The VX-12 speed controllers puts the two battery packs in series. This makes the batteries act as one big 12-cell pack. From the VX-12, power is split up so that each motor is getting 14.4 volts of power. This type of power delivery provides minimal power loss and is the most efficient way known of converting the electrical wattage available into sheer mechanical power. The VX-12 is designed to handle an 150 amp load continuously, which means modified 14V motors should be no problem. Using standard 6-volt 540s will greatly increase heat generation.

In designing the E-Maxx, Traxxas came up with the 23 turn Titan motor. The Titan is looks like a mild-mannered throw away motor but it's really unique. The Titan is longer than standard 540 motors, which allows for more torque to be produced. Inside each motor is a fan piece located above the armature stack. The fan helps to keep the motors running cool. Traxxas says the fans help to keep the motors no more than 20° F above the ambient air temperature. We'll be sure to test that out. To keep the magnetic field as strong as it can be, each Titan motor features a additional metal sleeve around the magnets.

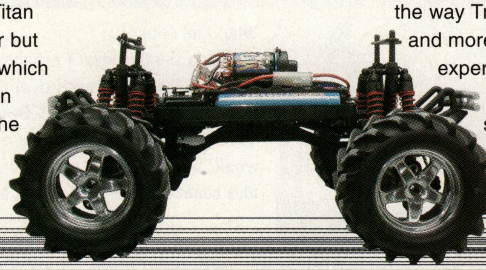
RTR

The E-Maxx is a true electric ready-to-run. Out of the box, there's very little that needs to be done in order to get you on the road. Traxxas provides a great little "Quick Start" sheet that gets you going in a matter of minutes. Grab a couple of battery packs, charge them up, pull out the antenna, adjust the radio, install the body, install the batteries, turn it on and you're ready to go.



Body, Tires, and Wheels

The T-Maxx comes with a clear body while the E-Maxx comes a ProGraphix pre-painted, pre-cut body. The basic paint design is available in four different colors – blue, red, purple, and silver. The E-Maxx comes with a complete sheet of decals that are pre-cut. It's amazing the way Traxxas comes up with more and more ways to make the new kit experience easier and easier. The original monster truck-sized paddle tires found on the T-Maxx make their way onto the E-Maxx along with satin finished five-spoke wheels.



Friendly aliens couldn't survive the hot Texas air E-Maxx calls home.

Testing

Acceleration • The stock motors and any battery pack we tried allowed the E-Maxx to lift the front tires with ease. Even towards the end of the charge I was still able to lift the front end from a dead stop. With the stock gearing, the truck reached top speed in first about 20 to 30 feet from start. At that point a flick of the switch and a quick let off on the throttle shifted the E-Maxx into second with a whole new acceleration curve. Out of the box, the E-Maxx accelerates more like a touring car than a monster truck. Compared to a T-Maxx, the E-Maxx accelerates harder off the line than the T-Maxx, but will lag behind when second gear kicks in on the T-Maxx.

Top Speed • Remember, this is a monster truck. Monster trucks are not supposed to go over 25 MPH. But this one does. The E-Maxx is fast on when it comes to top speed. Thanks to second gear, the truck hums with a noticeable jolt and sound when second gear kicks in. A simple flip of the toggle switch located on the transmitter shifts the truck. Without letting off of the throttle the E-Maxx will wait until it has reached top speed in first to shift.

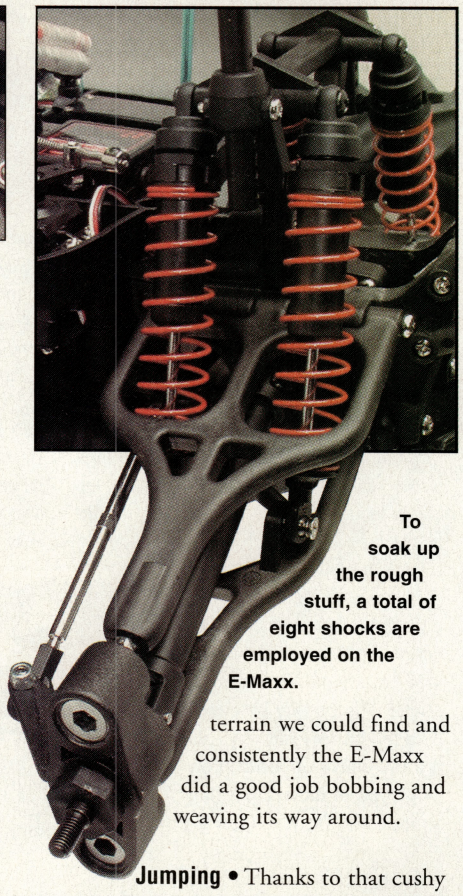


The battery cutouts allow the user to choose between stick packs and side-by-side batteries.

Otherwise simply letting off of the throttle for a split second will allow the truck to shift into second on the fly.

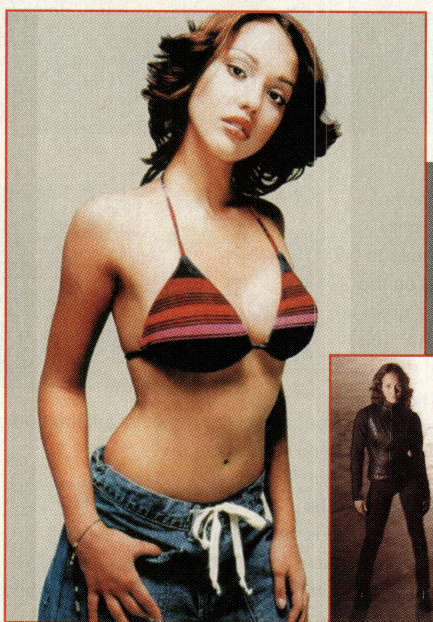
High-Speed Turning • The E-Maxx can turn pretty well if you keep the hammer down on the throttle. The inside front tire will lift off the ground, but that just looks cool. The instant you let off of the throttle the E-Maxx will be rolling over like Rosie on stilts. Changing direction quickly at high speeds is something else that's not advised when piloting a monster truck, so don't do it.

Low-Speed Turning • Once the truck is rolling, low-speed turning is a breeze. Either on the dirt or on the pavement, the E-Maxx finds itself right at home negotiating its way over or around just about any obstacle. During testing I ran the E-Maxx on asphalt, concrete, grass, sand, dirt with large tractor treads carved into the ground, smooth dirt, hilly terrain – basically every terrain we could find and consistently the E-Maxx did a good job bobbing and weaving its way around.



To soak up the rough stuff, a total of eight shocks are employed on the E-Maxx.

Jumping • Thanks to that cushy Cadillac-like suspension, the E-Maxx likes to be jumped. On one of our outings we jumped the E-Maxx over a very steep jump that placed the truck about five feet above the ground. After about five unsuccessful attempts, I was able to finesse the throttle



Move Over E-MAXX!

Regardless of what you might think, we here at *Xtreme* feel there are just a couple more "Max's" that kick a little more butt than the E-Maxx. I know, I know...you're thinking "these guys are idiots!" right? Well read on, I think we can sway your vote.

Who: Jessica Alba
Where to see this Max: The FOX show *Dark Angel.*
Max connection: Alba plays Max Guevara, a genetically enhanced human prototype who searches for others like herself in a post-apocalyptic America.
Look out E-Maxx: "Girls kick ass; it says so on the t-shirt." (actual line from the show). Who can argue with that? Besides she looks good in black cat suits.
Why we like Dark Angel: Let's just say – yummy!







Who: Mel Gibson
Where to see this Max: Perhaps the baddest (see ass kickin') movies ever made – *Mad Max, The Road Warrior, & Beyond Thunderdome.* Okay the last one was a little weak, but midgets liking pig crap is cool!
Max connection: Gibson plays Max, a wandering loner who searches for gasoline in a post-apocalyptic wasteland.
Look out E-Maxx: Mad Max fights off crossbow slinging dudes with mohawks, muscle punks clad in leather masks, and guys that chop up cars with axes; all with just a double barrell shotgun. 'Nuff said.
Why we like Mad Max: B.A.D. - A.S.S.

You knew science would eventually pay off.

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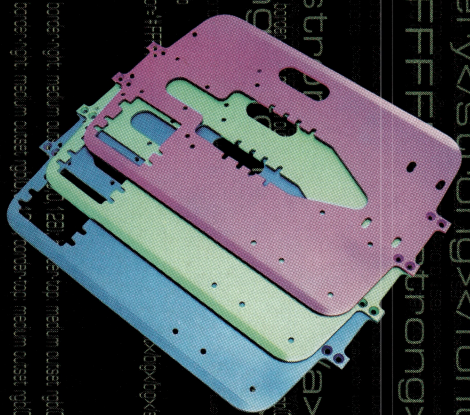
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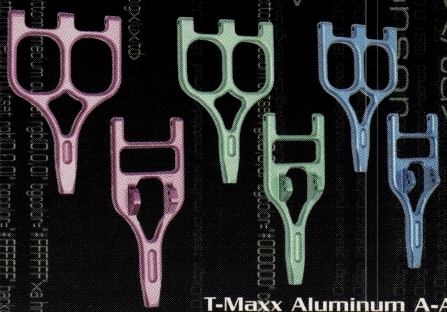
T-Maxx Titanium Chassis
HCR-00310 (.21 motor version)
HCR-00300 (.15 motor version)



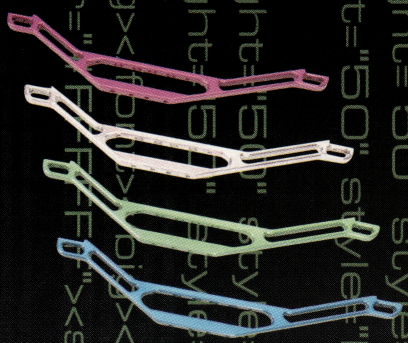
T-Maxx Titanium Front Skid
HCR-00308



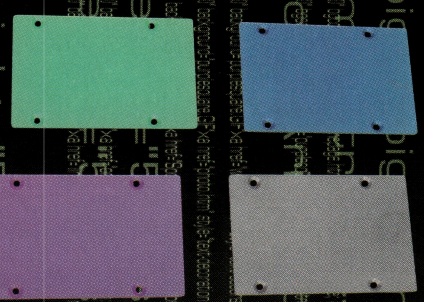
T-Maxx Titanium Rear Skid
HCR-00309



T-Maxx Aluminum A-Arms
(full set includes hinge pins & e-clips)
HCR-00304



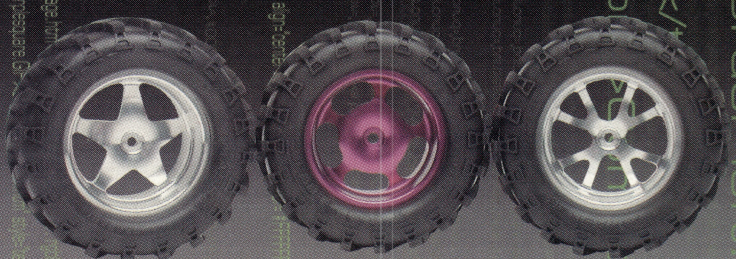
T-Maxx Aluminum Chassis Braces (pair)
HCR-00303



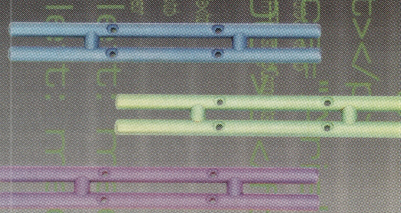
T-Maxx Titanium Center Skid
HCR-00307



T-Maxx Titanium Pillow Balls
HCR-01504



Pounder - HCR-003113 • **Stomper** - HCR-003112 • **Matrix** - HCR-003111
T-Maxx Aluminum Wheels Set of Four



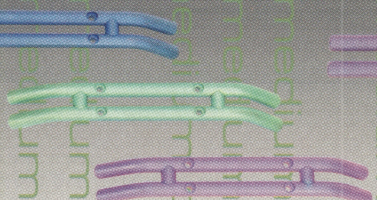
T-Maxx Titanium Rear Bumpers
HCR-00305



T-Maxx Hyper-laminate Brake Disc
HCR-00301



T-Maxx Titanium Callpers
HCR-00302



T-Maxx Titanium Front Bumpers
HCR-00306

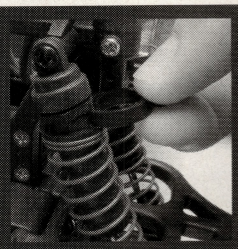
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E-MAXX SETUP TIPS

Lower ride height



You can reduce the likelihood of rolling the truck over by simply lowering the truck's ride height. Lowering the ride height will slightly reduce ground travel, but the effect is negligible. Remove the spring clips from the rear shocks and set them aside. Remove the clips from the front shocks and install them onto the rear shocks. This will slightly lower the ride height and center of gravity.

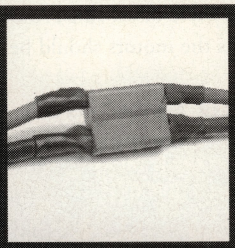
Adjust Camber

Out of the box the E-Maxx's camber is set pretty well, but, after time, things get out of whack. Pick up a camber gauge from RPM to measure camber. Stand the gauge up on edge to measure the tall tires. Using a 2.5mm wrench you can adjust the camber by screwing the captured balls in or out. Zero to negative one degree of camber is your best bet for the overall best performance.



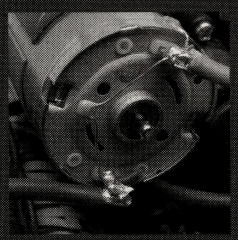
Axe the Plugs

Thanks to high amp loads placed on all of the electrical connections, Traxxas went the extra step and used super high quality connections inside the standard Tamiya-style plugs. If you use anything hotter than the stock motors you'll find that the stock connectors get warm after use and can eventually melt together if the connection gets loose. Replace the stock plugs with Deans Ultra Plugs. We've found these to work easily, provide a super low resistance connection, and are easy to grasp.



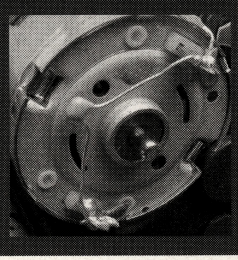
Hardwire the motors

If you don't mind having to pull out the soldering iron every time you change motors, I highly recommend getting rid of the bullet-style connections run between the ESC and the motors. Remove these plugs and solder the leads from the ESC directly to the motors. Convert only one motor at a time so as not to get confused. Make sure you keep the polarity straight. The positive (red) leads go to the positive terminals on the motors marked with the small red dot.



Put a capacitor across the motors

To help reduce noise generated by the twin Titan motors, run a standard .1 microfarad capacitor across the two terminals on each motor.



Building Tips

1. Glue the tires.

Pick up some tire glue or CA from the local hobby shop and glue the tires to the rims as prescribed in the operating instructions. This will keep the tires from coming off the wheels during hard cornering or prevent the wheels from spinning in the tires and wasting power.

2. DO NOT CUT THE ANTENNA.

After you install the antenna tube over the receiver antenna, coil the antenna around the antenna tube. Another way to make use of that extra antenna is head over to the local hobby shop and pick up an antenna wrap. This is a small piece you can coil the excess antenna around before you thread the antenna into the tube. About five or six coils around the antenna wrap should do.



The E-Maxx hardened beveled diff gears can handle their fair share of abuse.

so that the truck could land on all four. I felt like a freestyle motorcrosser not long after. On smaller one-foot jumps and curbs the E-Maxx just laughs as it easily rumbles over things.

Braking • Braking takes a little getting used to. The VX-12 doesn't really have brakes. Tapping what would normally be the brakes on an electric car results as reverse. Being light footed on reverse will result in some braking power, but if you go too far on the brakes you'll end up flipping the truck over itself.

Durability • As usual we bashed the hell out of this truck. Thankfully the only thing that broke was the front skid plate. The skid plate tore through the screws that secure it into place. Just to give you an idea of how we tried to bash this truck, we went top speed in first straight into a curb – no damage; full speed in second causing an intentional roll over – no damage; full speed in second, drop into first, and give the truck full reverse – no damage. Continually doing any of the stupid things we tried will eventually end up ruining your E-Maxx, so don't do it. Just know that we did and our truck is still running.

Tunability • There really isn't too much to tune on the E-Maxx. Camber is a valuable adjustment on the E-Maxx. Instructions for camber changes come with the kit. The Allen wrench necessary to adjust camber is also included. Changing ride height is as easy as adding or subtracting shock clips, also included with the kit. The one tuning aid that was not included with our test truck (the first batch) was a wrench to remove the tires. You'll need a thin walled 5/16" or 8mm wrench for that. After the first batch of E-Maxxes Traxxas will be including a wrench for this task. Changing pinion gears or motors is also very easy.

Maintenance • The E-Maxx is like any other electric vehicle when it comes to maintenance. Regular cleaning with compressed air and a toothbrush should do you. Traxxas recommends their Nitro Wash solvent for heavy cleaning chores with the exception of the motors. For cleaning the

E-Maxx Vs. E-Mail? Advantage: E-Maxx. No Spam Here.

motors be sure to use high-quality motor cleaner. The E-Maxx should be cleaned whenever convenient and definitely between every five or six runs. About every fifteen runs the motors should be removed, cleaned with motor cleaner, and re-oiled. About every four to six months a complete tear down would definitely be helpful. This would include rebuilding the shocks and diffs for those comfortable enough to get their hands a little dirty.

Runtime • I ran the E-Maxx with Trinity Monster Maxx 1900 Ni-Cads, Trinity Sanyo 2400 Ni-Cads, and SMC Sanyo 3000 Ni-

The specifics

Traxxas E-Maxx
Part # 30906
MSRP: $695
ESP: $330-$350

Vehicle Type
4WD electric powered, twin-motor, monster truck.

Chassis
Type: Molded tub.
Material: Molded fiber composite.

Wheels and Tires
One-piece, 5-spoke, satin finish wheels with large paddle treads and foam inserts.

Drive Train
Type: Center mounted gear box with 2-speed.
Drive Shafts: Universal sliders
Diff: Two planetary gear differentials
Slipper: Friction slipper
Bearings: rubber sealed bearings
Internal gear ratios: 1st - 2.77:1, 2nd 1.77:1

Suspension
Type: Independent lower and upper arms with adjustable captured balls for camber adjustment.
Damping: Eight plastic-bodied, coil-over, oil-filled shocks.

Motors
Two Titan 550 23-turn 14V motors

Items You'll Need
Two 7.2 Volt battery packs, 7.2V battery charger, eight "AA" alkaline or rechargeable batteries.

Main Competition
Taimya Juggernaut 2, Tamiya Clodbuster.

E-Maxx'ed to the Maxx

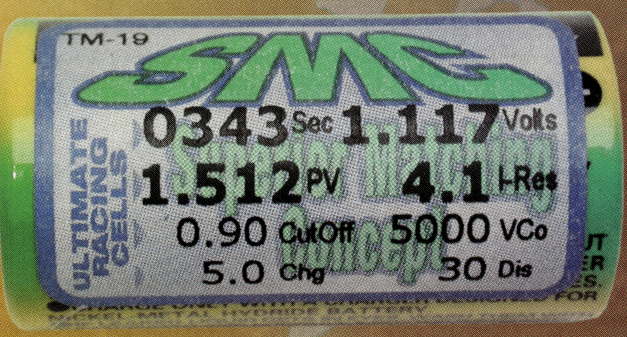
To get a taste for some high-speed thrills I bolted on two of Trinity's new Monster Maxx 17-turn bearing'ed 550 motors. Holy Crap! The E-Maxx kept up with our souped up T-Maxx on top speed and blew it out of the water on acceleration. The downside – 6 minute run time with 2000's and 9 minutes with 3000's. The moral of this little side bar: If you want to go scary fast the E-Maxx can handle it. Just watch your ESC temps and adjust your gearing.



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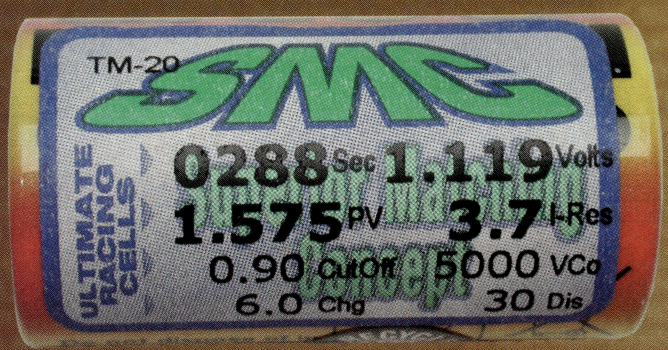
SVP cells: 1.105+ avg. voltage at 30 amps. 0.90 voltage cutoff. 3.6-4.5mohms

Part #	Description	Retail Price
SVPS3006-S	340+ High Voltage 1.115+	$125.00
SVPS3006-P	340+ Voltage 1.105-1.114	$100.00
SMCS3006-MSP	Matched Stick Pack w/sticker	$85.00

Sanyo RC-2400

SVP cells: 1.11+ avg. voltage at 30 amps. 0.90 voltage cutoff. 3.2-4mohms

Part #	Description	Retail Price
SVP2406-S	275+ High Voltage 1.12+	$120.00
SVP2406-P	280+ Voltage 1.11 - 1.119	$95.00
SMC2400-MSP	Matched Stick Pack w/sticker	$75.00





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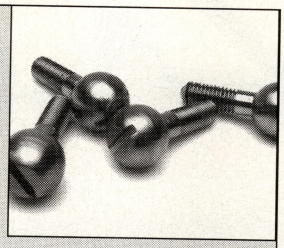


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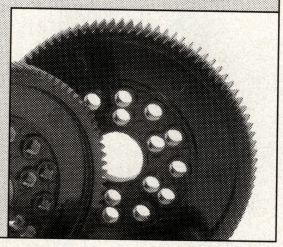
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Our Top Hop-Ups

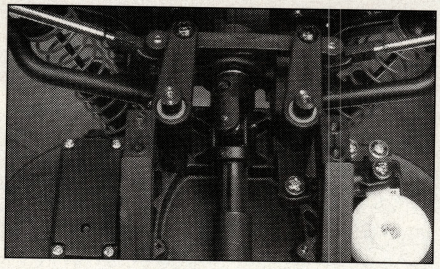
Lightweight Pillow Balls • Pick up lightened pillow balls from Traxxas (4933X) or Hardcore Racing (HRC-01504). Replace the stock balls with these lightened ones. You'll save lots of weight when you change all eight balls. Plus this is critical unsprung weight. The less unsprung weight the more control you'll have over the truck.



Extra Spurs and Pinions • You'll want to experiment with different gear ratios depending on the motors or batteries you're using or the terrain you're running over. Traxxas, Kimbrough, and Robinson Racing all offer 32-pitch direct replacement pinions and spurs. As long as you set the mesh correctly, you should be able to run 48-pitch gears, which will allow the truck to run quieter, smoother, and more efficiently.



The supported steering bellcranks help to turn those massive tires and wheels.



For the strongest steering joints possible, 1/8-scale-style pillow ball suspension is used.



MH's. With average use, not always on the gas, but not always stopped, and shifting between first and second gears when appropriate I got between 12 to 16 minutes of run time with two fully charged batteries.

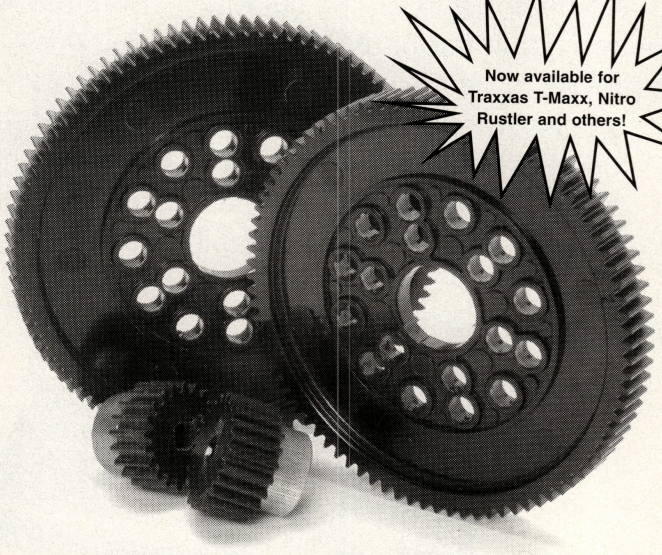
Conclusion

Traxxas has done it once again. The E-Maxx is an electric version of the most popular R/C vehicle in a decade. The basic design is more than anyone could ask for, and the E-Maxx is an RTR at that. Out of the box, this truck is more fun than a barrel full of wired monkeys hopped up on speed. The E-Maxx is fast, can handle any terrain, does more than a monster truck should, is durable, comes pre-assembled and ready to go, and is reasonably priced. What more do you people want? Aside from all this there's already a billion hop-ups that were available for the T-Maxx that will bolt right on. Anybody looking for a matching E-Maxx to their T-Maxx, something they can bash around with indoors, or somebody looking for a T-Maxx but are afraid of gas, will fall in love with the E-Maxx. Viva La E-Maxx.

KIMBROUGH Products

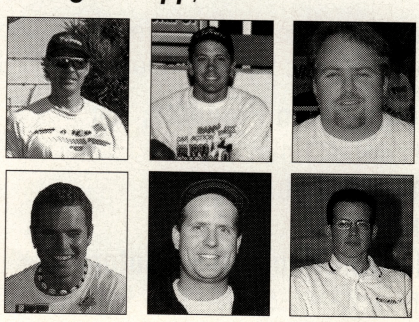
The best drivers in the World use the best gears!

Now available for Traxxas T-Maxx, Nitro Rustler and others!



Kimbrough gears are made from the finest materials to exact tolerances for unsurpassed quality and performance. We offer a variety of pinion and spur gears available in 48-, and 64-pitch sizes.
Available in 32-pitch for gas vehicles.

Drivers like ***Tony Neisinger***, ***Chris Tossolini***, ***Billy Easton***, ***Mark Pavidis***, ***Greg Hodapp***, ***Derek Furatani***, ***Scott Hughes*** and ***Rick Hohwart*** can choose any brand of gear for their cars. They choose the best, ***Kimbrough!***

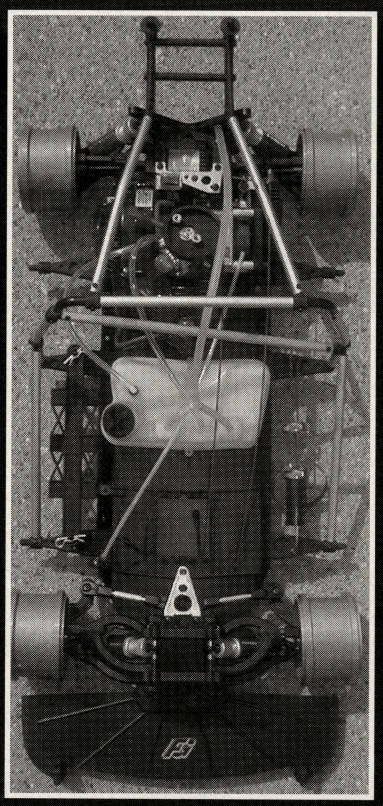


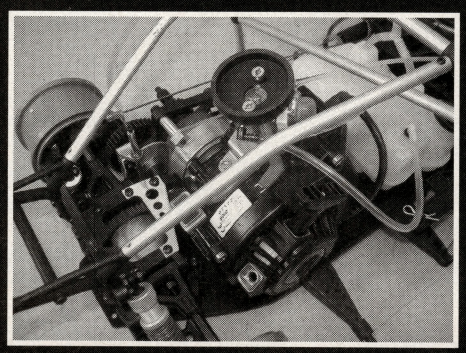
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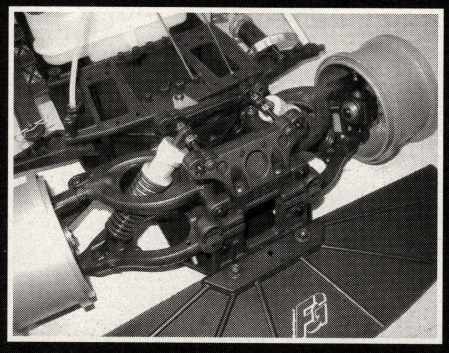
GO TOURING IN A BIG WAY!



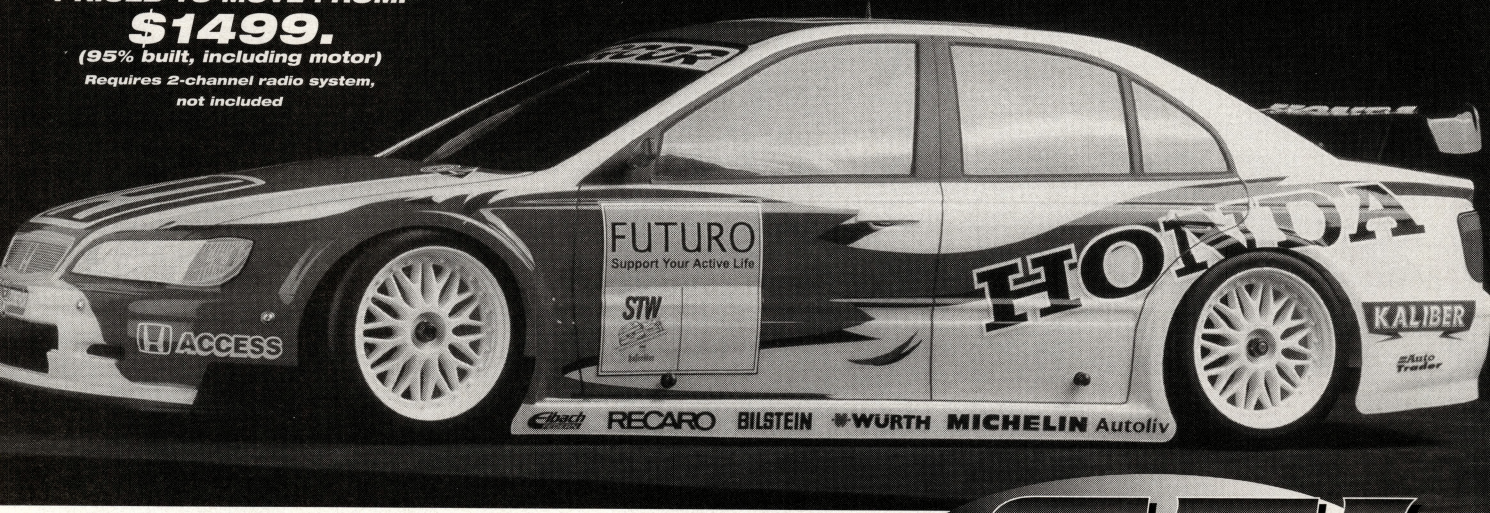
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TEAM ASSOCIATED T3 RTR



ATED T3 RTR TEAM ASSOCIATED T3 RTR

What movie is the following line from?

To date, most RTR kits on the market are cars that have been designed to be RTRs. They feature things like molded control links so that the user doesn't have to worry about adjusting things like camber or toe. There are typically few suspension adjustments, again so that things are simple and easy. These kits are great for those that have no aspirations of every hitting a real race track. But for those that eventually do, these kits later on become throwaways.

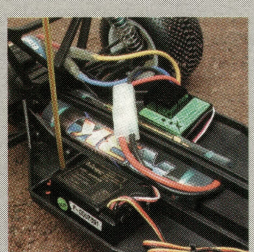
As a result of the success of the RC10GT RTR, Associated decided to take the RTR treatment to their proven and tested electric race truck design. Introducing the RC10T3 RTR. It's the same basic kit you can buy in a box with 100 plus parts for you to put together, plus electronics. Instead of opening the box to find a few hours of building, the RTR can hit the road in a matter of minutes. But does a true racing design work as an RTR? Is it user friendly enough? How about racing, is it still a race truck? Let's find out.

Hits:
- Truly a raceable RTR.
- Tons of options already on the market.
- Best handling RTR we've seen.
- High quality build and fit.

Misses:
- Other RTRs come with bearings.
- Included motor is no speed demon.

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

Electronics



The T3 RTR comes wired and ready to go. An LRP Runner ESC comes installed, wired, and ready to turn on. The Runner has brakes, reverse, and can handle down to an 18-turn motor. Speaking of motors, the T3 RTR comes with what looks like a standard slow-poke Mabuchi motor. But, that sleeper motor actually holds a hot 20-turn modified armature inside. Sure it's not a 9-turn double, but it's faster than what you'd expect in a kit geared at beginners. To keep control of things, Associated gives you a Hitec Sport Lynx radio. The Sport Lynx isn't featured packed, but it's got the features you need.

Steering



The T3's steering is very straight forward. A spring-loaded steering bell-crank is used as a servo saver should you slam the truck into a curb or other foreign object. This steering system is very responsive and very tough.

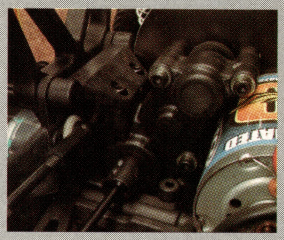


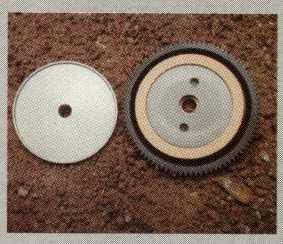
Chassis

The T3 RTR is built upon Associated's tried and true composite tub design. The chassis is extra long to provide plenty of stability. A 7.2 volt battery is mounted down the center of the chassis. A large foam pad can be placed in front of or behind the battery to affect how much steering the truck has. At the front of the chassis the front suspension is bolted on using an aluminum suspension plate. The same is true in the rear for the rear suspension. The chassis has a smooth bottom complete with countersunk holes for nice clean finish.

EAM ASSOCIATED **T3 RTR** TEAM ASSOCIA

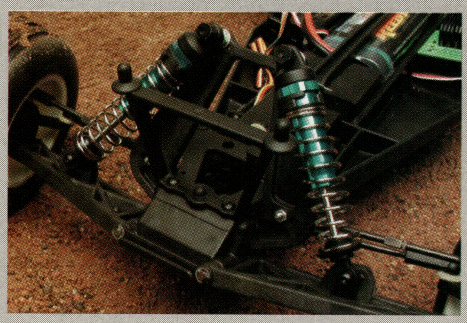
Drive Train





What more could a beginning racer want than a Stealth Transmission? Since this is a true T3 and not some sub-par competition kit knock off, Associated spared no expense; a Stealth Transmission complete with an adjustable ball differential is included. Associated chose to support the transmission with bushings over bearings. Although I would have liked to have seen bearings in the tranny, not having them does keep the kit cost down. The adjustable ball diff does require more maintenance down the road than an geared differential, but an adjustable diff offers the easy adjustability you can't get from a geared differential. To help keep the traction under control the ATC slipper clutch is standard. The slipper clutch can be loosened or tightened depending on the needs of the driver and the terrain. When loosened, the truck will take longer to take off, but will keep the wheels from spinning in loose dirt or sand. When the slipper is tightened all the power from the motor is being put to the ground. Standard dogbones shuttle power from the transmission to the axles and rear wheels.

Suspension



What else can be said that hasn't been said about the T3's suspension? This truck has won multiple NORRCA and ROAR national championships. The suspension just plain works. In the front and rear, the suspension uses long molded composite arms along with adjustable steel turnbuckles to allow for camber adjustment. For those looking to tune their truck to the demands of the road, you'll like the adjustable tie-rods. For those of you who don't have a clue and don't want to learn, leave these alone. To keep the chassis as flat as possible over rough terrain, blue anodized aluminum shocks dampen all four wheels. The shocks are the same basic design Associated has used for years. Oil, spring, and piston changes are not difficult and can greatly improve the way the truck performs. Again, since this is a real T3 the suspension is completely adjustable, camber, caster, toe, camber placement, and shock placement are all adjustable.

"Hey geek face, wanna race?"

Other Features

Body, Tires, and Wheels • The T3 RTR body is the basic T3 body that's been used for years. But, the body that comes with the kit is Associated's second attempt at including a painted body. And I must say they did a very good job. The design is inspired by Mark Pavidis' race design. The design is available in Mark's red (actually it's kind of a orange-peach), white, and blue; Billy Easton's red, white and yellow; and Scott Hughes' purple, yellow and white. The tires that come with the kit are Pro-Line knock-offs almost identical in tread design to rear Hole Shot and Edge tires up front. I would have liked to have seen the genuine article here instead of imitations. The tires come with foam inserts and are pre-glued to the white dish wheels.

Hardware • Unlike most RTR kits we've seen, the T3 comes with all American Standard screws with Allen heads. These are the same screws you'd find on any other T3 kit. Once again, this is the same T3 kit you can buy un-assembled. To help in repairs, Associated threw in a molded tool set along with Allen wrenches need to make most minor repairs.

Testing

Getting Started • After opening the box to the T3 RTR, you quickly find that most of the work is done for you. Associated includes a small one-page Quick-Start guide. Basically all you have to do is install eight AA batteries into the radio, charge up your 7.2 volt battery install the battery pack, trim the steering, trim the throttle put the body on, and connect the battery. That's it. The body is cut out, the antenna tube is threaded through, the tires are glued, and the suspension adjustments are all already set.

Testing Ground • Our testing ground consisted of the large asphalt parking lot here at *Xtreme* HQ and our local test facility at K&M Raceway in Grand Terrace, CA.

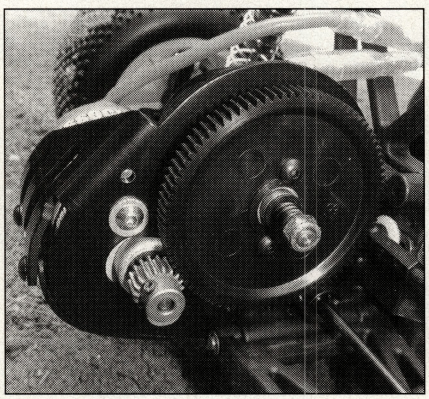
Acceleration • Remember when I said the 20-turn motor was a hot modified? I lied. Actually it's not that bad, but it's no beast. On asphalt, the truck's acceleration is a little on the slow side. When the truck is on the dirt, the sensation of speed is around thanks to the dirt flying. The slipper comes in very handy on the dirt. Remember, in stock form the T3 RTR is intended for the first timer.

Top Speed • (See Acceleration) Just kidding. Top speed is not bad. Once the truck gets rolling, the speed should keep most first timers happy for a while. If the T3 RTR is your first competition R/C, the speed is perfect. It's fast enough to keep you excited, but not so fast you can't learn how to drive.

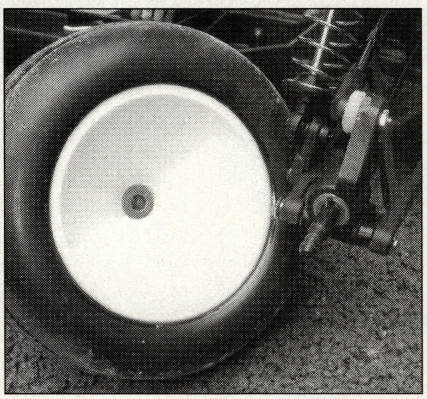
Jumping • This truck is truly at home on a dirt track, more so than any other RTR in its class. Big jumps, little jumps, ruts, table tops, you name it. The T3 RTR handled them all without problem. The truck's attitude remained level on any jump situation.

Braking • What brakes? As much as I tried and tried on making ESC adjustments the Runner ESC would shift into reverse. This brings you to a stop. You just got to learn how to let off reverse so that the truck doesn't whip around when you only want to stop. On the track this took a little getting used to, but once you do it's second nature.

Low-Speed Turning • Out of the box, the truck handled all of our slow speed turns with very little push. On and off throttle the truck was extremely stable. The stock M2 tires handled the dusty ungroomed track conditions given the tame power plant. On the asphalt, the truck was very easy to control and didn't do anything I didn't want it to.



Like the T3 Racer and even the Factory Team version, the RTR comes with an adjustable slipper clutch.



If racing is in your future, the first things that have to go are the bushings. Replace the bushings with ball bearings.

Setup Tips

1. When installing the battery pack do the following. Take the battery brace and first place the hook end of the brace underneath the groove notched into the rear shock tower first before you place the pack in the chassis. Once the hook is under and into the latch, place the battery pack into the chassis. This will save you some time.
2. When I first laid my eyes on the receiver and the nest of antenna wire beside it, I thought I was going to have to get an antenna wrap to clean things up. I didn't. Out of the box the Sport Lynx radio gave us a range of at least 250+ feet without a glitch.
3. Never run the truck without the body on. You'll greatly increase the odds of breaking something when you go topless.

What It Takes to Race

In stock form, the simple installation of a ROAR-legal stock motor should be enough to make the T3 RTR competitive in any novice class of racing. If you decide to do some racing, the first hop-up I would suggest would be a full set of bearings. Ball bearing sets are available from Associated, Boca, DuraTrax, Dynamite, and other companies. A set will set you back about 40 bones, but you'll be thankful. Your truck will be faster, quicker, and smoother running. The next expense would be to buy a couple different pinion gears. Pick up 19-,20-, and 21-tooth gears. And the last thing on your list should be some different springs. A set of Green front and rear springs will give you some tuning options. Lastly, find out which tires are the killer setup at your local track and pick up a pair. Normally the front tires that come with the kit will work just about anywhere. You only need to worry about changing the rear tires. The instructions that come with the T3 RTR are packed with tuning advice. You can find more tuning tips from us in Issue 4.4 and also from Associated's Complete Tuning Guide.

The first person to email Mike the title of that movie will win a DVD or VHS copy.

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

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

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

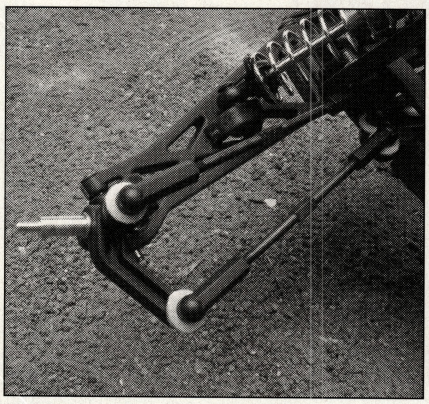
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Know Your Role

The T3 RTR fits almost dead in the middle of Associated's T3 line up. At the high end is the Factory Team T3 which features every conceivable hop-up and performance enhancing piece you can imagine. The FTT3, like most of Associated's cars, is a kit that requires some skill and patience for building. At the other end of the spectrum is the Basic+ T3. It comes unassembled with basically the same running hardware as the RTR. With the RTR Associated took the Basic+, built it, installed a radio, ESC, painted the body, put in a hot motor and swapped out the gold shocks for blue ones.



Unlike most RTR's, the T3 RTR comes with adjustable tie-rods instead of fixed links.



The Hitec radio is simple to use and comes with all the necessary adjustments.

High Speed Turning • At height speeds the truck is again extremely stable. The T3 design is so well refined I would expect it to be nothing less than near perfect. On a large sweeping turn at the track, the truck kept a nice tight line all the way through. The T3 design was made to win races with some super fast batteries and motors. That means with a slower power plant the T3 handles like a Ferrari.

Tuning • Tuning is all very easy. The tools that come with the truck allow you to make camber adjustments easily. Clips are included for making ride height adjustments. At the track, I kept things very stock. The only tuning I made was to the slipper clutch on the dusty conditions. During our photo shoot we needed to remove the rear wheels. The included box wrench gave us problems and could not grab a hold of the rear nuts that hold on the wheels. We needed to use a pair of needle-nose pliers to loosen the nuts. Associated needs to mold some space between the wheel nuts and the wheels so that removal is easier.

Maintenance • After ten minute run times with Reedy 3000 Panasonic cells, the motor was not hot at all. Standard motor cleaning and re-oiling should be performed about once every ten or fifteen runs. Tranny and shock rebuilds should be performed about once every three to four months. If racing is in your future, you'll want to increase frequency of all three maintenance procedures.

Damage • During testing on the asphalt we were having lots of fun slamming the throttle between forward and reverse and reverse and forward. The truck would swap ends while going down a straightaway at top speed. On one of these freestyle passes, I slammed the truck into a curb at full speed in reverse. Well the result was a broken left rear suspension mount. In fairness to the T3, I got away easy considering the speed of the impact. A trip to the hobby shop and a $2 replacement part got me back on the road. Thanks to the T3's popularity parts support should be great at just about any hobby shop.

Conclusion

The T3 RTR is an RTR that's truly in a class by itself. This statement might upset Associated's competitors but what other RTR is a motor change away from competing at any organized off-road race track in the country? None. The T3 RTR is essentially the same truck that wins big races all around every year. There are vehicles on the market that were designed to be RTRs, and those cars or trucks might be better suited for the first timer thanks to the lack of adjustment and more user-friendly design, but none of those other cars are a few hop-ups away from at least a year of racing in the normal racing time frame. Pick up a stock motor and a set of ball bearings and the T3 RTR can easily be enough to get you well into the sportsman ranks. If you don't think racing is in your future you'll enjoy the ease of operation and the quickness from unwrapping the box to hitting the road. Team Associated has hit one out of the park with the T3 RTR.

The Specifics

T3 RTR
Part #: 7010
MSRP: $359.95
Street Price: $230-$250

Vehicle Type:
2WD electric stadium race truck.
Scale: 1/10
Chassis Type: Molded tub chassis with center running battery tray.
Material: Molded composite.

Transmission
Design: 3-gear reduction
Reduction Ratio: 2.4:1
Differential: Adjustable Ball.
Slipper Clutch: Yes, Friction
Bearings/Bushings: Bushings

Suspension
Type: 4W independent lower A-arm with adjustable camber links.
Damping: Oil-filled, coil-over shocks.

Wheels, Tires and Body
Wheels: One-piece white molded dish.
Tires (F/R): Hole shot knock-offs in rear, Edge knock-offs up front.

Who It's For
Entry level racers or backyard bashers who want to get running five minutes after they open the box.

Dimensions
Weight: 3 lbs 10 oz.
Wheelbase: 11 5/16"
Width: 12 1/2" Rear, 12 1/8" Front
Build Time: 5 minutes not counting battery charging.

Main Competition
Traxxas Rustler, Losi XXX-T, Kyosho Ultima ST RTR.

Here's a clue – it's Mike's favorite movie.

BODIES



#10165
GRAVE DIGGER™
1/10 Clear Body w/decal

#10165P
GRAVE DIGGER ™
1/10 Painted Body w/decal

BODY MOUNTS



#10449
DIRECT FIT TRAXXAS T-MAXX
HIGH BACK BODY MOUNTS
(perfect for our Grave Digger™#12)

#10159
BIGFOOT® CHROMALUSION™
1/10 Clear Body w/decal

#10159P
BIGFOOT® CHROMALUSION™
1/10 Clear 200mm Body w/decal



.040 Lexan® 25% STRONGER



#10138
OVAL OUTLAW
1/10 Clear 200mm Body

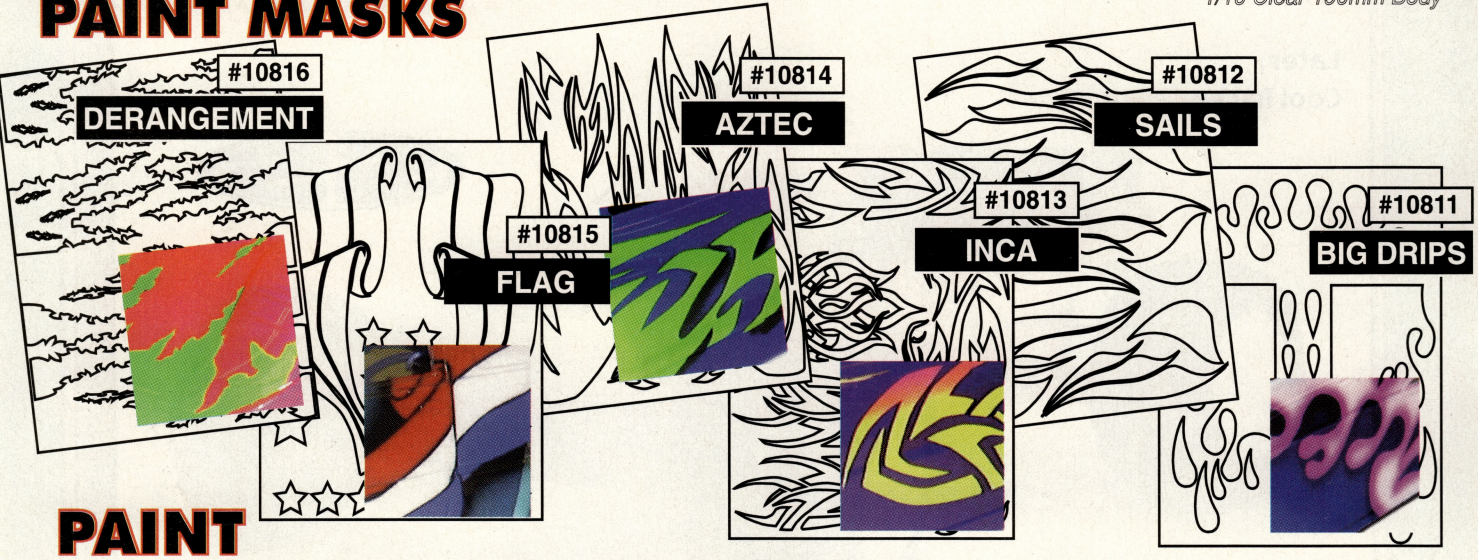


#10152
"GANGSTAR" CUSTOM
1/10 Clear 200mm Body



#10181
OPEL ASTRA DTM w/wing
1/10 Clear 190mm Body

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GOT SPEED?

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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



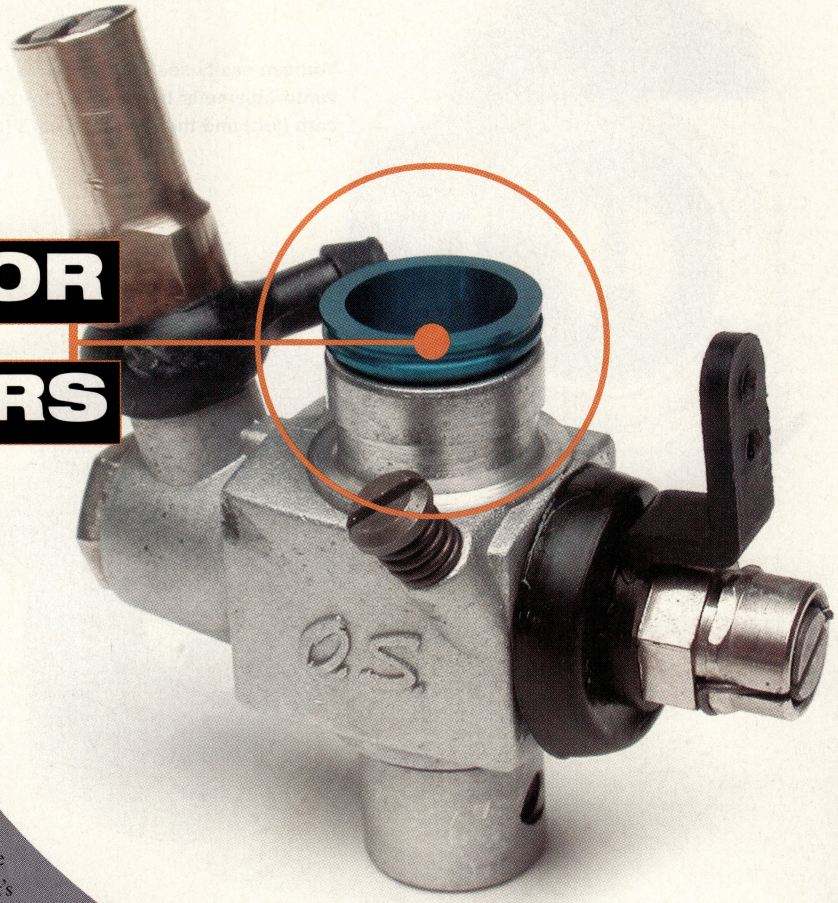
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TUNING with CARBURETOR RESTRICTERS

By Regan LeBlanc



What does a restricter do?

In off-road nitro racing a smooth power band is more sought after than sheer power. A restricter helps to smooth an engine's power band from idle to mid-range. Having a smoother power band will help keep your truck under control and going straight when accelerating. A restricter reduces the amount of air flow going into the engine, which in turn also reduces the amount of fuel flowing into the engine. The side effect to that is slightly better mileage when a restricter is installed. The benefits of a restricter aren't simply derived from the reduction of air flow into the engine, where that restriction takes place. A restricter reduces the size of the carburetor venturi leading into the engine. This accelerates the air as it's induced into the engine.

Who makes restricters?

Team Associated, Dynamite, and other companies offer restricters for .12 size engines in a variety of diameters. The most popular range of restricters is that offered by Associated. They produce three sizes with diameters ten thousandths or an inch smaller than the other. It's amazing, but even that difference in diameter makes a difference. Associated's restricters are color coded. The Associated restricters are black (.170), blue (.180), and silver (.190). If you heed to my advice and give a restricter a try, I recommend you pick up all three.



When should you give it a try?

If you race gas off-road truck there's a very good chance that you'll find a restricter greatly beneficial. On the pro off-road circuit, almost every top driver uses a carb restricter. After installing a restricter you'll see a smoother power band down low. Your engine won't just kick in with a bang it will be more controllable. Your engine will also idle a little bit better since the air velocity will be higher as it comes into the engine. The only area a restricter becomes a hindrance is with top speed. If you're on a large off-road track that doesn't have many tight turns and has tons of traction a restricter probably won't help much and will only slow you down. Other vehicles like nitro touring cars, 1/8-scale on-road cars, and 1/8-scale off-road buggies don't get as much benefit from the use of a restricter. These types of cars can typically handle as much power as your engine can produce, so smoothing out your engine's power band isn't necessarily a good thing.

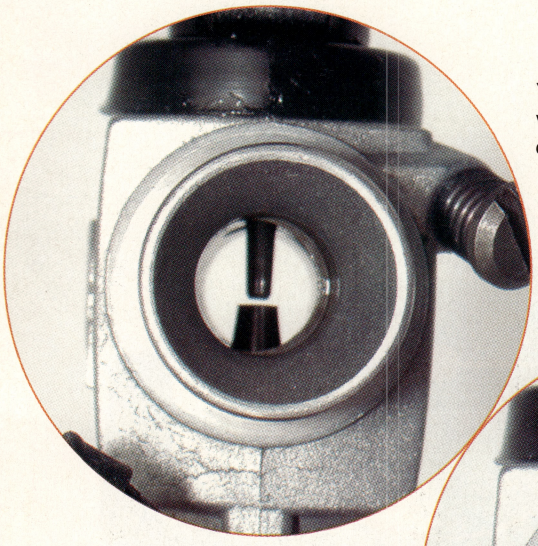
More or less restriction?

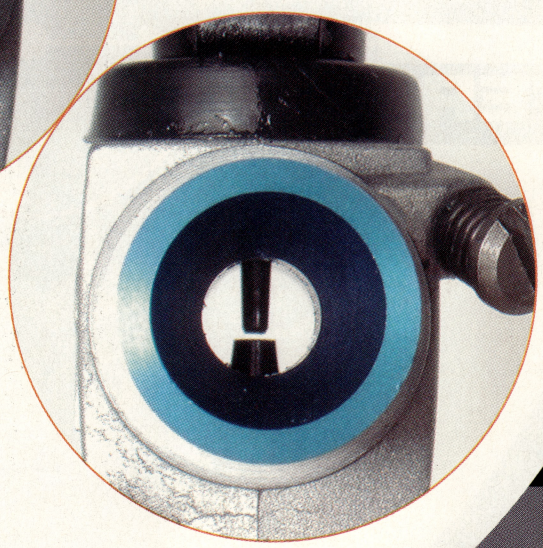
As you can imagine more restriction will exaggerate the benefits and downsides of using restriction than less restriction would. Using a restricter with the smallest amount of restriction will have a positive impact on fuel economy and have just small effect on smoothing out the power band and limiting top speed. Using a restricter with the greatest amount of restriction will also have a positive impact on fuel economy while making a more dramatic effect on smoothing out the power band. As you can imagine, the most popular restricter tends to be the one that fits in the middle of this scale.

Where should you start?

Once you've picked up a couple or restricters get yourself to the track on a practice day. If

Mike was on restriction for 3 months one time.





You can easily see the difference in venturi diameter between an un-restricted carb (left) and the restricted carb (below).

A dirty air-filter is no substitute

Don't get a carb restricter and a dirty air filter confused. It's critical that you clean your air filter whenever possible. For my 1/10-scale truck I like to used a standard Associated paper filter with a well oiled foam pre-filter. Keep that pre-filter free of dirt and keep it oiled. If you keep your pre-filter clean and oiled often you shouldn't have to replace the paper filter often at all. Replace the pre-filter between race days as well. Use high-quality filter oil on your pre-filter. If you use a foam air filter like those from O.S. and other engine makers, be sure to clean those filters out often with denatured alcohol. Again, re-oil the foam before you reinstall the foam into the filter itself.

you're using the Associated restricters, start with the Black restricter, give your truck a try, then proceed to move on to the smallest silver restricter. This will give you a taste of one extreme to the other. Then try the blue restricter on for size. If you're like most of us you'll probably settle on this midsize restricter. But, it's good to try the largest and smallest restricters so that you can mark the difference in performance from one restricter to the other. Adjusting the carb post restricter installation. If you're absolutely happy with how your engine's running and then you pop a restricter in, you'll only need to make a minimal amount of carburetor adjustment if any. Upon installing a restricter you may need to lean the high-speed needle just a click or two. You should go through your entire engine tuning procedure after you've installed a restricter that way you know you're getting maximum performance from your engine.

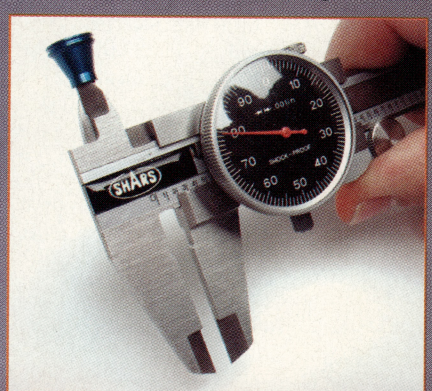
Barrel or Slide?

Most restricters like those from Associated and Dynamite can work with either slide or barrel carburetors. In off-road truck racing, a barrel carburetor will give you the most manageable performance. But, if you have a slide carburetor on your off-road truck restricter is a must and will help to make your slide carbureted engine much more manageable and controllable. All too often drivers find there slide carbs drive like a light switch, either on or off. A restricter can have a huge impact on helping a slide carburetor feel like a more smoother-accelerating barrel carburetor.

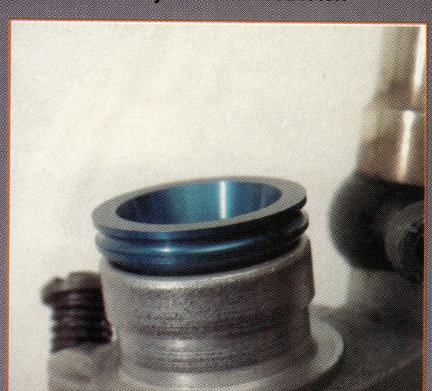
So, you going to give it a shot?

I hope I convinced you to give a carburetor restricter a try. If you're into off-road truck racing I think you'll see a noticeable improvement in performance. Even if you're a backyard basher that might not ever see a race track, a restricter can help your truck on idle and make it more driveable.

Restricters are measured by the inside diameter of the smallest opening.



Be sure to install your air filter with zip ties whenever you use a restricter.



The cause was an incident that paralleled the plot of Risky Business.

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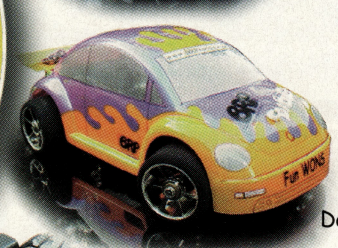
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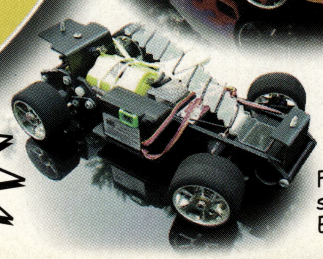
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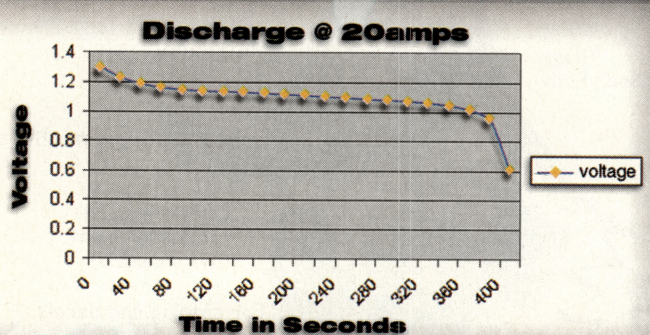
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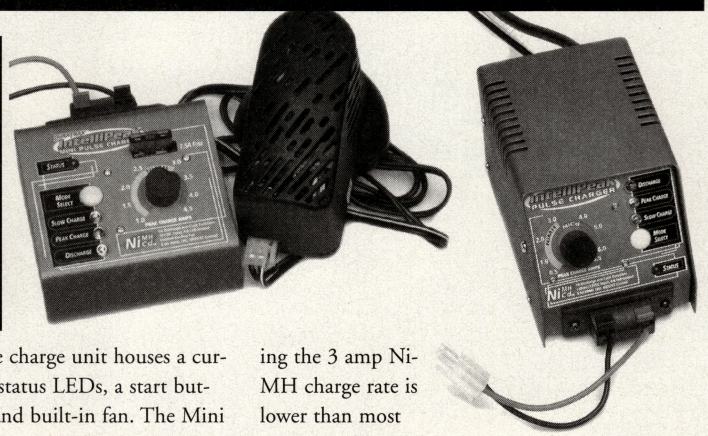
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DuraTrax IntelliPeak Pulse & Mini Pulse

At the recent hobby show in Chicago DuraTrax debuted the IntelliPeak line of chargers. The entire line-up ranges from a simple DC peak model all the way up to a pro-level digital charger. All of the IntelliPeak chargers share some features. The IntelliPeak line-up is geared to satisfy the needs just about everyone. The subjects of this Under The Scope are the Pulse Charger and Mini Pulse Charger each designed to accommodate the needs of weekend bashers to intermediate racers.



What It Is/What It Does

The two chargers reviewed here share a number of features. Both chargers feature "Fuzzy logic peak detection," what this does is institute a lock out period that helps to reduce the number of false peaks while charging. Both chargers use computerized control with 8-bit 4MHz CPU, 8k ROM, 1k Ram, and a 1 channel 16 bit analog-to-digital converter. What's all that mean? Basically these chargers aren't simple a collection of wires and diodes, but actually use programming in their charging scheme. Both chargers are have a 100mA trickle charge, fused overload and reverse polarity protection, MOSFET drive transistors, LEDs, two discharge cycles, AC/DC input, spring loaded output jacks, and a 1 year warranty. Both chargers have four different modes, first a standard trickle charge, a fast peak, a discharge, and a cycle mode. The cycle mode discharges the batteries first, waits for a period of time the switches over to a peak charge. Both chargers are safe to use on Ni-Cad and Ni-MH cells. Both limit the charge rate on Ni-MH at 3 amps.

Where They Differ Mini Pulse Charger •

The Mini Pulse charger is two piece system. First the main charger itself is a small, compact, DC peak charger. The charge unit houses a current adjustment dial, status LEDs, a start button, removable fuse, and built-in fan. The Mini Pulse charges from between 0.5 to 4.5 amps and has a 2amp fixed discharge rate. The most unique feature on the Mini Pulse is the separate 12V, 7amp AC power supply with built in cooling fan. The Mini Pulse charger uses a cord to connect to the AC power supply.

Pulse Charger • The Pulse charge is a one-piece AC/DC unit. In AC mode the charger can charge packs at between 0.5 to 4.0 amps while in DC mode the charge rate ranges between 0.5 to 6.5 amps. The discharge current is 1amp. The controls on the Pulse are the same as the Mini Pulse. The Pulse has cords for both an AC connection and alligator clips for a 12V power supply.

Testing

For a full week we used both chargers to charge all the batteries around the office. That entails about 30 to 40 charges considering all the cars we test, play with, and work on during those days. On occasion we whipped out the voltage meter to monitor voltage as it charged. Both chargers worked great when charging Ni-Cads – almost no false peaks. Charging the Ni-Cad AA batteries in our radios was a breeze. DuraTrax offers an optional connection to charge Futaba and other brand radios. Thanks to the spring loaded connector jacks changing the plug type on the charger was easy. Charging Ni-MH batteries on the other hand was a little more traumatic. Both charges false peaked more often than we would have liked, the Pulse more than the Mini Pulse. Luckily that's a pretty quick fix, just push a button. When we didn't run into a false peak both chargers did a good job of charging or Ni-MH. For the demands of racing the 3 amp Ni-MH charge rate is lower than most racers would prefer. After the 3amp charge our Ni-MH packs didn't seem as punchy as when we charged them at 5 amps on our other Ni-MH chargers. With that said, only racers might notice the difference between a 3amp and 5amp charge. Once the IntelliPeak chargers reached their peak with the Ni-MH packs battery temperature was within the 120° safe range.

Testing the discharge was pretty simple. The one button interface is easy to navigate and get the hang of. Because the discharge rate is so low, 2amps on the Mini Pulse and 1amp on the Pulse, I don't recommend discharging fully charged packs. The built in discharge feature on these chargers is handy when bringing down the voltage on Ni-Cad packs. The voltage cut off is too low for Ni-MH (and not really necessary). Once the charger finishes its discharge function it automatically goes in to a trickle charge mode.

The last thing I wanted to test was the reverse polarity protection. Testing this was easy, simply plug a battery in backwards. Both on the charge input and output. The charger would simply not function when the battery being charged was plugged in backward. When the input voltage was reversed the fuses in each charger simply blew out.

Conclusion

The IntelliPeak chargers tested here don't set the world on fire with features, but they do offer an inexpensive quality charge. Between the two units I prefer the Mini Pulse. For just a few dollars more it offers virtually the same number of features as the regular Pulse, but it's lighter, smaller, and when you don't need an AC connection you simply leave the power supply at home.

Vital Info:
DuraTrax
Dist. by Great Planes
PO Box 9021
Champaign, IL 61826
www.duratrax.com

Hits:
- Inexpensive
- Charges Ni-MH
- AC/DC
- Easy to use
- Few false peaks (Mini Pulse)

Misses:
- False peaked on Ni-MH
- No voltmeter inputs.
- Heavy (Pulse)

The Last Word
Although the do have their faults, they're very inexpensive, easy to use, and worth every penny.

RATING 8
CELEBRITY EQUIVALENT
PULSE: Nicole Kiddman

RATING 7
CELEBRITY EQUIVALENT
Mini Pulse: Kristy Swanson

The Specifics:
Part #:DTXP4110 (mini), DTXP4100 (pulse)
ESP: $65-70 (mini), $50-$60 (pulse)
Made in Hong Kong

The one year warranty is good only for U.S. and Canadian owners.

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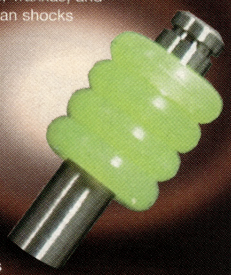
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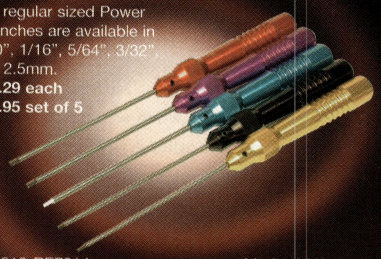
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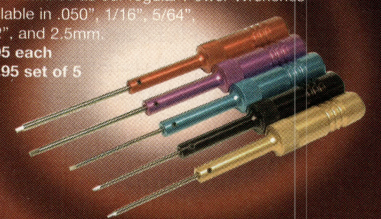
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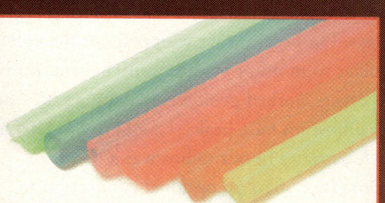
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RE7054-RE7060

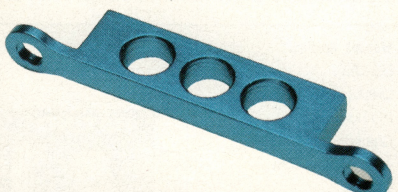
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Ni-MH BATTERY CARE & USE

by Ryan Thomas



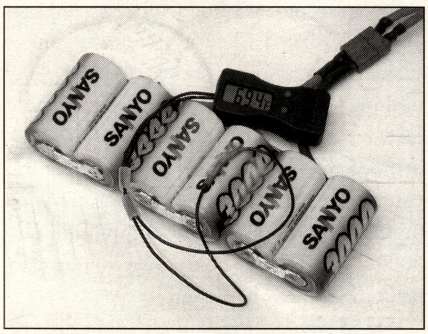
Have you been wondering about the nickel-metal hydride (Ni-MH) batteries that have been out for a year or so? Do you have a few nickel-cadmium (Ni-Cad) batteries lying around, and are you wondering if you should replace them? Well, read on and find out what's so great about the Ni-MH cells and how to take care of them!

Charging

Most battery manufacturers officially recommend charging Ni-MH battery packs on a linear-charge mode battery charger, rather than the conventional delta-peak system. The reason you want linear mode to charge Ni-MH cells is because of the way the nickel-metal hydride batteries are constructed and the chemicals used inside the battery cell itself. Without getting too complex, when a nickel-cadmium battery pack is charged, it reaches a "peak" (a level at which the battery won't efficiently take a charge, and builds up more heat than more stored capacity). A delta-peak battery charger detects that peak and the drop-off in voltage, and automatically changes charge modes from delta-peak to trickle-charge (a low-amperage slow charge). When a nickel-metal hydride battery is charged, on the other hand, it doesn't reach that peak. Instead, it reaches what is termed a slope and then levels off. A charger in delta-peak mode doesn't find the peak in Ni-MH battery packs because there isn't really one to find, so it continues to charge. The charger keeps building up heat in the batteries, which can quickly damage them.

If you DO intend to charge a Ni-MH pack with a delta-peak charger, you must monitor the temperature of the pack with a temperature probe or heat gun. We recommend the MIP temperature probe (their "Onboard Temp Gauge 2") or a nitro car temp gun (Raytek now offers a small, nifty temp gun for about $100). Charger manufacturers who do their own testing recommend that you don't let the pack get over 110 to 120 degrees Fahrenheit.

Many battery matchers and charger manufacturers recommend charging Ni-MH cells at 3.5 to 4.5 amps (preferably with a Ni-MH-specific charge mode). Speaking with Rick Hohwart of Peak, he told me that he charges his packs between 4 to 5 amps. It's general knowledge among racers that the lower the amperage at



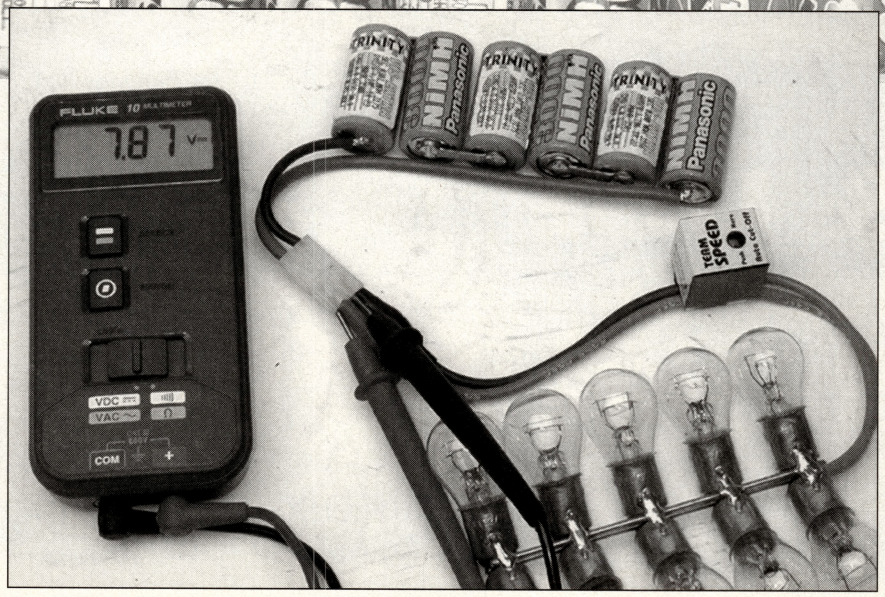
If using the MIP Temp Gauge simply tape the probe point onto a battery cell.



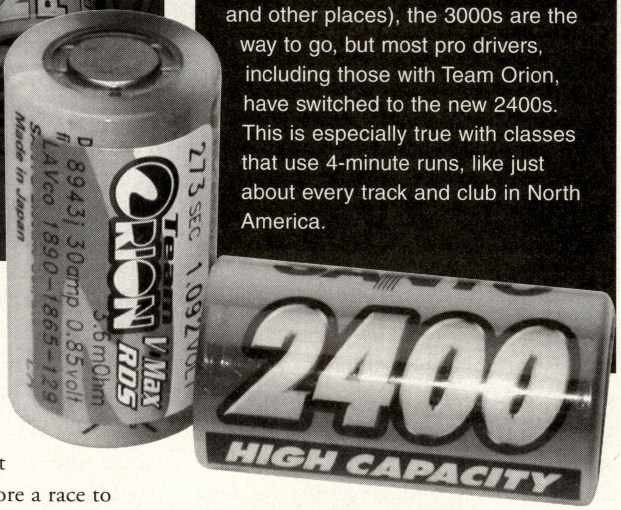
An infrared heat gun, like this one from Kyosho, can also be used.



When purchasing a new charger, look for one that is Ni-MH compatible.







Top: When discharging be sure to use some type of cut-off device and monitor the voltage with a meter. Above: Securely fasten your batteries in place so that they don't bounce around and short on something.

Open 24/7

So with all this talk of Ni-Mh 3000mAh cells, why would I possibly mention nickel-cadmium 2400 cells? Because lots of pro racers have started using them, especially after the latest release of cells hit the market a few months ago!

The first batch of Sanyo Ni-Cd 2400s weren't that great. Even the battery matchers themselves agree with that statement. But the latest batches, coded "EE" on each cell (and there are some that are newer), apparently have much better voltage than the first batches of cells that battery matchers got. I have three packs myself that have 1.121 volts with 295 or more seconds of runtime at a 30 amp discharge. If you're a racer, you know that's impressive. If you're not a racer, you probably don't have to worry about it (and I'd recommend 3000s for you anyway).

Rick Hohwart from Peak says that for any class that uses 5 minute racing and modified motors (such as the 5-minute 4WD modified class in Europe and other places), the 3000s are the way to go, but most pro drivers, including those with Team Orion, have switched to the new 2400s. This is especially true with classes that use 4-minute runs, like just about every track and club in North America.

which you charge your packs, the lower the temperature the packs are when they are finished charging, and therefore the longer the battery pack will last in general use. In English, this means with lower amperage charge rates, your packs last longer. The more abuse the packs take (e.g., high amp charging, high amp discharging, running hot mod motors, excessive heat), the shorter the useful life of the pack. Charging at a high rate may give you give you good punch or acceleration for a short time, but you will be drastically shortening the life of your pack.

Using Your Ni-MHs

Obviously, a battery pack with 3000mAh (milliamps of power) will last one and a half times as long as the 2000mAh batteries you may have. For stock racers, this means that you can do tons of hot laps around your track before a race to warm up your tires, or you can have practice times of up to 8 or 9 minutes. For mod racers, this means you can do a few more hot laps than usual around the track, or practice for 6 to 8 minutes. For hobbyists or backyard bashers, all this talk of bigger capacity just means you can run your car longer!

For the stock racer, a lot of talk goes into concerns of voltage that provide you punch, or acceleration. The Ni-MH packs do not have as much voltage as Ni-Cad batteries, which makes Ni-MH cells better for modified racers.

Thanks to Ni-MH batteries most expert-level mod racers have started using wild modified motors, like 8- and even 7-turn motors! I remember several years ago when a 12-turn motor was considered "hot." Now it's single digits or nothing. Speeches about too much motor for your own good aside, it's still recommended that you use the proper gearing for your car or truck when using these crazy motors. It's still possible to dump using 3000's, but if you're doing that, you have to be doing something wrong.

If you're new to using Ni-MH cells, try the same motor and gearing that you would use with Ni-Cads. Depending whether

Remember the April Fools joke about the Russian batteries?

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you're running off-road or on-road you might want to see what effect using a larger pinion will do for you, one tooth at a time. If you see your lap times getting better and you're not dumping, stick with the larger pinion. If you're racing in a modified class borrow a lower wind motor from a friend until you find the wind that works for you, then go buy the motor that suits your needs.

Discharge?

So after you run the batteries down, then what? The official word from at least one highly-respected charger manufacturer on discharging is basically: don't do it! For either the racer or hobbyist, you can just put the battery pack away and charge it up the next time. Waiting at least one day between uses is recommended, but if you let the pack cool down naturally you can use it more than once in a 24-hour period. If you have to charge up the pack again soon, put a fan on it. I use a 12v DC computer fan plugged into my DC power supply box to cool down my batteries and motor after each run.

With Ni-Cads, you used to have to worry about discharging the pack to a certain voltage, then using a discharge tray to "equalize" the cells of each pack. Well, with Ni-MH batteries you don't have to worry about that anymore. Just take the batteries out of the car, maybe put the fan on them to help cool them down and put them away for next time. Ni-MH's have no "cell memory" like Ni-Cads have. When storing your batteries leave them with about a 40%-60% charge.

However...

Rick Hohwart actually recommends discharging the battery pack, because through personal testing and reports from team drivers he's found that discharging helps the packs stay strong. A safe middle ground would be to run the pack down as much as you can while it's in the car. When you are practicing or having fun in the street, this won't be a problem. However, when you're racing and you've charged up a pack all the way but only use 4 or 5 minutes, take the pack out and let it cool down (remember to be as gentle on the cells as possible; use my fan trick). THEN discharge the pack with a set of light bulbs or better yet, a discharger that lets you set the cutoff voltage. With such a discharger, set it to stop discharging when the pack reaches 6 volts. If you just have a set of light bulbs, use a discharge relay unit that has a cutoff of 6 volts. Let the pack cool off again and you're ready to let it sit until you need it again. Most pro racers recommend that the pack sit for at least a day before charging it up. One thing you definitely don't want to do to your Ni-MH batteries is dead short them.

Down The Road

So now you know how to take care of your new Ni-MH 3000mAh cells. What else is there to discuss? Plenty! You should know that there are two primary manufacturers of 3000mAh cells: Panasonic and Sanyo. Panasonic beat Sanyo to the punch last year, releasing the Ni-MH batteries before Sanyo could put theirs to market. Since then, Powers Japan and Sanyo have released 3000s to the R/C market. Neither research from reputable charger makers nor track testing from teams of pro racers have produced any significant advantages of either brand of battery. (However, the Sanyo's and Powers' haven't been out as long as the Panasonic's have, and there are the constant developments in battery technology; read below.) And because of the high volume and immense engineering efforts of both Sanyo and Panasonic, I would guess that either of these company's cells will handily lay the smack down on the other manufacturer's cells.

Tomorrowland

Beyond 3000s, what's next? Advances in battery technology are always coming, with higher voltage, longer runtime, and better capacity continually on the horizon. The newest date-coded batteries will be better than the batteries manufactured just six months ago, and of course the newest cells will be better than year-old cells, after being cycled a few times. Even now racers can get 3500mAh of power into their 3000mAh-rated packs, so you can be sure 4000s are on the way, and soon. 5000s are surely next after that. But, what about different types of cells?

Ni-MH is the just the first of many steps that are coming down the road. Since Ni-Cads are terrible for the environment. (Remember to recycle them where you see the RBRC logo (1-800-822-8837)! Ni-Cads will eventually be completely phased out of the battery industry. Full-size electric and hybrid automotive technology is pushing research in lithium-ion batteries, which eventually will trickle down to the R/C industry. I would say that in just a few years we'll see the first lithium-ion packs in R/C cars, which will carry a high voltage, perhaps enough to require just two or three cells in one car to equal the power of the six cells that we use now. Imagine that!

So there you have it. The lowdown on the battery wars, so to speak. Hopefully you've learned something that will help you get the upper hand on your fellow racers!

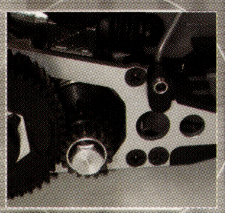
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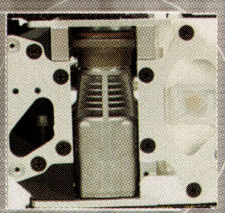
Remember, keep your batteries stored with about a 40% to 60% charge.

ARE YOU READY FOR THIS?

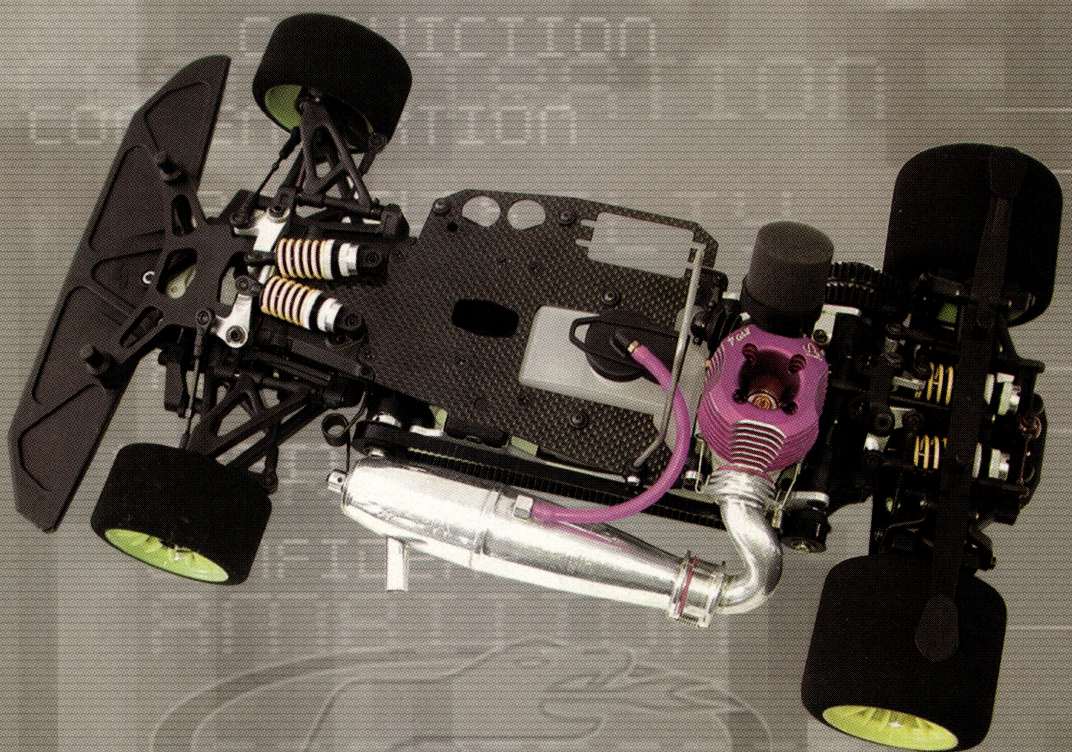
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Duratrax MAX ST PRO

TRAX MAX ST PRO DURATRAX MAX ST PR

by Mike Henry

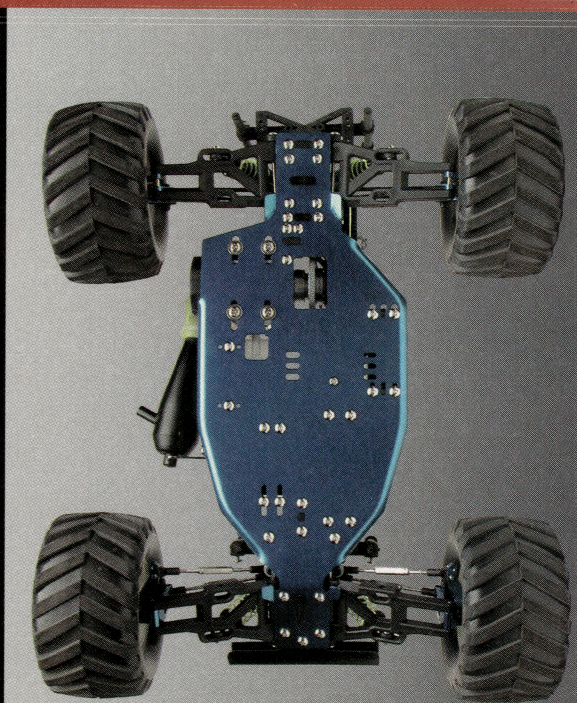
In case you've been living in a cave for the last year or so, ready-to-run (RTR) vehicles are currently the darlings of the R/C industry. While not a new concept, the success of vehicles like the Traxxas T-Maxx have raised the collective brow of every manufacturer on the planet. Team Associated's RTR RC10GT and the soon to be released RTR RC10T3 are further evidence that the industry isn't taking this trend lightly.

Enter Duratrax, one of the leaders of the RTR revolution. Duratrax has made R/C affordable, easy, and competitive for entry-level racers. They offer a full line of nitro-powered cars and trucks targeted at beginners, novices, and backyard bashers. The Maximum ST Pro is their newest flagship, and comes with a dizzying list of hop-ups and features. If you started with the 2WD Maximum ST, and checked off every option Duratrax makes, you'd have the ST Pro. I put myself into bashing mode, and put the ST Pro to the test.

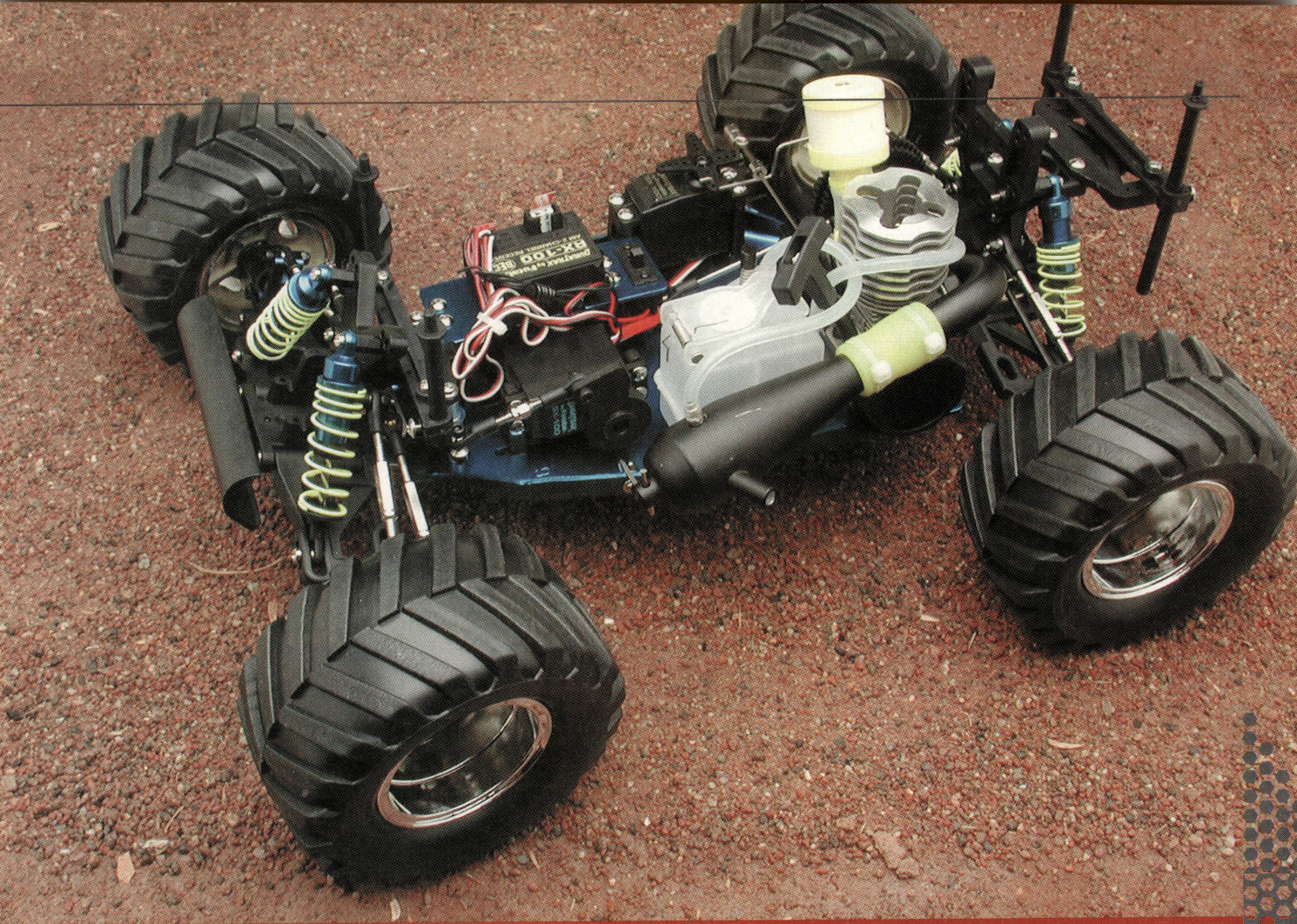
Hits:
- Kit is loaded with hop-ups.
- Amazing power and top speed.
- 2-speed tranny and slipper clutch.
- Smooth shocks.

Misses:
- Chassis is overmatched by the engine's power.
- Weak steering servo.
- Tires only work well on grass.

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



Hop-ups come standard with the Max ST Pro.



DURATRAX **MAX ST PRO** DURATRAX **MAX**

Chassis

Ground zero for the ST Pro is a 2.5mm thick slab of blue anodized T-6 aluminum. The chassis features raised sides for added rigidity. The underside of the chassis features a large hole for the flywheel and slots for adjusting the engine mounts. Unfortunately, the holes are not countersunk. A small brace ties the transmission and chassis together. A large 85cc pressurized fuel tank resides just in front of the engine. A small rectangle of aluminum makes up the radio tray, with a slot for the on-off switch. A large plastic bumper keeps the front end in check.

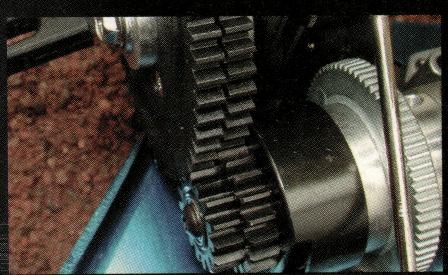
Drive Train

The ST Pro delivers the goods with a pull-start .16 engine. The Torq 16 features true ABC construction (aluminum piston, brass cylinder liner with chrome plating) and a dual ball bearing-supported crankshaft. The rotary carb features both high-speed and low-speed mixture adjustments as well as a throttle stop screw. The Pro also comes shod with a high-flow manifold and a tuned pipe. A 3-shoe clutch puts the power to an adjustable 2-speed transmission. A slipper clutch assures rough landings won't tear up the gears.

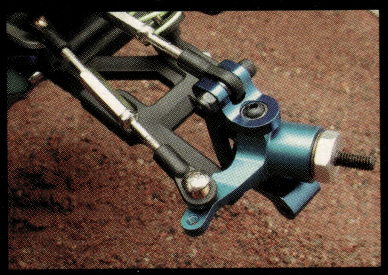
Power is then directed to a metal-gear differential via a 3-gear transmission, terminating at Duratrax's universal drive shafts. A Fiberite disc brake brings the ST Pro to a halt.

Suspension

Hop-ups galore! Each corner of the ST Pro is flanked with blue anodized alloy hub carriers. Ball bearings to reduce friction and increase performance come standard on the Pro. Six stout metal turnbuckles adjust camber and toe. All of the suspension arms and both shock towers carry Duratrax's six-month Stress-Tech guarantee. The ST Pro is adjustable; there are three holes on each shock tower, and three more on each suspension arm. Both camber links can be tuned, thanks to additional holes on each hub carrier. The ST also has a nice set of threaded alloy shocks. They are smooth out of the box, and ride height changes are a snap.







DuraTrax guarantees its suspension components from breakage.

Other Features

Steering • Steering chores are handled by a standard Duratrax/Futaba SX-100 servo. A small turnbuckle fixes to the aluminum bellcranks. The action is smooth and slop-free. Although there are no Ackerman adjustments, there are two additional holes on the front steering blocks that change the geometry of the system.

Body, Wheels, and Tires • The ST Pro comes with a pre-painted and trimmed Lexan body. The body can be outfitted with a sheet of colorful decals. The truck also features a set of 2.2 inch chrome wheels and four large Chevron-style rubber tires.

Radio Gear • The RTR kit includes a Duratrax/Futaba AM radio system with two standard servos. The radio features throttle and steering trim, servo reversing, and a battery LED. The servos are powered by 4AA batteries, which are held in place by the alloy radio tray.

Testing

Break in the engine • The instructions go into great detail to ensure you do this right. Do not skip this step.·Don't forget to cut two holes in the body. That big .16 engine needs fresh air to run cool and fast.· Double check the throttle and brake linkages. These should be pre-set from the factory, but make sure.

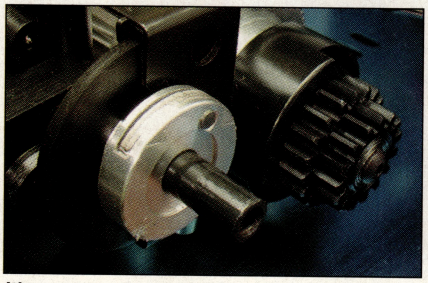
Test Site #1 • One of the cool things about bashing with an R/C car is the abundance of places to do it. Sometimes when I'm out and about, I'll spot a potential test site. The Arizona Pima Community College downtown campus is one such place. The perpetual construction and mixed terrain make for a backyard basher's bonanza. Since the engine was already broken-in, thanks to Mike at *Xtreme* HQ, I got right to work. The Torq .16 came to life after just two or three pulls on the recoil starter. Once it reached operating temperature, I set out to find the engine's potential.

Throttle response was crisp and even, and the ST Pro spun the rear tires on every surface I could find. It seemed to take a long time to find its top speed and I never heard it shift, so I brought it in for a closer look. It turns out the transmission was stuck in second gear! I properly adjusted the shift point, and set it back down. Now the ST Pro was just a terror. Being kind of a racing snob, my expectations for the ST weren't really that high. But the thing was just balls-out fast. I would pit the ST against any of my nitro-powered trucks in a drag race, confident it would trounce them all. The truck's speed actually over-powered the suspension, as it became a real handful at speed.

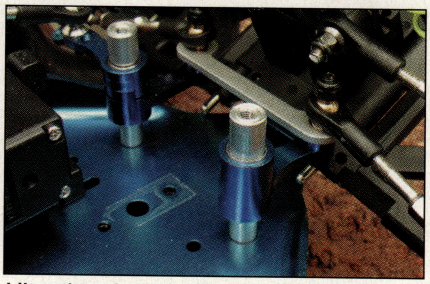
Pleased with the engine's output, I started looking for some big air. I found some smallish jumps at a nearby construction site. The truck's theme of oversteer continued on the broken, hard-packed dirt. I was able to coax TJ Hooker-style, Adrian Zmed style 180's and power slides anytime I wanted to. A little finesse was required to get the big tires to hook up, especially at lower speeds. Once rolling, the high ground clearance and compliant suspension made quick work of the uneven terrain. The



The Max ST Pro comes with everything you need to get this truck going – a Duratrax/Futaba AM radio, glow plug igniter, fuel bottle, and a video on starting and tuning the engine.



It's not too often that a two-speed tranny makes its way to an RTR.



Like other pieces on the Max ST Pro, the steering bell cranks are machined from aluminum then anodized.

PIT STOP HOW-TO
Engine Break-in Tips

- **Don't mess with the settings as they come out of the box.** Most RTR engines are pre-tuned to get you started right away. If anything, err on the side of richness. That means once the engine is started you can back the needle adjustment out an 1/8 of a turn (counterclockwise).
- **Stick to the break-in instructions that come with the kit.** Different manufacturers have different procedures depending on the materials used and design of the engine.
- **In order to run your engine as rich as possible during break-in, set the idle stop so that the idle is on the high side.** Typically, if your engine is too rich it will stall when the engine comes down to idle. With the idle set a little higher you'll be able to keep the engine rich through break-in without constantly stalling. Your engine's instruction manual will show you how to adjust the idle stop.
- **Allow the engine to cool completely between tanks during break-in.**
- **After you break in the engine, head over to the local hobby shop and replace the stock glow plug with a high quality replacement.**

Look for the break-in video in theaters soon.

The Specifics

MAX ST PRO
Part #: DTXT92**
Estimated Street Price: $350-$360

Vehicle Type:
2WD nitro powered stadium race truck.
Scale: 1/10
Chassis Type: Tub chassis
Material: Aluminum.

Transmission
Design: 3-gear reduction
Slipper Clutch: Yes, Friction
Bearings/Bushings: bearings.

Suspension
Type: 4W independent lower A-arm with adjustable camber links.
Damping: Oil-filled, coil-over shocks.

Wheels, Tires and Body
Wheels: One-piece white molded dish.
Tires (F/R): large off-road ribbed tires.

Who It's For
Backyard bashers who want to go very, very fast with all the options they can find.

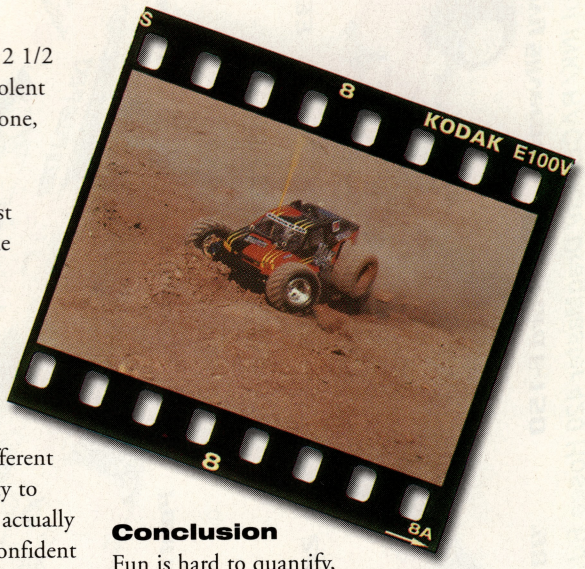
Main Competition
Traxxas Nitro Rustler, Traxxas Nitro Stampede, Kyosho Ultima ST RTR, Associated RC10GT RTR.

truck handled well at low and high speeds, but once it reached its limit, it was difficult to control. Again, it almost felt too fast for its own good. Does a truck this fast really need a two-speed tranny?

While rambling around the campus, I hit the same manhole cover – twice. It was sticking up above the ground about 2 1/2 inches, and the ST Pro came to a violent halt both times. But no harm was done, and it continued on its way.

Test Site #2 • My tour of southwest Arizona's learning institutions led me to the University of Arizona. I have done some low-orbital altitude testing at the U of A, as there are truly awesome natural jumps and inclines. Almost all of the testing I did at U of A was on grass.

The ST Pro was a completely different animal on grass. It lost its propensity to spin out, and the big Chevron tires actually hooked up quite well. Once I felt confident with the truck, I headed for the gnarliest jump I could find. The killer jump was about five feet high, and the face was around 45-50 degrees. It doesn't take a NASA think-tank to figure out the big-air possibilities of this jump. At first, I wanted to make a check-out pass at half speed to see how the ST would fly. I hit the jump just as tranny wanted to shift into second gear. The truck only gained marginal altitude, however. By this time, a small crowd of on-lookers and angry students had gathered to watch. I guess finals week at U of A is a bad time to test a noisy nitro truck. I mustered up as much gnad as I could, and hit the jump at near-terminal velocity. The truck jumped at least 5 feet into the air and slapped the chassis hard on landing. Everything appeared to be intact, so I went for one more bonsai run. The second time, the truck made an ugly landing, hitting on one of the front wheels, and the engine died as it came to a stop. The gas tank was empty, but nothing was broken. In the distance, I could see a U of A police car approaching, so I decided to pack up and head back, while I still had my freedom. Somewhere, the theme from "Cops" was playing...



Conclusion

Fun is hard to quantify, but I had a blast while driving the Maximum ST Pro. It isn't a racing truck, and it doesn't pretend to be one. However, racing rubber will fit the 2.2 inch wheels. Too many entry-level kits offer lackluster performance, and the owners end up bored after a few weeks of driving. The ST Pro is truly an adventure. It has enough power to keep anyone entertained, and the truck is equipped to take the bumps and bruises owners are likely to serve it. It offers a good blend of performance and reliability for the asking price. The plastic parts are covered under Duratrax's stress tech guarantee, but you'd have to do something really insane to break any parts on this truck. The Maximum ST Pro is very near the top in the RTR nitro class.

The large steel turnbuckles are easily adjustable thanks to large hexes and the included wrench.





Right: Universal drive shafts along with machined hub carriers and ball bearings are found on the rear suspension.

The world famous Ranch Pit Shop made more than one appearance on Cops.

DragMaster Racing Products

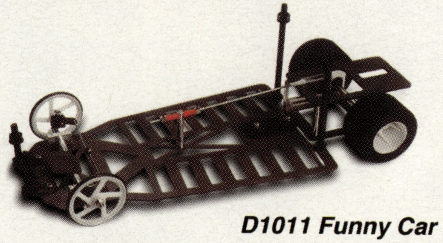
RACEtech motor sports

BoLINK

D1001 Pro Stock Chassis Kit

D1002 Pro Stock Kit Less Body

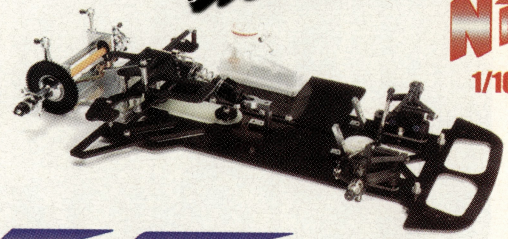
D1003 Pro Stock Kit Complete Less Electronics



Nitro Slider

1/10 Scale Nitro Oval Racer

R8011

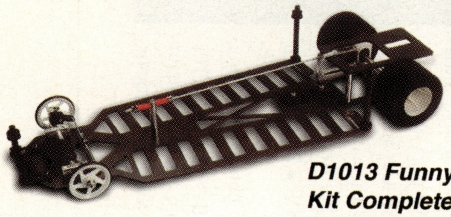


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D1012 Funny Car Kit Less Body

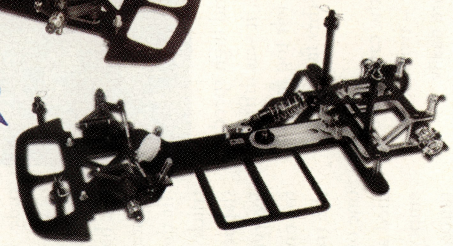
D1013 Funny Car Kit Complete Less Electronics



The Slider

1/10 Scale Oval Racer

R8010



BL 1311 RC Cruiser Kit

BL 1312 Assembled RC Cruiser w/ Painted Body

RC CRUISER



BL 2114 2000 RC Cruiser Body

BoLINK Bodies

For Drag Racing

Funny Cars

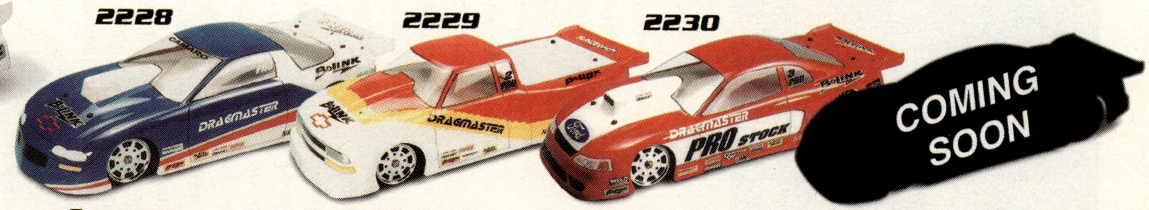


2227 Camaro

2238 Mustang

2261 Pontiac

Pro Stock Cars



2228 Camaro

2229 S-10 Truck

2230 Mustang

'63 Pro Mod

For Traxxas Trucks

Nitro Rustler

2233 Chevy Silverado

2234 Ford F-150

Stampede

2250 '98 Ford Pickup

2251 '98 Chevy Pickup

T-MAXX/ E-MAXX

2231 '56 Ford Pickup

2232 Chevy Avalanche

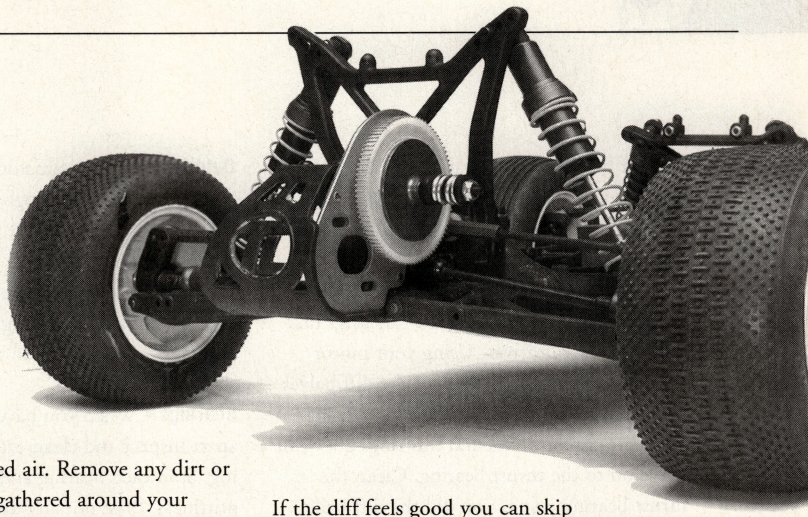


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Rebuild Your Car or Truck's Drive Train

by Dan Tirre



No other mechanical system on an R/C car is more important than the drive train. How well your car or truck's drive train is maintained might just be the difference between first and second for those of you who race. For R/Cers who don't race but, expect their car to work every time they run then drive train maintenance is also vital. In this article I'll show how to diagnosis, inspect, repair, and adjust your drive train.

Diagnosis

Knowing when to rebuild your drive train is important. Wait too long and you risk damaging some components and being slower than you could be. Rebuild too often and you're just wasting time. Keeping a schedule and knowing how to identify a problem is important. If you race on a regular basis, say once a week, rebuilding at least once a month should be your routine. If you're a racer and you want to keep on top of things rebuilding about once every four days of racing will keep you safe. If at any time you hear some strange noises coming from your gearbox you should instantly pull out the toolbox for a rebuild.

Break Down

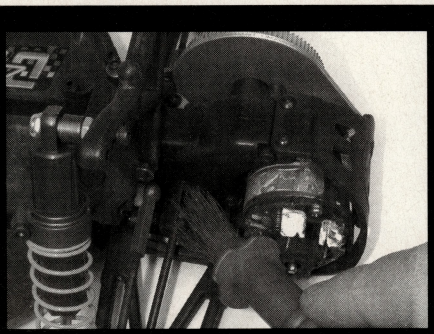
Start any rebuild or inspection by first cleaning your car off with a paint or tooth brush and some compressed air. Remove any dirt or dust that might be gathered around your transmission. Next remove your car's motor. A motor can make working on the drive train clumsy not to mention act as a vacuum for loose screws and washers. After removing the motor remove the transmission from the vehicle. Once out of the car or truck, loosen the slipper nut and remove the slipper assembly. As with any disassembly you should have your car's instruction manual out and nearby for reference. Also, use a parts tray to keep track of all the hardware as you remove it from the vehicle.

Once the transmission is out of the vehicle open the transmission and take a look around. Look at the shape of the teeth on all of the gears inside the transmission. Although I'll instruct you to inspect things again later, when the gears are in place is the best time to spot any possible problems.

Differential Tear Down and Inspection

With the differential out of the gear box feel the differential. Hold on to either side of the diff by the outdrives and operate the diff in your hands. Listen and feel, if your diff feels or sounds gritty or clicky, rebuilding the diff can help improve performance and handling. If the diff feels good you can skip rebuilding the differential and move on to inspecting things.

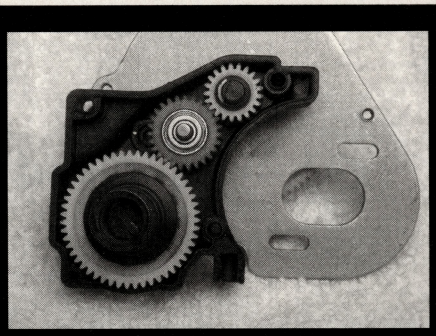
If it appears that your differential needs to be rebuilt start by taking it apart. Once it's fully disassembled, remove the diff balls from the diff gear. Thoroughly clean the diff gear with denatured alcohol in a spray bottle or plastic safe motor cleaner. With the diff balls removed use a pipe cleaner to remove any dirt or grime from the diff ball holes. Leaving any dirt behind will contaminate your diff forcing you to rebuild things a lot sooner than you'd like. Once the diff gear is completely clean, the diff balls should be cleaned or replaced. Spray some motor cleaner on a clean towel and roll the balls around on the towel. Most racer kits these days include carbide diff balls which last a very long time, allowing them to be used over and over again. This means ball replacement might not be more than once ever three or four months of racing. After you've cleaned the diff balls place the balls back into the holes in the diff gear. Now take a look at the diff rings. Clean your diff rings just like you did the diff balls, on a towel with some cleaner. If your diff rings have only been used on one side, you should flip them over and use the other side. If you see the route of



Before you start pulling things apart clean the rear end of the car as thoroughly as possible. An air-compressor and a couple of brushes come in real handy here.

Whenever you work on your car you should also work on a clean work area. I like to work on a clean white towel. This helps to prevent diff balls and other small parts from rolling around.





Inspecting the gear box is vital. The best time to spot any abnormalities in gears is when the gears are resting inside the transmission housings.

the diff balls simply polished into the diff rings you're okay. If the ball route is deeply cut into the rings than it's time to replace the rings. Because the carbide diff balls are so hard replacing the diff rings will be common. After cleaning or replacing the diff rings take a look at the outdrives. Using your motor cleaner, clean out the inside of the diff halves and blast out any dirt that might be inside.

After the outdrives and diff rings are clean move on to the thrust bearing. Clean the thrust bearing just as you did the diff balls and the diff rings. Be careful not to loose any of the micro small thrust bearing pieces. If you see deep scoring in the thrust bearing rings then replace the entire assembly. Remember, you can flip the thrust bearing rings over if you need to.

Differential Build Up

Reassemble the differential per your car's instruction manual. Be sure to use the recommended diff lube. When it comes to putting the lube on the diff rings I've found it better to apply the grease to the diff rings instead of the diff balls. Use a hobby knife to smear the lube onto the diff rings. Applying the grease to the diff rings seems to make the diff last a little bit longer. If you have problems getting the diff rings to stick to the diff halves during the rebuild a small dot of grease between the ring and the outdrive can be useful. Again, refer to your car's instruction manual to figure out tight the diff should be. I'll show you how to break-in your diff later.

Inspecting the Rest

Before you start putting anything back together take a good look at each piece you're working with:

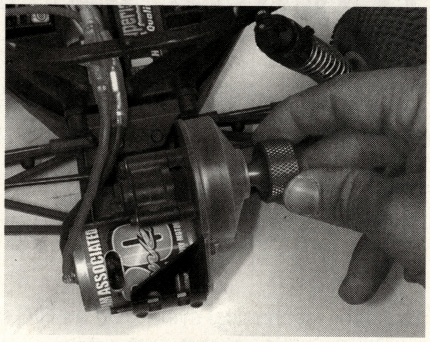
Outdrives • Check the slots in the outdrive where the pin in the dogbone or universal rubs. If there is an indent in the outdrive, it should be replaced. These indents will keep the suspension from operating smoothly while accelerating and cornering. The pin in the dogbone will get stuck in the indent and bind the suspension.

Bearings • When you have the transmission apart inspect and clean each and every bearing. Spin each bearing and listen and feel for grittiness. Blast out any dirt that might be inside the bearing with a bearing cleaning tool from RPM or Robinson Racing. If that doesn't work you may need to remove a rubber seal and blast it again. If you're still not sure and the bearing doesn't feel too good, replace it. After cleaning any bearings be sure to re-oil it with high quality oil.

Other Gears • Check the idler and top shaft gear. Look for tooth sharpening or any lines that might have developed from the gears coming in contact with something they're not. If you see signs of wear don't chance it, replace it. Once gears show signs of wear, they don't have much life left in them. If you do replace a gear, it's a good idea to also replace the gear that it runs next to. Chances are good that the gear it runs against is also worn-out. To clean you transmission gears spray a little motor cleaner on a tooth brush and brush the teeth.

Adjustment

Before you run down to the track and drive your car again you should break-in your differential and slipper. Refer to your car's instruction manual and tighten it as prescribed in the manual. Next turn your transmitter and car or engine on, hold one rear tire



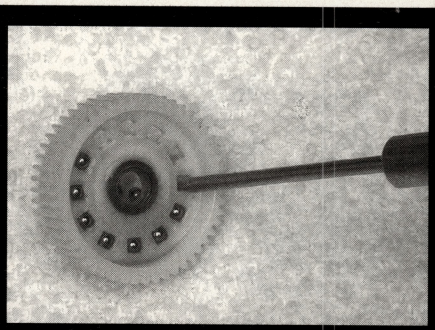
Correctly breaking-in and setting the diff and slipper is important and can greatly increase the gap between drive train rebuilds.

and apply about 1/8 throttle. Run the car or truck like this for about 15 seconds. Hold the opposite tire and repeat the same procedure. Now vary the throttle between 1/8 and about 1/2 to 3/4 throttle. Hold the first tire again and apply between 1/8 and about 1/2 to 3/4 throttle. Now tighten your diff about 1/8 to 1/4 turn. Now your diff is broken-in. If necessary readjust your diff so that it's not too loose or tight according to your instruction manual.

To break in the slipper pad, adjust the slipper loose and hold both rear tires. Apply about 1/8 throttle causing the slipper to slip for about 10 to 15 seconds. This will set the slipper pads and make the slipper operate more consistently throughout the first run on the rebuilt slipper. Readjust the slipper to your desired setting before racing.

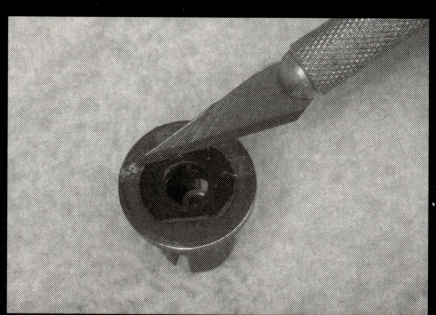
Go Race

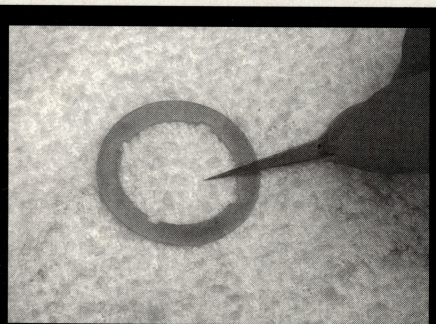
Now you're all set to go out and win. Keep this article along with your car's instruction manual handy the next time you rebuild your car's drive train.



Poke the diff balls out with an Allen wrench or similar tool. Then completely clean out the insides of the diff gear with some plastic safe motor cleaner and pipe cleaners.

Inspect the diff rings for deep cuts into the rings. Either flip the wings over or replace them. When rebuilding the diff spread, the diff lube onto the diff rings with a hobby knife.





When going through the slipper clutch use a sharp hobby knife to scrape off any glaze that has accumulated on the slipper pad itself. Be careful not to cut the pad.

Elliot's a pro at knowing how to handle trannies

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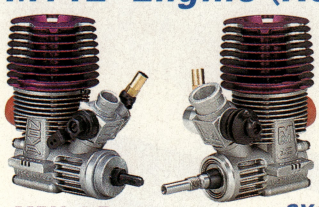
- Belt Drive 4WD・Cam Type 2-Speed Gear Housing・3PC Clutch・Disk Brake・Turn Buckle Steering Rod
- 3mm (A70-75) Chassis・Front Urethane Bumper・75c.c. Fuel Tank Filter-equipped・Resin Radio Plate
- Manifold for MT12Engine・Air Filter・Adjustable Front Bump Stop/Rebound Stop
- Adjustable Rear Bump Stop/Rebound Stop
- Adjustable the angle of Front/Rear Damper
- Adjustable Camber/Toe/Caster angle (only Front)
- Full-Bearing



■Technical Date■

- Length……380mm
- Width……198mm
- Wheel Base……260mm
- Tread(F/R)……172mm/172mm
- F.caster Angle……6.2°~14°
- Gear Ratio……1st 7.421:1/2nd5.717:1
- Weight……1,640g

MT12 Engine (Rear Exhaust)



MT12S1 SG-Shaft, Slide Carb.

MT12R2 STD-Shaft, Rotary Carb.

MT12S2 STD-Shaft, Slide Carb.

Cubic Capacity : 2.1c.c. Bore : 13.80m/m
Power : 1.15HP Weight : 215g
Rpm : 36.500rpm Shaft : φ11m/m
Stroke : 14.00m/m

MBX-4 Parts



C0179
Al.Rear Tension Rod for Long Chassis

CX12 Engine (Side Exhaust) Parts for MTX-2

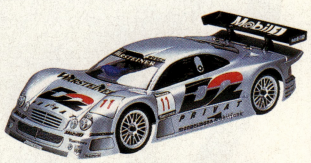


T0701Engine Shaft for CX12
T0903Manifold for Side Exhaust
51601Black Pipe (12)

PRIME12/MTX-2 BODY 200mm



K1001 CASTROL TOYOTA TOM'S SUPRA GT BODY



K1005 MERCEDES BENZ CLK-GTR BODY



K1008 TOYOTA COROLLA WRC BODY



K1014 PEUGEOT 406 STW BODY



K1010 SUBARU IMPREZA WRC BODY



K1016 TAKATA DOME MUGEN NSX BODY



K1012 MITSUBISHI LANCER EVOLUTION V WRC BODY



K1018 DODGE RAM TRUCK BODY

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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

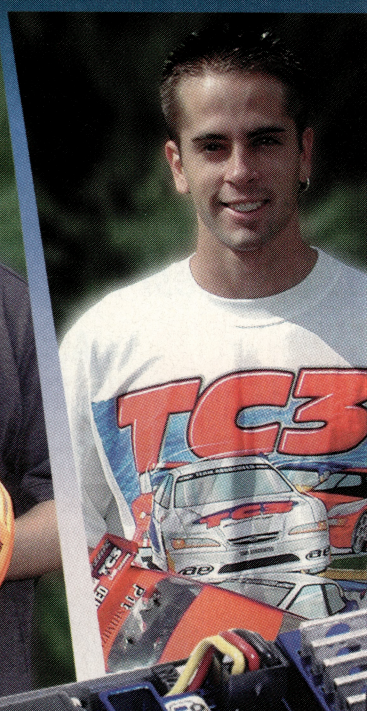
Mark Pavidis



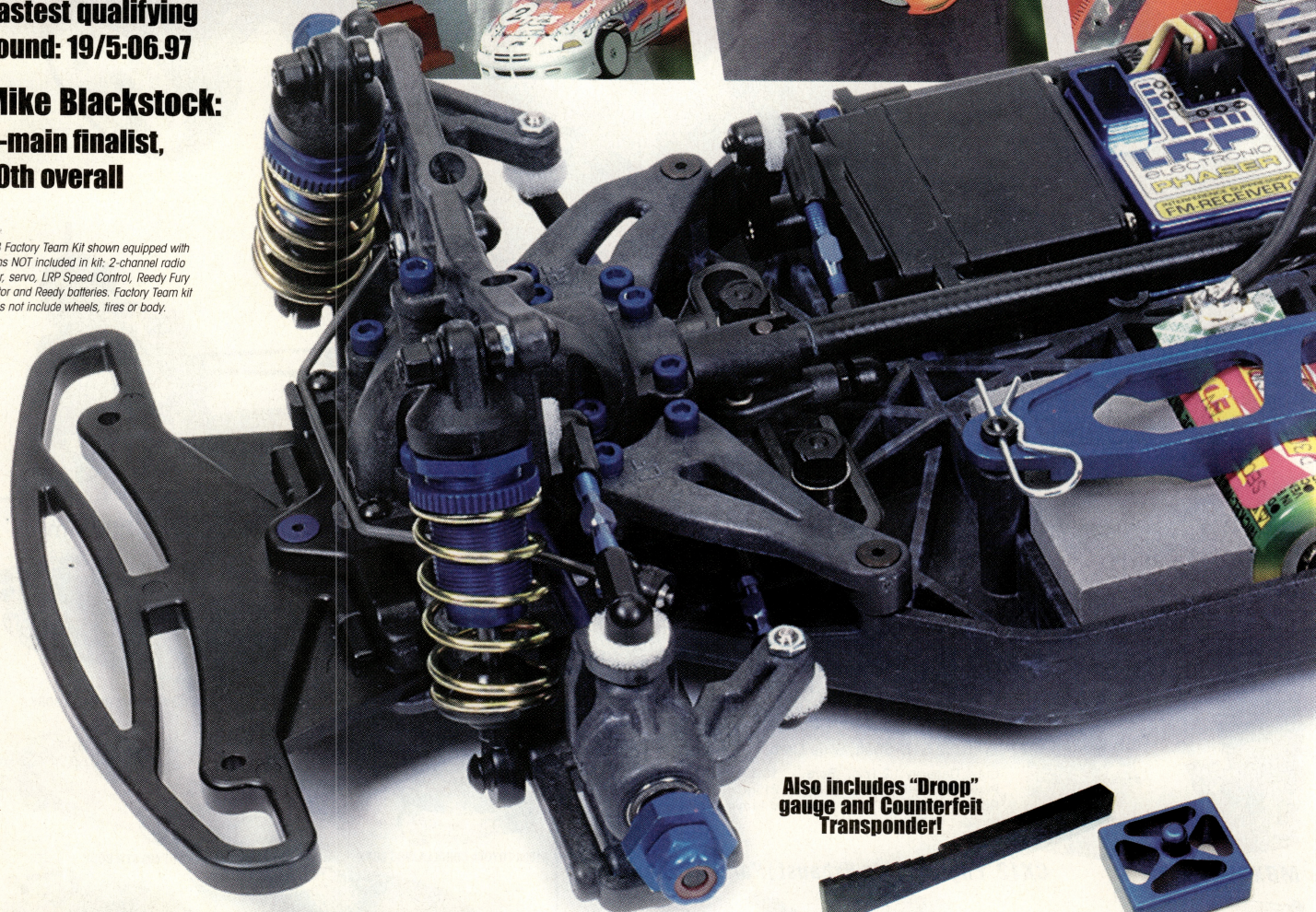
Craig Drescher



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.

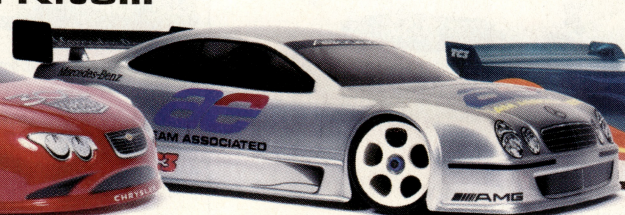


Also includes "Droop" gauge and Counterfeit Transponder!

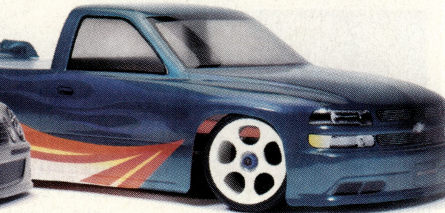
New TC3 RACER Kits...



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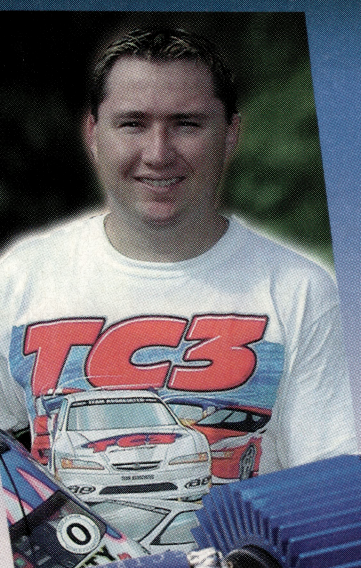
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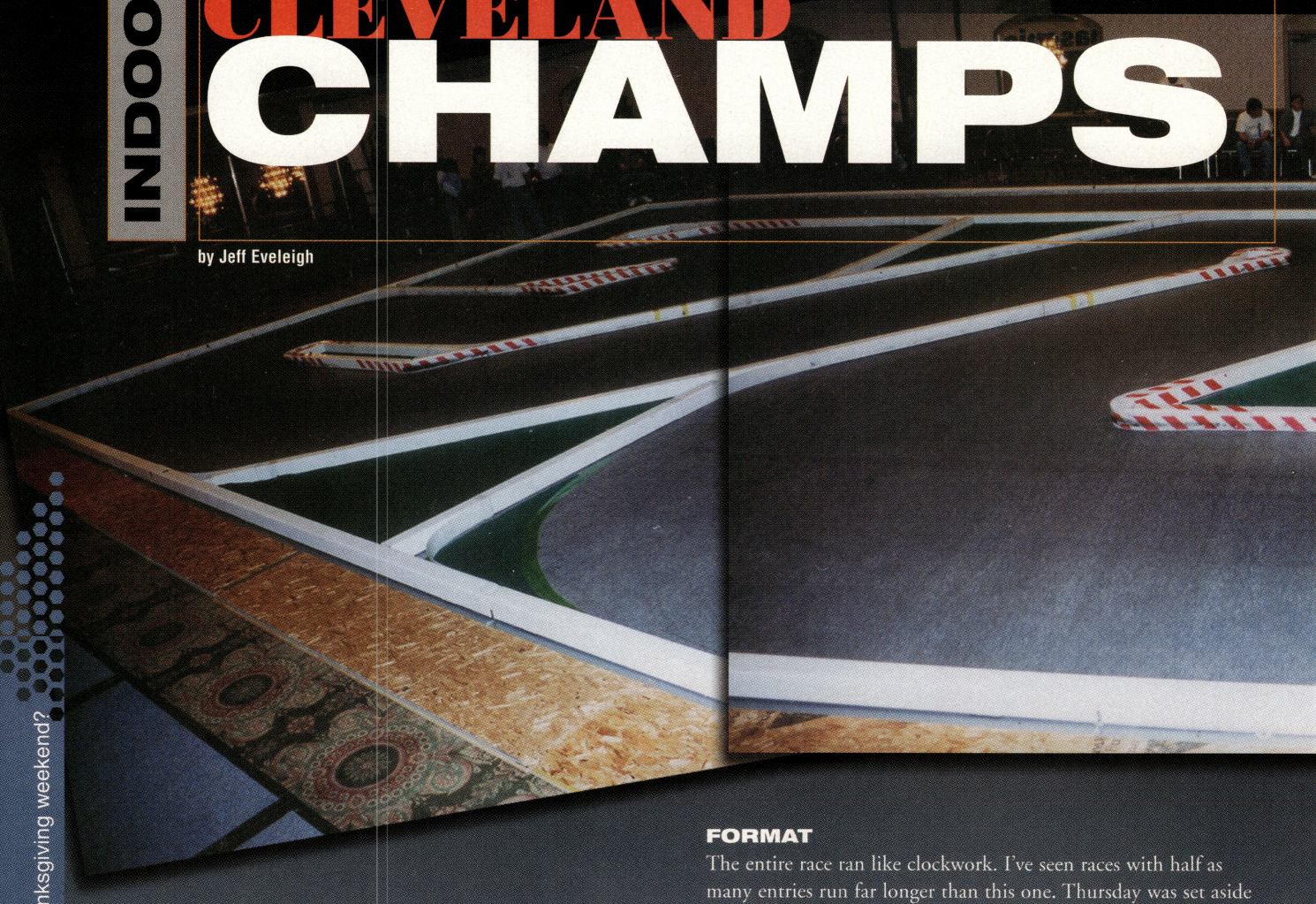
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INDOOR

CLEVELAND CHAMPS

by Jeff Eveleigh



Did you know that the Cleveland Indoor Champs is held on Thanksgiving weekend?

Tradition (tra-di-tion) 1. A long-established custom or practice. This is how the dictionary defines tradition and I can't think of a better word to describe the Cleveland Indoor Championships. Many of the racers look upon this race as a tradition and would not miss it for the world. Whether they attend for the elite group of "old school" (and new school) 1/12-scale races or for the enormously popular Touring Car class, they all come with one thing in mind – a great weekend of top class racing action. The Cleveland Indoor Champs not only brings out all of the top names in drivers and manufacturers, but also the die hard hobby racers that continue to make our sport grow. With increases in entries every year, the 21st annual Indoor Champs set records with over 450 entrants.

The host hotel continues to be the Holiday Inn located in Independence, OH. This establishment has ample resources to ensure a hospitable stay for all the participants. They even have an on-site nightclub allowing a place for many of the racers to lounge and unload after a hard day of wrenching and wrecking. (This was by far one of the hot spots for the weekend!)

FORMAT

The entire race ran like clockwork. I've seen races with half as many entries run far longer than this one. Thursday was set aside for controlled practice in which each driver was given track time along with the same people that were in their qualifiers. This offered an excellent indication of just how fast a setup was compared to the competition. The qualifiers were set using the previous year's results and any newcomers were stuffed at the back of the pack and had to earn their keep come qualifying time. Some rules were stretched a bit for drivers that had "a little more experience" behind the wheel of an R/C car. Billy Easton was one such example, having being placed in the B main qualifier even though this was his first year attending the race. As you will see later in this coverage, the race officials seemed to have made a smart decision on that one!

Two qualifiers set for Friday followed by a reshuffle and the final two qualifiers on Saturday. IFMAR starts were employed to keep "rubbin" to a minimum, but the qualifying points system was not used. This race was all about speed and all it took was one good run to place high at this event. The two rounds of qualifying set for each day ate up time quickly. With an early morning start of around 9:00 AM, the schedule ran far into the evening usually ending around 1:00 AM the following day.

Most of the racers pitted in their hotel rooms, which made it difficult for this reporter to find them to chat, but made it very

THE TRACK

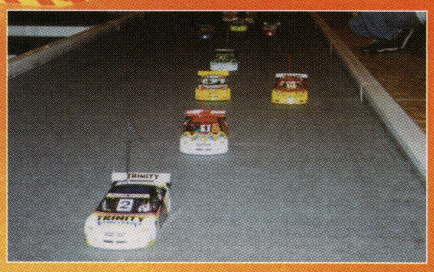
The 77- by 36-foot Ozite surfaced track was assembled on Wednesday morning and other than a few minor repairs made to a bumpy surface leading to the straightaway, the track was set up without a hitch. This year's track was a little faster and less technical than that of the past, making it more of an equalizer track. This usually makes the slower drivers a little faster meanwhile placing a little more pressure on battery and motor choice as speed has a greater effect than driving ability. Don't think for a second that this was an easy track to navigate, just a little less technical than past layouts. Here is how the course went down.

It all started with a sprint down the straightaway, which spanned the entire length of the track. This led into a high-speed right-handed sweeper that saw many cars up on two wheels just begging for a traction roll. Then you slowed down for the tight right- then left-handed chicane onto another quick sweeping right hander. A 180-degree left dropped onto a short straight section into a tight right then left then right again back onto the place where ya' show the boys just how fast your motor is and then it's around for another lap!













comfortable for the drivers. The race organizers and hotel provided a special television station offering vital information to the drivers as to which heat was racing, which heat was staging, and which heat was in tech.

The mains were run on Sunday and, to mix things up a bit, they ran one of each class per round instead of finishing an entire class and then moving onto the next. This meant, for example, that when the D main was being run spectators got to watch the D main stock Touring followed by the D main modified Touring, followed by Masters 1/12-scale, etc. The race length was set to five minutes for Touring car and eight minutes for 1/12-scale.

THE BUZZ

Not much going on here except that the Losi crew didn't send a lot of drivers to this event to fill that setup book for the prototype, still nameless, touring car they're working on. Brian Kinwald and Greg Hodapp were the only two guys I could find bearing the Losi name. After talking to Brian, I was informed that the Losi chassis was pretty much the same as the Worlds car except that the motor was moved forward a bit to change the weight transfer and the left to right balance of the car was altered to make it perfectly balanced.

QUALIFYING

After four grueling rounds of qualifying, Sean Cochran was the top guy in Touring Car Stock. Josh Cyrul showed everyone that he is the "carpet man" in Touring Car Modified. The always-popular Eli Ezrow heard the crowd cheer in Masters 1/12-Scale, and Brian Berry was on top in the 1/12-Scale Stock class.

The real story was in 1/12-scale Modified, which came down to 1/100 of a second to determine who was the man to beat. The battle was between the famous David Spashett and veteran carpet guy Mike Blackstock. The best part of this final qualifier was that because of the IFMAR starts no one knew who had TQ'd at the finish line. We all knew it was close. We all knew it was either David or Mike, but until the official announcement from the trusty AMB system, even the drivers had no idea. It turned out to be past world champion David Spashett who would wear the number one on his car come main event time.

MAINS

Touring Car Stock A Main • Sean Cochran and Billy Easton vaulted from the line, followed by fourth place qualifier Terry Rott into lap one. Easton poured on the pressure causing Cochran to bobble and allowing Rott into second place. Rott and Cochran duked it out for the first minute allowing Easton to just walk away from the

You wouldn't know by reading Jeff's article would you?

I CAN BEAT YOU WITH MY HAND TIED BEHIND MY BACK



Four-year Cleveland Indoor Champs veteran George Theders is fast – fast enough to beat out almost half of the entries in the Masters 1/12-Scale class after only five total years of racing. This would be a feat that would warrant bragging rights for any R/C racer at an event of this magnitude, but this guy has even more reason to wear a smile.

George Theders only drives with one hand. After a motorcycle accident a few years ago, George lost the use of his left hand. When he decided it was time for a hobby, R/C racing was exactly what the doctor ordered. Using his trusty Futaba radio with an over-sized foam donut on the wheel, George navigates his 1/12-scale rocket around the track with surgeon-style accuracy. Before I met George I was watching him race and when I realized that the machine I was following on the track was being driven with a single hand I just had to get the entire story. George controls the throttle with the usual finger and offers the steering input with his thumb alone.

Great job, George. Your driving skill was an amazing sight to see and your accomplishments make you a hero in any R/C racer's book. Keep up the great work and keep two eyes on the road and one hand on the wheel.









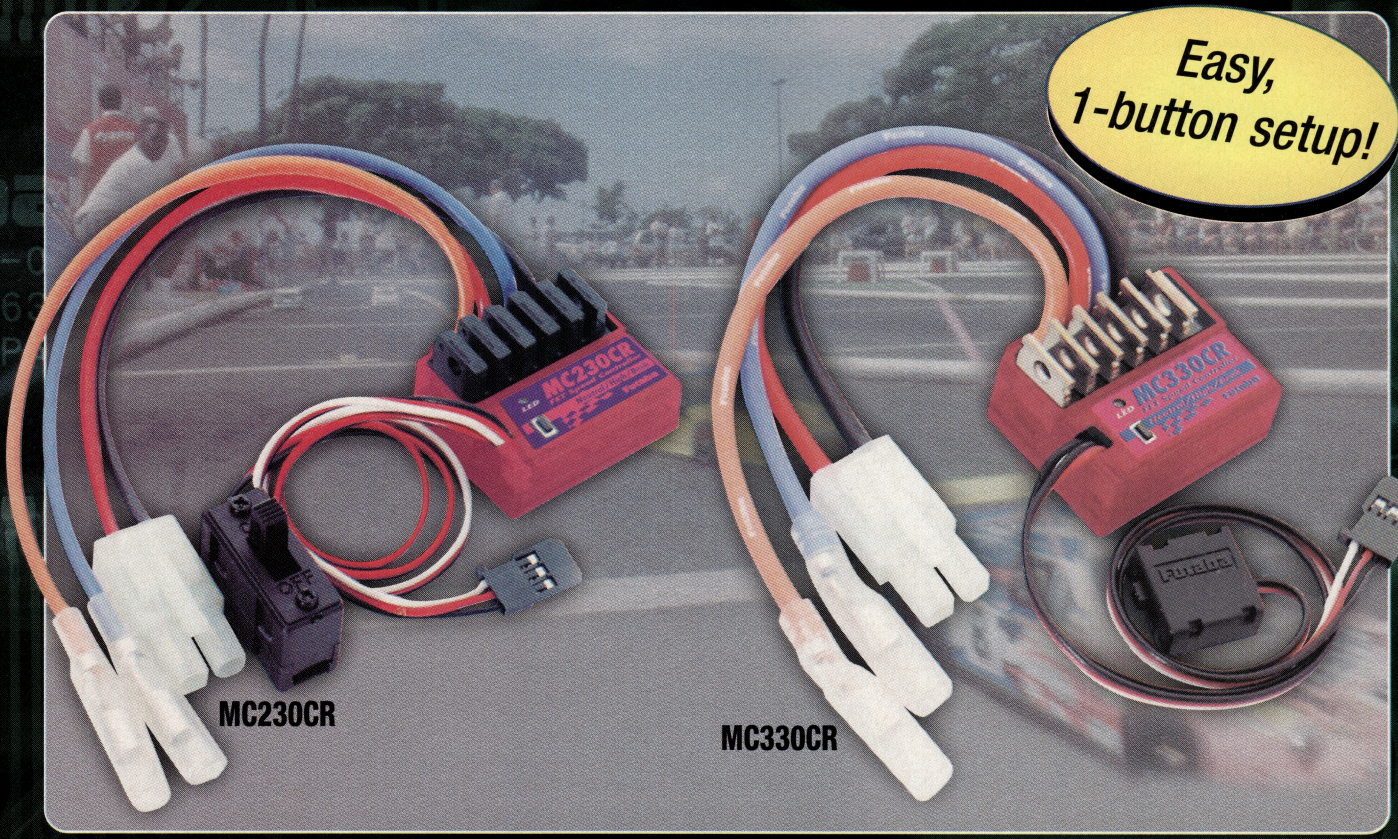




One: Nobody could believe how close the maid could get to the edges of the track as she vacuumed the carpet between each round.
Two: Room service brought up a complete order of tires along with the shrimp cocktail and turkey sandwich.
Three: " I bet I can chug this beer quicker than you can pull your finger out of your nose."
Four: It's a good thing that Greg chose racing for a career. His future in underwear modeling is bleak at best.
Five: Tiger mistuck a touring car for... we'll leave that one alone.
Six: We've got nitro. Have you got milk?

That's because Jeff's Canadian. He could give a damn about our stinking holiday.

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Put them all together and you have the MC230CR, the ESC of choice for Futaba's 2PC and 2PCKA pistol radios. Made from vibration-resistant Surface Mount Components (SMC), the MC230CR is not only lighter and more reliable than servo-operated controls, but more compact, as well. At just 1.07" x 1.31" x 0.50", the MC230CR fits easily on a crowded chassis, with room left over for a wide range of helpful features.

High-frequency design leads the list, extending run time, and providing fully proportional control in forward *and* reverse—a big step up from the notchy, all-or-none response of most mechanical speed controls. And if you want to go stock racing, you can; there's a reverse lock-out feature that makes the MC230CR ROAR-legal in seconds.



And even if the action gets too hot to handle, the MC230CR won't. Its 1500Hz switching rate, heat sinks and new plastic FETs combine to keep it running cool. Under extreme conditions — heat, overload or short-circuit — the MC230CR will not only shut down automatically, but won't reboot until the problem is solved. That's investment protection.

Specifications:	MC230CR (FUTM0922)	MC330CR (FUTM0932)
Dimensions (in.):	1.07 x 1.31 x 0.50	1.07 x 1.31 x 0.50
Weight (oz):	1.55	1.59
Capacity:	6-7 cells	6-7 cells
Motor Limit:	20+ turns	13+ turns
Current (fwd/rev):	90A/45A	200A/100A
Wire:	16 ga.	14 ga.
Motor High Frequency:	yes; 1,500 Hz	yes; 1,500 Hz

Both include: BEC and installed Futaba J, JST & bullet connectors.

So is the MC230CR's low battery feature and the new receiver switch reminder. Forget to turn off the receiver before the transmitter, and the MC230CR will beep and "pulse" your vehicle forward until you do.

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field. A brave move by Rott to overtake Cochran caused an accident at the one-minute point and Rott, being the sportsman he is, allowed Cochran to pass for position again. The only problem was that a bunch of other drivers took advantage of the opportunity and flew by Rott allowing Mike Dunnigan to inherit third position. By the closing seconds of the race, it was still all Easton followed by Cochran and Dunnigan. A swift move by Dunnigan onto the final straight gave him a beautifully-earned second position and they would cross the line in fashion with Easton way up front followed by Dunnigan and Cochran.

Touring Car Modified A Main • This was one of the big shows that drew a huge crowd of people around the track. After the introductions were made and the grid was cleared, it was all about the racing and the top dawgs had to put their throttle fingers where their mouths were. TQ Josh Cyrul and Billy Easton took the first turn honors followed by fourth place qualifier Michael Lufaso. A first lap driving error let Mike Dumas take over the third position and the top three cars freight-trained around the course for the next three minutes offering very little excitement. Easton wanted it bad and proved it to the crowd as he honed his sights in on Josh Cyrul and began to close in on the "carpet king" himself. By the 3:30 point Easton was all over Cyrul, but a slight bobble gave Cyrul some breathing room. This winner circle vision was short lived for Cyrul as Easton poured on the juice one final time to pressure Cyrul into a mistake. When he wouldn't give space to the slightly faster Associated machine, Easton decided it was time to make his own door and with a slight "friendly" rub he worked his way past the Trinity-powered Yokomo to acquire the top honors on the second last lap. Billy Easton was crowned the 2000 Cleveland Indoor Modified Touring Car Champion followed closely by Josh Cyrul and Mike Dumas for third.

1/12-Scale Masters A Main • They may be a little older, but it seems that age equals ability with these guys. After a massive first turn pileup, it was Frank Calandra Jr. followed by Chuck Lonergan and Paul Martin to round out the top three. Once they sorted themselves out, this race turned F1 style and there was no more action for the next eight minutes. No one was willing to give up a position nor ambitious enough to take one and they crossed the line on the last lap as they did on the first lap with Frank Calandra Jr. as the 1/12-Scale Masters Champion followed by Chuck Lonergan and Paul Martin.

1/12-Scale Stock A Main • Cars one, two, and three bolted for the early lead at the tone. A second place battle between Dana Bailes and Brian Jucha gave leader Brian Berry a little breathing room. At the one-minute point a massive crash took the entire field out from position numbers two and back. Once the dust (carpet dust that is) had settled, it was Brian Berry way out

Modified 1/12 Scale

F	Q	Driver	Car	Motor	ESC	Battery	Tires	Radio	Body
1	1	David Spashett	Trinity Switchblade	Trinity	LRP	Trinity	TRC	KO PROPO	Protoform Nissan
2	3	Jon Orr	Trinity Switchblade	Trinity	GM	Trinity	TRC	KO PROPO	Andy's Mercedes
3	4	Josh Cyrul	Trinity Switchblade	Trinity	Novak	Trinity Vis NiMH	TRC	KO PROPO	Protoform Nissan
4	2	Mike Blackstock	Trinity Switchblade	Trinity	Novak	Trinity Panasonic	TRC	JR RACING	Protoform Nissan
5	5	David Chester	Trinity Switchblade	Trinity	Novak	Trinity	TRC	Airtronics	Protoform Nissan
6	6	Walter Henderson	Associated 12L3	Reedy	LRP	Reedy Zappers	Jaco	Airtronics	Protoform Nissan
7	8	Michael Lufaso	Associated 12L3	Reedy	LRP	Reedy R3K	Jaco	Airtronics	Protoform Nissan
8	10	Jeff Brown	Associated 12L3	Reedy	Novak	Reedy R3K	Jaco	Futaba	Protoform Nissan
9	9	Chris Doseck	Speed Merchant Rev3 CD	Modified	GM	World Class	Jaco	KO PROPO	Protoform Nissan
10	7	Barry Baker	Trinity Switchblade	Trinity	Novak	Trinity Vis NiMH	TRC	Airtronics	Protoform Nissan

Stock 1/12 Scale

F	Q	Driver	Car	Motor	ESC	Battery	Tires	Radio	Body
1	1	Brian Berry	Associated RC12L3	Handout	Novak	Reedy Panasonic	Jaco	Airtronics	N/A
2	2	Dana Bailes	CRC	Handout	GM	Trinity Panasonic	TRC	Airtronics	N/A
3	7	Scott Smither	CRC	Handout	Novak	SMC	Jaco	KO PROPO	N/A
4	8	Mike Dunnigan	Associated RC12L3	Handout	LRP	SMC	Jaco	Airtronics	N/A
5	10	Mike Pulfer	CRC	Handout	Novak	World Class	Jaco	KO PROPO	Protoform Nissan
6	4	Eli Ezrow	CRC	Handout	LRP	World Class	Jaco	JR RACING	Protoform Nissan
7	3	Brian Jucha	Speed Merchant Rev3	Handout	Novak	World Class	Jaco	Airtronics	N/A
8	6	Wayne Vince	CRC	Handout	Novak	SMC	Jaco	JR RACING	N/A
9	9	Sean Cochran	Associated RC12L3	Handout	LRP	Reedy Zappers	Jaco	JR RACING	Protoform Nissan
10	5	Todd Lewis	Trinity	Handout	Novak	Trinity	TRC	Airtronics	Protoform Nissan

Masters 1/12 Scale

F	Q	Driver	Car	Motor	ESC	Battery	Tires	Radio	Body
1	3	Frank Calandra.	CRC	Handout	Novak	World Class	Jaco	JR PROPO	N/A
2	4	Chuck Lonergan	Trinity	Handout	Novak	World Class	Jaco	Futaba	N/A
3	5	Paul Martin	Corally	Handout	Novak	Panasonic	Jaco	JR PROPO	N/A
4	2	Bob Vanwagner	CRC	Handout	Novak	World Class	TRC	JR PROPO	N/A
5	1	Eli Ezrow	CRC	Handout	LRP	World Class	Jaco	JR PROPO	N/A
6	6	Tom Esposito	Trinity	Handout	Novak	Trinity	TRC	JR PROPO	N/A
7	9	David Lee	Speed Merchant	Handout	GM	World Class	Jaco	Airtronics	N/A
8	10	James Arnold	Speed Merchant	Handout	Novak	World \Class	Jaco	JR PROPO	N/A
DNS	7	Steve Lafara	CRC	Handout	Novak	SMC	Jaco	JR PROPO	N/A
DNS	8	Skip Starkey	CRC	Handout	Novak	Reedy Zappers	Jaco	JR PROPO	N/A

Modified Touring

F	Q	Driver	Car	Motor	ESC	Battery	Tires	Radio	Body
1	2	Billy Easton	TC3	Reedy	LRP	Reedy Zappers	Jaco	Airtronics	Protoform Stratus
2	1	Josh Cyrul	Yokomo	Trinity	Novak	Trinity VIS NiMH	TRC	KO PROPO	Protoform Stratus
3	5	Mike Dumas	TC3	Reedy	Novak	Reedy Sanyo	Jaco	Hitec	Protoform Stratus
4	3	Mike Blackstock	TC3	Trinity	Novak	Trinity Sanyo	TRC	JR PROPO	Protoform Stratus
5	7	Walter Henderson	TC3	Reedy	LRP	Reedy Zappers	Jaco	Airtronicst	Protoform Stratus
6	6	David Spashett	Yokomo	Trinity	LRP	Trinity	TRC	AIRTRONICS	Andys Sratus
7	4	Michael Lufaso	TC3	Reedy	LRP	Reedy Zappers	Jaco	Airtronics	Protoform Stratus
8	8	Brian Kinwald	Losi	Trinity	Novak	Trinity Trinity		Airtronics	Losi Stratus
9	10	Mike McMahon	XPRESS	Orion	GM	Orion	Jaco	KO	N/A
10	9	Jacob Pritchard	Yokomo	Reedy	GM	Reedy	Jaco	Airtronics	Protoform Alfa

Stock Touring

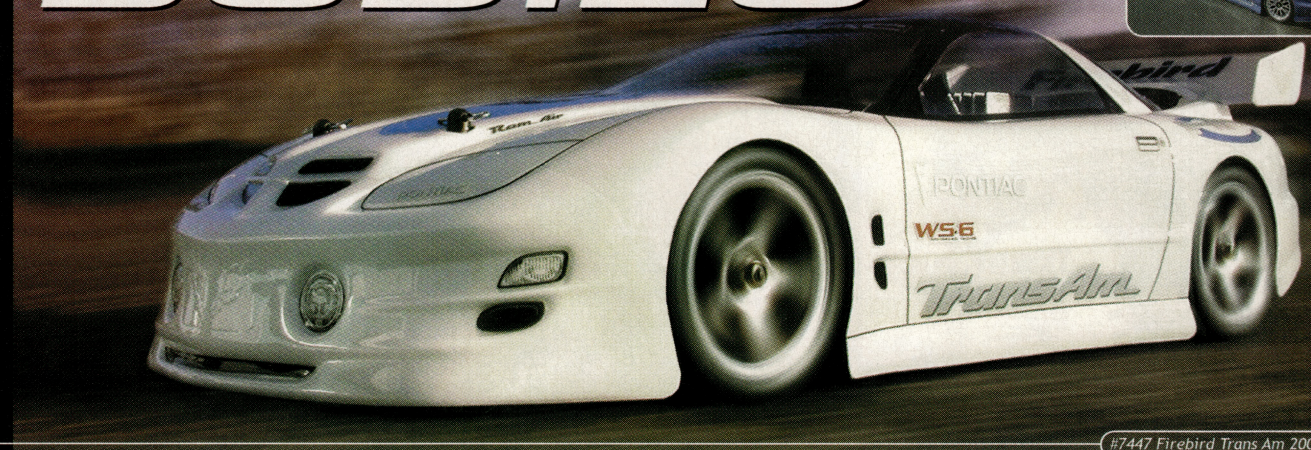
F	Q	Driver	Car	Motor	ESC	Battery	Tires	Radio	Body
1	2	Billy Easton	Associated TC3	Handout	LRP	Reedy	Jaco	Airtronics	Protoform Sratus
2	7	Mike Dunnigan	Associated TC3	Handout	LRP	Fantom SMC	Jaco	Airtronics	Protoform Sratus
3	1	Sean Cochran	Associated TC3	Handout	LRP	Reedy Zappers	Jaco	JR RACING	Protoform Sratus
4	5	Rich Oettinger	Associated TC3	Handout	Novak	Power Push	TRC	Airtronics	Protoform Sratus
5	4	Terry Rott	Associated TC3	Handout	Novak	Trinity	TRC	Futaba	Protoform Sratus
6	3	Greg Powrie	Associated TC3	Handout	LRP	Fantom SMC	Jaco	Airtronics	N/A
7	10	Ray Darroch	Associated TC3	Handout	Novak	Killer Volts Fantom	Jaco	Airtronics	N/A
8	6	Dana Bailes	Associated TC3	Handout	GM	Fantom SMC	TRC	Airtronics	N/A
9	9	Chuck Lonergan	Associated TC3	Handout	Novak	TC Powercells J	Jaco	Futaba	N/A
10	8	Walter Henderson	Associated TC3	Handout	LRP	Reedy Sanyo	Jaco	Airtronics	Protoform Sratus

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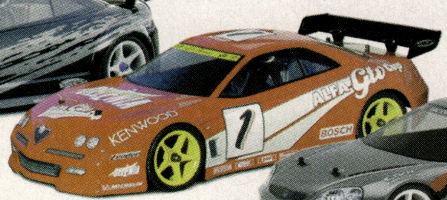
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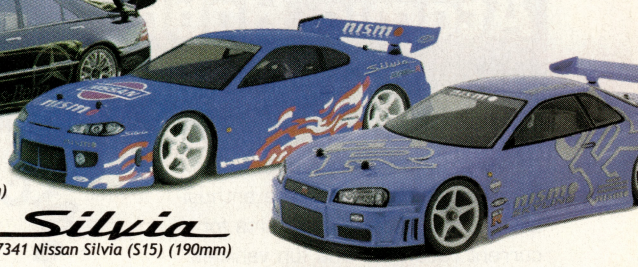
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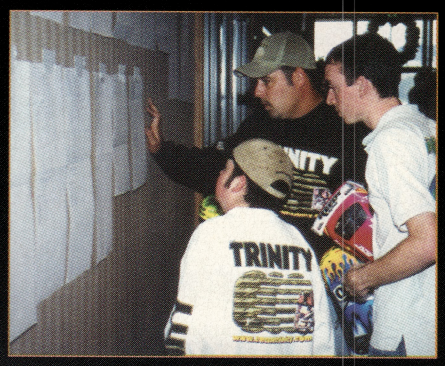
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Checking qualifying times is a Thanksgiving tradition for these guys.

front followed by Canadian driver Scott Smither in second and Bailes in third. In the closing moments of the race, Bailes made a sweet pass on Smither to claim second position. Then Mike Dunnigan stepped up to the plate to test the skills of Smither for third place. The last minute charge by Dunnigan proved useless against the strong Canadian (see, that's Jeff homering again.) driver and the cars crossed the line in style with Berry up front followed by Bailes and Smither for third.

1/12-Scale Modified A Main • Once the magical beep sounded, David Spashett was heard saying "see ya" to the rest of the suckers as he danced off into the sunset. The battle was for second and it was between Mike Blackstock, Jon Orr, and Josh Cyrul. A first lap traction roll by Blackstock opened the door for Orr and Cyrul to go by. Cyrul was fast, really fast, as he passed Orr for second position at the 1:30 point. The field freight-trained around the course for the next few minutes and was actually gaining on leader Spashett. Cyrul caught a board at the five-minute point leaving room for Orr and Blackstock to get by. Then Orr bobbled at the 6:40 point, handing second position over to Blackstock but leaving Cyrul in fourth. A final lap charge by Orr to get past Blackstock pushed both drivers into the wall allowing Cyrul to pass Blackstock but get stuck behind Orr. That is how they finished with Spashett as the 2000 Cleveland Indoor 1/12-Scale Modified Champion followed by Orr in second and Cyrul close behind in third.

Time to Go Home

Overall, I had a great weekend and hung out with a great bunch of guys. The racing was close and fast. The nightlife was, ahhh, interesting. The sportsmanship was outstanding (when one racer's radio went missing just before his race I saw another fellow racer lend him his radio), and outside of a 30-person pileup in the elevator at three o'clock in the morning, the weekend went off without a hitch.

Congratulations to all of the participants and winners and thanks to Trinity, Panasonic, CRC, NORCAR, and Great Lakes Racing for sponsoring the event. I would also like to take this opportunity to thank all of the volunteers who made this weekend possible. There are far too many to name, but if it weren't for all the help I think we'd still be finishing off the mains right now. I'll see you all next year and for all you racers reading this article, be sure to stop by and thrash out some hot laps at the 2001 Cleveland Indoor Championships.

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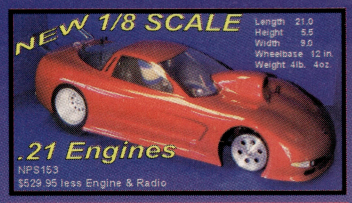
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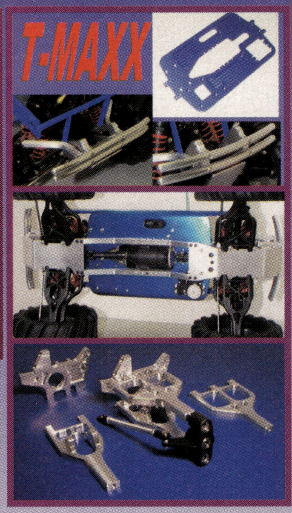








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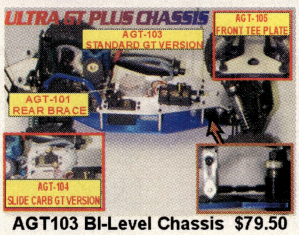




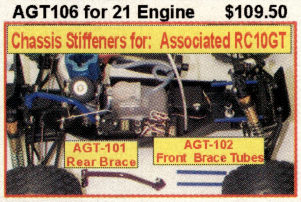


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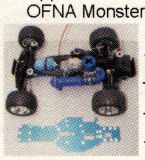
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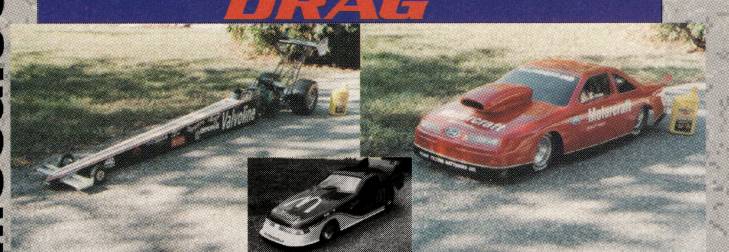
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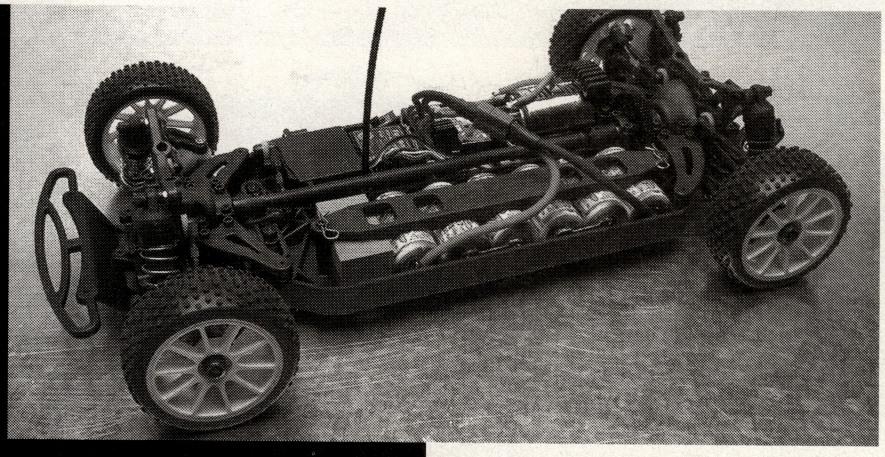
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Associated TC3 Rally Conversion

by Mike Henry



In case you haven't noticed, the phenomenon known as rally racing is fast becoming a favorite of the American racing fan. Rally is truly the ultimate test of man and machine; navigate a production-based vehicle through various terrain, armed only with a hand brake and a navigator yelling "left" and "right." Euros are quite fond of rally. Drivers like Colin McRae and Tommi Mäkinen get paid huge jack to dodge trees and small vertebrates in the FIA World Rally Championship series.

Rally has slowly seeped into the world of R/C as well. Schumacher, Team Losi, and HPI led the charge, offering race-worthy kits based on their 4WD touring cars. When Team Associated announced the TC3 Rally conversion, racers stood up and took notice. We were anxious to get our hands on the kit and put it through its paces. Follow along and see what happens when you pit a sedan against off-road machines.

What It Is

The TC3 Rally is a conversion kit. It assumes you already have the TC3 touring car. The Rally can be built on either the Team or Racer kit. Within the kit you will find the following pieces:

- Longer suspension arms;
- Longer composite CVDs to fit the 200mm width;
- .56 shock shafts, 2 pairs of buggy springs, and a bottle of 25 weight shock oil;
- A revised rear shock tower;
- Longer turnbuckles and 12 ball cups;
- A kicked-up front bumper;
- A set of Pro-Line Rally Boss tires in M2 compound and a set of 24mm Wabash rims.

The kit essentially converts the standard TC3 into a 200mm wide TC3 with more ground clearance.

The TC3 makes a perfect candidate for a rally car. It has a tub-style chassis, which eliminates the need for an under tray. The drive train is almost completely sealed. Belt-driven rally cars use an inner liner to keep dirt and debris from fouling the drive train. However, this also prevents cool air from circulating around the electronics.

Wider is Better

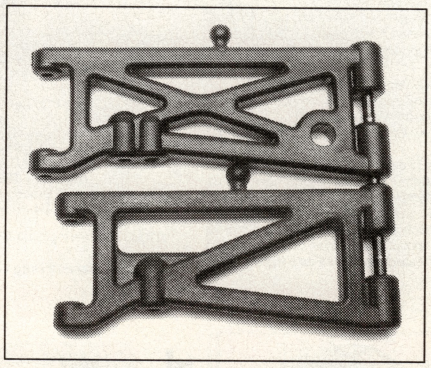
Converting the TC3 into the rally version isn't especially difficult, but it is time consuming. The instructions are sparse, but AE includes a check list and a few before and after pictures to help guide you. If you didn't save all of the extra parts from your original TC3, you'll need a set of shock pistons and about eight E-clips to get the job done. Of course, you'll also need a 200mm wide Lexan body. A word of caution: Bodies with high roof-lines, such as the Ford Focus may not fit the TC3 Rally. The rear body posts just aren't long enough to accommodate this body style. Our Pro-Line Subaru Impreza WRC body was a perfect fit.

On the Track

Watching a 1/10-scale rally car zip around an off road track is entertainment, to say the least. I set the car down using the setup found within the instructions. Does the TC3 Rally drive like an off-road buggy?

In a word, no. Make that hell no. Successful laps are more a practice of timing than anything else. The rally car does have a lot more ground clearance and suspension travel than the standard TC3, but you will need to modify your driving style quite a bit.

That's not to say the TC3 is difficult to drive. You just need to exercise caution when you hit larger jumps. The TC3 takes to the air like, well, like you might expect. Actually,



All of the pieces that come with the conversion kit are different than the ones they replace on the original kit. It's easy to see the extra shock mounting hole and extra length on the rally arms.

The Specifics:

Part #: 3020
Estimated Street Price: $79.99
Manufactured in USA.

Vital Info:
Team Associated
3585 Cadillac Ave
Costa Mesa, CA 92626
www.rc10.com

Hits:
- Comes with everything you need to rally sans body.
- Performs pretty damn well for a rally car.
- Easy to convert.
- Tires are among best rally tires on the market.

Misses:
- Pinion and spur dangerously exposed.
- Body mounts only work with low profile bodies.



The Last Word
Got a TC3 and want to taste some dirt? Pick up this conversion. It's pretty nice, not perfect, but easy to convert and lots of fun.

Rally racing – not the same as a pep rally.

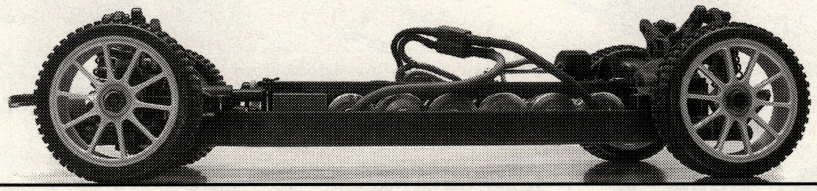
there was only one huge jump that I couldn't for the life of me get the rally car to take. Of course, there are some drivers that case that jump with their buggies, too.

The TC3 Rally is fast. I made my initial runs with a stock motor and the car just flew down the back straight. I entered in the stock truck class, not knowing what to expect. If I needed to make a pass, I could just wait for a fast section and scream by effortlessly. The 4WD rally car was completely composed under acceleration.

The car really earned its money in the low-speed corners. Even without a one-way, the TC3 turned in with pinpoint accuracy. Navigating the twisties was a point-and-shoot affair. I was also very impressed with the Pro-Line Rally Boss tires. This is Pro-Line's first attempt at a rally tire, and they worked exceptionally well. More importantly, they weren't bald after three or four runs. I've had experience with other companies' soft rally tires and they wear out faster than you can say $30.

During practice, I bolted in a Reedy Pulse R 11-double modified motor. The car was ridiculously fast. After scaring myself and spectators in the line of fire for a few laps (just like real rally), I decided to pull the car off the track.

Before I even received the kit, I was a little concerned about the exposed spur gear. My fears were confirmed after just one run on the track. The 72-tooth gear was littered with mud and small rocks. I carefully cleaned it with a hobby knife and restored it to like-new condition. No harm; no foul. Unfortunately, I had to go through this ritual after every run. The spur gear never failed, but if neglected, I wouldn't be shocked if it did. The next day, I called AE's Duane Silva, and I quote, "Racers might want to try taping the bottom of the chassis with our protective tape. We've tried it both with and without tape, and there doesn't seem to be a 100 percent perfect solution." Until there is one, keep a watchful eye on the condition of the spur gear. Beyond that, the TC3 Rally took all the abuse I could throw its way.



Rally On

The TC3 Rally is a special car for special racers. The most frustrating element of the car might be finding other rally cars to race. There are more than a few regions across the country where off-road rally racing is a hit. If you don't think they can keep up with trucks and buggies, just go to the World Famous SoCal Raceway in Huntington Beach, CA on race night. A handful of skilled drivers pilot their rally cars to TQ times even faster than the modified guys!

The AE kit is complete and it works. If you've ever driven a standard TC3, you can expect the same thing from the TC3 Rally car. It doesn't throw any curves at you; it just goes about its business clicking off laps. The asking price is very fair, and the package includes everything, sans a 200mm body.

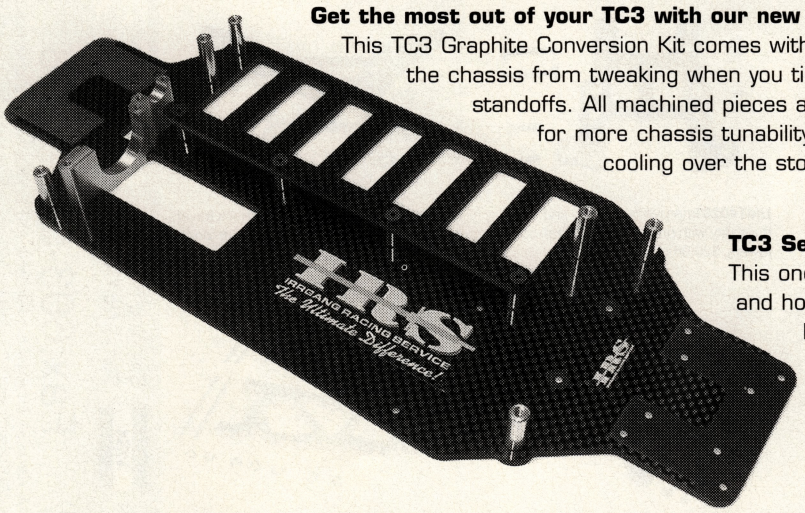
The only way a true rally class will flourish is if people start racing them and convincing their buddies to do the same. Associated just made it a whole lot easier to get your feet wet in this new, exciting class.

IRS

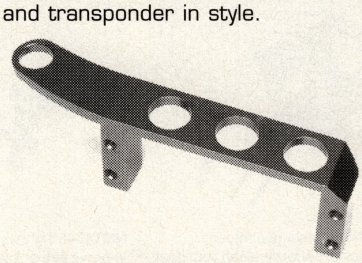
Put IRS Performance On Your Side!

NATIONAL CHAMPIONS

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

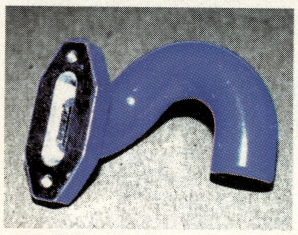


TC3 Servo/Transponder Mount (#IRS148)
This one-piece machined aluminum mount is anodized blue and holds your servo and transponder in style.
MSRP $27.50

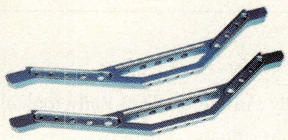


Irrgang Racing Service • 18 Cannon Range Rd • Milmay • NJ • 08340
609-476-2371 • 609-476-4649 (fax) • www.TeamIRSrc.com

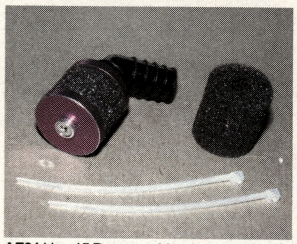
TRAXXAS T-MAXX ALUMINUM



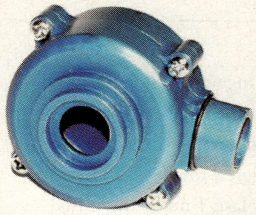
TMX13016 This manifold has a dark blue powder coat finish and is port matched to your exhaust. $30.00



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



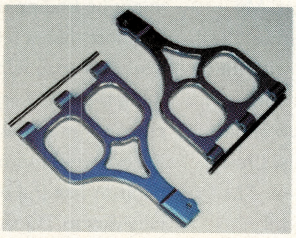
AF01 Has 45 Degree rubber boot, two zip ties and an outer foam pre filter. $15.00



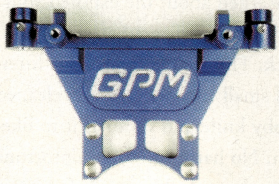
TMX1011 These are the first step to building a bullet proof drive train. You will need 2 sets for each truck. $65.00



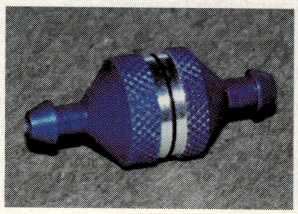
TMX1815 With 30% more cooling area and a large opening for easy maintenance. This is a must for longer engine life. Fits Pro 15 engine. $40.00



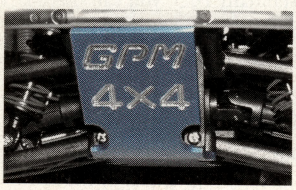
TMX1054 Set of 2 upper control arms. These are by far stronger than the original plastic arms. Includes pins and clips. $40.00



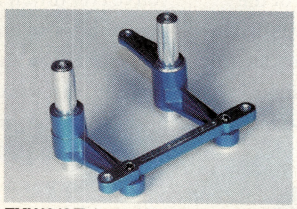
TMX1028 You will need 2 for each truck. These are direct replacements for the stock shock tower. Replaces original perfectly. $40.00



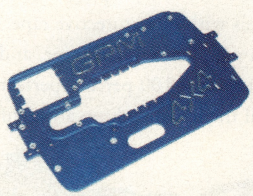
OF01 Filter comes apart to allow cleaning and is sealed with an o-ring. Fits standard size fuel tubing, common on all cars. $8.00



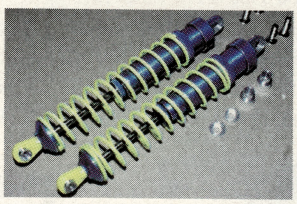
TMX1331F Don't be a poser, get one of these 3mm thick skid plates and be with the "in" crowd. $25.00



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

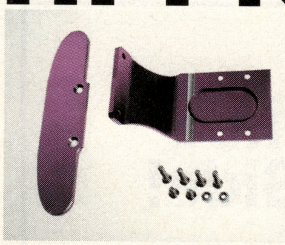


TMX1016 This 3.5mm thick main chassis features thick 4.5mm Ribs don't risk loosing power to a thinner chassis! It is a must for a more power engine hop-up. $75.00

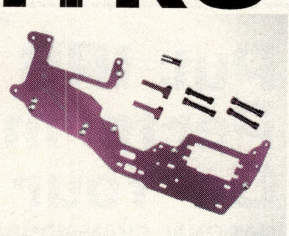


DP100 Threaded shock bodies are perfect for fine tuning your ride hieght. These are 4.125 inches long. $45.00

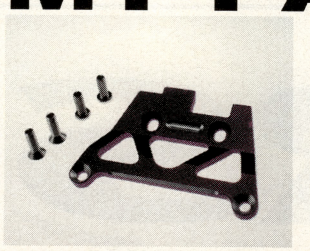
HPI NITRO MT PARTS



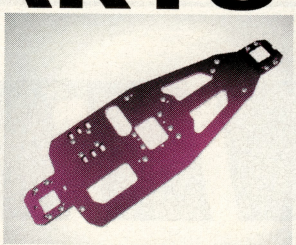
NMT4003 Is your bumper large enough? Install this bumper and matching skid plate for improved protection. $40.00



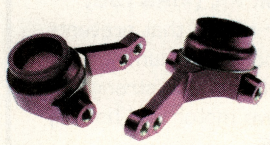
NMT4014 Customize your Nitro MT with an alloy radio plate. Includes posts and screws need to mount. $40.00



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



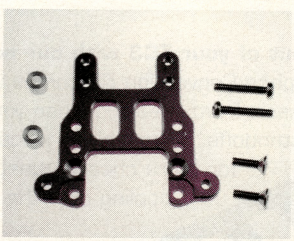
NMT4016 Set your truck apart from the crowd with a 3mm thick chassis machined from 6061 T6 Aluminum $55.00



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



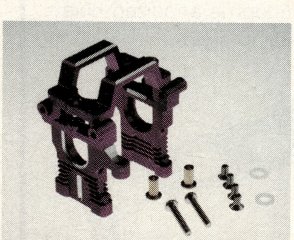
NRS4022 Keep the rear wheels pointed where they should! These hubs will remove the flex found in your stock plastic parts. $25.00



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



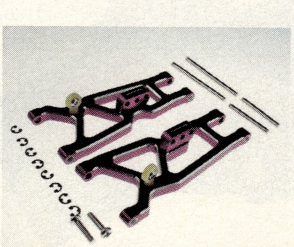
NMT4030 Did you break your shock tower, again? Replace it with this aluminum one! $25.00



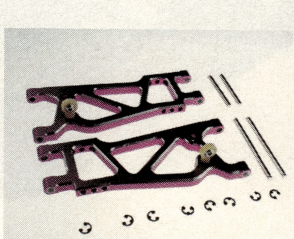
NMT4038 Alloy center gear mount replaces original perfectly. Keep your gear mesh in line with a rigid aluminum replacement. $45.00



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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Sat 10am to 7pm

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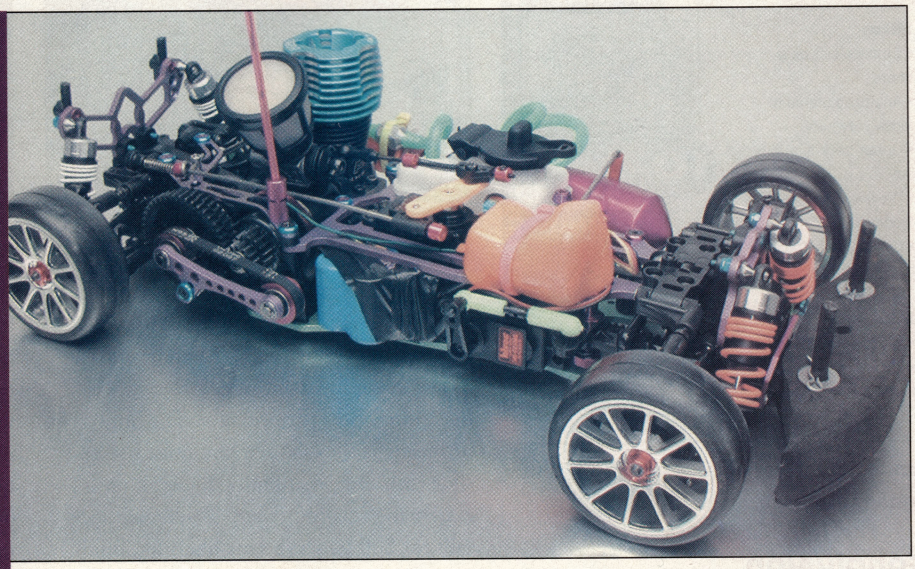
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Nashua NH, 0306

Hardcore Nitro RS4 Chassis & Upper Deck

Few vehicles have reached the level of popularity that the HPI Nitro RS4 enjoys. That popularity caused a ton of aftermarket manufacturers to try to improve on the genuine article. Companies that make aluminum and titanium replacement pieces typically leave things alone and just give you a replacement part that keeps the stock geometry. Well, not the guys at Hardcore Racing. They've come up with a huge number of Nitro RS4 hop-ups made out of strong-as-steel, lightweight titanium. Among their offerings is a unique Pro Team titanium upper deck that does a lot more than leave things alone. Let's take a look at that upper deck and other accessories from Hardcore.



The Specifics:

Part #: HRC-00105 (upper deck), HCR-00102 (chassis), available in Blue, Purple, and Green.
Suggested Price: $60 (upper deck); $135 (chassis).
Manufactured in USA

What It Is/What It Does

The titanium chassis is a work of art. The chassis looks like Swiss cheese thanks to a couple dozen strategically placed cut-out holes for weight savings and maximum cooling. The flywheel hole has been made larger to aid in finding the bump starter when you need to. All of the mounting holes remain the same as the stock piece it replaces. The entire chassis is countersunk and is 3.1mm thick. Trying to flex the chassis is nearly impossible.

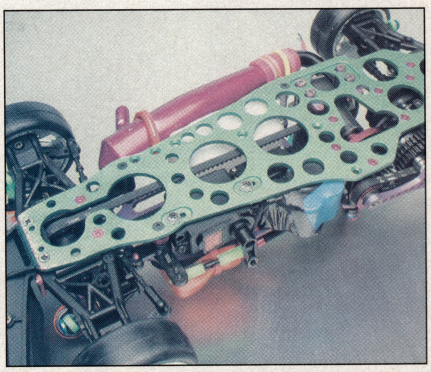
The Pro Team upper deck does quite a bit. It's made from the same 3.1mm thick titanium from which the chassis is made of. But this piece greatly departs from the stock piece it replaces. On the Pro Team upper deck the throttle servo and fuel tank are repositioned. Using this upper deck requires you to go out and pick up one of Yokomo's low profile 75cc GT-4 fuel tanks. With that tank installed this new upper deck moves the fuel tank 1.5" closer to the center line of the car. The servo is also .75" closer to the center of the car. When used with a 4-cell receiver pack instead of a 5-cell pack, the batteries are a full inch closer to the center of the car. The Pro Team upper deck completely reorganizes the layout of the car, for the better we hope.

Testing

We tested our Nitro RS4 two ways. The first was with just the chassis and the upper deck being replaced. The second was balls out Hardcore like you see in the photos – a version was complete with just about every hop-up Hardcore offers.

Upper Deck and Chassis • Right from the start we could see a difference in the way the car handled. Straight line acceleration was no different, but the minute I turned the wheel I could see and feel the car act differently. Steering was very responsive. Much more than with the stock setup. When going through a chicane section at a local track, the Hardcore car was tight and nimble where the stock version overshot each direction change by at least a few more inches. When banking from left to right, the Hardcore car was definitely more responsive. Off the track, the car was as stiff as a board with almost no flex.

Complete Hardcore • The difference from chassis and upper deck to complete car was not nearly as noticeable as the simple replacement of those two previous components. The complete car felt just as comfortable as the other car and maybe was a little quicker on acceleration thanks to the lightened drive shaft. I'm sure the fact that there's no flex in the suspension with the titanium shock towers had something to do with the car's overall responsive feel. After the brake disk broke in, stopping power was very good. During the build, we sanded the disk down a bit to shorten the brake-in period. Another part that warrants mention is the shaft brace. It connects the shaft that the two speed is on to the front



For weight savings, the Hardcore chassis looks a little like Swiss cheese.

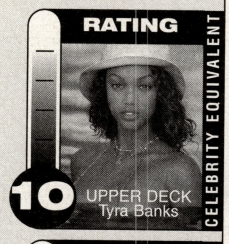
The Joker has a purple and green Hardcore Nitro RS4.

Vital Info:
Hardcore Racing
25435 Rye Canyon Rd
Valencia, CA 91355
661-294-5032
661-294-0770 (fax)
www.racinghardcore.com

Hits:
- Chassis stiff as a board.
- Anodized titanium looks very cool.
- Upper deck is a must buy.
- Provides super nimble steering.
- Car handles noticeably better than stock.

Misses:
- $135 for the chassis.
- Must purchase additional fuel tank.

The Last Word
If you race you need the upper deck. If you've got the cash go for the chassis also. You won't be disappointed.

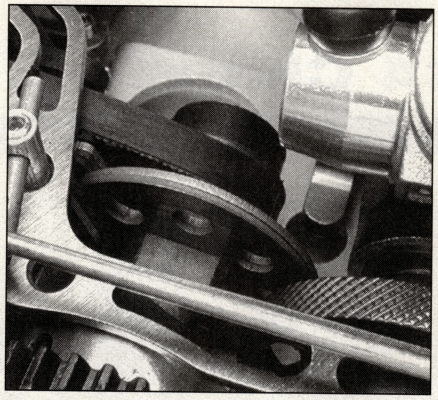




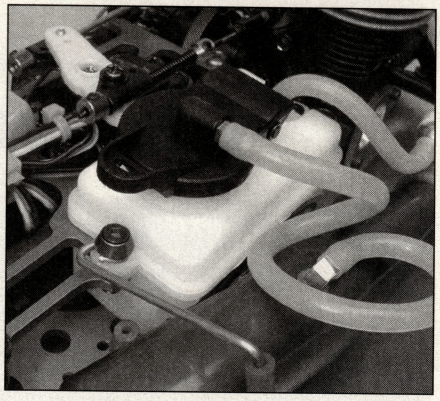
transfer shaft. This brace is very handy and worth the investment.

Conclusion

Hardcore did their homework on the upper deck. Even if you don't go with the full Hardcore lineup or even the chassis, you must get this upper deck. The repositioning of the servo, fuel tank, and battery has a huge impact on performance. The only downside is the fact that you must use a slide carb. But, thankfully the hook-up is extremely straightforward. The upper deck sells for $60 bones. Seems like a lot, but remember, it's titanium and it's beautiful. The chassis also had a positive impact on performance. The workmanship and quality in Hardcore's components is second to none, not to mention they're the only ones on the market that have anodized titanium in a color other than blue. The other components we tested were also nice. If you want the most exotic material R/C has to offer give them a shot. But before your next race I want you to go out and pick up a new upper deck. You can thank me later.



Once broken in, the Hardcore brake hooks up.



The GT-4 Tank is more compact and puts more of the fuel's weight at the center of the car.

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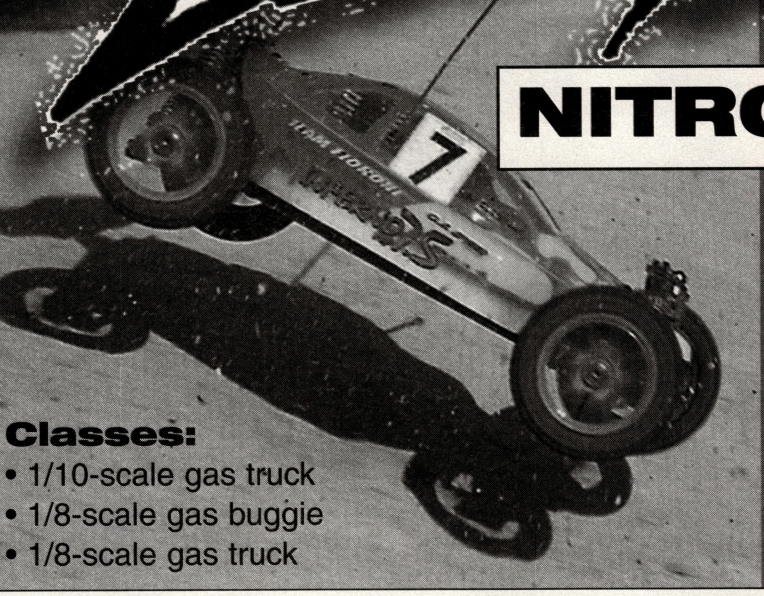
For links to all these companies go to www.xtremerc.com

2ND Annual

Xtreme R/C Cars

The Dirt Racing

NITRO CHALLENGE



Classes:
- 1/10-scale gas truck
- 1/8-scale gas buggie
- 1/8-scale gas truck

Sponsored By:
- Kyosho
- Pro-Line
- O'Donnell Fuels
- Paris Racing
- MIP
- Jr. Racing
- Team Associated
- Airtronics
- Progressive Suspension
- The Dirt Girls.com

...and many more!

February 2nd - 4th • 2001



Saturday night party in Palm Springs with the Dirt Girls!

THE INFO

What: The Dirt Nitro Challenge
When: February 2,3,4, 2001
Where: The Dirt Racepark, Hemet, CA
164 S. Santa Fe St.
909.925.9331 or 909.925.7592

Schedule:

Wed: open practice - noon to 5pm
Thurs: Scheduled practice - 8am to 4pm
Fri: 1/10-scale qualifying only. Drivers meeting at 8:30am. Qualifying starts at 9am.
Sat: 1/8-scale qualifying only. Drivers meeting at 8:30am.
Sun: ALL MAINS! Drivers meeting at 8:30am. Mains start at 9am.

Event Host Hotel : The Travel lodge - 909.766.1902 or
The Ramada - 909.929.8900

ENTRY FEES

$40.00 for 1st car • $30.00 for 2nd car

Make checks payable to:
Dynamic Hobbies

Send entries to:
Dynamic Hobbies
530 1/2 E. Florida Ave.
Hemet, CA 92543

Free T-Shirt per person for pre-entry only.
You can sign up when you get here...but no free shirt!
Plaques for all A-main, 1-3rd in the B & C, participation plaques for all the rest! This is a ROAR sanctioned event. Membership can be purchased on-site.

Entry Form

Name _____
Address _____
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ROAR # _____
Freq 1 _____ Freq. 2 _____ Freq. 3 _____
Freq 1 _____ Freq. 2 _____ Freq. 3 _____

experience the thrill

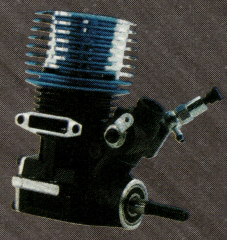
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MRC SP3 Extreme
1/12 Scale R/C Car
by MODEL RECTIFIER CORP
MRC's 1/12 scale ready-to-run SP3 Extreme R/C car runs as fast as its assembly time! Pick up the SP3 Extreme and you'll be burning up the track in no time flat! Includes two-channel radio.
eHobbies price: $139.99
Item #1003-2111



Nitro Rs4 Monster Truck, 4wd. RTR.
by HPI
Conquer all obstacles in style and speed with HPI's new Nitro RS4 4WD Monster truck. Big, bad and ferocious, this RTR truck is ready when you are!
eHobbies price: $339.99
Item #1004-5522



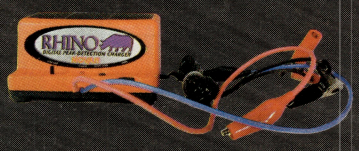
▲ **Picco .12 engine, Non P/S**
by TRINITY
eHobbies price: $124.99
Item #1002-6379

Nova Rossi CX 12 Non Pull Start Engine #1004-5524	$139.99
O.S. .21 RZ-V-99b (P) #1004-0980	$279.99
12CV R 10A Slide Valve Carb. on road #1006-0026	$169.99
O.S .21 RG-X Pull Start Engine (P) #1004-0991	$189.99
Trinity D4 Modified Motor 10-Turn Triple #1002-6145	$55.99
Trinity P2K Paradox 2000 Stock Motor #1002-6140	$24.99



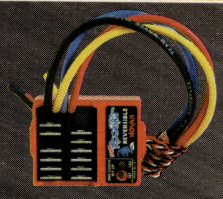
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by AIRTRONICS
eHobbies price: $269.99
Item #1000-1401

Airtronics Blazer BL2p AM 2 Ch Radio #1004-1584	$69.99
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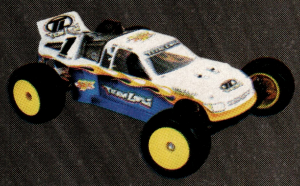
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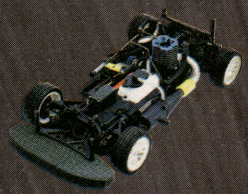


▲ **RC10GT RTR R/C Truck**
by ASSOCIATED
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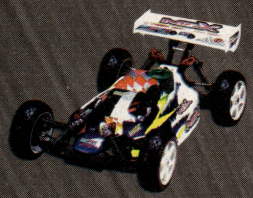
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▼ **MBX-4 RR 4WD 1/8 R/C Racing Buggy**
by MUGEN
eHobbies price: $479.99
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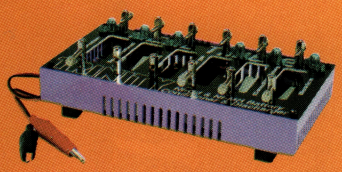
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by TRINITY
Trinity's Monster Hauler bag comes with internal storage compartments to store all your goodies from batteries to transmitters. The bag even has enough room for up to two cars and gear.
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1002-5607	Belted Slick Tires 24mm (27R)	HPI	$13.99
1002-5608	Belted Slick Tires 24mm (33R)	HPI	$13.00
1002-5581	26mm Sedan Mesh Chrome Wheel	HPI	$9.99
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1002-5589	X-Pattern Radial Pro Cmpnd 26mm	HPI	$12.00
1003-0402	1/8 Buggy M2 Multi Spike	Pro-Line	$19.99
1003-0395	Rear Hole Shot t M3	Pro-Line	$18.99
1003-0390	Rear M3 Square Fuzzy T	Pro-Line	$18.50
1003-0400	1/8 Buggy XTR Multi Spike	Pro-Line	$17.99
1003-0144	Rear Velocity Dish for T2 ,T3	Pro-Line	$6.95
1003-0457	Ft Buggy, RC 10 B3 Cone Dish Whl	Pro-Line	$5.95
1003-0436	Front, Rear M2 Dirt Hawg II 2.2"	Pro-Line	$17.95
1002-9140	Rear Truck Sprint Tires,Red	Team Losi	$17.99
1002-9146	T-2000 Truck Tires, Red	Team Losi	$17.99
1002-9099	Frt Truck Wedge, Silver	Team Losi	$17.95
1004-6057	Sprint 24mm Tires, firm	Yokomo	$7.99
1004-6058	Sprint 24mm Tires, Medium	Yokomo	$7.99
1004-6070	10 Spoke Wheels, 24mm	Yokomo	$3.99
1004-6071	10 Spoke Wheels, 26mm	Yokomo	$3.99

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1004-3220	Titanium Combo for RC-10 GT	Associated	$34.99
1003-0977	TC3 Factory Team Motor Clamp	Associated	$31.99
1001-8944	Kwik Klip III with Charger	Du-Bro	$19.99
1000-1369	Nitro Starter Pack	Duratrax	$39.99
1002-5167	Red Alert 10% Nitro Car Fuel	Duratrax	$5.99
1000-1365	Kwik-Pit 250 Fuel Bottle	Duratrax	$4.99
1000-9155	Blue Thunder 20%	Dynamite	$9.99
1000-0492	Curved Lexan Scissors	Dynamite	$6.49
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1004-3502	Nitro RS4 2 Spd Transmission, H.D.	HPI	$54.99
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1003-0151	RS4 MT Super Shocks ,70-103 mm	HPI	$29.99
1002-5746	RS4 EP Heat Sink Motor Plate	HPI	$26.99
1000-1453	Nitro R/C Car Cleaner	HPI	$4.49
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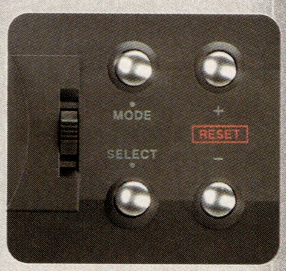
Four buttons and clear instructions are all you need to use or adjust any of the 3PDF's wide range of programmable features, from digital trims and ATV on steering and throttle to servo reversing, 2-channel exponential, 3-model memory and the function-selectable 3rd channel. Every adjustment is made with digital accuracy—and confirmed in black and white on a big, easy-to-read, 2-line LCD.

But the 3PDF is easy to use in other ways, too. There's the transmitter battery alarm that helps you monitor power level just by listening. Two ways to tailor throttle ATL to your driving style. There's a battery box for the receiver, a built-in recharging jack for optional transmitter NiCd use— and a padded hand grip that makes it all easy to hold as you race to the top.

For the location of the Futaba hobby dealer nearest you, please call 1-800-682-8948 and mention code number 2334V.



Digital thumb switches enable you to vary steering rate and throttle ATL as you drive, to meet changing conditions. Changes are confirmed with sound cues, so your eyes can stay on the action.



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Narrow-band FM technology in the transmitter and R123F receiver give the 3PDF the power to punch through radio clutter at crowded events.

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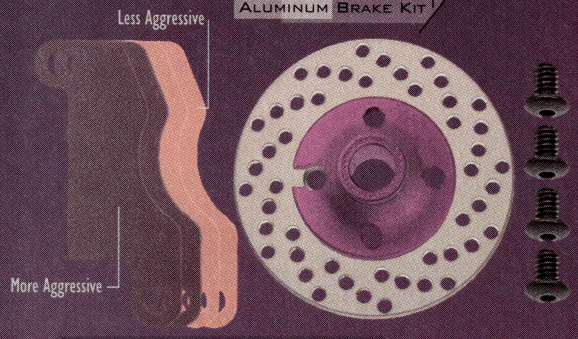
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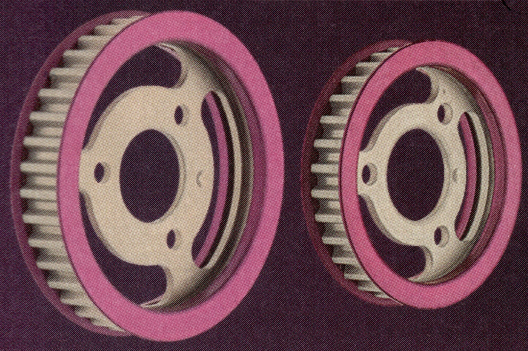
PERFORMANCE

HPI RS4 Nitro Aluminum Brake Kit



New, variable braking system. Lightweight aluminum. RRP 1575

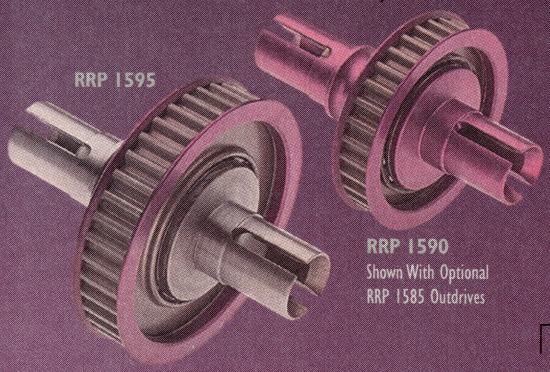
HPI RS4 Front One Way Diff Pulleys



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

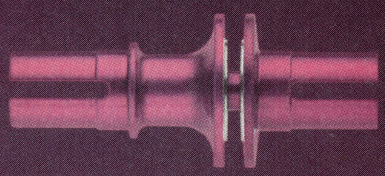
Performance from Precision

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

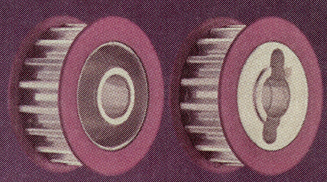
HPI RS4 / Pro / Pro2 / Nitro Lite Aluminum Outdrives



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

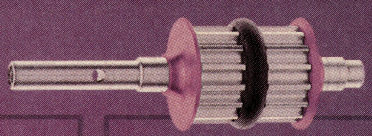
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HPI RS4 Nitro Small Drive Pulleys



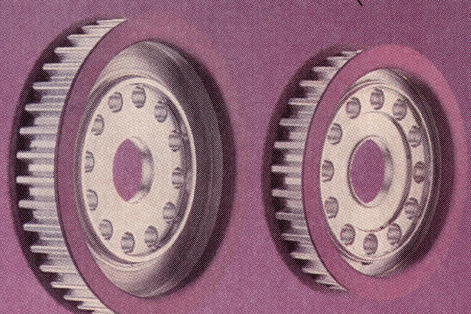
Drive pulleys sold in pairs. RRP 1538

HPI RS4 Top Shaft Pulley



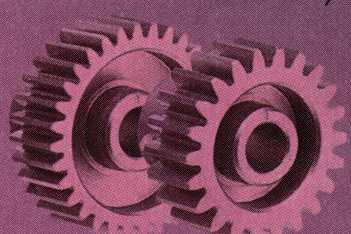
HPI RS4 Top Shaft Pulley: One piece pulley and shaft are precision cut and hard anodized. Purple anodized side flanges are pressed on.
RRP 1527

HPI RS4 Diff Pulleys



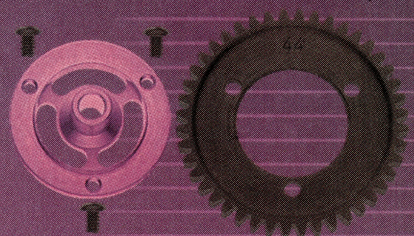
Precision machined, hard anodized aluminum diff pulleys. RRP 1539 fits HPI Nitro sedans. RRP 1528 fits HPI electric sedans.

HPI SuperLite Purple Aluminum Sedan Pinions



They're lightened, hard coated and precision cut.
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RRP 30XX (48P) and RRP 31XX (64P). Only $5.25

HPI RS4 Nitro Lightened Gear Adapter



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

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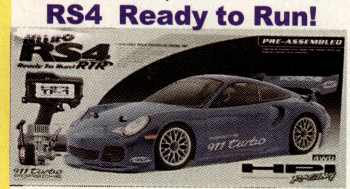
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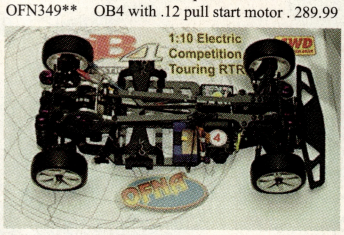
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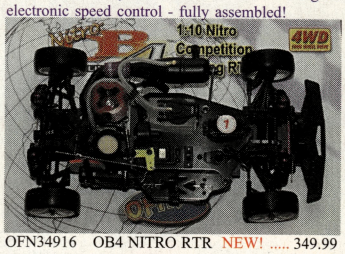
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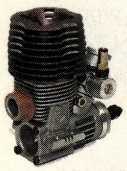
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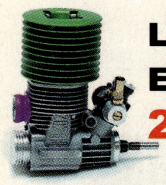
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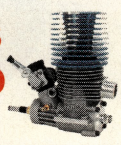


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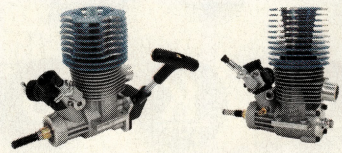
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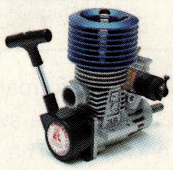
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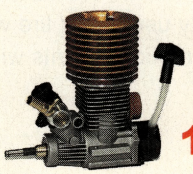
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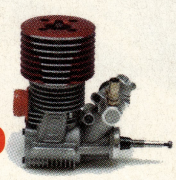
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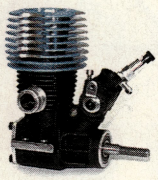
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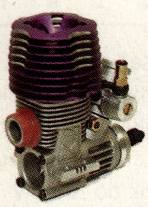
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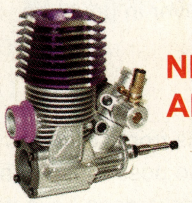
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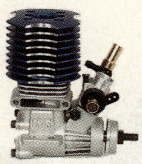


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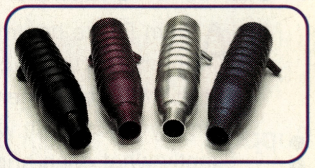


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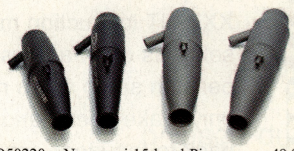


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PCOAL12TP Paris Turbo Ring Pipe w/ coupler & 90 degree fitting in black, purple,silver & blue.....34.99
These pipes are in short supply....call for availability



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PCO40602	Nova .12 rear exh manifold	24.99
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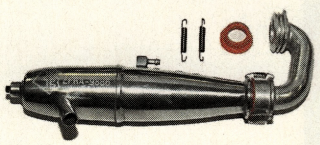
CVEZ120	1/10th scale pipe w/fittings	49.99
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Available colors: silver, blue, red, purple & black.

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RBC PIPES

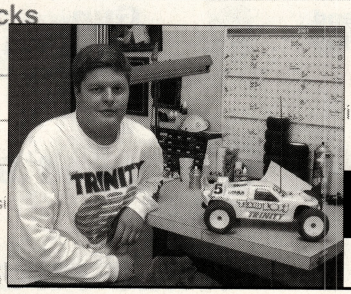


13510186P	.21 On Road Polished 086	109.99
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These pipes are one piece - pipe & manifold

XXX-NT

HOOKUP



with ADAM DRAKE

RACING & DEVELOPMENT

Adam Drake has made a name for himself as one of the top nitro truck racers in the country. Adam now works in the R&D department at Team Losi. I'll take you adjustment by adjustment with Adam so that we can show you exactly what each and every adjustment will do to how your truck performs on the track. Adam keeps his standard setup almost identical to the basic as prescribed in the XXX-NT instruction manual. Remember, stick to the stock setup as often as possible. Only make changes to the suspension setup when needed. And, when making changes only make one change at a time. Whenever in doubt go back to the stock setup and try again.

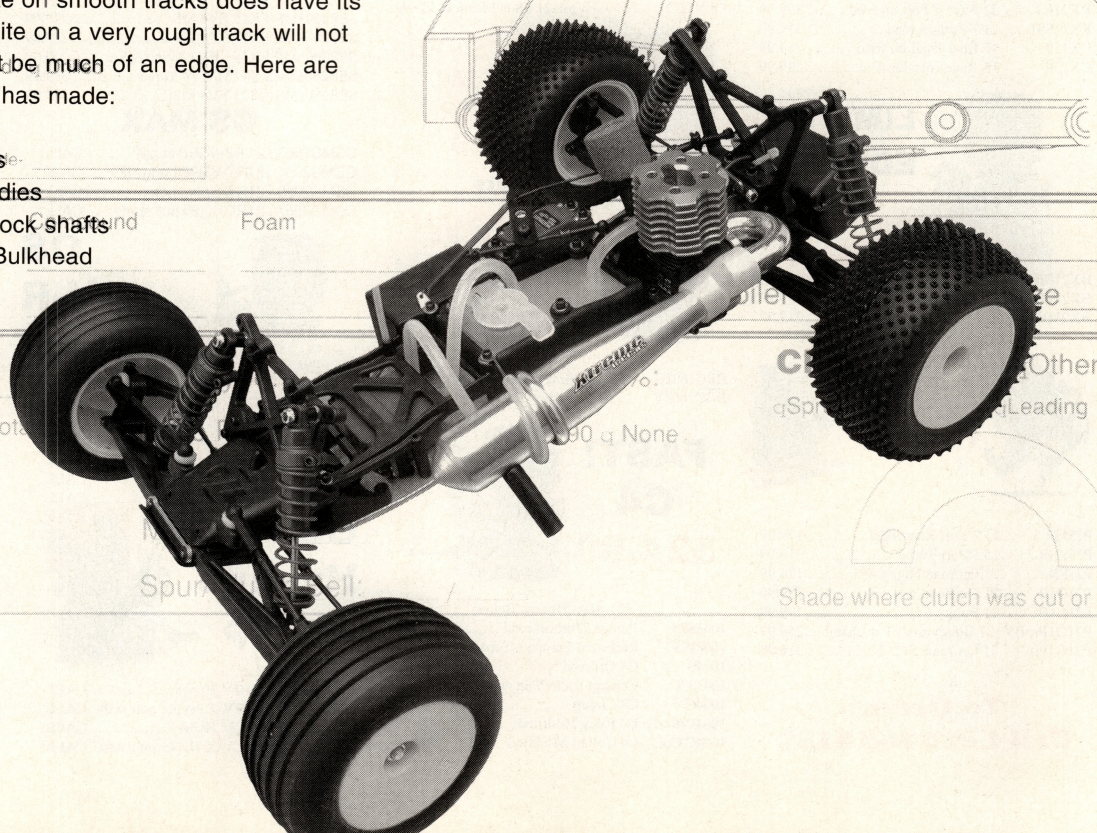
Adam's truck

All plastic, the only thing that's graphite is front kickplate. On rough tracks graphite doesn't seem to pose much of an advantage. Using graphite on smooth tracks does have its advantages. Using graphite on a very rough track will not be a hindrance, but won't be much of an edge. Here are the other changes Adam has made:

- Lunsford Turn Buckles
- Losi Titanium Ball Studs
- Losi threaded shock bodies
- Losi Titanium Nitride shock shafts
- Trinity Aluminum Front Bulkhead

Sway-Bar • (Effects: performance on smooth tracks) Adam doesn't like to use a sway-bar on either the front or rear end of the XXX-NT. The only time a sway-bar would be advantageous would be on a smooth, blue-grooved track. In that situation try a sway-bar on the rear end.

Tires • (Effects: Overall traction) For most tracks Red Step Pins work well in the back and Red Directionals up front. On a hard packed track try Red Reptiles in the rear with a Silver Directional in the front. Because gas races are so much long than electric races you'll usually use a rear tire with a larger pin than an electric race. Directional fronts will almost always work in the front.

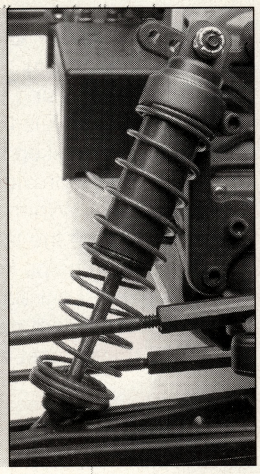


The XXX-NT handles like an electric truck with a loud power plant.

Front Shocks

(Effects: overall suspension performance)

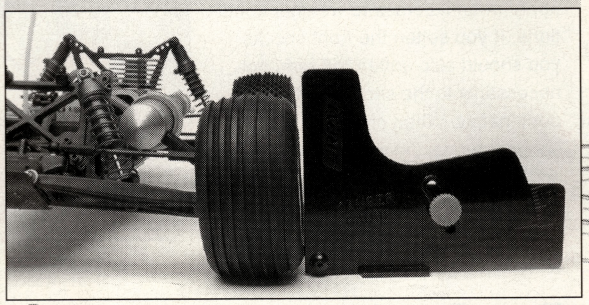
Out of the box the front shocks are #55 pistons with 30wt oil and red springs. Adam uses #56 pistons with the same oil and springs. Using the middle mounting holes on the front arms Adam uses this shock setup with .120" spacer inside the shocks instead of the .050" spacer called for in the stock setup. Not too often does Adam stray from this setup. He changes the shock oil weight depending on the ambient temperature. At night races or in cold weather he'll put some 27.5wt oil in the front shocks. During hot weather races he'll use 32.5wt oil.



Camber

(Effects: suspension consistency)

Adam keeps the camber at -1º. Adjusting more negative camber into the front will help make the truck a little more consistent through bumps and turns.



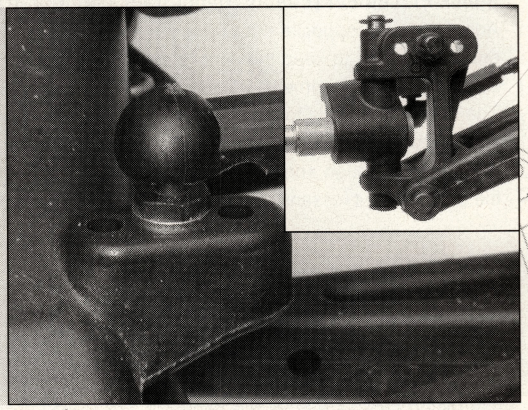
Front Camber Location

(Effects: steering feel, turn-in, track handling)

The basic setup places the front camber link ball studs in the center hole(2) with one washer beneath the ball stud. If you like a really precise feeling, fast acting truck then shorten the front camber links and move the ball studs to the outside holes on the front bulkhead. This might sound like a good move, but expect your truck to be a bit harder to drive. If you want a truck that's a little easier to drive and smoother feeling, lengthen the front camber links and use the inside holes on the front bulkhead.

On the front hub carrier the standard mounting spot is in the center (b) hole. Adam rarely changes this adjustment.

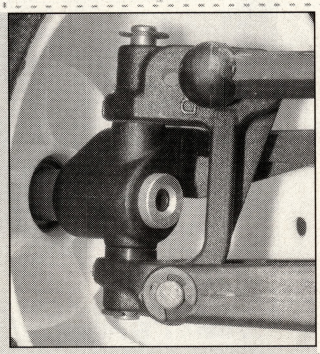
The number of washers beneath the ball stud on the front bulkhead will effect how the truck turns. Adding washers will smooth out how the truck feels, taking washers away will make the truck feel more aggressive and faster to your steering input.



Spindle placement

(Effects: rough track stability)

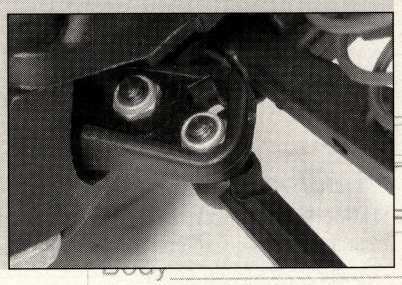
The stock setup calls for the front steering spindles to be placed at the lowest setting. This means a small spacer is placed above the spindles on the king pin. This adjustment gives the truck more stability through bumps. Moving the spindles up will make the truck a little too aggressive under most situations. The only exception would be on a very high-bite track and you want as much steering as possible.



Steering Ackerman

(Effects: rough track stability)

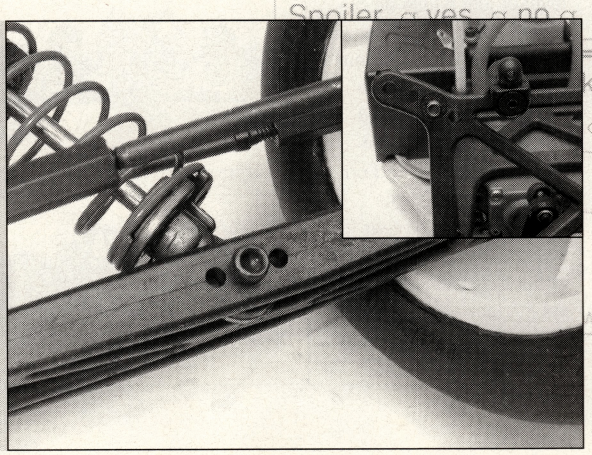
This is a good adjustment on rough slick tracks. Move the steering tie-rods to the inside location on the steering bell cranks on a really rough track. This adjustment will help smooth out the steering and allow the steering to be less impacted by the rough terrain.



Shock Location

(Effects: steering aggression, turn-in)

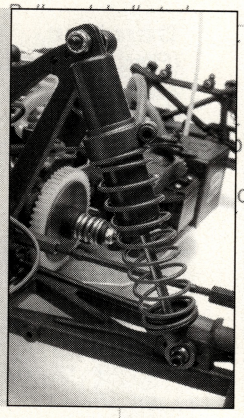
The front shocks are mounted to the second hole from the inside on the shock tower and in the middle hole on the arm. When it comes to placing the front shocks make your adjustments by moving the location on the shock tower. Moving the shock mounting location on the front arm greatly effects down travel which means you need to change the shock limiting if you start to fiddle with the arm mount location. Moving the shocks to the outside holes (standing them up) on the shock tower will make the truck more aggressive by giving you more on-power steering. Going the opposite direction, moving the shocks inward (laying them down) will make the truck feel smoother entering turns, less aggressive, but easier to handle. This is a great adjustment to play with if you have some practice time on the track.



The best adjustment you can make is more practice.

Rear Shocks
(Effects: overall suspension feel)

Keep the rear shocks close to the stock setup. Use #56 pistons with 40wt oil and orange springs. The same rules apply when it comes to weather conditions. If you soften the front shocks you should also soften the rear, not necessarily to the same point, but proportionately. When changing shock springs the next step stiffer from Red springs are Orange springs. The next step softer are Pink springs.



Rear Hub Carrier
(Effects: traction)

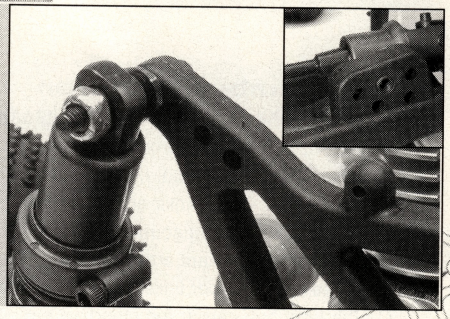
Adam likes using the 1º rear hub carriers, stock is 0º. During long races Adam likes the effect that the 1º hubs provide near the end of the race. When tires provide less traction the little bit of extra rear toe-in helps keep the traction there. Losi also offers 2º hubs, but Adam prefers the 1º hubs under most situations.

Pivots Supports
(Effects: jumping)

The stock pivot supports work great. The 2 degrees of anti-squat makes it easy to get off jumps.

Rear Suspension
Shock Placement (Effects: rough track stability, traction)

Adam uses the opposite thinking when it comes to moving the shock placement in the rear end. Adam likes to keep the shocks mounted to the outside hole on the rear shock tower. This is the standard placement. When adjustment is needed Adam moves the shocks on the arms. The basic setup calls for the rear shocks to be mounted to the middle hole on the arm. Moving the shocks to the inside hole will make the rear end feel a little softer which helps the truck through rough and rutted sections. Not too often does Adam move to the outside hole on the arms since it lessens rear shock travel. Something typically needed in nitro off-road racing.

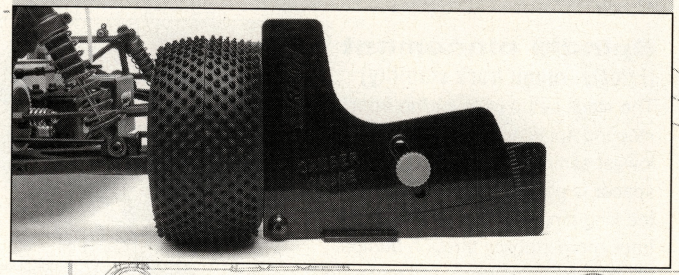


Setting the Diff and Slipper
(Effects: acceleration, longevity)

Adam prefers running his diff extremely tight. On off-road gas racing races are long, the demands are tough. To absorb any shock to the drive train that might come from landing off a jump on power Adam sets the slipper to absorb some of that force. Typically the slipper is set about 4 1/2 to 5 turns from tightening the slipper spring all the way down. To set this tighten the slipper all the way then back it off 4 1/2 to 5 turns. This setting sets the slipper a little looser than normal. It's a safe starting point that should be check frequently depending on race conditions.

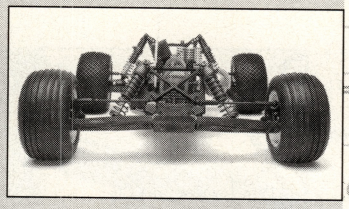
Rear Camber
(Effects: rear traction)

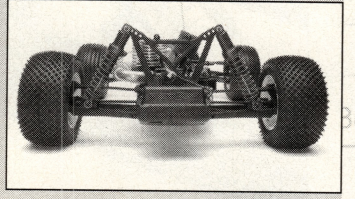
Rear camber is usually set between 0 and -1º. On smooth high-bite track camber is set at 0 while on bumpy tracks -1º works well.



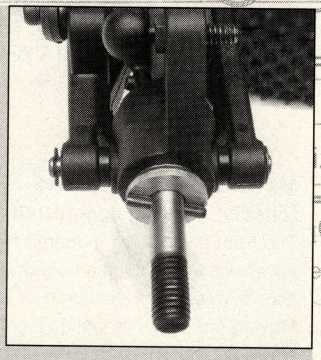
Ride Height
(Effects: overall steering and rough track handling)

Set the rear arms so that the dog bones just above level. On the front set the arms level or just a little bit below level. Adam likes to run his truck with the rear slightly higher than the front. With the rear end being set a little higher there's more pre-load on the rear springs. This helps to make the rear suspension more reactive rather than being low and set in place when it comes to going through turns and through jumps.





Wheel Base
(Effects: traction, steering)



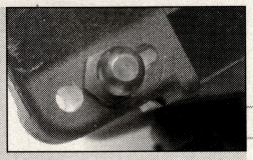
This is a critical adjustment. Normally Adam runs the rear axles in the center placement. That means one spacer in front and one space behind the hub carrier. Moving the axles forward by placing the spacers behind the hub carrier will give the truck more straight line traction and will allow the truck to transfer weight faster around corners because of the shorter wheelbase. Moving the axles back by placing the two spacers in front of the rear hub carriers will lengthen the wheel base. This will make the truck more stable overall with less forward traction. Turning won't be as sharp, but stability through the rough stuff will be a little better.

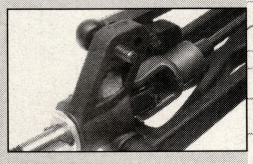
Ride Height is a very quick and easy adjustment that yields results right away.

Drive Shafts
(Effects: how the truck handles during acceleration)

Adam usually runs the stock Losi universal bones. When more forward traction is needed Adam installs MIP CVDs. The CVD's give the truck a little more forward-bite, but the Losi universals go through the bumps a little better.

Rear Camber Placement
(Effects: rear end stability)





Adam likes the middle hole on the rear bulkhead and the inside hole on the rear hub carrier. When more rear stability is needed Adam moves the camber link to the outside hole on the hub carrier. The truck will have a more balanced feeling when the outside hole on the hub carrier is used. The inner hole works better on bumpy tracks. On the bulkhead Adam rarely changes the mounting point. It's more difficult to make adjustments on the bulkhead as opposed to making them on the hub carriers instead.

What to change first

Really Rough Track

- Move the shock mount on the rear arms to the inside hole. This will increase travel and help the truck accelerate through the rough stuff better.
- Place an additional washer underneath the front ball studs on the bulkhead.
- Put a little more toe-in into the front wheels.

Need More Steering

- Move the front bulkhead ball studs to the outside hole and re-adjust the camber.
- Add a little more front toe-out.
- Lower the front ride height just a bit.

Front	Stock Setup	Adam's Setup
Shock Location on Arm	Middle	Middle
Shock Location on Tower	Second hole from inside	Second hole from inside
Shock Springs	Red	Red
Shock Pistons	#55	#56
Shock Oil	30wt	30wt
Shock Limiters	.050	.120
Camber Location on hub carrier	Middle	Middle
Camber Location on bulkhead	Middle	Middle
Spacers under bulkhead Ball Stud	One	One
Camber	-1º	-1º
Toe	0º	3º Toe-In
Caster	Stock	Stock
Sway-Bar	None	None
Steering Ackerman	Outside	Outside
Spindle Location	Bottom	Bottom
Tires	Red Directionals	Red Directionals

Rear	Stock Setup	Adam's Setup
Shock Location on Arm	Middle	Middle
Shock Location on Tower	Far outside	Far Outside
Shock Springs	Red	Orange
Shock Pistons	#56	#56
Shock Oil	30wt	40wt
Shock Limiters	0	0
Camber Location on hub carrier	Outside	Inside
Camber Location on bulkhead	Middle	Middle
Camber	-1º	-1º
Rear Toe-in on Carrier	0º	1º
Rear Axle Spacing	Center	Center
Pivot Support	#2	#2
Sway Bar	None	None
Drive Shafts	Stock	Stock
Diff Adjustment	Tight	Very Tight
Slipper Adjustment	Tight	More Loose than stock
Tires	Red Step Pins	Red Step Pins

Adam recently moved to sunny California from cold and snowy Michigan.

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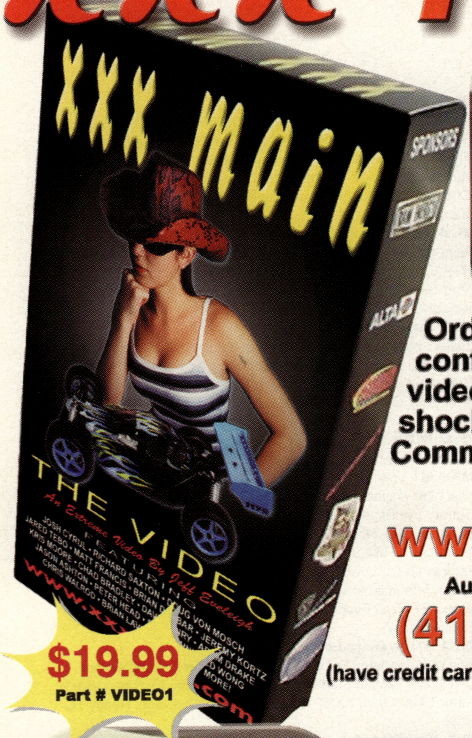
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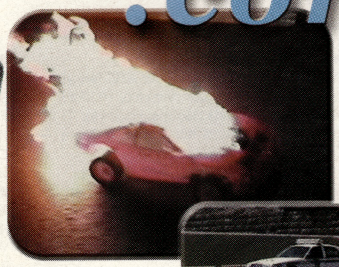
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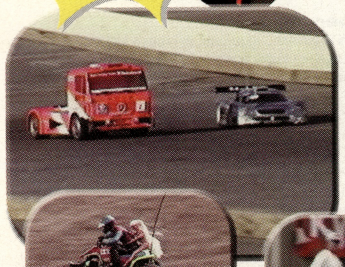


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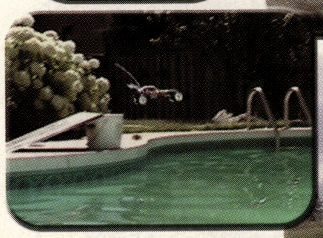
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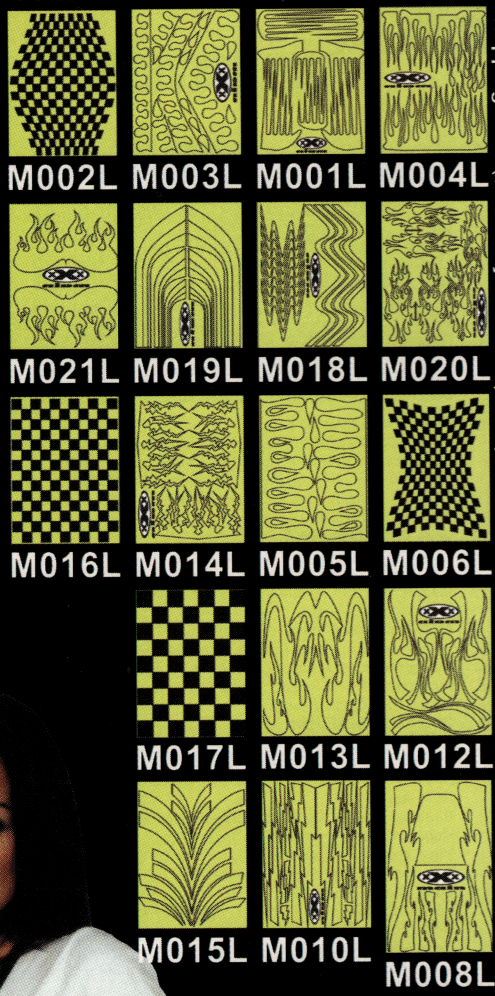






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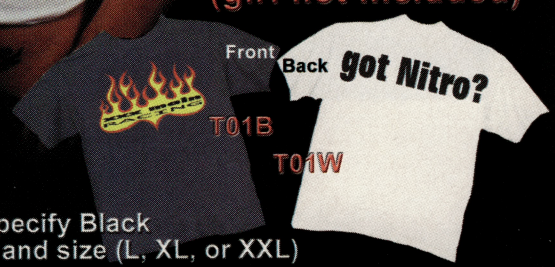




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3.4 Nov-Dec '97
Reviewed: Associated T3, Trinity Switch Blade 12. How-to: Tune with Down and Up Travel, Mount Rubber Tires, Hop-up and Tune the HPI Nitro RS4. Features: All About Discharge Trays, '97 Off-Road Worlds Coverage.

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.

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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
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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!

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6.2 October/November '00
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GT-1 Winner
Rodney Clemente



TCS National Finals winners



F-1 Winner
David Beale



GT-2 Winner
Benny Chou

The winners in the F-1, GT-2, GT-1, and M-Chassis classes have each won expense paid trips to Japan to compete in the 2000 Tamiya World Championship from November 18-19. Tamiya would like to thank the many competitors that came from across the country to compete in the TCS National Finals, and we would also like to thank everyone that participated in TCS events around the country this past year.



M-Chassis Winner
Miguel Macias

F-1

1st	David Beale
2nd	Marty Hageman
3rd	Chen-Hwa Chen
Best of Show	Dan Pozel
Top Qualifier	Chen-Hwa Chen

GT-2

1st	Benny Chou
2nd	Matt Pozel
3rd	Lee Passehl
Best of Show	Ian Aquino
Top Qualifier	Benny Chow

GT-1

1st	Rodney Clemente
2nd	Peter Robinson
3rd	Kevin Michellick
Best of Show	Brad Palmer
Top Qualifier	Derek Hung

M-Chassis

1st	Miguel Macias
2nd	Jeff Olmstead
3rd	Chou-Hang Iun
Best of Show	Dan Munoz
Top Qualifier	Chou-Hang Iun

B-Main Winners

F-1	Ray Meek
GT-2	Dude Pozel
GT-1	Sean Wu
M-Chassis	Larry Olmstead

C-Main Winners

F-1	Kurstin Hardy
GT2	Charles Aggenbach

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February 18, 2000
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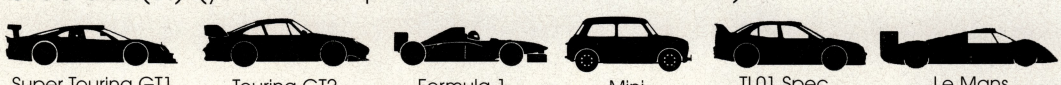
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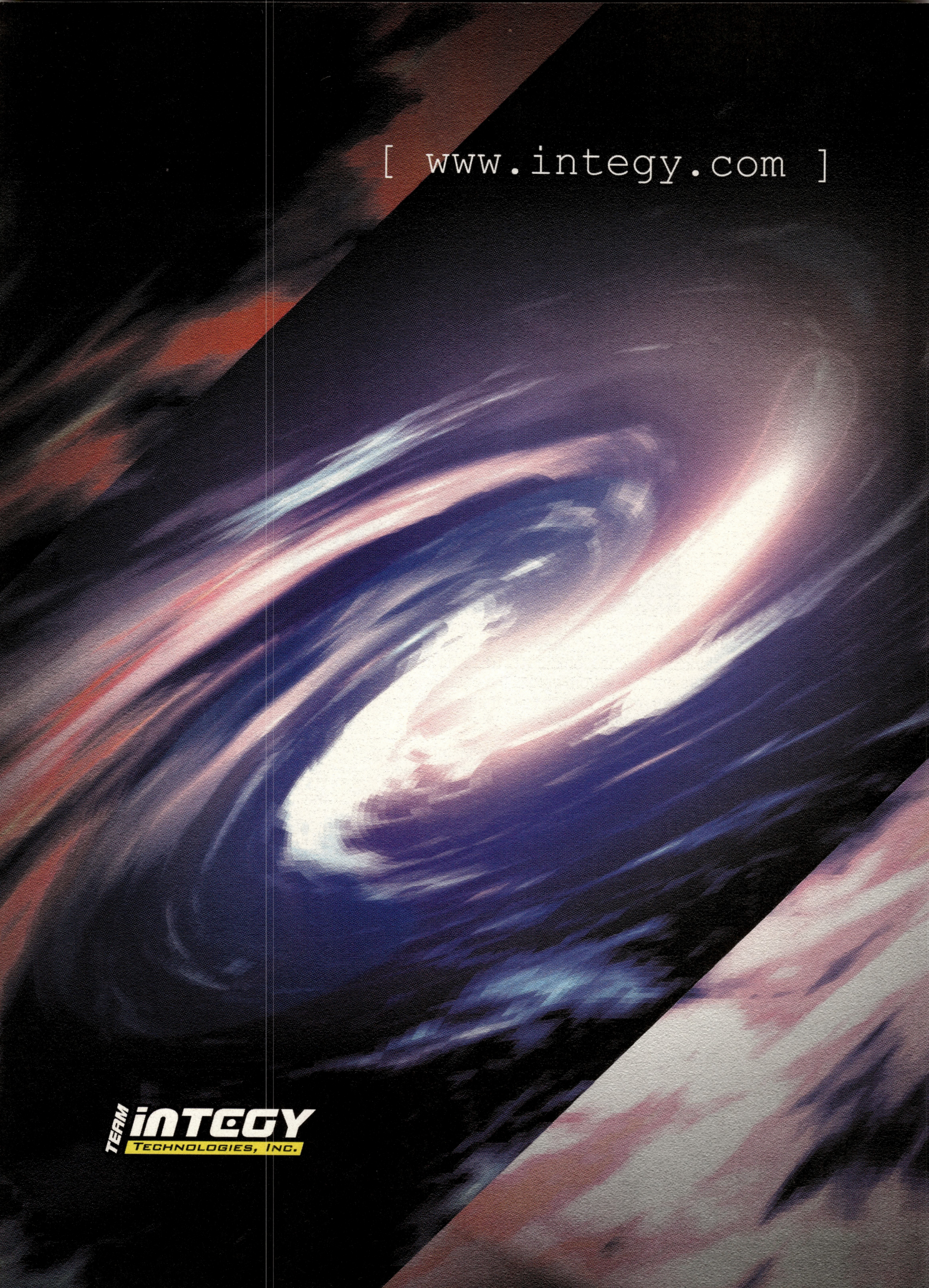
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or
Xtrastuff, 14175 Telephone Ave.,
Ste. O, Chino, CA 91710

Rally Rant

First off,
I would like to say that I am a recent convert to your mag. I used to read another (I won't embarrass myself by stating which one). I THINK I'M HOOKED ON XTREME!

The main intent of this letter though is so I can blatantly promote something (hopefully). My name is Rob Gunning, I am a trusted regular on the HPI rally forum (robstoy's racing). I am hoping that you might be willing to print this in whole or in part to let people know about something myself and some other local Midwestern R/C rally racers are starting. We plan to hold what will be known as "THE MIDWEST RALLY CHAMPIONSHIP" starting late spring of 2001. It will be a multi-race series traveling across Indiana, Michigan, part of Ohio, and possibly Illinois and Wisconsin. We are still looking for a few more tracks to host events (on and off-road), racers willing to travel in order to compete in the points standings, and possibly even sponsors for different events.

We have developed a rule book and have also found a rather major sponsor for a race or two, but could always stand a few more. Would you please include my name, address and email so that any tracks, racers, sponsors, or anyone else interested could get in touch with me? It would be greatly appreciated!
My name and address is:

Rob Gunning (robstoy's racing)
PO Box 231
Kingsford Heights, IN 46346
email: robstoys@yahoo.com

Sure thing Rob. We'd love to see Rally racing gain in popularity. We hope printing this letter helps you. Be sure to send us some pictures of the races.

The Pimp is Out There!

Hey Xtreme!
As always, great mag, great babes, great tests, great babes, great race coverage, and... more great babes! I like it. but there's something I noticed about you guyz. What happened to the great pimp, our national hero? I'm talking about James Revilla. He's not in the credits anymore. He was always giving us the true scoop on Tamiya products and stuff. Seeing as you guys are pretty smooth, my buddies and I came up with a theory – we noticed that James had his own "style of writing" and that although he's not credited anymore, we think he's still throwin' down some product tests. We even had my English teacher compare a few articles... and we noticed that lately there have been some major tests done with no author credit. Is there some sort of conspiracy?!?!? Is James the new X-File?!?!? We love his stuff out here in Mountain View... you guys each have a fan base out here. There's the "Mike Velez" followers, but I myself are a part of the hardcore racers who are down with "the man" James. So we racers out here ask: if he was kidnapped by aliens, please bring him back because without him, *Xtreme RC* and the rest of the male species is without their "high king pimp leader"!!

Let him know if you find him.... we believe the truth is out there – with the babes, of course!!!

The others R/C mags suck toast compared to *Xtreme*! by the way, the xtrastuff@xtremerc address doesn't work!

Mason De la Cruz
Mountain View, CA
TamiyaRcr1013@aol.com

P.S. My sister thinks he's cute... she forced me tell you guys that she's 22 and to ask if he's single?!? She wants to send a pic if you guys can find him... sheesh.

James, is that you? Okay Mason (wink, wink), James went back to school and started his own full-size auto accessory business. You caught us, from time to time James does contribute an article or two but we like to use his alias. Which shall remain a secret. As for the "Mike Velez" followers, the next meeting is this Monday at 8:30 behind the old steel mill. I'll bring the Cool Aid. Let's take a look at your sis. Send her pic to jamesr@xtremerc.com. His email address still works. We'll check out the xtrastuff address.

Thanks Mason (don't worry, I won't blow your cover – JAMES).

Long Time, No Read

I enjoy *Xtreme* and can't wait for the next issue. You see, I get these withdrawl symptoms when I don't find the new reading material. I must confess that we must expect to wait a little longer as the mags have to travel a longer way to South Africa.

I identified one problem. We may be the minority but we Front Wheel racers would like some FWD tests, reviews and news too.

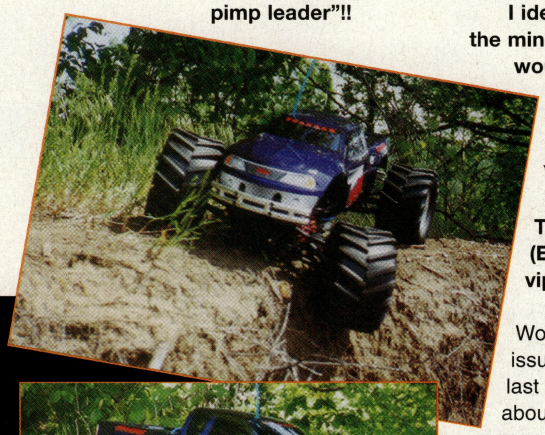
Keep the *Xtremes* rolling and have a happy and blessed New Year.

Theunis
(Ermelo, South Africa)
viperk@xsinet.co.za

Wow, it must take a long time for issues to make it to South Africa. The last front wheel drive car was released about 3 years ago. Occasionally Tamiya pops out another FF car with the same chassis and a different body, but other than that we have been packing all the front wheel news we can find into every issue – that being none. Sorry Theunis, should any front wheel drive news break soon we'll be sure to let you in on it.

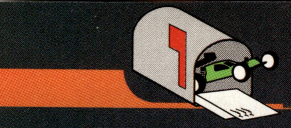
Hi Xtreme,
I'm 43 years old and this is my first nitro powered T-Maxx. The T-Maxx is awesome right out of the box. Unfortnuantly two days after this picture was taken my T-Maxx was run over by a full-size Chevy. Thankfully only minor damage was done, that's one tough truck. The T-Maxx of course. Keep up to good work.

Mike Lauzau
North Tonawanda, NY

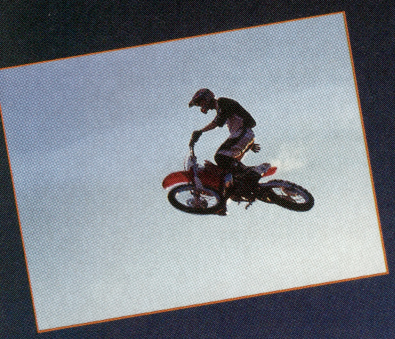




Show the world your car! Send us pics for our Racer's Rides.



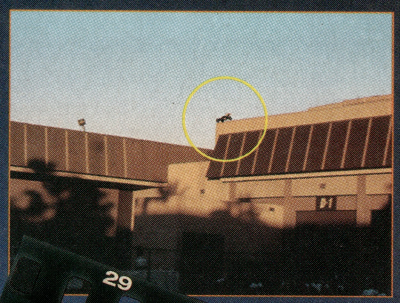
On The Web: Check out Mark Pavidis land a complete back flip at *www.xtremerc.com.*

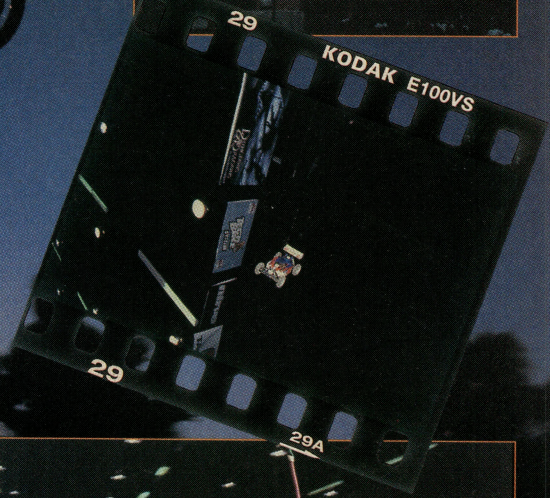




Invert 2000

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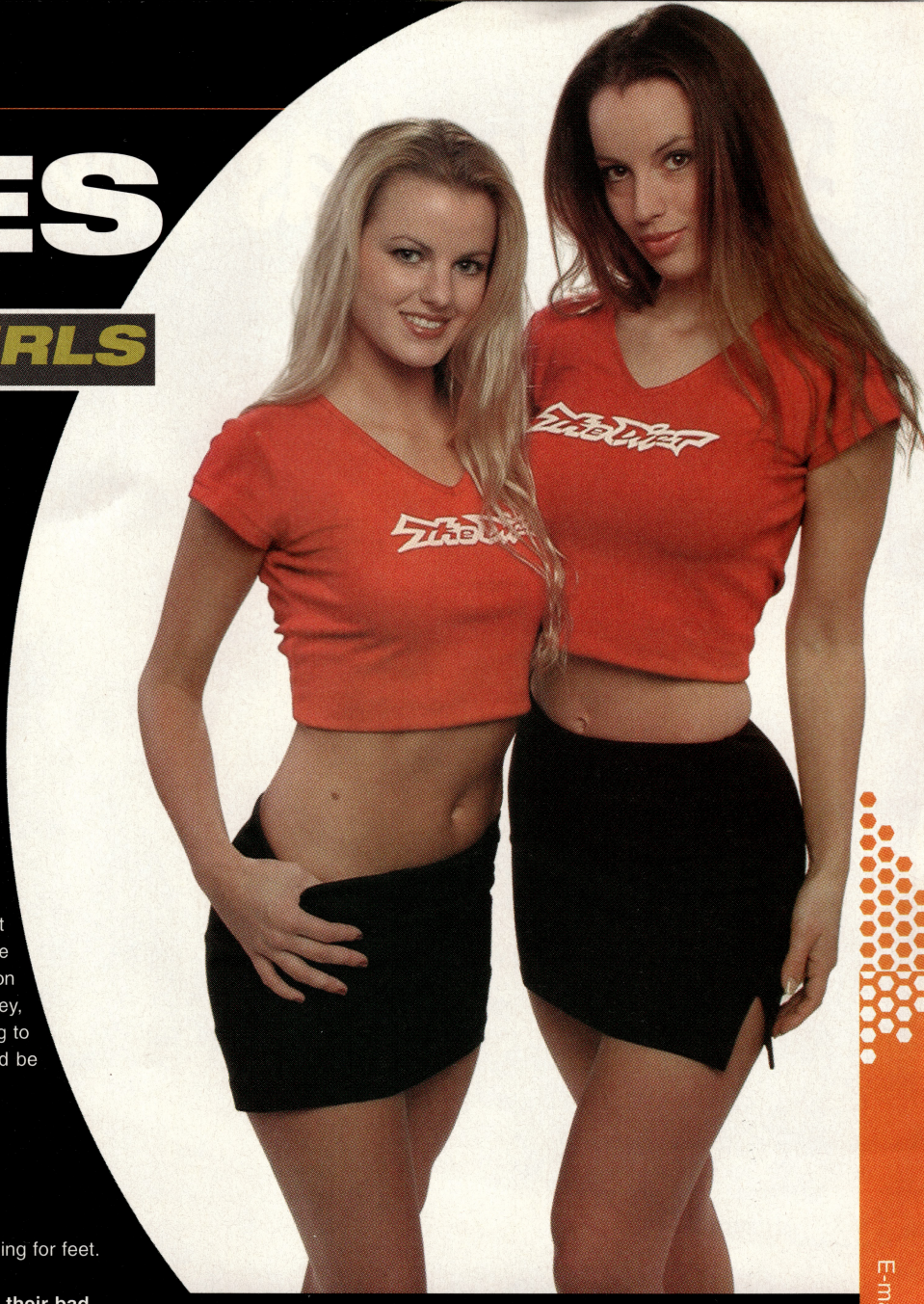


What do you get when you mix one part BMX dirt freestyle jumps, one part nitro-powered 1/8-scale 4WD buggies, and one part the best R/C drivers in the country? Something very awesome to say the least. In late November, the Anaheim Convention Center was host to Invert 2000, the Vertical Sports Carnival – an exhibition to all things extreme. Exhibits included BMX freestyle, BMX racing, MX freestyle, a huge skateboard half-pipe, R/C freestyle, good looking ladies and lots of giveaways. What was that? R/C freestyle? That's right, some of the top nitro drivers were on hand, including Mark Pavidis, Richard Saxton, Greg Degani, Jarred Tebo, Scott Hughes, Derek Furatani, and others. Drivers were perched on the top of a BMX starting ramp as they controlled their cars on the huge track below. Over a thousand spectators cheered each driver on as they attempted complete back flips and other stunts. After each driver had three passes at the track the announcer, Joey Christensen of The Dirt race park in Hemet, CA, asked the crowd to rate the performance with the volume of their cheers. Although it was very, very close, Jarred Tebo charmed the crowd and ended up with the win. Jarred was rewarded with a $500 cash prize for his efforts. Among the different exhibitions at Invert 2000 R/C Freestyle and MX Freestyle drew the largest crowds. It looks as if R/C will be invited back next year for Invert 2001. If you've got some truly Xtreme R/C stories let us know.

Only Andy could turn one of Mike's bad pictures into an artistic background.

BABES of THE MONTH

THE DIRT GIRLS



Sara Curtis (blonde)
Born On: March 27, 1978; Freehold, NJ
Occupation: Student

Anna Curtis (brunette)
Born On: September 16 1976; Sacramento, CA
Occupation: Promotions Director

You've seen them before. They're the Dirt Girls. We first showed you the Dirt Girls about a year ago. Since then they've made appearances in Xtreme R/C Cars and other magazine as the beautiful trophy girls that frequent some of the major nitro races. Who are these girls you ask. They're sisters, daughters of a military family, they've seen the world. Anna's a Promotions Director and is going to school to become a nutritionist. Sara has a degree in English and is going to school to become an English teacher. Sara races at The Dirt in the novice class and likes to spank the competition. Anna on the other hand doesn't race on a regular basis. If it weren't for Sara's boy friend, Joey, neither Sara nor Anna would probably have nothing to do with R/C. Sara's idea of a great first date would be going racing – got to love that.

What's the worst line ever used on the girls?
Sara: "Hey baby, what's your sign?"
Anna: "Are you working?"

Turn Offs: Guys that stare and guys that have a thing for feet.

The only fault we could find with the ladies was their bad taste in men: When asked who's the cutest racer both replied Scott "The Squirrel" Hughes.



E-mail the Dirt Girls at xtremerc@xtremerc.com

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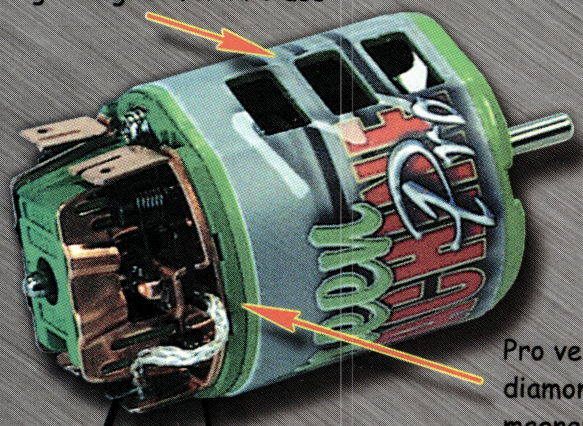
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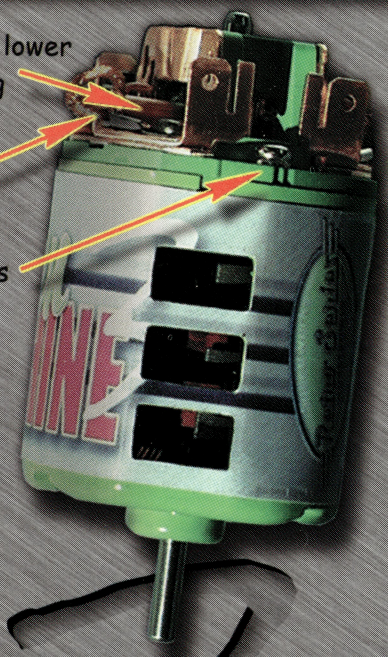
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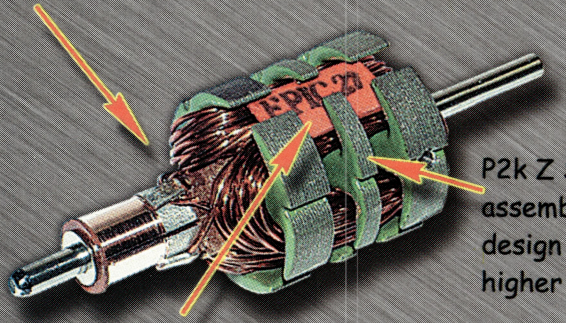
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