FIRST LOOK: ASSOCIATED B4, MONSTER GT & HPI SAVAGE 21

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T-MAXX 2.5

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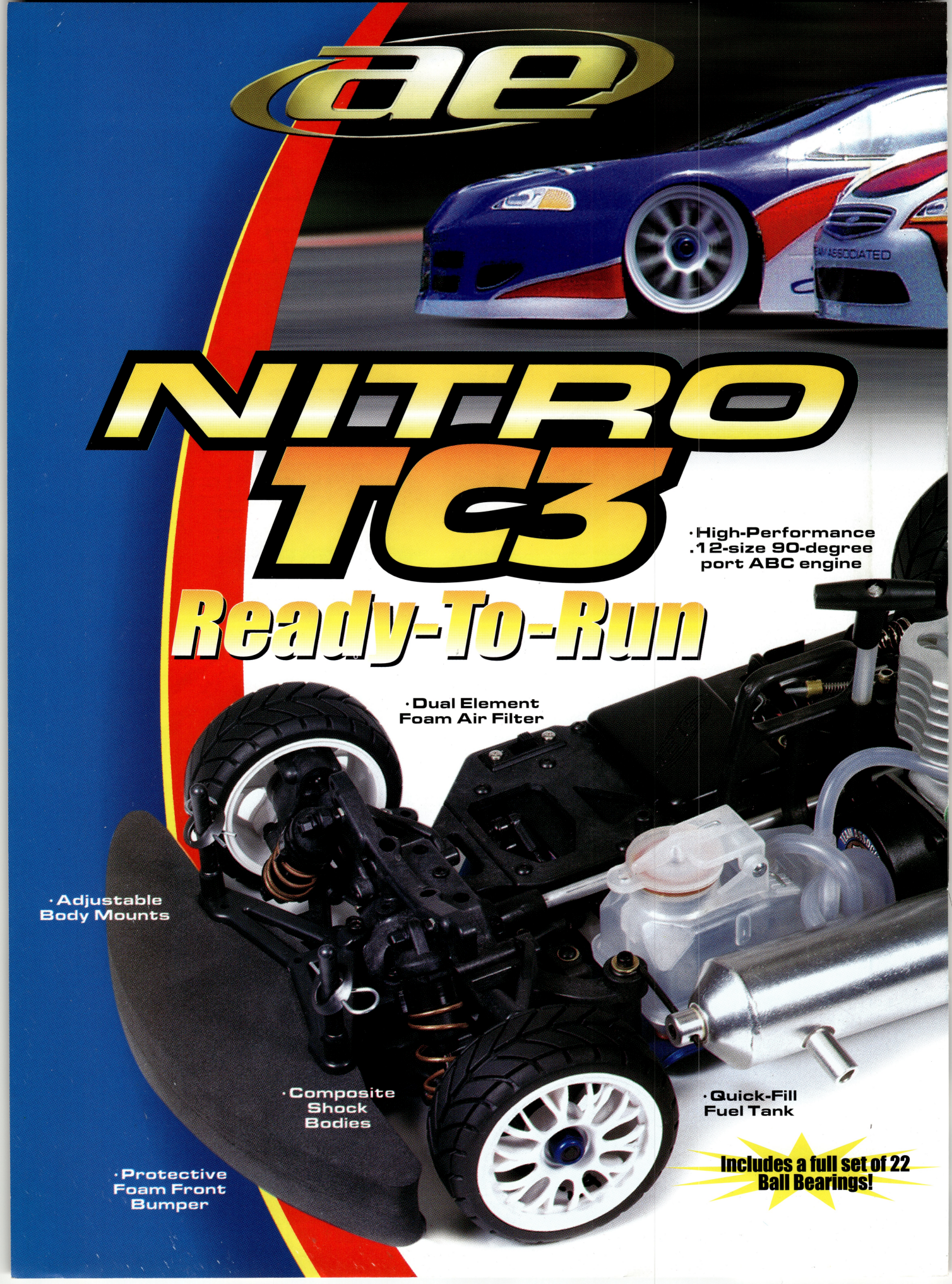
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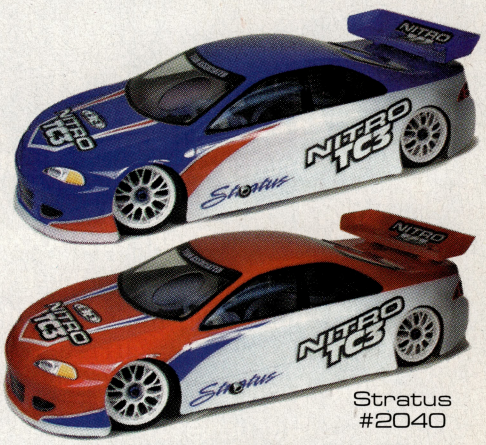

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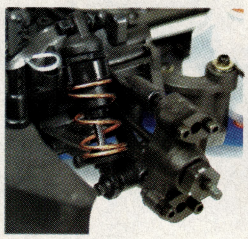
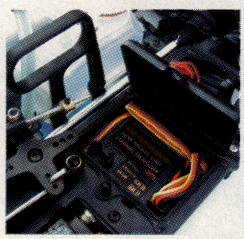
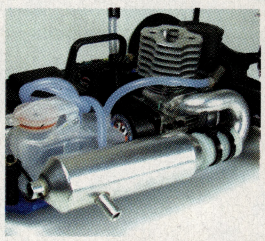


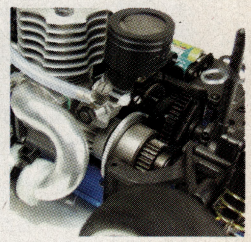
Pivot-ball type suspension with easily adjustable caster, camber, and toe-in. Interchangeable front and rear hub carriers.



Enclosed receiver compartment for protection from fuel and dirt. Easily removeable radio tray detaches with just six screws.



Side-exhaust manifold and pipe. Reverse-fill fuel tank and convenient carrying handle included.



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You won't believe this is a RTR!

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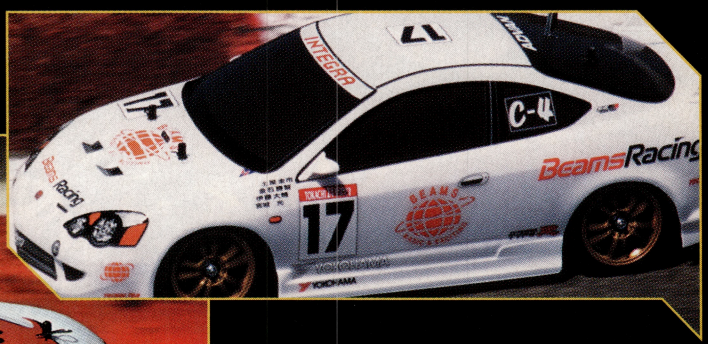



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On the cover: Traxxas' new T-Maxx 2.5 and Associated's Nitro TC3 RTR tear it up. Photos by Adam Campbell



R/C CAR

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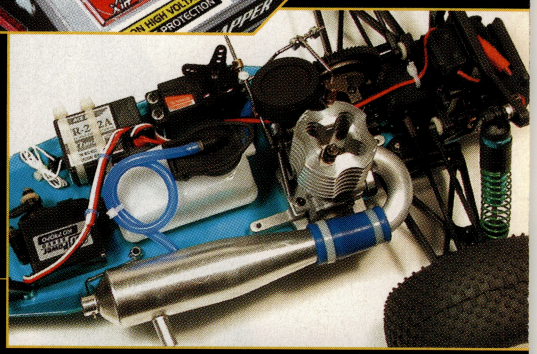

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Wasp.12

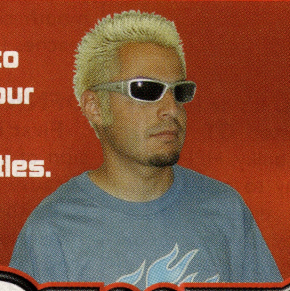
★Attack Status★

The invasion has begun! Team Orion has deployed the Wasp .12 into combat against the low power, fuel thirsty competition. Designed to engage in full force nitro racing, the Wasp .12 produces enough power to overrun the opposition while preserving maximum fuel efficiency and longevity.



Part #	Engine	RPM	HP	Bore	Stroke	Exhaust	Shaft	Carburetor
80051	Wasp 12 ROAR	37,000	1.45	13.8	14.0	Rear	SG	Slide
80052	Wasp 12 Turbo	38,000	1.50	13.8	14.0	Rear	SG	Slide
80053	Wasp 12 Off-Road	36,700	1.40	13.8	14.0	Rear	Std	Rotary
80060	Wasp 12 SE	34,600	1.30	13.8	14.0	Side	Std	Rotary
80061	Wasp 12 SE-PS	34,000	1.25	13.8	14.0	Side	Std	Rotary

The Wasp was subjected to intensive track testing by our factory combatants at the country's premier nitro battles.



"...easily made 10 minutes before stopping for fuel. I was going over 12 minutes in practice with a legal tank!"
Wasp driver Rick Hohwart



PEANUT

- Travis Amezcua
- 3rd - 2002 Dirt Nitro Challenge
- Finalist - 2002 Silver State Nitro Challenge
- Finalist - 2002 Sidewinder Shootout

PUDGE

- Ryan Cavalieri
- TQ, 1st - 2002 Dirt Nitro Challenge
- Finalist - 2002 Silver State Nitro Challenge
- 1st - 2002 Sidewinder Shootout

Wasp engine accessories

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88001	Inline Pipe Kit black (Rear)
88050	Inline Manifold polished (Rear)
88052	Std. Manifold polished (Rear)
88100	Inline Tuned Pipe polished
88101	Inline Tuned Pipe black
88102	Std Tuned Pipe black



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BY FRANK MASI

Big News in Chicago!

This year's Chicago Hobby Show marked not only the release of the new Traxxas T-Maxx 2.5 (see our review elsewhere in this issue), but also the unveiling of several formidable contenders for the Maxx's crown. Based on first impressions, here are my early predictions of how the competition will fare. Of course, I could be wrong.

Associated Monster GT (BFT)

First impressions. It's really, really big, and it's heavy. The layout of the drivetrain is unique among all of the trucks in this class. The gearbox is mounted inline like those of the other trucks; however, a series of gears allows the Monster GT's engine to sit across the chassis like that of the 1/10-scale RC10GT. This was done to reduce the effects of the engine's torque on the chassis and suspension. The exhaust system is also very unique. It resides to the rear of the engine and has a pair of silicone outlets that exit through the bottom of the chassis like a pair of straight pipes on an old muscle car!

Most outstanding features. Again, it's the Monster GT's engine position that sets it apart. Have we ever criticized the T-Maxx for torque-related handling problems? No, but the physics of what Associated is saying about this configuration are solid. I also think that the truck's eight shocks, with their external oil reservoirs (*a la* Progressive Suspension, but made out of plastic), will draw people to the Associated camp. The reservoirs appear also to have top-mounted air bleeding screws, which should make them much easier to rebuild and bleed.

I wish they had... given the truck an on-board starter system.

Success rating. The Monster GT is very impressive. As it is a joint-venture product between Associated and Thunder Tiger (it's cohort in the RTR arena), the truck looks like a combination of at least two design engineers—it's a design that appears to have been tweaked by in-house genius Cliff Lett, but not one that has been totally designed by him. But I don't count this as a strike; the Associated name and reputation rides along with the Monster GT, and one should never underestimate that significance. It'll sell well and will put AE on the monster-truck map.

HPI Savage 21

First impressions. It's as large as the Associated Monster GT, but it doesn't feel quite as bulky. HPI really went out of their way to make their monster truck look different from anything else, and they have succeeded. The body is absolutely trick-looking, and the wheels and tires complete the package. I liked the compactness and efficiency of the vertical plate chassis, and this design appears to add strength without the need for extensive bracing that would otherwise impair ground clearance. They also appear to have done their homework, as the drivetrain parts look overbuilt (at least the parts that are visible; we haven't examined the internal tranny bits yet). The shocks look a little weak compared to the rest of the truck.

Most outstanding feature. Gotta be that cool chassis. And the optional add-on reverse module is a great idea.

Success rating. HPI knows how to market and sell its kits, and the Savage 21 will be no exception. I personally think that the truck's potential to be a real player rests totally on the durability of the first production run that's sold. If there are any gearbox or drivetrain problems—even minor ones—word of mouth could sink the Savage before it reaches its full potential.

OFNA Dominator

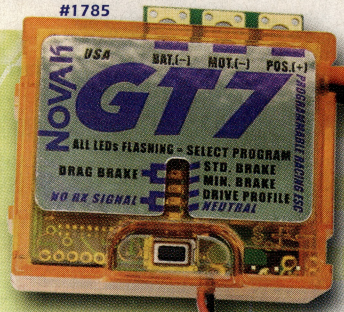
First impressions. A quick conversion of an existing 1/8-scale buggy. But because of this, the Dominator looks to be the truck most likely to wear its 1/8-scale-size .21 engine with the least worry. I did not like the suspension and wheel design, as the truck's stance has been widened merely by the addition of wheels with great offset, which in design terms is never a good idea and messes up the suspension geometry.

Most outstanding feature. A true 1/8-scale buggy drivetrain.

Success rating. OFNA sells a lot of these things, and it's products have slowly but surely become more reliable over the years. If I were to recommend the Dominator, I would also recommend that Pro-Line's Maxx suspension kit (which has aluminum bulkheads that fit the Dominator perfectly) also be installed, as it essentially fixes the Dominator's otherwise lackluster suspension.



#1785



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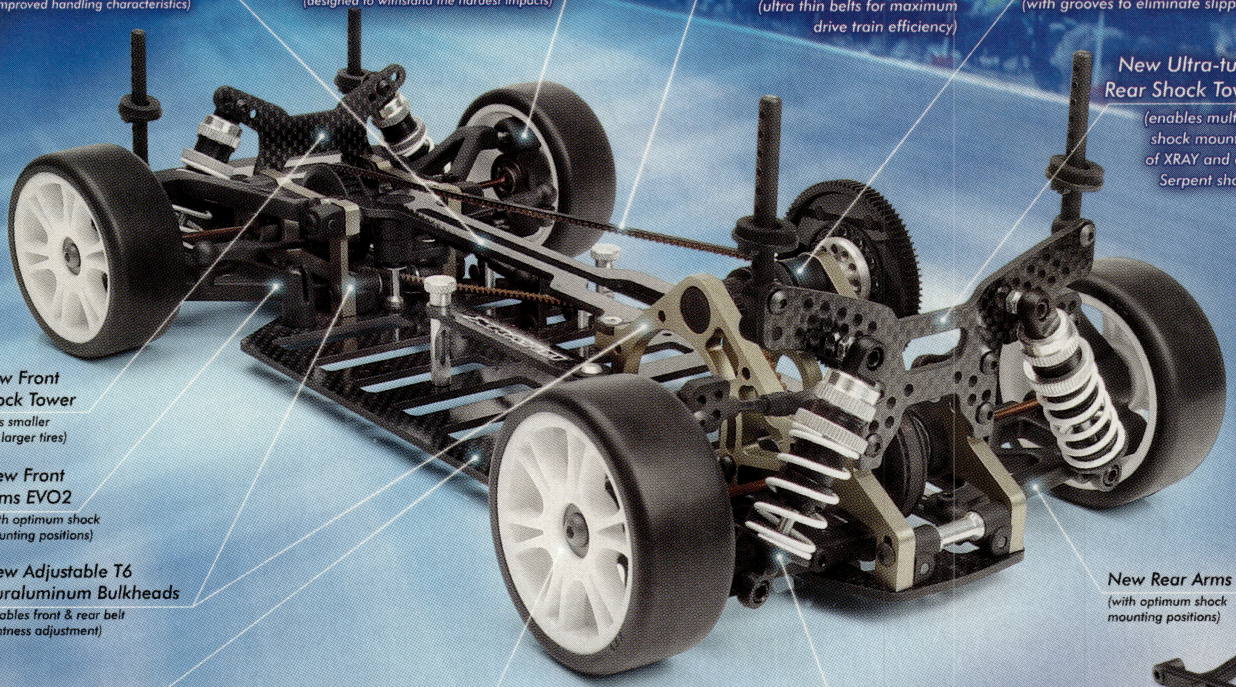

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New Rear Arms EVO2
(with optimum shock mounting positions)



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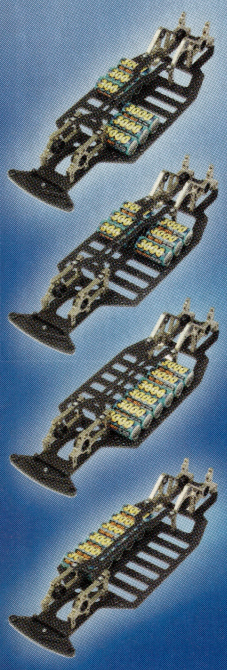

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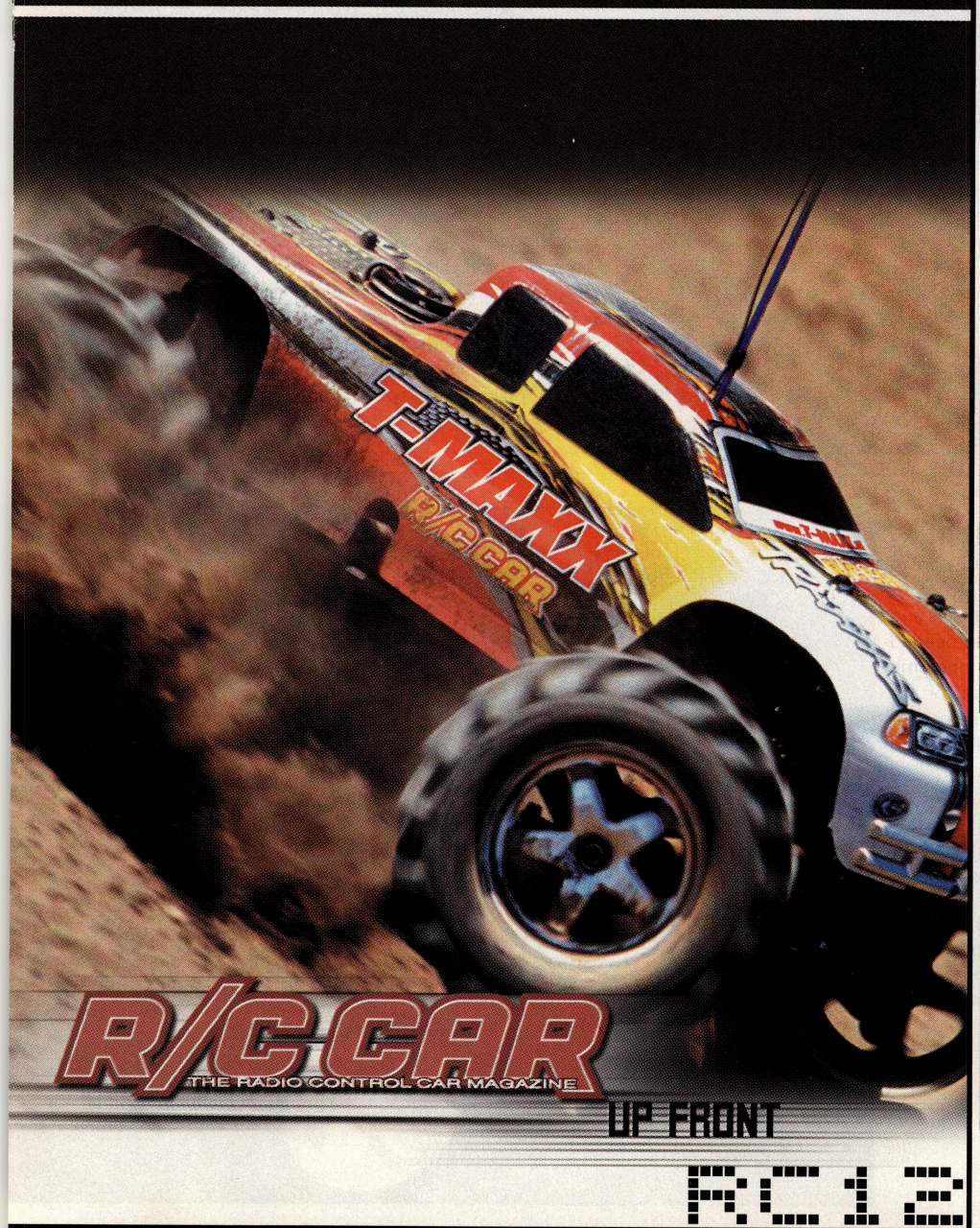
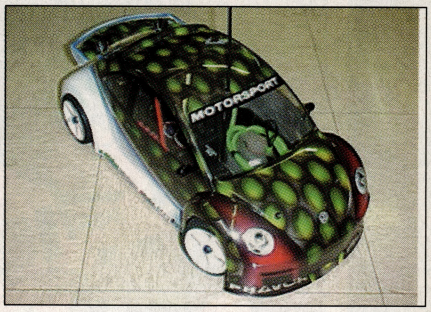


UP FRONT

RC12



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TRUCK COLUMN (PAGE 30)

[Readers' Projects]

Welcome to *R/C Car's* Readers' Projects. We receive many impressive "home-built" reader projects each month, so we decided to showcase some of them in each issue. How about you? Got a lot of pride in your ride? Snap some pics and send 'em to us here at *R/C Car* Readers' Projects, 25233 Anza Drive, Valencia, CA 91355. Hi-res digital images can also be emailed to tomh@hi-torque.com. Who knows, maybe you'll see your car or truck in an upcoming issue! And if we use yours, you'll receive a free one-year subscription!



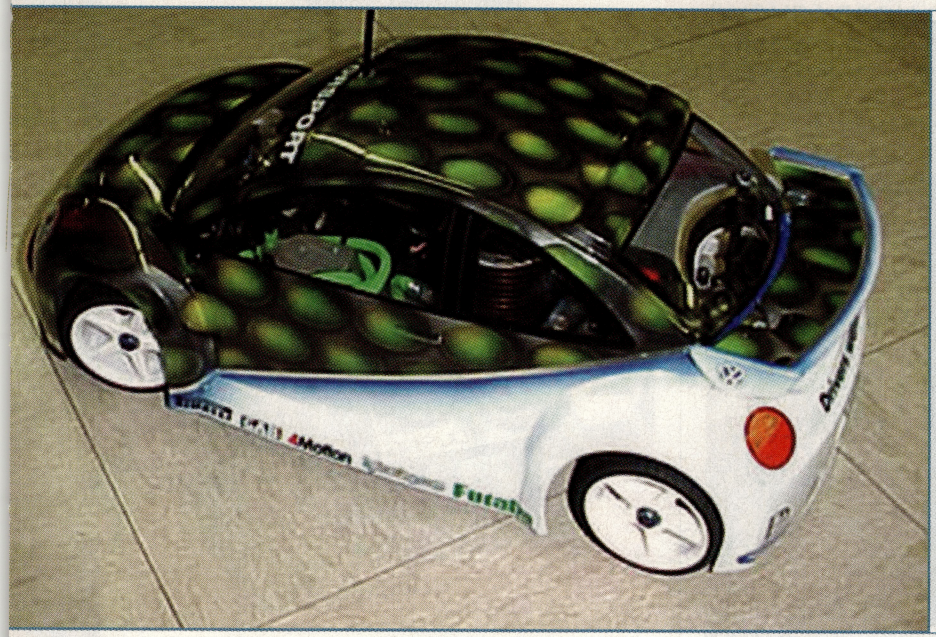
MOTORCROSS FAN

If Ricky Carmichael had an off-road racing truck, this is what it would probably look like. David Perryman spent extra time working on the body graphics, so his Adam Drake edition Losi Truck resembled his favorite motocross rider. Even though the truck comes with all of the bells and whistles, David felt that a factory connection truck worthy of Carmichael would need some extra hop-ups. The truck received aluminum MIP CVDs, aluminum top shaft, aluminum pivot blocks, aluminum shock mounts and spring tensioners. The stock steel ball studs were replaced with titanium studs, so that the truck can take much more abuse. David also tossed the stock clutch and replaced it with an MIP racing clutch. The power for this racer is provided by a Nova Rossi .12 rear exhaust engine that truly rips. Airtronics popular high-torque 94358 servo gets the steering responsibilities while a high-speed 94357 servo takes care of the throttle. The truck and all of its controls are given to KO Propo's Mars radio system. This is definitely an eye-opening truck.

A NEW-LOOK NITRO RUSH

This Traxxas Nitro Rush comes form Socott Welte, South Carolina. Scott needed another hobby when four surgeries and a doctor's advice told him that he needed to hang up his dirt bike gear. The long time motocross racer found an outlet for his competitive nature with his current off-road truck. Scott's Nitro Rush is painted to resemble his favorite beverage, Red Bull's popular energy drink. Underneath the nicely painted HPI body you will find titanium turnbuckles, an aluminum heat-sink head, and an MIP racing clutch. Dynamite's air and fuel filter are also installed and work together to increase the engine's efficiency and overall power. Lastly, the truck is outfitted with Pro-Line's Blades tires up front and their burly Gladiators in the rear.





A RACING BEETLE

Never thought you would see such a well-painted beetle body on top of Associated's Nitro TC3, huh? Well, here it is. Paul Donaldson spent over a week masking off this HPI body and then spent the better half of a day painting this handsome shell. The 4WD sedan is not just for oohs and ahs as you might think; its Fantom .12 racing engine will make you run for cover and scream because of how fast it pushes the car along. The bug's health is given to a Futaba radio and servos, which is a huge responsibility given this car's potential. Traction comes from Yokomo inch-ups wheels and Pro-Line soft compound tires. It goes to show that a well painted body is like the hood of a muscle car, in that you do not know what you will find until you open it up.



ONE LAP WONDER

The owner of this Kyosho One Lap is Marc Rutherford of Port Hope, Michigan. Marc's car is outfitted with an HPI Eclipse body that he spent considerable time painting. Under the body is a 12-turn double motor for more than enough spank. The car also has a set of ultra smooth ball bearings that reduce the car's friction and increase its efficiency. Aluminum oil-filled shocks replace the stockers to give this sedan great traction. Titanium turnbuckles are used up front in high impact areas that wreak havoc on steel turnbuckles. This mighty on-roader is controlled by JR Racing's Pro radio system and servo. Thanks, Marc, for the pictures of your car and for sending us a valuable Reader's Project

HIGHLIGHTS FROM THE 2002 CHICAGO INTERNATIONAL MODEL AND HOBBY SHOW!

So much new stuff, so little space. The *R/C Car* crew stalked the aisles of the nation's largest hobby show to bring you the news of the newest and most exciting R/C swag. Here are just some of the intriguing releases, and you'll be seeing the rest in months to come and on our website at *www.rc-car.com*.





TRAXXAS SPORTMAXX

With all eyes on the new T-Maxx 2.5 (see elsewhere in this issue for a full test), Traxxas slipped the new SportMaxx through the backdoor. The concept behind the SportMaxx is to offer a "stripped" version of the T-Maxx to those who can't quite swing the price of that truck. For about $100 less than the price of a T-Maxx, owners get a 2WD, single-speed monster that has the same high-performance TRX 2.5 engine that was recently developed for the T-Maxx. Aside from the money savings, SportMaxx owners will also enjoy upgrading their trucks to full T-Maxx status with the installation of three add-on "modules." There will be a 2-speed module, a 4WD module and a reverse module available.



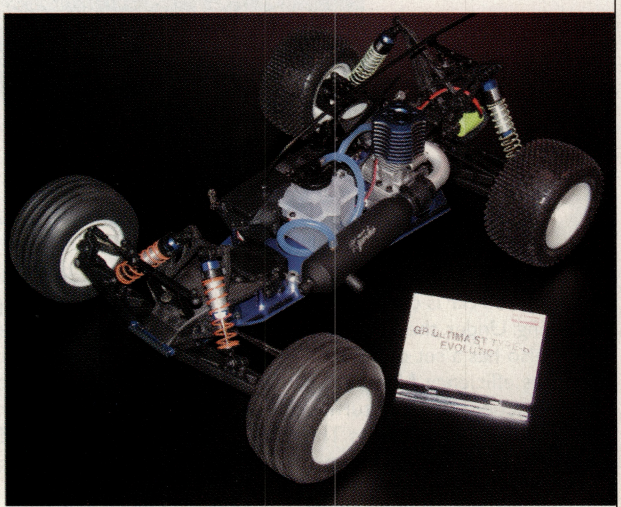
TEAM ORION V2 MODIFIED MOTOR

Team Orion introduced one of the most innovative designs for brushed motor we've seen. The V2 endbell differs from those of standard motors in that it uses a pair of circular brushes that contact the commutator at an extreme angle. According to Orion, this design allows the use of softer brush springs without the risk of brush bounce from high-load conditions. This saves the comm from burn spots and allows for higher rpm with greater efficiency, as there's less friction between the brushes and comm. Other features include screw lugs for the brush shunts and lead wires (no soldering is needed) and slide-in Schottky diodes. Eyelet-style brushes can also be used.

KYOSHO ULTIMA ST GP EVOLUTION

We thought that Kyosho had killed the Ultima line, but there sat the Ultima GT GP Evolution prominently on display in the Kyosho booth. Last summer, some of the Kyosho team drivers had hinted to us that a fully optioned team truck was in the works, and this looks like it.

The GP Evolution features a blue-anodized aluminum chassis, nose plate, standoffs and chassis brace, as well as graphite-composite bulkheads and shock towers to stiffen things up (the original Ultima ST flexed like Arnold). Other features include universal driveshafts and alloy rear suspension mounts that key to the chassis to maintain proper toe-in (plus, the old plastic mounts were terrible - they practically broke when you tightened a wheel nut). The shocks look really cool; they are the dual-type SS shocks used on the original truck, but with blue-aluminum caps and titanium-nitride coated shock shafts.



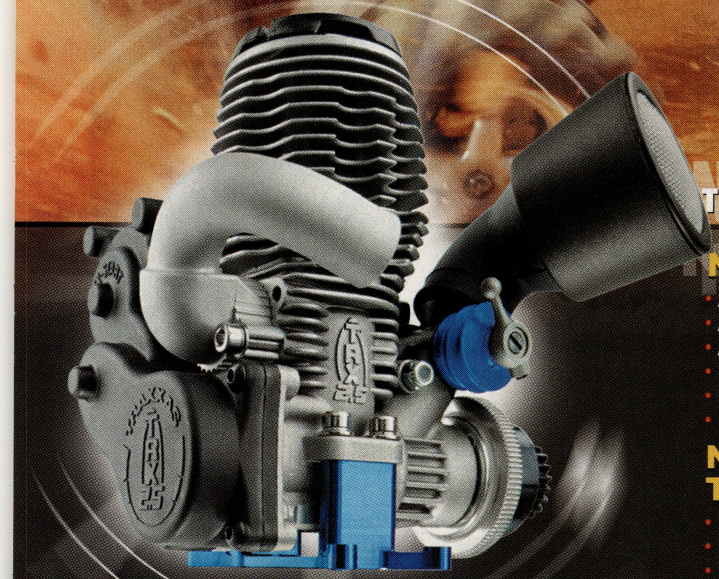
SOME CALL US CRAZY TO PUT THIS MUCH POWER IN A READY-TO-RUN.

WE CALL IT LISTENING TO OUR CUSTOMERS!

T-MAXX



THE NEW T-MAXX!



THE NEW T-MAXX. Faster, Wider, Meaner Than Ever.

New Engine

- All-New Rear Exhaust Racing Engine
- All-New Composite Slide Carburetor
- All-New EZ-Start 2 Push-Button Starting
- Most Powerful Engine in its Class
- Blows Away .15 – .18 Size Engines
- 60% More Power Than Original T-Maxx

TRX 2.5 RACING ENGINE

New Upgrades To Handle The Extra Horsepower!

- Wider Stance for Superior High-Speed Stability
- Larger Diameter, Heavy-Duty Driveshafts
- 50% More Rigid, 3.0mm Aluminum Chassis
- Larger 3.5mm Turnbuckles

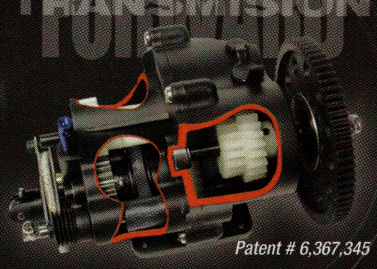
40+ MPH

NEW GRAPHICS



The new T-Maxx is a rolling work of original art with its Incredible new 6-color graphics that would be nearly impossible for even a master painter to duplicate. The body is fully painted and trimmed with new die-cut decals for easy final detailing. 4 color choices are available including new Sinister Black!

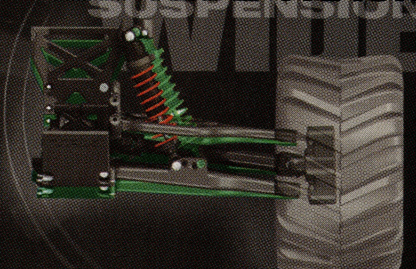
FORWARD/REVERSE



Patent # 6,367,345

Only T-Maxx has the patented forward/reverse transmission with an autoshifting 2-speed that works in both forward and reverse. It's the only one that allows familiar, fully-proportional trigger control of the throttle and powerful 4-wheel disc braking in both forward AND reverse gears. Anything less is a compromise!

NEW WIDE TRACK



The T-Maxx has superior stability thanks to new wider arms and an increase of over 1 inch in track width. New multiple shock mounting positions (up to 10) provide the widest range of adjustability. Set it for that famous, bottomless Maxx suspension travel and plush feel, or slam it low and firm for high-speed racing action!

TRAXXAS

**Blue motor mount for display purposes only.*

Traxxas Corp.1100 Klein, Plano Tx, 75074 Ph. 972-265-8000. Traxxas U.K., P.O. Box 1128, Winterbourne, Bristol BS17-2SH, England. Ph. 44-117-956-1002. Fax 44-117-956-1121.
© Copyright Traxxas Corp. 2002. Call, write, or fax for your nearest hobby shop and for our latest catalog. Specifications subject to change. Optional blue anodized engine mount shown.
Questions? Call the Traxxas' technical support department at 1-888-TRAXXAS (872-9927). Customers outside U.S.A call (972) 265-8000. Or E-mail us at support@traxxas.com.
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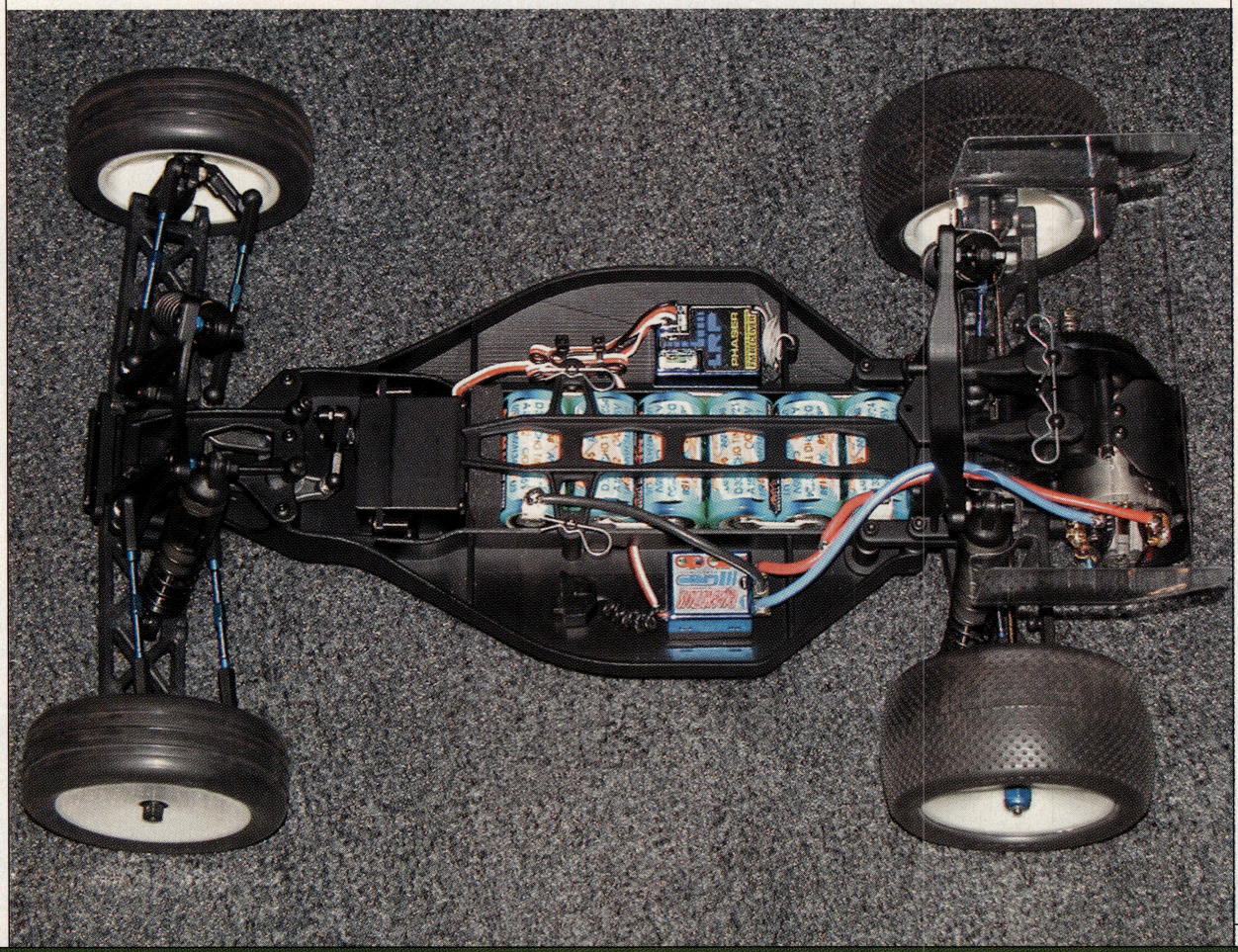


TEAM ASSOCIATED B4

Associated threw the R/C media a curve ball when it showed up with an all-new 2WD buggy. We all knew they had been working on updating the B3, but the new B4 was more than we could have hoped for. Here's are the details as released by Associated's Cliff Lett.

• The B4 has a new gearbox with a taller 2.6:1 ratio and the larger capacity diff from the GT gas truck. The entire tranny has been integrated into the chassis and suspension structure.

• A new double-sided slipper clutch assembly provides a finer range of adjustment and greater efficiency. It can also handle higher loads with a looser setting for added control on slick surfaces.

• The motor, battery, body, wing and shocks are lower to provide a much lower CG for greater cornering speeds and more stability over jumps and bumpy terrain.

• The B4 uses all-new wheels at both ends. The front wheels have new offsets are stiffer and can use wide-body front tires. The new rear wheels are now interchangeable with those from other buggies. This makes it possible to have pre-glued spec tires for all buggies.

• Longer MIP CVD driveshafts increase rear traction by pushing the B4's wheels out to the maximum allowable rear width.

• The B4's new "forward swept" front suspension, designed in conjunction with the car's "co-planer" Ackermann steering geometry, provides maximum front-end clearance with minimum bump steer – all while maintaining the correct Ackermann settings.

• Either in-line or trailing front axles can be used to tune the aggressiveness of the steering. Whichever axle type is chosen, steering Ackerman remains correct.

• All four suspension arms are of equal length for consistent handling. And for ease of building and improved durability, all of the suspension's hinge-pins are captured, so no E-clips are necessary.

• Associated is calling this the "most adjustable RC10 ever." All of the car's suspension settings are easily accessible; the upper suspension arms have vertical ball-studs front and rear to allow for finer roll-center adjustments.

• Lastly, Associated has finally ditched wing wire: the B4 has impact-absorbing molded wing mounts. Even the wing's angle can be adjusted.

No word on an exact release date for the new B4, but the prototype mock-up shown here looks to be very close to the finalized design of the car.

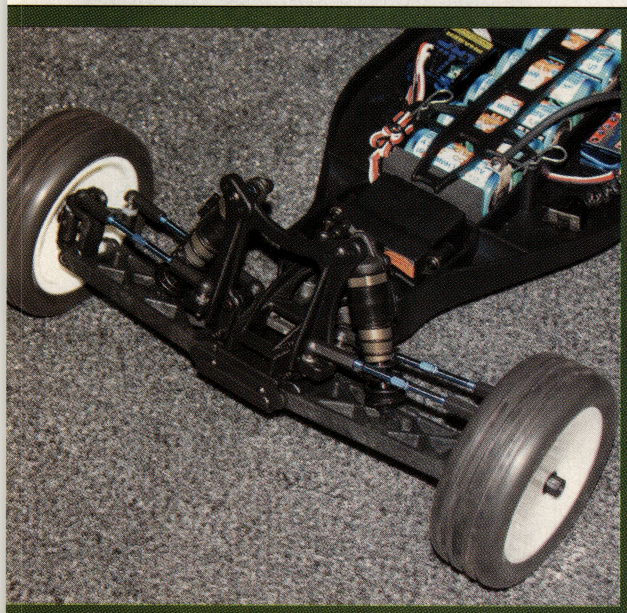


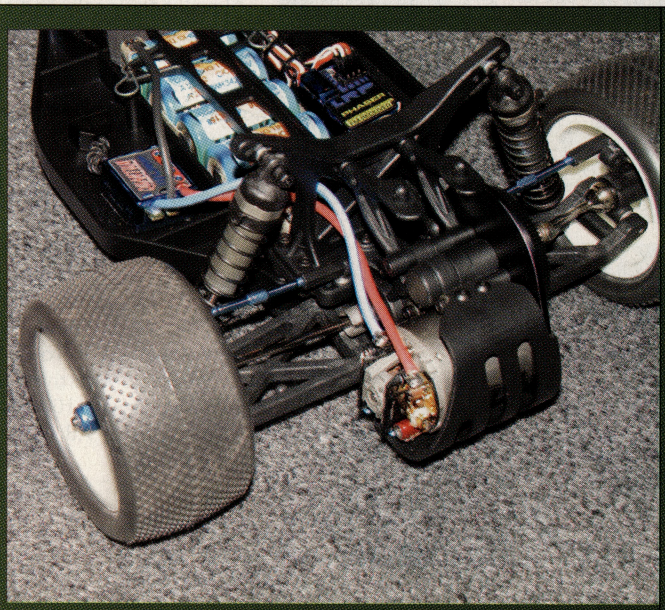




FUTABA 3PK RADIO

Looking more like a radar gun than a transmitter, Futaba's long-awaited successor to the 3PJ Magnum is bristling with innovative new features, not the least of which is its response time - reported to be nearly double that of any other radio system when used with the matching Futaba receiver and digital servos (the radio will also work with standard radio gear, it just won't be as fast). In addition to all the programming features we've come to expect on a high-end Futaba pistol (ABS, three-channel operation, traction control, etc.), the 3PK features a large, blue-backlit LCD screen that faces the driver for easy setting. The 3PK is available in either PPM or PCM modulation, and includes the hardware necessary to configure the steering wheel in the "dropped" position if that's your preference.





NOVAK ELECTRONICS

Novak had more new stuff in their booth than ever before. Usually, they have one, perhaps two big releases for Chicago, but this year, there was plenty to take in.

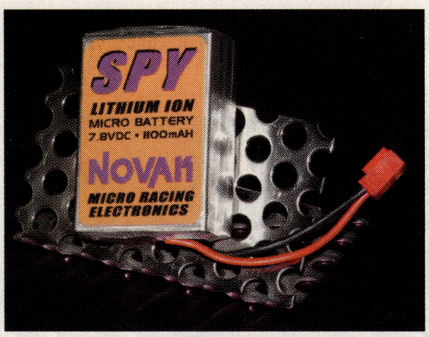


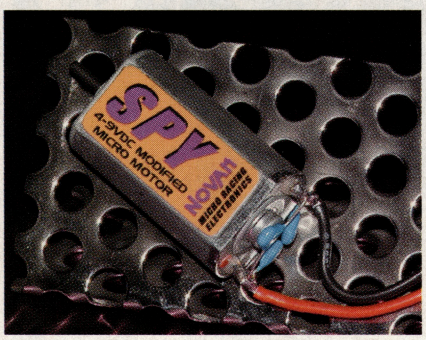


The most significant item in the orange booth was near-production version of the long-awaited brushless motor system. There will eventually be three models of motor systems from Novak, but the Super Sport system will be the initial release. Tyree, Bob and Charlie from Novak spent the entire duration of the show demonstrating the capabilities of their brushless motor system by racing their SS-equipped Tamiya sedans on the tight, carpeted demo track. All we can say is that we were impressed: with sport packs, the cars were running well in excess of 20 minutes on a single charge, and there wasn't one failure during hours of running. We had the chance to drive one of the brushless cars, and we were happy with the acceleration, the braking and the overall smoothness of the system. We can't wait to get a production version! Novak has set the list price of the SS system at $395.

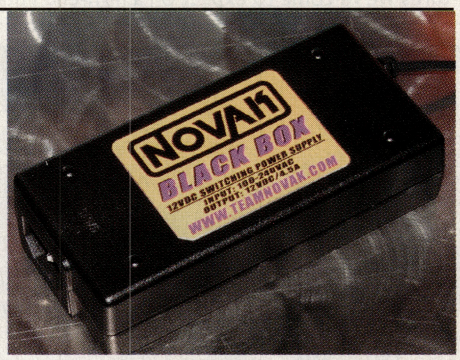
You may recall that we broke the news about Novak's Switch synthesized module in last month's issue. Well, Novak had the Switch on display for all to see. As we had surmised, the Switch is the counterpart to Novak's popular Xxtra synthesized receiver, and will initially be available to fit the Airtronics M8. What we didn't know is that the switch will only be available on 75mHz initially. No word on a 27-band model yet.







Novak additionally had a new motor and battery under its Spy line of HPI Micro RS4 accessories. The Spy motor is a little hotter than the kit motor, but it's not so demanding of the battery that run time will be compromised. The really trick item was the new Lithium-ion rechargeable Spy battery for the Micro. This type of battery puts out more voltage than a NiCd or NiMH cell, and Novak's Spy-system-equipped Micro RS4 was utterly ballistic with this combo. The Spy battery is 1100mAh and puts out a hefty 7.8 volts from just two cells.



Last but not least was the Black Box 12-volt power supply, which is basically the Ionic AC/DC charger's internal supply, just out on its own. The Black Box is a direct plug-in for the Millennium Pro charger, and allows you to operate your DC charger from a 120-volt AC wall socket. Rated at 4.5 amps, the Black Box is the ideal supply for high-voltage stock racers, but everyone else should find it a useful and convenient addition to their pit space.

ASSOCIATED MONSTER GT

As anticipated, Associated had on display a pre-production sample of its Monster GT "BFT" truck. All we can say is that photos don't accurately convey the sheer size of this monster! In person, the BFT is massive (it's 22 inches long, over 17 inches wide and weighs 12 pounds). Here's what we know so far.

• The Monster GT will come as a RTR with a three-channel Ace Jaguar radio, a S1807 Ace metal-gear steering servo and a pair of Ace S1903 servos to handle the throttle and shifting duties.

• Speaking of shifting, the MGT will have two speeds in both forward and reverse, just like the T-Maxx.

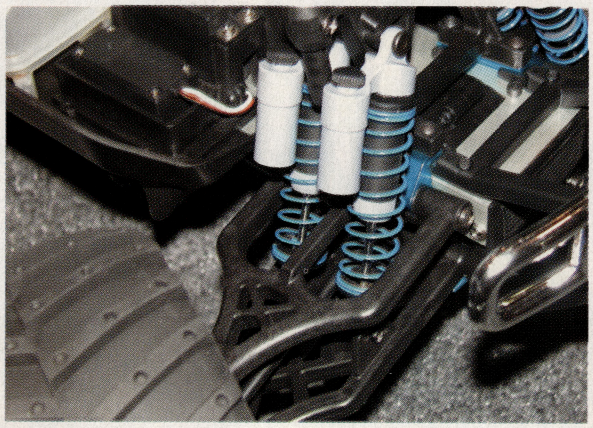
• The truck will come with a Thunder Tiger big-block .21 pull-start engine fitted with what Associated calls a dual-function starting system, which is basically a pull-starter mechanism that can also be operated via an electric drill (ala the Thunder Tiger EK-4).

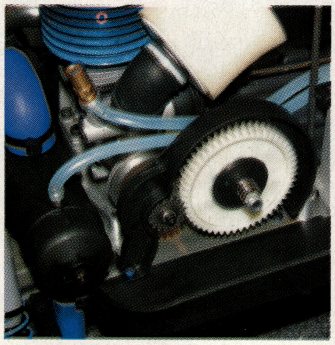
• The composite exhaust system mounts behind the rear-exhaust engine and has a pair of blue silicone-rubber stingers that drop through holes in the lower chassis. From the looks of the chassis, the MGT can also accept a conventional 1/8-scale tuned exhaust system, as there is a large slot that looks like it is there to accommodate a tuned-pipe's stinger. Clearance of the starter may be an issue.

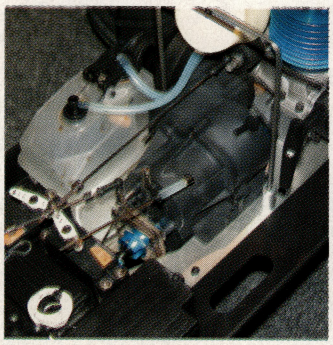
• The large capacity fuel tank has dual pickups so that it can supply enough fuel to run the engine even when the truck is upside-down.

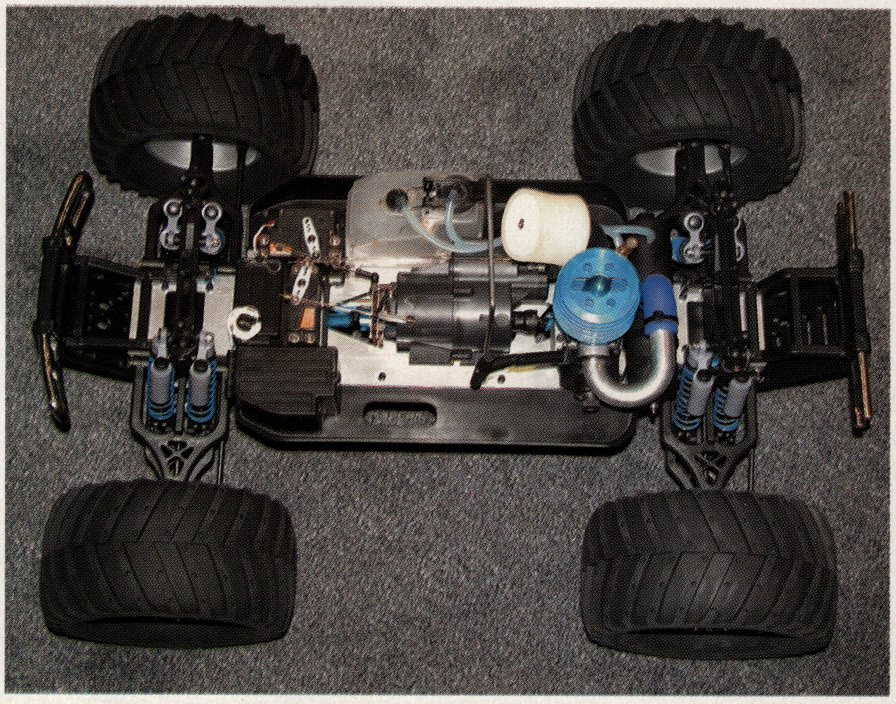
• The double-wishbone suspension is more Terra Crusher than T-Maxx, as it shuns the Maxx's pivot-ball design in favor of more conventional C-hubs. The eight oil-filled shocks are topped width molded reservoirs similar to those found on Progressive Suspension's EDC shocks, although with a top-mounted bleeding screw, the Associated shocks look easier to fill.





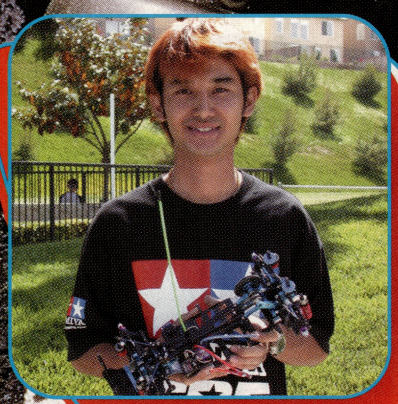






IFMAR WORL

WIN AT ANY COST...



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DRIVING THE 414M II
SURIKARN
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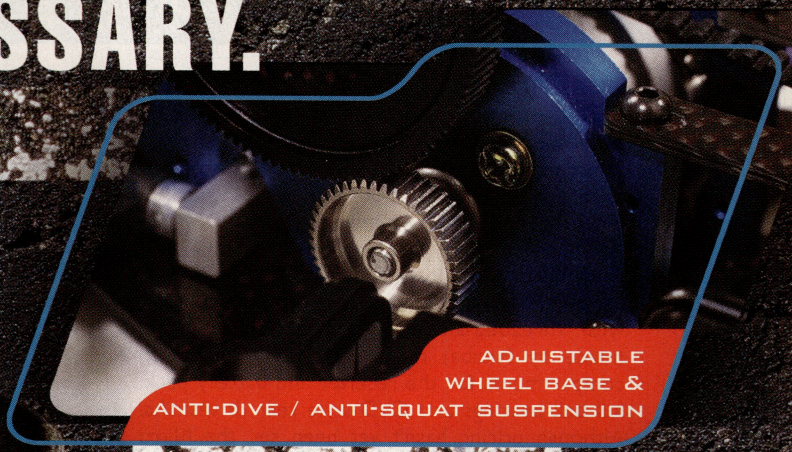
The legend goes like this, a certain manufacturer asked a few key drivers what they wanted and *needed* to win under no uncertain terms. They told that manufacturer and ... it was done! So suddenly a select group of speed freaks were running around with this trick chassis that was engineered to win at any cost. The legend *is* fact and Tamiya was the one that delivered. Now you too can prosper from this winning endeavor. Tamiya's new TRF 414M II is available and comes fully loaded, race-ready and highly competitive, all at a great price. Equipped with adjustable roll center for anti-dive and anti-squat performance and tons of anodized parts among other features, this machine is ready to take its place among the heavy hitters. So get to your hobby shop or for more info try WWW.TAMIYAUSA.COM and enjoy the fruits of victory knowing that winning at any cost did not cost you a bundle.

D CHAMPION

STILL NOT NECESSARY.



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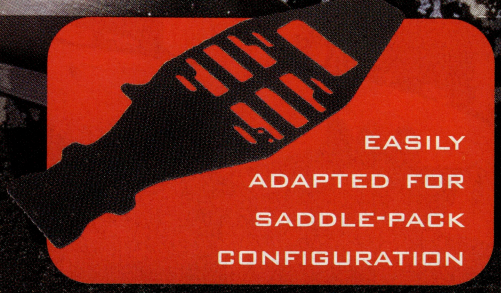

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Kit Number 49219

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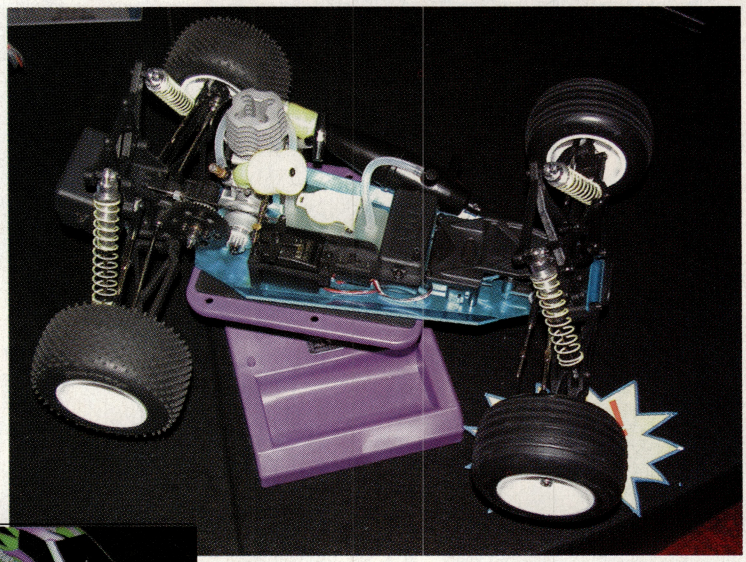
DURATRAX NITRO EVADER ST

The most impressive new release from DuraTrax is this Nitro Evader ST, which is a nitro version based on the Evader ST electric truck. The most promising news about the Nitro Evader ST is its O.S.-built .18, two-needle pull-start engine. You heard correctly: the engine is made by O.S. in Japan! Other features include a channeled, blue-anodized aluminum chassis, long-travel suspension with threaded-aluminum shocks, a DuraTrax (made by Futaba) radio system with enclosed compartments for the receiver and battery pack, full ball bearings and CVD-style rear driveshafts. Although pricing hasn't yet been set, the Nitro Evader will be available as a RTR and as a pre-built kit, so you can use your own radio should you choose.





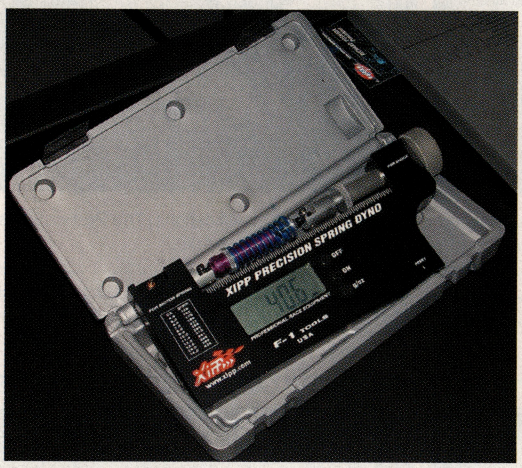
DURATRAX EVADER BX

DuraTrax also had on display this RTR electric buggy, called the Evader BX. This isn't a stripped-down play car; the Evader BX is pretty serious with full ball bearings, universal-joint driveshafts, steel turnbuckles and a 20-turn Photon motor. The transmission is also race-oriented with an adjustable ball diff and an externally adjustable slipper clutch. It even comes with a DuraTrax/Futaba radio and DuraTrax Sprint reversing speed control. All you'll need is a battery and charger, as the body comes pre-painted and trimmed.

DURATRAX DELPHI INDY CAR

This Delphi Indy car was the surprise release in the DuraTrax booth. The Delphi is a race-ready pan-style Indy car that needs practically nothing to get running. The chassis is pre-assembled with a DuraTrax/Futaba radio system already installed. The body is also fully detailed, so all you have to do is add a 6-cell battery and you're off to the track. Other features included a graphite chassis and a Photon Speed 20-turn electric motor.

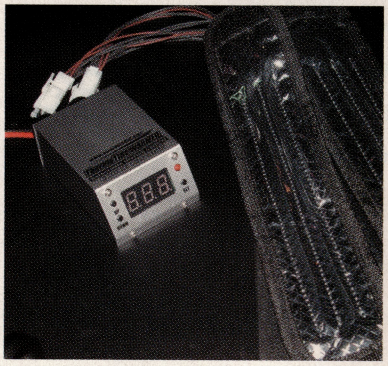






XIPP PRECISION DUAL-FUNCTION SPRING DYNO

Integy had on display a pair of spring dynos from Xipp. The Dual-Function model can test both shock springs as well as motor springs. How it works is simple: place the spring in the fixture, dial-in how far you want to compress the spring, and the dyno tells you the calculated rate. With this tool, you'll never have to hand-guess at which springs are stiffer. The bottom of the Dual-Function spring dyno is used to measure the stiffness of a motor's brush springs (in pounds or grams). Xipp also offers a separate Precision Spring Dyno specifically for motor springs.



EAGLE RACING TIRE WARMERS

You've seen tire warmers before, but none like these from Eagle Racing/Integy. These warmers are thermostatically controlled by a central control box, and you can accurately set the heat of the warmers individually for the front and rear tires. This feature would allow you to tailor your sedan's traction before the race. Power is supplied by a 6-cell battery or suitable 12V power source.



INDI 16x5v6 CHARGER

The latest Indi charger from Integy is the 16x5v6, a DC-only model that offers state-of-the-art charge functions such as a partial charge mode, which allows you to charge your NiMH cells to partial capacity for storage (recommended by many experts), a boosting mode that discharges cells slightly before re-peaking them (this is said to maintain the highest voltage for pre-race charging), and a "fuzzy logic" mode in which a partially discharged pack is drained before being peak-charged.

PRO-LINE NEW MINI COOPER

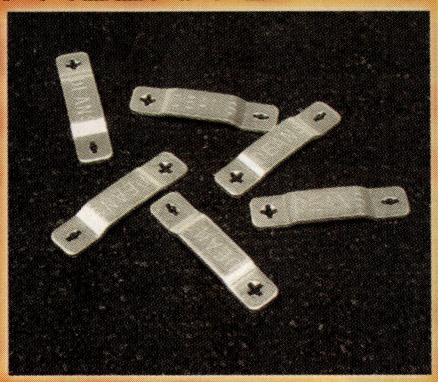
Check this new Mini Cooper body shell from Pro-Line! It's designed to fit most popular 190mm touring car chassis, and comes with clear overspray film, pre-cut window masks and realistic detail stickers made from the highest quality vinyl material.



EASYWIRING 101

All Deans products are designed and manufactured to exacting tolerances, to give you unmatched quality and performance. From the legendary Ultra Plug, to the innovative Speed Jig, and now the ProBar 3, each product was created with one goal in mind... TO BE THE BEST!

PROBAR 2™



Plated to military specs., the ProBar 2.0 is designed for RC1700, RC2000, RC2400 and similar cells.

#1600 .....6pcs
#1601 .....25pcs
#1602 .....100pcs

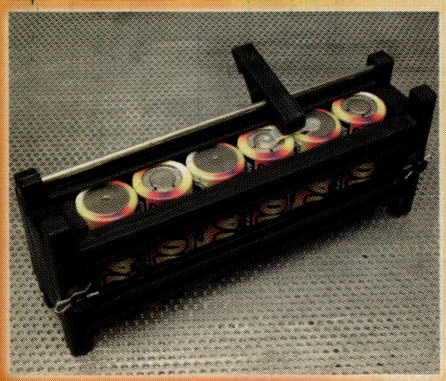
PROBAR 3™



Plated to military specifications. The ProBar 3.0 is designed for RC3000H cells.

#1610 .....6pcs
#1611 .....25pcs
#1612 .....100pcs

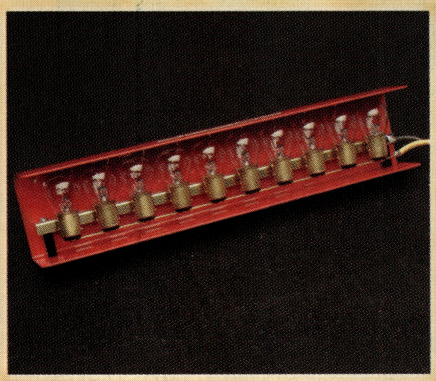
SPEED JIG™



"Ten Must Have Tools" - R/C Car Action
"Rating: A+" -Xtreme R/C Cars
"The best building jig on the market" - R/C Car

#2040

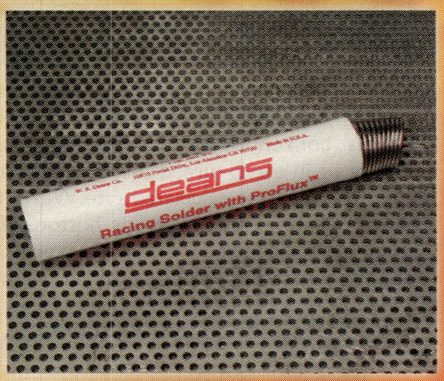
DISCHARGER



Car stand and discharger in one

#2030 .....kit
#2031 .....assembled

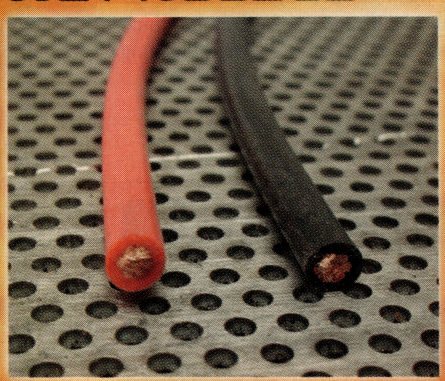
RACING SOLDER



Silver alloy and ProFlux™ a Deans exclusive - the highest quality electronic solder available

#2020 .....1oz

WET NOODLE™



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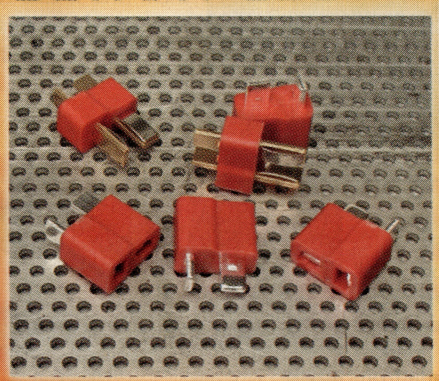

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TAMIYA AMERICA

Tamiya didn't have as much new stuff as we have come to expect, but there was still plenty to look at. Perhaps the reason for fewer releases was because of the show's date (moved up significantly from years past), or maybe Tamiya is planning on bombarding the upcoming Tokyo hobby show with new goodies. Regardless, here's what's new from the Big-T.

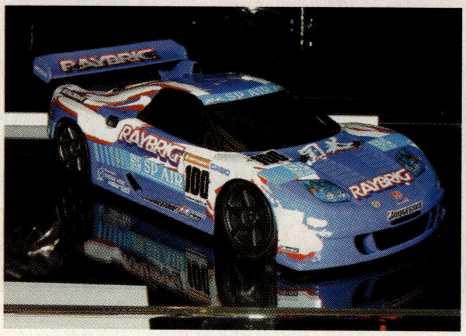


Based on the shaft-driven TB-01 electric touring chassis, this new Enzo Ferrari had all lovers of the prancing horse, well, prancing. In typical Tamiya fashion, the body is a stunning replica of Ferrari's newest super car, and with the all-season traction of 4WD, the Tamiya's Enzo should be easy to drive on any smooth surface.





Built upon Tamiya's affordable shaft-driven 4WD TL-01A chassis, the AMG Mercedes CLK-DTM 2002 is an exact replica of the car driven by former F1 pilot Jean Alesi. This would be a great car to run in your local TCS series, as the TL-01 class is one of the most competitive and popular.



The Raybrig NSX is built on the high-performance, belt-driven 4WD TA04 chassis. The body comes clear and with a highly detailed molded plastic rear wing, side mirrors and extensive decals that will allow you to duplicate the real racecar.



The wildest thing parked in the Tamiya booth was this Terra Crusher-based Wild Commando. Take one part Terra Crusher, one part Hummer-style body, add some low-profile tarmac tires and you've got one wild ride. Aside from the gunmetal-gray finish of its chassis, the WC's underpinnings are pure Terra Crusher, although its .18 engine gets a new heat-sink head.

TEAM LOSI

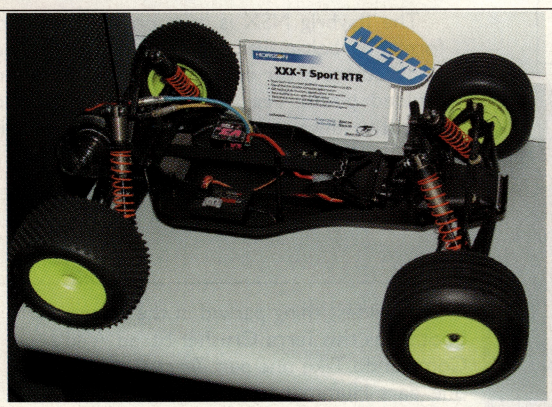
The Losi camp was in full force in Chicago (albeit in the Horizon booth), and brought with them a whole bunch of new goodies, including a host of new kits and RTRs (the stuff that makes us drool).

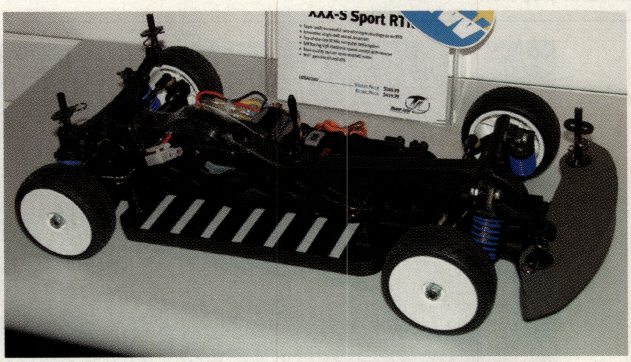
Topping the list of new kits was, of course, the long-awaited XXX-4 4WD off-road buggy. We finally got the chance to see the car in production trim, and it looks good. The car retains the innovative single-belt 4WD system of the XXX-S touring car, but we've been told that the belt material will be slightly different (and wider) than the sedan belt, and that the XXX-4 has an adjustable friction slipper-clutch to help absorb off-road shocks and protect the drivetrain from damage. The production kit comes with a sleek body that has 6 vent holes at the leading edges of its side pods. It will also come with MIP CVDs as standard equipment. Four-wheel-drive stock, anyone?





If you spent a lot of money hopping up your XXX-S sedan, don't read this. Losi announced the release of the XXX-S Graphite Plus kit, and in following the tradition of the other graphite kits, you'll get a whole lot of hop-ups for very little money. Included in the GP kit are Losi's graphite-composite chassis and suspension pieces, hard-coated threaded shocks with titanium-nitride coated shafts, machined titanium turnbuckles, new 24mm mesh racing wheels and MIP CVDs at all four corners. The GP XXX-S will also come topped with Losi's new Alfa 156GTA body shell. The street price is expected to be just under $270.





Losi also unveiled a pair of new RTRs in Chicago. Both the Triple-XT Sport and XXX-S Sport will come pre-assembled and with pre-painted/trimmed body shells. Also, each will come standard with a JR Racing XR2 computer radio and a GM Racing ESC. The Triple-XT Sport will also have the added benefit of a high-torque steering servo to better cope with its larger wheels and tires. Both models will also have powerful 19-turn open-endbell racing motors. The expected street pricing for each is $269.99.

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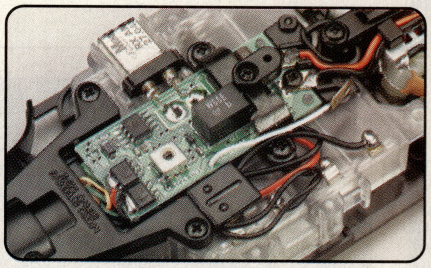
For more information, and the location of the dealer near you, visit our website at www.kyosho.com or call 1-800-682-8948 and mention code number 2946A.



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McLaren Mercedes (M. Hakkinen)
McLaren Mercedes (D. Coulthard)
Jordan Honda (H.H. Frentzen)
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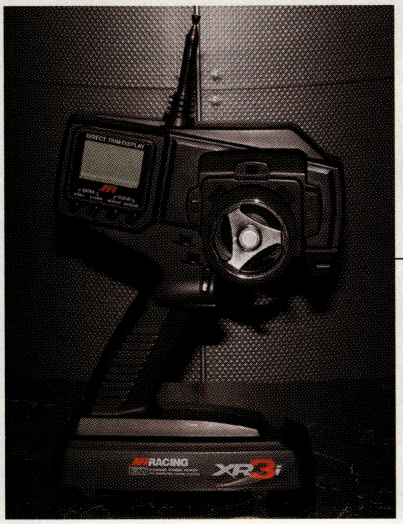
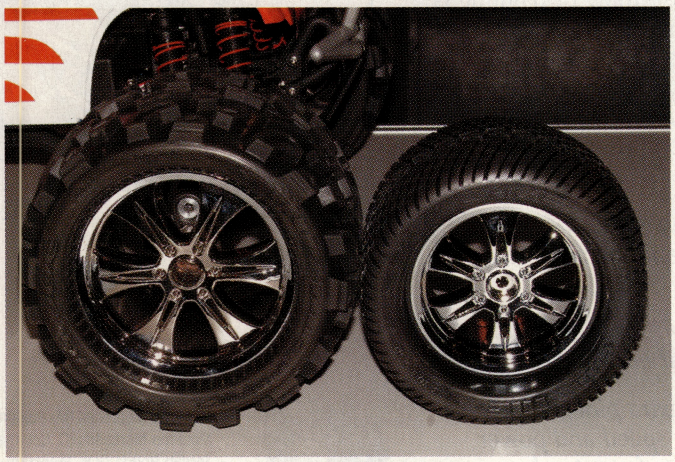


JR RACING

JR is one of the few companies to offer computer-controlled, multi-model memory radios that are targeted to sport racers. The all-new XR3i is the next evolution of the XR series, and includes such features as exponential adjustments for both steering and throttle channels, four-model memory and an "emergency" steering override button, which temporarily disables the dual-rate function to provide full steering. What's more, JR has designed a new, more modern case for the XR3i, which even features a third-channel grip button so it can be used to shift Maxxes and other three-servo trucks.

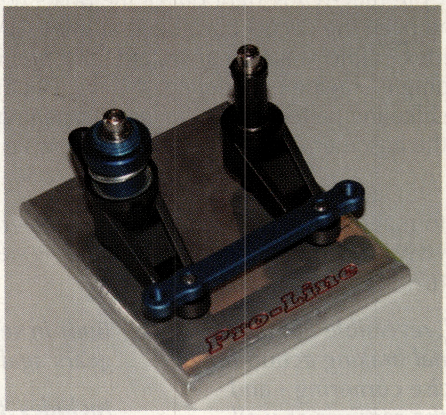
Also on display was the JR R-1 Pro. The R-1 has always been JR's top-of-the-line racing radio, but it's been made even better with the Pro model. Most significant is the addition of JR's FPPM (Fast Frame Rate Modulation), which speeds up the processing of the data signal to give faster response time to your control inputs. Of course, the Pro has all of the features we've come to expect from the R-1, such as beginner and expert software modes, a progressive steering-wheel spring and 8-character model naming. The Pro is visually distinguished from the standard R-1 by its gold trim.





PRO-LINE 40-SERIES TIRES AND WHEELS

With the rash of 1/8-scale sized monster trucks flooding hobby stores, Pro-Line has decided to go big with its new line of 40 Series wheels and tires. Designed to fit big monsters such as the Tamiya Terra Crusher, TXT-1, Clod Buster and Juggernaut II, as well as the new trucks from HPI and Associated, the 40 Series does away with the "hoopty" look that occurs when Maxx-sized wheels are used on these behemoths (a T-Maxx wheel and tire are shown for scale). The 40 Series tires are available in Pro-Line's M2 compound and in two tread styles: Road Rage 40 and Big Joe 40. There are also two wheel styles: Velocity (dish) and Outback (shown here).



PRO-LINE MAXX PERFORMANCE STEERING KIT

Pro-Line's Maxx Performance steering kit eliminates the T-Maxx's servo-mounted servo-saver and replaces it with a more rugged 1/8-scale-style bellcrank system. The kit comes with aluminum hardware and ball-bearing supported bellcrank posts for smooth, bind-free operation. What's more, the kit is a direct bolt-on mod.

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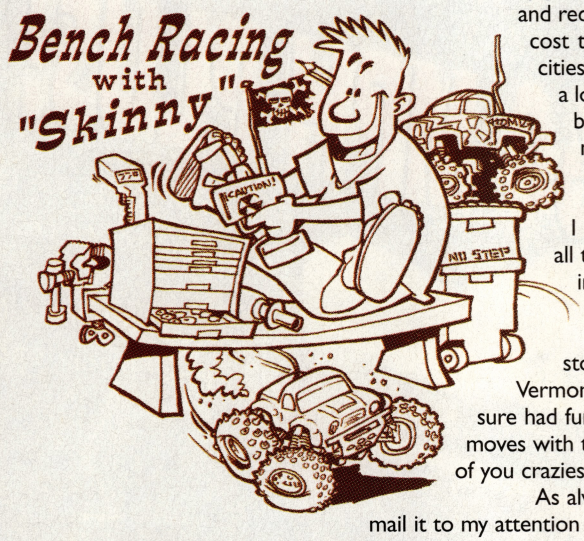
[Truck Column]

My fellow R/C Americans, how are you doing? I'm feeling really patriotic at the moment as I sit in my hotel room.



Why you ask? For the last two weeks, I've been traveling across the country and rediscovering how cool the gold old U.S. of A is! I have been from west cost to east cost and have been through such beautiful countryside and cities, that it really has reminded me, we citizens of this great country have a lot to be proud of. And remember that we are blessed to be here. I've been all over the world, and now that I've been on this R/C-slash-mountain bike tour, I have been reminded that God really packed a lot of beauty into one land! And boy, there are a lot of R/C people out there.

I don't know about you, but lately I've been kind of down because of all the weird stuff that's been going on: 9-11, fires, killings, etc. And living in L.A., you get bombarded with all the media hype. There's nothing like a good road trip to clean out the pipes.

I have to say R/C is really booming across the country. All the stops I've made have really brought out the cars! At one stop I made in Vermont, a bunch of kids came to my tent to show off their Stampedes. I sure had fun that day. As I make my way home, I look forward to busting more moves with the Terra Crusher and Storm Pro in more states. Hope to see more of you crazies out there and to do some big time bashing.

As always, send in your monster truck info to bighorsevan@msn.com or mail it to my attention at R/C Car, 25233 Anza Drive, Valencia, CA 91355.

TRADE SHOW ALERT!

We interrupt Skinny's R/C Adventure to bring you an important update, almost live from the Chicago Hobby Show.

RCHTA: READY FOR A CHANGE?

Ok, with that out of the way, lets go on with the show.

What do you want first, the good news or the bad news? Ok, the bad first.

What a bomb! Don't get me wrong, it was a great show with wonderful displays, a good amount of booths, plenty of cool stuff to see, and most of the "big hitters" were there. But it was a ghost town! Hardly any dealers were there, and on consumer day, there was one big rush in the morning and then it kind of tapered off. So what's the problem? I can't say for sure, but this is what I think. First, the show was the weekend before 9/11. I know, but I think a lot of people are still spooked about the whole thing and don't want to travel.

Second, it was a major Jewish holiday. And finally, the Rosemont center is, well, out there. It's away from the city, where the fun is, and it was very expensive to do anything. The closest entertainment was a sports bar at the Hyatt. I went into the Windy City for fun and dinner, and the taxi ride there was fifty bucks, then the ride back was $25 (go figure!).

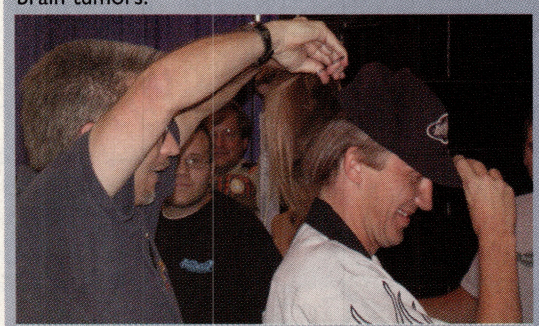
Lastly, I feel the 'net has something to do with it. I think maybe people are taking the web thing too far and are going to the computer to see what's new and getting their buying ideas on-line. If that's the case, fine, but at least get away from that thing and go out and have some fun. Get up close and personal with the product you plan to get. Not only that, but meet the people you deal with, the companies behind the product. I think we're becoming all too quickly a faceless society, more willing to interface with the computer rather than with each other.

MY SOLUTION

I would change the date of the show to early October, and move it to Las Vegas or Atlanta. By moving it to Vegas, you give people more incentive to come. Wives could come to have some fun while the boys go and play at the show; vacations could be planned. I see the writing on the wall, and if the organization that does this show fails to change things, I see others moving in to take over. All I'm saying is that I see growing pains ahead for the hobby industry. It's getting very popular and I care about my newfound joy in life I'm done here, as this is getting way too political for me. But you get the idea, so thanks for hearing me out. Let's move on to the good stuff.

NEWS FLASH!

Hippy cuts his long ponytail to raise money for cancer research. Yes my friends, *R/C Car*'s poster boy cut his locks and raised a nice sum of money for cancer (over two grand for the cause). Way to go Hippy! God bless you! The proceeds from Hippy's haircut went to benefit the Devin Hock Memorial Fund, an innovative program for the research of childhood brain tumors.



Chopped: Associated's Gary Owens hacks off Charles "Hippy" Charron's flowing locks. All for a good cause.



BY BRIAN SKINNER

SO MANY TRUCKS!

There were a lot of goodies to look at while at the Chicago show (you can see most of it elsewhere in this issue, and the next issue, and the next issue). Frank's plan (that editor guy again) was to get me to highlight the big trucks.



BROOKLYN HOBBIES:

Contact information: (718) 951-2500; brooklynhobbies.com

Wow! Now that's big! It's a 1/5-scale monster truck and this thing is big. It is gas powered and it looks sweet. It's also made in the U.S. of A. If you want big, and something that will blow your friends away, then this is it! Tell them Skinny sent you.



MONSTER GT BY ASSOCIATED

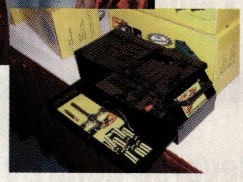
So they say this is a BFT! Well it is (I'll let you guess the BFT thing). This thing looks good and it's well built. The coolest thing about this truck is the extruded aluminum chassis; it's light and strong, and the aftermarket guys will be hard pressed to top it! The Monster GT is .21 powered, and it's around the same size as the Terra Crusher...hmmm? This should get interesting. Look for it soon at a store near you.



SAVAGE .21 FROM HPI

I was in love with this thing! Unfortunately it's still in prototype form (it looked pre-production to me!) and should be out in time for the holiday rush. I will tell you that this is one of the most compact and well laid-out monster trucks I have seen to date. The shocks were a mile long and should have very nice control. With all that oil in there, how could it not! The Savage will definitely put a hurt to the competition when it hits the track!





HAPPY TIME R/C

Contact information: (510) 651-0469; website happytimehobby.homestead.com

It's not a truck, but Frank missed this one, and it was to cool to pass up. This starter box is dope! Check out the tool tray built into the box. I'm getting one of these for my new Mutant Maxx and for my 1/8 scale. I always lose my stuff when I use my starter at the track, and now I got a place to put it. Wahoo! They also have of other things worth looking at, so check them out, and tell them Skinny sent you.

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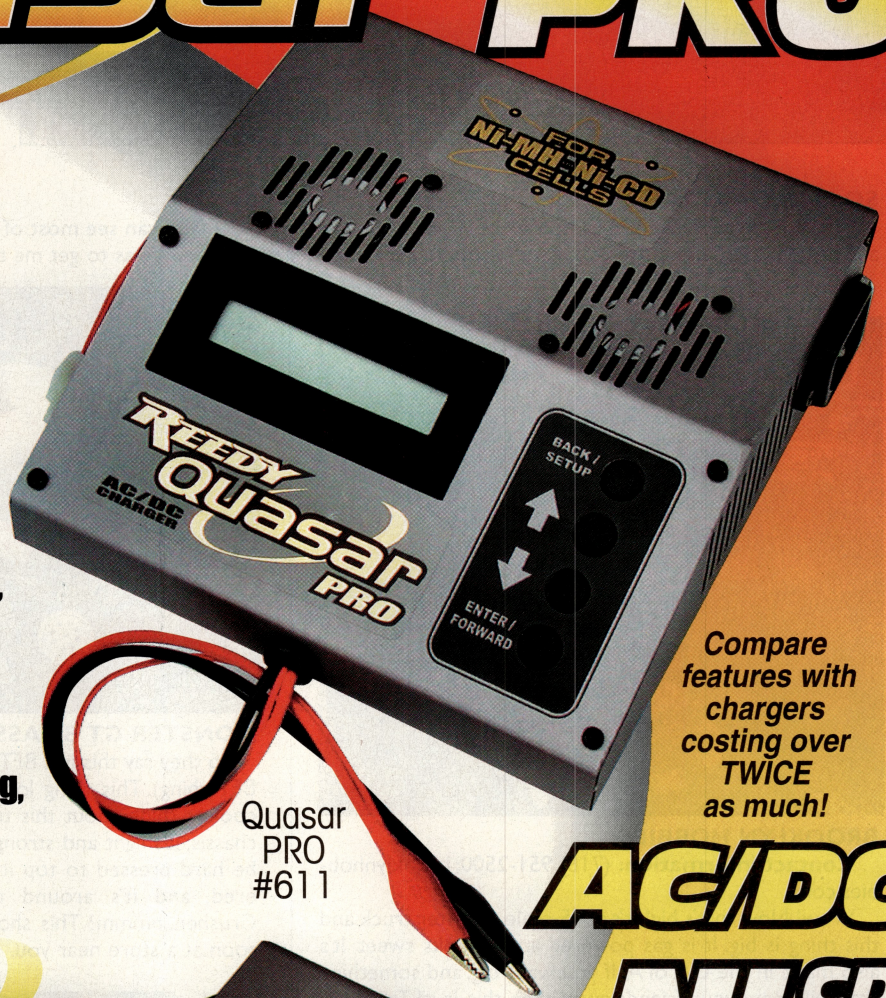

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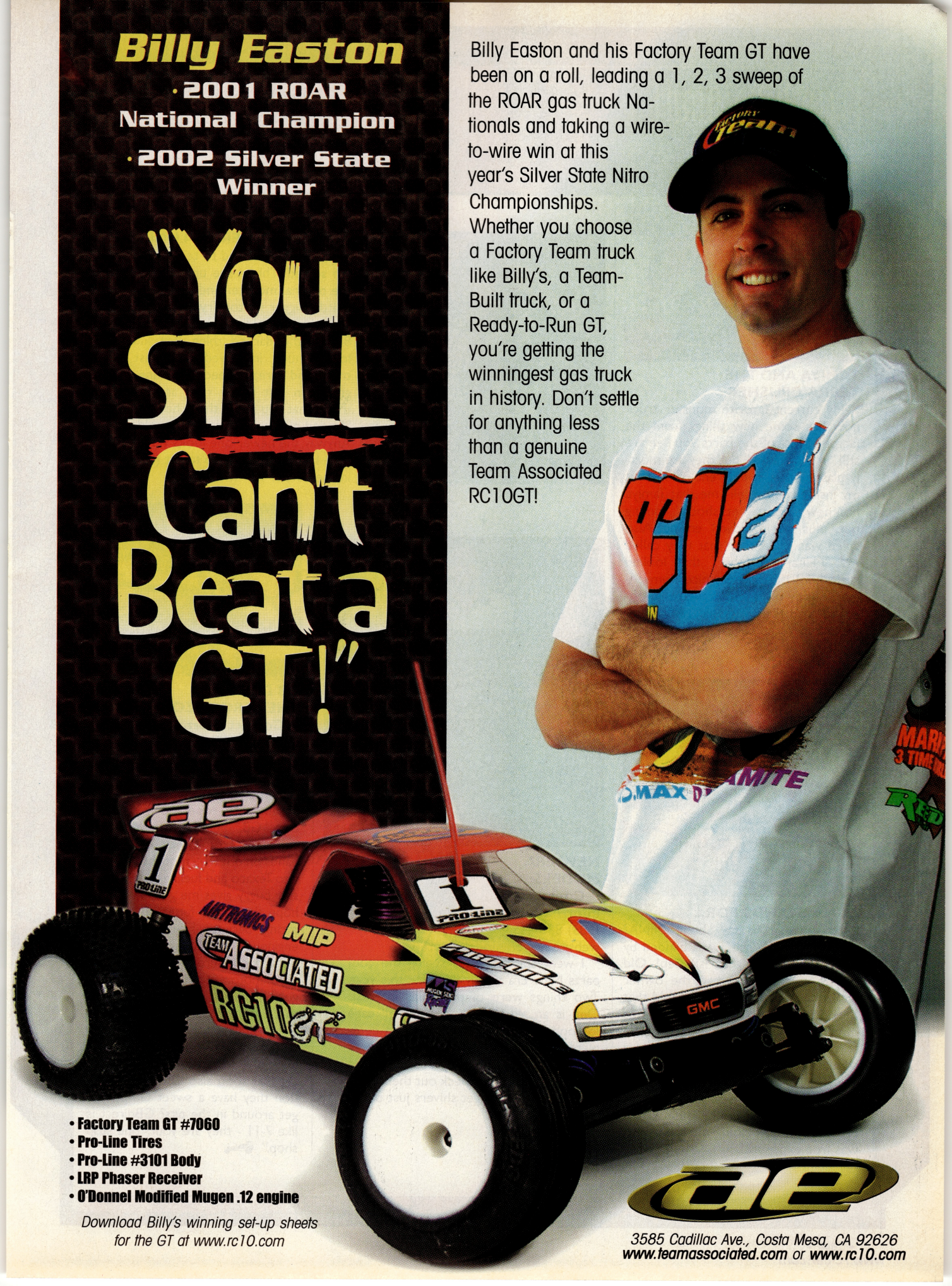

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- LRP Phaser Receiver
- O'Donnel Modified Mugen .12 engine

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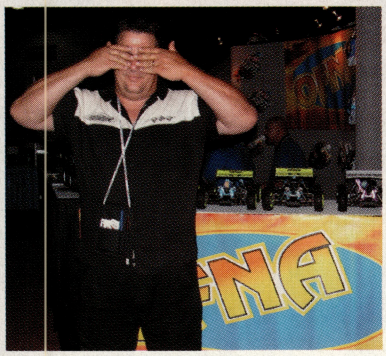
[Truck Column]





TAMIYA AND THE TERRA CRUSHER:

My current favorite monster truck now has some new things from the factory. Most of the parts you see are still "in the works," but they are mostly plastic parts in different colors, but my inside source tells me that Tamiya has new aftermarket shocks coming out, plus an improved engine. Also spied was a Crusher that they called the "Military Crusher" that looked really cool. It had a very nice Humvee-esque body on it with low-profile on- or off-road tires. Very nice. Also look for a red Terra Crusher body to be available soon.



OFNA STANDS FOR...

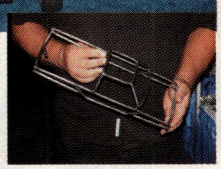
Hmm, what to say about OFNA? Well, as you can see, I was blinded by them (blindsided, that is!). Yep! Old Skinny was denied when the owner kicked me to the curb; I was told that they deal only with one mag and I was not it. Ouch! So no photos for you, sorry! If this makes you outraged (as it should), that your old pal Skinny can't bring you the (choke!) cool stuff from OFNA, I would suggest you call them at (949) 586-2910 and let them know. Heck! I was just doing my job, and it was free exposure!



THUNDER TIGER EK-4 UNLIMITED

What a beast! And to tell you the truth, I'm scared! This is the updated version of the original monster, and it supposedly has a little bigger motor. Try a .90! Huh? They should stop messing around and throw a V-8 into the darned thing. Just kidding. It looks much improved over last year's truck, and it really needed it. Mine disintegrated in just a few runs and did some things that you see in those horror movies, "I need a young priest and an old priest." Anyway, the newer one looks very nice and dare I say I can't wait to test it (I'm shaking in the corner as I write this).





NEW ERA MODELS:

Contact information:
(603) 888-4453;
website neweramodels.com

I went spiritual after seeing the cool parts New Era was making for this year. Two things were of particular interest: One is an all-titanium T-Maxx roll cage for only $185.00. The other was a complete kit for the way underrated Terra Crusher. Look for a complete test of the TC parts soon. Also check out their complete dual .21 kit. I get shivers just thinking of the power.



GB DIRECT: THE BERGONZONI FOLKS

Contact information:
(407) 671-8833; gbdirectusa.com

Now this is what I'm talking about! A monster 1/8-scale buggy. I call these guys "cheeseburgers" because it's easier to remember than "GB," but these folks have it going on. I can't wait to get my hands on one. The thought of pulling into Texaco and fueling up my monster buggy gives me goose bumps. I hope this is the future of off-road racing, because having a gasoline engine is so appealing to me. I love nitro, but it sure is a pain, and the nitro motors don't last too long. I got a weed-whacker in my garage that's three years old and starts every time. Look for a complete test soon. By the way, they have one heck of a 1/8 scale, too; I'll be testing that soon also. Oh! Did I mention they have a sweet Go-ped to get around in the pits? GBdirect is like 7-11 - they are your "one stop shop."

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From the graphite chassis to the realistic-looking body, this model is all about quality. The included 2-channel pistol grip radio is made by Futaba®, with features usually found on competition systems. A powerful 20-turn Photon Speed™ modified motor is pre-installed for convenience. The Sprint™ ESC with reverse is lighter, smoother and more reliable than a mechanical unit. And for versatility, the battery pack can be mounted in-line for road racing, or side-to-side when competing on oval tracks.

Along with being Ready-To-Run, the Delphi EP Race Car includes a FREE start-up video that shows the quick way to hit the track. And it's backed by a ONE YEAR Stress-Tech™ Parts Guarantee. If any Stress-Tech part breaks within one year of purchase, DuraTrax will replace that part — at no charge.

With the Delphi EP Race Car, it's never been easier to experience the thrills of real racing. To see it for yourself, visit your local hobby dealer. For more information visit www.duratrax.com, or call 1-800-682-8948 and mentioning code number 2948U.

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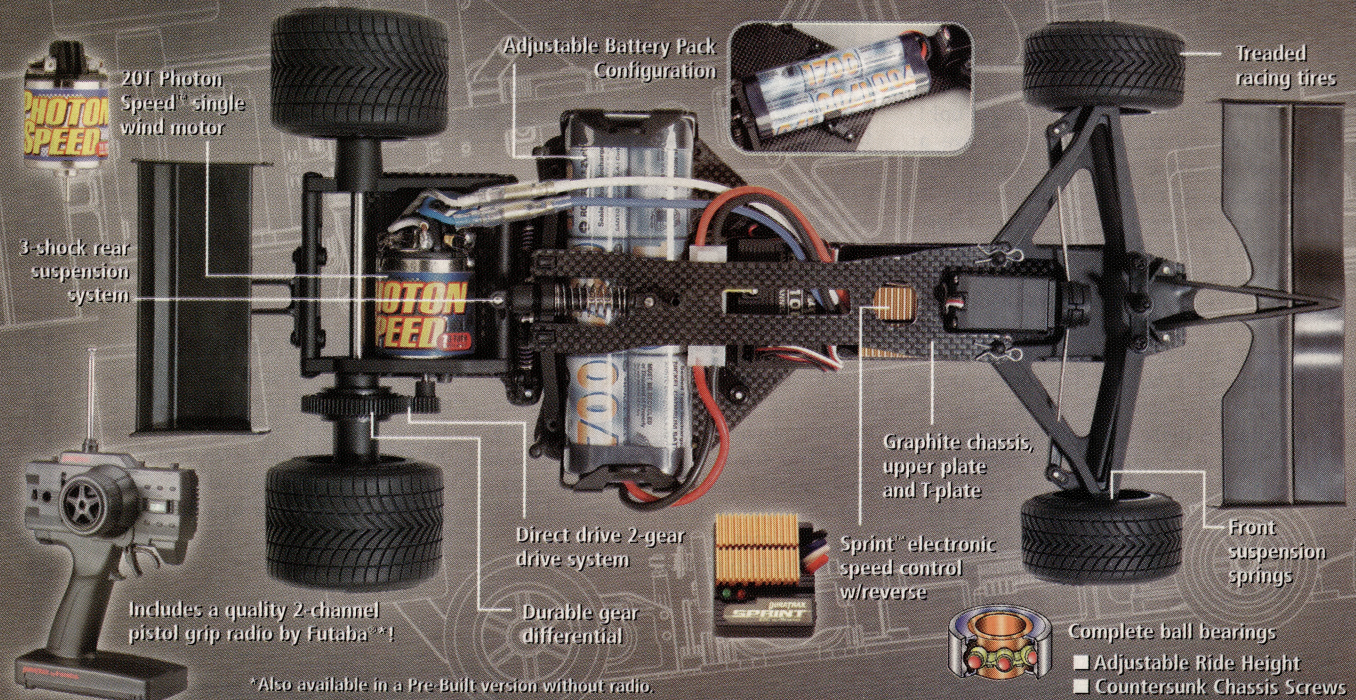

*Also available in a Pre-Built version without radio.

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TWEAKED NT

I have a Team Losi Triple-X NT Sport. My question is, why does my car pull really hard to one side when I accelerate off the line or try to load up for a jump? My car is practically getting sideways down the straights, even when I try to ease into it.

Boondega
Via *rc-car.com*

We've ruled out the possibility that your steering trim is way off because, well, you'd check for that first, right? Otherwise, there are two prime suspects. The first is that your shock springs' pre-load isn't even. If the springs aren't loaded evenly from left-to-right, the vehicle will do funny things, such as turn to one side under power. Make sure that the springs' pre-load collars are equal distances from the tops of the shocks. The other culprit could be your differential. Part of the diff's job is to help the vehicle accelerate in a straight line; if the diff is really tight or if it's in bad condition, it can cause the vehicle to veer under acceleration.

GREAT FINDS AT ONLINE AUCTIONS

Here I am sitting a my computer at five a.m. with nothing to do but look on the internet for R/C stuff and write an "atta boy" letter to you. Why five a.m., you ask? My four-month-old puppy decided it was time to get up! I just wanted to say you guys have a good magazine going. The other R/C magazine isn't near as good, and it is more ads than anything else. I just started in this hobby and like it! There is a lot to learn to be competitive with the more experienced guys (and girls). The only thing I would like to see is maybe an article (or two or three) on racing on a budget. The other thing maybe you can pass along to your readers is there are a lot of great buys to be had on eBay (I have shopped a lot there myself until my wife said 'cut it out'). To keep the peace with my better half, I told her that I am saving a lot of money buying there. Like everything else, you just have to know what the stuff is worth new, and if the buy is still worth it when shipping is added. The last thing on this subject is, don't forget your local hobby shop. I live in an area where the local hobby shop is ten minutes away. If they close up it would be more like hours away. I bought some stuff for racing off of eBay to save a few bucks until I can afford to upgrade, but the stuff I need now, I will go to the shop and support them. Keep up the good work; I really envy your job, playing with new stuff all the time. Life is tough at times.

Brenda, Rob and Jaime
Via *rc-car.com*



You're envious? You have no idea of the hardships we editors must endure! Why, just this month we ran out of stock motors and had to use the same one two times in a row!

THE ONE-WAY ROAD

I just finished building my Serpent Impulse Pro and breaking in its engine. This is my first car to have a one-way diff in it, and when I drive it, braking or steering hard causes it to spin. Can you give me tips on how to stop that from happening?

Carmen
Via *rc-car.com*

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CEN

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Rally Smart Chassis Buggy
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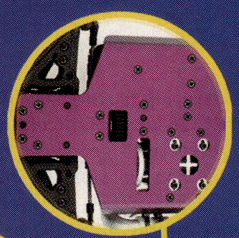





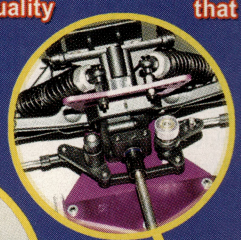

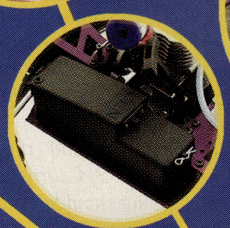



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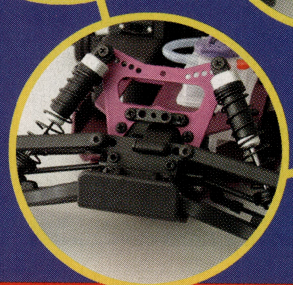

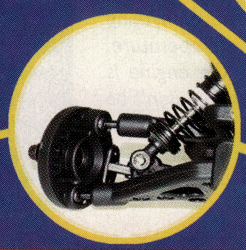

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- Pivot ball suspension
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- Super hardened diff gears
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[FEEDBACK]

Carmen, you've just described the one bad trait of one-ways—you can't use the brakes. Well, you can if you are able to adjust them so that they just barely slow the car: enough to slow for the tight turns, but not so much brake that the car spins out. See, with the one-way installed, your car's brake only affects the rear wheels. If the car is a little off-balance, guess what happens? Major loopage! Personally, we only like one-ways (in gas cars) on really big tracks where there aren't any tight, technical sections. Electric cars with one-ways fare better, as the electric motor has built-in drag brakes, and slowing down is less of an issue. My advice is to get a front diff to keep in reserve as an option for when a one-way isn't helping your lap times. Good luck with your racing!

V-ONE S CARB SETTINGS ANYONE?

I have a Kyosho V-One S car, and I just want to ask what is the best engine setting for the GS15R? Also, I looped the fuel tube around the heatsink head and a single loop again for the tubing for the pipe. Do you think that those loops affect the engine's temperature? Because the engine gets too hot after a single tankful of fuel.

Ricki Paolo Roxas
Via *rc-car.com*

Ricki, you made me have to take my V-One S off its perch on my car shelf, but here's how my engine is set for 20-percent nitro fuel: the main needle is 1-1/4 turns out from closed, and the low-speed needle is 1-3/4 turns out. And the fuel tubing shouldn't have anything to do with engine temperature. Just make sure that the engine is getting enough fuel (it shouldn't be run too lean), and be sure that you've cut vent holes in the car's windows to allow for air circulation —FM.

LONG-GONE SERVO

In your September issue's article on the HPI Nitro RS4 Type SS, you listed using a KO Propo PS-2001 FET steering servo. I cannot seem to find this servo anywhere, even on KO's website. Where can I find this servo?

Mike DiScala
Via *rc-car.com*

Mike, the PS-2001 we used in our Type SS test was an older servo that we had lying around from a previous test. KO has updated its servo line, and the 2001 is no longer listed. However, the equivalent KO servo would be the PS-2173. As stated in our review, a high-performance servo such as the KO will make the Type SS feel much more responsive and stable.

GOING ALL THE WAY

I'm getting a Factory Team GT and I wanted to know what engine would be good for it. Is a pull-start better than a non pull-start? just wanted to know.

Devon
Via *rc-car.com*

Devon, if you're going for the "big time" GT kit (the Factory Team), you might as well go all-out and get a racing non-pull-start engine such as the Novarossi, RB, Sirio, or our personal favorite, the side- or rear-port CV-R from O.S. Engine. For racing, non-pull-start engines are preferred because they sit lower in the chassis (no starter apparatus to clear), and most higher performance engines are only available without pull-starters.

E-mail your letters direct to the editors! You can get ahold of Frank Masi at evaone@pacbell.net or Jason Sams at jasons@hi-torque.com. If you're going the old-fashioned route, send along your letters to R/C Car at 25233 Anza Dr., Valencia, CA 91355. Check us out on the Web at www.rc-car.com

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A-011
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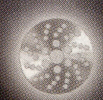
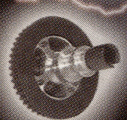
VoneR K-417
Wide Hex Hub

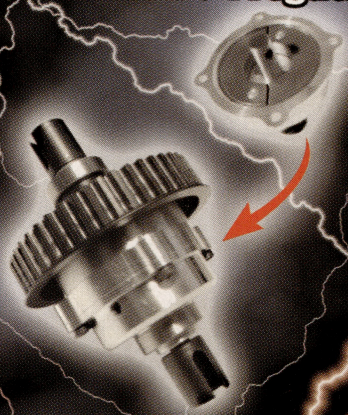

VoneR, MTX2
K-809
Body Mount Short


VoneR K-431
MTX2 K-802
Front One Way


VoneR, MTX2
K-710
Vented Brake Rotor


VoneR K-419
Brake Top Plate

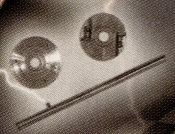

VoneR K-435
MTX2 K-805
Solid Rear Axle



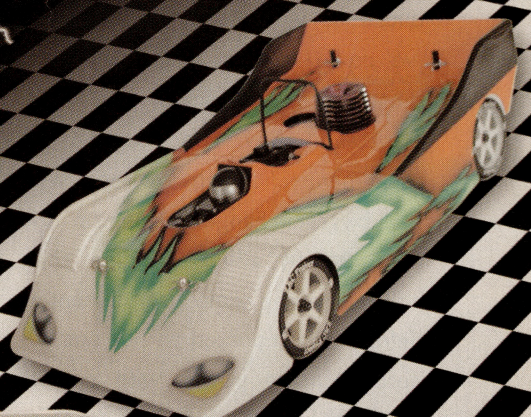

VoneR K-426
Carbon Shock Tower


MTX2 K-717
Mid BB Block


VoneR K-428
MTX2 K-723
1st Gear Housing


MTX2 K-731
Positive Lock
Two Speed


MTX2 K-716
Alloy Brake Top Plate





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TEST DRIVE



TRAXXAS

Traxxas should receive due recognition for focusing on the new hobbyist and the ready-to-run market. For many years now they have been releasing quality products that not only dominate sales, but also are successful at getting many new people into our growing hobby. When it was released, the T-Maxx was an instant sales success and a big hit with both newcomers as well as seasoned veterans. Three years later and the T-Maxx is still going strong, which made it all the more surprising when Traxxas announced that it would be replacing its record-setting monster truck. What would the new truck look like? Would it be radically different? Would a big-block engine power it? The answer to these questions was more shocking than we could have imagined: they left most of the truck alone!

Instead, they concentrated on refinement and improvement, with the biggest change coming in the form of an all-new engine that, although of the same displacement as before, was reported to put out 60-percent more power with greater reliability. So without further delay, we present the long-awaited successor to one of the most significant vehicles in the history of the R/C hobby, the T-Maxx 2.5!

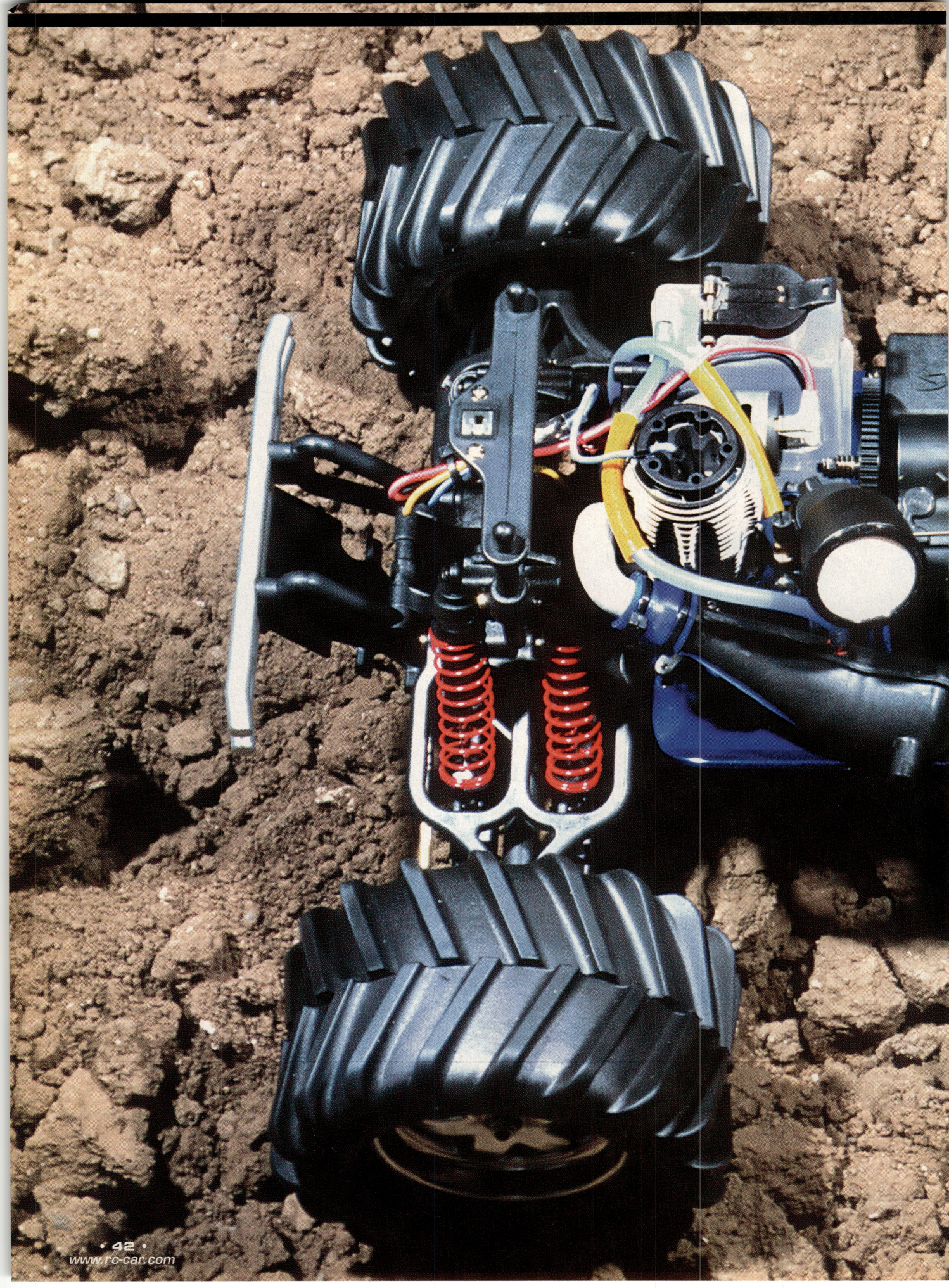
NOT BIGGER, BUT

4WD READY-TO-RUN NITRO POWER

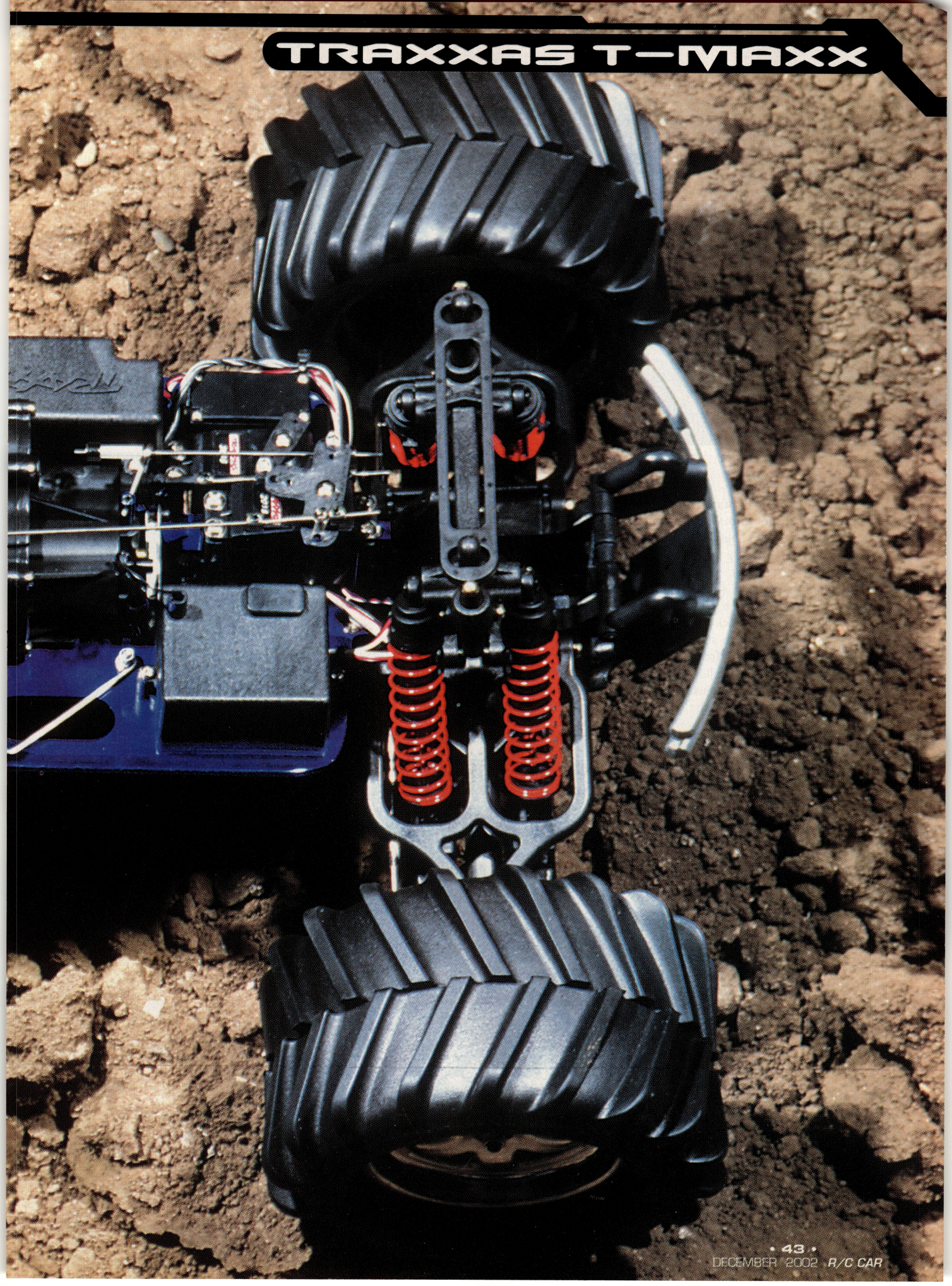
T-MAXX 2.5

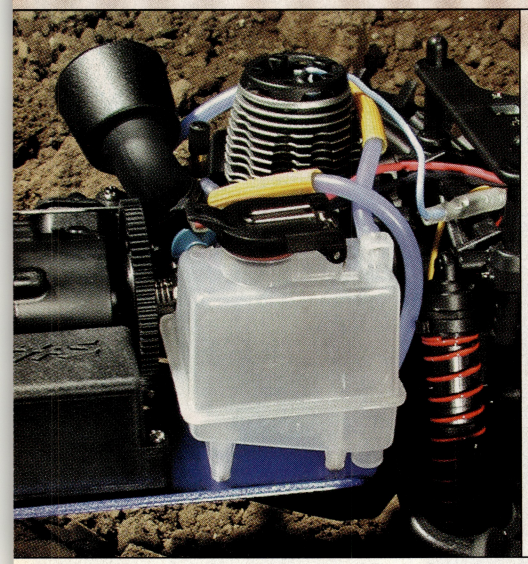


BETTER IN EVERYWAY



TRAXXAS T-MAXX





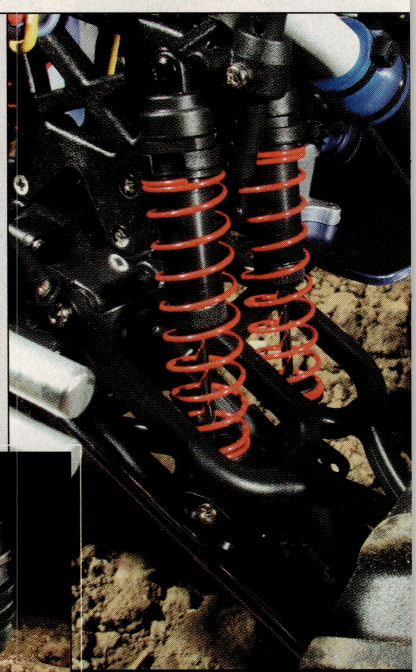
MAJOR HORSEPOWER FROM THE SAME DISPLACEMENT

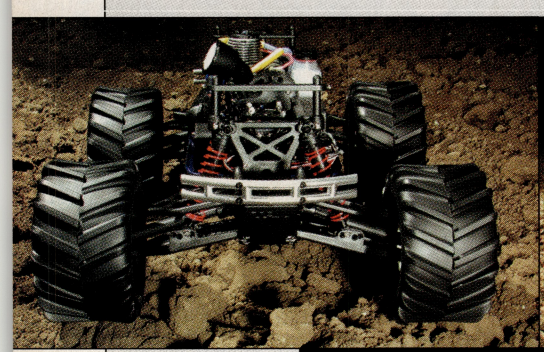
The development of the all-new TRX 2.5 engine has taken Traxxas Engineers over two years to complete. Instead of purchasing engines from an outside vendor, Traxxas felt that by designing the engine and manufacturing it themselves they could achieve closer tolerances, greater reliability and higher performance. What they set out to do was make a powerplant so strong and reliable that owners of the engine would forget about any problems they had with previous engines. The new 2.5 tolerates a wide variety of high- and low-speed needle settings regardless of the outside temperature and altitude. Although the engine stays in tune with a number of different needle settings, it also responds well to slight adjustments for reliable tuning.

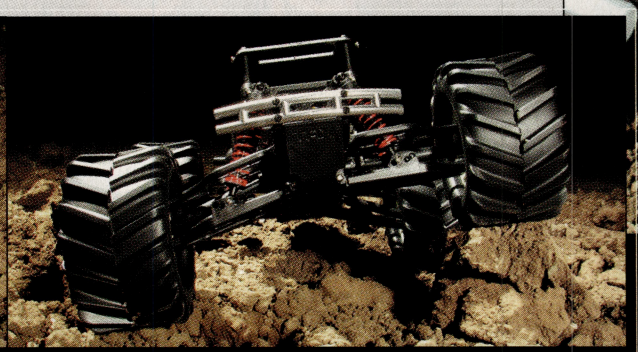
The composite slide-carburetor is slippery smooth for precise throttle response. The air leaks of old are long gone with the 2.5s tightly sealed O-Rings, which help maintain constant pressure inside the engine's cavity. The aluminum header provides more than enough airflow for a very reactive exhaust system. Although many people may have expected Traxxas to strap in a big block .21 engine in their redesigned Maxx, the new TRX 2.5 will turn heads with its similar power output.

WIDER STANCE

The original T-Maxx had a remarkable pivot-ball suspension, which helped put it on the map as the best-suspended monster truck. The already proven system has received a number of upgrades that, as shocking as it may sound, makes the new truck even better. The WideMaxx suspension system of the 2.5 truck is over an inch wider, so that an increase in stability was achieved. With an inch more front and rear wheel track, the 2.5 stays on all fours with ease. The suspension is easily adjusted with multiple anchoring holes in both the lower wishbones and the front and rear shock towers. The truck's factory-set ride height can be left alone for mowing over large obstacles, or in just a few minutes, the truck can be lowered to drop the center of gravity for racing applications. For even greater tuning options, even caster can be changed. And for improved durability, the new suspension receives thicker turnbuckles that are 3.5mm in diameter. The turnbuckles now have stops on them that allow you to easily duplicate the factory suspension settings without needing to measure or worse, guess at the right turnbuckle lengths.



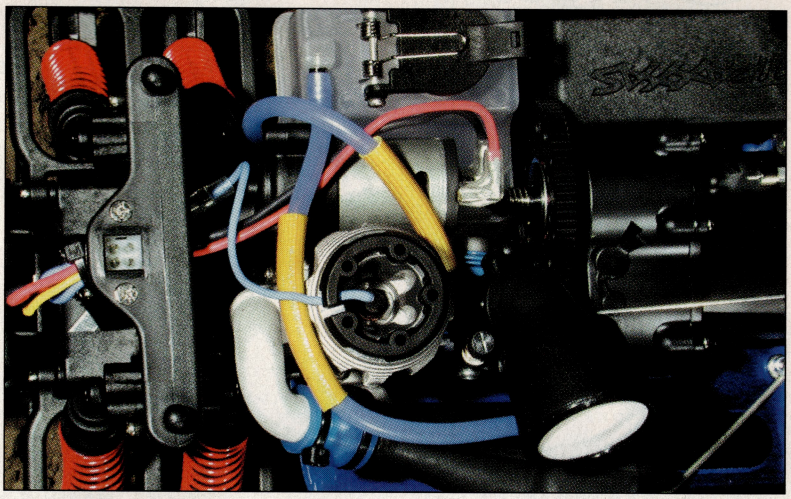






NO SLIPPING, NO STRIPPED GEARS

A second generation EZ-Start system has been included with the T-Maxx 2.5. The new design is feature-laden making it much more versatile than the system it replaces. The handheld unit heats the glow plug and spins the on-board starting motor. With Smart Start technology, the compact system is able to monitor the starting functions by diagnosing any problems with the motor for easy starting every single time. The status of the motor and glow plug is displayed with two indicating LED lights. The status of the lights will allow users to know if a glow plug is bad or disconnected, and if the starting motor is stopped because of excessive load or there is a disconnected wire. A 7.2-volt battery pack is installed inside the handle portion of the starter, which also has a very useful belt clip. The power of the unit is regulated, so when the battery gets extremely low, or when the starting motor draws power, it still supplies enough voltage to the glow plug for starting.



BEEFED-UP DRIVETRAIN

Precision ball bearings are used throughout the drivetrain of the new truck. The large wheels and bulk of the truck don't seem to have any negative effect on the smoothness of the drivetrain. An automatic two-speed transmission is centrally located with a small port for making easy adjustments to the shifting point of second gear. The 4WD system has hardened steel rings and pinions that will hold up under continual use. The planetary gear differentials work well with a provided slipper clutch to give the new Maxx much better traction. The new engine caused another trickle down effect to the added size and strength of the new driveshafts, which have steel ball-to-cup joints for greater durability and improved suspension articulation. Since the shafts have no metal-to-metal friction they wear significantly less and are additionally more efficient.



Thunder Tiger

SIMPLY THE MOST POWERFUL MONSTER TRUCK EVER

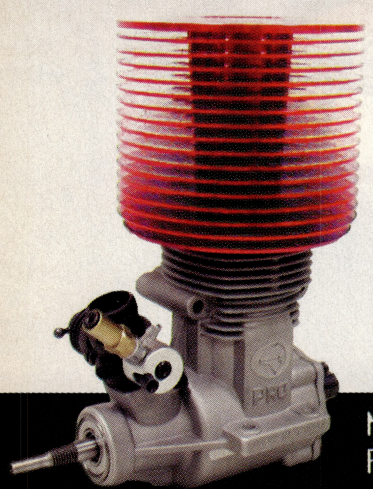
.90 UNLIMITED

EK-4 S2

Already with a reputation as the most poweful, and fastest production truck with the .70 Nitro engine, Thunder Tiger raises the bar with the new Unlimited .90 powered EK-4.

This kit ground shaker requires a two-channel radio, hi-torque servos, and your favorite fuel. Start the big block with a rear starter probe, and watch the ground shake. Seven adjustable shocks keep the big tires on the ground, coupled with the tuned 3-needle carburetor for fine-tuning, and a tuned pipe matched to the Thunder Tiger .90 engine.

Now available with three optional fully painted truck bodies. A great big truck choice for dusting off your friends in the dirt or at the dunes. You will want to keep this one in the trunk or motor home for instant gratification and all out four wheel drive power!



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- ERGAL Heat Sink Engine Mount
- Ferodo Brake Discs
- High Performance Aluminum Shocks
- Adjustable Turnbuckles
- Carbide Engine Pins
- ERGAL Chassis, 5mm
- Main Gear: 52T, 54T, 56T
- ERGAL Chassis Brace
- ERGAL Front and Rear Shock Towers
- ERGAL Front Upper Arm Mount
- ERGAL Transmission / Suspension Hinge Plates
- ERGAL Rear Toe-In Nlock - 2 Degrees
- ERGAL Front Knuckle
- Carbon Fiber Servo Tray
- Carbon Fiber Battery Plate

EK4 SPORT



Optional Bodies

No. 6216-A1 Purple

No. 6216-A2 Blue

TTR6216-F EK4 S2 Monster Truck
Shown with optional body No. 6216-A3 Red, Wheelbase: Adj. from 315mm to 320mm, Front Track Width: Adj. from 295mm to 305mm, Rear Track Width: 300mm, Front Kick-up: 5°, Front Caster: Adj. from 18° to 25°, Rear Anti-dive: 2°, Rear Toe-in: 1°, 2°, or 2.5°, Weight 3200g without engine, tuned pipe, servos. (requires radio unit with two high torque servos)

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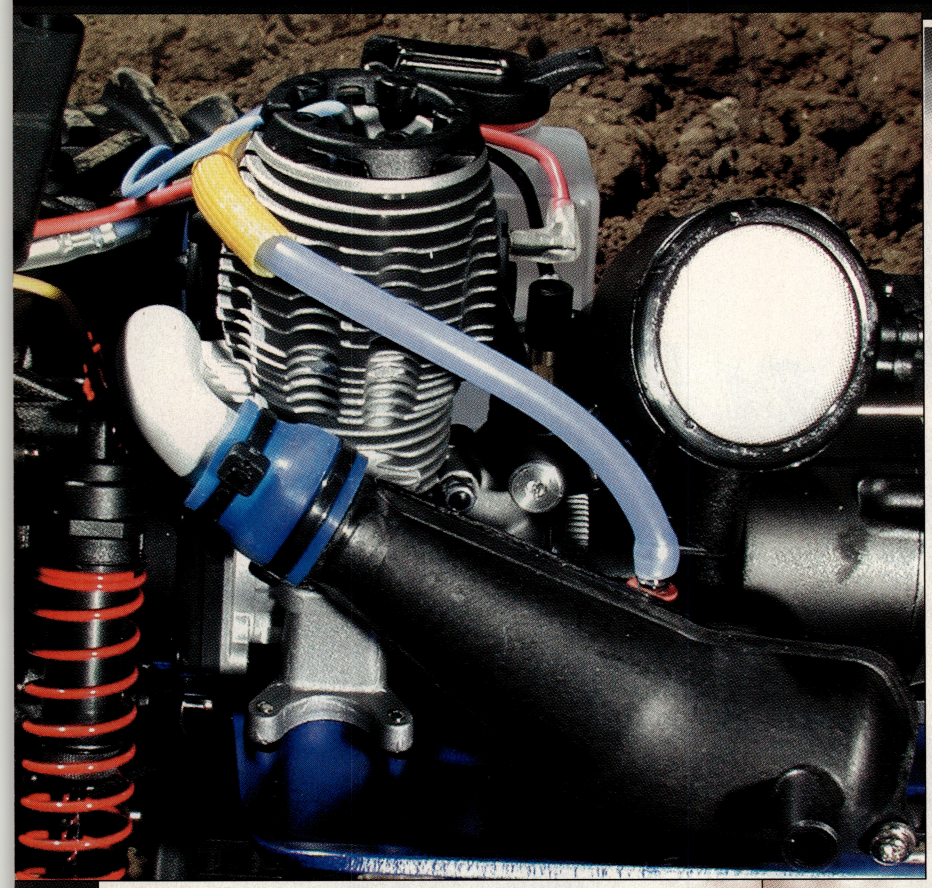

MAXIMIZED POTENTIAL; THE NEW TRX 2.5 ENGINE

The big story surrounding the new T-Maxx 2.5 is its new engine. It's not that the original T-Maxx's TRX-15 was a dud, but upgrading a larger or more powerful engine was one of the first hop-ups performed by most owners. At this year's Chicago Model Hobby Show, we had the chance to sit down with Brent Byers and Kent Poteet from Traxxas to speak about all that has gone into the new 2.5 engine. As Brent is the man responsible not only for the new powerplant, but for the original design of the truck itself, he is definitely the ultimate resource.

WHY MAKE A NEW ENGINE?

There were two chief reasons for Traxxas to produce a new engine. The first is that after it had produced so many thousands of the original TRX-15 engines, the tooling was due to be replaced at a substantial cost. But perhaps more importantly, T-Maxx owners had been telling Traxxas for years that they wanted more power in their trucks. "When people wore the old engine out," said Brent, "they usually upgraded to a Novarossi or an O.S., and they rarely rebuilt the old engine. Our goal was to produce a truly world-class engine."

WHY NOT A BIG-BLOCK?

"We knew that we could make more than enough power with a .15," added Brent, "and there was some anticipation that at some point, .15 size engines might become race legal anywhere that a small-block .12 was being used. Increasing displacement is a cheaper, faster solution, and it works to some extent, but without a solid basic foundation, it's still a compromise." Traxxas set out to make a world-class engine rather than to simply install a larger one.

One of the key elements in that quest is an in-house dyno, which, according to Brent and Kent, is really unlike anything else used in the model engine industry. "There a two basic ways to design things," said Brent. "You can predict the way something will work, and that's theoretical, but without an accurate, real-world way to scientifically measure, it's difficult to know how each design change will affect overall performance. A lot of companies prototype something, then go out in the field and test it and say 'that's better.' The vast majority of their testing is trial and error. The dyno is extremely important for real scientific measurement of power and response. We built our dyno three years ago, and the new engine has been in the works for two of those years - way before the idea of the T-Maxx update."

ENGINEERED FROM THE GROUND UP

The TRX 2.5 is actually the product of a team of engineers, each one with his own particular specialty. The Traxxas dyno also played a large role in the new mill's development. "Mechanical engineers, based on their education, become fluent with engines," says Brent, "I always played with cars, dirt bikes and stuff like that. We had to develop a whole lot of knowledge to do this right. We built our own dyno and equipped it with sophisticated equipment that measures such things as air/fuel ratios, exhaust gas temperature and fuel pressure. We've had good people working with us on this project, people with lots of experience in engine testing.

"We also knew that we didn't want to waste our budget on less essential 'glam' stuff." Adds Brent. "Big cylinder heads with fancy machining eat up money but really don't give better performance. We have a cast head that's every bit as functional, still looks good, but is not nearly as costly. We had X-amount of dollars to produce an engine. The money we spent on surface finishes and hardnesses [of internal moving parts], we could have easily spent on a nice machined head. It's about economy of production and concentrating on what will make the engine perform better, not look better."

TARGETING AIR LEAKS

According to Brent, the number one concern with the new engine was the elimination of air leaks. He and his engineering staff did what any good design team would do: they evaluated their competition, and each engine had one thing in common: air leaks. "We've got systems that measure how much air is leaking into the engine," comments Brent. "Most engines we tested had a significant leak, and most had consistent leaks, which can be dealt with by tuning the engine. However, it is the inconsistent leaks that cause the biggest problems.

"No engine has an O-ring between the carb and the pinch bolt (the carb retainer). The 2.5 has two O-rings, one at the base of the carb and one at the top of the engine case's opening. Most engines also have pretty serious leaks in the carb alone. Any place that had a potential to leak air, we developed an O-ring seal. This includes the idle-speed adjustment and the back plate.

"Most engines also have problems with air and oil leaks at the front bearing. We developed special passages that allow oil to flow through and lubricate the front bearing without allowing air to leak into the engine case."

We asked Brent how air leakage was reduced around the engine's back plate - which is a notorious source. "Our backplate bushing has a special face that interfaces with the face on the back of the starter shaft," he answered. "When the crankcase is pressurized, the crank is

pushed out to form a seal against the surface of the back plate bushing. This is accomplished through tight clearances and oil film."

Traxxas has even addressed leakage around the exhaust manifold. Rather than rely on a gasket, a reusable O-ring seals the 2.5's manifold to the exhaust opening. You also won't need to use thread lock to secure the manifold screws, as Traxxas includes special lock washers that remain tight under harsh vibration.

INSIDE THE TRX 2.5

In speaking with Brent, it's evident that a lot of quality, innovation and care went into the design of this engine. Here's a brief list of some of its more significant features.

• The crankshaft bearings are the best available. Traxxas sources them from Japan, and they are custom-designed just for this engine. According to Brent, you really can't buy any better bearings.

• The crankshaft is also special. It has Traxxas' own integrated pilot-shaft design, similar to the popular SG-style crank, but made to different dimensions to eliminate problems with clutch wobble. The 12mm crank is made out of high-strength steel and receives multiple hardening and grinding operations. The hardened crankpin also extends the life of the engine's internals.

• Both the piston and its connecting rod have been made as lightweight as possible to reduce stresses on the crankshaft and bearings. When a heavy piston is used, a heavier connecting rod and crankshaft are also necessary to handle the loads, and all of these parts beat up the bearings. Lightweight parts have less mass for faster engine response (better acceleration). And a lot of piston sleeve wear is caused by the weight of the piston and rod. A lightweight piston and rod increases efficiency, provides more power with less heating, and improves fuel economy. The TRX 2.5's piston and sleeve feature ABC construction (aluminum piston with a chrome-plated brass sleeve), but Brent tells us that he piston is made of a proprietary aluminum material. The connecting rod is made from 7000-series aluminum, which according to Brent, "is about the strongest stuff you can buy."

• The TRX 2.5 has three intakes ports, however the ports are cast into the block rather than being machined-in after casting, which allowed Traxxas to design more intricate ports with greater accuracy and less expense.

INTAKE INNOVATIONS

"A lot of work went into this carb," comments Brent. "The body of the carb is a 'hybrid' material - there are two different pieces. It's a steel base combined with a liquid-crystal polymer that is basically the best, top-of-the-line plastic you can get. And yes, it's very expensive, but it's incredibly strong. You can beat on it with a hammer for a long time before it will even dent. The material also molds very accurately so we can keep close tolerances and complex shapes without worrying about shrink marks. It's also chemical resistant.

"The spray bar is now molded integrally into the carb. Number one, this simplifies the carb. Number two, we can mold a much more complex shape than can be machined. If we machined the spray bar, it would be round. Our molded bar is foil-shaped and has slots that release fuel in specific places in the airstream. Also, our molded bar is less likely to be damaged by the low-speed needle because we have included a positive stop in the carb to prevent you from screwing in the low-speed needle too far.

"The spray bar is actually the so-called 'mid-range adjustment,' or third needle on some carbs. Our fixed bar is right where we wanted it, so there isn't a need for adjustment. Really, the only time you need to adjust the bar is when the enrichment [the amount of fuel in the mixture] is not correct during open throttle. If this were a massively heavy vehicle, we might change the bar setting to alter the enrichment. But based on performance, the fixed spray bar give much better atomization of the fuel for improved response, so it vastly outweighs any potential benefit from having an adjustable spray bar.

The 2.5's carb also has a built-in return spring, but according to Brent, the spring isn't just for safety. "The return spring takes up slack and keeps the slide in precise alignment," he says. "Other slide carbs tend to wear, but our springs keeps everything smooth, and makes the engine more drivable because everything is precise."

One particular feature of the TRX 2.5 engine that stands out is that its carb is mounted at a much more shallow angle than we're used to seeing. We're told that this has to do with the relationship between the incoming fuel/air mixture and the crankshaft's intake port. But as the new engine was intended to work in the rest of the Traxxas nitro lineup, it features two high-speed needle bosses. So when the carb is mounted at 180 degrees, you can remount the needle to maintain easy access for tuning.

AN EASIER EZ START

Traxxas' original EZ Start system made nitro much more simple and convenient. But it wasn't without its problems - namely its tendencies for stripped gears and a slipping one-way bearing. In the planning of the new T-Maxx, Brent was asked to address these issues, and in his words, the EZ Start "...doesn't s#@# anymore."

The most radical change to the system is in the handheld control box, where a series of sensors now monitor such things as plug voltage, motor load and pack voltage and display their findings through a pair of LEDs. "Once the battery is under load, as it is when the starter motor is turned on," says Brent, "the voltage to the plug typically is reduced. However, as the new starter is electronically regulated, this no longer happens, and the plug always receives the right amount of voltage."

Many of the cases of stripped or broken gears in the original EZ Start could be attributed to increased loads caused by hydraulic lock (created by flooding the combustion chamber with unburned fuel) and by gummed-up engines that had been sitting for a long time. The new control box senses the load placed on the starter motor. If it deems the load too high, it will shut itself off before the motor or the gearbox can become damaged. And like an ESC's thermal shutdown, it will turn itself back on when the load is reduced.

The new EZ Start also has a "real" one-way bearing, roller clutch, as Brent puts it. Engine oil seeping past the back-plate bushing often caused the old one-way to slip, but we are assured that this won't happen with the new starter.

THE QUALITY OF LIFE

Traxxas has set very high goals for its new TRX 2.5 engine, and it has reached a level of quality and performance that few engine makers can match. And like any high-performance engine, the 2.5 needs TLC to reach its potential. This means that the break-in procedure is more critical than ever, and that proper maintenance is essential. Brent says that the engine doesn't need any special maintenance program, but that it would "be a shame" not to maintain this engine because of its performance and capability.

Of particular note is the new foam air filter. As this engine must take in vast quantities of air to create performance, a clean filter is a must. It's also important to perform after-run maintenance, too. A little light oil such as Pacer's After Run or Marvel Mystery Oil will help keep the engine's internals from gumming up and from rusting.

Brent predicts that the general lifespan of the new engine should be very high if it's maintained properly. "With some engines we tested," informs Brent, "the bottom end [the rod, crank and bearings] needed to be replaced along with the piston and sleeve. With the quality and finish of the 2.5's parts, the bottom end should outlast several piston/sleeve sets, and the main crank and bearings are of sufficient quality that you should be able to finish off several cases of fuel before needing to do any bottom-end work."

TRAXXAS T-MAXX 2.5



STIFFER CHASSIS

The added beef in the horsepower department and extra wide suspension components caused the Traxxas team to make some changes to the chassis. The blue anodized T-6 aluminum chassis looks the same, but it is now thicker by 1 millimeter and as a result, provides a 50-percent increase in overall rigidity. The added rigidity allows the suspension to work properly without suffering the ill effects of chassis flex.

WHEELS AND TIRES

Traxxas knows if it isn't broke, then you don't fix it. The wheels and tires from the original Maxx are relatively unchanged. The handsome five-spoke chrome wheels come standard with the new 2.5 Maxx as well as the same pattern of the original TRX tires. These wheels vary in that they are slightly lighter than the original ones and the chrome finished nylon is much more durable. The outer beads of the tire fit securely in place, so that gluing the tires is relatively easy and clean.

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SPECIFICATION

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Data Recall	All Battery Vital Information
Boosting Charge	Torpedo Type Built-in
Partial Charge	Adjustable 10 to 50%
Fuzzy Logic Charge	Linear VESC
Trickle Charge	On/Off
Trickle Rate	Automatic
Ring Tones	6 User Selectable
Auto Repeak	On/Off
Repeak Delay Time	1 to 60minutes
Voltage Display	Triple Decimal Digit
AC Input	Optional Power 14A Supply
DC Input	12 to 15V
Output	1 to 10cells
Battery Type	Ni-Cd & Ni-MH
Battery Capacity	50 to 6000mAh
Charge Rate	0.1 to 7.0A
Discharge Rate	0.1 to 20.0A
Voltage Threshold	0.003 to 0.020V/cell
Delay After Charge	1 to 60minutes
Delay After Discharge	1 to 60minutes
Number of Cycles	1 to 9
Charge Capacity mAh	Yes
Discharge Capacity mAh	Yes
Current Display	Two Decimal Digit
Discharge Ave. Voltage	Yes
Input Cord	AC USA Type & DC Alligator Clips
Output Cord	4 Wires Alligator Clips
Voltage Protection	Yes
Instruction	Yes

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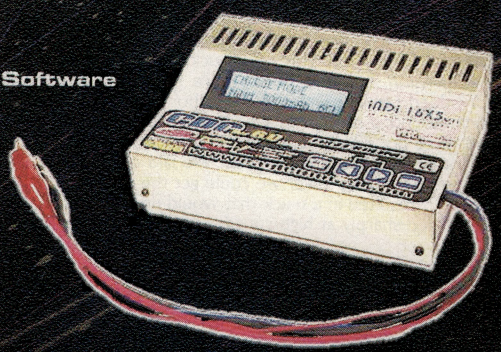

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TRAXXAS T-MAXX 2.5

REPORT CARD

Test location: KZ Raceway, Sun Valley, SC
Test conditions: Hard-packed dirt, bumps, ruts and large stadium jumps

Engine: A+

The new TRX 2.5 engine is everything it is hyped-up to be and then some. Once the general public gets to see just how fast the new truck is, they will quickly forget about wishing for a big block .21. During the break-in process, when the engine was blubbery rich, the engine never, ever stalled. The compression of the 2.5 led us to believe that this engine is made to maximize every bit of horsepower it could possibly muster. When we leaned both the low and high-speed needles to reach roaring speeds the engine's temperature was never higher than 215 degrees, despite the scorching 110-degree temperature during the test. This engine is a real efficient workhorse that will not only make owners proud, but should give engineers at Traxxas justified recognition for their brilliant design. Our hats are off to Traxxas and this gem of an engine.

Acceleration: A

We were fortunate enough to run the new Maxx alongside an original T-Maxx for comparison. The new truck was a little on the rich side, while the original Maxx was tuned for competitive racing. When the two trucks had several head to head drag races, the original Maxx was not even close. The 2.5 rocketed to the lead every time, even though it was significantly richer. With our accurate temp gun, the new truck was 50 degrees cooler and would have been leaned more but we wanted to baby the engine. It was only its seventh or eighth tank.

Top Speed: A+

The Traxxas box claims that the truck will hit 40-plus mph. They were being modest. Our test truck went screaming by us with the speed of a racing nitro sedan. With each passing high-speed run, the truck seemed to get faster and faster. Not only did it catch an original Maxx from behind, but also it smoked by it like it was standing still. We believe the new truck was reaching speeds 12-15 mph faster than our original Maxx the truck it replaces.

Jumping Ability B

The truck's WideMaxx suspension absorbs rough landings with no difficulty. When our test truck landed off balance, it did not matter because the extra width of front and rear wheel track took over. The wider suspension gave us a feeling of security when we launched the truck at speed. Although the suspension will enable the truck to go over almost everything with ease, we felt that it absorbed too much of the jumps to give maximum liftoff and distance.

Steering: B-

The Maxx 2.5 was able to turn well under the light loads of slow speed. But when we put some power to the ground, the steering servo felt overwhelmed, causing the truck to push. We understand that putting a high-dollar steering servo with more torque in the truck will significantly increase the selling price, but the steering servo in our test truck is the first thing we are going to replace.

Suspension: A

The original Maxx was better than its competitors because of its suspension. The new truck gets the same proven suspension, but it is much more adjustable and wider for added stability. The lower wishbones now have four shock-mounting holes, while both the shock towers each have three holes. With the racer in mind, Traxxas set out to make suspension tuning a cinch. We laid down the shocks to see how much lower we could get the center of gravity, and this resulted in a truck that would not flip over when we turned sharply at high-speeds on high-grip pavement.

Completeness: A

Every RTR to should be as easy as the new T-Maxx to get running. You will need a bottle of fuel, 12 AA batteries and some tire glue (yes, tire glue, so glue those babies) and that is it! The body comes painted and trimmed. The decals for the body are also cut out, so no precious time is wasted tediously trimming the stickers. Taking time to break-in the engine is the only process that is time consuming. It will be tough to have patience during the break-in, especially when you know the capabilities of the new engine. Trust us; it will be in your best interest to follow the instructions very closely, as the final result will be well worth the wait.



SPECS

Price:	available at $389.99
Length:	19.125in./486mm
Height:	10.375/264mm
Width to outside of tires:	16.25/414mm
Wheelbase:	12in./305mm
Track (front):	16.25in./414mm
Track (rear):	16.25in./414mm
Differential Type:	Hardened Steel Bevel Gear
Center Ground Clearance:	4in./101mm
Front & Rear Tires:	5.75"X3"
Front & Rear Wheels:	5-Spoke 3.2"
Transmission:	Automatic 2-Speed Forward and Reverse
Drive System:	Shaft-Driven 4WD
Chassis Type:	3mm (6061) T-6 aluminum with comp stiffeners
Radio System:	Traxxas TQ-3
Engine:	TRX 2.5
Brake Type:	Disc
Fuel Capacity:	125cc
Top Speed:	40mph+

Final Score

Highs: Traxxas has another winner on its hands. This holiday season, the buzz around hobby stores will be this truck. The new Maxx addresses every single issue we would have liked to have seen changed on the original. The 2.5 is much faster, wider, more adjustable and durable than its predecessor. During our tests, the engine was always in tune, even though we ran the truck both during the heat of the day (which was about 110 degrees) and early in the morning when it was about 70 degrees. Traxxas was right that an increase in power-to-weight ratio was better, because the new truck is very nimble, yet oh so fast.

Lows: We can't really gripe too much because we love this truck. Our only complaints are that the truck is not named something else like T-Maxx 2 or something like that. It would also be nice if Traxxas glued the tires on the truck because most first timers will overlook the importance of glued tires until the new engine rips them right off the rim.

The verdict: As popular as the original T-Maxx was, there were things that could have been better. Our first test of the new model proves that Traxxas has listened to its customers to the letter. The result is the "complete package." All that was great about the original truck remains intact, yet the shortcomings have been triumphantly addressed. There are quite a few people who bemoaned Traxxas' decision to stick with a small-block .15, but if they give this new Maxx a chance, their reservations will be wiped away with the first pull of the new truck's throttle.

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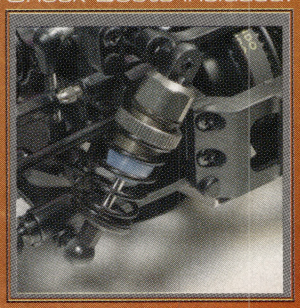

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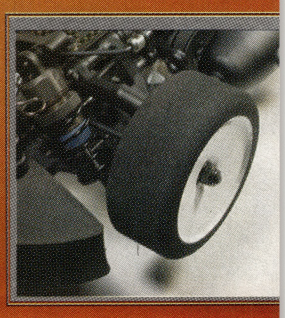

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Engine, Radio, and Exhaust are not included with the kit. Car body is unpainted. Photos are for reference only. Actual production may vary.

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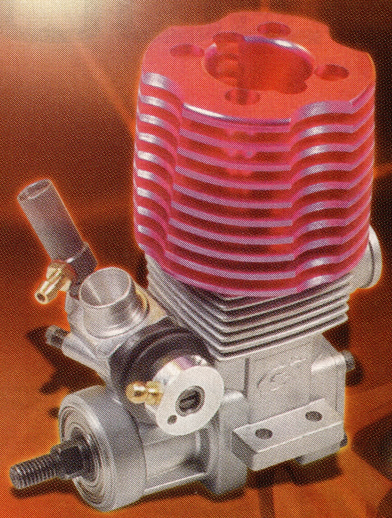

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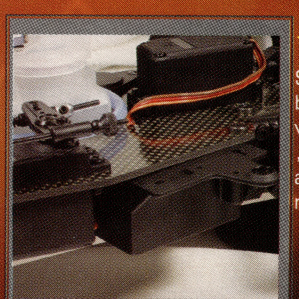

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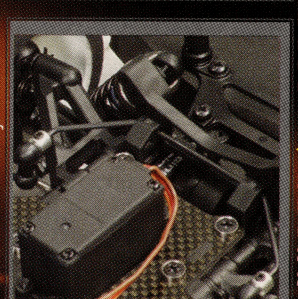

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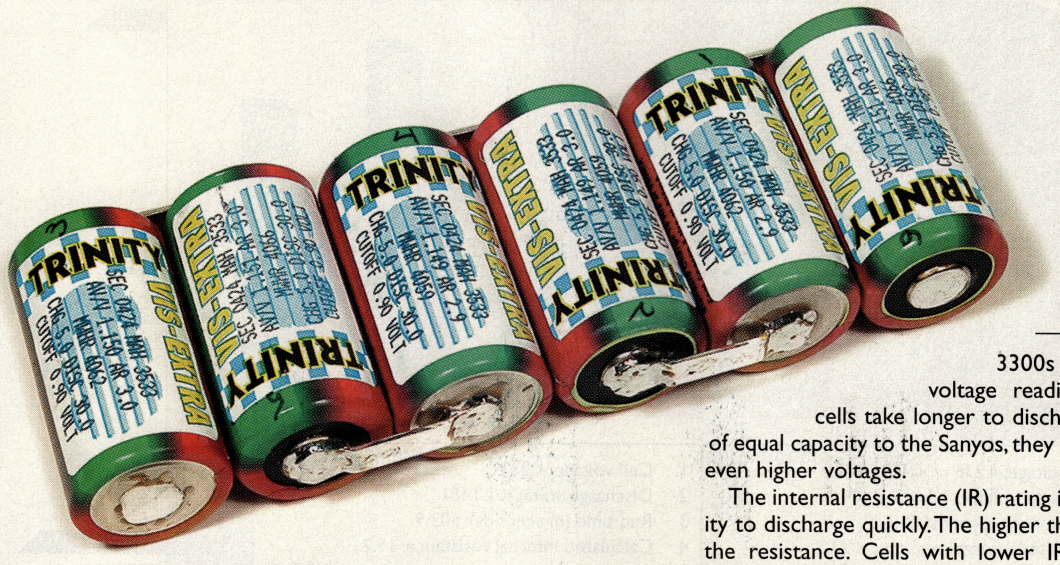
TRINITY GOLD PEAK 3300 CELLS

More run time, less cost



Batteries tend to go through production life spans akin to those of personal computers. Just as there seems to be a new PC processor speed each week, so too does it feel like every time you buy new cells, the companies that make them come out with newer, better ones. The newest batteries from Panasonic and Sanyo, the big players in the R/C market, are high-voltage versions of their 3000mAh Nickel Metal hydride cells. And just when we thought that they couldn't pack more capacity into a sub-C sized cell, along comes these 3300mAh cells, but not from Panasonic, or even Sanyo: these latest batteries come from a company called Gold Peak.

Trinity was kind enough to send us an early sample pack of these new cells for an evaluation. This particular pack was made up of cells that had been processed by Trinity's VIS voltage increasing system, so in essence they are representative of the cream of the battery crop.



TO THE TURBOMATCHER!

The first thing we did was cycle the GP3300s on a Competition Electronics Turbomatcher 4 (considered by many to the industry standard in battery matching equipment). We cycled each cell three times to get an average reading that would take the cells' newness into account, then we averaged the readings from all six cells to yield an overall performance rating.

If you look at the results chart, you can see that the GP cells seem almost too good to be true. At a discharge rate of 30 amps, an average time of over 400 seconds (403.9 to be exact) is simply astounding. By comparison, the Sanyo RC-3000HV cells we used as a comparison mustered a respectable discharge time of just under 350 seconds—and these were new, top-shelf cells from a major battery label. Folks, this equals nearly an extra minute of run time.

Of equal importance is the discharge voltage and internal resistance of the GP cells, which determine the amount of "punch" the pack will have. The GP cells yielded an average per-cell discharge voltage of 1.1481, which, if you know battery numbers, is really, really good. Compare this number to that of the Sanyo cells (which also underwent a voltage-increasing process), and you'll see that the GPs are right there. But what isn't shown in the numbers is that the extra capacity of the 3300s slightly dilutes the voltage reading (because the GP cells take longer to discharge). If the GPs were of equal capacity to the Sanyos, they would most likely have even higher voltages.

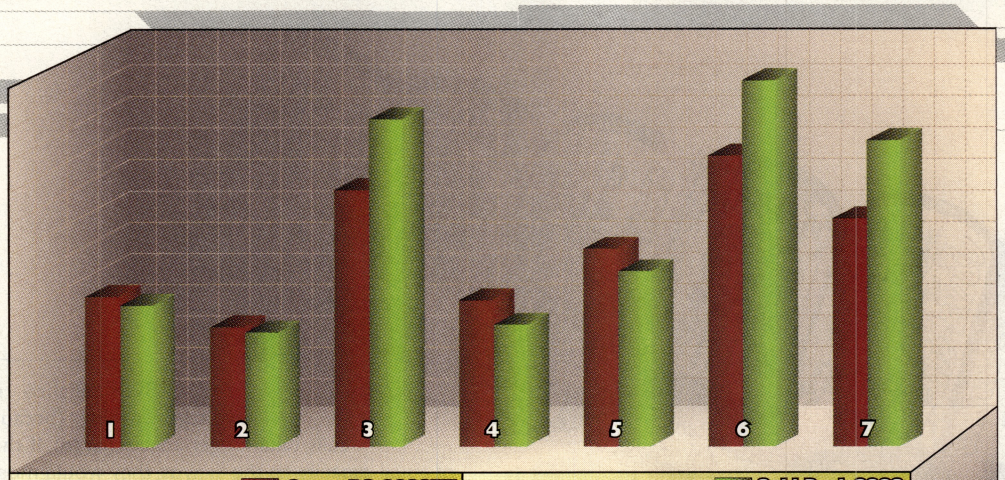
The internal resistance (IR) rating indicates the cells' ability to discharge quickly. The higher the number, the greater the resistance. Cells with lower IR ratings will provide longer run times, but they'll have less voltage. Vice-versa with cells that have lower IR numbers. Again, the GP cells were astonishing: With an actual IR of just 2.9 milliohms (anything around 3 milliohms is considered good), the GP cells have less resistance than even the top-of-the-line Sanyos we tested (which had an actual IR rating of 3.48 milliohms).

TRACK TESTING

The second phase of our evaluation involved using the GP3300 cells in competition. Our test bed was a 1/10-scale Team Losi Triple-XT, fitted with an 11-turn double modified motor, and we competed at Hot Rod Hobbies' weekly Tuesday night off-road races. The track was the same layout used for the recent Hot Rod/*R/C Car* Off-Road Shootout (see coverage in our previous issue).

We charged the pack at five amps, which took approximately 24 minutes to reach its peak from being fully discharged. The ending charge voltage was only 9.38 volts—an indication of the cells' low internal resistance.





Sanyo RC-3000HV

1. Cell voltage: 1.236
2. Discharge voltage: 1.1485
3. Run time (in seconds): 346.5
4. Calculated internal resistance: 23.3
5. Actual internal resistance (in milliohms): 3.48
6. MWHR (milliwatt hours): 3315.3
7. MAHR (milliamp hours): 2237

Gold Peak 3300

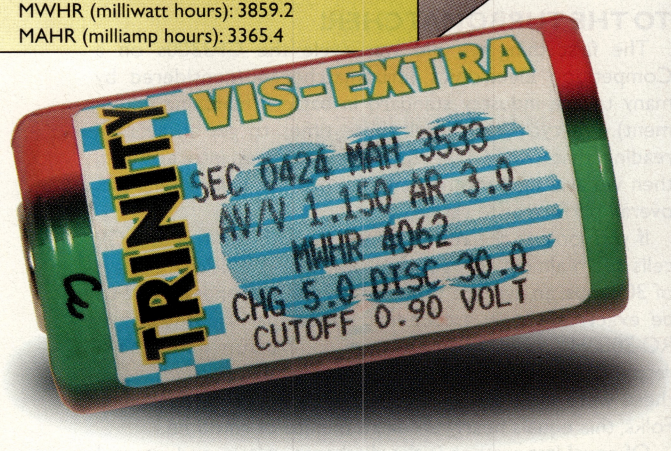
1. Cell voltage: 1.222
2. Discharge voltage: 1.1481
3. Run time (in seconds): 403.9
4. Calculated internal resistance: 19.2
5. Actual internal resistance (in milliohms): 2.9
6. MWHR (milliwatt hours): 3859.2
7. MAHR (milliamp hours): 3365.4

The truck had very good punch, which we would rate as an eight out of a possible ten—definitely well above average, especially considering that the motor had not been cut in a while. We have had 3000mAh cells that have felt as good as the GPs, but none that we could rate as markedly better.

During the first five-minute qualifier, we were able to clear the 15-foot triple jump throughout the entire heat—there was no loss in punch. In fact, one of the things we liked most about the GP 3300s was that they provided the same punch from beginning to end, with no drop-off.

With no time to allow the pack to cool, (we had 15 minutes until the second heat), we just re-peaked the pack while it was still warm. Of course we don't recommend this behavior, but one of our goals was to punish these new batteries to see how well they hold up to the abuse that you might subject them to.

The GP cells felt just as good in the second heat as they had in the first. We felt no loss in punch, and certainly no reduction of run time. After the second heat, we went out during the break to finish off the pack. We were amazed when our truck was able to run an additional five minutes at full power! Before dumping completely, we were able to run an additional minute with slightly diminished punch. Still, that's 10 minutes of run time with an 11-turn motor!



CONCLUSION

These Gold Peak cells are for real. They're not some "cell of the week" that promise the world but in reality deliver one or two good runs before fading. We've subjected these batteries to many cycles and have punished them under harsh racing conditions, and they have yet to show weakness. We also have praise for Trinity's matching and voltage-increasing system; the numbers on the factory labels were very close to the numbers we attained on our matcher, and each of the six cells stayed closely matched. The best news is that Trinity offers its top-of-the-line Team-matched VIS packs for less than the cost of its comparable Panasonic and Sanyo cells (the GP packs sell retail for between $15 to $50 less).

6-cell VIS matched Race Spec pack,
matched, voltage increased, unassembled pack.
Part no. GNR3306, $85.00

6-cell VIS matched Team Spec pack,
matched, voltage increased, unassembled, highest voltage output.
Part no. GNT3306, $99.99

6-cell VIS Powered stick pack,
voltage increased, assembled.
Part no. GN3307, $69.99

SOURCES

Trinity Products, Inc., 36 Meridian Rd., Edison, NJ 08820 • (732) 635-1600; fax (732) 635-1640

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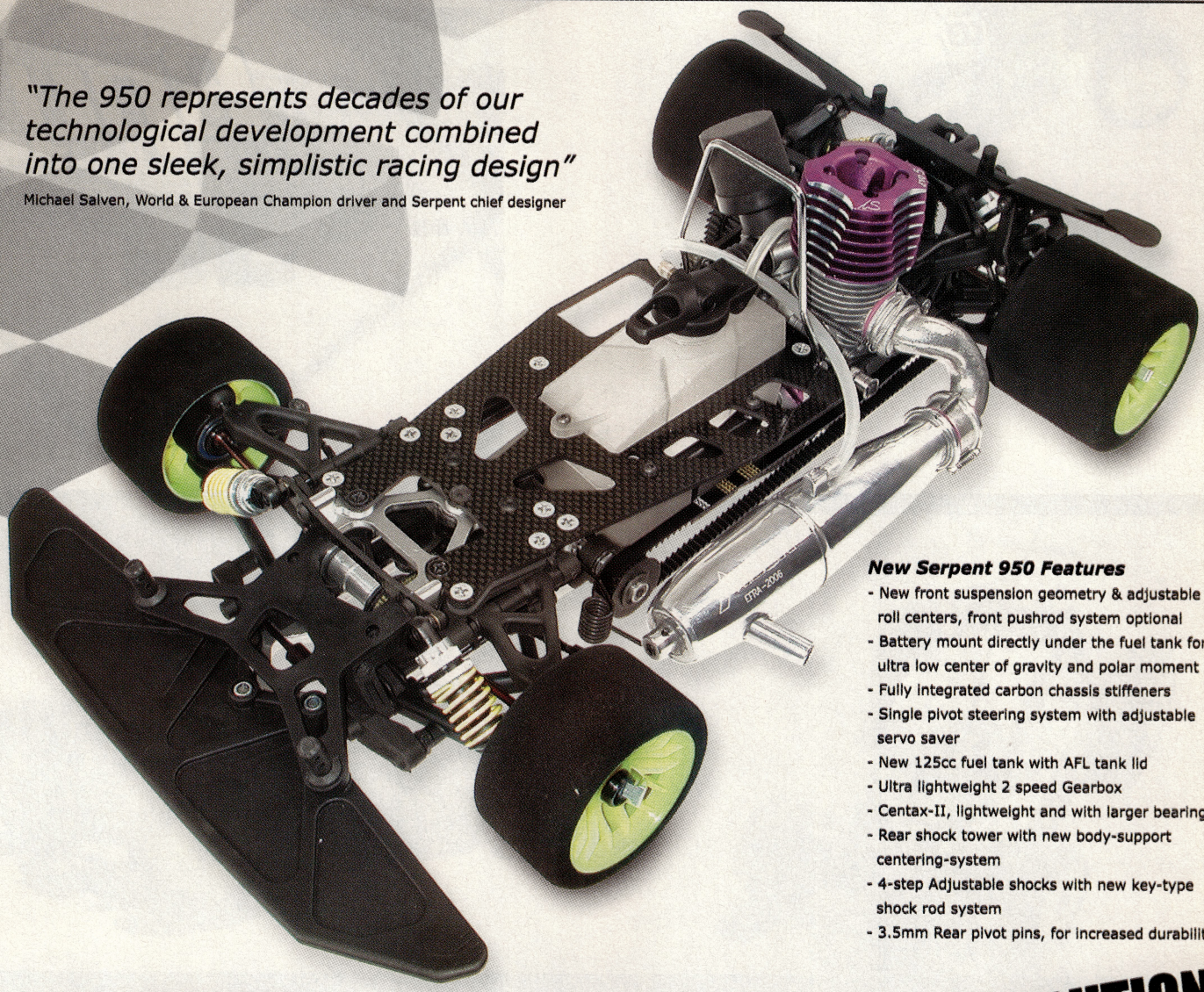

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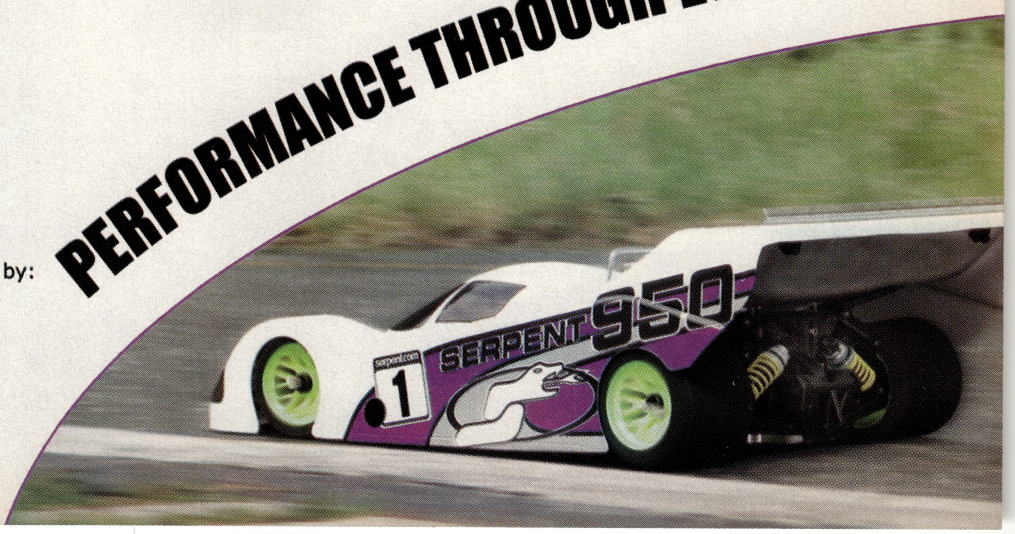
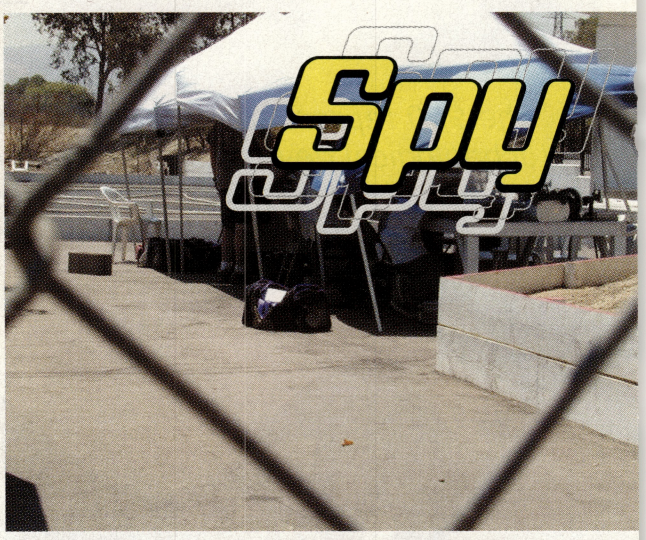


Production Spy

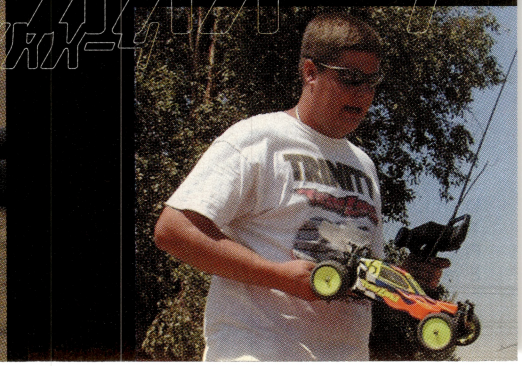




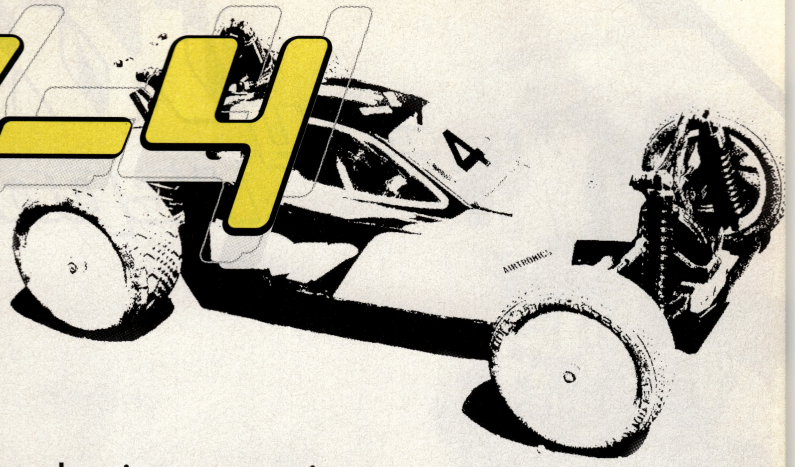








XXX-4 Report

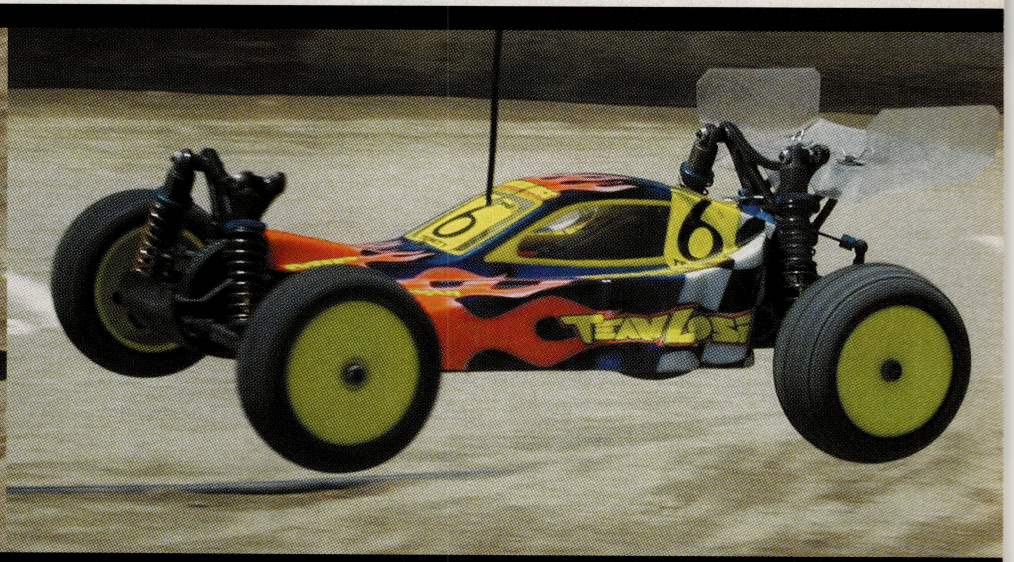


Dropping in on a secret Team Losi test session

By Scott Madrigal

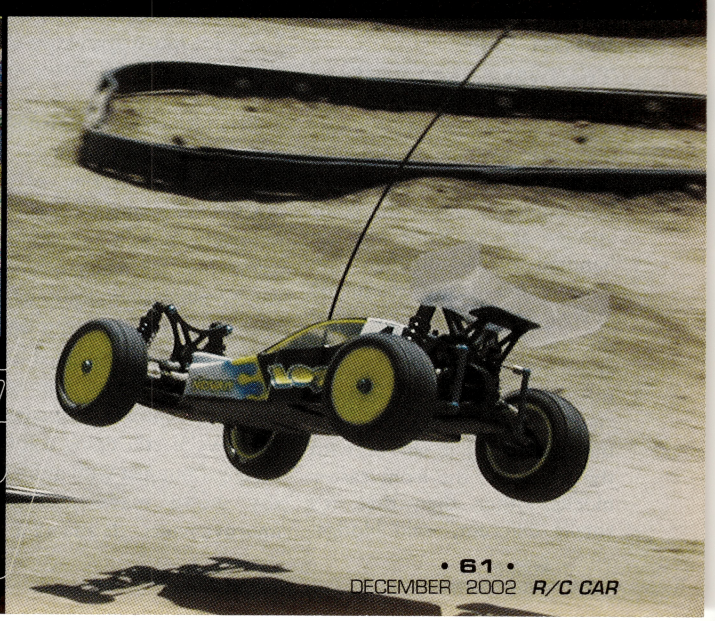
Unless you have been living under a rock for the past couple of months, you already know that a brand new four-wheel drive buggy is in the works from Team Losi. However, how many of you have seen this new buggy? Earlier this month we caught up with the guys from Losi at Hot Rod Hobbies in Saugus, California, where we found them testing the car for two days on the dry track surface. The test was mainly to come up with different setups for the production car, as well as be able to get an idea of how the car, which took on a completely different design, would handle on the track.











XXX-4 Spy Report



WHAT THE TEST DRIVERS SAID

When we arrived at the track, Todd Hodge was practicing with his pre-production buggy. The car itself was very fast, especially down the front straight at Hot Rods. His car handled nicely through the corners and most of the jumps as well. After his run, we talked on the way back to his pit about the differences between the XXX-4 and it predecessor. "It's a totally different design; the only thing it shares with the old car is the front caster blocks, other than that, it's totally different," said Hodge. "It's a lot more aggressive than the XX-4, and it's faster than the XX-4."

Brian Kinwald also made the trek to Saugus in order to assist in the testing of the XXX-4. We caught up to him before his practice session and asked him his feelings on the car. "Well, everything is different. The big thing is the drivetrain; it's way more free, the car is a lot faster and has a lot more horsepower. Suspension-wise, we're still doing a lot of testing…but just within the last day we've made a lot of improvements…It reacts a lot faster then the old car, accelerates a lot faster, it obviously has a lot more corner speed, more steering, just a lot quicker."

Gil Losi, Jr. was also at the track to assist in the testing. We caught up with him on the track to tell us what was new about the XXX-4. "Well, this one has less ground clearance but it's got more corner speed and more horsepower. We all still love how the old car jumps, but I guess we're trying to learn how to make the new car jump like the old car, that's the challenge with it. But the corner speed and the horsepower are much better. This car can run four wheel drive stock; the old car wouldn't accelerate where this one accelerates good with a stock motor, so that's quite a bit of a difference in the way the drivetrain spools up."

CONCLUSION

The two-day test ended up being a good idea for Losi; in that time period they learned a lot about the characteristics of the car and got an idea for the basic setup of the XXX-4 for store shelves. No word yet on a release date for the new car, but keep checking your local hobby store.

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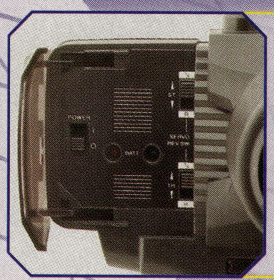

The smoked plastic panel over the servo reversing switches and battery LED offer instant access, but full-time protection against unwanted changes.

Going Beyond the Basics

Futaba's 2PH defines the basics of control; the 2PHKA refines it.

2PHKA "extras" include a Dual-Rate Steering dial for banishing under-/oversteer, plus EPA (End Point Adjustment) dials that tailor steering, throttle and brake action to your "touch." Add NiCds and a charger, and the 2PHKA's built-in jack makes it easy to recharge one with the other without removing them.

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For more information on Futaba's 2PH and 2PHKA pistol-grip radios, or the location of the dealer nearest you, visit the Futaba website at **www.futaba-rc.com**. For a copy of the 2PH and 2PHKA brochure, please call 1-800-682-8948, and mention code #2946W.

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Futaba®

TEST DRIVE



TAMIYA BEAMS

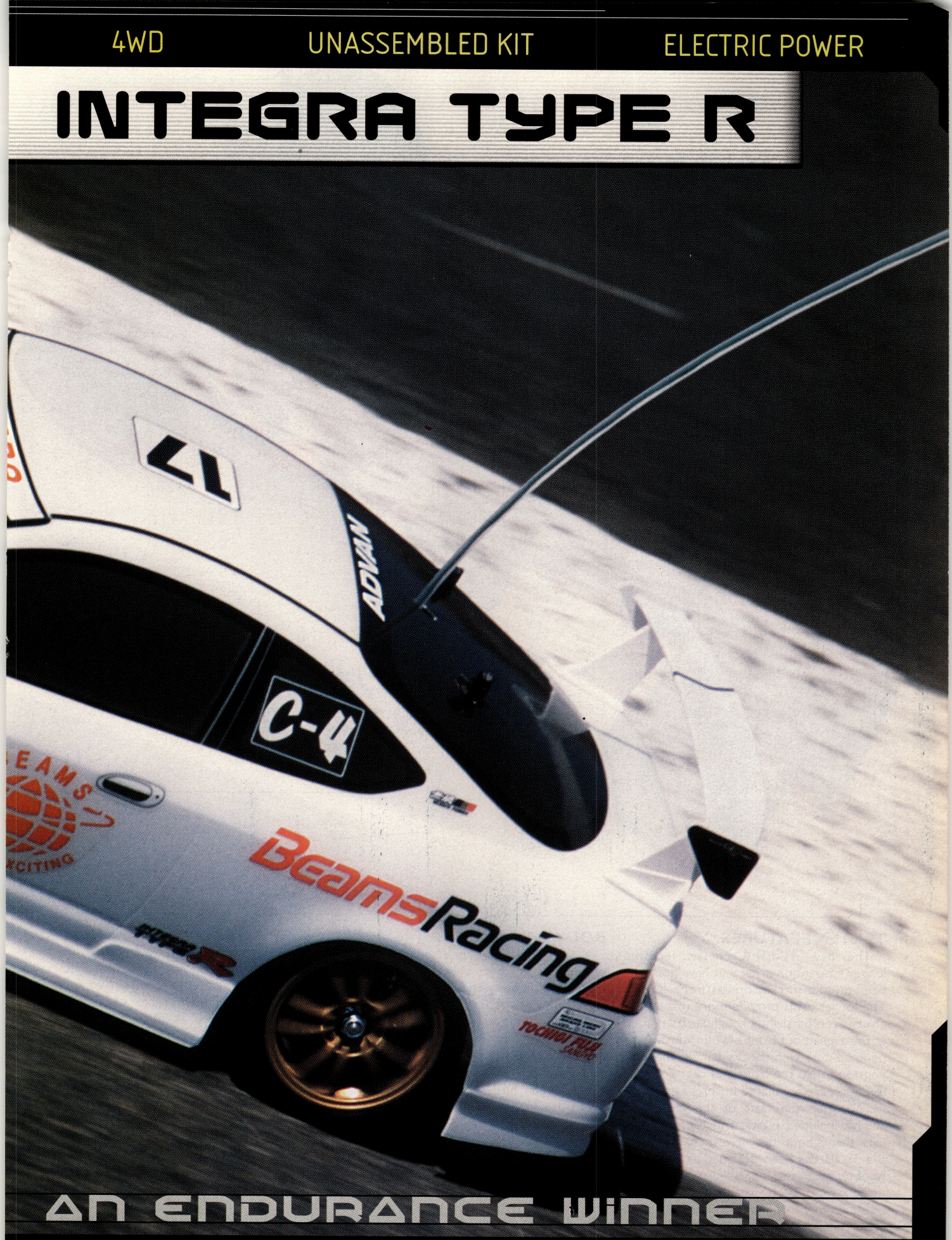
The sport compact/import car scene has grown by leaps and bounds, especially with the release last summer of the movie "The Fast and The Furious." Those who are part of the scene are familiar with the legend of the Integra Type R—the factory race version of the Acura/Honda Integra. In 2002 Acura decided to drop the Integra name for the new model and called it the RSX Type S. The U.S. version has a 200hp 2.0-liter engine, leather interior, and all the goodies. The Japanese version Honda Integra (they got to keep the cool name) produces an enthusiast version called the Type R. Their version has a 220hp engine, Brembo brakes, bigger sway bars, Recaro Racing seats, and cool body pieces. In fact, the Type R does not come with air conditioning, a radio, or any of the other excess baggage such as cruise control. Its high performance and relatively cheap price make the Type R a favorite among Japanese racers.

There are many forms of racing for the Type R, but the most prestigious is the All Japan Super Takaiu (Endurance) Race of Champions. This past year, the Team Beams cars took the one-two finish at the Tokachi Speedway in Hokkaido after a grueling 24-hour endurance race. In honor of Team Beams' accomplishment, Tamiya has reproduced a model depicting the winning car, number 17, on the tried and true TL-01 Chassis. This time, however, Tamiya included the Long Arm suspension with this kit to widen the car's stance and improve handling.

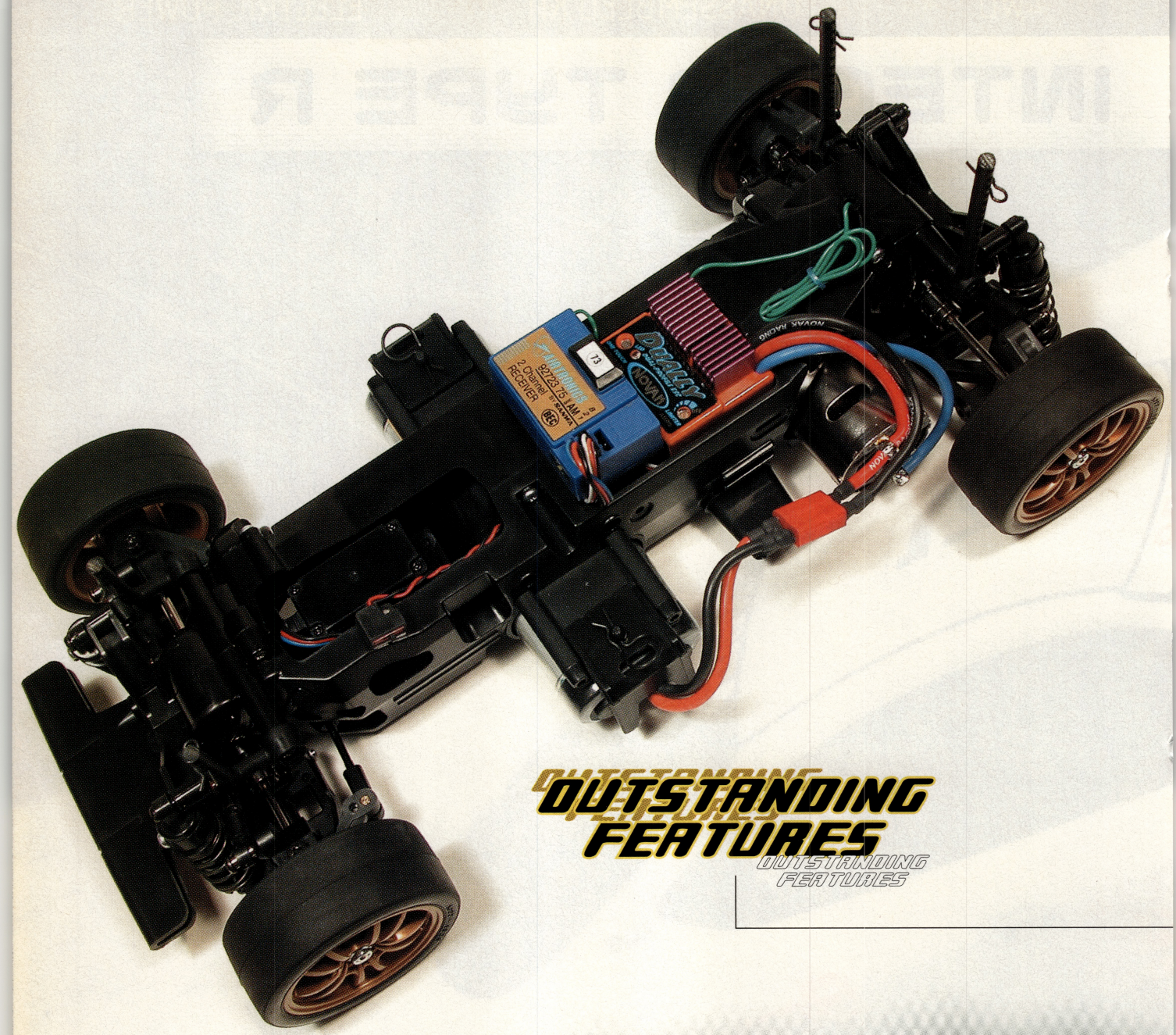
A ROLLING TRIBUTE TO

4WD UNASSEMBLED KIT ELECTRIC POWER

INTEGRA TYPE R



AN ENDURANCE WINNER



OUTSTANDING FEATURES

OUTSTANDING FEATURES

TL-01LA FEATURES

The new TL-01LA chassis features longer suspension arms that have normally been an aftermarket option from Tamiya. The longer arms provide more maneuverability, even on slightly rough surfaces such as the asphalt out front of your house. Non oil-filled coil-over shocks handle the suspension, while the front and rear gear differentials are protected in sealed gearboxes. To keep the cost of the kit down, Tamiya included plastic and bronze bushings throughout the drivetrain. Although the TL-01 has been designed as an entry-level type car, the longer suspension arms make it much better than that. In fact, it is one of the more popular chassis at the Tamiya TCS races with this type of layout.

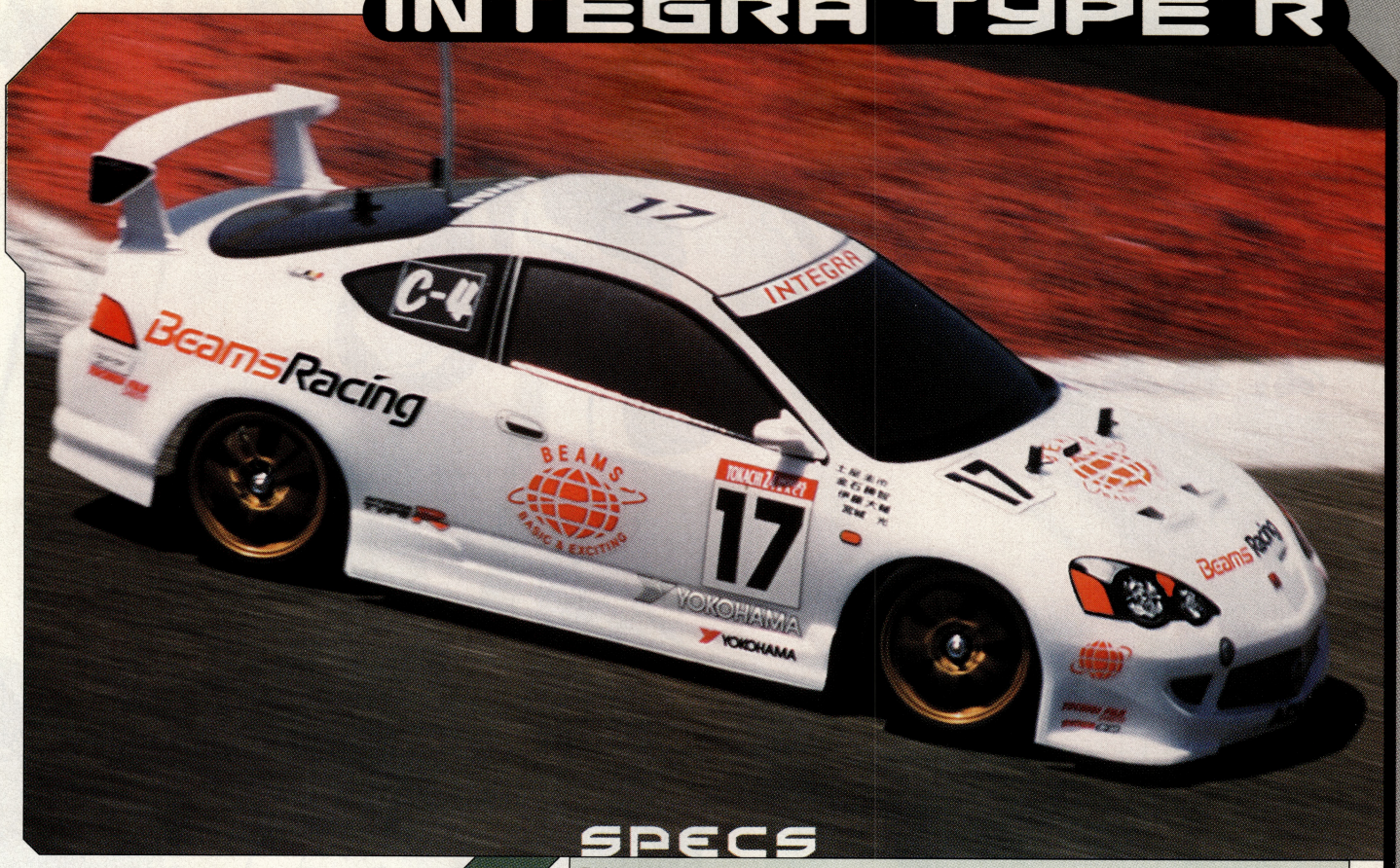
BODY & WHEELS

Now for the hardcore sport compact enthusiast, the best part of The Beams Integra is the body and wheels. While the U.S. RSX has some nice styling, the Mugen body kit makes it just that much better. Mugen is Honda's factory aftermarket company that makes all types of race goodies. The Beams Integra features a full Mugen body kit, Mugen rear wing and smaller race mirrors. A real Mugen body kit for the real RSX will run in excess of $3000! Team Beams also raced the car with 17-inch Mugen MF-10 wheels. These lightweight wheels would set you back another $2500, so consider the Tamiya kits sub-$200 retail price to be a bargain!

Tamiya has always been known for its outstanding attention to detail, and with this in mind, they did not disappoint. The Beams Integra kit comes with two full sticker sheets. The first has all of the detail stickers such as headlights, window moldings, badges, etc. This sheet is nice because it is pre-cut. The logo/sponsor sheet is not pre-cut, but it does make up for that by offering both the number 16 and 17 car number options.

It is very unlikely that Acura (Honda) will ever bring the Type R model to the U.S., but with the Tamiya Beams Integra Type R, it will help ease the pain of the sport/import car fanatic, at least for a little while.

INTEGRA TYPE R

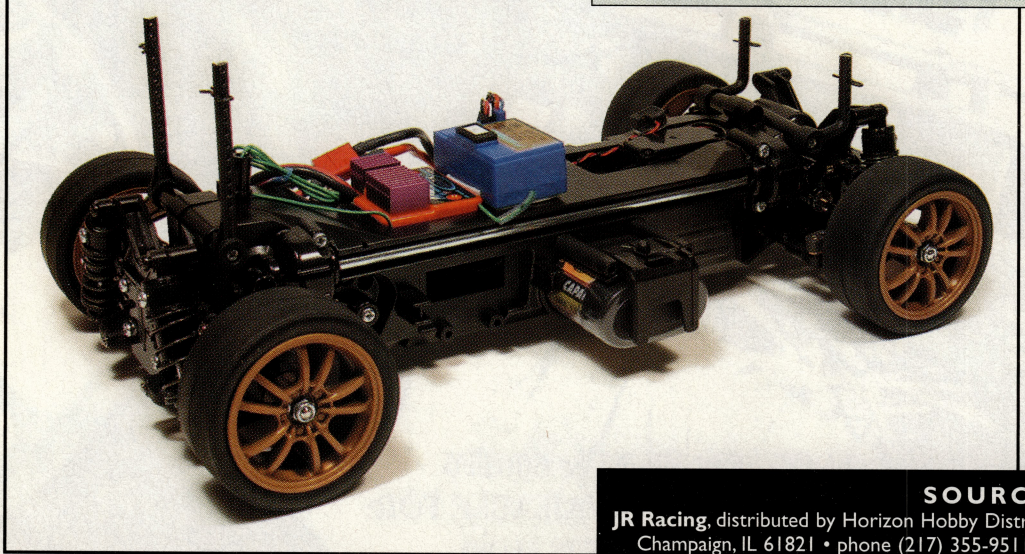


SPECS

Price:	available at $109.99
Length:	18.3in/464mm
Width:	7.5in/190mm
Wheelbase:	10.1in/257mm
Track (f/r):	6.2in/157mm
Weight:	1085g
Gear Ratio:	7.96:1
Chassis:	molded-plastic monocoque
Suspension:	lower A-arm, adjustable upper link
Drivetrain:	shaft-driven 4wd
Diff(s):	nylon planetary-gear
Damping:	plastic friction dampers
Bearings:	metal and plastic bushings
Wheels:	Mugen MF-10 spoke
Tires:	rubber slicks

Accessories included: Mabuchi 540 motor, three-step forward and reverse mechanical speed control

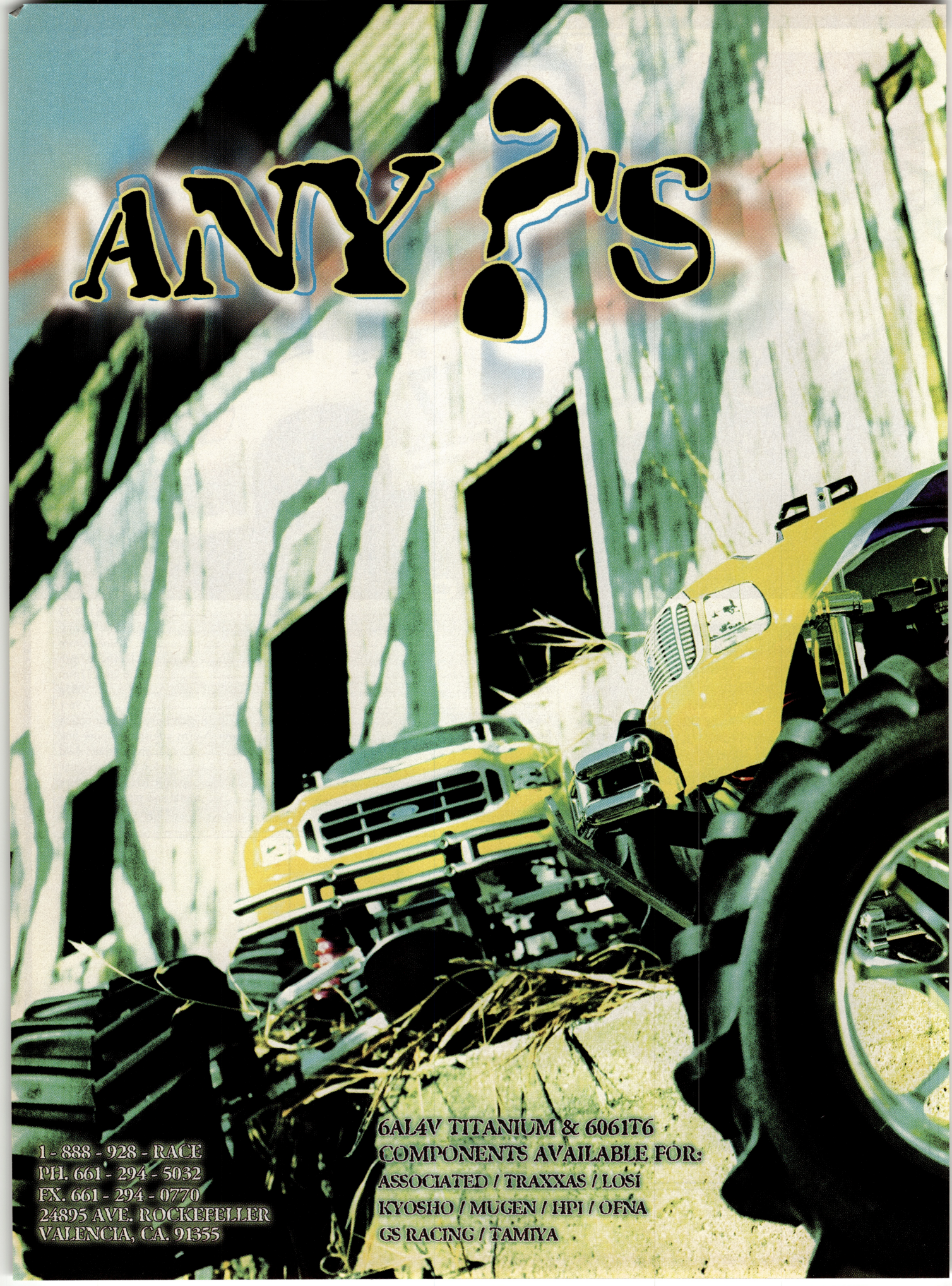
Accessories you'll need: Two channel radio system with two servos, six-cell battery pack, charger, paint for the body, CA glue for the tires, and 12 AA batteries to run the radio system.



SOURCES

JR Racing, distributed by Horizon Hobby Distributors, Inc., 4105 Fieldstone Rd., Champaign, IL 61821 • phone (217) 355-9511

Tamiya America, Inc., 2 Orion, Aliso Viejo, CA 92656-4200 • phone (949) 362-2240; fax (949) 362-2250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TEST DRIVE



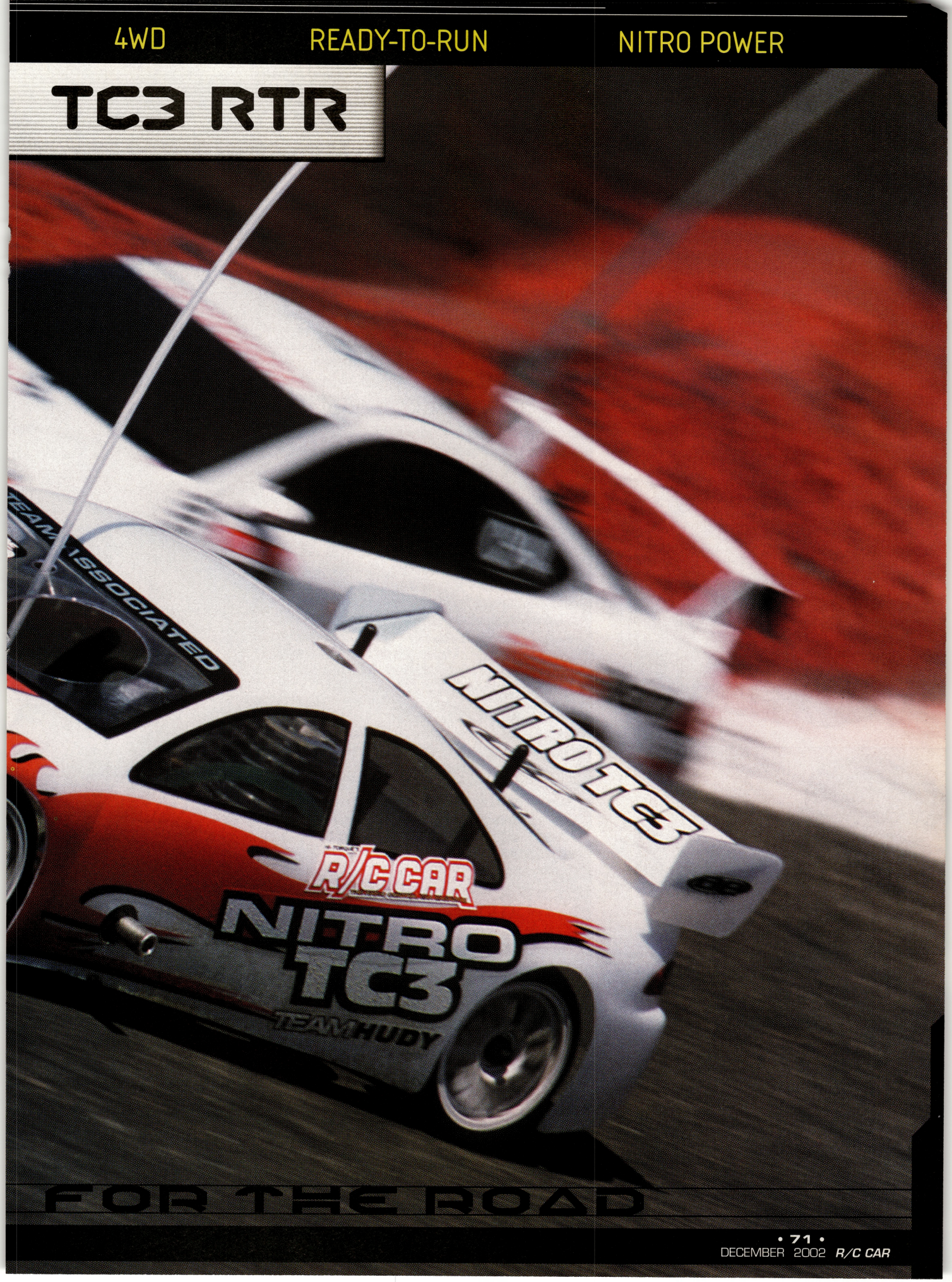
ASSOCIATED NITRO

To think that at one time that Associated was unsure if it should enter the then-burgeoning RTR market is almost ludicrous. The company's RTR GT gas truck and electric T3 RTR truck are among its best-selling products, easily outstripping their kit versions by a wide margin. But it's true; there was a time when the company bigwigs were divided on the subject of RTRs. Thankfully, that's all behind them now, and it's been proven that the addition of the "sport level" RTRs to the company's lineup hasn't hurt Associated's rep as a racing team to be feared.

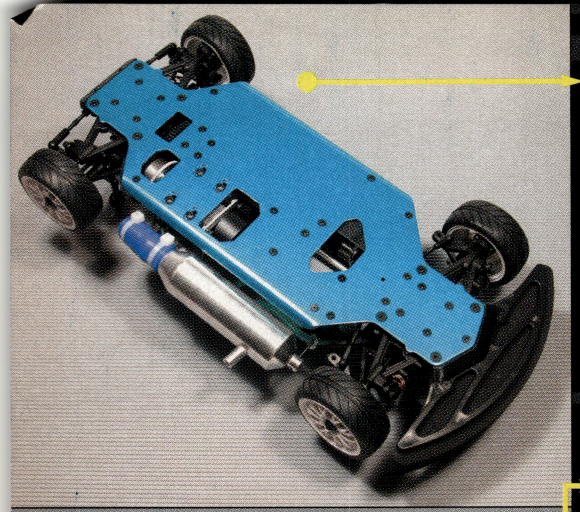
Following on the heels of the existing RTRs is the new Nitro TC3 RTR, which is so closely based on the racing version of the NTC3 that only the most knowledgeable will be able to tell the difference between the two. We finally got our hands on one of these pre-built street machines, and we were anxious to put it through our usual battery of subjective tests. Here's the deal on the new NTC3 RTR.

4WD READY-TO-RUN NITRO POWER

TC3 RTR



FOR THE ROAD



The NTC3 RTR is made for Associated in Taiwan by Thunder Tiger using tooling that is essentially identical to that used to make the parts for the kit version, which is why every part made for the kit will also fit the RTR. The materials are basically the same specification, although you may notice that the finish on the chassis is a little different, and that the plastic suspension pieces seem a bit more flexible than those of the kit version (done to help the suspension survive crashes better). Otherwise, we would challenge anyone to tell the differences between the kit and RTR versions.

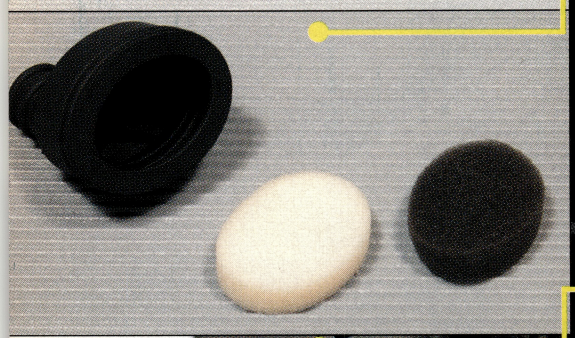
THE LITTLE ENGINE THAT COULD

The biggest new item is the engine. For what we surmise are reasons of legality (see the sidebar), Associated decided not to simply package the RTR with the .15 that has served so well with the GT RTR. Instead, a new .12 pull-start engine was developed jointly between Associated and Thunder Tiger. Although visually similar to the .15, the NTC3 RTR's engine is of less displacement.

Inside, the new mill features ABC (aluminum piston with chrome-plated brass sleeve) construction for increase d durability with improved compression. A pair of efficient ball bearings supports the crankshaft, and a handy pull-starter means that you won't have to purchase a starter box (which runs about $75 or more).

Atop the engine is a rotary-style carburetor that has both high- and low-speed needles for added tuning capability. The high-speed needle, as its name suggests, controls the fuel and air mixture when the engine is running at high rpm. The low-speed or "idle" needle, as it's sometimes called, controls the engine's mixture at idle and when the engine moves from idle to low rpm.



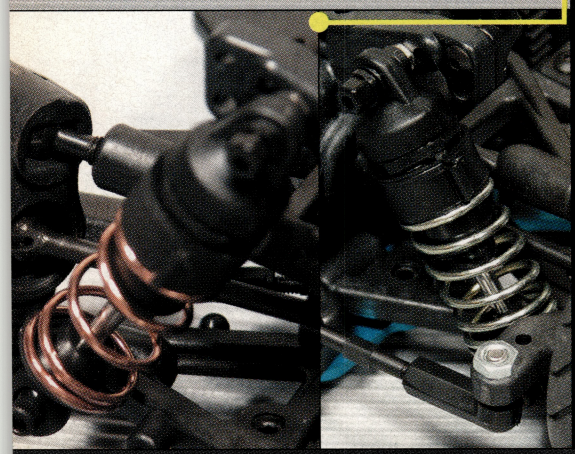


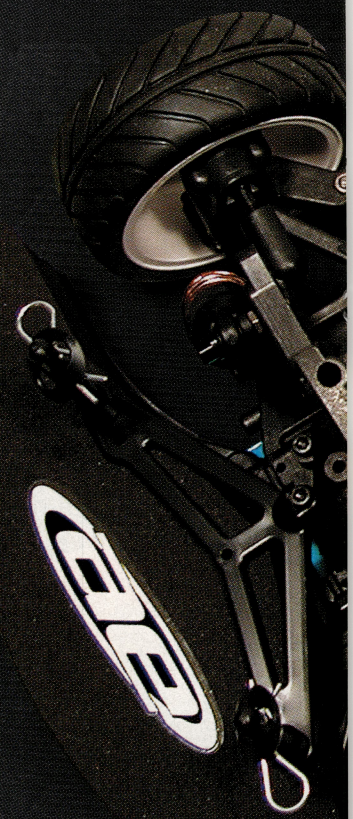
A nice, large-volume foam air filter that has two elements handles the intake chores: the element that is closer to the carb is fine foam, while the outer element is coarser foam to trap larger dirt particles. Once the mixture is combusted, its gases escape through a free-flowing aluminum manifold into an aluminum tuned pipe. The pipe is similar to the optional Factory Team pipe, and provides excellent response throughout the throttle range.

SUSPENSION

The RTR has the same pivot-ball suspension that was designed for the full-race Nitro TC3. Up front are a pair of upper and lower wishbones that allow for full adjustment of the car's camber, width and caster. In back, a similar set of wishbones allows the adjustment of the camber, width and rear toe-in angle.

The only important difference between kit and RTR Nitro TC3s is that the RTR version comes with lower-cost plastic shocks in place of the race kit's threaded aluminum dampers. Otherwise, the pistons, oil and springs of both RTR and kit are identical.





BODY ISSUES

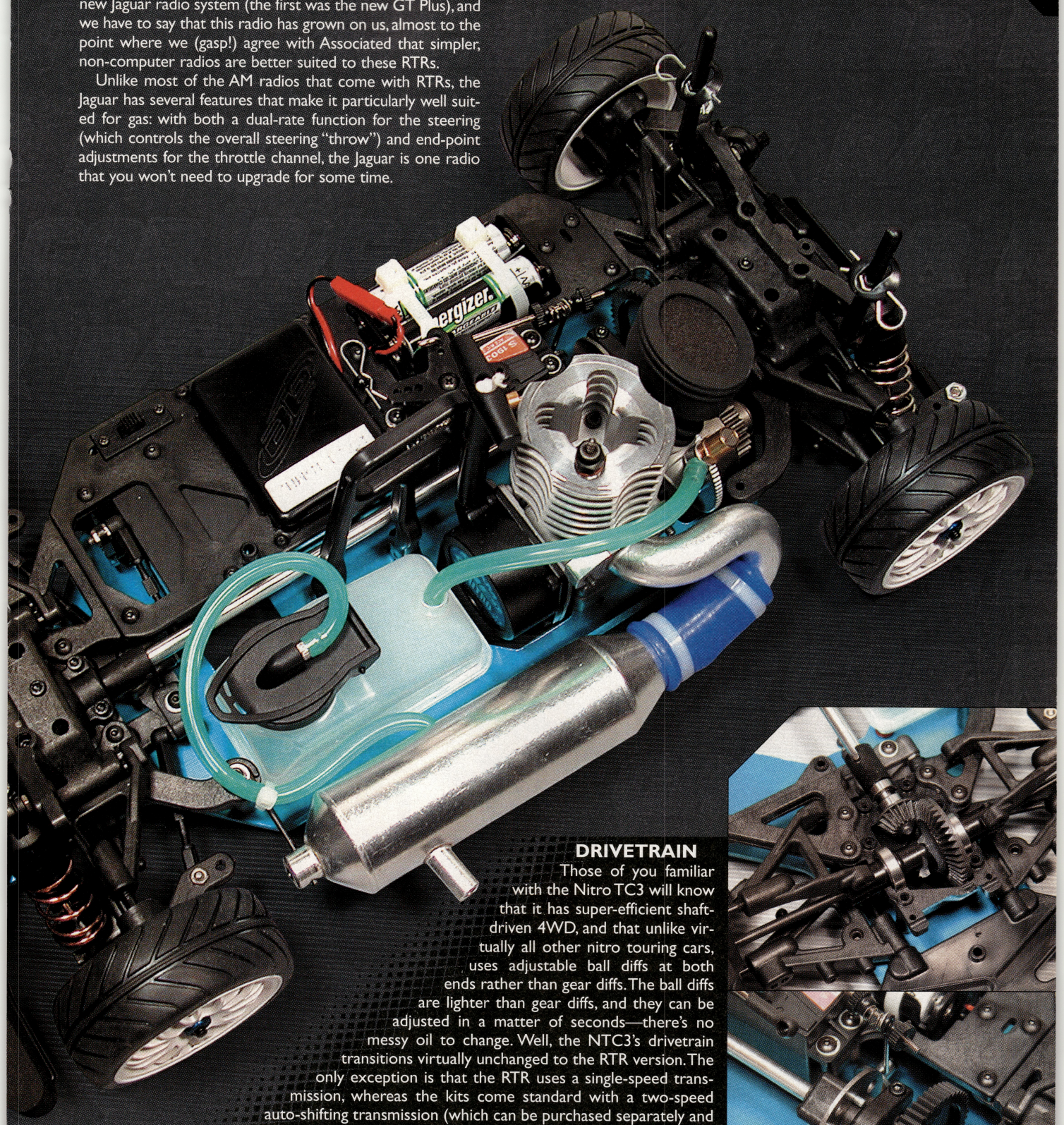
The NTC3 RTR can be had with one of two body types: a Dodge Stratus or Honda Accord. Both types of bodies are available pre-painted in either red or blue schemes, and come pre-trimmed and stickered, ready to mount

NITRO TC3 RTR

ACE IN THE HOLE

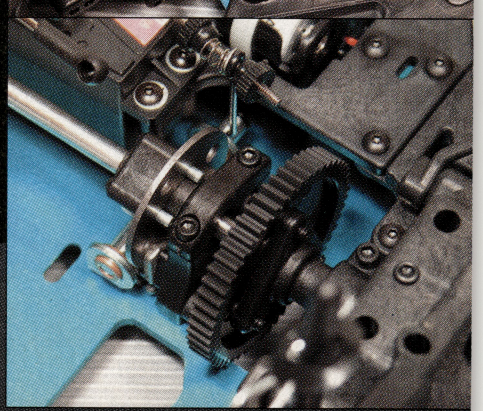
The NTC3 RTR is the second model to come with Ace's new Jaguar radio system (the first was the new GT Plus), and we have to say that this radio has grown on us, almost to the point where we (gasp!) agree with Associated that simpler, non-computer radios are better suited to these RTRs.

Unlike most of the AM radios that come with RTRs, the Jaguar has several features that make it particularly well suited for gas: with both a dual-rate function for the steering (which controls the overall steering "throw") and end-point adjustments for the throttle channel, the Jaguar is one radio that you won't need to upgrade for some time.

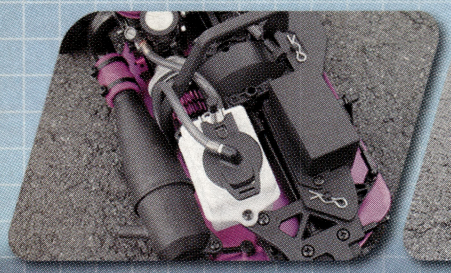


DRIVETRAIN

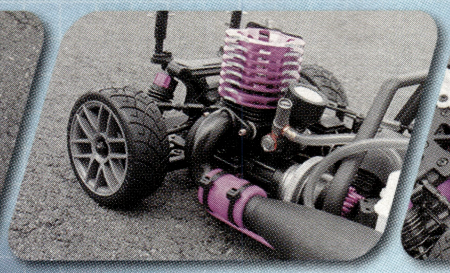
Those of you familiar with the Nitro TC3 will know that it has super-efficient shaft-driven 4WD, and that unlike virtually all other nitro touring cars, uses adjustable ball diffs at both ends rather than gear diffs. The ball diffs are lighter than gear diffs, and they can be adjusted in a matter of seconds—there's no messy oil to change. Well, the NTC3's drivetrain transitions virtually unchanged to the RTR version. The only exception is that the RTR uses a single-speed transmission, whereas the kits come standard with a two-speed auto-shifting transmission (which can be purchased separately and installed in the RTR).



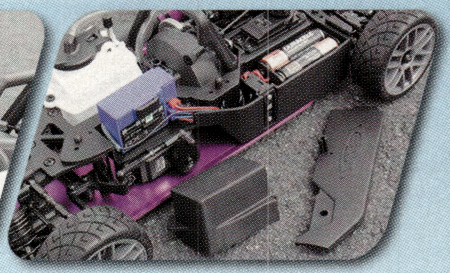
to the chassis. We liked that Associated chose to give us clear windows, which, unlike those of the RTR electric TC3, are legal for racing (and they look better, too). The graphics on both bodies are quite nice, and we plan to run our red and white Accord until it's so thrashed it no longer resembles a car!



4WD SHAFT DRIVE



ALUMINUM HEADER & TUNED PIPE



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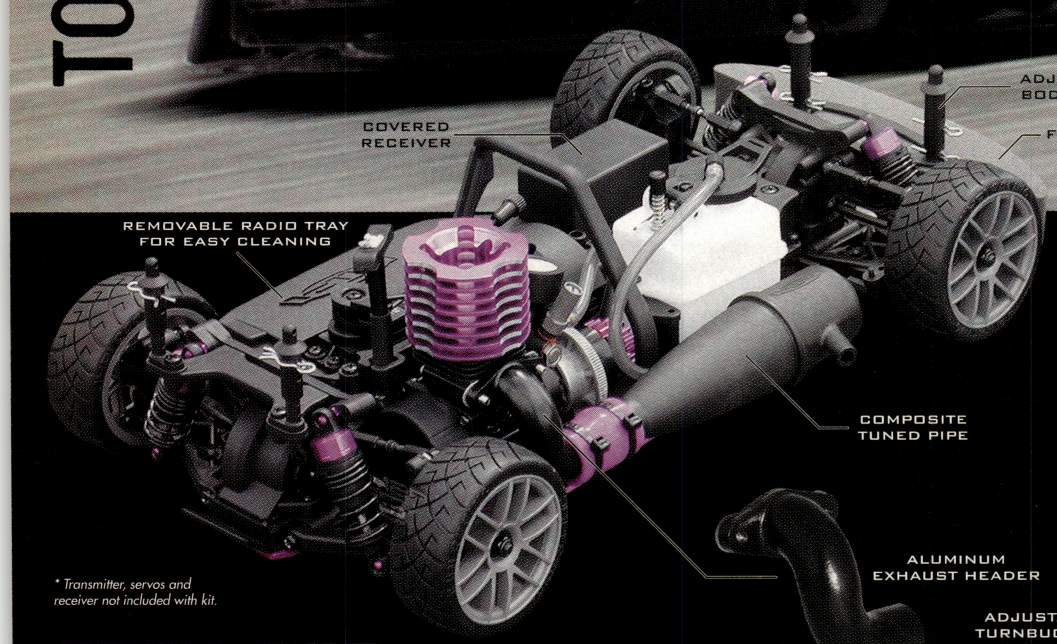

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RACING ENGINE INCLUDED!



The included Nitro Star12R SS pumps out 1+ horsepower for incredible top speed!

* Transmitter, servos and receiver not included with kit.

FEATURES:

- *New Nitro Star 12R SS engine with 1+ horsepower!*
- *2 speed transmission!*
- *High-flow tube header*
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- *Sealed metal bevel gear differentials*
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- *Covered radio tray for easy cleaning*
- *Full set of 18 ball bearings*
- *2.5mm countersunk purple anodized 6065 aluminum chassis*
- *Adjustable turnbuckles*
- *Precut foam bumper*
- *Split-6 wheels with D-Compound X-Pattern Radial tires*

NITRO RS4 3 TYPE SS



NEW #443 Nitro RS4 3 Type SS Kit with Acura RSX Body (200mm)

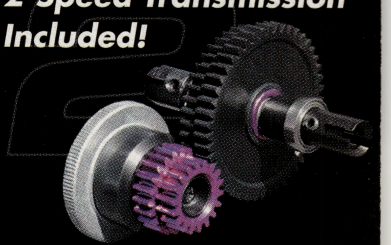
NEW #442 Nitro RS4 3 Type SS Kit with Pontiac Firebird Trans Am Body (200mm)

NEW #444 Nitro RS4 3 Type SS Kit with Saleen S7R Body (200mm)

STREET TUNED

The Nitro RS4 3 Type SS kit is built for street racers looking for a tough car that's loaded with hop-ups and delivers the speed you need to impress crowds. We started with our shaft drive third generation nitro chassis that is well protected from the typical street hazards like rocks and curbs. The suspension is built for simplicity and durability, and you won't be frustrated with rocks getting stuck in your belts... because we eliminated the belts in favor of tough driveshafts. The heart of the RS4 3 Type SS is our brand new Nitro Star 12R SS engine that pumps out more than one horsepower and features a purple anodized aluminum heat sink head and black case to keep it cool, internally it has aggressive porting and true ABC construction with a hard chrome sleeve for durability and performance. A pullstarter makes it easy to start, and our fully adjustable 2 needle rotary carb makes it easy to tune. Next we added an adjustable 2-speed transmission and a high flow header pipe, the result is a car that eats up streets in a hurry. To top it off we give you a choice of two of the hottest street racing bodies available, the hot new Acura RSX and the classic Firebird Trans Am. The "Type SS" is a great kit for street racing, ***give one a try!***

2-Speed Transmission Included!



The included 2-speed transmission shifts on the fly for incredible top speed. It's fully adjustable for shift point and 1st and 2nd gear ratios.

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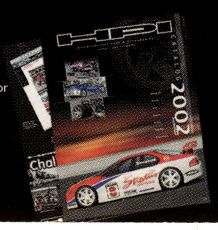

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WHAT'S THIS .12 DOING IN HERE?

We were more than a little puzzled when we found out that the Nitro TC3 RTR would be packaged not with the RTR GT's .15, but with a smaller .12. Why did they do this? Probably to allow the RTR to conform to current 1/10-scale racing rules. But then, why doesn't the GT RTR also have a .12? That's the displacement rule for gas truck, too. Associated doesn't care that the GT RTR's engine is too large for racing; the majority, make that the vast majority, of GT RTRs will never see organized competition—that's not the Associated truck's market. Obviously, Associated predicts that enough Nitro TC3 RTR buyers will show up at tracks to warrant the development of this smaller, race-legal mill. We don't fully agree with this choice, but we could be wrong. Personally, we'd rather have seen the bigger engine here, as the NTC3 RTR's main competitors, the Yokomo GT-4 RTR and the HPI Nitro RS4 3 RTR, have engines with larger displacements (.18 and .15, respectively).

But this review isn't about pining for what we didn't get; it's about testing what comes with the car, and the new AE .12, while not as strong as the GT's .15, is pretty good for its size and cost.

Let us elaborate. The last AE .15 we tested was the one in Associated's new GT Plus RTR. As that test took place just last month, our experience was fresh in our minds. That .15 only needed a couple of tugs on the pull-starter cord to come to life, and when it was running, the factory preset carb was nearly perfect; the NTC3 RTR's .12 took a bit more fiddling.

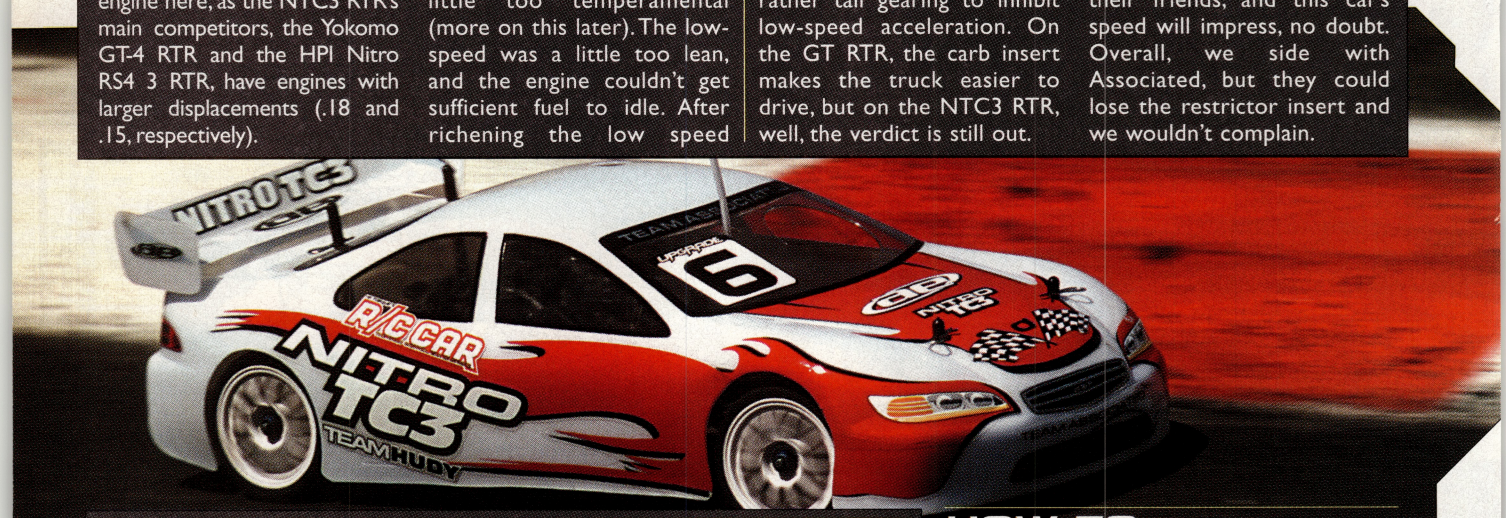
The engine would catch, idle for a second, and then die. The culprit turned out to be the low-speed needle, which, like most Thunder Tiger carbs, seemed to be a little too temperamental (more on this later). The low-speed was a little too lean, and the engine couldn't get sufficient fuel to idle. After richening the low speed slightly, the engine ran, but the idle was too high.

This time, the issue was with the high-speed needle, which was too lean. Okay, not too lean, but too lean for break-in. Associated tells us that a good starting point for the high-speed is about 2-1/2 turns out; we ended up at about 2-3/4 for break-in. This change, plus a further reduction in idle speed using the idle screw, put our engine in the ballpark.

After three tankfuls of fuel had been used, we began to tune for performance. Here's what we learned. Don't try to lean the low-speed too much. We kept trying, and at a point, the engine would just cut out at low rpm from fuel starvation. The carb's plastic insert, which smooths the throttle response, conspires with the rather tall gearing to inhibit low-speed acceleration. On the GT RTR, the carb insert makes the truck easier to drive, but on the NTC3 RTR, well, the verdict is still out.

Accept that Associated has biased the gearing towards high speed, not neck-snapping yank. We would have done the same thing; people want speed. Just look at the HPI RTR Nitro RS4 3: it was geared towards acceleration, and everyone that drove it thought it was slow. It wasn't, it was just under-geared. So here we are complaining about mediocre low-end? There's just no pleasing some people. Oh wait, yes there is: just buy a two-speed!

On the other hand, the NTC3 RTR's top speed was excellent. And if that was the goal, then the mission has been accomplished. As we were testing, we kept thinking of the average person who would buy this car. We know that they'll be busting up and down the street to impress their friends, and this car's speed will impress, no doubt. Overall, we side with Associated, but they could lose the restrictor insert and we wouldn't complain.



TUNING TIPS FOR THE AE .12

Make sure the engine runs cool during the first few tanks, as this is the formative "childhood" period of the engine's life. You wouldn't want a bad seed, would you? Fiddle with the carb to keep the engine below 200 degrees. Use a temp gauge or the old spit test, but watch that temperature. The engine should be pushing a good amount of bluish smoke and unburned fuel.

- As the engine breaks in (this will happen after about four or five tanks), it will begin to run cooler—even though you haven't changed a thing. Why? Because there will be less heat-causing mechanical friction going on inside the engine as the parts wear in to one another.
- After break-in, tune the high speed before you do anything else. This is vital because the low-speed needle on this engine is especially sensitive. Lean the high speed until you hear the engine topping out (but let off the gas when it does reach peak rpm, or you'll detonate it), then pull the car in and richen the high speed by about 1/8 turn. This should be a near-perfect setting.
- Don't tune the low-speed needle solely based on acceleration—not with the way the NTC3 is geared. Instead, drive the car at speed for a few minutes, then pull in and listen to the idle: the engine should drop down to idle almost immediately. If it doesn't, slightly lean the low speed until it does.

HOW TO GET MORE LOW-END PUNCH

With its tall gearing, it's a little tough to get the stock NTC3 RTR to really snap out of the turns. Associated installs a molded plastic restrictor inside the carb that is designed to broaden the powerband and make the car more driveable. We decided to remove the insert to see if we could coax some additional acceleration. It worked; throttle response from down low to the mid range was improved. Not a whole heck of a lot, but enough to make a difference.

To remove the insert, use a very thin blade (such as an X-Acto knife blade) to pry the insert from the carb's opening. Be careful when doing this, as you may wish to re-install the insert for slippery conditions.

NITRO TC3 RTR



REPORT CARD

Test location: Frank's street and Hot Rod Hobbies' permanent road course

Test conditions: Dusty asphalt and clean, high-bite smooth asphalt

Getting running: A

The NTC3 RTR comes almost ready to go straight from the box. You have to install four AA batteries inside the on-board holder (provided), and an additional eight batteries inside the transmitter. The body is pre-mounted and trimmed (you'll have to add the pre-cut side dams to the wing), and we found that the radio's settings were spot-on.

Engine: B

Overall, the new AE .12 is a very good match for this car, and it puts out good power and ran reliably for our test. Subtle complaints such as a low-speed needle that is too sensitive (you can push the needle in and lean the mixture just by touching it with your screwdriver) prevent us from giving an "A" in this category.

Kit tires: C

We don't hold RTRs to the same light as race kits; we know that most cars like the NTC3 RTR will never find their way to a smooth, high-traction track. But we do expect an RTR's supplied tires to work well on regular ol' asphalt—the NTC3 RTR's don't. On pavement, the tires aren't abhorrent, but they exacerbate the torque effect of the in-line engine, causing the car to wiggle under heavy acceleration. We much preferred the HPI Nitro RS4 3 RTR's stock X-pattern tires, or for that matter, the Pro-Line V-Rages that come standard on the Nitro TC3 kits.

Acceleration: B–

The NTC3 RTR is geared for speed, and as such, its off-the-line snap is nothing to write home about. It's a pity, because the new AE .12 is capable of lighting the tires, but most of us would prefer that the car be geared towards speed, and Associated obliged.

Speed: A

The RTR is geared just "in between" the two ratios of the kit NTC3's two speed (2.25:1), so it doesn't quite have the acceleration of the two-speed's first gear (2.45:1), and it doesn't quite have the top-end of the two-speed's second gear (1.92:1).

However, top speed remains very impressive. If you're on a track, you won't really feel the need for a taller ratio

SPECS

Price:	available at $299.99
Length:	14.6 in/370mm
Width:	7.9 in/200mm
Wheelbase:	10.2 in/260mm
Track (f/r):	6.5 in/165mm
Weight:	63.5 oz.
Chassis:	blue-anodized aluminum
Suspension:	ind. double wishbone/pivot-ball links
Drivetrain:	shaft-driven 4WD
Diff(s):	ball diffs front/rear
Damping:	plastic oil-filled shocks
Bearings:	full ball-bearings
Wheels:	white nylon mesh
Tires:	directional tread

Final Score

Highs: This is a Nitro TC3—our pick for the best nitro sedan in our recent Editor's Choice Awards. Some of the parts aren't exactly of the same material (for example, the RTR's suspension has a little more "give" to it), but for all intents and purposes, they are the same car. We also have praise for the new Ace Jaguar radio, which has all the essentials needed for nitro running.

Lows: The stock tires didn't work well on any surface we tried. The engine's low-speed needle adjustment is too sensitive. The engine deserves a two-speed. We understand that it would raise the price of the car, but we want one anyway.

The verdict: For just a bit more money that you'd spend on a Nitro TC3 kit, you can own the RTR version, which includes both an engine and radio system. Oh yes, and the car's been built, the body has been painted, and aside from 12 AA batteries and a glow-plug igniter, there's nothing else to buy. The specifications between the kit and RTR are slightly different, but that really doesn't dilute the package at all.

SOURCES

Associated Electrics, Inc., 3585 Cadillac Ave., Costa Mesa, CA 92626 • (714) 850-9342; (714) 850-1744 fax

Sidewinder Performance Racing Fuel, produced by Morgan Fuels, P.O. Box 311201, Enterprise, AL 36331 • phone (334) 347-3525

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And if you're a nitro fan, Team Losi's **Drake Edition Graphite XXX-NT** kit is based on the one Adam drives himself, including Losi's exclusive molded graphite for better handling, improved acceleration and lower weight. (And if you'd rather drive than build, Losi's got a **XXX-NT Sport Ready-To-Run** too!)

		List	Our Price
LOSA0280	XXX-S Sport RTR w/JR XR2	419.99	269.99
LOSA0845	XXX-NT Graphite Drake Edition	499.99	319.99
LOSA0880	XXX-NT Sport RTR w/XR2 & Mach .15	499.99	339.99

ACCESSORIES FOR XXX-S SPORT RTR

		List	Our Price
DYN1000	Dyna-Sport™ 1500mAh 6-Cell Flat	21.95	16.99
DYN1005	Dyna-Fun™ 1500mAh 6-Cell Ni-Cd	13.99	13.99
DYN4010	Mega I™ AC/DC Quick Charger	41.95	29.95
DYN4045	Vision Peak™ AC/DC Charger	59.95	39.95

ENGINE OPTIONS FOR XXX-NT

DYN6505	.12SPD .12 Engine w/Recoil	119.95	84.95
DYN6507	.12SPD .12 Engine, NPS	109.95	79.95
OPS81265R	Pro .12 Side Exhaust	179.95	109.95
OPS81267R	Pro .12 Side Exhaust w/Recoil	199.99	119.99
OMAP485	Omega XT .12 Side Exhaust, PS	239.99	179.99
OMAP487	Omega XT .12 Side Exhaust	199.99	149.99
OMAP490	Omega XT .12 Rear Exhaust, Off-Road	219.99	159.99

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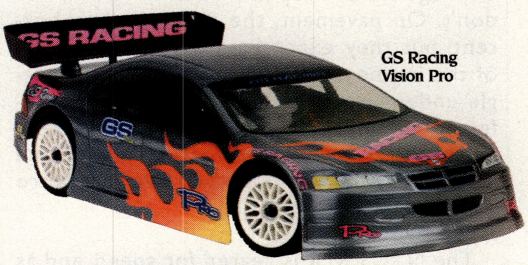
		List	Our Price
GSC411	Vision Pro Nitro Kit	479.99	309.99

ACCESSORIES FOR VISION PRO:

OMAP493	Omega XT .12 Rear Exhaust On-Road	219.99	159.99
DYN1415	5-Cell 1000mAh Ni-MH RX Flat	44.95	35.95
DYN2370	Blue Thunder™ Race Formula 20%, Quart	11.95	10.95
DYN2508	McCoy MC59 Power Plugs (2)	10.95	10.40



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		List	Our Price
DYN4008	Prophet DC Peak Predict Charger	29.99	24.99
DYN4036	Prophet Plus AC/DC Peak Pred. Chgr	59.99	39.99
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JRP212175	XR2 AM Pistol, 2-Z250, 75MHz	129.95	99.95
JRP212675	XR2 AM Pistol, 1-Z250, 75MHz	229.95	169.95
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DYN8103	Rocket Racer: MCFI	199.99	139.99
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		List	Our Price
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INSIDE PUTNAM

Want the fastest stockers? Give Todd Putnam a ring



In many ways, stock-class racing can be more of a challenge than modified. Imagine you're at a race: your chassis feels dialed, you're driving perfectly, and of course, you have the right tires and the best batteries. But you're still two-tenths off the pace. This is the frustration of stock racing. You can have nine tenths of the equation covered, but it's that final tenth— the motor—that can often make the difference.

The mass-produced stockers that you buy at the hobby shop counter are very good, but when you're looking for an edge, it's usually the smaller motor builders that can hook you up. This isn't to say that the big-name motors aren't competitive, but if you want just a little more, the small tuner can provide it for you—and you don't have to experiment with brushes, springs and all the other minutia that goes with stock racing. The tuner does it for you.

One such tuner is Todd Putnam of Putnam Pro-Pulsion in Nassau, New York. Todd built his chops racing on the oval tracks of New England, where his tireless pursuit of the ultimate stock motor eventually caught the eye of one of the biggest names in electric motors, and earned him a ROAR national championship.

We race in a lot of stock-class events, and we have tried what we thought was every combination of brush, spring and trick in the book to gain a bit of extra power. But when we threw one of Todd's tweaked Excessive Force motors on our Fantom Facts Machine dyno, we were amazed at the readings. When we bolted the motor into our Tamiya 414MII and went club racing, we were even more impressed.

After a successful race night, we knew we had to call Todd and find out a bit more about this guy who seems to have the "touch" that all racers wish they had, as well as how he gets so much power out of these motors.

WHO'S THAT KID?

Todd Putnam began racing ovals in the mid '80s, but didn't catch the racing public's eye until he won the '91 ROAR 1/12-scale paved oval stock class using a homemade car. As an unsponsored driver, Todd's accomplishment was made all the more impressive because during this time, the factories also competed in the stock classes.

With a growing reputation as a world-class stock motor tuner, Todd was eventually picked up by Tate McDaniel's Cam motors. Unfortunately, success in modified racing proved to be elusive. As Todd puts it, "There are so many more variables, wires and turns, with mod motors, it's even more challenging." After going from his best year of racing to his worst, Todd decided to go back to what he knew—stock motors—and left Cam. He also vowed to learn everything he could about modified motors.

Todd proved to be a quick study, and soon found himself running for Trinity as a 50 percent driver. At the '92 K/N Winter Blast in Connecticut—which was one of the nation's largest events at the time—Todd TQ'd and won the premier 1/10-scale mod class against a host of Trinity's heavy-

PRO-PULSION

hitters, including Joel Johnson and Jim Dieter, establishing a new track record in the process.

Trinity owner Ernie Provetti, shocked by how this "50-percent" kid was able to beat his A-team, was, to say the least, a little miffed that Todd was able to win against not only his top guns, but his full-time, paid motor tuner. "I would call Trinity and order armatures, really off-the-wall type stuff," remembers Todd, "I was doing what I do best—trial and error."

Shortly afterwards, Todd was hired by Trinity to apprentice under Neil McCurdy—who was himself a recent acquisition of Trinity when his company, RevTech, had been purchased. Neil was sent to all of the "big" races, while Todd found himself traveling to what were viewed as smaller, less-important events.

The turning point in Todd's career came during the '94 Cleveland Indoor Champs. Trinity's top driver and best hope of winning the prestigious 1/12-scale mod class, Joel "Magic" Johnson, was suffering from chronic battery dumping. "Joel couldn't make it past the seven-minute mark, no matter what they tried," recalls Todd. "Ernie called me on the phone and asked me if I thought that I could pull them out of the fire." Todd went and gave Joel one of his motors, and he was able to qualify fourth in the A-main, and ended up leading nearly the entire event until his batteries went soft just a half-lap from the checkered flag.

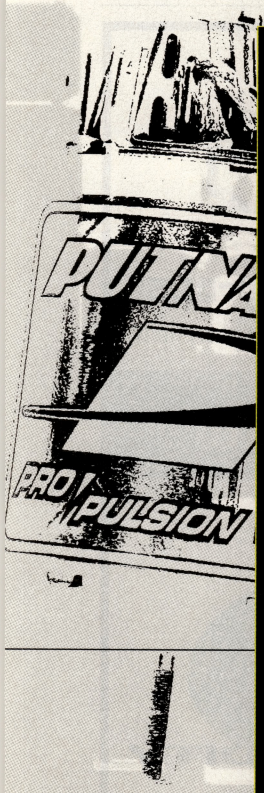
From that point on, Joel insisted that Todd be at every race. McCurdy had been relegated to in-house R&D projects, while Todd had become the traveling motor guru, providing support to all of the team's racing efforts.

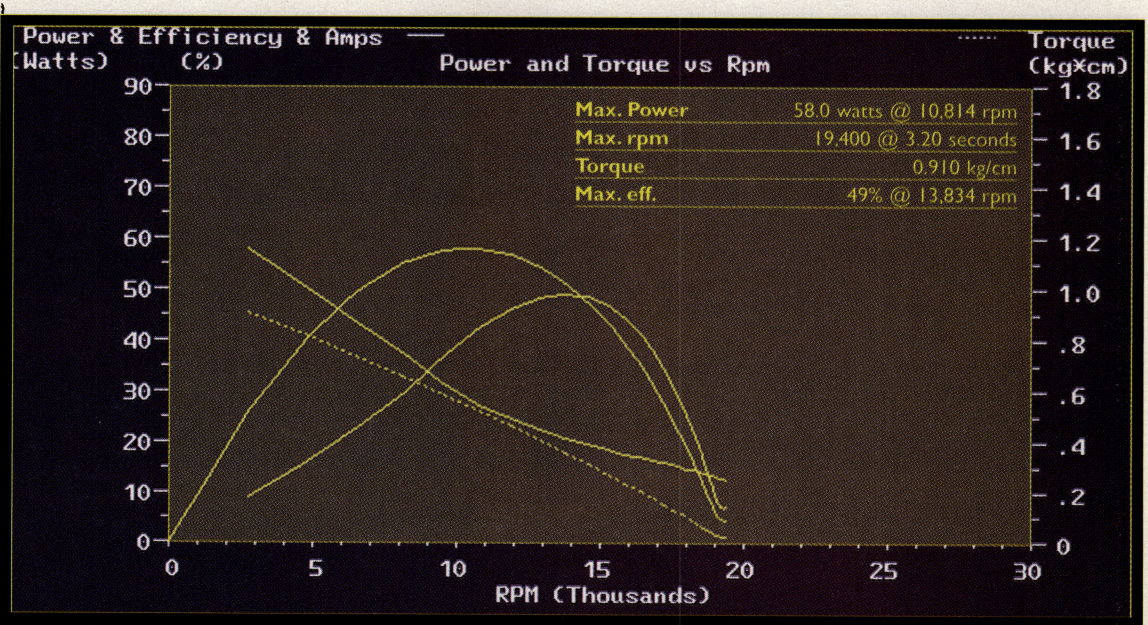
ONE DOOR CLOSES, ANOTHER OPENS

The relationship between Todd and Trinity ended in '95, and Todd went back to helping out his East Coast oval buddies, as well as pursuing his own racing career.

During this period, Todd had been working with Joe York, his contact at Keystone, the leading supplier of electric motor brushes not just to the R/C market but to the much larger power tool industry. Keystone had been developing new brush lubricants that would work better with the new trend in higher-voltage power tools, and it was thought that the R/C market would be the perfect way to test the results.

"We were working with new lubricants that would allow us to introduce more silver to the brush," recalls Todd. "Silver is a great sliding-contact material, but it's a soft metal. Most people think that it's the silver that causes increased comm wear,





TESTING THE EXCESSIVE FORCE

On the dyno, the Excessive Force, which is based on Trinity/Epic's Green Machine 3 motor, basically shattered the previous high marks we had stored from the various stock motors we've tested over the years. As an rpm-based motor, the GM3, as expected, spun high (reaching almost 20,000 rpm!), but with Putnam's tuning expertise, the motor gave up nothing in terms of torque and acceleration.

On the track, the Excessive Force backed up its dyno performance. It accelerated as briskly as the torque-based motors we've tested, such as the Trinity P2K2, but felt smoother. As anticipated, top speed was nothing short of amazing—feeling more like that of a 19-turn spec mod than a stock motor.

What surprised us even more was how well the commutator held up. After one practice run, two heats and a main, the comm still retained its finish and color, with almost no perceptible wear.

INSIDE PUTNAM PRO-PULSION

but in fact, it's not the silver, it's the materials that you have to add to the brush to regain density so that the brush doesn't wear out in one run. More silver increases motor performance, but because of the additives, comm wear is greatly accelerated. With this new lubricant, we were able to add more silver, yet comm wear was minimized."

By '97, demand had forced Todd to make these proprietary brushes available to the racing public, and he formed Putnam Pro-Pulsion. And in addition to offering three varieties of brushes (each of which has color-coded shunts for easy identification), Putnam Pro-Pulsion sells complete hand-tuned stock and modified motors.

Todd also has his own race team. In fact, his drivers won every modified class at the prestigious '02 Snowbird Nationals—19-turn mod, 6-cell open/pro, 4-cell mod and 19-turn sedan road course. Not bad at a race that had 670 entries. NASCAR Winston Cup driver Tony Stewart, an accomplished R/C racer, also drives for Putnam.

WHAT GOES INTO A PUTNAM STOCK

Smaller motor companies buy "teardowns," the basic motor components, from one of the industry's main suppliers (Trinity, Reedy, Orion, etc.). With stock motors, the small company is chiefly relegated to fiddling with the brushes and springs, but Putnam's motors receive a host of tweaks that make them spin like a modified. Here's what he does.

1. First, the magnets are zapped with electricity to increase their field strength. This is also known as saturating the magnets.

2. The zapped magnets are then gaussed (tested for strength). Putnam only takes the best cans; the others are sold off to smaller OEM companies for use in sport models such as RTRs and mail-order "combo" packages.

3. The armatures are then re-balanced (Todd drill balances, which removes mass, rather than epoxy balancing, which adds it). We asked Todd about the legality of this process, as it's pretty clear in the ROAR rulebook that you aren't allowed to re-balance stock armatures. Todd replied that the issue of re-balancing at big sanctioned events is moot, as these races only use handout motors. Most club tracks only follow the rules of the sanctioning bodies to an extent, and he views the re-balancing as just another tuning aid, like changing brushes or springs.

4. The brush hoods are aligned to provide the most contact area between the brush faces and the comm.

5. The commutators are re-trued. Todd likes to start the comms at 0.295 inch—most stock comms are 0.300 and larger.

6. Each motor gets a set of new Putnam Pro-Pulsion brushes. Todd likes to install a high silver content brush on the motor's positive side, while a medium silver brush is installed on the negative side.

7. He then installs a stiffer red spring to the positive brush, and a softer green spring on the negative brush. This helps the motor make power without causing too much mechanical drag.

8. Each motor is then thoroughly run-in to ensure that the brushes are seated properly.

SOURCES

Putnam Pro-Pulsion, P.O. Box 179, Nassau, NY 12123 • phone (518) 527-8439



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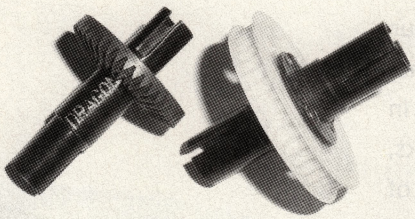
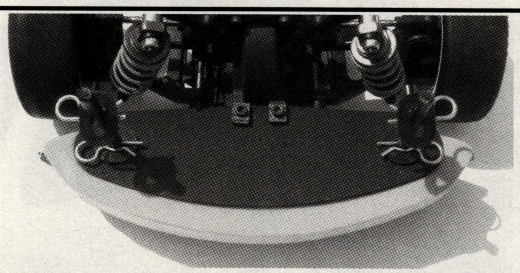
Sunday, July 28, 2002 Vol 1.1

DRAGON R/C'S SOLID DIFF'S DOMINATE



Dragon R/C's "NEW" SOLID DIFFERENTIALS for the Associated TC3 & Losi XXX-S win 2 out of 3 Touring Car classes at the ROAR 2002 Electric Paved On-Road Nationals held at MHOR R/C Raceway in Aurora, Colorado on July, 26-28, 2002. These diff help you pull the front end through the corners but help maintain control when breaking.

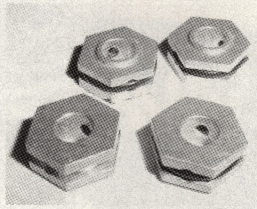
DR-260 Solid Diff Losi XXX-S $ TBA - Available Late Sept.
DR-360 Solid Diff for Assoc. TC-3 $ TBA - Available Late Sept.



NEW XXX-S FRONT BUMPER

Increases strength and durability of XXX-S's front end. Special Kydex pieces sandwich the foam bumper for increased strength and support of the front body mounts.

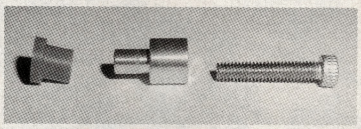
DR-255 Front Bumper Brace $ 19.99



T & E-MAXX DRIVE HUBS w/O-RINGS - BACK IN STOCK

Tired of digging drive hubs out of rims? Tired of looking for the drive pins that falls out of the axle? These Drive Hubs w/ O-Rings eliminate the problem of lost axle pins & hubs stuck in rims. The O-Ring captures the drive pin to keep them where they belong and keep the drive hub on the axle.

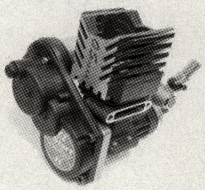
DR-130 T & E-MAXX O-Ring Drive Hubs - Blue $25.99



NEW SHOCK BUSHINGS

Tired of sloppy shock bushings? These newly designed bushings eliminate the unnecessary play for the upper shock mount.

DR-250 LOSI Shock Bushings (All XXX) $ 19.99
(Set 4 - Available in Red, Blue or Black)
DR-350 ASSOC. Shock Bushings (B3 & T3) $ 19.99
(Set of 4 - Available in Red, Blue or Black)
DR-351 ASSOC Shock Bushings (TC3 & NTC3) $ 19.99
(Set of 4 - Available in Red, Blue or Black)
DR-151 TRAX. Shock Bushings (T or E MAXX) $ 12.99
(Set of 8 - Available in Red, Blue or Black) (not pictured)



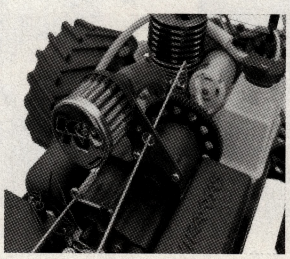
EZ-START CONVERSION FOR O.S .12 & .15 CV ENGINES

Tired of pulling again and again to start your engine? With the E/Z Start conversion you are ready to go with the push of the button. All you need with this kit is an E/Z Start unit with One-Way Bearing and an O.S .12 or .15 CV Style Engine.

DR-165 E/Z Start Conversion $ 67.99

25% MORE AIRFLOW FOR T-MAXX ENGINES

Increase the air intake for T-Maxx's by 25% over standard paper or foam air filter. K&N Air Filters allows more air to get to the engine while keeping the dirt out. The Dragon R/C Air Filter system moves the filter away from the engine to allow it to capture cooler air and reduce vapor lock. Knowing the demands of the average T-Maxx owner Dragon R/C has firmly mounted the filter so that it can survive the worst crashes. Dragon R/C's K&N Air Filters are available for the stock T-Maxx with a .12 or .15 engines, and is also available for most Big Block .21 conversions.



DR-170 K&N Air Filter Kit

DR-170 K&N Air Filter w/Mnt. $39.99
DR-172 Big Block .21 K&N w/Mnt. $49.99
DR-171 K&N Air Filter Recharge Kit $ 7.99

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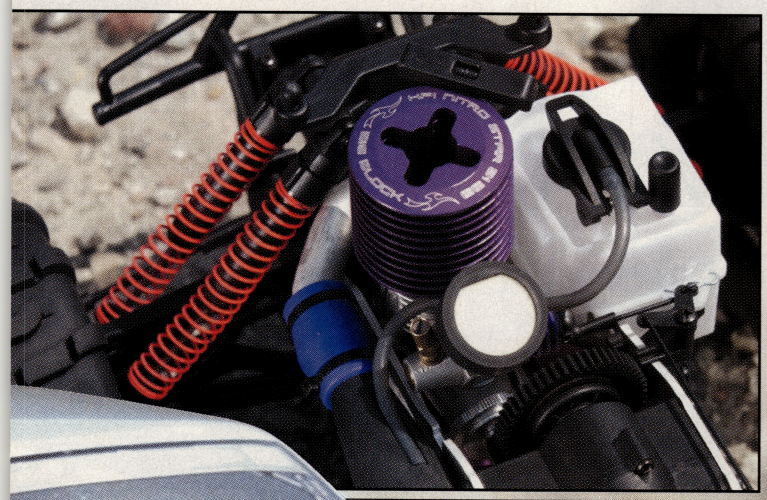
First Look:

A monster truck to sooth the beast

When we heard that HPI was working on an all-new monster truck, we begged like small children to get a sneak peek. HPI executives were gracious enough to hear our cries and let us come down to their headquarters in Foothill Ranch, California, to get the first look at the truck we so anxiously wanted to see. We can honestly say that our first glimpse of the new Savage 21 only served to whet our appetites. The massive wheels, long chassis and enormous .21 size engine caused us to stare in amazement of what might be the next biggest thing. The eight oil filled shocks, a concealed radio tray and HPI's proven shaft drive system were just some of the features we noticed right off the bat. Read further and find out what other cool attributes we discovered while being entertained by the gurus at HPI.

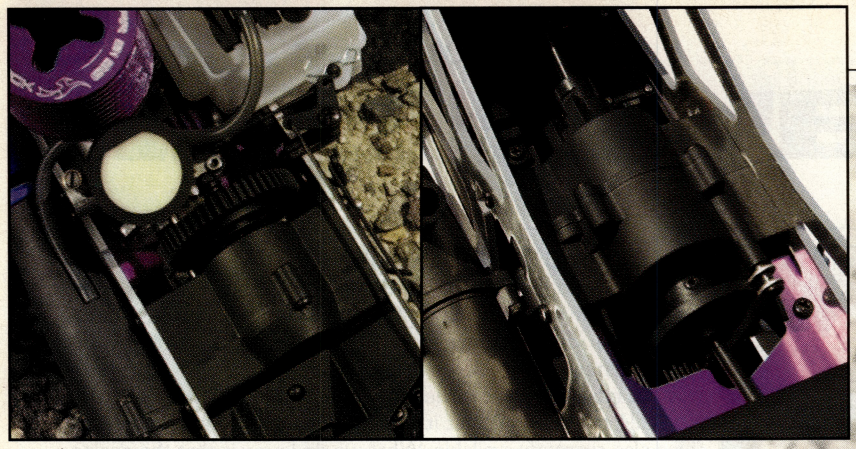


HPI Savage 21



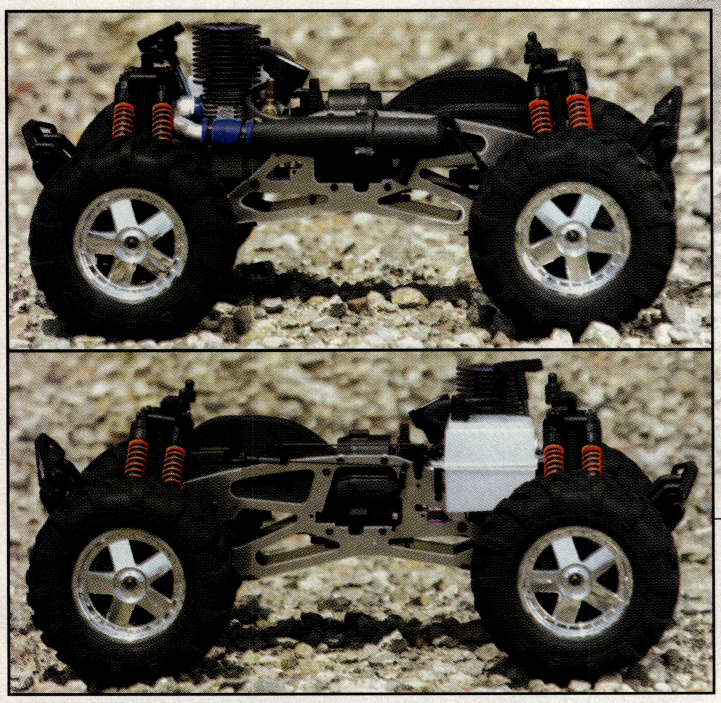
WHEN IN DOUBT, GO BIG!

When we found out the new truck was outfitted with a powerful rear exhaust Nitro Star .21 engine, we were anxious to see what type of horsepower it was capable of putting out. Unfortunately, the truck we photographed was a prototype that was not ready to be run. The HPI reps we spoke to said the truck is a real screamer and that it should be as fast or faster than anything else currently available. What we do know is that the engine is tuned through a two-needle 7mm carburetor and is constructed with an ABC chrome sleeve for added durability. The engine contains ball bearings for gains in rpm and efficiency. An aluminum high-flow header and dual chambered composite pipe are mated together for a perfect combination of raw torque and impressive top speed. On top of the impressive engine, you will find an aluminum heatsink head that helps keep running temperature down, and also scores really high in the coolness factor. This strong powerplant is strapped to the chassis with cast aluminum, heavy-duty engine mounts, so absolutely nothing is coming loose.



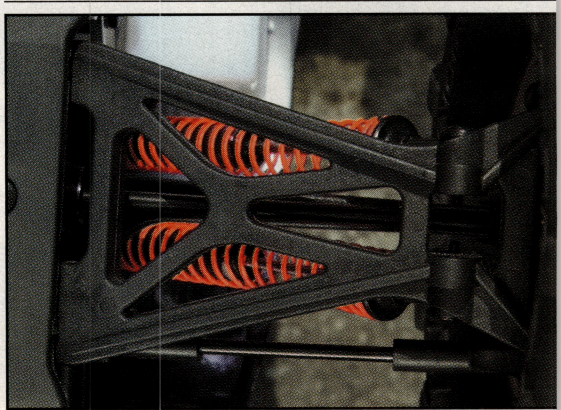
HEAVY METAL 4WD

The Savage 21 incorporates a two-speed transmission that sends power to all four wheels via two steel driveshafts. The tranny is fully adjustable, so the point at which the truck shifts into second gear can be tuned to obtain maximum performance. To withstand the power of the meaty .21 big-block engine, the gears inside the transmission are all steel. The differentials also house hardened metal gears for added reliability. Ordinary dogbones would easily bend with this kind of horsepower, so HPI installed really thick bones that laugh at ordinary monster truck horsepower. And when slippery surfaces call for extra traction control, the silky smooth drivetrain has an adjustable slipper clutch for extra tuning possibilities. As an added benefit to future Savage owners, the 4WD truck comes with expensive rubber-sealed ball bearings instead of less expensive and restrictive bushings. All this power is shut down by an adjustable, oversized disc brake that should have no problems stopping the Savage. Although the out-of-the-box Savage doesn't have reverse, HPI will offer an optional "plug-in" reverse module.

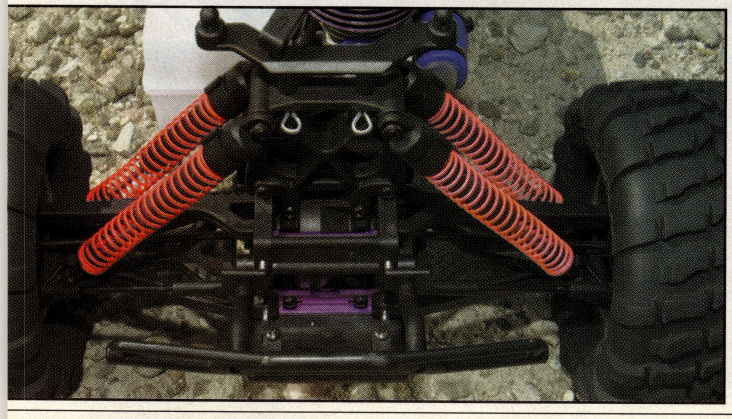


BEEFED-UP BACKBONE

A truck of this size requires a chassis that not only supports its weight, but also will withstand doses of abuse time and time again. The rigid aluminum TVP (Twin Vertical Plates) chassis addresses these issues and goes a step further: it uses the engine as cross support (also known as a stressed member) which eliminates all torsional flex. The rigidity of the chassis allows the suspension to do its thing. With the plates running almost the entire length of the truck, there should be no concerns about its durability. The chassis is also aided by front and rear skid plate bumpers that take on obstacles with ease.



HPI Savage 21

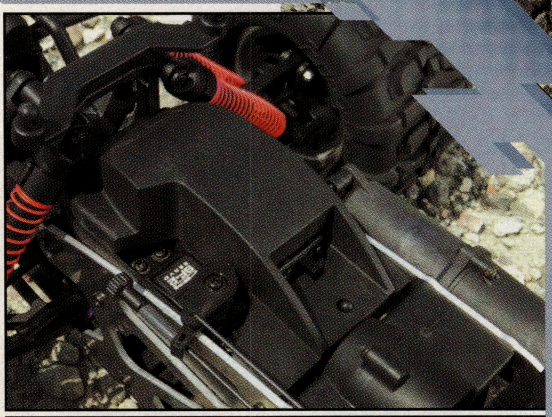


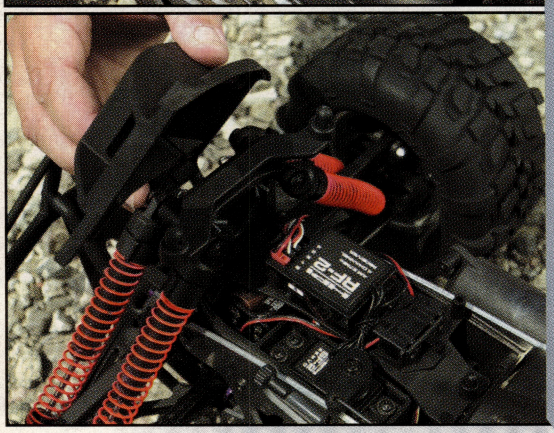
TERRAIN-TAMING SUSPENSION

It appears that HPI wanted to design a truck that surpasses its competitors in almost every way. The track of the Savage is nearly 17 inches wide, which is almost two inches wider than that of the original T-Maxx. The length of the truck is a whopping 21 inches, which is also close to two inches longer than Traxxas' original monster. Even the eight long-stroke oil-filled shocks are longer and larger than shocks we have been accustomed to seeing. The beefy suspension arms are really thick and have been strengthened in high stress areas for increased durability. The arms pivot on stainless steel hinge pins that are secured to purple anodized aluminum braces. With the extra width and travel of the suspension, the truck can easily fit a soda can under any of its tires without any other tire coming off the ground. That is nearly five inches of travel. This truck should go over anything—especially since it has the power to do so.

HPI Savage 21







ADDITIONAL FEATURES

HPI definitely knows the trends of the ever-changing market of R/C cars. They have seen success with all of their ready-to-runs, and look like they have a real winner in the new Savage 21. The designers have addressed issues other manufactures overlooked. The pre-painted body is cut out and has the stickers applied, so prepping the Savage for its first outing is simple and fast. A Futaba-designed three-channel TF-4 radio system and high-torque servos are installed, and do not require any last-minute adjustments. The radio gear is enclosed in a sealed radio box for protection of the valuable electronics. A large 160cc fuel tank with primer will provide long run times and hours of fun. HPI knew the aftermarket support was huge for the T-Maxx and that everybody has one, so they made sure that the wheels, tires and bodies specially made for the T-Maxx are compatible with the Savage. Like we said earlier, the staff over at HPI has seemingly thought of everything.



THE WAIT IS ALMOST OVER!

HPI would not give us an exact date of when the Savage would be available. They are currently testing several prototypes and are trying to refine the truck they hope will shatter the market. According to their website, the truck should start shipping to hobby stores across America sometime early in November, which is perfect, because it is just in time for the holidays. We will receive our Savage 21 for January's issue of *R/C Car*, so look for an in-depth review of this new beast in that issue.

SOURCES

HPI Racing, 70 Icon Street, Foothill Ranch, CA 92610 • phone (949) 753-1099; fax (949) 753-1098

1/10 & 1/8 SCALE www.NewEraModels.com

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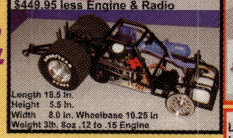







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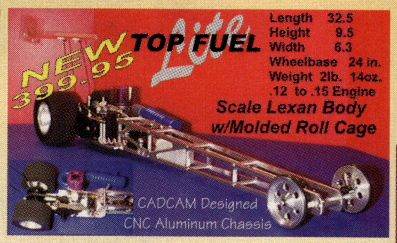
DRAG CARS





T/E-MAXX CNC Aluminum Upgrades Silver or Blue





1/10 & 1/8 SCALE UPGRADES



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Nitro Rustler and Stampede CNC Aluminum Upgrades



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Many More T-MAXX Upgrades CALL

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TRM341	REAR BULKHEAD BRACE	$10.95	
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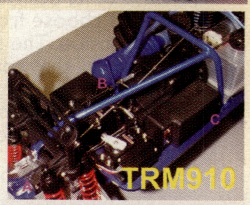
TRM343XL	WHEELIE BARS EXTENDED	$29.95	
TRM345SD	STEERING SERVO SKID PLATE	$16.95	
TRM346XL	CVD EXTENTION FOR TRM110XL	$14.95	
TRM318	FRNT BODY POSTS W/COLLAR	$12.00	
TRM318P	FRT BODY POST W/PLATE & COLLAR	$22.50	
TRM318HP	FRT BODY POST W/PLATE & HOLES	$27.50	
TRM319	REAR BODY POSTS W/PLATE & COLLAR	$22.50	
TRM319H	REAR BODY POSTS W/PLATE & HOLES	$27.50	
TRM319G	GRAVE DIGGER REAR BODY MOUNT POSTS ONLY W/COLLAR	$19.50	
TRM319GP	GRAVE DIGGER REAR BODY MOUNT W/PLATE & COLLAR	$27.50	
TRM401	BODY DETAIL KIT (ROLLBAR, WIPERS, MIRRORS)	$19.95	
TRM402	BRIGHT WHITE LIGHT KIT	$29.50	
TRM407	SPRINGS (8) SUPER DUTY	$9.95	
TRM407B	SPRINGS (8) SUPER DUTY BLUE	$14.95	
TRM450	WHEEL ADAPTERS 19mm	$29.95	
TRM450N	WHEEL ADAPTERS 17mm	$24.95	
TRM451S	STAR BILLET ALUM WHEELS	$159.95	
TRM451H	CENTER LINE BILLET ALUM WHEELS	$159.95	
TRM452H	BILLET ALUM WHEELS W/ 1/2" OFFSET	$159.95	
TRM452S	BILLET ALUM WHEELS W/ 1/2" OFFSET	$159.95	
TRM500	CLUTCH NUT FOR .21 CONV	$14.95	
TRM500RG	CLUTCH NUT FOR OS .21	$14.95	
TRM501D	CLOSE HEADER FOR .21	$24.50	
TRM502	UNIVERSAL FOR TRM107	$5.00	
TRM503	RIPPLE PIPE FOR .21	$39.95	
TRM505	BOLT ON HEADER ADAPTER FOR OS .21 RG (ANY HEADER)	$19.95	
TRM507	BELLCRANK LINKAGE FOR .21	$16.95	
TRM510	FUEL TANK .125CC FOR .21	$26.95	
	E-MAXX ONLY		
TRE101L	TUBE UPPER CHASSIS $179.95	$149.95	
TRE910	E-MAXX ROLL BAR W/BRACE	$39.50	
TRE280	E-MAXX *AIRCOOL* Motor Mount	$19.95	
TRE281	E-MAXX Battery Hold Down (2)	$28.95	
TRE103	E-MAXX 3.2mm Alum. Chassis	$39.95	
TRE107	E-MAXX Extended Main Chassis	$49.95	





.18, .21, .25 UPGRADE ENGINES CALL









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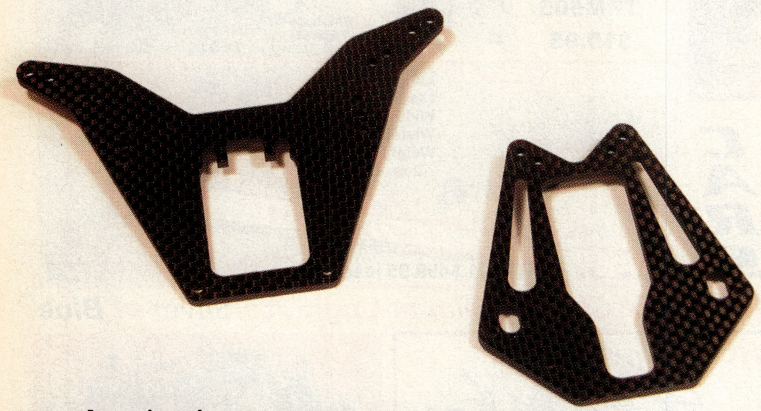
GAS TRUCK GO-FAST GOODIES

RC10GT hop-up buyer's guide

Team Associated has been very instrumental in the popularity of nitro off-road truck racing. With the introduction of their first GT over a decade ago there has been overwhelming after-market support for their established racer. With each passing year there have been a growing number of hop-ups through both Associated and manufactures that support the truck. We felt that this multiple champion should receive recognition through a mini buyer's guide for its popularity and role in developing a rapidly growing nitro truck class.



Associated
FACTORY TEAM GRAPHITE SHOCK TOWERS

Associated's graphite items for the GT add strength and rigidity while managing to reduce unwanted weight. The thick front shock tower will be able to endure significant amounts of abuse because of its design. With multiple anchoring holes, it also allows racers to choose from a number of shock locations for fine tuning suspension. The same graphite material is also used for a rear shock tower that compliments the front tower with its own wide range of adjustment.

7216 FT Shock Tower Graphite $12.00
7656 RR Shock Tower Graphite $17.00





FACTORY TEAM SPRING SETS

To be competitive at different tracks and in varying weather conditions racers must adjust their suspension. One of easiest ways is to change the shocks springs for a desired feel. Here is a sample of the different springs that Associated carries.

1580 Truck Front Springs $11.99
1582 Truck/Buggy Rear Springs $11.99

FACTORY TEAM TITANIUM TURNBUCKLES

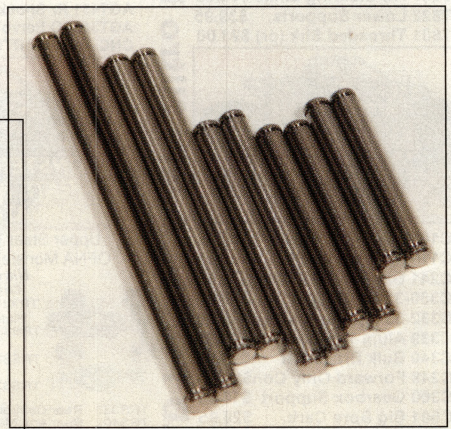
Upgrading any steel items to titanium will not save weight but more importantly increase strength. Associated's cool blue titanium turnbuckles accomplish both. The trick blue anodizing matches the truck's chassis while giving racer's a sense of security when their truck crashes. These turnbuckles are must have for the serious GT owner.

1280 GTT2T3 Turnbuckle Set $30.00

POLISHED HINGE-PIN SET

Hinge pins play a crucial role in the smoothness of suspension movement. Associated's pins have a polished surface that has been treated for minimal amounts of friction. The hinge pins are extremely durable and will outlast the stock set they replace.

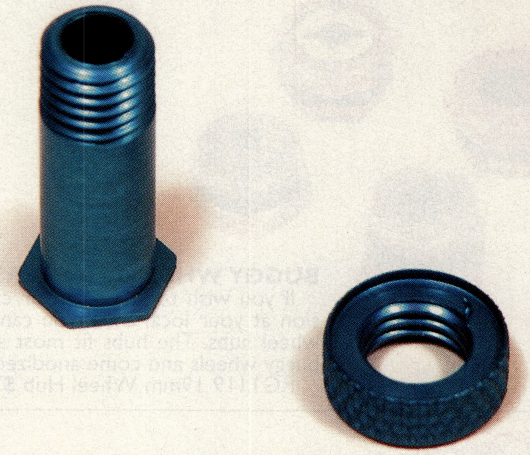
1620 GT10TT2 Hinge Pin Set $18.00

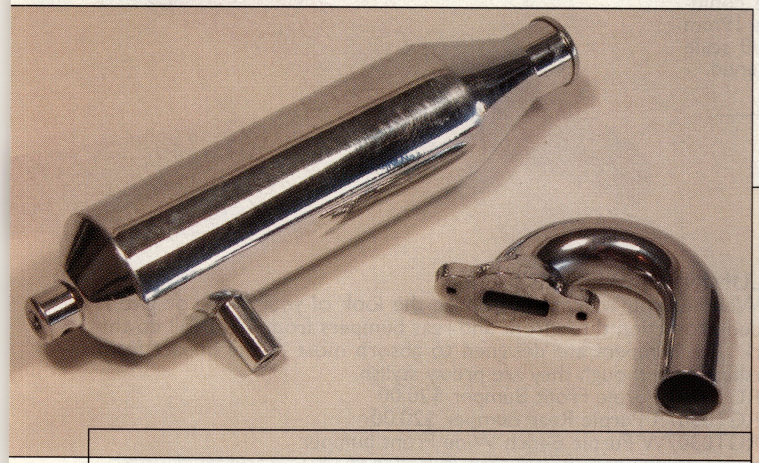


FACTORY BLUE SERVO SAVER POST

Go for the blue with Associated's Factory Team blue post and nut for the GT's built-in servo saver. This is basically the same aluminum tube and knurled nut that you already have, just anodized blue for that factory appearance.

9156B Servo Saver Tube/Nut $6.50





FACTORY TEAM TUNED PIPE AND MANIFOLD

To increase the airflow and lower the running temperature of your nitro engine use Associated's chrome manifold. The header works great when matted with the chrome-tuned pipe that is also available. The two increase the abruptness of the bottom-end as well as allow the engine to breathe easier and work more efficiently.

7749 P/S Manifold Chrome $20.00

7741 GT Chrome Tuned Pipe $37.00



HIGH AIRFLOW FILTER

Associated offers an air filter kit for improving the performance of your race engine. The kit comes complete with necessary hardware for easy assembly. The high airflow filter will help aid engines that seem finicky and are hard to tune.

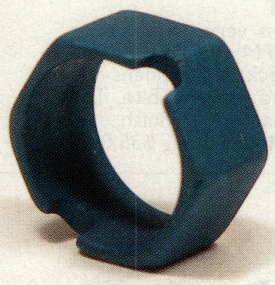
7705 GT/NDS Air Filter Kit $7.50



FACTORY TEAM BLUE HEATSINK HEAD

The first thing most racers change on their engines is the stock cylinder head. The stock piece usually restricts the engine in that its dissipation of the heat in rather inadequate. The wide-finned heads from Associated will lower an engines running temperature, so much that the engine can be slightly leaned out for gains in horsepower and fuel efficiency.

29061 AE 15 Blue Cylinder $44.99



ALUMINUM BRAKE ADAPTER

The demands of nitro racing require brakes with superior stopping force. To address these demands an aluminum brake adapter is available through Associated. The adapter will perform without being affected by the stress and heat from hard driving.

7561B GT/NDS Brake ADPT Aluminum $5.00

GAS TRUCK GO-FAST GOODIES

GPM

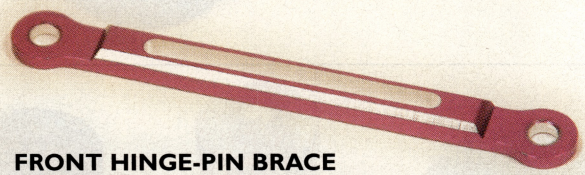
GPM has quite a large line of products that makes it possible for owners to give their trucks a complete makeover from the front bumper to the rear trailing arms. The products fit and finish rivals the best we have seen in the industry. Take a close look at these eye-catching items that are currently available from GPM.



BUGGY WHEEL ADAPTERS

If you wish to stand out or cause some confusion at your local track you can use these 19mm wheel hubs. The hubs fit most standard 1/8 scale buggy wheels and come anodized and hardened.

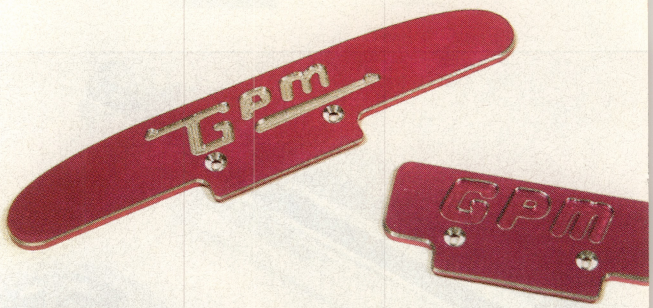
RGT119 19mm Wheel Hub $35.00



FRONT HINGE-PIN BRACE

Personalizing your R/C has never been easier than with the wide variety of parts from GPM. The purple front hinge pin brace accents the front of the truck in addition to being very durable.

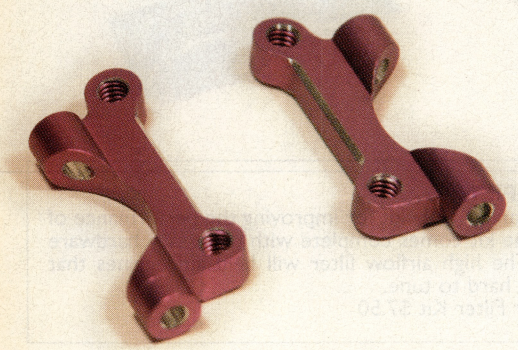
RGT0907 Purple Front Hinge Pin Brace $10.00



ALUMINUM BUMPERS

Whether you want to customize the look of your truck or give it added protection these front and rear bumpers from GPM will do the trick. The bumpers are designed to absorb most of the impact from crashing even though they are pretty stylish.

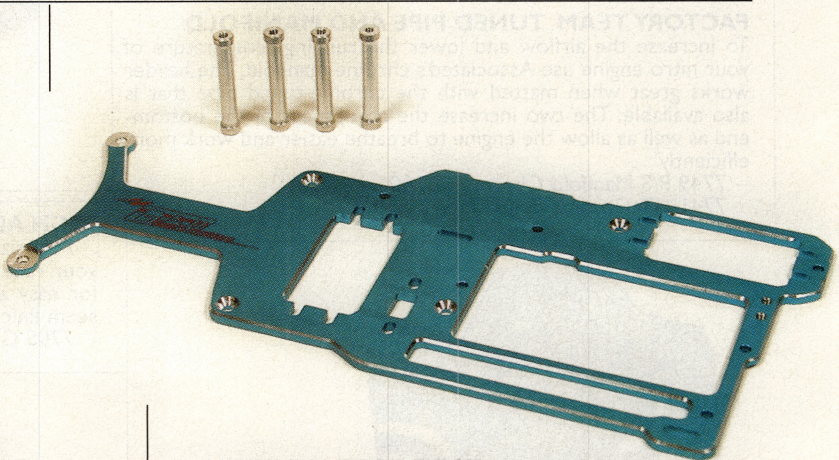
RGT0307 Purple Front Bumper $20.00
RGT0307R Purple Rear Bumper $20.00
RGT0307W Purple 6-inch Wide Front bumper



REAR SUSPENSION MOUNT

Changing the rear pivot block is very useful tuning option that is often overlooked. GPM offers a 0 degree rear suspension mount (pivot block) that stiffens the rear end for gains in traction and forward bite. The handsome piece is anodized for that factory finish.

RGT1007M Purple Rear Susp. Mount 0 deg $35.00



ALUMINUM UPPER DECK

For added rigidity and reduced side-to-side flex there is GPM's GT top plate. The anodized plate is cutout for servos and radio gear for easy installation. The drilled holes are also perfectly aligned for securing the plate.

RGT14R Blue Top Plate $30.00



UPGRADED TIE-RODS

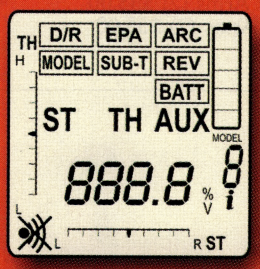
Replacing the stock steel tie rods with these tie rods from GPM is a definite improvement. The tie rod set comes with hardened plastic ball-style ends, which reduce play for precise steering without any slop. The stainless steel balls rotate effortlessly for a slippery smooth feel.

RGT16006 Blue Tie Rod Set w/Hd Ball ends $35.00

MX-3

THE ULTIMATE MAXX UPGRADE

3 Channel FM



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Features include:
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5 Model Memory
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and much more.



90510FM system w/ 2-94102Z servos Dry Batt.
90511FM system w/ 1-94102Z servo Dry Batt.
90512FM system w/ 1.94102Z servo & 1-96305Z Dry Batt.
90513FM system w/ 1-94051Z servo & 1-96316Z ESC Dry Batt.
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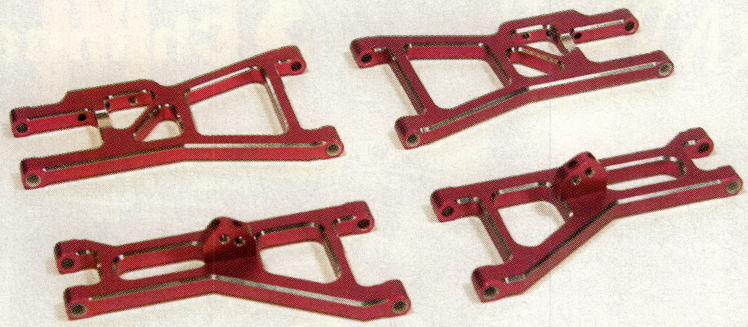
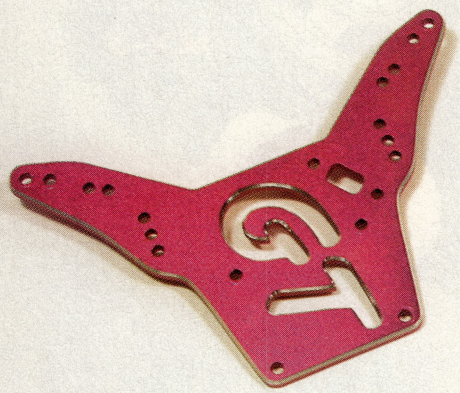
GAS TRUCK GO-FAST GOODIES



ALUMINUM SUSPENSION ARMS

For the ultimate in durability GPM provides these 6061 aircraft grade aluminum trailing arms. They should not bend or break, providing hours of fun. A front and rear set are both available separately. For the rear arms there is also optional lower shock mounts made from the same high-grade aluminum. The mounts are resilient and rigid providing accurate suspension articulation.

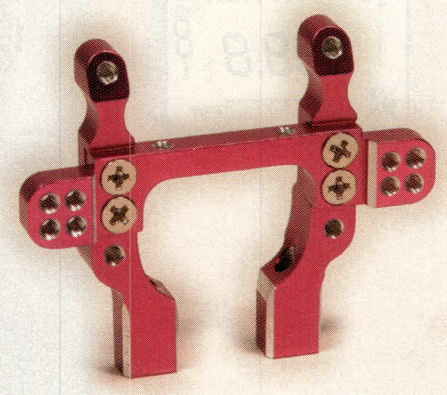
RGT5507 Purple Front Arms (2) $35.00
RGT5607 Purple Rear Arms (2) $35.00



ALUMINUM SHOCK TOWERS

These rear shock towers are made from high-grade aluminum for superior strength. The towers have been anodized purple to look as sharp as any other top shelf pieces. The first tower has a large hole near the top for an MIP stinger exhaust system. The other rear tower has GT etched in it, which is pretty unique and rather cool.

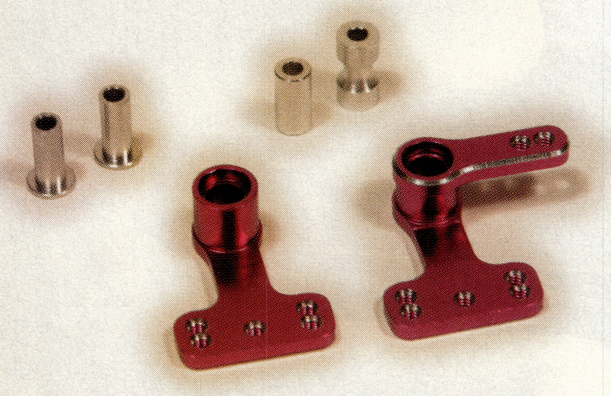
RGT3007 Purple Rear Shock Tower $20.00
RGT3007M Purple Rear Shock Tower MIP $25.00



ALUMINUM REAR BULKHEAD

GPM's rear bulkhead fits perfectly in place of the stock piece it replaces. Save the original hardware because this bulkhead uses all of the same screws. Like the other items shown this piece is anodized brilliant purple.

RGT3207 Purple Rear Bulkhead $25.00



BALL-BEARING STEERING KIT

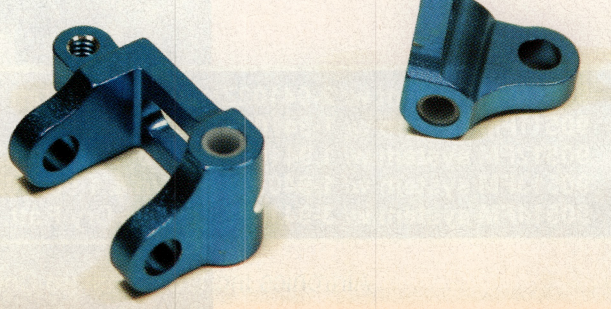
This steering assembly is for a show stopping truck that deserves all of the goodies one can afford. The set comes with a set of bearings and is machined precisely, so that the fit and finish is practically perfect.

RGT4807 Purple Bearing Steering

BUSHING FRONT C-HUBS

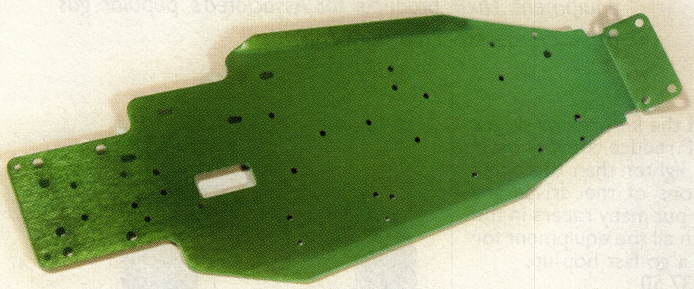
GPM's bushing front C-style hubs are direct replacements for the stock GT hubs. The hinge pins pivot on Delrin bushings that will last a long time. The anodized blue hubs are real strong and will sustain moderate abuse.

RGT1906 Blue Bushing Front C Hubs $25.00



Hardcore Racing Components

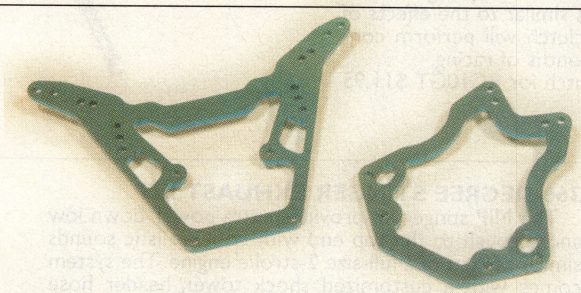
Hardcore's line of billet aluminum and titanium hop-ups has set the benchmark for the aftermarket with excellence in both craftsmanship and durability. The parts also shout "Bling, Bling" because of their polished finish that is unrivaled in the R/C industry. Not only do their pieces look good and withstand serious abuse but they also improve a truck's racing performance.



TITANIUM CHASSIS

Hardcore's beefy titanium chassis works great for someone who wants nothing but the strongest chassis available. The chassis underside is counter sunk so that none of the screws below the platform get knocked off when the truck bottoms out. All of the stock hardware will fit directly onto Hardcore's chassis with ease. The chassis is available in blue, silver, purple, and green.

HCR-0200 GT Team Chassis (color) $135.00



TITANIUM SHOCK TOWERS

Titanium is the metal of choice for weight savings and brute strength. Hardcore offers a front and rear shock tower for the GT that is made from the expensive material. The shock towers should not break or bend under the stress of even the worst crashes. They are available in Hardcore's signature colors blue, silver, purple and green so that individuality and a custom look can be obtained.

HCR-0201 GT F Shock Tower $38.00

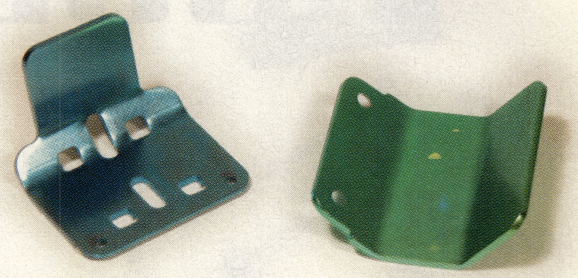
HCR-0202 GT R Shock Tower $45.00



HYPER BRAKE DISC

For the ultimate in stopping force Hardcore offers an extra thick brake disk. The disk is cutout for additional cooling, so that consistency is maintained throughout long main events. The thickness of the disk should last several hours of use before it needs to be replaced. It is also available in Hardcore's standard colors.

HCR-0203 GT Hyper Brake Disc $25.00



TITANIUM SKID PLATES

Nose and tail heavy landings can be detrimental to the chassis. Hardcore set out to add style and strength to these high impact areas with their front and rear skid plates for the GT. The titanium plates might get scuffed up but will keep on taking the punishment as long as you're driving your truck.

HCR-0204 GT F Nose Skid $32.00

HCR-0205 GT R Skid Plate $42.00



BILLET ENGINE MOUNT

For added looks and a solid mounting platform Hardcore offers titanium motor mounts for the GT. The mounts are available in blue, silver, purple, and green. The blocks are for non pull-start engines only.

HCR-0206 GT Motor Mount $39.00



TITANIUM NOSE-TUBE MOUNTS

A chassis can sometimes get tweak from the impact of nose first crashes. The tweak chassis causes serious handling problems that are often overlooked. For the strongest nose tube mounts available on the market, check out Hardcore's titanium set that fights off unwanted bending.

HCR-0207 RC-10GT Nose Tube Mounts L/R Set $28.00

GAS TRUCK GO-FAST GOODIES



MIP

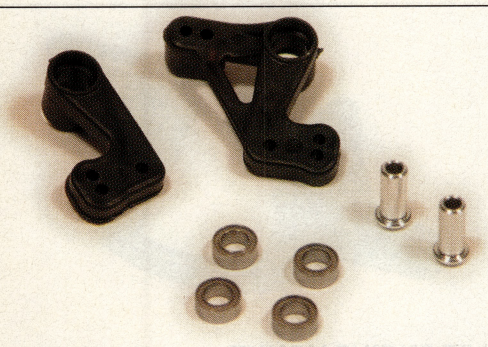
We have come to expect nothing but top quality products from MIP. Their clutches, CVDs (constant velocity drives), nitro boost bottles and team tools have always been for use in racing vehicles that require the absolute best equipment. Their products for Associated's popular gas truck are as expected from MIP ideal.

SHINY CVD KIT

For many years racers have dumped the kit provide drives for MIP's CVDs. The CVDs from MIP reduce rotating mass significantly because they are often lighter than the bulky kit provided ones. The steel versions of the drives are durable replacements that have help put many racers in the winners' circle. The drives come with all the equipment for easy installation. They are definitely a go fast hop-up.

1197 Shiny CVD Kit RC10 GT $37.50





4-N-1 CLUTCH KIT

When the stock clutch of the GT wears out a worthy upgrade would be MIP's 4-N-1 clutch assembly. The 4-N-1 clutch is fully adjustable for various conditions and is as tough as nails. A specially designed extension spring and ball bearings allow changes similar to the effects of a slipper clutch. The clutch will perform consistently for several months of racing.

3012 MIP 4-N-1 Clutch for RC10GT $11.95

BALL-BEARING STEERING KIT

There is no substitute for a smooth precise steering system. MIP has a ball bearing steering kit that slides with ease. The glass filled nylon and Teflon sealed ball bearings eliminate side-to-side play and bump steer. According to MIP the kit is maintenance free and is much stronger than the stock system. This system is once again a fine example of the quality that belongs with the MIP name.

3013 BB Steering for RC10GT $24.95

360-DEGREE STINGER EXHUAST KIT

The MIP stinger kit provides extra power down low and through to the top end with cool realistic sounds similar to that of a full-size 2-stroke engine. The system comes with a customized shock tower, header hose and ties for securing the system to the truck. The 360 Stinger kit for the GT has polished anodized surface that compliments the performance aspect of the system nicely.

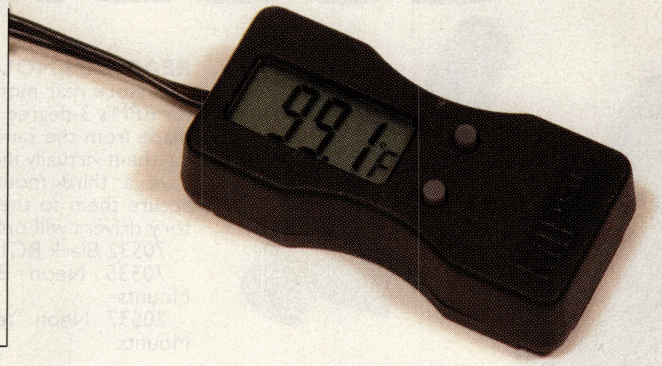
3002 360 Stinger Kit for RC10GT $58.95



ON-BOARD TEMP-2 GAUGE

The temperature of an engine is crucial information for tuning. An excessively hot engine will usually seem powerful but will not have a long life. With MIP's on-board temp gauge users can look at accurate temperature readings as the engine changes. The unit has a loop-style probe sensor that can be used on any make of engine. The large LCD screen is easy to read and is protected by a new Lexan splashguard. An ON/OFF button saves battery life while the truck is not in use.

2001 On-Board Temp2 Gauge $48.00



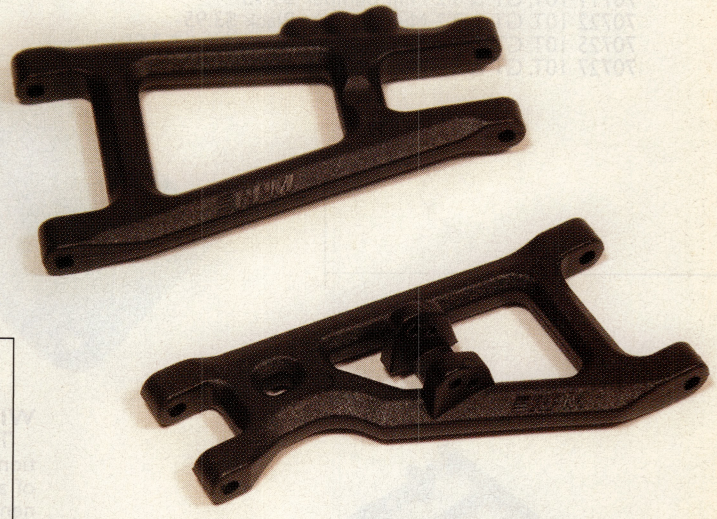
RPM

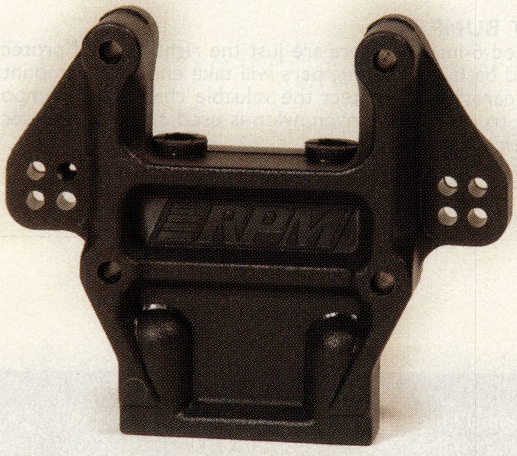
Every time we get an RPM catalog we are amazed to see how many new items have been added. This year's catalog was no different with all kinds of items available for Associated's popular GT. Whether you want parts for show or go they have got you covered.

SUSPENSION ARMS

If you break an A-arm you should take a close look at a set from RPM. These arms are said to be the most durable arms available in addition to wearing better. The arms are molded from a tough black nylon that flexes on impact but retains its shape so that suspension geometry is maintained.

70302 10T, T2 &GT Rear Arms $9.95
70402 10T, T2 &GT Front Arms $9.95





REAR BULKHEAD

RPM's blend of resilient nylons is used in producing one of their toughest products, a GT rear bulkhead. The bulkhead is beefed up in high impact areas so that it will take crash after crash.

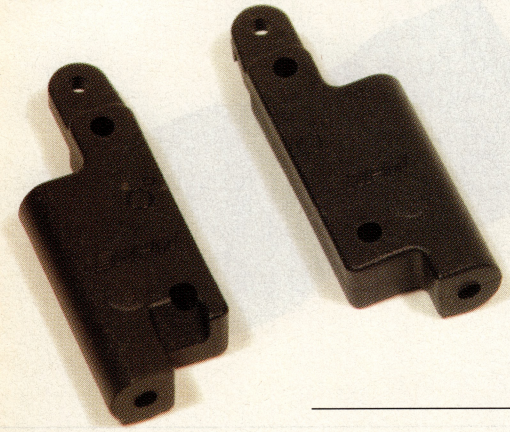
70352 Rear Bulkhead for GT $8.95

REAR HUB CARRIERS

RPM has a set of durable rear carriers that directly replace the GT's stock carriers. The set comes separate or with high-speed bearings that should reduce some of the rotating drag. The set is designed to be more efficient and claims to be quite a bit stronger. The bearings are also sold separately to accommodate 3/16-inch diameter axles.

70232 Rear Carriers w/bearings $29.95
70272 10 & GT Carriers w/o bearings $7.95
70280 Bearings for 3/16-in. dia. axles $18.95

GAS TRUCK GO-FAST GOODIES



REAR ARM MOUNTS

The stock rear mounts can be swapped out for RPM's 3-degree mounts. The mounts are made from the same high-grade nylon making them virtually indestructible. The mounts have a third mounting hole which helps secure them to the rear bumper. Some factory drivers will only use these mounts.

70532 Black RC10GT 3 Deg. Mounts
70535 Neon Blue RC10GT 3 Deg. Mounts
70537 Neon Yellow RC10GT 3 Deg. Mounts

ZERO-DEGREE ARM MOUNTS

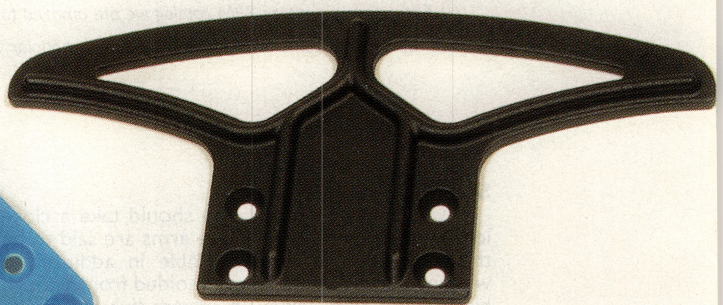
As an added tuning tool RPM specially designed zero degree toe-in blocks for the GT. The blocks allow the truck to sweep through high-speed corners without the rear-end losing traction and breaking loose. The blocks increase straightaway speed but should only be used for oval racing or on high bite blue-groove off-road tracks.

80932 GT Zero Deg. Rear Toe-in Blocks $5.95

FRONT MINI BUMPER

For all the punishment you can dish out try one of RPM's mini bumpers. The bumpers take the pain and beg for more. What's really cool is that they come in three different colors.

70711 10T, GT & T2 Mini Bumper $3.95
70722 10T, GT & T2 Mini Bumper Black $3.95
70725 10T, GT & T2 Mini Bumper Neon Blue $ 3.95
70727 10T, GT & T2 Mini Bumper Neon Yellow $ 3.95

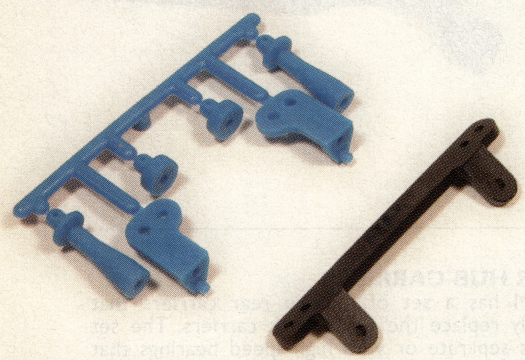




WIDE FRONT BUMPER

These oversized 6-inch bumpers are just the right form of protection for backyard bashers. The bumpers will take enormous amounts of abuse while managing to protect the valuable chassis and components within the truck. RPM's proven nylon is used, so there's no second-guessing their durability.

70332 Wide Front Bumper for GT Black $8.95
70335 Wide Front Bumper for GT Blue $8.95



BODY MOUNT KIT

If you desire to move the body mounts on your GT to avoid the hood cowl or rear shock towers, than RPM's mounts are just for you. The mounts can we widened up front and either widened are narrowed in the rear. The set comes with two front and two rear body posts, one front chassis mount, and two reversible rear shock tower mounts.

80542 RC10T, T2 & GT Body Mounts Black $6.95
80545 RC10T, T2 & GT Body Mounts Neon Blue $6.95
80547 RC10T, T2 & GT Body Mounts Neon Yellow $6.95

SOURCES

Associated Electrics, Inc., 3585 Cadillac Ave., Costa Mesa, CA 92626 • (714) 850-9342; (714) 850-1744 fax
GPM, distributed by Hobby Etc., 90 West Pearl St., Nashua, NH. 03060 • phone (603) 883-4919
Hardcore Racing, 24895 Avenue Rockefeller, Valencia, CA 91355 • phone (661) 294-5032; fax (661) 294-0770
MIP, 830 W. Golden Grove Way, Covina, CA 91722 • phone (626) 339-9007; fax (626) 966-2901
RPM, 14978 Sierra Bonita Ln., Chino, CA 91710 • (909) 393-0366; (909) 393-0465 fax

SPY

MICRO REVERSIBLE

1/24 SCALE

HIGH PERFORMANCE

1/10 SCALE

LOW COST



THE SECRET IS OUT...
THERE'S A SPY IN OUR MIDST

NOVAK'S SMALL SPEED CONTROLS AND RECEIVERS FOR SMALL CARS

actual size



SPY SPECS & FEATURES:

- Case Size: 1.12" x 0.95" x 0.48"
- Weight: 0.51 oz. (w/wires & connectors)
- Input Voltage: 4-7 cell FWD/REV operation
- BEC: 5 Volts/0.5 Amps
- On-Resistance: 0.019Ω
- Pre-wired Micro (HPI-type) battery/motor connectors
- One-Touch Set-Up
- Polar Drive Technology
- Radio Priority Circuitry
- Thermal Protection
- Smart Braking
- Reverse Disable

XXL SPECS & FEATURES:

- Case Size: 1.29" x 1.11" x 0.53"
- Weight: 0.48 oz.
- 2 Channel AM or FM receiver
- Available on 27 MHz and 75 MHz
- Low-voltage operation for glitch-free reception
- External battery slot and DSC connection
- Solid State Reverse Voltage Protection
- Meets FCC radiation limits
- Ultra Narrow-band ceramic filter for 10 KHz channel spacing
- Compatible with all popular radio systems

actual size



NOVAK

NOVAK ELECTRONICS, INC.
18910 Teller Ave. • Irvine, CA 92612
TEL: 949.833.8873 • FAX: 949.833.1631
www.teamnovak.com

Product features and specifications are subject to change.
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XXX NO COMPROMISE

JUST BECAUSE YOU DON'T WANT TO BUILD, DOESN'T MEAN YOU SHOULDN'T HAVE THE BEST.

SPORT RTR

Each Team Losi ready to run machine benefits from the same race proven features found in its kit built counterpart and the sophistication of a JR computer radio control system. No bushings, only bearings. No plastic where there was aluminum. No stripped down radio system. No compromise.



JR RACING



LOSA0090

XXX-T SPORT RTR

The XXX-T Sport RTR uses the same race proven platform that has won numerous ROAR National Championships. This would include the exclusive XXX-T suspension system with hard-anodized oil filled shocks, ball bearings from wheels to tranny, a rigid molded chassis with a dropped center that lowers the CG and improves handling, and a fully adjustable slipper clutch that lets you tweak traction and acceleration control to track conditions. Add the sophistication of a JR computer radio control system and the power of a 19-turn motor mated with GM Racing's state-of-the-art V3R electronic speed control and you've got a ready-to-run electric truck that doesn't just exceed your expectations, it redefines them.

HORIZON HOBBY

2002 Team Losi, a division of Horizon Hobby, Inc.

LOSA0880

XXX-NT SPORT RTA



Crowned the 2002 Nitro Truck of the Year by the editors of RC Car Action magazine, Losi's XXX-NT Sport is the standard by which all other nitro ready-to-runs are judged. Like it's racing counterpart the XXX-NT Sport boasts an aircraft aluminum chassis, low stacked 4.11:1 ratio transmission, and ball bearings wherever they're needed. Its tough suspension with its hard-anodized oil filled shocks is on par with anything you would find in much more expensive kits. The potent Mach .15 engine will have you blasting down the straights at a blistering 40 mph making you more than a match for any sportsman class competition right out of the box. If you're looking to make a grand entrance into the world of off-road nitro racing, this is your truck.

ENGINEERING WINS

LOSA0280

XXX-S SPORT RTA



Based on the same platform that took home the ROAR Stock National Sedan Championship, Team Losi's XXX-S Sport features a sealed, single-belt drivetrain with easy access differentials. This system not only reduces friction for outstanding acceleration, it's a cinch to maintain. MIP CVD driveshafts provide smooth, solid power transfer to all four wheels. The integrated one-piece chassis allows you to use either stick or saddle style battery packs. And as with every other Losi ready to run, ball bearings are used throughout. Plenty of power is provided by the 19-turn, rebuildable motor with GM Racing's V3R electronic speed control. Quite simply, this is the finest ready-to-run electric sedan you can buy.

Team Losi
ENGINEERING WINS

www.teamlosi.com

4971

CEN FUN FACTOR



CEN has carved out a nice little niche for itself in the R/C hobby market. Its products might not reside at the very top of everyone's wish list, but when it comes to offering the kinds of features and performance that most fun-loving R/C drivers want, but at a fraction of the cost of the bigger-name products, CEN delivers the goods.

The Fun Factor 2 is the newest in CEN's "smart" chassis lineup. How smart is the FF2? It can be any one of four vehicles: a monster truck, a rally car, a buggy or a stadium truck. What's more, the FF2 can also be purchased in either two or four-wheel drive variants, and with or without a factory installed two-speed transmission. And you don't have to sweat which version to buy, as CEN offer simple conversion kits to allow any FF2 chassis to easily become any of the other three vehicle types.

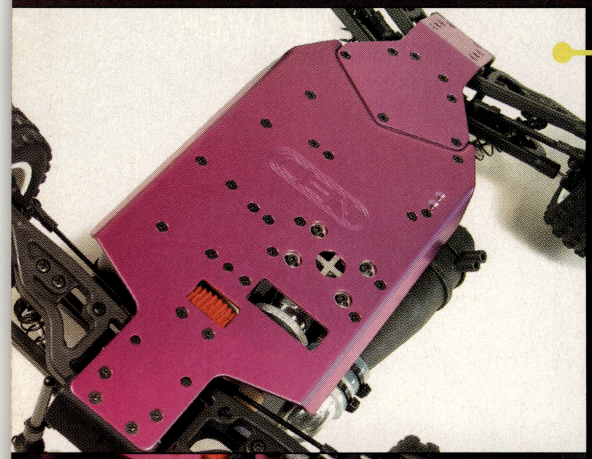
We tested the Fun Factor ST 2—the "stadium" truck of the family—with 4WD and the factory installed two-speed. Want to know if the newest Fun Factor lives up to its name, or the reputation of the original? Read the rest.

THE LOW-COST

ST 2



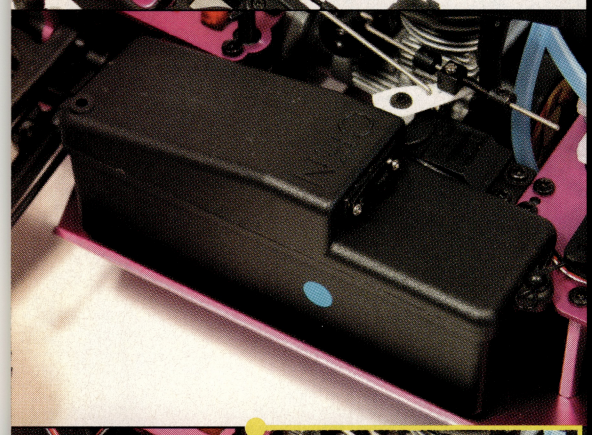
T-MAXX ALTERNATIVE



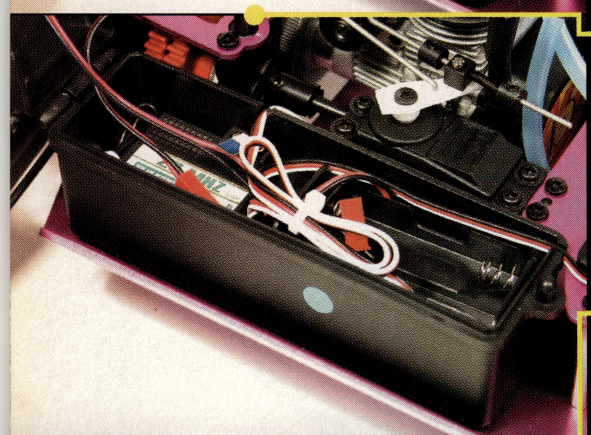
THE PURPLE DINOSAUR

The FF2 is built upon a pretty solid foundation: a 2.5mm thick aluminum plate, purple anodized, stretches from one end of the vehicle to the other. Actually, the lower chassis is made from two separate pieces that have been bolted together. This way, if you really bash the truck and bend the nose, you can just buy a replacement front section rather than having to fork out for a whole new chassis. Another nice feature is that all of the screws beneath the chassis plate are countersunk to prevent anything from snagging on the ground when the truck bottoms out. Even the engine mounting screws reside within machined recesses for the same reason.

The chassis if stiffened (slightly) by the addition of a pair of upper plates, which are also purple aluminum. The front plate serves as a mount for the fuel tank and steering servo, while the rear plate braces the rear gearbox and the brake assembly. We think that the addition of a center brace would benefit the truck's overall rigidity, as we could watch the rear of the chassis flex just from the force of the brakes being applied.

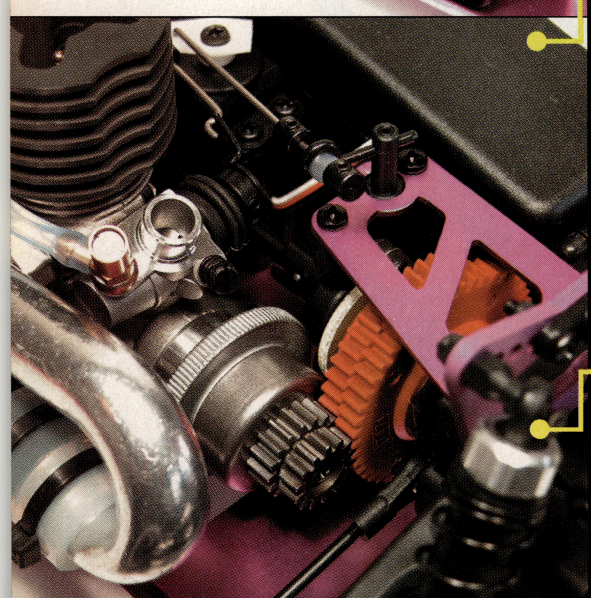


CEN has designed a huge plastic box that houses the receiver and battery pack. The box spans the entire length of the chassis, and has a really cool hinged lid that allows you to change the crystal or the batteries by removing just one body clip.



2WD OR 4WD: HAVE IT YOUR WAY

The FF2 is available in both two and four-wheel drive configurations—the only difference being the lack of the front gearbox's internals and the omission of the center driveshaft. Our 4WD FF2 has bevel-gear diffs at both ends, each sealed inside a plastic gearbox and spun by a standard ring-and-pinion gearset. The main drive gears are located just in front of the rear gearbox, and a steel driveshaft is used to send power equally to the front and rear ends. One particularly welcome addition is universal-joint driveshafts for the front wheels—an expensive hop-up with most vehicles in the FF2's price range.



Also under the category of "Wow! That's great!" is the discovery of the FF2's included two-speed transmission, which provides the best of both worlds: good acceleration with higher top speed. The point at which the transmission shifts is adjustable via a setscrew located on the two-speed's hub.

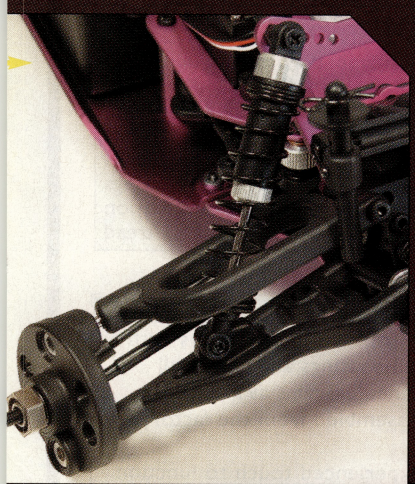


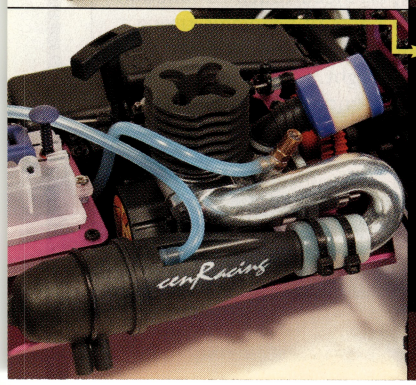
JUNIOR T-MAXX SUSPENSION

The truck versions of the FF2 receive what looks like a slightly scaled-down version of the popular T-Maxx suspension. Each corner of the truck gets upper and lower wishbones that end in adjustable pivot-balls for added strength and greater tuning potential. Large-volume plastic oil-filled shocks provide the damping, although in stock form, the oil feels way too light, almost as if there weren't any in the shocks (but it's in there). The plastic that makes up the suspension pieces has a good amount of flex to it—perfect for novice drivers who tend to hit everything that doesn't move (and, on occasion, objects that do).

OUTSTANDING FEATURES

OUTSTANDING FEATURES





Accessories included:
Two-channel Mirage III radio system, .16 CEN pull-start engine, pre-printed, trimmed and decaled stadium-truck body

Accessories you'll need:
Glow fuel (20 percent or less), a squeeze-type fuel bottle, a glow-plug igniter, CA glue for the tires and 12 AA batteries

SWEET SIXTEEN

While other companies offer .12s, .15s and .18s, CEN decided to differentiate themselves from the crowd by installing a .16 in most of its nitro-powered vehicles. The mill in the FF2 is surprisingly even-tempered for a sport-level offering. The pull-starter equipped engine has durable ABC (aluminum piston, chrome-plated brass sleeve) construction, a pair of ball bearings for the crankshaft, and a race-style two-needle rotary carb.

A scant three years ago, most RTRs and sport-level kits had restrictive airplane-style mufflers that limited the engine's performance and created excess heat. Thankfully, the trend of late has been to ditch those power-robbing chokers and replace them at the very least with easier breathing pipes. Although it might not be on par with the best tuned pipes, the FF2's composite pipe and aluminum manifold do provide good acceleration and easy tuning. We also thought that the pipe's dual stinger outlets looked cool.

CEN FUN FACTOR ST 2

REPORT CARD

Test location: The street, a neighbor's front yard (by accident), the dirt pits at Hot Rod Hobbies

Test conditions: asphalt, concrete, grass and soft dirt

Engine: B

We've had plenty of experience with the CEN .16 (we've tested several vehicles with this powerplant), and we're still impressed with the amount of performance that this supposedly sport engine delivers. It won't put any racing .12s to shame, but it moves the rather heavy Fun Factor 2 with ease, and propels it to T-Maxx level speeds. The engine was fairly simple to start and break in, and the quality of the carb is among the best we've seen in this category. The mixture needles are accurate and they keep their settings.

Pre-assembly: A–

Overall, we rate the quality of the FF2's build-job as high. The only problem we encountered involved the throttle/brake linkage: when the carb was in the neutral position, the linkage caused quite a bit brake to also be engaged. This led to an overheating of the brake, which also caused it to stick. We had to fiddle with the linkage's collars to get rid of the dragging brakes. Otherwise, the truck was solidly built.

Radio: B

CEN has improved its Mirage radio (which is now called the Mirage III) over the early models we tested. The transmitter's ergonomics are very good for a radio in this class, and although it lacks end-point adjustments for the throttle channel (a feature we feel is almost a necessity for nitro vehicles), it does offer steering dual-rate, a 70/30 or 50/50 option for trigger travel and a charging jack for use with rechargeable cells. We didn't like the hard plastic steering wheel.

Overall handling: B–

Despite its anemic steering servo, the FF2 is actually quite responsive and nimble. Perhaps this is because of the ST version's smaller and lighter tires. The suspension geometry is very good, with less chassis roll than most other vehicles in this class and price range. The suspension also gets high marks for plushness, although we felt that the damping was too soft, and tended to allow the chassis to wallow at higher speed.

Speed and acceleration: A–

If all you care about is speed, then you'll like the FF2. It has good acceleration out of the hole, but when the engine gets up to its high range, it really pull hard to the redline. The two-speed obviously helps in this department, as its low first gear works well for dead-stop launches and climbing, while the tall second gear feels well matched to the engine's powerband.



SPECS

Price:	$450.00 (list price w/o discount)
Length:	16.5 in.
Width:	12-3/8 in.
Wheelbase:	11 in.
Track:	f/r: 12-3/8 in.
Weight:	4 lb. 12 oz.
Chassis:	Stamped aluminum, two-piece
Suspension:	Ind. double-wishbone with pivot-ball hubs
Drivetrain:	Shaft-driven full-time 4WD
Diff(s):	Sealed bevel-gear diffs
Damping:	Plastic oil-filled shocks
Bearings:	18 steel ball bearings
Wheels:	One-piece white nylon
Tires:	Semi-pneumatic block tread

Final Score

Highs: The FF2 has plenty of features that are usually optional items with RTRs. The inclusion of a two-speed, a set of ball-bearings and pivot-ball suspension make this one of the best performance bargains available. The truck's quality is very good, and it's very well assembled from the factory. Even the body is well done.

Lows: The throttle/brake linkage needed an experienced touch to function properly. We could imagine a beginner having all sorts of problems trying to figure out why the truck's brakes were locking up whenever the throttle was in neutral. Also, the shocks' damping was too light.

The verdict: Can't quite afford that T-Maxx? Look no further than the Fun Factor 2.

SOURCES

CEN, distributed by Genka Trading Corp., 1800 E. Miraloma Ave., #F, Placentia, CA 92870 • (714) 792-1923; fax (714) 792-1968

HOT COMPETITION IN WA







Left: Galaxy Hobby, Lynnwood, WA, put on a great TCS event with 68 racers and 103 entries.

Top Left: Winners from the event show off their awards and winnings. Along with other qualifiers, these event winners are now eligible to race in the 2002 TCS North American Finals at Tamiya America headquarters in Aliso Viejo, CA, September 28 & 29.

Above: Picking the concourse winners was a tough job, but Best of Show honors went to these hot rides, including winners from the new Tarmac Rally, Monster Truck and F201 exhibition events.

RESULTS

Formula-1

First Place	Dave McMullen
Second Place	Dan Garber
Third Place	Chris Lim
Best of Show	Ramil Basco
Top Qualifier	Dan Garber

Super Touring GT1

First Place	Peter Robinson
Second Place	Sam Hudson
Third Place	Ken Vannice
Best of Show	Stan Ng
Top Qualifier	Peter Robinson

Touring GT2

First Place	Peter Robinson
Second Place	Kevin Michellich
Third Place	Sam Hudson
Best of Show	Lou DeBenny
Top Qualifier	Sam Forbes

Mini

First Place	Dan Garber
Second Place	Eric Wippler
Third Place	Masahiro Otsuka
Best of Show	Mark Tveten
Top Qualifier	Dan Garber

TL-01 Spec Exhibition

First Place	Spencer Wilson
Second Place	Chris Ledray
Third Place	Ben Ledray
Best of Show	Andrew Balatico
Top Qualifier	Spencer Wilson

Tarmac Rally Exhibition

First Place	Ray Meek
Second Place	Eric Wippler
Third Place	Ryan Partee
Best of Show	Paul Powers
Top Qualifier	Ray Meek

F201 Exhibition

First Place	Ramil Basco
Second Place	Troy Crabtree
Third Place	Ray Meek
Best of Show	Ramil Basco
Top Qualifier	Jesse Galang

Monster Truck Exhibition

First Place	Michael Ross
Second Place	Kevin Michellich
Third Place	Jon McLean
Best of Show	Kevin Michellich
Top Qualifier	Michael Ross

Entries

Racers	**68**
Second Entry:	**35**
Total Entries:	**103**

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WARP SPEED GRAPHITE MISSION CHASSIS

Souping up Schumacher's sedan

By Shannon Hudson

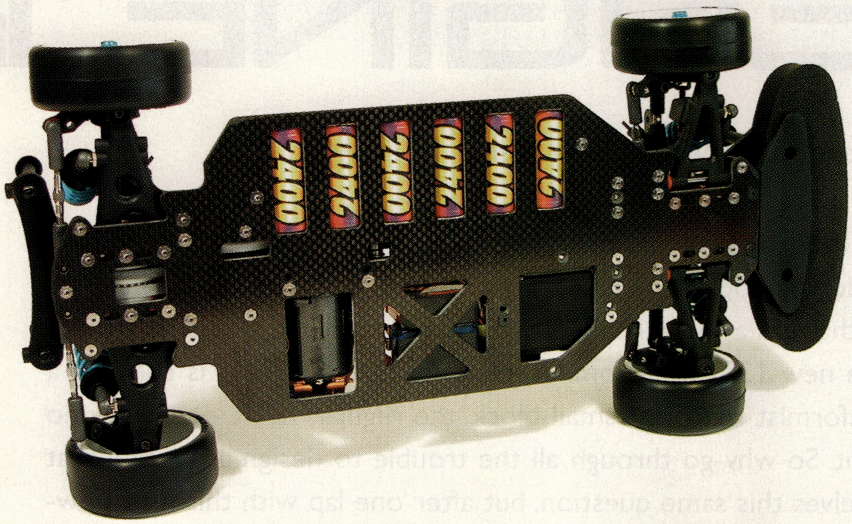


Let's start by telling you who Warp Speed is. They are a Tampa, Florida company that specializes in graphite upgrades for R/C cars. Currently, the only thing they have readily available is an upgrade chassis for the Schumacher Mission touring car, and the reason for this is that Schumacher USA is also in Florida, and Paul Wynn, the team manager at Schumacher USA, works closely with the guys at Warp Speed to help develop their products. However, many other graphite parts are on the way, including a graphite chassis kit for the TC3 and some cool 1/12-scale chassis that will allow you to use your choice of front ends. Schumacher USA is the exclusive distributor for Warp Speed.

WHAT IT DOES

The chassis kits are available in two different thicknesses: 2mm and 3mm. I chose the 3mm chassis because it provides the stiffest platform, and I have to say once the whole assembly is put together, there is virtually no side-to-side flex. The fit and finish of the chassis is excellent. Everything went together without any hang-ups. I do recommend that you file the edges of the chassis and the battery slots (pay close attention to the front of the chassis where it meets the bumper; I sanded this spot down a lot to prevent it from snagging on anything). After that is done, it is always a good idea to seal the edges of the chassis with CA glue to prevent splitting.

This chassis drastically changes the overall layout and placement of the batteries and electronics. The motor plate and servo mounting are also moved to better offset the new straight battery layout. Another plus to the new layout is that there is more room for the electronics. The original chassis was a little cramped. The one thing you will have to do is go out and get some long-shank pinion gears, because the offset of the motor plate won't allow the use of standard pinions. Schumacher sells long-shank pinions in case you have a hard time finding them at your local hobby store. Installing this chassis gives the car a better-balanced feel, and because it is stiffer, it allows you to feel every suspension change you make. When you change springs or shock oil, it will be easier to feel what that change did to effect the handling. Almost all team drivers use this chassis, and Paul Wynn provides a great base setup that should put you in the ballpark at virtually any track.



PAUL WYNN'S MISSION SETUP

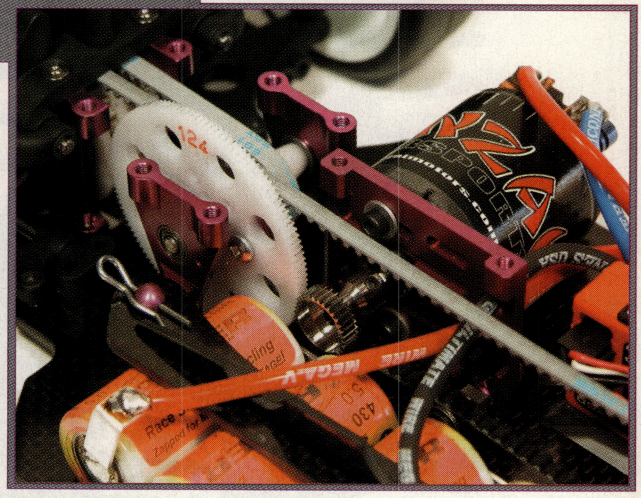
Front
Oil: 60wt
Spring: blue
Piston: 2
Shock tower: hole no. 3
Arm: hole no. 1
Front toe (inboard): 0°
Front toe (outboard): 0°
Hub carrier: hole no. 2
Diff: standard ball diff
Camber: 1° negative

Rear
Oil: 60wt
Spring: blue
Piston: 2 hole
Shock tower hole: no. 3
Arm hole: no. 1
Rear toe-in (inboard): 0°
Rear toe-in (outboard): 3°
Hub carrier: hole no. 2
Camber: 1° negative

Motor: Banzai 10 triple
Gearing: 26t pinion 124t spur
Servo: Hitec 525 metal gear
Batteries: Racer Hobbies Sanyo 2400
Speed Control: Keyence Zero V Extreme
Receiver: Novak XXL
Tires: Take Off CS-27

DITCHING THE POSI & OTHER HOP-UPS

Schumacher USA is also the distributor for TiR, who make some awesome titanium hardware that I used while putting the car back together. Getting rid of those weird posi screws sure makes working on the car a whole lot easier. Of course, I couldn't stop at just adding new screws to the Mission, I had to go a little further by installing some of Schumacher's hop-ups as well. The list includes a 20-tooth alloy layshaft pulley (no. U2460V), purple alloy wheel hexes (U2401A), steel universal drive shafts (U2151D), alloy battery post (U2476N), front and rear alloy diff mounts (U2462X) and TiR titanium Diablo shock shafts (11027). Schumacher also sent us one of their new Frewer Dodge Stratus bodies, which was painted by Craig Tasker at C&C painting & designs, (818) 540-5943.



THE TEST SESSION

The testing took place at our local permanent asphalt track, Hot Rod Hobbies. The track layout was really smooth and fast with only one really sharp hairpin. I ran the car with Paul Wynn's recommended setup and it was dialed. I felt confident with the car right from the start, and was able to hold my own while practicing with one of the local fast guys. The Banzai 10 triple that I was running felt more like an 8-turn as the Mission ripped down Hot Rod's 90-foot straightaway. The car had tons of steering, even with my transmitter's dual-rate setting at only 69 percent. You can definitely feel the difference between the stock chassis and the Warp Speed. The more balanced feel of the car gives you confidence to push the car harder. I was running Take-Off's CS-27 pre-glued tires—the same control tires used at the Reedy Race. I have to say these tires are excellent and you don't have to glue them—what could be better? Actually, I would like to see them come in different rim styles, but I don't want to sound too picky. I plan on doing some more testing on this car in the future, and I'll try making some changes to see how it affects the handling, but for now, I don't feel the need to touch it.

THE VERDICT

The bottom line is that the Schumacher Mission is an awesome car right out of the box, but the Warp Speed chassis definitely improves on what is already a great car. The fit and finish of this product is as high as anything produced from the factories. Other than the fact that you have to buy new pinion gears when you run this chassis, there really are no drawbacks. You end up with a car that is stiffer, has better balance, more room for electronics, and allows you the ability to notice how much of the handling is affected when you make subtle changes. Mission accomplished!

SOURCES

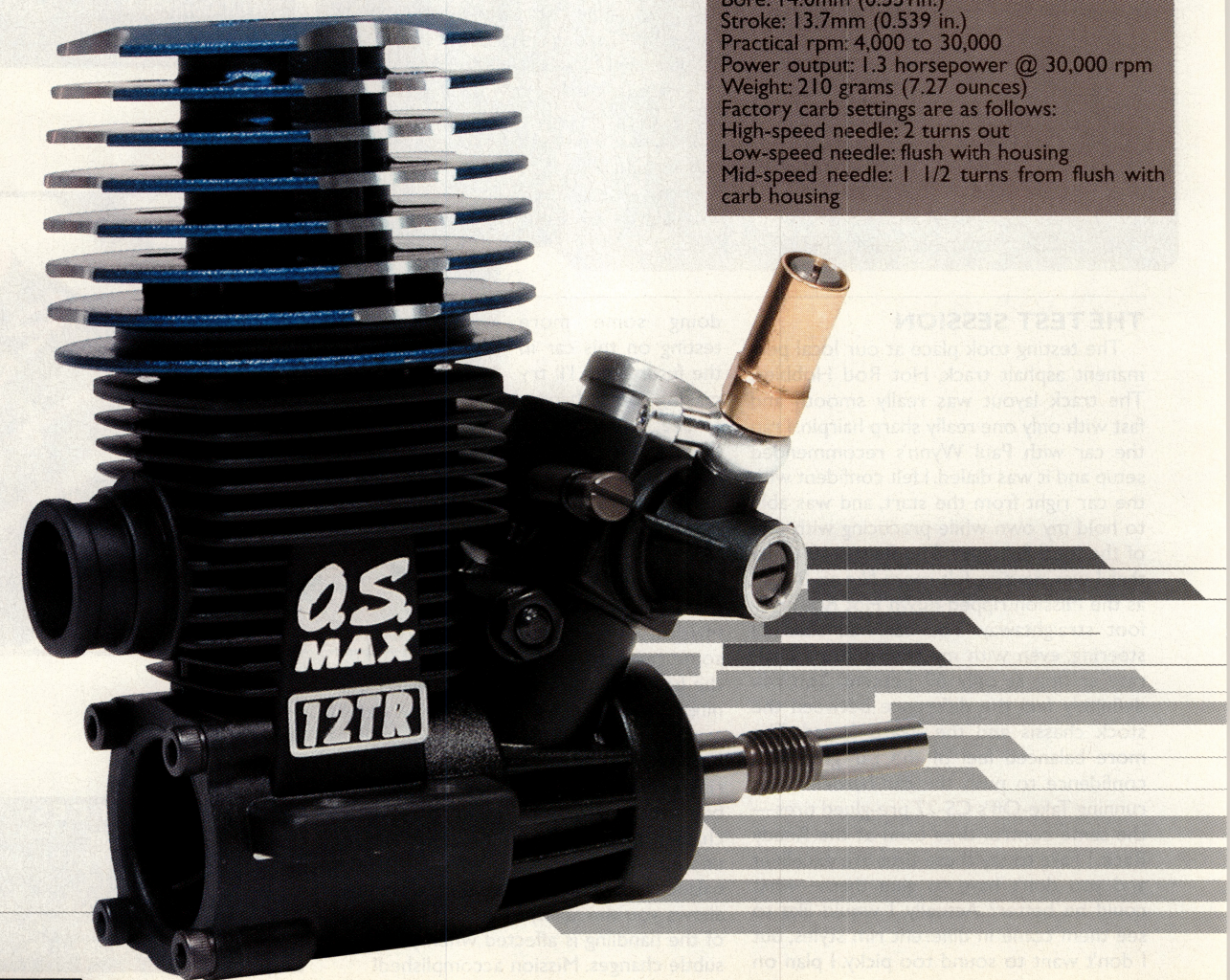
Novak Electronics, Inc., 18910 Teller Ave., Irvine, CA 92612 • (949) 833-8873; fax (949) 833-1631
Schumacher USA, Inc., 6302 Benjamin Rd., Suite 404, Tampa, FL 33634 • phone (813) 889-9691; fax (813) 889-9593

O.S. ENGINE 12

With this kind of power, who cares if it's illegal

What is an outlaw engine? By the book, this means that by its specification, an engine fails to comply with the rules of the major race-sanctioning bodies. But the more common definition, as it applies to R/C nitro racing, is a .12-sized engine that has a turbo head design and more than the requisite three induction ports. Such an engine is the new 12TR (T) from O.S. Engine. The 12TR (T) is basically a "turbo" version of the company's conformist rear-port small block, the regular 12TR - certainly no slouch in the performance department. So why go through all the trouble to design an engine that can't be raced legally? We asked ourselves this same question, but after one lap with this new powerplant, we knew the answer: this thing just plain cooks!

SPECS
Price: available at $219.99
Displacement: 2.11cc (0.29 cubic inch)
Bore: 14.0mm (0.551in.)
Stroke: 13.7mm (0.539 in.)
Practical rpm: 4,000 to 30,000
Power output: 1.3 horsepower @ 30,000 rpm
Weight: 210 grams (7.27 ounces)
Factory carb settings are as follows:
High-speed needle: 2 turns out
Low-speed needle: flush with housing
Mid-speed needle: 1 1/2 turns from flush with carb housing



2TR (T)



Cheater head: although 1/8-scale racers have relied on turbo-style plugs for years, they are still considered illegal for small-block engines in sanctioned competition.

WHAT MAKES AN OUTLAW?

The two major differences between the turbo and the regular version of the 12TR are what make this new engine illegal: its head and its cylinder.

The 12TR (T) has a two-piece head, as does the standard model, however the new model uses turbo-style glow plugs rather than the industry standard 1/4-inch UNF plugs. The reason turbo plugs are considered an advantage is twofold. First, the tapered design of the plug itself forms a better seal in the combustion chamber for improved compression with less leakage. Secondly, turbo plugs are available in a wider variety of heat ranges for improved tuning potential.

The design of the turbo model's cylinder is less a performance advantage and more like a performance "difference." The standard 12TR has the usual array of intake ports: two transfer ports located at either side of the exhaust port, and one large boost port directly opposite the exhaust port. The turbo model has five intake ports: two at either side and one boost port. But this greater number of ports doesn't mean that the turbo's porting is solely responsible for a performance increase. In fact, the total volume of the intake ports is actually reduced in the turbo engine, as O.S. essentially made two transfer ports out of one by dividing the area. What the extra ports do is change the way the engine's powerband feels. The foremost transfer ports improve the charge retention to keep as much incoming mixture in the combustion chamber as possible. This is really a way of improving both the efficiency of the engine as well as its response during mid-speed operation.

WHAT'S THAT EXTRA ADJUSTMENT?

At first glance, the carbs of the standard and turbo engines appear to be similar (except for their colors: the turbo's carb is black). But upon further inspection, you'll notice that the turbo's new 11A slide carb has a third needle adjustment. This needle, which is located on the carb's slide, controls the position of the spray bar. This is commonly known as the "mid-speed" needle, and it mostly affects the enrichment of the engine during lower speeds. We think of the mid-speed needle as affecting the transition of the engine from idle to mid-speed. But like the low-speed needle, once the mid-speed needle is tuned, you won't really have to mess with it: most of the compensation tuning will be made by the high-speed needle, which also affects the enrichment of the low- and mid-speed needles.

Other carb features include an IFMAR-compliant 5.5mm throat, which is the maximum size allowed. And to prevent mixture-altering air leaks, rubber O-rings, which also prevent the needles' settings from moving from engine vibration, seals all three needle valves.

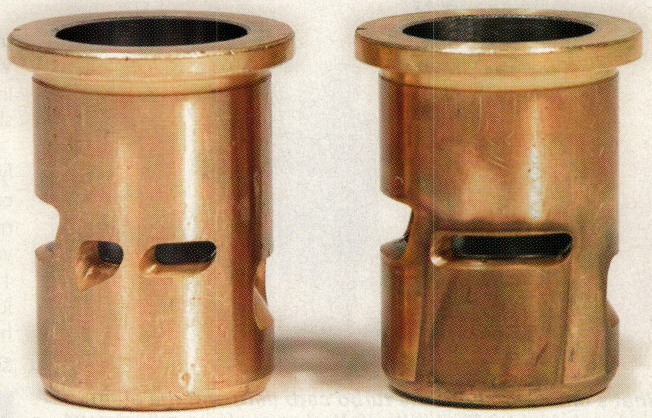
AND THERE'S MORE...

The turbo model shares many of its features with its non-turbo sibling, the 12TR, which is one of the best of the "legal" rear-port small-blocks on the market.

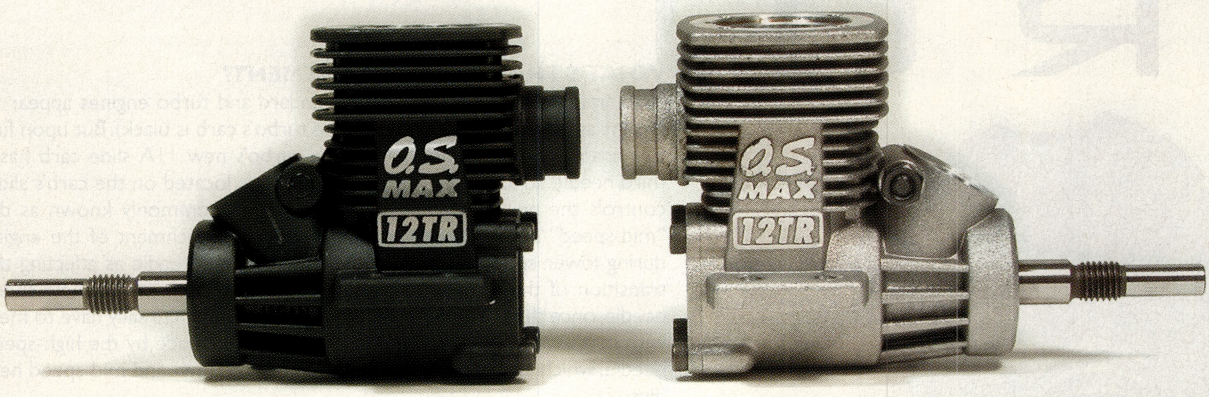
Although it has received a trick-looking black finish, the turbo's crankcase features the benefit of webbing to help the case resist distortion caused by heat and stress. This webbing stiffens the front of the engine and also keeps the bearings from binding under load. For improved cooling, the fins of the dark blue, machined aluminum cylinder head are mimicked on the top of the engine case.

THE RULES ARE CLEAR

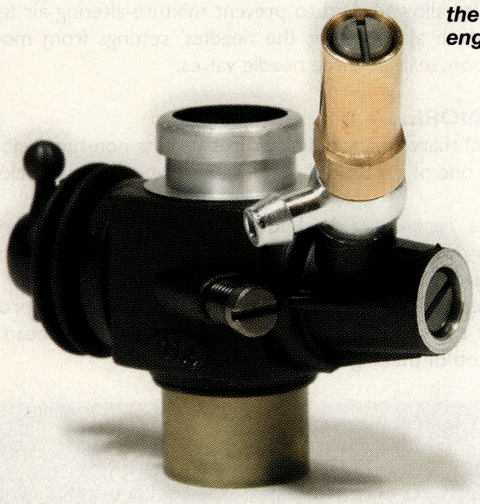
Here's what the two largest sanctioning bodies have to say about outlaw engines such as the 12TR (T).
ROAR: "Turbo plugs are permitted only in the .15 Open and .21 Open engines. (The) maximum number of internal ports w/exhaust: 4."
IFMAR: "The engines may have a maximum of four (4) ports, including the exhaust port. No Turbo style glow plugs, only 1/4 UNF plug types."



Five from three: O.S. took the three-port cylinder sleeve from the standard 12TR (right) and created the turbo engine's five port sleeve (left). The redesigned porting allows for greater throttle response.



Case in point: The turbo engine's case (left) is virtually identical to that of the standard 12TR (shown at right). The only difference is that the turbo engine's case has a black finish which is claimed to aid in cooling.



The new !!A carb is up to typical O.S. standards. It's adjustments are jewel-like and it's very temperature stable.



What's different about the turbo carb (left) and the standard carb (right)? That little slotted screw is an adjustment for the mid-speed needle.

TRACK TESTING

Our test of the 12TR turbo began with last month's Test Drive of the GS Racing Vision Pro (you may have noticed that trick little black engine neatly tucked into the chassis). We ran the pants off this engine for that test, and have subsequently poured nearly a gallon of Sidewinder 30-percent race fuel through it.

Break in: Relying on the factory set carb made it a little difficult to get the turbo running for break-in. We ended up having to lean the low-speed needle by about a quarter-turn in from flush to get a reliable idle (we didn't want to lean the high-speed needle at this time). We let the engine idle through its first tank, using an infrared temp gun to maintain a temperature of about 170 degrees. After this, we ran about five additional tanks of fuel, leaning the high-speed needle gradually with each run.

Mid-speed needle: The trick (for us) to set a mid-speed needle is to forget that it's there until you've tuned the high- and low-speed needles. Once you're happy with the high-end, and have set the low-speed so that the engine drops to idle in only two or three seconds, you can fiddle with the mid-speed needle until you're happy with the throttle response.

Top speed: The 12TR (T) is a screamer. It's every bit as fast as the last 12TR we tested (back in the Nitro TC3 Test Drive), and it pulls hard.

Acceleration: Hands down, this engine accelerates harder off neutral than any small-block we've ever driven. Combined with the Vision Pro's power-ball clutch, the turbo launches like a Nike missile. In fact, we ended up richening the mid-speed needle to avoid overshooting the turns in the tight section of the track.

Durability: So far, the 12TR (T) has been a solid runner. After nearly a gallon of fuel, it's still tight and has excellent compression. The carb has maintained its tune with superb accuracy (an O.S. trademark), and we haven't had to compensate too much for weather variations (going from day racing to night racing). Overall, the 12TR(T) is the cream of the crop in small-blocks. Just don't tell your local competition what you've got under the hood (you may need to hold some ponies in reserve to avoid drawing attention to your illegal powerplant!).

SOURCES

GS Racing, distributed by Horizon Hobby Distributors, Inc., 4105 Fieldstone Rd., Champaign, IL 61821 • phone (217) 355-9511

O.S. Engines, distributed in the U.S. by Great Planes Model Distributors, 2904 Research Rd., Champaign, IL 61826-9021 • phone (217) 398-6300; fax (217) 398-0008

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❑ **SEPT. '01**
Reedy Touring Car Race Of Champions, How-To: Set Your Diff And Slipper Clutch, Inside Mark Pavidi's Reedy Race Winning TC3, Kyosho Mini-Z Buyer's Guide, Top TC3 Tuners, How-To: Keep your Engine Running Cool, How-To: Dye Your Shock Springs, Top R/C Inventions, 10 Steps To Preventing And Resolving Receiver Problems, Super Ten Battle: Two Stroke vs. Four Stroke Product Test: JHM Aero Engineering On-Board Glow Driver, Traxxas EVX Speed Control, Competition Electronics Pit Bull Charger Test Drives: Nuova Faor SF501 Motorcycle, GS Racing Storm 1/8-Scale Buggy, Tamiya Mad Bull, Tamiya Subaru Impreza WRC '99 XB.

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Team Losi XXX-S, Tamiya TAO4-R HKS Racing Altezza, Team Associated Team Built RC10GT, Tamiya Lancia 037 Rally Features: How One-Ways Work, Pre-Painted Bodies, Novak XXTra Synthesized Receiver, Plastic Fantastic: Molded Chassis vs. Graphite Plate, Hopping Up the Tyco Jeremy McGrath X-Treme Cycle, Pro-file: Scott Hughes, David Katz, ROAR On-Road Nationals, First Test HPI Micro RS4, R/C Car/Hot Rod Hobbies Off-Road Shootout, Jason Jaeckel's Racer Maxx

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Kyosho Landmax 2 Peugoeot 206 WRC, Tamiya TG10R, XRay T1, Yokomo MR-4TC Features: New For 2002, The First Touring Car, Pro-File: Matt Franks, Best Truck of 2001, Tamiya TCS 2001 North American Finals, Pro-File: Tatsuro Watanabe, Best Car of 2001 Product Tests: CS Electronics Space Charger Pro, Multiplex Profi 301, MRC Super Brain 959, Integy INDI 16x5 Computerized Battery Charger.

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AIRTRONICS

Tempting T-Maxx owners with FM operation

There's no denying that the T-Maxx is the most popular R/C vehicle ever sold. It has rejuvenated an entire industry and has become a class unto itself. Both the T-Maxx and its electric sibling, the E-Maxx, come with three-channel TQ3 AM radio systems manufactured by Traxxas. These radios have easily accessible toggle switches that allow the driver to operate the third channel "on the fly." On the T-Maxx, the third channel controls reverse, while on the E-Maxx it allows the driver to shift between first and second gear at will.

While there is nothing wrong with AM radios (and certainly, the TQ3 is among the best in its class), the tendency for Maxx owners, especially those who have invested hundreds if not thousands of dollars in their trucks, is to upgrade to FM, which is generally a more reliable method of radio transmission. The problem is that most FM radios, while having three channels, aren't really set up to accommodate the needs of the Maxx driver; their third-channel controls are usually located too far off the beaten path to be of any use during driving.

Enter Airtronics and its new MX-3, which is actually quite a brilliant idea. They took an existing radio case—the Blazer—and stuffed it with what are essentially the guts from the 3Ps computer radio (an oversimplification, we know). The result is a low-cost computer radio that is custom-tailored to the Maxx user thanks to the location of its third-channel—a lever right next to the steering wheel. T-Maxx owners, rejoice!

MX-3 SYSTEMS
90510 (2) 94102Z servos: $117.99
90511 (1) 94102Z servo: $104.99
90512 (1) 94102 servo/1 96305Z servo: $169.99
90513 (1) 94051Z servo/1 96316Z ESC: $199.99
90514 (3) 94102Z servos: $154.99



MX-3

MECHANICAL SPECS

Here's the skinny on the "hardware" side of the MX-3:

• The case is the same well-balanced case we love on the low-cost Blazer AM radio. It has a high-tech look and a solid, quality feel to it. The MX-3's LCD screen replaces the trim-knob panel that would normally be to the left of the Blazer's steering wheel.

• It has a soft, non-slip rubber steering wheel that fits comfortably in the hand (the Blazer has a rigid-plastic wheel).

• The MX-3 has digital trim levers for the steering and throttle trims, plus the steering's dual-rate feature. The nicest thing about having digital trims is that they can't be accidentally moved on you while the radio is switched off.

• A large lever allows easy access to the third channel. Like the toggle on the Traxxas TQ3, the MX-3's lever is a simple "on/off" switch that sends the servo to either end of its travel.

• There's a 70/30 throttle trigger (which means that 70 percent of the travel is for forward, while the remaining 30-percent is for brake or reverse). The MX-3 allows you to adjust the position of the trigger to accommodate hands of different sizes.

• A low-battery warning feature alerts with an audible beeping when the battery's voltage drops below a preset limit.

• The MX-3 allows for quick access to the transmitter's crystal for easy changes.

• The radio can be fitted with dry batteries or rechargeable AA cells, or with an optional rechargeable pack. If either rechargeable option is chosen, the MX-3 has an integrated charging jack on its case.

SOFTWARE SPECS

Here's what the MX-3's built-in brain has to offer:

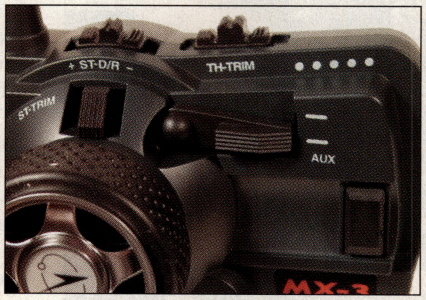
• Digital trim indicators on the MX-3's LCD let you know the position of the throttle and steering trim positions.

• The LCD has a unique "fuel tank" graphic to show the status of the batteries. As the batteries are drained, the "tank" becomes empty.

• When selected from the menu, the dual-rate steering function is shown on the display as a percentage of the total steering throw. It's always handy to know how much total steering you have so that you can duplicate the setting when switching between models.

• Both steering and throttle channels get the added benefit of having EPA (end-point adjustment), which allows for the independent setting of the servo's throw in either direction (example, you can set the throttle servo to stop exactly at full throttle, and you can set the strength of the brakes from the radio).

• Each channel (steering and throttle) also has an ARC (adjustable rate control) function that allows you to set the ratio of the servo's throw from neutral. In other words, you can "speed up" or "slow down" the movement of the steering servo's movement from neutral to change the way the steering feels. We used quotes because this feature doesn't actually alter the speed at which the servos operate, it just changes the ratio of the servos' movement in relation to how far you move the wheel or trigger. The total amount of travel remains the same.





• The MX-3 can store settings for as many as five separate models. This means no more resetting your transmitter each time you want to drive a different vehicle.

• Digital sub-trims allow you to center the servos independently of the standard trim levers. This not only allows you to gain more trim latitude, but it allows you to have your main trims set exactly at neutral (we always strive for this), which impresses your friends.

• Like virtually every radio known to man, the MX-3 allows you to reverse the servos' travel. Why is this important? Ever have your gas car brake when you give it throttle? You know how embarrassing this is. Of course, the MX-3's computer operation allows you to do this digitally, so none of your friends can reverse your servos on you while you're not looking.

• You can also disable the audible low-battery warning (as well as the beeps that occur when you make any programming or trim changes). A good feature if you want to keep your racing buddies as friends!

USING THE MX-3

We've always like the Blazer, so the MX-3 feels like an old friend. Like the top-of-the-line M8, Airtronics has made the MX-3 one of the easiest computer radios to use. There's very little "hidden" information that you need to access; everything, especially the most important and most used functions, are always displayed on the LCD. To say that the MX-3's operation is intuitive is an understatement.

How about shifting? We tested the MX-3 in last month's brushless-motor powered E-Maxx, and although we still feel that the third channel of the Traxxas TQ3 is the easiest to operate, the MX-3 is a not-too-distant second. After a little practice, we were upshifting and downshifting with ease and, most importantly of all, very little conscious effort!

WHAT WE REALLY THINK

Airtronics has really come to rule over the racing market, and now it seems as if they might do the same with the much larger Maxx/monster truck category. The MX-3 is exactly what truckers needed, but might not have realized they needed. Now, you can upgrade your stock AM radio system to more reliable FM, plus you get additional programming features, five-model memory (we know guys who own five Maxxes!) and most important, you retain the ability to do what makes the Maxxes so special—shift!

SOURCES

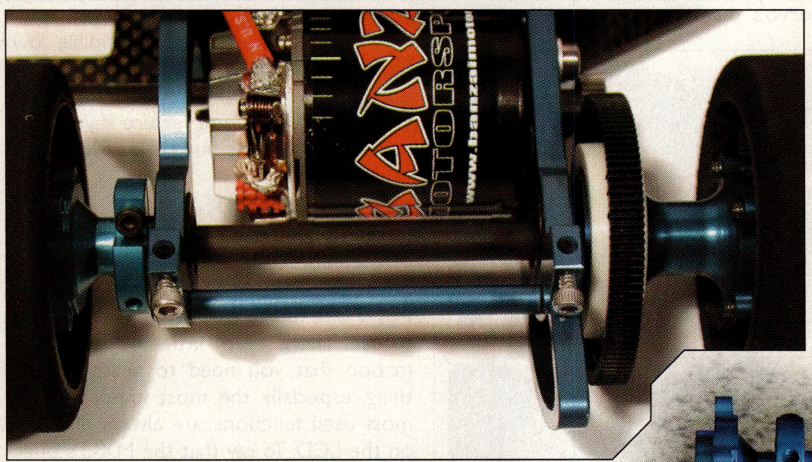
Airtronics, 1185 Stanford Ct., Anaheim, CA 92805 • (949) 978-1895; fax (949) 978-1540

TEAM WALBERN TC VERI-TRACK HUB SET

Give your pan-car added tuning options

By Scott Madrigal

In paved oval racing, tuning is everything! Racers are constantly looking for the best way to improve the handling and performance of their cars, and with the Veri-Track hub set by Team Walbern, this becomes an easier task. This hub set will fit any axle that uses the standard Team Associated SS-type diff hub, and it can even be used in some left-hand-drive applications.



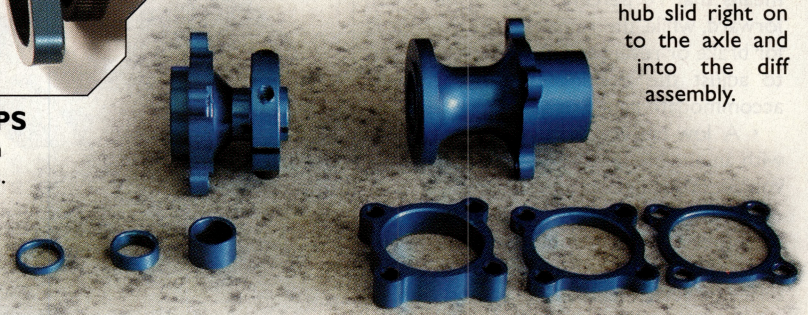
VARIABLE WIDTH AT YOUR FINGERTIPS

The Veri-Track hub set comes complete with both left- and right-side hubs and a total of six axle spacers. The hubs look similar to their Associated counterparts, but with a few differences. For example, the left hub is held on by two screws that give it extra strength to grip the axle. The hub is also 0.90 inch longer than the stock hub. In addition, the lip of the hub is about 0.025 inch longer, which increases the surface area that supports the left-rear wheel. Included in the kit are three axle spacers for the left side that come in thicknesses of 0.05, 0.10 and 0.20 inch. With these spacers, you are able to adjust the car's track width in 0.05-inch increments.

The right hub, on the other hand, takes on a new design, with the inner half looking much like the stock Associated hub, but with the outer half extending about 0.40 inch longer where the right-rear wheel will mount. On this extension you can place any of the three spacers that are included in the kit, again to alter the car's track width. These spacers look similar to the section of the hub on which the wheel is attached, but they don't have any threads, so the wheel-mounting screws slide through them freely. The three spacers for this side come in the same thicknesses as the left-side spacers. And if you do use these spacers, you will need to supply longer screws to attach the wheel. Overall, the rear track width on your car can now be increased by 0.30 inch per side (for a total increase of 0.60 inch) without the need to change hubs or undo the differential.

TESTING

The first thing I tested was the hubs' straightness: I spun them on both a tire balancer as well as on the car's axle, and saw that they were in fact straight and well balanced. The second part entailed the assembly of the pieces. The left-side hub went together easily and held tightly to the axle. The right-side hub was a little more difficult to install; in order to get the bearings to fit into both sides of the hub, I ended up having to use the "hammer technique" to firmly tap them into place. Other than this, the hub slid right on to the axle and into the diff assembly.



At our local track, I wanted to test one thing—strength! With the use of the cement blocks that make up the back straightaway wall, a couple of wooden boards that make up the infield perimeter, and my car, I gave the hubs a good durability test. Throughout the night's racing, I drove my car into the walls of the track, bumping against the blocks and hitting the car against the infield barriers on several occasions. After finally breaking a rear T-plate and ending the night, I once again tested the hubs for straightness, and they spun straight without any damage whatsoever.

WHAT WE REALLY THINK

The ability to have this much control over the car's rear track-width is an important thing when it comes to tuning your car, and Walbern's Veri-Track hub set gives you that ability with great ease. Although the assembly of the set required a little force, the tuning control that you get with these hubs far outweighs the extra work. Overall, the Veri-Track hubs are a great product—one that every serious racer should consider trying.

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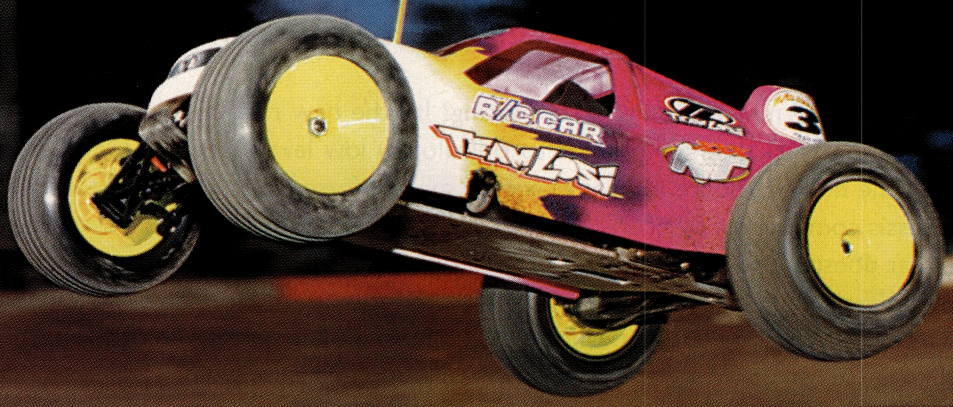

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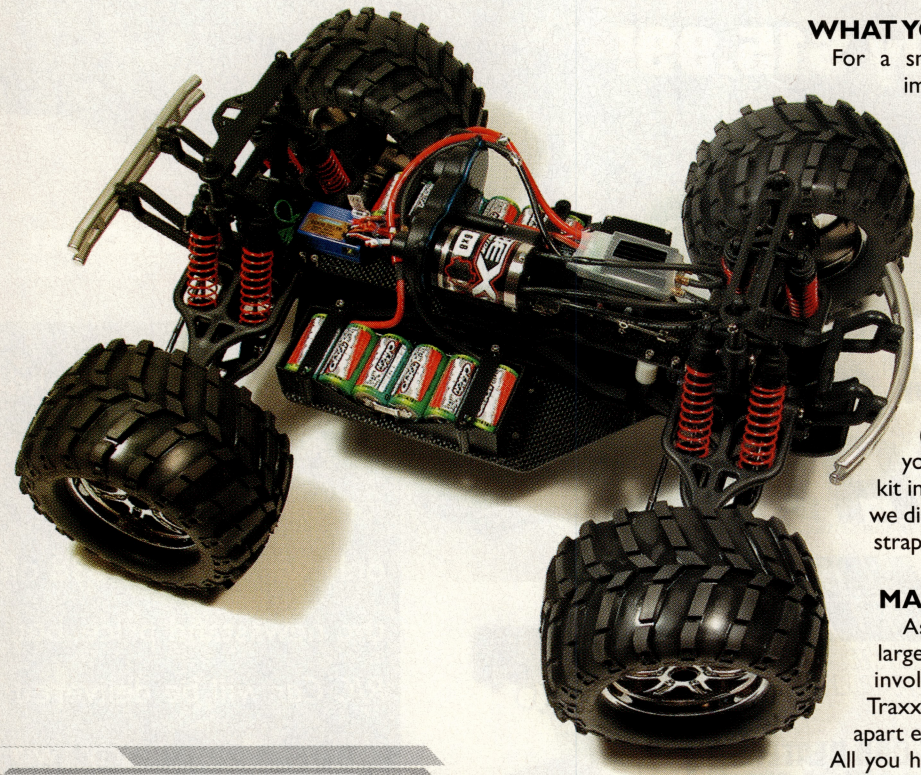
XTREME RACING

Dump those cells (lower them, that is)!

What's the big new trend in T-Maxx racing? It's the new rash of "hybrid" chassis conversions that drop the truck's center of mass to ridiculously low levels (see our October issue's cover story on the new Hardcore Mutant Maxx for more information). What happens when you can lower the heaviest chassis components by nearly two inches? You create a truck that can corner harder without flipping, and one that doesn't dive so hard under braking or lean back so much when you grab a handful of throttle. Well, Xtreme Racing now provides a chassis that does just that, but for the electric-powered E-Maxx! We had to get one of these chassis conversions for a test! Extreme offers two types of chassis material—fiberglass or graphite. Of course, we asked for the graphite. Would you expect anything else?

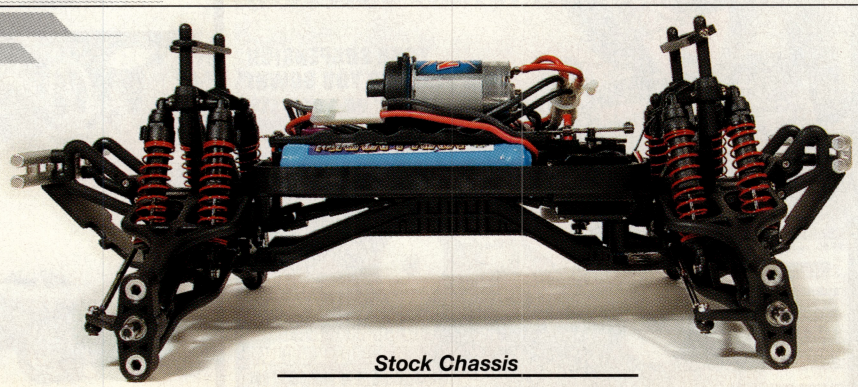


WHAT YOU GET

For a small, relatively new company, Xtreme impressed us with the completeness of its conversion kit. You get everything needed to perform the swap, including a lower chassis plate, an upper chassis deck, nylon spacers for the stock steering bellcranks and all miscellaneous hardware (most of the stock hardware is retained where possible). You also have two options for battery mounting: you can either install your side-by-side packs into the lower chassis' slots, or you can use the Associated-supplied nylon battery cups (remember the tub-chassis RC10s? If so, you'll recognize the cups instantly). Our kit included straps for the former option, but we didn't get any type of standoffs to hold the straps, so we opted for the cups.

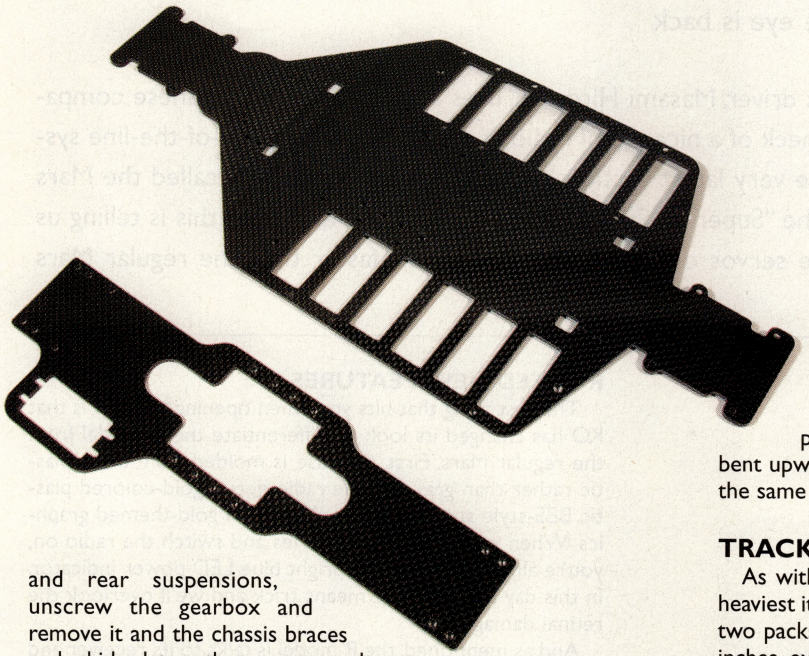
MAKING THE SWAP

As the Xtreme chassis replaces the largest components of the truck, installation involves major disassembly. Fortunately, Traxxas has designed a truck that comes apart easily (only when you want it to, though). All you have to do is remove the modular front



Stock Chassis

E-MAXX CHASSIS



1000 G-10 kit w/battery straps and posts: $175
1001 G-10 kit w/battery cups: $200
1002Carbon fiber kit w/battery straps and posts: $200
1003 Carbon fiber kit w/battery cups: $200

and rear suspensions, unscrew the gearbox and remove it and the chassis braces and skid plates, then remove the stock electronics from the old chassis (if you plan on using them on the conversion).

The top deck is designed to replace the main chassis of the stock E-Maxx, so all of the radio gear gets re-installed to the new deck. Unfortunately, we couldn't find any provision or mention of the truck's third "shift" servo in the instruction. We guessed that serious racers don't care about shifting, but we do. We simply servo-taped the shift servo to the top of the new upper deck—everything worked fine when we were done. The steering servo attaches with screws through a rectangular opening in the top deck and its position is exactly the same as stock.

The only thing you have to do to install the stock steering bellcranks is to add the provided nylon spacers, which take up the play where the old chassis' molded-in standoffs once were.

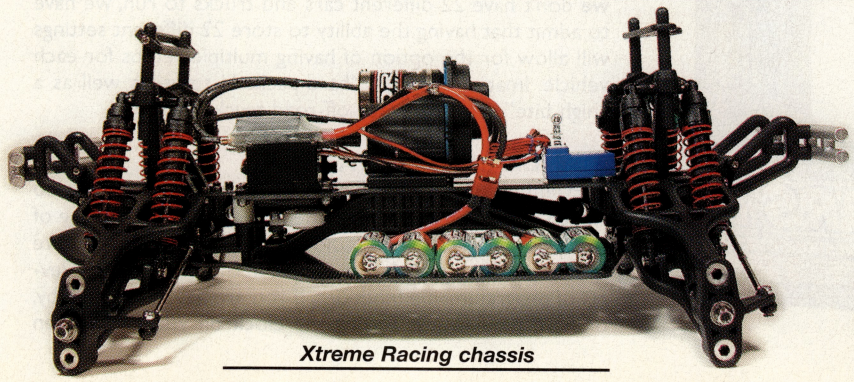
The lower deck is more of a challenge. It is a flat plate, but if you look at the T-Maxx, its front bulkhead has kickup that rakes the front suspension upward a bit to increase wheel caster and to prevent the front of the chassis from digging into the ground when the suspension bottoms. So the Xtreme lower chassis has a little bit of a "fudge factor" to it: you have to follow a particular sequence when installing the screws that affix the new chassis to the original chassis braces and suspension. The front of the new plate becomes slightly bent upward as the screws are installed. The kickup isn't quite the same as stock, but it's there.

TRACK TESTING TIME

As with any electric vehicle, the E-Maxx's batteries are the heaviest item to be installed on the chassis (and the E-Maxx has two packs!), so when you can drop that weight by nearly two inches, expect some drastic handling changes. The handling of our otherwise stock E-Maxx was made more stable by the addition of the Xtreme chassis. On pavement, the truck felt much less likely to roll when pitched into tight turns. On dirt, the effect was less pronounced, but we felt that we could pitch our E-Maxx into the bumpy turns with more confidence than before. Jumping felt about the same, but we did also notice that the slight reduction in caster (caused by the new lower plate) made the truck's steering feel more responsive in lower-speed turns. We did notice that the truck was a bit more "wandery" on fast straights, but this was a minor feeling.

WHAT WE REALLY THINK

Any time you can lower a vehicle's center-of-gravity, handling will usually improve. Such is the case with the Xtreme Racing E-Maxx chassis. It drops the weight of the packs substantially, yet doesn't upset the overall layout of the remaining components too drastically. We had some minor gripes about the installation of the lower plate, and we felt that some mention of the shift servo should have been included in the instructions. We also found that our graphite plate was warped, but with the Maxx, this doesn't affect handling at all. Overall, this is a worthwhile mod for E-Maxx racers. Handling gets better, and the truck's ground clearance isn't substantially reduced. Combine this mod with Pro-Line's Maxx suspension kit, and you'll



Xtreme Racing chassis

SOURCES

Xtreme Racing, 25 7th St., York, SC 29745 • (803) 684-3467

KO PROPO

Old blue eye is back

Although KO Propo's most famous driver, Masami Hirosaka, uses a stick radio, this Japanese company also knows how to build one heck of a nice pistol radio as well. The current top-of-the-line system from KO is the Mars, and the very latest version, which we're testing here, is called the Mars R. The "R" in the name designates this as the "Super Hi-Speed Response Version," and what this is telling us is that this radio relays information to the servos or ESC up to 40-percent faster than the regular Mars (which was no slow-poke to begin with!).



R-RATED NEW FEATURES

The first thing that hits you when opening the box is that KO has changed its look to differentiate the R model from the regular Mars. First, the case is molded from black plastic rather than gray, and the radio gets a gold-colored plastic BBS-style steering wheel along with gold-themed graphics. When you install the batteries and switch the radio on, you're almost blinded by a bright blue LED power indicator. In this day and age, blue means trick and we'll overlook the retinal damage.

And as mentioned, the R model is talks to its receiver and gets the info out to the servos or ESC 40 percent faster than before. Of course, this means that you'll have even greater control over your vehicle for those lightning-fast countersteering maneuvers and subtle throttle corrections. In order to take advantage of this increased processing speed, you will of course need to make sure that you use the included KR-301F micro receiver, as it is one half of the high-speed equation (the transmitter being the other). You can use the Mars with most aftermarket receivers, but it won't be as fast. But as the KO receiver is among the smallest we've seen (it's about the same size as an LRP Phaser), we don't mind using it at all. If you will be using the Mars with multiple models, you'll find that replacement receivers are on the pricey side compared to the cost of a good aftermarket model. Our advice: put the KO receiver in your best car!

Also new for the R model is the ability to store data for as many as 22 models! In addition to the regular models 1 through 10, the R adds an extra A through L! Although even we don't have 22 different cars and trucks to run, we have to admit that having the ability to store 22 different settings will allow for the option of having multiple setups for each vehicle. Imagine having a "hard-packed" setup as well as a "high bite" setup for your off-road truck?

STANDARD MARS-WARE

Even before the advent of the R model, the Mars was no slouch in the software department. In fact, it remains one of the most programmable radios on the market. But despite its complexities, the Mars is unique in that it offers four levels of programmable functions. If you are new to the hobby, or have trouble just setting the clock on your VCR, then

MARS R

stick with Level 1 (which comes as the factory default setting). Or, if you often write your own code, move right to Level 4, where such features as ABS and steering punch await.

The Mars also has a very extensive interface, which consists of six touchpad buttons, four ET (electronic trim) levers, two on/off push buttons (for timing functions and various other selectable features) and a grip dial. What's really handy is that you can alter the "assignment" of various functions to the ET levers, push-buttons and three of the six keypad buttons. This allows you to truly customize the Mars to your personal preference; the features you use the most can be quickly accessed using this versatile feature.



An LCD keeps track of all the Mars' programming features, while a pair of status LEDs lets you know which mode you're in for easier navigation.

We also like the series of dual-purpose LEDs that are used to indicate whether the radio is in Function Mode or System Mode. The LEDs are also used to indicate when some of the radio's more complex features, such as ABS and Throttle Speed, are enabled.

There are also some pretty cool mechanical features. The throttle trigger is adjustable so that it may tightly fit any sized finger (you'll need a Phillips head screwdriver to make changes), and there's even a tiny slotted screwdriver located behind a "hidden" access door below the power switch. You can't really use this little tool for anything on the Mars, but it's nice to have it handy when you're adjusting your ESC or other devices.



KO Propo's new R model is 40 percent faster than the regular Mars, but you'll need this KR-301F receiver to take advantage of the transmitter's super-quick communication.

CHOOSE YOUR LEVEL

As mentioned, the Mars is one of the very few radios that allow you to start off slowly, and as your knowledge and skills progress, it can grow with you. There are four levels of programming available. When you select a lower level, most of the more complex (and sometimes confusing) functions are disabled, so they won't even show up on the LCD panel. Here are the functions for each level. Note that we left out the really simple stuff, as you already know what steering trim does... right?

Level One:

- Steering Travel
- Steering Balance
- Throttle High Point
- Throttle Brake
- Sub Trim
- Model Select

Level Two adds:

- Timer 1
- Steering Curve
- Throttle Curve
- Throttle Speed (1P)
- Position Display

Level Three adds:

- Timer 2
- Throttle Pre Set
- Automatic Start
- Steering Speed
- Throttle Punch
- Throttle Speed (2P)
- Active Brake System

Level Four adds:

- Steering Punch
- Steering Speed (two way)
- Throttle Speed (3P)
- Throttle Acceleration

TEAM LOSI TECH-TALK

Tech Tips #9

What a difference a diff makes.....Yes, among other things, we are going to look at differentials again, except this month we are looking at diffs as used on the new Team Losi XXX-S touring car. Just like off-road cars, on-road cars also use ball type differentials. This type of diff offers numerous advantages, but they must also be allowed to break in and need to be adjusted during this process to prevent undue wear or failure. Team Losi differentials use high quality ultra hard (carbide) balls running against precision ground and polished high carbon steel drive rings. Since the balls are harder than the rings, they will quickly wear a groove into the rings. As this groove develops, the metal of the rings is compressed, creating a denser surface much like squeezing a sponge until it's solid. As this groove forms, the total amount of contact area between the surface of the ball and the rings increases dramatically. This increases the friction and allows the diff to be adjusted looser and still operate freely without slipping. So if you use the following procedure, you should get a diff that operates like this and will give you lots of trouble-free laps. On the new XXX-S all-wheel-drive touring car you have a diff at both the front and the rear. After you have assembled the diffs as per the instructions, try this break-in procedure. (Yes, this technique also works on off-road diffs). While holding the chassis with only the left side tires firmly on the ground, give the car about quarter throttle for ten seconds. The right side tires should spin freely — backwards! Repeat this process with the right side tires held firmly to ground allowing the left side tires to spin. Those diff balls are now seating into the drive rings and all of the parts that are stacked up and screwed together are settling into their permanent position. Since the tension across the diffs, the balls and the drive rings has been reduced, you will need to tighten them up a bit. Now repeat the process a second time, including tightening up the diffs afterward. OK, one more time and you should be good to go. Make sure you check the diff adjustment before the first run. If in doubt, run it a little tight, I've never seen a failed or poorly performing diff that was too tight—only too loose! In addition to this break-in procedure you will want to check and probably tighten the diffs after each of the first two or three runs. Since the XXX-S features a fully enclosed drive train, you will find that the diffs will not require service for quite a while. When they finally do, you will be pleased to see that you need only to remove six screws to access them.

Nitro racing is in full swing around the country now and it seems that with the great power handling capabilities of the new XXX-NT a lot of you have the "Tim Taylor Syndrome".....that's right, you want more horsepower! The tuned pipe included with the XXX-NT offers a broad range of tuning opportunities. Pick up a new silicone coupler (part# A-9325) and try running the pipe as long as you can get it. You will probably have to adjust the high speed needle a small amount. Do not run it up and down the street but out on the surface you will be racing on. You should see a difference in the power band, which affects the acceleration as well as the top speed, and how quickly it wants to get there. Reduce the pipe length by 1/4 to 1/2" at a time and take care to note the difference. Continue to do this until the pipe is coupled as short as possible. If the coupler is too long to butt the pipe against the exhaust manifold, cut your old coupler to fit. As the pipe is made shorter the response will change noticeably. Use a small flexible tape measure to document the length and performance characteristics as you do this. This procedure will do several things for you. Obviously, you will find the spot where that particular engine is "happy" making the most raw horsepower. More importantly, you will learn how to adjust the pipe to produce a power band that is suited to particular track conditions. Next time we are going to look at another frequently asked question, "What's the best gear ratio for electric and nitro vehicles"

ADVERTISEMENT

A TASTE OF TECH

To explain each of the Mars' various functions and abilities would fill an entire issue (at 89 pages, the instruction book that comes with the Mars is the R/C equivalent to "War and Peace"). Instead, we picked a few of the Mars' more unique features.

Throttle Speed: This limits the speed of the throttle servo or ESC in response to quick or sudden movement of the throttle trigger. This differs from the traditional idea of throttle curve, as it is time-based, whereas throttle curves are based only on trigger position. If you move the trigger slowly, the Throttle Speed feature doesn't affect servo movement. Also, this feature doesn't do anything to the return speed of the servo or ESC.

Position Display: This lets you scroll through any of the electronic trim lever (ET 1 through 4 and button 1 through 2) or button positions to see its value. The values can be reset by pressing the plus and minus keys simultaneously.

Steering Speed: This works much like the Throttle Speed feature by limiting the speed of the servo against a given amount of time. In effect, this is like a slipper clutch for your steering wheel. Unlike the Throttle Speed feature, Steering Speed also affects the return speed of the steering servo.

Throttle Punch: This works like the "minimum drive" feature found on some Novak ESCs. What it does is alter the amount of initial throttle. So if your gas car feels sluggish from neutral throttle, upping the Throttle Punch value will move the throttle servo to a further position right off neutral. This also affects the servo's brake travel, so be careful not to overdo it!

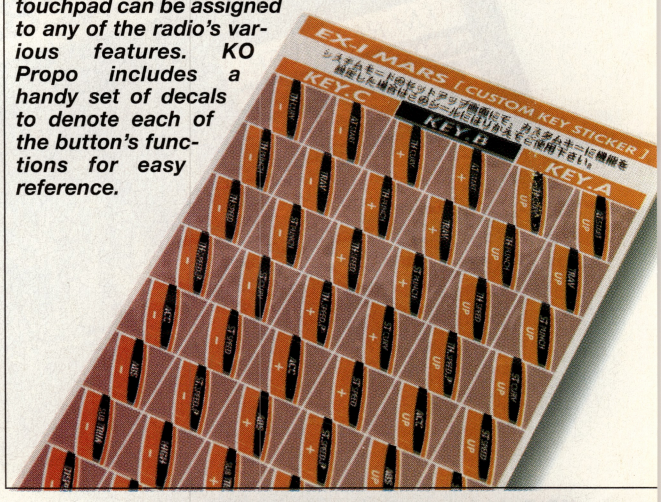
Active Brake System: KO calls this "Active Brake System" rather an anti-lock brakes, but the idea is the same: the brakes are pumped to prevent the wheels from locking up and provide smoother control when braking through turns. The Mars lets you adjust four parameters: pulse width - the amount of time the brakes are applied - is adjustable in a value of between 1 and 100; position, or the beginning of the ABS cycle, is also adjustable from between 1 and 100; cycle - the speed of the pulse - is also settable from 1 to 100; the delay menu lets you set the time it takes for the ABS to kick in once brakes are applied; duty cycle controls the speed of the pumping effect (the "up and down" movement).

Steering Punch: This is pretty much the same as Throttle Punch, but of course, it works on the steering channel, not the throttle.

Throttle Acceleration: This is a really useful feature that is basically like ABS for the throttle. If you're racing on a very slippery surface, the Throttle Acceleration feature can overcome any lack of trigger finesse you may have to prevent wheelspin. You can set both the position at which the function begins as well as where it ends.

CONCLUSION

The Mars has been around for a while, but it is by no means getting old. Although the ergonomics of the transmitter were not exactly to our personal tastes (KO offers an adapter to lower the height of the steering wheel), the rest of the package is very nice. We liked the blue LED (of course) and the gold steering wheel very much. We also like the idea of having different skill levels built into the radio's software, so if you have to recommend a radio to your novice friend, you won't feel guilty for giving him a radio he can't handle. Rather, you'll be getting him into a system that will take him all the way from the sportsman classes up to world-championship competition, should he desire.



Three of the buttons on the touchpad can be assigned to any of the radio's various features. KO Propo includes a handy set of decals to denote each of the button's functions for easy reference.

SOURCES

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XTREME Racing



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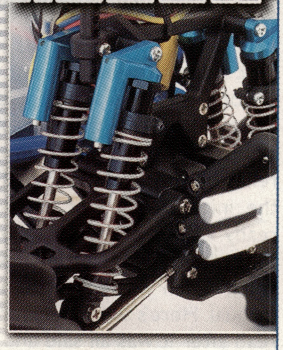

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XIPP DCX3000 XAPPER

THE BATTERY FOUNTAIN OF YOUTH

Our local track, Hot Rod Hobbies, is where on occasion a few fast guys whoop up on the R/C Car staff. Although these drivers get around the track without making mistakes, they always have the fastest cars. When we seem to have the edge and are leading the race, these same fast guys out-motor us and eventually chase us down. After several weeks of losing, we were forced to swallow our pride and find out what they were doing. The motors they ran were similar, the cars and gearing were the same, and so were the numbers on their batteries. So, what the heck were they doing? They were "zapping" their batteries of course. We had to act as if we knew; after all, we're editors for an R/C car magazine. After our discovery, we phoned Integy, the distributor of Xipp battery Xappers, and had them "kick it down," as it were.



WHAT DOES ZAPPING DO?

Inside each cell, a chemical reaction produces electrons. Internal resistance is the speed at which this chemical reaction produces these electrons. The internal resistance controls how many electrons can flow between the terminals. NiCd and NiMH cells are limited to 1.2 volts because that is the voltage produced by their chemical reactions. With time and repeated use, crystalline buildups form on the separators within the cell. These buildups limit the rate at which the electrons flow. By applying a high voltage or zapping the cells, you can break up this resistance to improve the speed of the electrons, which means that the cell will be able to discharge at a faster rate. You should know that damaged or worn out cells are usually beyond any help from a battery zapper. They will never regain their original performance.

THE TEST RESULTS ARE IN

We had some old Integy 2000mAh cells that were primarily practice packs. Since the packs were great racing cells just a few short years ago, we decided to see if we could revamp the old dogs. We wanted to see if the DCX3000 Xapper was up to the challenge. Before we zapped the batteries, we needed to see where they stood before the process. We broke down the pack into individual cells and strapped them into a Competition Electronics TurboMatcher 4 35.

To our surprise, some of the cells were actually in pretty good shape, but as with any battery pack, the strength of the team relies on the weakest link. After finding out the initial reading of each cell, we were ready to put the DCX3000 to work. We zapped the batteries at approximately 36 volts, which was suggested in the owner's manual. Here's what our TurboMatcher 35 read after it was all said and done.

BEFORE ZAPPING

Best cell:
Cell voltage: 1.240
Discharge voltage: 1.145
Run time (in seconds): 366
Calculated internal resistance: 37
Actual internal resistance (in milliohms): 4.5

Worst cell:
Cell voltage: 1.241
Discharge voltage: 1.096
Run time (in seconds): 361
Calculated internal resistance: 43
Actual internal resistance (in milliohms): 7.6

From the results of our test you can see that the best cell was in pretty good shape but the worst cell definitely held the pack back. The ridiculously low discharge voltage indicated that the weak cell was in dire need of some help.

AFTER ZAPPING

Best cell:
Cell voltage: 1.249
Discharge voltage: 1.151
Run time (in seconds): 371
Calculated internal resistance: 34
Actual internal resistance (in milliohms): 4.3

Worst cell:
Cell voltage: 1.245
Discharge voltage: 1.147
Run time (in seconds): 370
Calculated internal resistance: 33
Actual internal resistance (in milliohms): 4.5

THE VERDICT

Wow! The best cell exhibited slight improvements, which shows that it was in pretty good shape to begin with. But the worst cell has been transformed. Look at that huge reduction in internal resistance; it's a night-and-day transformation. The old pack should feel brand new after its zapping process. With the eye-popping results we experienced with the DCX3000, we give the unit our highest praises. This affordable zapper worked great and will be invaluable to anyone that has old packs that need a boost, or who wants to maintain new cells.

Part no.: 50008
Price: $129.99

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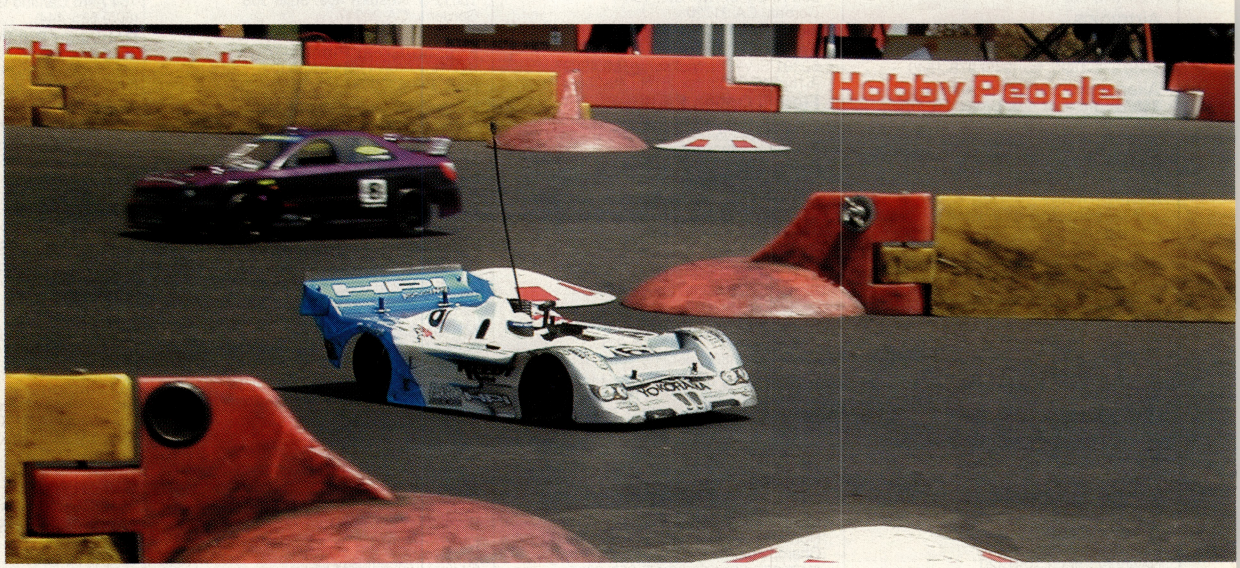
THE FOURTH ANNUAL HITEC PARKING

Big race turnout, small club atmosphere

By Scott Madrigal



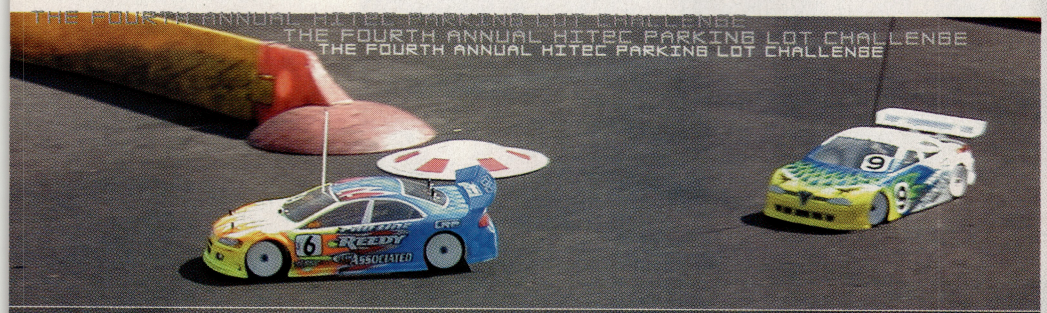
[Poway, California] When it comes to holding hugely successful parking lot races in Southern California, Hitec and Hobby People have it figured out. With the use of Hitec's parking lot, crew, and giveaways, combined with the race services of Hobby People's "Blue Crew," Hitec's Fourth Annual Parking Lot Challenge was held in only one day and was a great race. The event drew over 200 entries and brought factory drivers from all over the nation to race on the asphalt surface. Names like Atsushi Hara, Travis Amezcua, Greg Hodapp and Todd Hodge were some of the drivers who filled the Factory Mod class. For these drivers, and for the rest of the racers in the pits, the race had almost a "club-race" feel; drivers were laid back, and everyone was at the track mainly to have a good time.

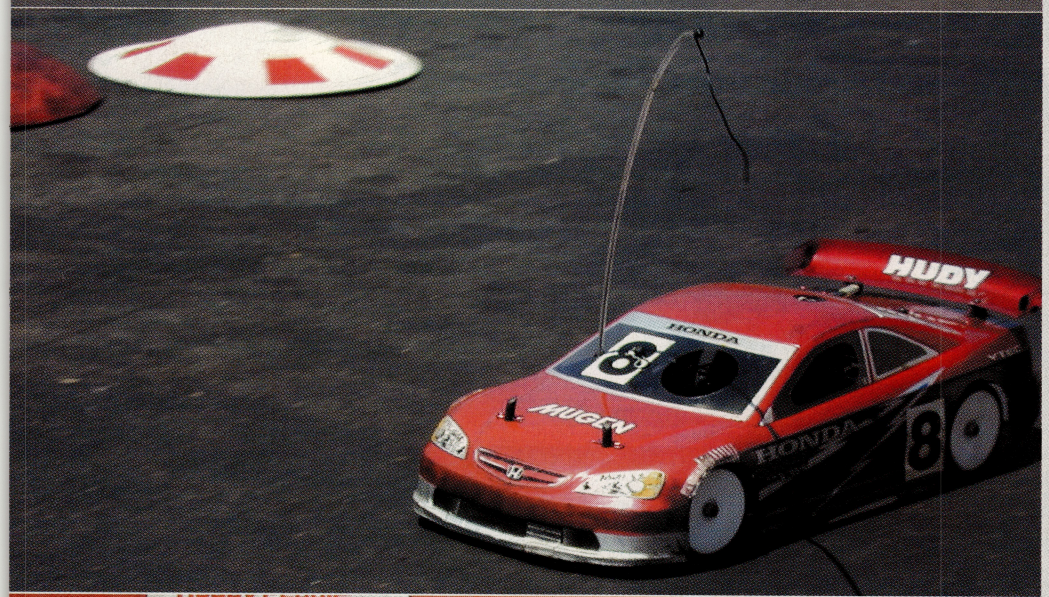


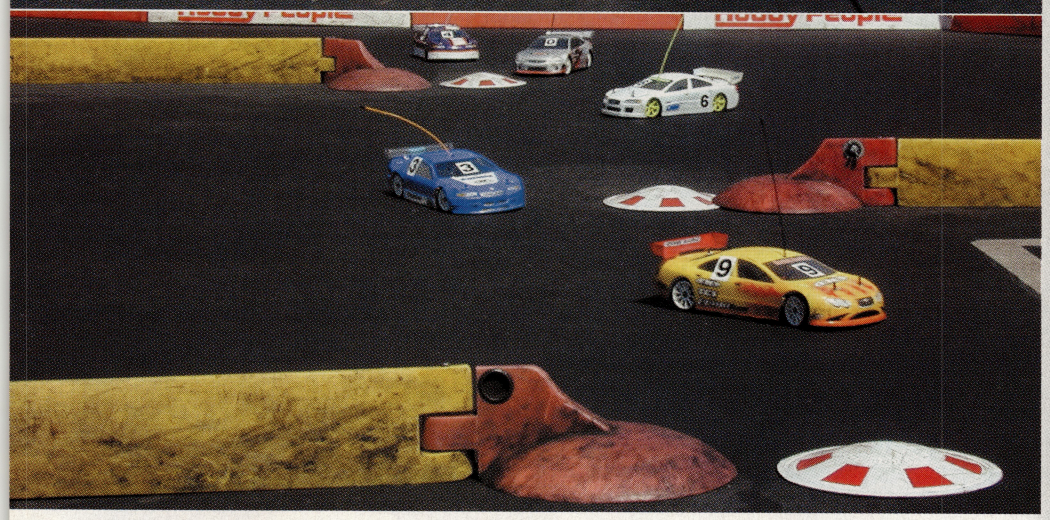


THE FOURTH ANNUAL HITEC PARKING LOT CHALLENGE

LOT CHALLENGE







PORTABLE TRACK, GREAT RACING

For the layout of the track, Hobby People brought out their normal parking lot race setup, which included both the drivers' stand and track borders. The borders consisted of tall, thick plastic boards that were linked together in order to construct the design. The track was limited in its size, so lanes were small and racing was extremely tight. The most predominant example of this was the center section of the track, where drivers were faced with an extremely narrow saw-tooth section: this was by far where most of the wrecks took place throughout the day. The parking lot surface, which was mysteriously coated with a Coke-syrup-like mixture the night before, was good on traction and very fast.

THE FOURTH ANNUAL HITEC PARKING LOT CHALLENGE





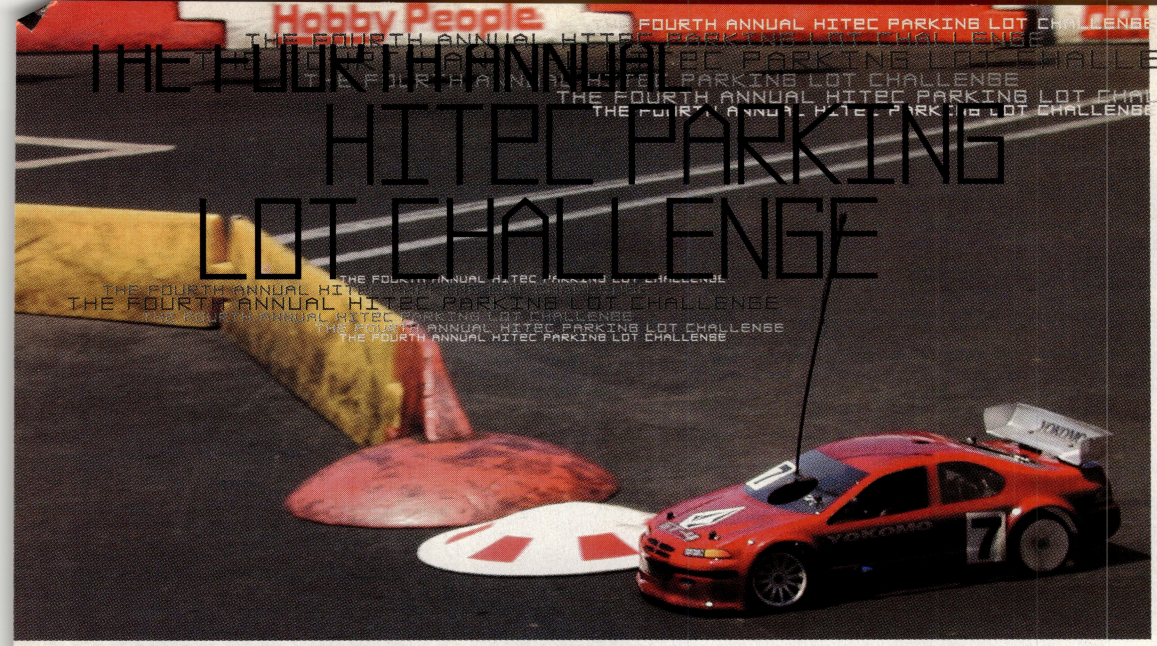


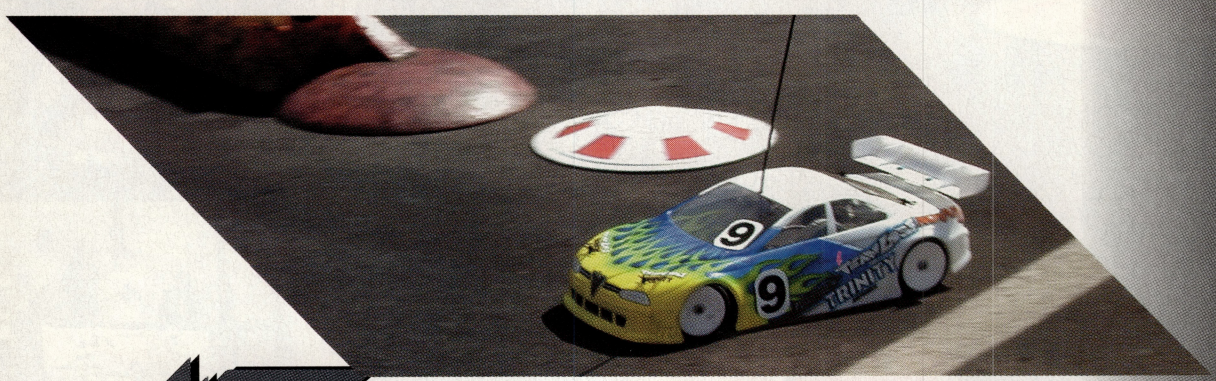






THE FOURTH ANNUAL HITEC PARKING LOT CHALLENGE

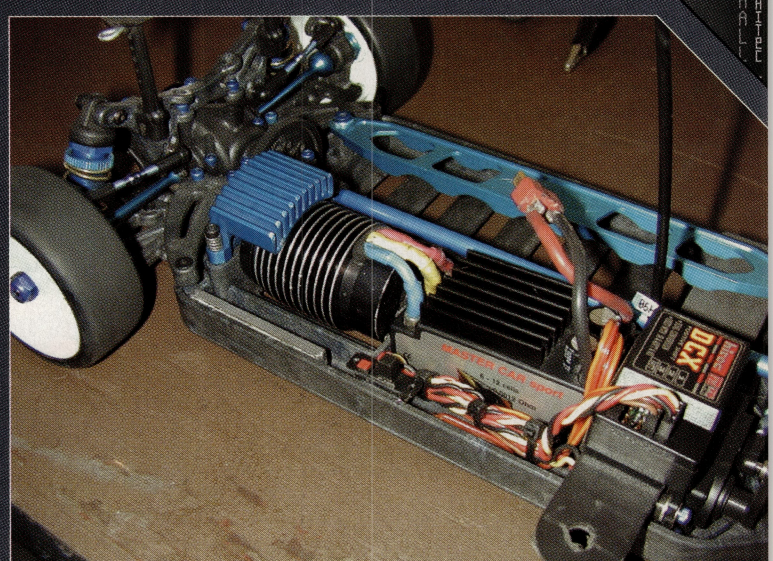


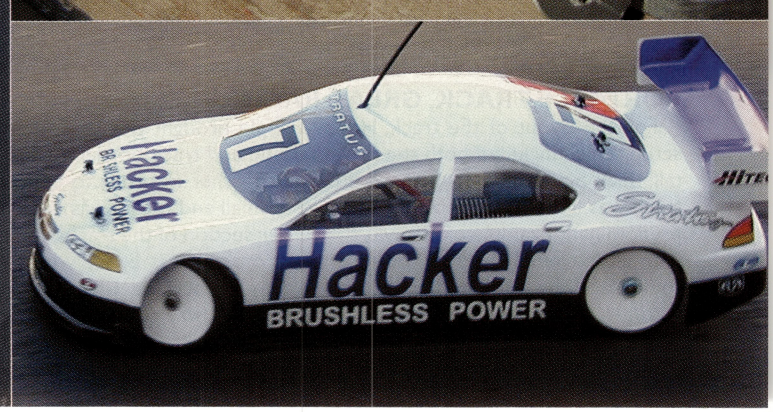


BUT WHERE WERE THE REST OF THE BRUSHLESS GUYS?

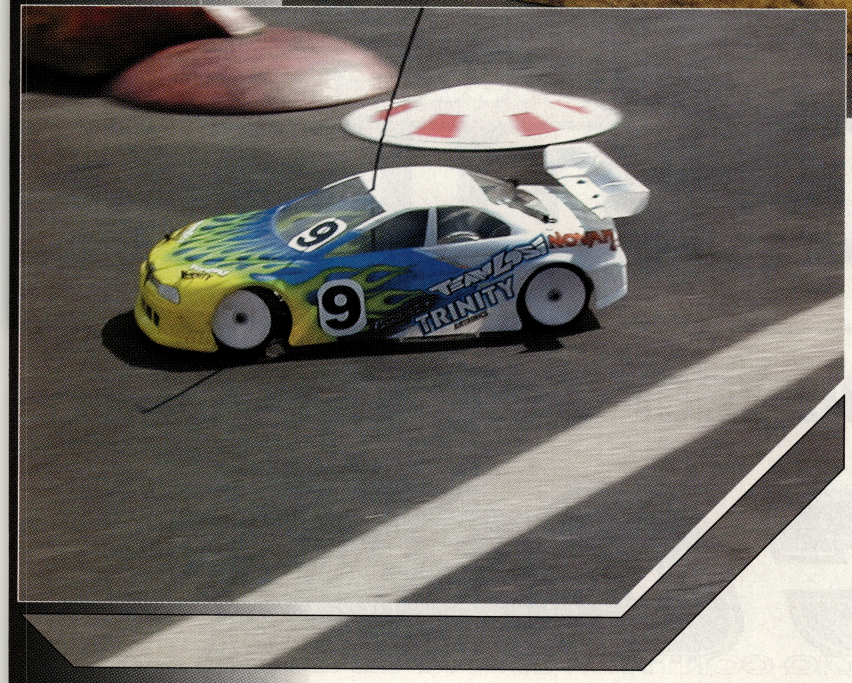
Setting this event apart from the rest was that for the first time at any big race, drivers in the Factory Mod Class were allowed to run the new brushless style motors. Hacker was the only motor company to take up the opportunity and sent out its version of the brushless system to compete with the rest of the Factory Mod drivers. "We couldn't pass up this chance," commented Ben Bustamante, part of the U.S. distributor for Hacker, "We've never run it at a big race before." The main quality that was to be tested on the new motor was performance, and the Hacker motor lived up to its expectations. "Speed-wise, it's pretty much the same…their monster power, batteries are not an issue, and you can run 2400s for five minutes easily, at the same speed they're running," said Bustamante.

The brushless motors stirred much of the conversation through the pits of the race as well, attracting many spectators to the track to watch the brushless system go head-to-head with some of the nations finest. "It looked fast," Factory Mod winner Greg Hodapp stated. "I think we need something like that actually—something that is going to make it better for the customer." Todd Hodge added his comments on the brushless system; "I think it's going to be the wave of the future for electric racing." Overall the brushless motor competed fairly well with its factory opponents. Watching the race first-hand, the brushless motor carried the same speed as everyone else on the back straight, but slowed a little bit compared to the competition through the infield. "I had a lot of car troubles today," Ben had to say after the day was over, "the motor itself is plenty fast, but I could never in my wildest dreams keep up with those guys."









CONCLUSION

Overall, the race itself was very successful. "It's fantastic—we have a couple heats of Factory, 100 total stock cars, 60 nitros, and a lot of sportsman," commented Hitec's Mike Mayberry. For an event to be the size of any national level race, and yet to have the feel of any local club race, is a very hard task, and one that everyone here did quite well. The race directors and announcers stuck to a strict schedule all day long and did a great job not only running two qualifiers and main events before sundown, but also in calling the action on the track. Congratulations to Hitec and Hobby People for having such a successful Fourth Annual Parking Lot Challenge; we'll see you next year for your fifth.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PRO TIPS

adam drake



Fine Tuning Nitro Engines

Developing the "touch"

Adam Drake of Team Losi has made quite a name for himself in the world of nitro off-road racing. He has won several national championships, dominating a very tough field of excellent nitro racers. "The Drake," as he is often referred to, must have a wealth of knowledge about nitro engines to ensure that his vehicles stay out in front and finish the long 45-minute main events. His knowledge and skills have also landed him his own signature edition of Losi's Triple-X NT. Although the Drake is a very busy man, we managed to catch up with him and get some valuable information about fine-tuning nitro engines.

YOUR ENGINE & THE WEATHER

"Before you begin tuning your engine, you should always warm it up for a few minutes," cautions Adam, "Either drive it around the track a few laps or run the car until you think it has reached its running temperature." Many people mistakenly think that once their engine is tuned that it should always remain tuned. According to Adam, this is not the case, "Engines are affected by both the outside temperature and humidity. Humidity drastically changes an engine's tune while air temperature slightly alters the running temperature of the engine. As night falls and the humidity increases, the engine will usually lean out and need to be richened by one hour on the high-speed needle. (Note: An engine's high-speed needle has a slot for flat-head screwdrivers. For tuning purposes, the slot should be imagined as an hour hand on a rotary clock. The slot should be moved about the distance an hour hand on a clock moves is one hour. This distance is about 1/16 inch.) If the temperature is cooler, but the humidity is relatively unchanged, then the engine, if it is running cool, can be leaned slightly. Turning the high-speed needle clockwise one hour should do the trick. If it is much hotter than the last time you ran your engine, then it can be slightly richened to counteract the affects of the heat. This can be obtained by turning the high-speed needle counter-clockwise in one hour increments."





REPLACE WORN PARTS OR LOSE POWER

Engines can be affected by a number of things that are often overlooked. For example, Adam says that most people run air filters several times before they clean or replace the dirty elements. A dirty filter will reduce precious engine power and cause an engine to act as if it has a restrictor. The engine may bog or act like it is too rich while the running temperature indicates it is in fact too hot. Another area to be concerned with is the wear of the clutch. An old worn out clutch that engages to soon will cause an engine to overwork. Not only will the engine seem weaker than normal, but the engine's head temperature will be high, giving the tuner a false sense of tune in relation to the high-speed needle. Installing a brand new clutch with strong springs will remedy these symptoms. An engine works best with new parts, so replace old items that slow you down and prevent you from having a well-tuned engine.

HELPFUL ENGINE TUNING TIPS FROM ADAM

A glow plug should be bright and heat up fast. Make sure the last couple of rings inside the plug are glowing like the rest.

• Every plug will not work with every engine. Read the engine's manual and find out what plug is suggested.

• Make sure that the engine's settings are within factory guidelines.

• An engine that is too lean will shut off when the radio's trigger is pulled to full throttle. The high-speed needle should be richened in hour increments, because the engine is starving for fuel.

• Check for exhaust leaks. The header should be secured tightly to both the engine and the pipe.

• Once set, the low speed needle should not require any adjustments.

• Always carry extra glow plugs. It's a bummer when you foul a plug and are unable to run.

• Use the same fuel you used for the break-in process. 20 percent nitro fuel is best for .12 and .15 size engines. 30 percent fuel is recommended for .21 size engines, but will increase power and cooling on smaller engines, at the price of excessive wear.

HOW TO KEEP IT IN TUNE

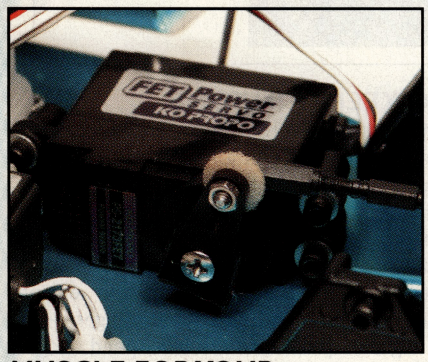
As we have already learned, nitro engines can get out of tune very easily. With a little knowledge and proper maintenance, the headaches of tuning can be eliminated. According to Adam, "Nine times out of ten, the majority of your engine tuning will consist only of adjusting the high-speed needle. The high-speed needle affects the power of the engine through the low-, mid- and high-speed ranges—not just at the highest rpm. Once the low-speed needle and idle are set, they usually do not require any adjustments, even when the weather changes. Altering the low-speed needle will not only make things very complicated, but the running temperature also responds drastically to any amount of change. On occasion I will turn the idle speed up for long main events. This will help keep the engine running during pit stops and when I crash (which is rare). It is always better to have the idle a little high than too low. Just remember that the idle setting can affect the powerband. A low idle will cause the engine to start slow and then hit hard with a burst of power through the midrange. Having the idle set too high will cause the engine to react faster, but it may be harder to control the power, and the brakes might wear out too quickly."

Engines that are finicky or are hard to tune might have an air leak. Check to see that the carburetor is secured tightly to the engine. Check the fuel lines for cracks and holes. Lastly, make sure the fuel tank is intact and that it is not leaking fuel or sucking air. The smallest air leak or overlooked maintenance can wreak havoc on engine tuning, so take time to go over your engine thoroughly and often.

How to make your Associated

No frills, just the competition essentials

One of the most popular R/C vehicles sold today is Team Associated's RC10GT RTR (now called the GT Plus because of the thorough updating it has received). Of course, the vast majority of these pre-built nitro-powered off-road trucks will never see organized competition, but some owners will surely try their hand at the local track—whether for racing or for practice. There are a ton of hop-ups available for the GT (see the buyer's guide elsewhere in this issue), but you don't need to spend a lot of dough to be competitive. In fact, that's the focus of this article—to help you prep your RTR GT for track time.

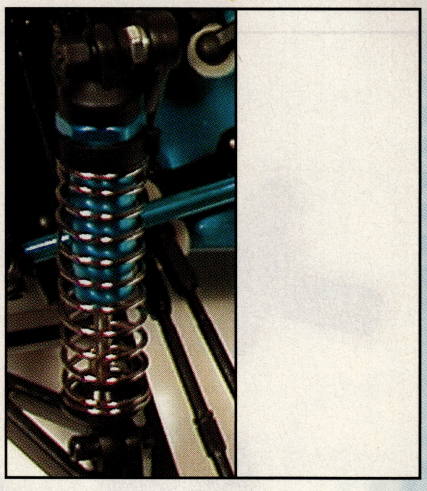


MUSCLE FOR YOUR FRONT WHEELS

In order to keep the price of the GT RTR low, Associated equips it with basic servos. Of course, we're appreciative of the metal gears in the steering servo, but to get around the track with any degree of finesse, a stronger, faster servo is essential. As with most things, you get what you pay for, and in the case of servos, the fastest, most powerful ones cost a pretty penny. How much do you need to spend? That depends on the servo you choose. For a gas truck such as the GT, we feel that the minimum servo specs should be 50 in/oz of torque, and a transit time (the time it takes the servo to go from neutral to the extent of its travel) should be around 0.17 seconds or faster. But fear not, as there are many reasonable midrange servos in this price range. You shouldn't need to spend more than $45 to $70, and you won't believe how much more responsive your GT RTR will become.

GT RTR into a Ready to Race



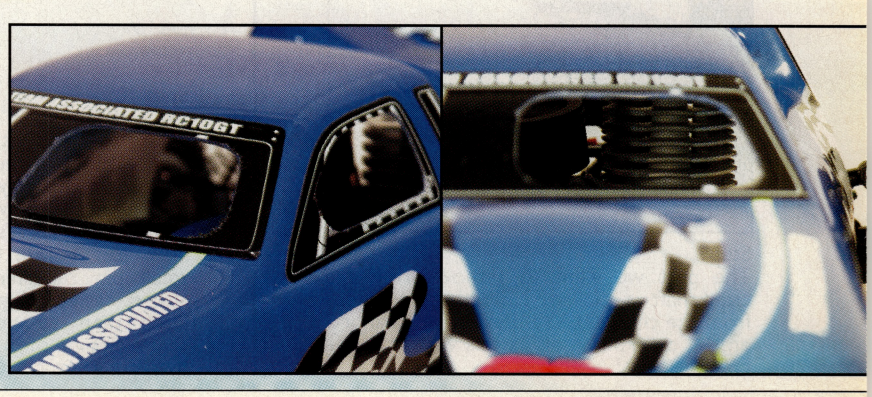


ALL SPRINGS ARE NOT THE SAME

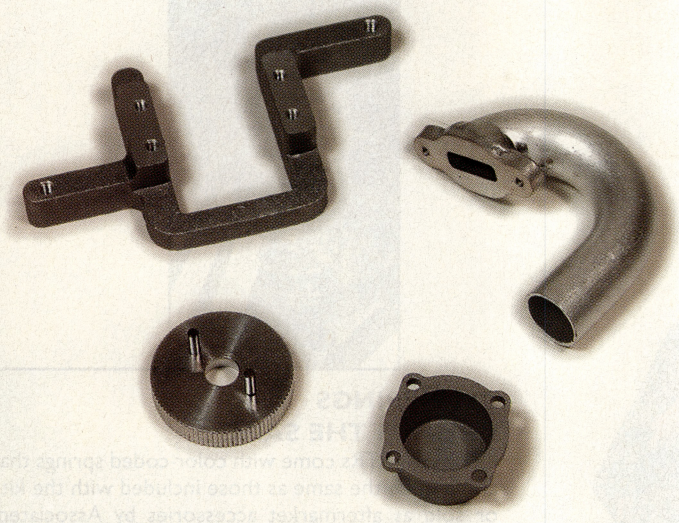
The GT RTRs come with color-coded springs that aren't quite the same as those included with the kits or sold as aftermarket accessories by Associated. We have found that the stock RTR springs tend to be softer than the kit springs of the same coding. So it's very hard to replicate the hot setup for your local track if you don't own the right springs. Do yourself a favor and purchase a set of Associated's silver front truck springs, and a pair of both green and silver rear springs. We almost always run the silver springs up front, as they help the truck go through the bumps better, and make it easier to drive. In back, we often switch between green and silver. On bumpy or slippery tracks, the softer green springs make the truck more stable and provide more rear bite. On faster, smoother tracks (or for tracks with tight, technical sections), silver springs in the rear help the truck to react faster to your steering input. If you really want your bases covered, pick up Associated's no. 1580 Truck Front Spring Set ($11.99) and 1582 Truck/Buggy Rear Spring Set ($11.99). Both sets include a pair of green, silver, blue, gold and red springs.

IT'S OKAY TO VENT

A cool engine makes more power—it's a fact of life. Associated has already cut out a portion of the GT's pickup body's rear bed to accommodate the protruding engine head, but you'll want more airflow than that. Begin by cutting out a section of the front windshield area; it's best to remove a portion directly in front of the engine's cylinder head so that the cooling air will be directed past the head's fins. Don't remove too much, as there are rules which govern how much material can be cut out. Generally, a 1-1/2 inch circle will be sufficient, or an area of approximately 1-1/2 inches square (make sure you round the corners of the cutout, as this will help prevent the body from cracking). You can also remove the left-side driver's window, which will not only allow for even more airflow, but will make it easier to reach the fuel tank for pit stops.



How to make your Associated GT RTR into a Ready to Race



HOW TO DITCH THE PULL-STARTER

WHAT YOU'LL NEED

Removal of the pull-starter requires several tools, some new parts and some degree of mechanical skill. If you're under 18, consider having someone with some engine experience perform this modification. Also, you should be aware that this mod voids the manufacturer's warranty.

Tools needed:

- 5/64-inch Allen wrench
- small flat-blade screwdriver
- a rotary tool with a cutoff wheel
- light machine oil or after-run oil
- 400-grit sandpaper
- engine-cleaning spray or solvent
- tape

Parts needed:

- #7770 non-pull-start engine mount
- #7610 non-pull-start flywheel
- 7736 non-pull-start manifold*
- #6928 manifold screws*
- #7734 manifold gasket*

**The new manifold isn't essential, however it does provide some performance gains and if you have the money, go for it.*

DISASSEMBLY

Step 1
Remove the engine from the truck and clean it. Next, remove the exhaust pipe and manifold as well as the stock engine mount.

Step 2
Remove the clip that secures the clutch bell and slide the clutch bell, its bearings and the clutch shoes from the engine. Next, remove the flywheel nut (you may need to grip the flywheel with pliers to hold it, or use a piston-locking tool if you have one). Remove the flywheel and its brass, cone-shaped collar from the crankshaft.

Step 3
Remove the cylinder head by using a 5/64-inch Allen wrench to remove the four screws.

Step 4
Using the same 5/64-inch wrench, remove the four screws that secure the pull-start mechanism to the engine's backplate. Slowly pull the starter mechanism from the engine, being careful that the recoil spring doesn't fly apart. In fact, it would be wise to wear eye protection for this step. Once the pull-starter is out, wrap it in tape to prevent it from uncoiling.

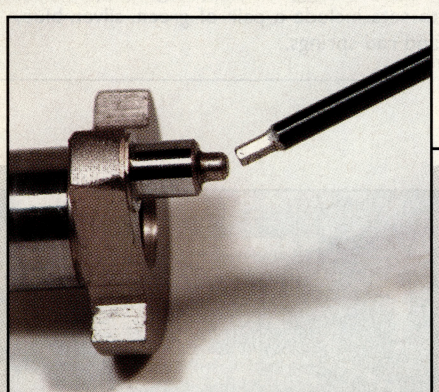
Step 5
Remove the backplate and backplate gasket by using a 5/64-inch wrench to remove the four screws.

Step 6
Spin the crankshaft. When the piston reaches its highest point, it will most likely cause the cylinder sleeve to rise up as well. If it doesn't, use the tip of a hobby knife to gently pry the sleeve upwards so it can be removed.

Step 7
Rotate the crankshaft again until the crankpin is at its highest point. Straighten a paper clip and place a small 1/4-inch hook at one end. Use this to gently pull the connecting rod from the crankpin. Remove the piston and rod from the opening at the top of the engine where the sleeve used to be.

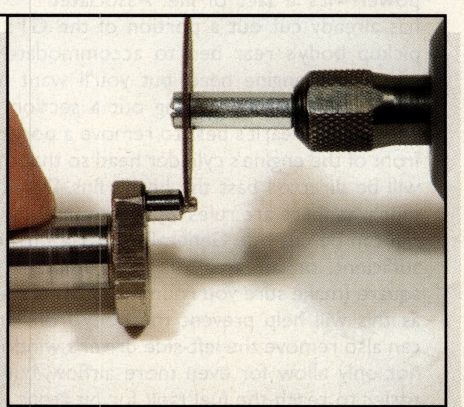
Step 8
Remove the crankshaft by pulling it straight out through the backplate hole.

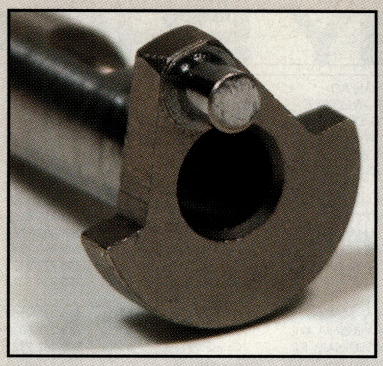
MAKING THE MODIFICATION



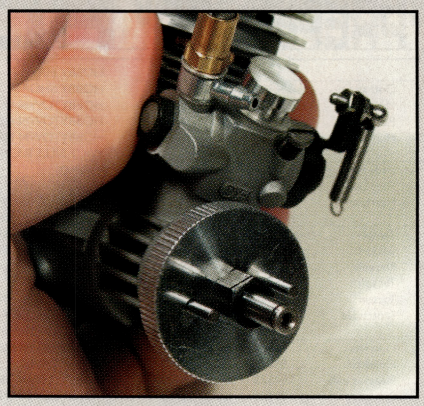
Step9
The part we want to remove from the crankshaft is the small pin that protrudes from the crankpin. We don't want to shorten the crankpin at all, as this will make the crank useless!

Step 10
We recommend using a rotary tool such as a Dremel with a cutting wheel. When cutting, protect your eyes from flying debris with a pair of safety goggles. It's better to leave just a little bit of the small pin remaining, as it's always easier to grind it off later than to accidentally remove some of the crankpin by cutting too close.

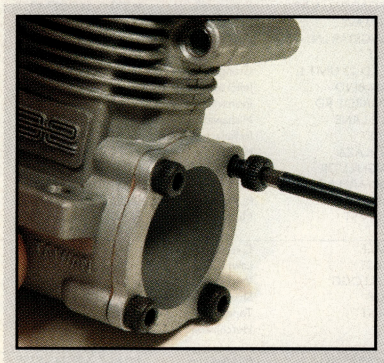




Step 11
This is what the finished crank should look like. Use a file or a fine grinding stone to grind the remaining portion of the small pin flush with the end of the crankpin. Make certain that there are no burrs that could damage the connecting rod's bushing.

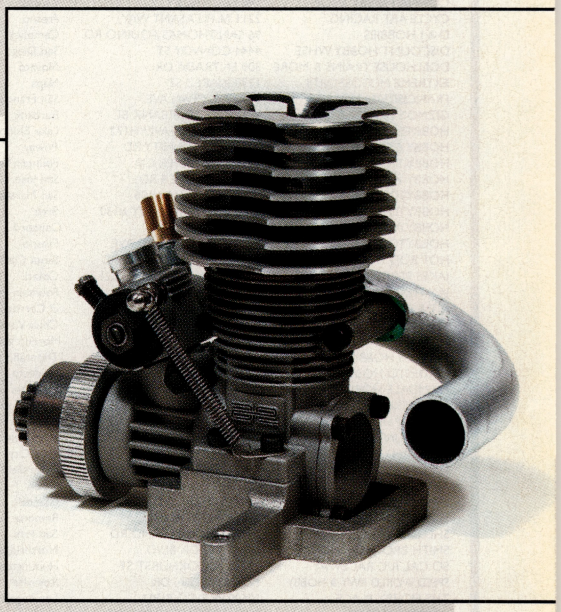


Step 13
Install the new, smaller diameter flywheel using the washer and brass collar that came with your engine. Install and tighten the clutch nut, then reassemble the clutch and clutch-bell as per your instruction manual.



Step 12
Reassemble the engine in the following order: slide the crankshaft into the engine case; then install the piston and connecting rod, making sure to place few drops of light oil between the rod's lower bushing and the crankpin; install the cylinder sleeve, making sure that its notch aligns with the small roll-pin; install the new backplate and its gasket using the screws from the old backplate.

Step 14
This is what your finished engine should look like. Note that the new exhaust manifold and engine mounts are also attached. Don't forget that the new non-pull-start manifold requires the use of the 4-40 #6928 capscrews.



HYDRA-DYNAMICS

The factory-build GTs come with 30wt silicone shock fluid already installed. Chances are, however, that your RTR's shocks are in dire need of a rebuild (especially if this is your first R/C, and you've been driving the wheels off it!). We recommend that you buy bottles of 30, 35 and 40wt shock fluid (it doesn't have to be Associated oil, but since you own an Associated truck...). The RTR uses the same pistons as the racing kits, so a good place to begin is to use the #2 (medium) pistons in front, which will provide a good balance of front-end support and bump absorption, and the larger #1 pistons in back. The larger rear pistons will help keep the rear tires on the ground where they belong, although they may allow the back of the chassis to bottom on big jumps. Try the 30wt oil to begin with, but if you want a bit more stability and corner speed, or if your track is smooth, experiment with the thicker 35 or 40wt. You'll also want to try the thicker fluid if it's really hot outside, as warmer temperatures do thin out the shock fluid (even though everyone says that silicone is impervious to heat and cooling).

YOU'VE OUTGROWN THE STOCK TIRES

The stock tires that came with your RTR GT are good for having fun and ripping around the yard, but for the track, they leave a lot to be desired. The main reason for this isn't the actual tread design of the tires, but the type of rubber they're made from. Companies such as Pro-Line and Team Losi have spent years developing rubber compounds that grip dirt like that shirtless drunk guy on "Cops" holds on to his smokes while being shoved into the back seat of a squad. Unfortunately, there are dozens of tire styles available, and at nearly $20 per pair, they aren't cheap. Our best advice is to go to the track and do a little recon: Which tires are the fast guys running? How well do they wear? Sometimes, you're better off not buying the softest rubber compounds; they provide the most grip, but a medium compound (such as Pro-Line's M2 or Losi's silver) will last much longer.

DITCH THE AA BATTERIES

It's time to ditch the AA alkaline batteries. There are two routes you can go: the ideal path would be to invest in a five-cell rechargeable battery pack (get the 3 plus 2 configuration for the GT), but these can be a little pricey (upwards of $30). The other option is a bit cheaper. You can get a set of four AA-sized NiMH rechargeable batteries, plus a wall charger, for under $20 at your local hardware or electronics store. The latest cells are 1700mAh, and they'll give you way more run time and more voltage (for faster servo response) than alkaline batteries. And with the rechargeable AA cells installed, you'll be able to fast-charge them through the battery holder's output plug—no need to cut the zip-ties and remove the holder each time you need to change batteries.

CONCLUSION

It doesn't take much to make the RTR GT into a formidable track machine—after all, it's very closely based on the ROAR national champion Factory Team GT. All of the essentials are there; racing simply requires a few hardware changes and a bit more preparation than you might normally give your truck. But whether you intend to race or just want to get the best performance from your GT RTR, these tips will yield big results with minimal cash outlay.

R/C CAR "PREFERRED" HOBBY SHOP

THE RADIO CONTROL CAR MAGAZINE

ALABAMA

BRYANS HOBBY SHOP	2837 ROSS CLARK CIR	Dothan	36302	334-793-2439
HOBBYTOWN USA RACEWAY	450 SCHILLINGER RD S.	Mobile	36608	334-633-8446
OAK MOUNTAIN HOBBIES	2238 PELHAM PARKWAY	Pelham	35124	205-989-4882
RC HI TECH RACEWAY	3303 MERIDIAN ST	Huntsville	35811	256-539-1347

ARKANSAS

HOBBYTOWN USA	400 N. BOWMAN/STE B-5	Little Rock	72211	501-223-5155
HOBBYTOWN USA	9220 HWY 71 SOUTH	Fort Smith	72916	501-649-9220
K & S HOBBY SHOP	809 N. 62-65 HWY	Harrison	72601	870-365-0597

ARIZONA

HOBBY DEPOT	216 WEST SOUTHERN AVE	Tempe	85282	602-968-1880
HOBBYTOWN USA	1915 E. BASELINE RD	Gilbert	85233	480-892-0405
HOBBYTOWN USA	5030 E. RAY RD #11	Phoenix	85044	480-598-5282
HOBBYTOWN USA	1102 E. 22ND ST	Tucson	85713	520-882-8888
HOBBYTOWN USA	4500 N. ORACLE RD, #202	Tucson	85705	520-888-9777
SCOTTSDALE R/C RACEWAY	3023 N. SCOTTSDALE RD	Scottsdale	85051	480-945-2186

CALIFORNIA

ARC RACING	41083 SANDLEWOOD CIR/ D	Murrieta	92562	909-304-0580
B.C.T. HOBBY & CRAFT	620 B SAN BENITO ST	Hollister	95023	831-636-7550
BEE GEE HOBBIES	234 GOLF CLUB RD	Pleasant Hill	94523	925-798-5133
CASTLE HOBBIES	14918 CAMDEN AVE	San Jose	95124	408-377-3771
COVINA HOBBY SHOP	140 N. CITRUS	Covina	91724	626-331-1910
CYCLE ART RACING	2211 N. PLEASANT WAY	Fresno	93705	559-233-3665
D & J HOBBIES	96 SAN THOMAS AQUINO RD	Campbell	95008	408-379-1696
DISCOUNT HOBBY WHSE	4444 CONVOY ST	San Diego	92111	619-560-9633
DOLLHOUSE TRAINS & MORE	300 ENTRADA DR	Novato	94949	414-883-0388
EXTREME MOTOSPORTS	1230 JUAREZ ST	Napa	94559	707-251-9876
FRANCISCIAN HOBBIES	1920-A OCEAN AVE	San Francisco	94127	415-584-3919
GIZMO'S HOBBY	2010 WEST BURBANK BL	Burbank	91506	818-842-8200
HOBBIES TOYS & MORE	17600 COLLIER AVE/ H172	Lake Elsinore	92530	909-245-1147
HOBBY CENTRAL	13461 COMMUNITY RD	Poway	92064	858-513-0373
HOBBY SHACK	18480 BANDILIER CIR	Fountain Valley	92728	714-964-0827
HOBBY WORLD	6148 BOLLINGER RD	San Jose	95129	408-873-2109
HOBBYTOWN	727 CENTER DR #106	San Marcos	92069	760-739-0672
HOBBYTOWN USA	2500 E.IMPERIAL HWY #130	Brea	92821	714-990-9652
HOBBYTOWN USA	4420-A TREAT BLVD	Concord	94521	925-685-3802
HOBBYTOWN USA	3069 WEST BULLARD AVE	Fresno	93711	559-435-3342
HOT ROD HOBBIES	25845 SAN FERNANDO RD	Santa Clarita	91350	805-255-2404
JAKES PERFORMANCE HOBBY	6650 COMMERCE BLVD #21	Cotati	94928	707-586-3375
JAX HOBBIES	17421 BROOKHURST/107	Fountain Valley	92708	714-378-8924
KIT & CABOODLE	550 EL CERRITO PLAZA	El Cerrito	94530	510-524-9942
KRAZY KEVIN'S	1223 3RD ST #D	Chula Vista	91911	619-422-2724
LPRP	24771 NORTHERN DANCER	Moreno Valley	92551	909-488-9021
MARTY'S HOBBIES	1728 N. MOORPARK RD	Thousand Oaks	91360	805-497-3664
MODESTO HOBBIES	1300 SYLVAN AVE #C7	Modesto	95355	209-529-7310
PALMDALE HOBBIES	2127 E. PALMDALE BLVD	Palmdale	93550	661-273-6229
PEAK PERFORMANCE	22601 LaPALMA AVE. #104.	Yorba Linda	92887	714-692-8533
PIT SHOP HOBBIES	2027 #B DeLaVINA ST.	Santa Barbara	93105	805-898-3902
R/C COUNTRY HOBBIES	6011 FOLSOM BLVD	Sacramento	95819	916-731-5868
R/C TECH	1618 SULLIVAN STSTE 105	Daly City	94015	650-992-7600
RACERS HAVEN	7401 WHITE LANE #12	Bakersfield	93309	805-835-0441
RIPON RC SPEEDWAY	701 N. ACACIA	Ripon	95366	209-599-5160
ROBIN'S HOBBY SERVICE	1844 WEST GLEN OAKS	Glendale	91201	818-240-2093
SAVAGE MOTORSPORTS	948 MAIN STREET	Ramona	92065	760-788-7733
SHELDON'S HOBBIES	2135 OLD OAKLAND RD	San Jose	95131	408-943-0872
SMITH BROTHERS HOBBY	8941 RESEDA BLVD	Northridge	91324	818-885-8636
SO CAL R/C RACEWAY	19118 BROOKHURST ST	Huntington Beach	92646	714-963-7484
SPEED WORLD RWY & HOBBY	1704 CHILTON DR	Roseville	95747	916-783-8864
THE HOBBY PLACE	10600 W. PICO BLVD	Los Angeles	90064	310-836-2000
VISALIA HOBBIES	2137 W.WHITENDALE AVE	Visalia	93277	559-734-8072

COLORADO

COLPAR HOBBIES	804 S. HAVANA ST	Aurora	80012	303-341-0414
CUSTOM HOBBIES	2813 E. PLATTE AVE	Colorado Springs	80909	719-634-7400
HOBBYTOWN USA	4348 S. COLLEGE	Fort Collins	80525	970-226-3900
HOBBYTOWN USA	6815 WEST 88TH AVE	Westminster	80021	303-431-0482
HOBBYTOWN USA	800 SOUTH HOVER RD	Longmont	80501	970-226-3900
MHOR R/C RACEWAY	15540 E. BATAVIA DR.	Aurora	80011	303-343-0151

CONNECTICUT

DANBURY HOBBY CENTER	366 MAIN ST	Danbury	06810	203-743-9052
NEW ENGLAND HOBBY SPY	71 HILLIARD ST	Manchester	06040	860-646-0610
PIT STOP HOBBIES	43 GRASSEY PLAIN ST	Bethel	06801	203-778-9249
RC MADNESS TRACK & HOBBY	640 ENFIELD	Enfield	06082	860-741-6501

DELAWARE

HOBBY STOP SPEEDWAY	RD 4 BOX 100 RT 13	Seaford	19973	302-629-3944

FLORIDA

ACE HOBBIES	2127 S. RIDGEWOOD AVE	Daytona Beach	32119	904-761-9780
ATOMIC HOBBIES	13205 S.W. 137 AVESTE 103	Miami	33186	305-235-3232
BOB'S HOBBY CENTER	7333 LAKE UNDERHILL RD	Orlando	32822	407-277-1248
CENTRAL FLORIDA HOBBIES	5600 W. COLONIAL DR #310	Orlando	32808	407-295-9256
COLONIAL PHOTO & HOBBY	634 N. MILLS AVE	Orlando	32803	407-841-1485
CROWN HOBBIES	7439 S.W. 24TH ST	South Miami	33155	305-264-3964
G & C HOBBIES	1228 HYPOLUXO RD	Lantana	33462	561-547-3812
HOBBIE WAREHOUSE INC.	1237 AIRPORT RD S.	Naples	34104	941-262-2701
HOBBY CENTRAL	UNIVERSITY MALL	Pensacola	32504	850-471-9800
HOBBY NUT INC.	12679 DIXIE HWY	South Miami	33156	305-235-9584
HOBBYTOWN USA	12608 S.W. 88TH ST	Miami	33186	305-273-7803
JACKS HOBBIES	131 N.E. 17TH PLACE	Ocala	34470	352-351-2224
MONSTER HOBBIES	616 S.E. 10TH ST	Deerfield Beach	33441	561-392-5447
PHIL'S HOBBY SHOP	6050 PARK BLVD	Pinellas Park	33781	727-545-1251
R.C. HOBBIES	6800 N. UNIVERSITY DR	Tamarac	33321	954-721-5720
ROB'S HOBBY WORLD	8602 S.W. ST RD 200	Ocala	34481	352-854-2799
SCOTT'S HOBBIES	26690 61ST RD	Branford	32008	904-935-0758
SPACE COAST HOBBIES	2135 PALM BAY RD NE	Palm Bay	32905	321-722-3696
SUPERIOR HOBBIES	1478 E. SEMORAN BLVD	Casselberry	32707	407-834-9299
TAVERNIER BIKE & HOBBIES	91910 OVERSEAS HWY	Tavernier	33070	305-852-2859
TEAM AUTO HAUS	424 BLANDING BLVD.	Orange Park	32073	904-276-5432
WARWICK CUSTOM HOBBIES	7676 PETERS RD	Plantation	33324	954-370-0708

GEORGIA

ALLISON PERFORMANCE HOB.	12 GREENVILLE ST	Newnan	30263	770-254-9557
HOBBY MART	6889 PEACHTREE INDUST. /STE H	Peachtree Corners	30092	770-840-8495
HOBBYTOWN USA	19 NORTHSIDE DR EAST	Statesboro	30458	912-489-8700
HOBBYTOWN USA	6770 VETERANS PKWY/STE 1	Columbus	31909	706-660-1793
HOBBYTOWN USA	800 E. BARRETT PKWY	Kennesaw	30144	770-426-8800
NATIONAL HOBBY	1975 SOUTH COBB DR	Marietta	30060	770-333-0190
SUGAR BOWL SPEEDWAY	5272 NELSON BROGDON WY	Sugar Hill	30518	770-945-6709

HAWAII

ACE RADIO CONTROL	1005 LEHUA AVE	Pearl City	96782	808-456-1279
THE HOBBY COMPANY	98-1005 MOANALUA RD	Aiea	96701	808-487-2473

IOWA

BOX KAR HOBBIES	3649 FIRST AVE S.E.	Cedar Rapids	52402	319-362-1291
FAGAN'S	2327 CENTRAL AVE	Dubuque	52001	319-588-0846
HOBBY CHEST	209 E. MAIN	Ottumwa	52501	641-683-4436
HOBBY HAVEN	7672 HICKMAN RD	Urbandale	50322	515-276-8785
HOBBY SHOP	1700 S. FIRST AVESTE 17	Iowa City	52240	319-338-1788
HOBBYTOWN USA	2406 E. 53RD ST	Davenport	52807	319-355-2071
HOBBYTOWN USA	2737 16TH AVE S.W.	Cedar Rapids	52404	319-364-3289
HOBBYTOWN USA	620 LINCOLN WAY #6	Ames	50010	515-232-9060
WILD BILLS R/C HOBBIES	901 W. JONES	Knoxville	50138	515-842-5973

IDAHO

BOISE HOBBIES	4516 OVERLAND RD	Boise	83705	208-363-9555
DAPCO HOBBIES	2211 GARRETT WAY	Pocatello	83201	208-233-8163
HOBBYTOWN USA	1870 W. PULLMAN RD	Moscow	83843	208-882-9369
HOBBYTOWN USA	3317 N. COLE RD	Boise	83704	208-376-1942
MONSTER HOBBIES	9551 N. HWY 95 SUITE E	Hayden	83835	208-772-0422
THE TOY SHOP	837 POLELINE RD	Twin Falls	83301	208-734-2725

ILLINOIS

AL'S HOBBY SHOP INC.	121 ADDISON, BOX 449	Elmhurst	60126	630-832-4908
CORNER HOBBY	308 NORTH VIRGINIA AVE	Swansea	62220	618-277-6030
DEPOT HOBBY SHOP	180 SOUTH SEMINARY ST	Galesburg	61401	309-342-9323
HIS N HERS HOBBIES	1206 TOWANDA PLAZA #2	Bloomington	61707	309-827-0204
HOBBY LAND	616 N. MAIN	Bloomington	61701	309-828-1442
HOBBYTOWN USA	1000 LAKE ST	Oak Park	60301	708-445-8056
HOBBYTOWN USA	1772 S. RANDALL STSTE 200	Geneva	60134	630-208-9062
HOBBYTOWN USA	4338 E. NEW YORK	Naperville	60540	630-778-8707
HOBBYTOWN USA	MACHESNEY PARK MALL	Machesney Park	61115	815-282-0727
LA GRANGE HOBBIES	25 S. LA GRANGE RD	Mc Cook	60525	708-354-1220
LEISURE HOURS HOBBIES	2712 N. PLAINFIELD RD	Joliet	60436	815-439-1477
PAT'S HOBBIES & CRAFTS INC.	5730 W. 95TH ST	Oak Lawn	60453	708-424-6131
RADIO ACTIVE RACEWAY	751 N. BOLINGBROOK DR #15	Bolingbrook	60440	630-759-7557
STANTON HOBBY SHOP	4718 N. MILWAUKEE AVE	Chicago	60630	773-283-6446
THE GREAT ESCAPE	4507 RAY ST.	Crystal Lake	60012	815-459-8111
VENTURE HOBBIES	23 HUNTINGTON LANE	Wheeling	60090	847-537-8669

INDIANA

B & R HOBBIES	9014 CRAWFORDSVILLE RD	Indianapolis	46234	317-297-4257
BREMEN HOBBIES	308 N. BOWEN AVE	Bremen	46506	219-546-3807
CUSTOM MADE HOBBIES	1600 MORNINGSTAR LN.	Decatur	46733	260-724-4013
G & G HOBBIES	105 E. MAIN ST	Griffith	46319	219-924-6686
GRANGER HOBBY STOP	12131 STATE RD 23 UNIT L	Granger	46530	219-243-2390
HAPPY HOBBIES	1398 EASTERN BLVD	Jeffersonville	47129	812-282-0060
HOBBY TOWN USA	139 N. BURKHARDT RD	Evansville	47715	812-477-7200
HOBBYLAND INC.	2564 MIRACLE LANE	Mishawaka	46545	219-255-1722
HOBBYTOWN USA	6336 E. 82ND ST	Indianapolis	46250	317-845-4106
HOBBYTOWN USA	1858 E. 80TH PLAZA	Merrillville	46410	219-736-0255
JOE'S HOBBY BARN	1950 E. SPRINGHILL DR	Terre Haute	47802	812-299-5773
P & T HOBBIES AND RWY	2412 N. POORFARM RD	Bedford	47421	812-849-6666
PHILS HOBBY SHOP	3112 N. CLINTON	Ft. Wayne	46805	219-471-1340
R & D HOBBIES	4217 FRANKLIN ST	Michigan City	46360	219-879-7563

KANSAS

HOBBY HAVEN	10560 METCALF	Overland Park	66212	816-942-2205
HOBBYTOWN USA	2108 W. 27TH ST	Lawrence	66047	785-865-0883
HOBBYTOWN USA	8229 EAST KELLOGG	Wichita	67207	316-683-7222
HOBBYTOWN USA	9270 METCALF	Shawnee Mission	66212	913-649-7979
MIKES R/C	121 S.E. 29TH ST	Topeka	66605	785-266-5767
R/C SUPERDOME & T.Q. SHOP	14 E. AVE A	Hutchinson	67501	316-665-6633

KENTUCKY

HOBBYTOWN USA	12615 SHELBYVILLE RD	Middletown	40243	502-245-5755
PIT STOP HOBBIES	1927 IRVIN COBB DR	Paducah	42003	502-527-8216
SCALE REPRODUCTION	3073 BRECKINRIDGE LANE	Louisville	40220	502-459-5849

LOUISIANA

HARES ART-N-HOBBY	4529 LEE ST	Alexandria	71302	318-443-2755

MASSACHUSETTS

BARN SPEED HOBBIES	109 CENTER ST	Lee	01238	413-243-2651
BIG BOYS TOYS	33 FATHER DE VALLES BLVD	Fall River	02723	508-677-9400
DAVE'S HOBBIES	281 CABOT ST	Beverly	01915	978-921-1559
HENRY'S HOBBY HOUSE INC.	67 W. BOYLSTON ST	West Boylston	01583	508-835-6165
HOBBY WORLD	171 GROVE ST	Adams	01220	413-743-7223
HOG HEAVEN HOBBIES	3 ARNOLD RD"P.O. BOX 416	Fiskdale	01518	508-347-9350

MARYLAND

DOUGS HOBBY	2935 CRAIN HWY	Waldorf	20601	301-843-7774
GPA HOBBIES	2431 CROFTON LANE STE 6	Crofton	21114	301-858-0004
HOBBY CITY	15751 COLUMBIA PIKE	Burtonsville	20866	301-421-5977
HOBBYTOWN USA	1305 W. 7TH AVE #28	Frederick	21702	301-694-7395
HOBBYTOWN USA	CHESAPEAKE SQR SHP CTR	Glen Burnie	21061	410-590-4950
HUNT VALLEY HOBBIES	10824 YORK RD	Hunt Valley	21030	410-666-1098
STONELEIGH HOBBY INC.	6717 YORK RD	Baltimore	21212	410-377-4447
S&J HOBBIES	10476 CAMPUS WAYS	Largo	20774	301-324-6680
THE TRACK	16806 OAKMONT AVE	Gaithersburg	20877	301-417-9630

MAINE

R/C SPEEDWAY & HOBBIES	87 MAIN ST	Fairfield	04937	207-453-4588
VICTORY LANE HOBBIES	306 ROUTE 236	Eliot	03903	207-439-3278

MICHIGAN

ACTION HOBBIES	211 EAST MAIN	Niles	49120	616-687-8550
ANYTHING GOES	5108 ROCHESTER RD	Troy	48085	248-740-2277
CAPITOL CITIES HOBBIES INC.	15357 HALL RD	Macomb	48044	810-532-0050
HOBBIES & TOYS	106 WEST MAIN ST	Gaylord	49735	989-732-3963
HOBBYTOWN USA	2252 S. MAIN ST	Ann Arbor	48103	734-996-2444
HOBBYTOWN USA	12821 S. SAGINAW	Grand Blanc	48439	810-695-9088
HOUSE OF HOBBIES	2763 N. 120TH AVE	Holland	49424	616-786-3686
JOE'S HOBBY CENTER	35151 GRAND RIVER RD	Farmington	48335	248-477-6266
KECK HARDWARE & HOBBY	2132 WEST RD	Trenton	48183	734-676-2282
LARRY'S PERFORMANCE R/C'S	43665 UTICA RD	Sterling Heights	48314	810-997-4840
NANKIN HDWRE & HOBBY	35101 FORD RD	Westland	48185	734-722-5700
P & D HOBBY SHOP	31280 GROESBECK HWY	Fraser	48026	810-296-6116
PASTIME HOBBIES	2700 PINE GROVE RD #16	Port Huron	48060	810-982-2874
PROP SHOP HOBBIES, INC.	23326 VAN DYKE	Warren	48089	810-757-7160
R & L HOBBIES & RACING	9782 PORTAGE RD	Portage	49002	616-323-3686
R/C NITRO ZONE	213 WEST MAIN STSTE #9	Brighton	48116	810-225-9586
RIDER'S HOBBY	32115 JOHN "R" RD	Madison Heights	48071	248-589-8111
RIDER'S HOBBY	42011 FORD RD	Canton	48187	734-981-8700
RIDER'S HOBBY SHOP	22789 NORTHLINE RD	Taylor	48180	734-287-7405
RIDER'S HOBBIES	2061 S. LINDEN RD	Flint	48532	810-720-2500
RIDER'S HOBBY	4417 S.WESTNEDGE AVE	Kalamazoo	49008	616-349-2666
RIDER'S HOBBY SHOP	2055 28TH ST S.E."UNIT 12	Grand Rapids	49508	616-247-9933
RIDER'S HOBBY SHOP	4035 CARPENTER RD	Ypsilanti	48197	313-971-6116
RIDER'S HOBBY SHOP	1609 E. MICHIGAN AVE	Lansing	48912	517-485-0700
RIDER'S HOBBY SHOP	30991 FIVE MILE RD	Livonia	48154	734-425-9720
ROBBY'S HOBBY	1106 COLUMBUS AVE	Bay City	48708	517-893-2712
THE HOBBY HUB	526 FRANDOR AVE	Lansing	48912	517-351-5843
YESTERDAY'S COLLECTION	5899 JACKSON RD	Ann Arbor	48103	734-668-6304

MINNESOTA

CHRISTOPHER'S HOBBIES	116 WEST BRDWAY ST	Owatonna	55060	507-451-2825
HOBBY TOWN USA	7916 BROOKLYN BLVD.	Minneapolis	55445	612-424-6052
HOBBY WAREHOUSE	7120 CHICAGO AVE S.	Richfield	55423	612-861-5587
HUB HOBBY CENTER	82 MINNESOTA AVE	Saint Paul	55117	612-490-1675

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NORTHWOODS HOBBY	614 FRONT ST	Brainerd	56401	218-829-9257
R.C. CAR KINGS	1913 W. BURNSVILLE PKWY	Burnsville	55337	952-895-9643
TWIN CITIES HOBBY & RWY	7577 BROOKLYN BLVD.	Brooklyn Park	55443	763-569-5069
MISSOURI				
CHECKERED FLAG HOBBIES	4491 LeMAY FERRY ROAD	St. Louis	63129	314-892-5353
HOBBY HAVEN	14100 A EAST 42ND ST	Independence	64055	816-478-3233
HOBBYTOWN USA	524 N.W. ENGLEWOOD RD	Kansas City	64118	816-459-9590
HOBBYTOWN USA	533 S.E. MELODY LANE	Lees Summit	64063	816-525-6885
JOPLIN R/C HOBBIES	1900 S. RANGELINESTE 9	Joplin	64804	417-623-0011
MARK TWAIN HOBBY CTR	2793 WEST CLAY ST	Saint Charles	63301	636-946-2816
REAL R/C	12019 EAST 47TH	Raytown	64133	816-358-0238
SCHAEFER'S R/C SHOP	4206 VIRGINIA AVE	Saint Louis	63111	314-352-3750
MISSISSIPPI				
HOBBYTOWN USA	4378 MALL DR	Tupelo	38804	662-690-6030
HOBBYTOWN USA	6380-D RIDGEWOOD COURT	Jackson	39211	601-957-9900
MONTANA				
NORTHLAND HOBBIES INC.	1325 HWY 2 WEST	Kalispell	59901	406-257-1808
PRAIRIE UNIQUE	114 S. LOGAN ST	Terry	59349	406-635-5598
THE TREASURE CHEST	1612 BENTON AVE	Missoula	59801	406-549-7992
NORTH CAROLINA				
ACTION HOBBIES	8500 PINEVILLE MATHEWS RD	Charlotte	28226	704-540-0311
HOBBY TOWN USA	8332 PINEVILLE MATHEWS RD	Charlotte	28226	704-544-2303
HOBBYTOWN USA	SHERWOOD PLAZA SHP CTR.	Winston Salem	27106	336-774-2324
K/C HOBBY INC	10948-G NORTH MAIN ST.	Archdale	27263	336-434-3482
KING R/C	614 S. MAIN ST	King	27021	336-983-3969
Z N Z HOBBIES	972 TALBERT BLVD	Lexington	27292	336-249-6127
NORTH DAKOTA				
HOBBYTOWN USA	2500 S. COLUMBIA RDSTE D	Grand Forks	58201	701-746-0708
NEBRASKA				
FUN TIME HOBBY	2020 CENTRAL AVE	Kearney	68847	308-234-1806
HOBBYTOWN UNLIMITED	EAST PARK PLAZA	Lincoln	68505	402-434-5056
HOBBYTOWN USA	13110 BIRCH DR	Omaha	68164	402-498-8888
HOBBYTOWN USA	3537 WEST 13TH ST	Grand Island	68803	308-382-3451
NEW HAMPSHIRE				
HOBBY ETC. INC.	90 WEST PEARL ST	Nashua	03060	603-883-4919
106 RACE PARK	743 CLOUGH MILL RD.	Pembroke	03275	603-225-9787
NEW JERSEY				
ALLIED HOBBIES	CHERRY HILL MALL	Cherry Hill	08002	856-665-7888
ALLIED HOBBIES	207 ECHELON MALL	Voorhees	08043	856-772-1268
ALLIED HOBBIES	264 BURLINGTON CENTER	Burlington	08016	609-386-5044
CRUIZIN WITH RC'S INC.	53 EAST MAIN ST	Ramsey	07446	201-825-4884
DNL HOBBIES	1604 A UNION VALLEY RD.	West Milford	07480	973-728-8003
FISHKIN BROS.	285 MADISON AVE	Perth Amboy	08861	732-826-0048
G&S HOBBIES	44 ANCHOR BLVD.	Old Bridge	08857	732-727-7871
HOBBIES ETC.	240 S. BRD ST	Woodbury	08096	856-384-7740
HOBBY WORKSHOPS	510 WEST KINGS HWY	Mount Ephraim	08059	856-931-2400
JERRY'S HOBBY CENTER	336 RT 22 W	Greenbrook	08812	908-752-6030
THE HOBBY SHOP	ABERDEEN TOWNSQUARE	Aberdeen	07747	732-583-4189
WACKY RC'S HOBBY SHOP	409 EAST 2ND ST	Roselle	07203	908-241-6700
NEW MEXICO				
ALBUQUERQUE HOBBY CO	1431 EUBANK BLVD N.E.	Albuquerque	87112	505-275-1882
BIG BOYS TOYS	1735 JUAN TABO N.E.	Albuquerque	87112	505-298-1023
CHARLIES HOBBY SHOP	1230 N. SOLANO DR	Las Cruces	88001	505-541-1097
HOBBIE'S & STUFF	9577-L OSUNA RD N.E.	Albuquerque	87111	505-293-1217
HOBBYTOWN USA	636 W. BRDWAY	Farmington	87401	505-325-5156
NEVADA				
DANSEY'S INDOOR R/C HOBBIES	741 N. NELLIS BLVD.	Las Vegas	89110	702-453-7223
HOBBYTOWN USA	5085 W. SAHARA AVE #134	Las Vegas	89146	702-889-9554
HOBBYTOWN USA	3789 S. CARSON ST	Washoe Valley	89701	775-883-5475
NEW YORK				
ACTION HOBBIES	1070 MIDDLE COUNTRY RD	Selden	11784	516-736-1574
BROOKLYN HOBBIES	3842 FLATLANDS AVE	Brooklyn	11234	718-951-2500
BRUCKNER HOBBIES	3587 E.TREMONT AVE	Bronx	10465	800-288-8185
COMPETITION HOBBY SUP	1006 LOUDON RD	Cohoes	12047	518-786-3622
EAST COAST HOBBIES	2515 65TH ST	Brooklyn	11204	718-627-3814
FANTASIA HOBBIES	17169 46TH AVE	Flushing	11358	718-460-5671
HOBBIES UNLIMITED	158-38 CROSS BAY BLVD	Howard Beach	11414	718-845-4545
HOBBY HOUSE	2366 LYELL AVE	Rochester	14606	716-429-6280
HOBBY WORLD	311 BROADWAY	Monticello	12701	914-794-8770
HOMETOWN HOBBIES	14 FEDERAL PLAZA	Monroe	10950	914-782-2401
LARRY'S HOBBY SUPPLIES	3006 JERICHO TPKE	East Northport	11731	631-499-7166
MACH 1 HOBBIES	249 W. 29TH ST #1	New York	10001	212-947-0157
NAGENGAST HDWR & HOBBY	68-02 FRESH POND RD	Flushing	11385	718-821-0958
PERFORMANCE HOBBIES	15 WEST MAIN ST	Webster	14580	716-872-4990
RACING CITY HOBBIES	MIDTOWN SHOPPING CTR	Glens Falls	12803	518-792-7272
RAMPAGE R/C AND HOBBIES	782 RT 9G ROCKLEDGE PLAZA	Hyde Park	12538	914-229-1379
THE HOBBY STORE	119 MT.VERNON AVE	Mt.Vernon	10550	914-668-3022
TONY'S HOBBY SHOP	229 HARRISON AVE	Harrison	10528	914-835-4765
TRANS BORDER CUSTOMS	C/O MODELER DISTRIBUTION	Champlain	12919	514-687-6214
UNIVERSAL ENTERTAINMENT	1611 PINE AVE	Niagara Falls	14301	716-282-4840
WALT'S HOBBY	2 DWIGHT PARK DR	Syracuse	13209	315-453-2291
WILLIS HOBBIES	300 WILLIS AVE	Mineola	11501	516-746-3944
OHIO				
CAPSTONE HOBBIES	562 W. SCHROCK RD	Westerville	43081	614-899-6313
DIVE IN SCUBA CENTER	3182 WARREN SHARON RD	Vienna	44473	330-856-6275
GRANDVIEW HOBBIES	1460 W. FIFTH AVE	Columbus	43212	614-486-3532
HOBBY STOP WEST	4550 MONROE ST	Toledo	43613	419-471-1108
HOBBYTOWN USA	8000 PLAZA BLVDSTE 9	Mentor	44060	440-946-5588
PHILS HOBBY SHOP	422 CLINTON STREET	Defiance	43512	419-782-8020
RIDER'S HOBBY SHOP	5333 MONROE ST	Toledo	43623	419-843-2931
PIT ROW	7796 MONTGOMERY RD	Cincinnati	45236	513-891-7487
THE HOBBY SHOP	153 N SPRINGBORO PIKE	Miamisburg	45449	937-436-6161
OKALAHOMA				
ACTION HOBBIES	4955 S. MEMORIAL DR	Tulsa	74145	918-663-8998
WINGS N' THINGS INC.	5241 S. PEORIA AVE	Tulsa	74105	918-745-0007
OREGON				
AERO SPORT & HOBBY	17941 N.E. GLISAN	Portland	97230	503-669-7665
EUGENE TOY & HOBBY	32 E. 11TH AVE	Eugene	97401	541-344-2117
HOBBY CENTER	1125 DALE ST S.E.	Albany	97321	541-928-5255
LEISURE HOBBIES	982 LANCASTER DR N.E.	Salem	97301	503-588-9884
R C ADDICTION	2810 N. PACIFIC HWY	Medford	97501	541-779-8298
R/C PLUS HOBBIES	1685 25TH ST	Salem	97302	503-364-9188
TAMMIES HOBBIES	12024 S.W. CANYON RD	Beaverton	97005	503-644-4535
ULTIMATE HOBBIES	1210 JANTZEN BEACH CTR	Portland	97217	503-247-8194
WAYNES WORLD OF HOBBY	10910 N.E. HALSEY ST	Portland	97220	503-261-8598
PENNSYLVANIA				
ADAM & EVES PET & HOBBY	313 LATROBE 30 PLAZA	Latrobe	15650	412-539-7130
ALLIED HOBBIES	204 OXFORD VALLEY MALL	Langhorne	19047	215-757-8086
CRANBERRY HOBBY DEPOT	GARDENS PLAZA	Cranberry Twnshp	16066	724-776-3640
GLENNS ALLIED HOBBIES	6607 RISING SUN AVE	Philadelphia	19111	215-745-5777
HOBBY EXPRESS INC.	309 MARS-VALENCIA RD	Mars	16046	724-625-1550
J.C. R/C HOBBIES	13 YORK RD	Warminster	18974	215-672-5200
LORESKI'S INC.	MIRACLE MILE SHOPPING CTR	Monroeville	15146	412-372-5155
R C OUTFITTERS	519 BROADWAY	Hanover	17331	717-633-9490
RHODE ISLAND				
NSANE TOYS	267 POCASSET AVE	Providence	02909	401-943-2629
NANCY'S CO-OP	350 MAIN ST	Warren	02885	401-247-0288
SOUTH CAROLINA				
GOLDEN STRIP HOBBIES	315 FAIRVIEW RDSTE G	Simpsonville	29681	864-963-7149
HOBBY STOP	939 S.ANDERSON RD	Rock Hill	29730	803-327-4121
HOBBYTOWN USA	BELVEDERE PLAZA	Anderson	29621	864-627-9633
HOBBYTOWN USA	VERDAE MARKET FAIR/ 340	Greenville	29607	864-627-9633
SOUTH DAKOTA				
HOBBYTOWN USA	DAKOTA PLAZA	Sioux Falls	57105	605-339-6613
TENNESSEE				
AAA MODEL SUPPLY	5237 HWY 126	Blountville	37617	423-323-1513
HOBBYLAND TENN INC.	5985 STAGE RDSTE 1	Bartlett	38134	901-937-0636
HOBBYTOWN USA	2000 MALLORY LANESTE 610	Franklin	37067	615-771-7441
HOBBYTOWN USA	2884 WOLFCREEK PARKWAY	Memphis	38133	901-213-2682
HOBBYTOWN USA	634 NORTHGATE MALL	Red Bank	37415	423-877-9885
HOBBYTOWN USA	COMMONS II	Knoxville	37923	865-690-6423
HOBBYTOWN USA	KINSINGTON PLACE SHOP CTR	Murfreesboro	37130	615-890-6777
TENNESSEE MODEL HOBBIES	8903 OAK RIDGE HWY	Knoxville	37931	423-927-2900
THE GREAT ESCAPE	1426 LAURENS RD	Greenville	29607	864-235-8320
TEXAS				
ACTION HOBBIES	2005 9TH ST	Wichita Falls	76301	940-766-2667
BIG MIKE'S HOBBIES & TOYS	2157 GILMER RD	Longview	75604	903-297-7814
DRYCREEK HOBBIES	2518 I 30 WEST	Greenville	75402	903-527-5381
GUADALUPE HOBBY CENTER	200 SIDNEY BAKER S.STE 5	Kerrville	78028	830-895-5654
HOBBY CENTER	18177 GULF FREEWAY	Webster	77598	281-488-8697
HOBBYTOWN USA	3033 W. PARKER RD #120	Plano	75023	972-758-7875
HOBBYTOWN USA	2500 W. PARMER LANE	Austin	78727	512-246-8904
HOBBYTOWN USA	4638 S. COOPERSTE 190	Arlington	76017	817-557-2225
HOBBYTOWN USA	5276 S. HULEN ST	Fort Worth	76132	817-263-1196
HOBBYTOWN USA	999 E. BASSE RD 135	San Antonio	78209	210-829-8697
INDY RC WORLD	2020 SATURN RD	Garland	75041	972-2714844
JUST HOBBIES	202 SAWDUST RDSTE 115	The Woodlands	77380	281-292-5878
M & M HOBBY CENTER	6703 CHIMNEY ROCK	Bellaire	77401	713-668-8866
MIKE'S HOBBY SHOP	1605 CRESCENT CIRSTE 300	Carrollton	75006	972-242-4930
ONEALL SPECIALTY HOBBIES	3321 W. EXPRESSWAY 83	McAllen	78503	956-686-6521
ROY'S HOBBY SHOP	1309 N. NORWOOD DR	Hurst	76053	817-268-0210
T & T R/C CARS	3420 AVE K	Plano	75074	972-633-2470
THE HOBBY CENTER RCEWY	4104 STAN SCHLUETER/STE 1	Killeen	76543	254-690-7311
THE RC HOBBY SHOP	13835 S.W. FREEWAY	Sugar Land	77478	281-265-4844
UTAH				
HOBBIE STOP	1150 W. RIVERDALE RD/STE D	Riverdale	84405	801-773-7849
HOBBYTOWN USA	FAMILY CTR. MIDVALLEY/STE A	Salt Lake City	84123	801-964-8242
HT'S RC'S	166 S. FORT LANE	Layton	84041	801-546-6959
VERMONT				
MIKE'S HOBBIES&RACEWAY	162 N. MAIN ST, RTE 7	Rutland	05701	802-775-0059
VIRGINIA				
BROWN BROTHERS HOBBIES	924 N. MAIN ST	Montclair	22026	703-221-5746
CROSSWORD HOBBIES	1104 W. MAIN ST	Salem	24153	540-387-3414
DRCW RACEWAY	2200 COMMERCE PARKWAY	Virginia Beach	23454	757-340-6681
GRAYMIA LLC	9105 CENTER ST	Manassas	20110	703-369-1197
HOBBY HANGERS SPEEDWAY	14014 D SULLYFIELD CIR	Chantilly	22022	703-631-8820
HOBBYTOWN USA	1067 INDEPENDENCE BLVD.	Virginia Beach	23455	757-464-4140
LINVILLE HOBBIES	7065 WENGERS MILL RD	Linville	22834	540-833-2222
STREAM HOBBY SHOP	10015 JEFFERSON AVE	Newport News	23605	757-591-0720
TSG HOBBIES	251 W. LEE HWY #691	Warrenton	20186	540-347-9212
WASHINGTON				
B & B	6422 EAST 2ND	Spokane	99212	509-534-7223
BURIEN TOYOTA	15025 1ST AVE SOUTH	Seattle	98148	206-243-0700
FOUR SEASONS R/C RACING	2941 SLEATER KINNEY RD N.E	Olympia	98506	360-491-2430
HOBBYTOWN USA	18500 33rd AVE WEST	Lynnwood	98037	425-774-0819
HOBBYTOWN USA	16421 A CLEVELAND ST	Redmond	98052	425-558-0312
MITCHELL RC HOBBIES	N. 4715 CRESTLINESTE B	Spokane	99207	509-482-6188
PERFORMANCE R/C	320 E. SUIRHAVEN AVE #100	Burlington	98233	360-691-4922
RAIN CITY RACEWAY	3616 SOUTH RDSTE #A-3	Mukilteo	98275	425-438-2454
REDMOND HOBBIES	1629 REDMOND	Redmond	98052	425-885-3639
TACOMA R/C RACEWAY	6305 6TH AVE	Tacoma	98406	206-565-1935
THE CLOVERLEAF	4110 MAIN ST	Union Gap	98903	509-453-8959
TIM'S HOBBY	2405 BROADWAY	Everett	98201	425-259-5929
ULTIMATE HOBBIES	131 E. MAIN ST	Auburn	98002	253-939-2515
WEST COAST HOBBY & RWY	2239 STEVENS DR	West Richland	99352	509-375-4995
WISCONSIN				
ABC RC INC.	244 W. MAIN ST	Waukesha	53186	262-542-1245
DOCKTER'S HOBBY WORLD	402 WESTGATE MALL	Madison	53711	608-274-0024
FOCUS INC.	75 S. MAIN ST	Fond Du Lac	54935	920-922-5999
GREENFIELD NEWS & HOBBY	6815 W. LAYTON AVE	Greenfield	53220	414-281-1800
HOBBY DEPOT	1524 E. SUMMER ST.	Hartford	53027	262-670-6242
HOBBY JUNCTION	1729 STEPHENSON ST	Marinette	54143	715-732-6333
HOBBYTOWN USA	2075 S. KOELLER	Oshkosh	54901	920-426-1840
HOBBYTOWN USA	2767 S. ONEIDA ST	Green Bay	54304	920-490-9996
HOBBYTOWN USA	3347 KOHLER MEMORIAL DR/D2	Sheboygan	53081	920-452-0801
JOHN'S HOBBIES	54 N. MAIN ST	Hartford	53027	262-673-7454
KDM HOBBY	711 E. SPRUCE ST	Abbotsford	54405	715-223-4414
PHIL'S HOBBY & CRAFTS	409 W. MAIN ST	Wautoma	54982	920-787-7232
S&N'S TRACKSIDE HOBBIES	3635 N 124th ST	Brookfield	53005	262-783-4699
WEST VIRGINIA				
DW REED HOBBY STOP	142 W. MAIN ST	Bridgeport	26330	304-842-2742
FULTON'S HOBBY SHOP INC.	3301 CHAPLINE ST	Wheeling	26003	304-233-5355
HOBBYTOWN USA	220 NITRO MARKET PLACE	Charleston	25313	304-776-7259
WEST VIRGINIA HOBBY&CRFT	PUTNAM VILLAGE SHOP CTR	Teays	25569	304-755-6474
WYOMING				
LARAMIE HOBBY CENTER	158 N. 2ND ST	Laramie	82072	307-755-5376
XTREME HOBBIES	2810 DOGWOOD AVESTE B	Gillette	82718	307-682-6077
PUERTO RICO				
D'S HOBBY SHOP	VILLA TURABO	Caguas	00726	787-460-2677
HI SPEED C. RACEWAY	422 SAN CALUDIO AVE	San Juan	00923	787-283-0198
ISLAND HOBBIES	DELFIN-OLMO 166	Arecibo	00612	787-871-1129
LA SORPRESA	1759 AVE. MILITAR/SUITE 1	Isabela	00662	787-872-2396
RACER'S HOBBY	873 SAN PATRICIO AVE	San Juan	00921	787-783-9150
SPEED ZONE SUZUKI	AVE. PONCE DE LEON 520-C	San Juan	00918	787-767-3475

CANADA

HOBBY GUYS	#1, 222-16 AVE N.E.	CALGARY	ALB	T2E 1J8	CANADA	403-230-8821
PM HOBBY CRAFT	2020 B 32ND AVE N.E.	CALGARY	ALB	T2E 6T4	CANADA	403-291-2733
GOLDEN HORIZON	2132-3779 SEXSMITH RD	RICHMOND	BC	V6X 3Z9	CANADA	604-331-2526
ONE STOP HOBBY	33228 S. FRASER WAY	ABBOTSFORD	BC	V2S 2B3	CANADA	604-852-6497
CAPE COD HOBBY	23 DIVISION ST NORTH	KINGSVILLE	ONT	N9Y 3E8	CANADA	519-733-2443

Thunder Tiger





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ALABAMA

Beacon Point RC Raceway, 15717 Beacon Point Dr. Tuscaloosa, AL 35406 (205) 333-8679

Dirt Road Rage, 208 3rd Ave. S.E. Cullman, AL 35055 877-435-9866 www.pyramidhobbies.com

Hobbytown USA Raceway, 4500 Schillinger Rd. N., Mobile, AL 36608, (334) 633-8446

Lagoon Park R/C Raceway, 2730 Lagoon Park Dr., Montgomery, AL 36109 (334) 272-6438

ALASKA

Fairbanks R/C Club, 510 Juneau Ave., Fairbanks, AK 99701, (907) 456-5494

ARIZONA

Hobbytown Raceway, 1102 E. 22nd St., Tucson, AZ 85704, (520) 882-8888

Kingman off-road track, 5737 Hwy. 66 Mpost 63 Kingman, AZ 86401

Scottdale R/C Speedway, 3023 N. Scottsdale Rd., Scottsdale, AZ 85251 (480) 945-2186

Kiwanis Park R/C Track, 855 S. Magnolia Ave., Yuma AZ 85364, (520) 539-7148

ARKANSAS

Alison Offroad RC Raceway, 6320 Thibault Rd., Little Rock AR 72206 (501) 490-1227

Arkansas R/C Car Association, 101 W. 52nd St., N. Litle Rock AR 72218 (501) 753-1286

Grand Slam Superspeedway, 5300 S. Zero St., Ft. Smith, AR 72703, (501) 648-1994

Hobbytown USA, 356 E. Joyce Fayetteville, AR 72703, (501) 571-3730

Sparks R/C Raceway, 7194 Greene 721 Rd., Paragould, AR 72450, (501) 239-3606

Grand Slam Hobby, 5300 South Zero, Ft. Smith, AR 72901, (501) 648-1994

CALIFORNIA

Castle Hobbies, 14918 Camden Ave., San Jose, CA 95124, (408) 377-3771

Crystal Park Raceway, 123 Artesia, Compton, CA 90202, James Reese, 310 631-0307

The Dirt Race Park, 164 S. Santa Fe Ave. Hemet, CA 92543 (909) 925-7592

Hobby Central, 13461 Community Rd., Poway, CA 92064 (858) 513-0373 www.hobby101.com

Hobbytown Raceway, 3069 W. Bullard Ave., Fresno, CA 93711 (559) 435-3342

Hot Rod Hobbies, 25845 San Fernando Rd., Saugus, CA 91350, (661) 255-2404

Jake's Performance Hobbies, 6650 Commerce Blvd.,#21 Rohnert Park, CA 94928, (707) 586-3375

LPRP, 800 Lake Paris Dr., Lake Paris, CA 92551 Dean Jones (909) 488-9021 lprcrp@cumpuserve.com

Lucerme Valley Raceway, 32800 Old Woman Springs Rd., #4, Lucerne Valley, CA 92356 (760) 248-7305

Nor-Cal Speedway, 519 Bush St., Woodland, CA 95695 (530) 668-5678

Pegasus Hobbies, 5515 Moreano Blvd. Mont Claire, CA 91763 www.pegasushobbies.com (909) 982-6507

Race Corner of Marin, 300 Entrada Dr., Novato, CA 94949, (415) 883-0388

Race Prep Raceway, 20115 Nordhoff Chatsworth, CA 91311, (818) 709-6800

Ripon R/C Speedway, 701 N. Acacia Ave., Ripon, CA 95366 (209) 599-5160

Sacramento R/C Racing, 6201 27th St., Sacramento, CA 95824, (916) 454-4044

Showtime R/C Speedway, 3805 Chester Ave. Bakersfield, CA 93301

Simi Valley Ground Pounders, 392-C - East Easy St., Simi Valley, CA 93065, (805) 584-8211

So. Cal Raceway, 19118 Brookhurst St., Huntington Beach, CA 92646, (714) 963-7484

Speedworld Raceway & Hobby, Billy Bowerdman 90 Corporation Yard Rd., Roseville, CA 95678, (916) 783-8864

Sun Valley Micro Raceway, 8295 Tujunga Ave., Sun Valley CA 94352, www.svmracing.com, (866) 793-6513 Toll Free,

Ultimate Hobbies, 2378 North Orange, CA 92865, (714) 921-0424

Ventura Road Runners, Freedom Park Camarillo, CA 93010 (805) 564-4144, www.venturaroadrunners.com

COLORADO

S&T Raceway, 323 Auburn Dr., Colorado Springs, CO 80909, (719) 574-2910

CONNECTICUT

Central CT Auto Racers
Davis Hobbies II, 45A Welles St., Glastonbury, CT 06033, (860) 633-3056

JP's Hobby Center & Raceway, 78 Pershing Dr., Derby, CT 06418, (203) 735-5512

K&N Speedway, West St., Stafford Springs, CT 06076 (860) 684-9896

R/C Madness, 640 Enfield St., P.O. Box 64, Enfield, CT 06082, (860) 741-6501

Xtreme Radio Control, 469 Danbury Rd., New Miford, CT 06469, (860) 354-4703

DELAWARE

Hobbystop Speedway, Rd. #4, Box 100, Rte. 13, Seaford, DE 19973, (302) 629-3944

FLORIDA

Broward County R/C Race Club, Mills Pond Park, Ft. Lauderdale, FL (954) 525-3304

Burton's R/C Raceway, 4215 Mustand Rd., Lakeland, FL 33803, (941) 665-1322

Coral Springs Roadrunners, PO Box 9632 Coral Springs, FL 33075, (954) 925-8284

Farmer's Hobby & Raceway, 5006-3 E. Broadway, Tampa, FL 33619, (813) 248-3314

Cars, Trains and Planes, 1029-4 Phillips Hwy. Jacksonville, FL 32256 (904) 880-9500

First Coast Speedway, 6410 Waltho Dr., Jacksonville, FL 32211, (904) 743-2161

Ft. Myers R/C Club, Lee Civic Center, Ft. Myers, FL (941) 936-1528

Kissimmee R/C Racing, Osceola Square Mall, 3831 West Vine St., Ste/ 60, Kissimmee, FL 34741, (407) 944-4913

Means R/C Raceway, 1550 Pondell Rd., North Ft. Myers, FL 33903, (941) 772-2251

Monster Hobbies, 616 Southeast 10th St., Deerfield Beach, FL 23441, (954) 428-9118

PBG Motor Park, 6351 Barbara St., Palm Beach Gardens, FL 33418, (561) 627-2608

Pro Hobbies Speedway, 715 N. Lake Pleasant Rd., Apopka, FL 33712, (407) 886-4615

Sarasota RC Speedway, 8475 Cooper Creek Blvd., University Park, FL 34201, (941) 358-7047

Triple Nickle R/C Raceway,
1/3 Mile South of HWY 60, on CO rd 555
Bartow, Fl 33820; (863) 533-0539 (no info on amenities)

GEORGIA

Anthony's Victory Lane, 129 East Hwy. 80, Pooler, GA 31322, (912) 748-0847

Dalton Raceway, 3036 Parquet Rd., Dalton, GA 30720, (706) 226-6699

Hobbytown Raceway, 2301 Airport Thruway, Columbus, GA 31904, (706) 660-1763

Prime Time Hobby & Craft, 432 S. Wall St., Calhoun, GA 30701 706-625-9037

Stinger Speedway, 3769 Maysville Rd., Commerce, GA 30529, (706) 335-9044

Sugar Bowl Speedway, 5272 Nelson Brogdon Blvd., Sugar Hill, GA 30518, (770) 945-6709

HAWAII

Maui Racing Association, 230 Hana Hwy., #11, Kahului, HI 96731, (808) 873-0376

Team PRC Racing Club, 176 Mamo St., Hilo, HI 96720, (808) 935-3561

IDAHO

Almosta Ranch R.C.'s, Idaho's largest outdoor track 1732 Eldridge Ave. Twin Falls, ID 83301 208-733-8219, or (208) 733-1572

Dirt Stuff Plus, 5344 N. Yellowstone Hwy., Idaho Falls, ID 83401, (208) 522-7576









ILLINOIS

AJ's, 10211 Keslinger Rd., DeKalb, IL 60115, (815) 756-2772 www.ajsraceway.com

CIRCR/Precisoin RC Hobbies, 1917 2nd St. Pekin, IL 61554 (309) 347-0975

Depot Hobby Raceway, 180 S. Seminary St., Galesburg, IL 61401, (309) 342-9323

H&H Raceway, 35-12 Berkshire SDr. Crystal Lake, IL 60014 815-444-1777 http://drive.to/h_hhobbies

Hobbytown Raceway, 2103 N. Veterans Pkwy., Bloomington, IL 61701, (309) 664-4451

Leisure Hours R/C Raceway, 24121 W. Theodore, Bldg. 1, Plainfield, IL 60544, (815) 439-1477

Mid America R/C Club, S. Maple-Schnieder Park Brighton, Il 62012

Monee R/C Raceway, 26049 Ridgeland Ave., Monee, IL 60449 (708) 799-5597

Outlaw R/C Speedway, 1614 Broadway, Mattoon, IL 61938, (217) 234-6229

Quad Cities Raceway, 541 1st Ave., North Silvis, IL 61282, (309) 751-9663

Radio Active Raceways, 751 N. Bolingbrook Dr., #15 Bolingbrook, Il 60440 (630) 759-7557

Rector's R/C Raceway, RR3, Box 104, Albion, IL 62806, (618) 842-9379, (618) 446-3282

RMR Raceway, 19091 W. Casey Rd., Libertyville, IL 60048, Ray Rawald, (847) 549-6963

SIRCAR Raceway, 1200 N. Marion, Carbondale, IL 62901, (618) 549-5885

Stanton Hobby Shop, 4718 N. Milwaukee, Chicago, IL 60630, (773) 283-6446

Wep Raceway, RR #2, Box 44, Lawrenceville, IL 62439

INDIANA

Bremen Racing, 308 N. Bowen, Bremen, IN 46506, (219) 546-3807

Finish Line Pets & Hobbies, 1209 East St., Rd 2 LaPorte, IN 46350 (219) 326-0921

GM Raceway, 1651 W. Franklin St., Elkhart, IN 46516, (219) 293-1827

Hardesty Raceway, 11 East Plymouth St., Hamlet, IN 46530, (219) 867-8600

Hobby Barn Raceway, 1950 Springhill, Terre Haute, IN 47802 (812) 299-5773

Hobbytown USA, 5385 E. 82nd St., Indianapolis, IN 46250, (317) 845-4106

P&T Hobbies & Raceway, RR2 (Hwy. 60), Mitchell, IN 47446, (812) 849 6666 www.pnthobby@bigfoot.com, www.pnthobby@safeshopper.com

R/C World of Indiana, 2246 West U.S. Hwy. 36, Lynn, IN 47355, (765) 874-2464

Summit Area Radio Cars, 7000 Red Haw Dr., Ft. Wayne, IN 46805, (219) 492-2271

IOWA

Hobby Haven, 7672 Hickman Rd., Des Moines, IA 50322, (515) 276-8785

R/C Excitement Inc. Hobbies & Raceway, 36 Harlon St., Worcester, MA 01605 Mike Gordan (508) 753-8676 (508) 854-0915 www.rcexcitement.com

HobbyTown USA, 2737 16th Ave. SW, Cedar Rapids, IA 52404, (319) 364-3289

Radio Control Raceway Park, 2100 First Ave. N., Ft. Dodge, IA 50501, (515) 576-3780

Riverfront Speedway, adjacent to Sunkist Meadows Golf Course, FT. Dodge, IA (515) 576-3780

Wild Bill's Raceway, 901 W. Jones, Knoxville, IA 50138, (515) 842-5973

KANSAS

R/C Superdome and T.Q. PRO Shop, 14 E. Avenue A., Hutchinson, KS 67501 (316) 665-6633

RC Hobbies, Franum Creek, Milford Lake, KS (785) 238-1877

Route 66 R/C Raceway, Galena, KS 66739; (620) 783-5751

KENTUCKY

Somerset Raceway, 188 Sycamore Dr., Bronston, KY 42518, (606) 561-4522 Halcomb@hyperaction.net

Coyete Hobbies, 218 N. Martin Luther King Blvd. Lexington, KY 40507,Danny Puchalsk: (859) 253-9330 www.coyetehobbies.com

Trio Hobbies & RC, 216 Redmar Plaza, Radcliff, KY 40160, (502) 351-7547

LOUISIANA

Baton Rouge Velodrome, 7122 Perkins Rd., Baton Rouge, LA 70815, (504) 665-5616

MAINE

Clay Bowl R/C Hobbies, P.O. Box 61, Greene, ME 04236, (207) 946-5003

R/C Speedway & Hobbies, 87 Main St., Fairfield, ME 04963, (207) 453-4588

MARYLAND

Countryside Raceway, 406 Pamela Rd., APt. C, Glen Burnie, MD 21061, (410) 761-6196

Doug's Raceway, 2935 Clain Hwy., Waldorf, MD 20601, (301) 843-6220

The Track, 16806 Oakmont Ave., Gaithersburg, MD 20877, (301) 417-9630

MASSACHUSETTS

Big Boys Toys, 33 Father DeValles Blvd., Fall River, MA 02723

C&C Hobby & Raceway, 562 Russells Mills Rd., South Dartmouth, MA 02748, (508) 997-4131

Hobbytown/RPM Raceway, 201 N. Quincy St.,Abington, MA, (781) 857-2300

Megadrome Raceway, Rt. 8 Curran Hwy. North Adams, MA 01247, (413) 743-7223

MICHIGAN

Beyond Extreme Racing, 36159 Plymouth Rd., Livonia, MI 48150 (734) 513-7641 www.beyondextremeracing.com

Down River Radio Controlled Racers (D.R. R/C), 22789 Nortline Rd, Taylor, MI 48180 (734) 287-7405 (Bobby or Fred) www.downriverracing.8k.com

Hobbytown USA, 2252 S. Main St., Ann Arbor, MI 48103, (734) 996-2444

JT Superspeedway, Golden Ave., Battle Creek, MI 49015, (616) 965-0116

Larry's Performance R/C's, 43665 Utica Rd., Sterling Heights, MI 49221, (810) 997-4840

Lazer RC Speedway, 2858 N. Wilmoth Hwy., Adrian, MI 49221, (517) 263-2806

Motor City Speedway, 16025 23 Mile Rd. Macomb Twp., MI 48042 (810) 677-2311

N.M.R.C.C. Raceway, Hobby Toy, Main St., Gaylord, MI 49735, (517) 732-3963

R&L Hobbies & Racing, 9782 Portage Rd., Portage, MI 49002, (616) 323-3686

Sandhill off Road R/C, Wood St at Vincent St. Saginaw, MI 48602;

Village Hobbies, 195 N. Elm St. Hesperia, MI 49421 231-854-1374

MINNESOTA

Duey's Hobbies & R/C Raceway, 6600 Cahil Ave., Inver Grove Heights, MN 55076, (651) 450-1721

Northwoods Hobby Raceway, 2638 Hwy. 25 North Brainerd, MN 56401, (218) 829-9257

Ray's Raceway Park, 105 3rd Ave. NE., Glenwood, MN 56334, (320) 634-5246

R/C Racing World, 235 Main AVe., North, Harmony MN 55939, (507) 886-5931

Southside Speedway, 2241 Marion RD., SE Rochester, MN 55904, (507) 281-3233

Twin Cities Hobby & Raceway, 7577 Brooklyn Blvd. Brooklyn Park 55443, (763) 569-5069

MISSISSIPPI

Patriot Racing, 5531 Fox Meadow Dr., Meridian, MS 39307 (601) 483-7000

Small Cars Unlimited, 820 Cooper Rd., Jackson, MS 398212, (601) 372-FAST

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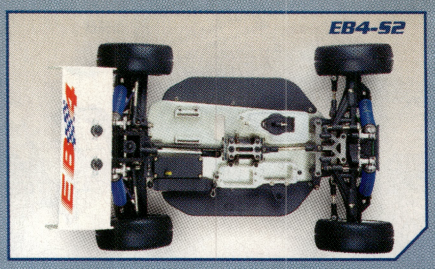

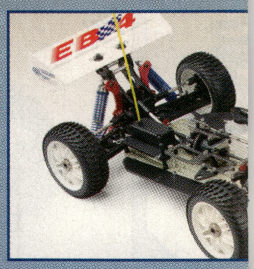

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MISSOURI

B&L Hobbies & Raceway, 2800 Anchor Dr., Park Hills, MO 63061, (573) 431-9444

Novelty R/C Raceways, 6th & Main Novelty, MO 63460 (660) 739-4530

St. Louis Dirt Burners, Marshal Road, Kirkwood, MO (314) 831-2194

Ozark's R/C Raceway, PO Box 460, Willard, MO 65781, (417) 742-4376, (417) 742-7223

Real Blue Vue Speedway, 12019 E. 47th St., Kansas City, MO 64133, (816) 358-0238

Real R/C Raceway, 24204 State Rte. 58, Pleasant Hill, MO 64080

NEBRASKA

Goodyear Speedway, 4021 North 56th, Lincoln, NE 68510, (402) 464- 5172

Hobbytown USA Raceway, 220 N 66th Lincoln, NE 68505 (402) 434-5056 www.eastparkracing.com

Hobbytown USA Raceway, 1st & Cornhusker Lincoln, NE 68505 (402) 434-5057 www.eastparkracing.com

OTWG Carpet Raceway, 55129 849th Rd., Norfolk NE 68701, (402) 644-7922

NEVADA

Danwsey's Indoor R/C Hobbies, 741 N. Nellis Las Vegas, NV 89110, (702) 453-RACE

NEW MEXICO

Big Boys toys, 1735 Juantabo N.E. Albq., NM 87112 (505) 298-1023

Charlie's Hobby Shop, 1230 Solano Las Cruces, NM 88005, (505) 541-1097

NEW YORK

Rampage R/C, 782 Rt. 9G, Hyde Park, NY 11204

The Hobby Shop, 119 Mt. Vernon Ave Mt. Vernon 10550 (914) 668-3022

NEW JERSEY

Hobby Workshop, 510 West Kings Hwy. Mt Ephraim, NJ 08059 (856) 931-2400

Alpine Lounge, Blackhorse Pike Turnersville, NJ

NEW HAMPSHIRE

106 Race Park, 743 Clough Mill Rd. Pembroke 03275, (603) 224-7223 www.106racepark.com

NORTH CAROLINA

Carolina Outlaw R/C Racing, 411 Ruritain Park Rd. Stony Point, NC 28678 (704) 585-2996

OKLAHOMA

Action RC Speedway, 3616 SE 59 Oklahoma City, OK 73135 (405) 670-7770 www.actionrc.com

Enid R/C Speedway, 1831 S. Van Buren, Enid, OK 73703; (580) 554-9400

OHIO

Corcar-Low's, 1675 Georgesville Square Dr. (614) 870-7159, Columbus OH 43228 www.corecar.com Bill Stevenson

OREGON

RC Speedcenter, 2810 N. Pacific Hwy. Medford, OR 97501 (541) 779-8298 Betty Skelton www.rcaddiction.net

PENNSLYVANIA

R/C Outfitters Raceway, 519 Broadway, Hanover PA 17331 (717) 633-9490 www.rcohobbies.com

RHODE ISLAND

Insane Toys, 122 Manton Ave. Providence, RI 02909 Jose Jimenez (401) 421-8878

Tri-State R/C Raceway, 205 Hallene Rd., Warwick, RI 02886, Lenny Sosa (401) 738-4908

SOUTH CAROLINA

Carolina R/C Speedway, 4148 Calhoun Memorial Hwy., Easley, SX 29640; Craig Prahl, (864) 295-1209; *www.carolinarc.com*

Myrtle Beach R/C Park, 5976 Grace Lane, Myrtle Beach, SC 29577 Brad Smith, (843) 234-0096

The Grove Racing Center, 939 S. Anderson Rd., Rockhill, SC 29730, Mike Durham or Don Faris, (803) 327-4121

ORA Atomic Racing, 373 Boyd Pond Rd., Aiken, SC 29803; Bill Felak, (706) 855-0846 or (803) 642-0314

R/C Racing Connection Speedway 4375 Juniper Bay Rd. Conway, SC 29527 (843) 397-0124

SOUTH DAKOTA

Boomerans Raceway, 105 N. Main, Hartford, SD 57033; Ed Smithback (605) 528-7345

TENNESSEE

Hobby Town USA, 2000 Mallory Ln., Franklin, TN 37067; Bobby Mills, (615) 771-7441

MSA R/C Racing, Rt. 12 Box 489 F, Crossville, TN 38555; D.R. Findley (931) 456-0027

W.O.W. Raceway, 59 Luray Rd., Beech Bluff, TN 38313; Kelly Bean, (901) 427-7874; *windix60@pipeline.com*

XS Speed, 5237 Hwy. 126, Blountville, TN 37617, (423) 323-1513

Speedzone Raceway & R/C Hobbies 121 Co. Rd. 308 Sweetwater,TN 37874 423-351-0055, 423-351-0056 speedzone@usit.net; www.speedzoneraceway.com

Hobby Town USA, Commons II 8859 Town & Country Circle Knoxville, TN 37923 (865) 690-6423

TEXAS

215 Speedway, 1814 County Rd. 215, Abilene, TX 79602; Clyde Gardner (915) 673-2351

Big Mike's R/C Raceway, 1405 W. Cotton St. Longview, TX 75604; (903) 297-7814

Discount Hobbies, 1722A West Anderson Loop, Austin, TX 78757; Tony Bermudex, (512) 458-2324

Drycreek Raceway, 2518 I 30-W Greenville, TX 75402 Micky Alphin, 903-527-5381, web.pulse.net/drycreek email: dycreek@pulse.net

Hal's Hobby Raceway, 1440 Bessember, El Paso, TX 79936; Carlos (915) 591-2213

Hobbycraft Speedway, 819 N. Main St., Corsicana, TX 75110; Keith Hoffman (903) 872-6761

HobbyTown USA, 999 E. Basse Rd., Suite 177, San Antonio, TX 78209; Joe Sena, or Clark Baisdon, (210) 829-8697

Indy R/C World, 2020 Saturn Rd., Garland, TX 75041, (972) 271-4844

Issac's Race Track, 18177 Gulf Frwy., Webster, TX 77598; Issac Ben-Ezra, (281) 488-8697

MBRC Off-Road Raceway, 204 D & E Valley Ln., Kennedale, TX 76133 (817) 292-5055

Reflex R/C, 1106C Witte Rd., Houston, TX 77055; Jorge Tabush or Terry Schmid, (713) 464-4458

Texas Speedway, 6703 Chimney Rock Bellaire, TX 77401 (713) 661-7137 www.mmhobby.com

T-N-T R/C Cars, 3420 Ave. K Suite 154, Plano, TX 75074 (972) 633-2470 (972) 238-0965 Joe Sullivan

Al's Hobbies, 7121 HWY. 90 W. Suite San Antonio, TX 78222 (210) 645-1050

VIRGINIA

Debbie's R/C World, 2200 Commerce Parkway, Virginia Beach, VA 23454, (757) 340-6681

Hobby Hangers Speedway, 14014D Sullyfield Cir., Chantilly, VA 20151; Kwang or Billy, (703) 631-8820

Linville Hobbies Raceway, www.linvillehobbies.com

Olde Towne Hobby Shoppe, 9105 Center St. Manassas, VA 22110; Arnie Levine, (703) 369-1197

Roanoke Race Club 5080 Stable Rd. Roanoke, VA 24014 540-989-4529 www.roanokeraceclub.com

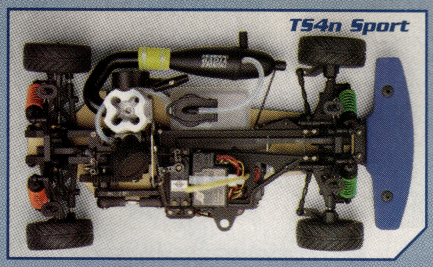
Shamroc Raceway, 106 Cheviot Pl., Stephens City, VA 22655; Scott Janow, (540) 869-3551

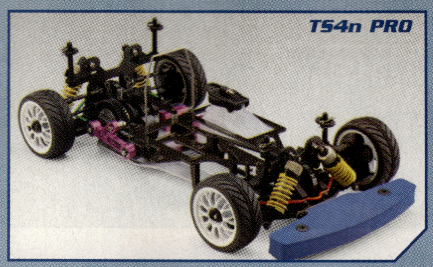
Star/Car Raceway, Debbie's R/C World, 200 Commerce Parkway, Virginia Beach, VA 23454, (757) 340-6681

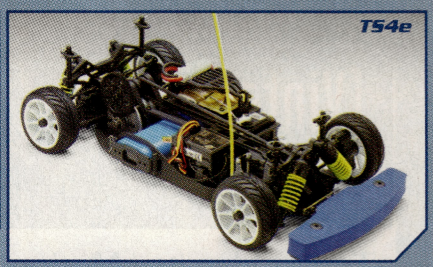
The Toteyard, 6494 Toteyard Dr., Dayton, VA 22821 (540) 828-3476 *toteyard.com.home*

Dirtona, 515 Front Ave. Salem, VA 24153 Steve Cooper (540) 387-3044









WASHINGTON

Alfie's, 108 South K St., Aberdeen, WA 98520; (360) 533-6638

A-Main Raceway, 14011 NE 3rd Ct., Vancouver, WA 98685; Monty Coleman, (360) 571-8404

Burien Toyota R/C, 15025 1st Ave. South, Seattle, WA 98148 Ray Meek, (800) 654-6456

Cedardale Raceway, 16733 Cedardale Rd., Mount Vernon, WA 98273; Joe Madonia, (360) 659-0072; *getchell@halcyon.com*

Four Season R/C Racing, 2941 Sleater Kinney Rd. NE Olympia, WA 98506; Gary Brown (360) 491-2430

HobbyTown USA Lynnwood, 18500 33rd Ave W Lynnwood, WA 98037 (425) 774-0819, Fax (425) 774-7391

Rain City Raceway, 3616 South Rd., Suite A3, Mukelteo, WA 98275, Debbie Cartwright (425) 438-2454 raincityraceway.com

Redmond Hobbies, 16260 Redmond Way Redmond, WA 98052 (425) 885-3639 www.redmondhobbies.com

B & B Indoor Raceway, 6422 E. 2nd Ave., Spokane, WA 99212; Brain Batch (509) 534-RACE

Tacoma R/C Raceway, 6305 6th Ave., Tacoma, WA 98406; Scott Brown (253) 565-1935

Ultimate R/C Raceway, 907 Cole St. #3, Enumclaw, WA 98022; Dan Dougherty, (509) 375-4995

West Coast Hobby & Raceway, 2239 Stevens Dr., Richland, WA 99352; Rick, (509) 375-4995

WEST VIRGINIA

Burr-Fab Raceway, 90 Davis St., West Union, WV 26456; Mark Travis, (304) 873-2487

Fulton's R/C Raceway, 2646 Chapline St., Wheeling, WV 26003; James Fulton (304) 233-5355

Left Turn Hobbies, 100 Saco Ln. Glen White, WV 25849; Stretch (304) 255-3930

Race Zone, Hopewell Rd., Rt. 8 Box 343A, Fairmont, WV 26554; Joe Clutter , (304) 368-1000

WVRCA R/C Club, 142 West Main, Bridgeport, WV 26330; D.W. Weed

WISCONSIN

Hobbytown USA, 2061 South Koeller, Oshkosh, WI 54901 (920) 426-1840

Hobbytown USA-Revolution, Memorial Mall, 3347 Kohler Memorial Dr., #D2, Sheboygan, WI 53081; Kenny, (920) 452-0801

Johns Hobbies, 54 N. Main St., Hartford, WI 53027 (262) 673-7454 www.explorewisconsin.com

Pro-Star Racing, 726 Pine St., Green Bay, WI 54301; Chuck, (920) 494-1233

RJ's/R.C., 4920 Hwy. 70W, Eagle River, WI 54521; Randy Stys, (715) 479-2541

S&N's Trackside Hobbies and Raceway, 6405 N. Green Bay Ave., Milwaukee, WI 53209; Scott Ernst, (414) 351-1910

WYOMING

Wind River R/C Racing Association, 309 N. 4th West, Riverton, WY 8250; Shannon Watts, (307) 857-0418

Xtreme Hobbies Raceway, 2724 Powder Basin, Gillette, WY 82718; Frieg Balls, (307) 682-6077

CANADA

Mid-Canada R/C Auto Racing, Hwy. 1 East Winnipeg, Manitoba Canada R2J 4E6 (204) 231-3324 www.geocities.com/midcanadarcautoracing

Canada R/C Auto Racing, www.geocities.com/midcanadarcautoracing

Circuit Teleguide Off Rd. Granby, 450 De LaGrande Ligne St. Paul D' Abbotsford Quebec, Canada (450) 776-3730

Nitro Extreme R/C Park, Blackfoot MX PK Calgary, Alberta, www.nitroextreme.com, e-mail: information@nitroextreme.com

One Stop Hobbies Raceway, 33228 S. Fraiser Way, Abbostford, B.C. Canada V252B3 (604) 852-6497 Dave Palmer

R/C Speedway Niagra, 253 East West Line, Niagra on the Lake, Ont, Canada Los 1J0

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BY RICHARD TRUJILLO

Tamiya Idemitsu Motion Mugen Civic

As most regular readers of my column know, I am a huge Honda fan. Now I have nothing against the domestic brands out there, but there is just nothing like hearing a 1.6 liter four cylinder revving to 9000 rpm and putting out over 200 horsepower—well, at least mine does, without benefit of Nitrous Oxide or a turbo (okay, enough about my car). The Honda Civic Hatchback is probably the most popular car for the import tuner to own. A whole industry has grown around making aftermarket parts for this car. The Tamiya Idemitsu Motion Mugen Civic is based on the '92 to '95 Honda Civic Hatchback. In Japan there is a very popular touring car class for front wheel drive compact cars. With the power-to-weight ratio that the Civic had, it was extremely popular for that series. From 1993 to 1994, Tamiya released three different versions of the Civic that raced in the JTCC:

- Idemitsu Motion Mugen Civic Kit 58121
- Castrol Honda Civic Vti Kit 58127
- JACCS Civic 93 All Japan Touring Car Class-3 Champion Kit 58133





The cool thing about the Tamiya kits was the fact that they were front-wheel drive chassis. The bad part was that they handled like a typical front wheel drive car, with tons of torque steer when you accelerated and major understeer on-power.

I found my kit at Pegasus Hobbies in Montclair, California. The kit had everything but a body and sticker sheet and thus they gave me a great price. I made a call to my good friend Fred Medel at Tamiya America, and he found me the last body kit they had for the Civic. I decided that I would keep the kit intact, except for painting the body and rims to match my real Civic. I also cheated a little on the chassis and mounted the body on a Losi XXX-S. The cost of this kit caught me by surprise. I have been searching eBay, and found that NIB (new in box) kits are getting upwards of $300! It seems that Tamiya did not make many of these kits and this has made them tough to find. It may not be a classic like a Sand Scorcher or Bruiser, but with its somewhat limited production, it may be worth adding this kit to your collection.

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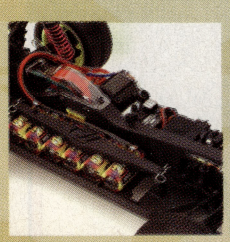





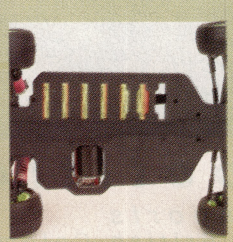

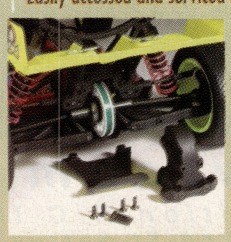

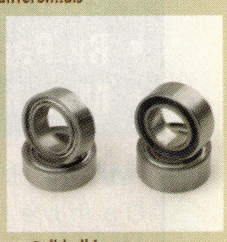

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-Brian Kinwald,
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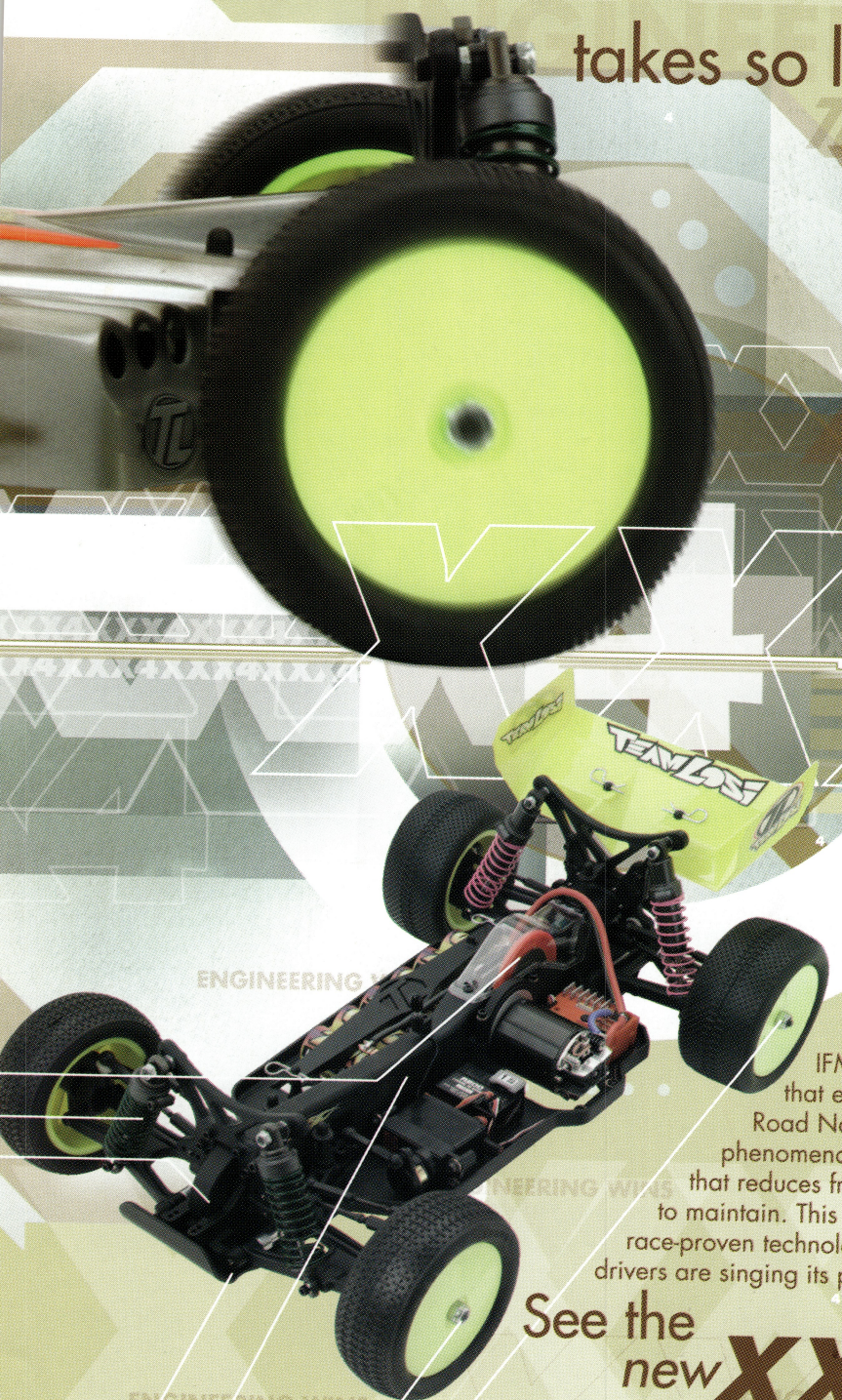

Designed to give racers the remarkable performance of a 4WD while being as easy to maintain as a 2WD, Team Losi's new XXX-4 has been dominating the competition in off-road's most prestigious events. Dubbed "the fastest car at the IFMAR World's", the XXX-4 not only top-qualified in that event, but has TQ'd and won this year's ROAR Off-Road National Championship as well. At the heart of its phenomenal performance is a sealed, single-belt drivetrain that reduces friction for outstanding acceleration and is a cinch to maintain. This advanced drive system, along with the rest of the race-proven technology Losi has engineered into the XXX-4, is why its drivers are singing its praises and the competition is speechless.

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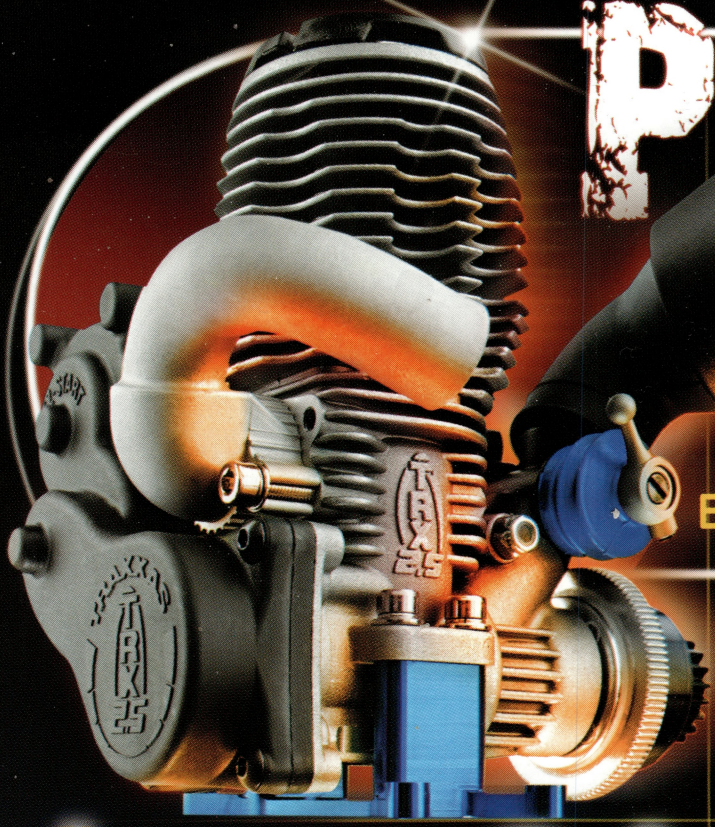
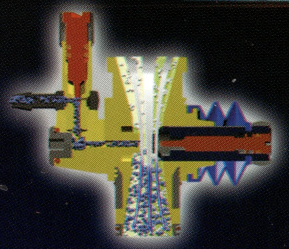
The POWER of TRX 2.5

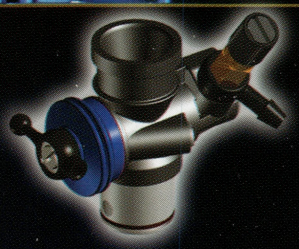


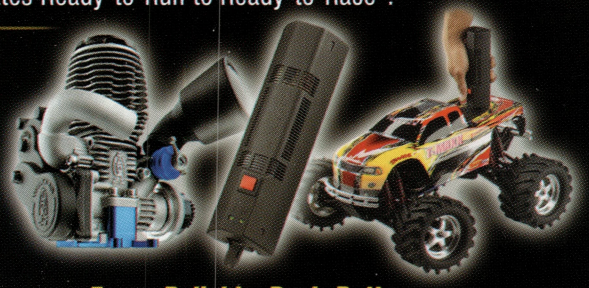
Elevating Ready-to-Run to Ready-to-Race®

All New Design

Traxxas TRX 2.5 engine is all new from the ground up! It's the result of over 2 years of engineering and testing. The TRX 2.5 delivers the power and technology of the world's finest high-performance racing engines, and truly elevates Ready-to-Run to Ready-to-Race®!

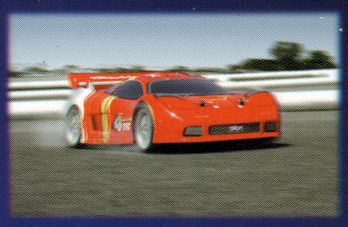






Slide Carburetor Provides Superior Fuel Atomization

The TRX 2.5 is equipped with the all-new TRX Composite Slide Carburetor. The slide carburetor is desired by performance enthusiasts because it provides less restrictive, straight through airflow for more power and better throttle response than typical barrel carburetors. It's an expensive option on some models, and not even available on others!



Advanced Design Features

- Precision molding provides a smoother, better-flowing inlet tract than cast or machined carburetors
- The carburetor, air-filter, and crankcase are integrated to provide smooth continuous airflow with minimal turbulence. It flows more air faster and more efficiently than conventional carburetors
- The low-speed needle has a positive stop to prevent damage to the spray bar from over-tightening
- The dust boot seals out harmful dirt and covers the built-in throttle return spring
- Molded LCP (Liquid Crystal Polymer) body is lighter and greatly reduces power-robbing heat transfer to the carburetor body

Easy, Reliable, Push-Button Engine Starting

The Traxxas EZ-Start™ system for the TRX 2.5 racing engine. Simply plug it in, push the button, and the EZ-Start System automatically heats the glow plug spins the engine.

- Regulated output supplies constant voltage to heat the glow plug, regardless of battery condition or starter motor load.
- Glow plug status indicator signals failed glow plugs.
- Elastomer cush drive output protects critical starter gears.
- Compact, planetary gear reduction.
- Indicator light shows the status of the starter drive circuitry.
- Efficient, thermal-sensing MOSFET circuitry provides greater starting power and longer battery life.
- Fully-enclosed battery. (Battery not included)
- Integrated vehicle connector for one-handed operation.

TRAXXAS

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