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Issue 5.8

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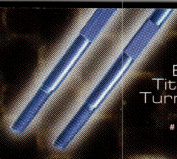
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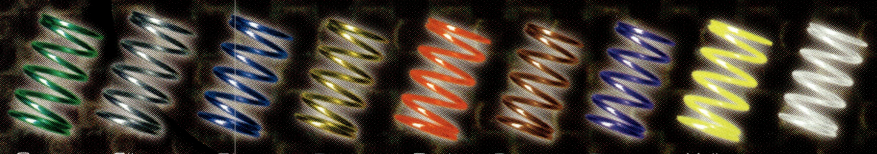

Green 12 lbs. | Silver 14.5 lbs. | Blue 17.0 lbs. | Gold 19.5 lbs. | Red 22 lbs. | Copper 25 lbs. | Purple 30 lbs. | Yellow 35 lbs. | White 40 lbs.


Graphite Rear A-Arms
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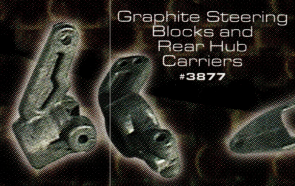
Graphite Steering Blocks and Rear Hub Carriers
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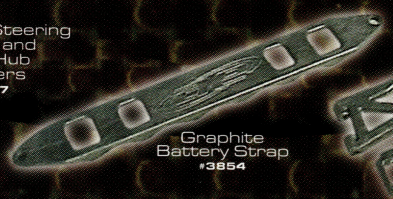
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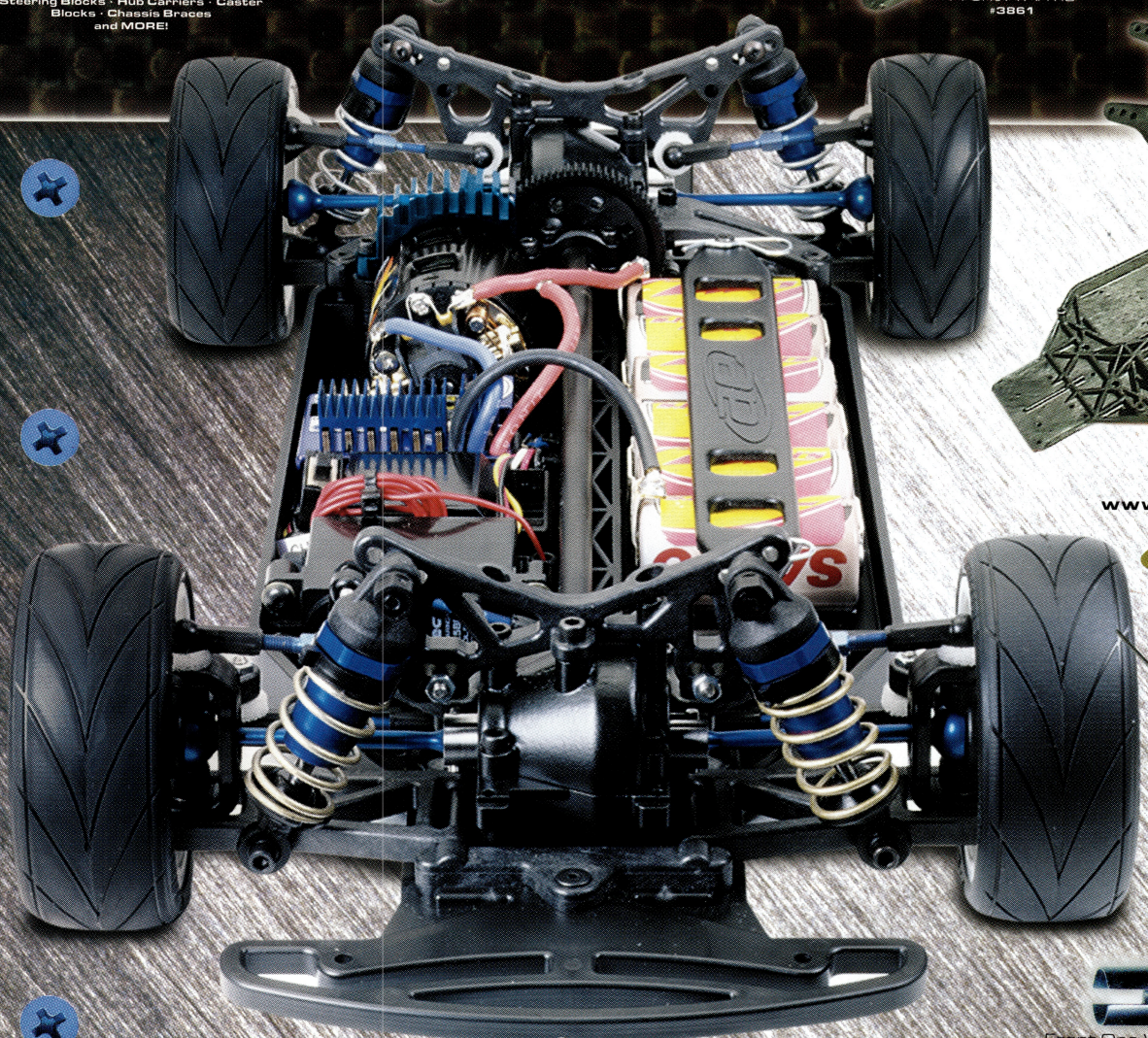

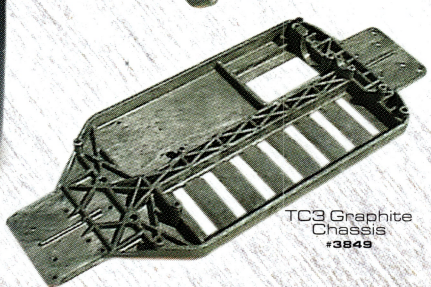
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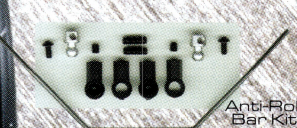
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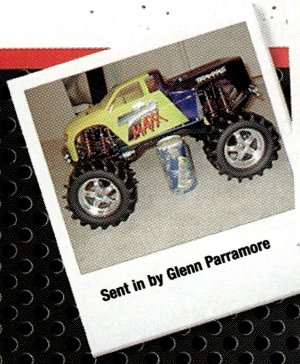
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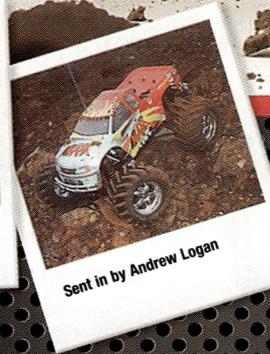
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R/C Car magazine

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Nick, via e-mail



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Issue 5.8 May 2000
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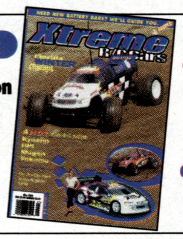

Other stuff in this issue: Other uses for battery bars, real life tales of the strip bar patrol, prosecution evidence, and a whole lot more.

Cover Photos by: Elliot Crabtree


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Where's The Points?


Industry Insider

Greetings, back in Issue 5.6, I conducted an interview with Trinity CEO Ernie Provetti. In the interview the discussion focused at points at the state of racing. Ernie brought up some good points. Such as the lack of points or a reward system for racing. But, to clarify things ROAR is a non-profit organization that has some simple purposes; establish rules for racing, host sanctioned races where these rules are enforced, and to have representation on the international level of racing. I agree with Ernie that there is a lack of a reward system in R/C racing. I've looked at other types of sanctioning bodies, in particular the sanctioning bodies in BMX racing. And in BMX racing there's regional, state, and national ranking that gives racers a little more to shoot for each time they step on the track. Now the ABA (BMX) in particular has over 50,000 members. Compare that to about 4,000 members in ROAR, and anyone can see that there's a big difference in funding for some type of new racing body. In order for a new type of sanctioning body that rewards achievement to get off the ground, the money has to come from somewhere. Maybe if the support is there from the membership, either NORRCA or ROAR could adopt some type of system. The other option is a new sanctioning body that is based more on promotion and achievement rather than rules. Where would the money for this new body come from? Well, if it looks as if something like this could be profitable maybe some person or corporate entity could make a go at it. What if manufacturers got together and launched something like this or provided additional funding to one of the existing organizations in order to enact some type of points system. If the funding did come from manufacturers how would you: the general public feel about this? Ever since that interview with Ernie, these have been questions on my mind. I'd love to hear what you guys had to say about this topic. You can discuss it on our website www.xtremerc.com or email us with your thoughts, xtremerc@xtremerc.com

We've got a great issue for you this month. We've got four killer reviews from HPI, Kyosho, Mugen, and Yokomo. See the Japanese theme? Plus we've got our first nitro article from new Nitro Editor Regan LeBlanc and a whole bunch of other stuff you can check out by just going to the contents page.

Until next month,

Mike Velez
Publisher/Editor/Racer

Xtreme R/C Cars

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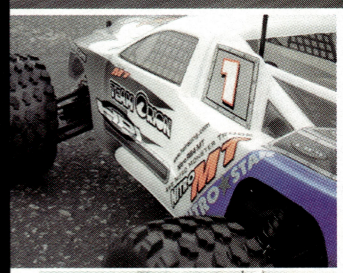



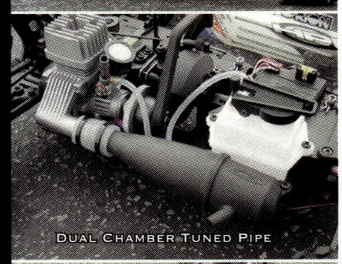

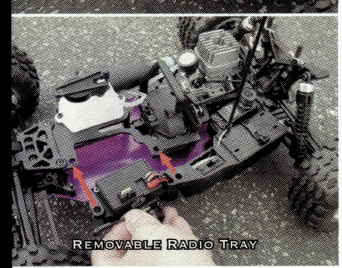

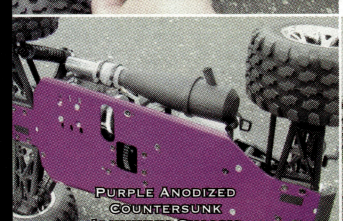

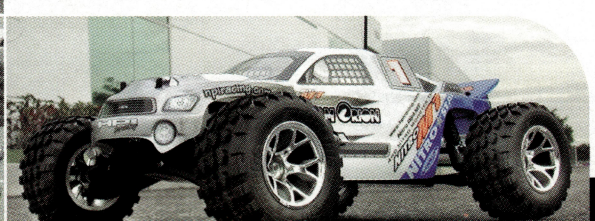

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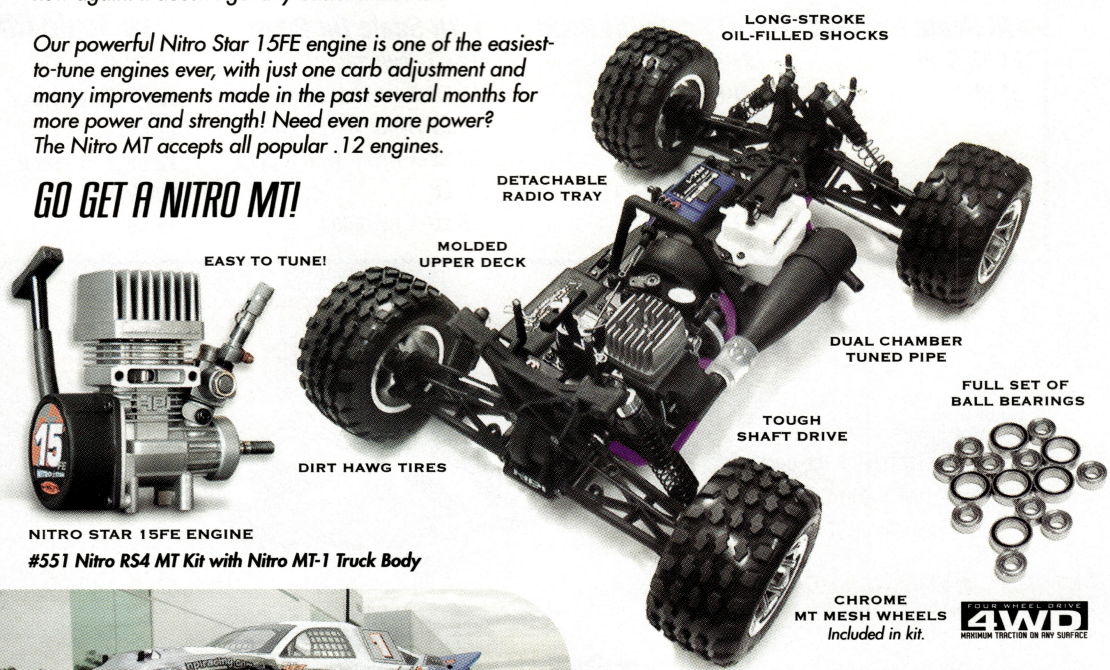

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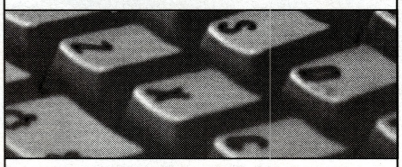

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Chevell wins our award for "Future Enterpriser" of the year. I'm just dying to know what his idea is, aren't you?

If The Slipper Fits

Hello gods of R/C. Your mag kicks major ass. have an HPI RS4 MT and I'm having trouble with the slipper clutch. I run on dirt so I have it tightened all the way and I thought that I wore out the traction control washer, so I replaced it. When I put the washer on, I again tightened the slipper all the way, but when I check for slippage the slipper was still slipping. What's wrong with my MT? It never slipped at the beginning and it has bearings if you needed to know. Thanks for any info you have. Keep up the great work,
Andrew Holley
Biloxi, MS

The solution to your problem is probably very simple. Either the slipper disk isn't seated right between the two slipper disks or you have an extra washer between the slipper hubs and the slipper nut. Double check your car's instruction manual to make sure you have all the correct pieces in place.

Careful

I enjoy your magazine much more than those other wastes of paper. But, I noticed something in the March issue that has me a little worried. In the engine rebuild how-to you mention that you can remove a piston liner out of an engine using pliers. This is very dangerous. I think you should have stressed the word "gently" more. If too much pressure is placed on the piston liner, it can become out of round and not run right. Instead of using pliers to remove a stuck liner and run the risk of damage, you should add a few drops of thin 3 in-1 oil to the outside of the liner between it and the crankcase. Next try pushing the liner out from the bottom of the engine through the back plate opening. Keep up the great job.
Bill Watkins
Providence, RI



Thanks for passing along that information.

RTRs are A-OK 4 ME

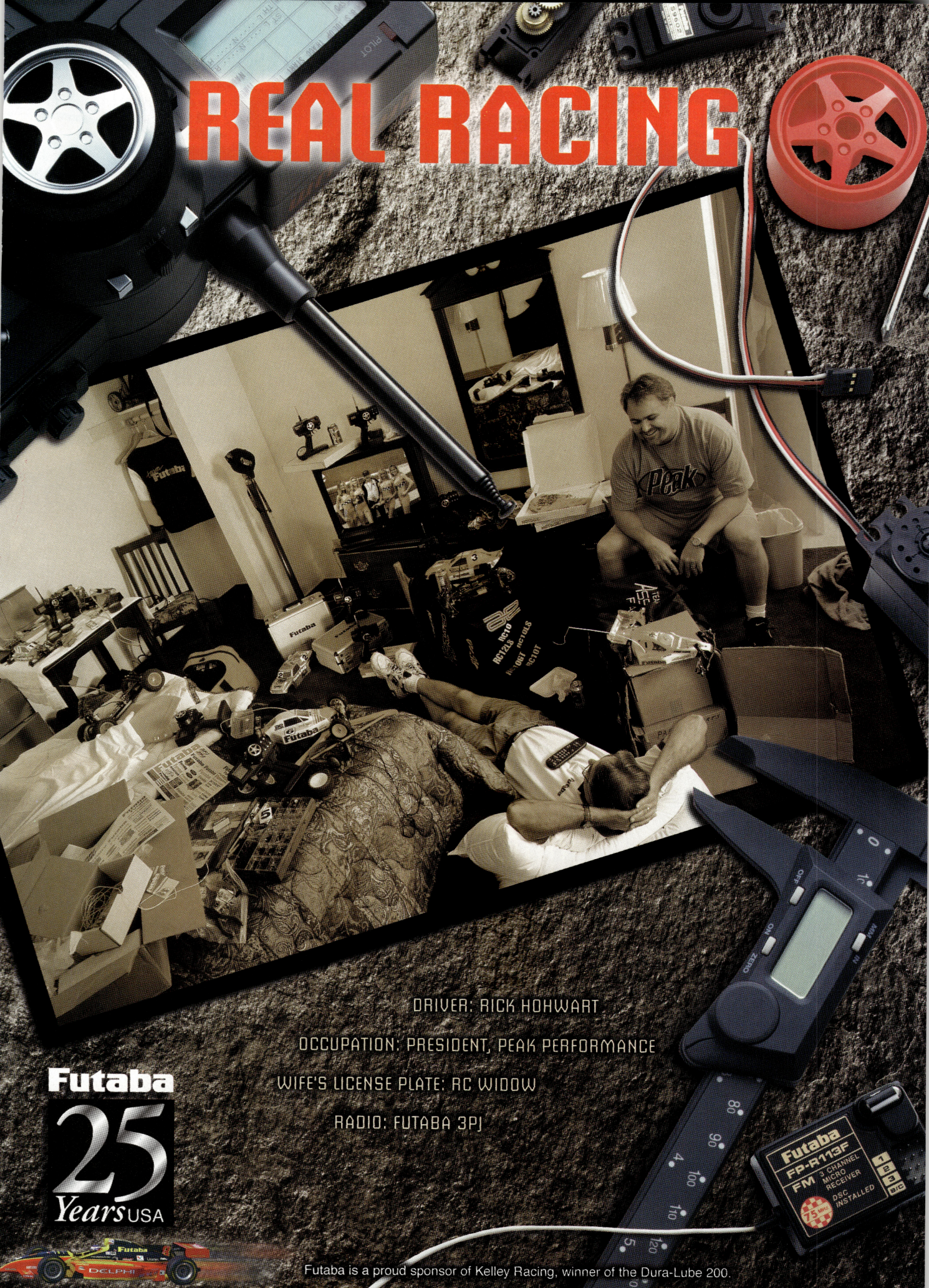
I just finished reading your Editorial in the March 2000 issue and I must tell you, it really isn't necessary to build a car to get real enjoyment out of this hobby/sport of R/C cars and trucks. Being in my mid 40's and having been disappointed by a couple of the Radio Shack-type R/C cars, I finally gave a "real" one a try. I bought a Traxxas Street Sport because it was recommended as a good beginners model. Having a full time, demanding job (I'm a Network Systems Administrator) leaves me little time and willingness to build a model from scratch so I bought an RTR Street Sport. I have to say, it is great. Painting the body and installing the body mounts was about all I had to do and that was fun. I have had it now for about a month and I haven't had this much fun since I was a kid. I plan to buy an off-road model next and it too will be an RTR. I am an avid auto race fan and just love to get out there and run the model fast. I intend to continue on with this hobby until I eventually graduate to fast nitro cars and trucks. Needless to say they too will be RTR's. You have a great magazine and I have enjoyed reading it cover to cover. Since I will be staying with the hobby, I will definitely subscribe!!!
Chuck Solorzano
Oceanside, CA

Chuck, we're glad to see enthusiasm like yours from an RTR customer. I hope that your feelings and views are common among others new to the hobby thanks to RTR cars. Look for some RTR Hook Ups soon.

It's Too Big!

I just got an RC10GT RTR. I went to my local track to race and they told me the engine was illegal. They let me race anyway, but they said that if I wanted to keep racing I would need to buy a new engine. How come my truck came with an illegal engine? What kind of engine do I need to buy? Any help you can give me is greatly appreciated. Thanks.
Mike Gomez
via the Internet

Hey, Mike. Your truck came with a .15 size engine. ROAR racing rules specify that you must use a .12 size engine for racing at sanctioned tracks. There are a couple of different reasons why your truck came with a larger-than-legal engine. First, most of the RTR trucks sold never actually see sanctioned competition. Most of the people that buy your truck will never have this problem, and for that reason, manufacturers often sell kits with a .15 size engine. A .15 size offers more power than a .12 size and uses the same amount of mounting space in your vehicle. That way if you later decide to install a .12, it's no problem. As long as your truck isn't too fast, you probably won't have any problems at a weekly club race. But, at a sanctioned race you'll have to change. In the next year, there may be a rule change in regards to engine size in off-road trucks or possibly a new class of .15 size engines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WIFE'S LICENSE PLATE: RC WIDOW
RADIO: FUTABA 3PJ
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NEW TB01 4WD CHASSIS



Driver and Navigator Figures

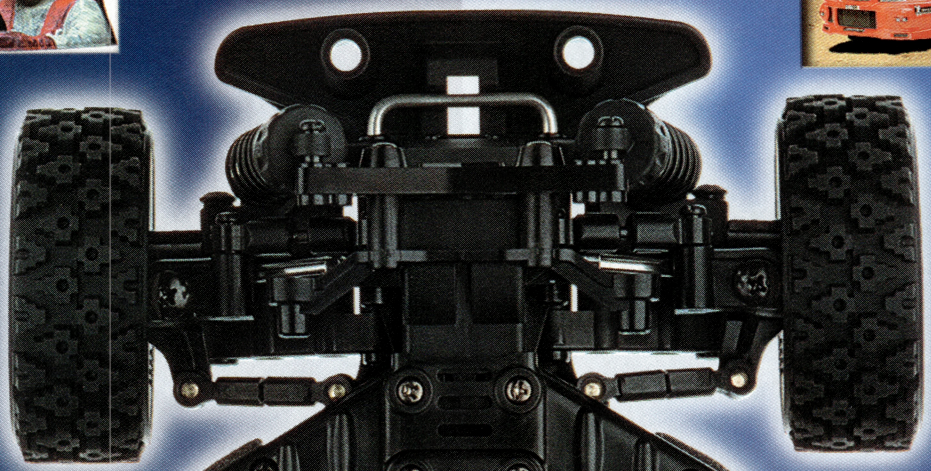


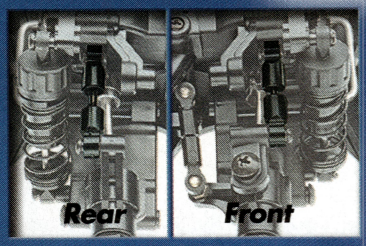
1:10 Mitsubishi Lancer Evolution VI WRC TB01 #58257

TG10 Gearboxes Front & Rear

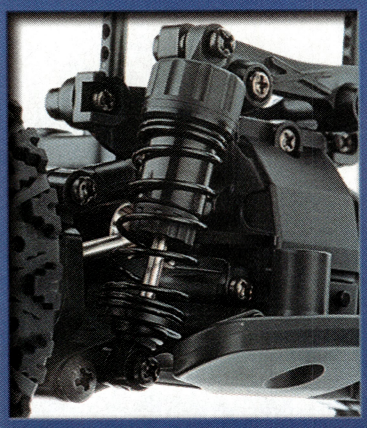
3-Step Speed Control (not shown)

Quick Release for 6-Cell Stick Pack

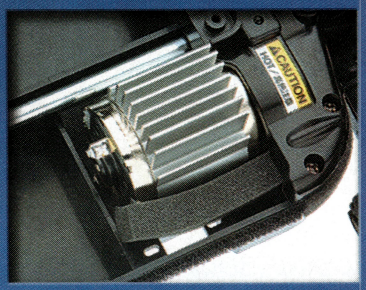




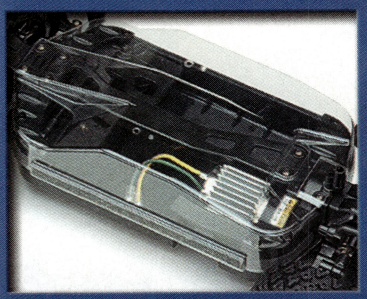
Adjustable Upper Links F&R



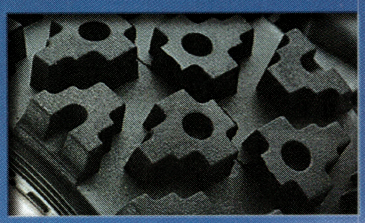
Oil-Filled Dampers F&R



RS 540 Motor, Aluminum Heat Sink and New Drive Shaft



Clear Protective Cover Attaches with Velcro



Rally Block Tires

TG10 Bumpers Front & Rear

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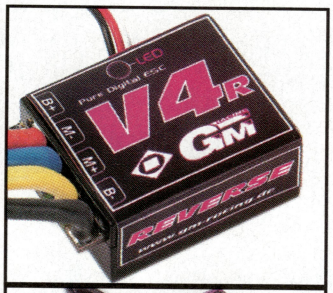
Yes, Commander. I want a new V-4!

GM Readies new electronics





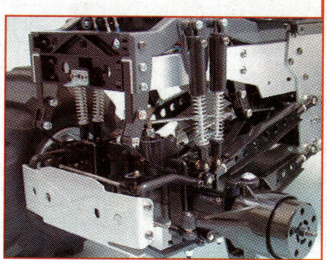
GM Racing's Commander-X may have the same casing as their trick Commander charger, but this new machine is all new inside! Features should include a new motor run function, 3000 Ni-MH compatibility, 2 sets of outputs to charge both battery pack and transmitter pack simultaneously, and an "auto" charge where the Commander-X will set charge amperage automatically to the best charge rate for your particular pack. It should also switch from the former model's VIS charge to the new PEP system, which is the same new technology that GM USA uses to match their batteries.

Another interesting item to watch out for is the new V-4 ESC. This entry level V-4 is claimed to be "plug and play", where you don't have to setup the ESC to your radio ~ give it a couple of seconds and it does it for you! Watch for more info on this ESC. Finally, both the V-8 and the V-12 have been updated to their new Super V-FETS, the V-12 having a resistance rating of 0.0004 ohms and proven performance since it is the same ESC Masami Hirosaka used to win the Worlds.

Juggernaut, part 2

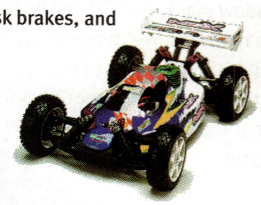
Tamiya's bad boy monster truck is back! When they pulled the original Juggernaut out of their line-up, a lot of monster truck fans were left out in the cold. Well now rejoice because the new Jugg is tougher ad stronger than before! The drive system problems that plagued the original Juggernaut have been eliminated with a completely new drive train. The diff housings, transfer case, and universal drive shafts are redesigned, and the all new diffs are twice the size as the old versions. Other changes include a new battery holder for the radio system, and the Juggernaut 2 sports a red styrene body with new decals to announce its presence (like the size of the Jugg alone won't do that!) Also new at Tamiya is their Subaru Imprezza rally car equipped with the 4wd shaft driven TB-01 chassis underneath. The Subaru joins the Mitsubishi Lancer kit that introduced Tamiya's TB-01 chassis to the U.S. Market.





Mugen's Latest Star!

MBX-RR...Remember that name as it is the next 1/8-scale off-road racer on its way out of the race winning Mugen stable! The new 1/8-scale off-roader features a differential shaft drive 4WD system, steel tranny gears, front universal joints, anti-roll bars, double disk brakes, and more.



In other Mugen Seiki news, they have released a new wide bumper, rear brace, and damper springs for the MRX-2 that also fit their Avance/MTX-2 chassis.

$50=More Voltage

Word has it that the guys at Integy are coming out with a low-dollar alternative to the Zapper 3000. Whereas the Zapper 3000 was more of an industrial-grade battery zapping machine, Integy's version is set to find its way into the hands of regular racers due to its projected $50 price point! Details are still a little sketchy, but sources say this new zapper can be used daily! In other Integy news, there's new aluminum MR4-TC parts, the Reactor dischargers are now up from 20 to 30 amps, and they have now added the Zipp Lathe 15 to their product line-up.



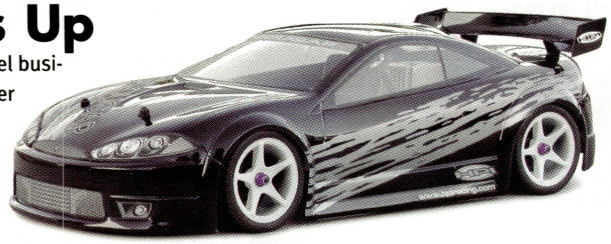
British Invasion

PROTOform's hitting the streets with a new Vauxhall Vectra Sedan body. The new body will fit all popular 4WD & FWD 190mm sedans. The new body will feature a wide stance low overall profile, and a high-downforce rear wing. The rear wink is a separate piece that comes with all of the mounting hardware needed to attach it to the body. The new body will come with window masks and detail stickers.

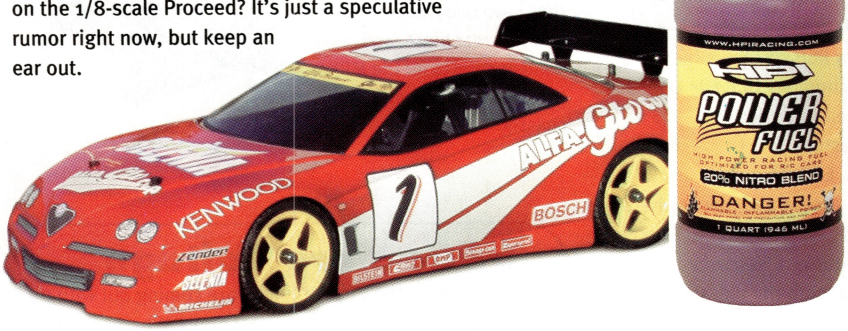


Save your Juggernaut. You'll be able to upgrade original Juggernauts easily.

HPI Fuels Up



HPI is getting into the fuel business with their new Power Fuel blend. Available in either 20% and 30% nitro contents the new fuel is designed for use in all car nitro engines. Power Fuel will be available in one quart size bottles. Also new are two new bodies both in 200mm widths for nitro sedans. The first is modeled after the new 2000 Mercury Cougar while the other body is a race shaped Alfa Romeo GTV. Each new body comes with decals and window mask. All of these items should be on the market by the time you read this. We recently heard a rumor that makes some sense. Could HPI be working on a next generation nitro touring sedan based on the 1/8-scale Proceed? It's just a speculative rumor right now, but keep an ear out.



Better Gears and 2 Years for Hitec... Plus More

Hitec's 925-945 Metal Gear servos already have a reputation for being tough little spinners. Well, Hitec has modified the MG servos with their new a new internal gear. Dubbed "MP" for metal/plastic, the base gear of the MG servos has a metal pinion gear but a molded outer gear. This change gives the MG servos even less resistance to glitching or "jittering", but with the same characteristics (and price) as the regular MG servos. Better yet, for those of you who absolutely need a "full metal" gear servo, Hitec includes the standard all metal base gear in the package, so that you can chose to equip your vehicle with either gear. Finally, Hitec backs all of their products with a new 2 year warranty, so you're covered much longer than other manufacturers give you!

On a related note, rumor has it that Hitec may be working on some other secret servo stuff. We haven't confirmed it so there's no details. As far as the rumor goes, there's one key word we've heard: "digital". Stay tuned...

Unequaled Precision

Absolute Series Spurs



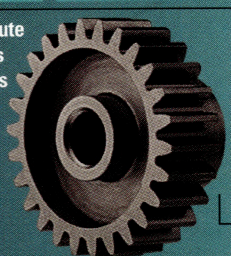
Available in 48P in 80T thru 91T, this is the quietest spur you can buy! RRP 1780 - RRP 1791

B3 / T3 Lite Aluminum Outdrives



Blue anodized and 40% lighter than stock ball diff outdrives. RRP 1502

Absolute Series Pinons



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

Unsurpassed Reliability

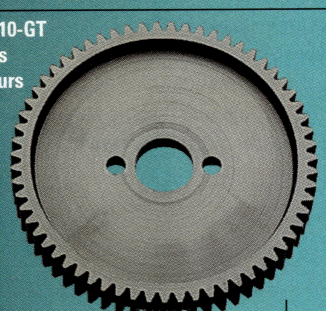
Outstanding Performance

Associated Blue Lightened Slipper Kit



The rear plate is hard anodized to reduce wear and the front plate is color treated. The front plate is designed to hold the slipper pad forcing the pad to slip on the rear plate. When pad shows sign of wear just flip it over for a new surface. Metal parts are CNC machined for a flawless fit. RRP 1515

RC10-GT Gas Spurs



Super tough and precision machined from heat-resistant plastic, these spurs mesh flawlessly with our Clutch Bells. 32P spurs in 54T thru 67T, RRP 2261 - RRP 2267, and 32P bells in 14T (New) thru 24T, RRP 2214 - RRP 2224.

www.robinsonracing.com

New Version of the MR-4 TC Pro?

Okay, I admit that that headline was a little misleading! What isn't is the fact that there's a new MR-4 on the horizon, basically a "detuned" Pro chassis. Referred to as the "sport version" here at the office (no official name from Yokomo yet) the new chassis will have the one-piece top plate, a molded chassis similar to the Pro's graphite version (slotted, with the lower motor heatsink), Yokomo body and full ball bearings- pretty loaded for a "Sport" version! This may very well take the place of the highly popular MR-4 TC as Yokomo's newest "sport level" chassis.

Speaking of Yokomo, their new Zero F2 machine wound ball bearing modified motors have been selling like hot cakes around the world and will soon be available here in the US. Also coming soon are new screwdrivers and pinion gear holders for your toolbox, Team Suzuki aluminum parts and new 0-1 2 degree hubs for the MR-4 TC series.



babe of the month

Virginie Ledoyen



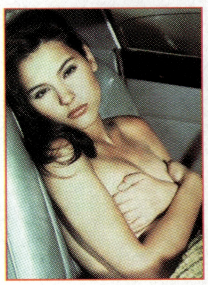
Remake the Matrix with her.

Now you have a reason to watch Leonardo de "Crap"io's new film "The Beach" with your girlfriend. Of course, only you have to know that you'll be watching to catch 30 foot shots of Virginie Ledoyen, the hottie costar in the film and this Issue's Babe of the Month!

Created for our viewing pleasure: November 15, 1976 in Aubervilliers, France.
Book your flights now.

Camera shy? We highly doubt it. Since the age of 2, Virginie's been in print and film, racking up no less than 23 film credits over the last 13 years and countless stage, print, and modeling jobs. She has been nominated for numerous European film awards, and even took home the gold in 1998's Festival of Film in Paris, France. All this from a girl who's only 24 years old.

Shortest answer for the longest question in this edition of BOTM which is, "What if you had a chance and actually scored a date with Virginie, where should you take her?": The Zoo. She likes the Zoo.



Favorite Hobbies: Swimming and reading.

Favorite music: French Rap...We don't even want to know.

Why she's Babe of the Month: So you go to the theater and see yet another preview of Mr. Titanic's latest film. Just as you're about to hurl Sour Patch Kids all over the unsuspecting moviegoer sitting in front of you, Virginie pops up on the screen in a bikini, with sand strategically sticking on her...You wish. I'm not going to tell you here! Go find out for yourself why she's Babe of the Month!

Superb Quality

RC10-GT Steel Combo



Precision machined one-at-a-time from a single piece of steel and then hardened this 65T spur and 15T bell combo will last and last. The extra-hardened clutch bell fits ALL Associated and MIP shoes. RRP 2365

Associated Titanium Stealth Top Shaft



CNC Machined from a single piece of titanium, this super hard, super light top shaft will fit any Stealth transmission. No serious racer should do without this part. RRP 1512.

Intelligent Innovation

RC10-GT Hardened Steel Idler Gear



Cut from solid steel stock, this gear is lightened and then hardened for super quiet precision and extra long life. Jamin' tranny grease is included. RRP 2213

Thoughtful Design

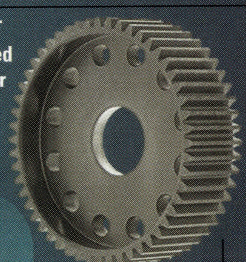


1999 World Cup and National Champion

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

— Richard Saxton

RC10-GT Hardened Diff Gear



Hard anodized, precision machined aluminum diff gear. RRP 1513

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Sound Off

Got a question? Want to rant? Want to ramble? Now you can exchange ideas and hear what others have to say about anything having to do with R/C at *Xtreme On-Line*. The Hot Topic section of *Xtreme On-Line* is now a complete and fully functional real-time bulletin board. Go take a look for yourself and be heard at www.xtremerc.com today.



Xtreme R/C Cars archives on eHobbies

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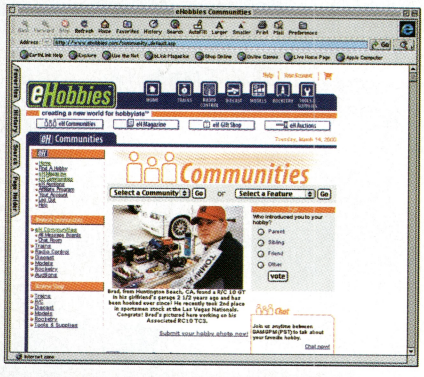


Brian's Brain Child Comes To Life

Back at the Worlds in Finland Brian Kinwald carved up some tires to see how well the insides of a tire carcass would work on the dirt. Well it turns out that the insides work pretty damn good. Team Losi is now offering Brian's custom tires as new "Inside Outs." The new tires will be available in Silver, Gold and new Pink compounds.



Losi's Inside Out tires actually have a similar design on the inside.

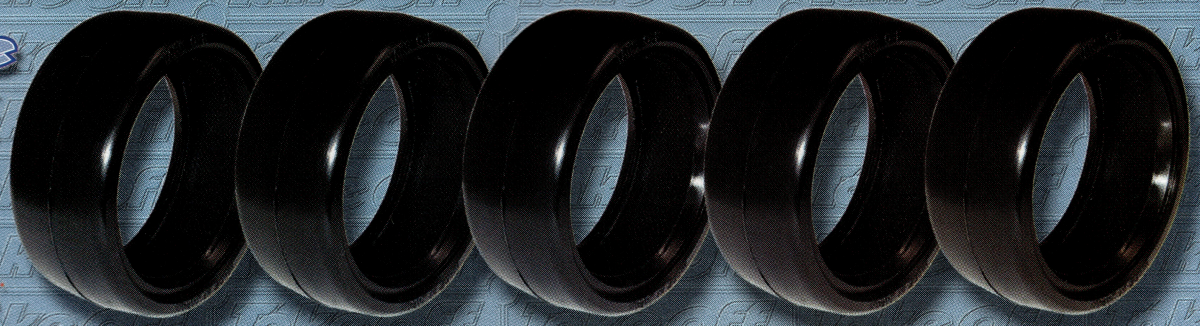




2000 Special New Items System Choice Take Off



SS tire



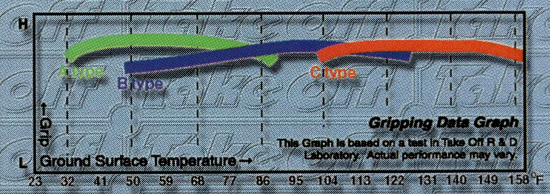
SS tire is winning race after race in the world. SS-A, SS-B and SS-C are the best choice for beginners to expert because of its high grip and long life. WSA and WSB are the best for actual races because of its super high grip and energy efficiency. These 5 types are enough for all tracks through a year so that you will find best performance tire from SS series. WSA and WSB come without inserts, please chose best fitting inserts for each track.

Width / Structure / Hardness
245 S M / B 30
Tire Type / Compound Type
Product Name Code Chart

SS-A | SS-B | SS-C | SS-WSA | SS-WSB

It's your choice, pick one !

245SM / A25	1 pair with special pressure inserts.	World Specials 2 pairs without inserts
245SM / B30	1 pair with special pressure inserts.	245SM / WSA
245SM / C35	1 pair with special pressure inserts.	245SM / WSB



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6 SubC



MAX 3000
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Powers Max 3000 Ni-MH batteries in 6 subC package and stick packs have arrived. Its' high performance and high capacity will change the race scene forever.

Ni-MH 3000mAh

POWERS MAX 3000

The Powers Max 3000 is a Ni-MH battery specially made for R/C model car. Its voltage is unusually high for Ni-MH batteries while achieving high capacity. We can now enjoy high power modified motors without fear of dumping. Every drivers dream, faster, longer and powerful running came to reality by the Powers Max 3000.

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quick tips

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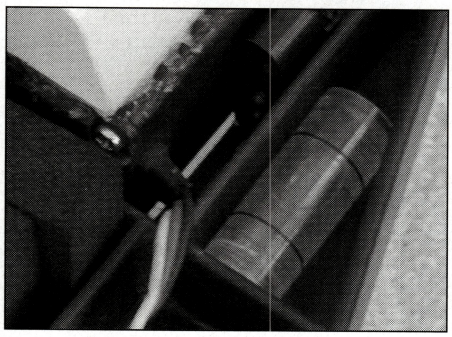


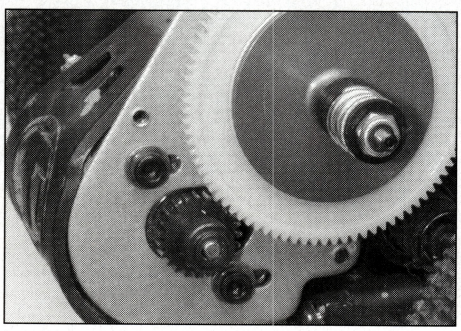
On The Level

This tip comes from Josh Knight who just won the Stock Truck class at this year's Winter Champs for the second year in a row. Pick up a small liquid level from the local hardware store and mount it somewhere on your car or truck so that the level runs end to end. When your set your ride height, all you need to do is set the front or rear first then precisely set the other end so that your vehicle is perfectly level. Of if you want to set it so that one end is higher or lower than the other you can consistently see where the level bubble is. You can also mount another level sideways on the car so that you can set the balance from left to right and the ride height. Just make sure you're setting your vehicle on a level surface to begin with.

Spice Things Up

Smell good and keep your motor safe at the same time. Old Spice round solid containers are the perfect motor home once you're done using the contents. After you've finished using all the spicy goodness roll the plunger back down to the bottom of the container. Next drop your motor inside the container, and screw on the cap. Once the cap's on, push the stopper at the bottom of the container upward to put some pressure on the motor and keep it from rattling around.



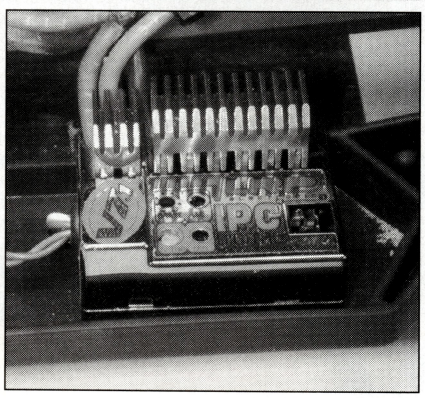


Don't Mesh Me Up.

Want a perfect pinion to spur mesh every time? Of course you do. To achieve the perfect mesh every time follow these simple steps. First, let's say you want to run a 23-tooth pinion with an 86-tooth spur. Mount a 24-tooth pinion onto your motor. Second tighten the motor so that the 24 tooth pinion is snug against the spur gear. Remove the 24-tooth pinion and replace it with the 23 tooth pinion you originally wanted to run. This tip will work with any gear combination. Simply tighten the motor down using a pinion one tooth larger than you plan on using. Your gear mesh will be set perfectly every time. Thanks to Gordon Wilardson for this tip and the Old Spice tip.

Easy Off Servo Tape

Trouble getting your receiver and ESC off your car or truck because it's stuck with double-sided tape? Once you do remove the stuck item, avoid the problem next time by mounting it with 3M Command Adhesive strips. These strips come with hooks for hanging pictures, but you can just toss those and use the tape to mount the receiver and ESC to your car. First, mount one of the Command strips to your chassis and to the component. Next, apply servo tape to the Command strip on the receiver or ESC and the chassis and mount as usual. Each Command strip has a tab on it. Leave the tab in place and when you want to remove the component just pull the tab and the tape will peel off. You'll still get a solid bond between the chassis and the receiver thanks to the servo tape. Although this tip works on receivers and ESCs, don't try it with servos. This tip was submitted to John Hauser via the web.



The Old Spice tip probably won't go over well in France.

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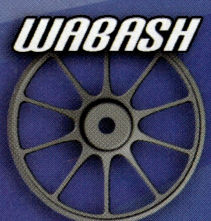
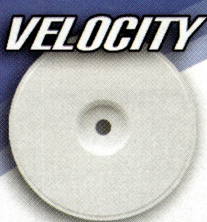


#2647 26mm
#2648 24mm

VELOCITY



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racers' rides

Loyal readers, this page is all yours...

T-Maxx and the Ice Age

Jason Ragan of Lakewood, NJ must be having fun in the snow! He sent us these pics of his Traxxas T-Maxx jumping, sliding, and climbing in a beautiful snow covered setting. Jason didn't say much about his truck so we figure it is a box stock T-Maxx. But after our recent test drive with the mighty T-Maxx (Issue 5.5), we don't see much that you would need to add – especially when you have a snow-covered playground and a mean monster truck to drive all over it!





Charge Like a Bull!

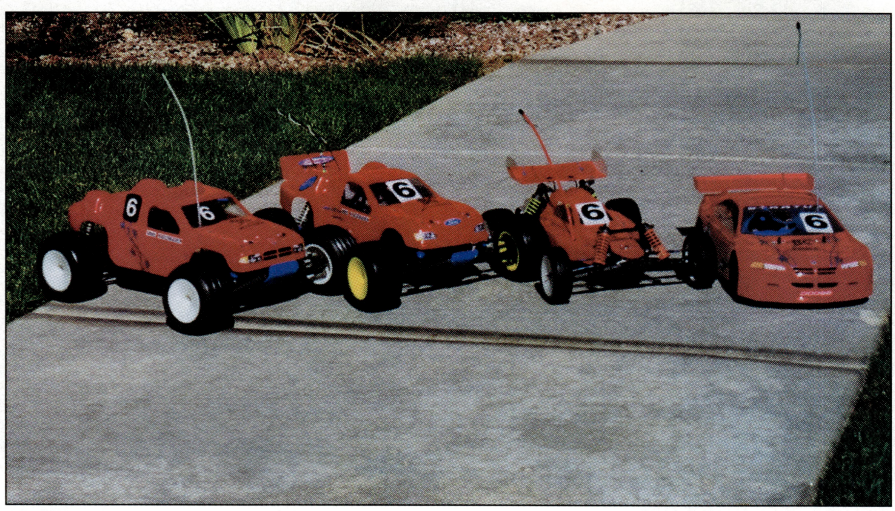
Ralph L. (we couldn't decipher his cursive!) of Palatine, IL sent us these pictures of his tricked-out monster truck. Starting out with a Tamiya Bullhead, Ralph swapped most of the stock parts with ESP ClodZilla components, and added Team Losi shocks and a slick Parma Dodge Ram body with a paint job, hand designed by Ralph himself. He beefed up the Futaba Magnum JR. Radio system with stronger 1/4-scale servos, and added to the monster effect with a Parma 1/10-scale Hemi motor kit. At 67 years old, Ralph has nothing but love for the hobby, and judging from his truck we don't doubt it!

READERS, TAKE NOTE!

All of the cars and trucks featured in Racers' Rides look good. However, if your R/C paint jobs suck but your girlfriend looks real good, send us a pic of her along with the car. Who knows – we might become your new best friends!

Kazz's R/C Family

Here's a picture of Kazz's "family" of R/C vehicles. Kazz a.k.a. Michael Laczmarek of Las Vegas, NV has quite a collection, starting with (left to right) an RC10GT with O.S., RPM, and Trinity parts; a Reedy Rage-powered RC10T3; a Losi XXCR Kinwald Edition; and finally a Mugen Seiki Prime 12 touring car with an O.S. Engine, 2-speed tranny, and ball bearings. Airtronics is the control of choice for Michael, and we might be going out on a limb here, but we think his favorite color is red and his favorite number is 6.



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Hard Drive

Race Secrets

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GOT SPEED?

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

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

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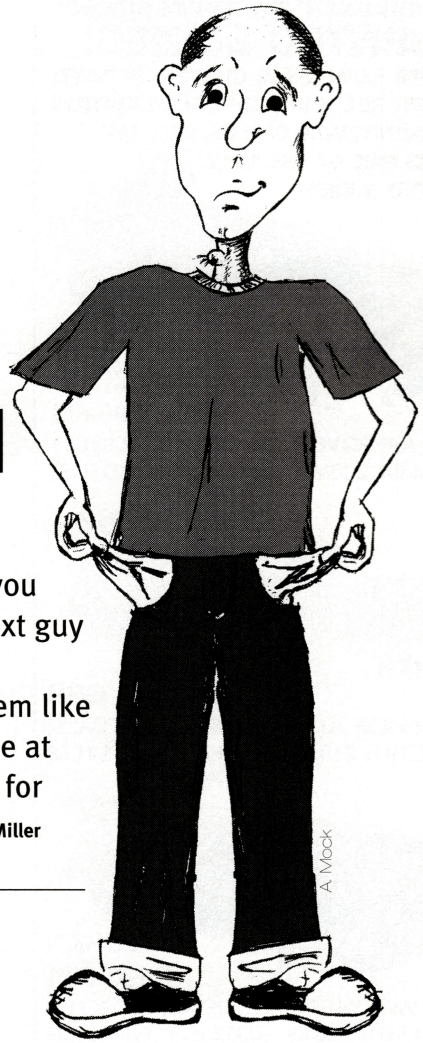

There's no way around it. In this hobby, if you want to race, you have to spend money. And in some cases, if you want to win, it takes spending more money than the next guy does. Or does it?

In this article, I hope to pass on a few tricks that may not seem like they save a lot of money up front, but really help the bottom line at the end of the season. So read on and find out how to compete for less money.

By Nathan Miller

Take Care of What Ya' Got

The first tip may seem incredibly simple but trust me it works. Take good care of the equipment you have now, and it will last longer. When racing, always remove your car's motor after every race and thoroughly clean it out, inspect it, and re-lube it before you put it back in the car. This is especially true if you use comm drops. When used correctly, these things actually do help motor life and performance. If used incorrectly, and if they're not flushed out of the motor after use, they can cause havoc. And always make sure to use no more than the drop's maker instructs. Use too much of this stuff, and you'll end up harming the motor. This is one of those cases where more isn't better. Make sure your motor isn't overgeared, either. If the thing is hot enough to fry an egg on when it comes off the track, then it's time to drop a few teeth on the pinion gear. Remember that an overgeared motor also puts unnecessary strain on the batteries.

Batteries can benefit from careful treatment, too. Always discharge the batteries after use, and let them cool before charging them again. If you can, only use your racing cells once a week – you only need better batteries for racing. It never hurts to use sport packs to practice and play around with. Besides, sport packs are made to handle this kind of abuse, and can be grabbed inexpensively. The less you use those expensive race cells, the longer they'll last.

Keeping things clean helps them last longer, too. Bearings that are kept clean and well oiled will last longer. Give your car's wheels a spin when it comes off the track, and spin the drive train without the motor in place. Gritty sounding bearings need to be flushed with motor spray until the liquid passing through them is clean. If you have sealed bearings, you shouldn't have much to worry about; just brush off the outsides of the bearings so no grit can invade the insides. Keeping pivot points clean will help ball studs and cups last longer, and keep things from getting sloppy. It's important to clean the pivot points in suspension arms and mounts. Any grit that gets in these joints can act like sandpaper, wearing not only the arm but also the hinge pins as well.

One last note in this area: don't be so vain to think you need a new, shiny, custom painted body every time. Run a body you have until it gets to the point where it hurts performance or is nothing but duct tape and Shoe Goo. And to really save some dough, paint the new body yourself. Who knows? You might like it.

What You Need, What You Don't

Everybody would love to have all the latest hop-ups, gizmos, and gadgets. But buying too many extras can be expensive, and distracting. When it comes to upgrading your car, buy only the upgrades that you know will improve performance. All those trick parts look cool, but this coolness comes at a price. Talk to others who have a car like yours, and ask what they've tried, and if it's helped the way their car handles. Some of the most beneficial upgrades are the ones you never see, like lighter transmission parts that cut rotational mass and improve acceleration. If you find your car handles well in stock form, why change anything? If it doesn't handle all that great, go back and check your setups before you determine that a new part will cure the problem. And hey, practicing never hurts either.

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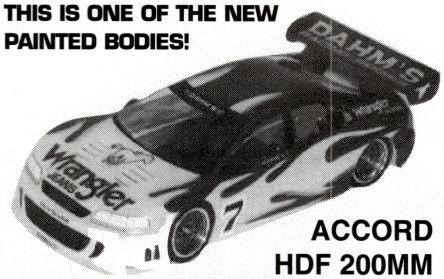

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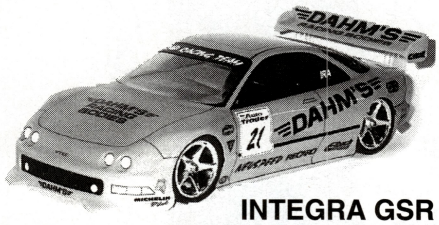

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Now a few words on the really high tech gizmos. Unless you race in an ultra-competitive environment, you don't need all this stuff. Does your local hobby shop have a comm lathe and motor dyno? If they do, then you don't need one. Even if they charge a few bucks per use, you can use their stuff a lot of times before it ever even gets close to what buying this stuff will cost you. Also consider that most of these devices are useless without a computer and an experienced operator. "But how do I know if those changes I made to my motor are making a difference?" you whine. Simple. Grab a buddy, a stopwatch, a pencil, and paper and do some testing. This is definitely much cheaper than a dyno. And consider this: a motor that's dynamite on the dyno might be a dog on the track and vice versa. Another good idea is comparing specs on products like ESCs and chargers carefully before laying down the cash. You can find a lot of products that offer great performance if you are willing to give up a few bells and whistles.

So what do you need? Most of the guys I race with do very well with good peak detection chargers, bulb dischargers with a cut-off device or a discharge tray, a good volt meter, a car stand, and a good set of tools and other basics. But along with this, they also carry a calculator, setup sheets, calipers, rulers, pencils, and some algebra knowledge. (See, you should have stayed awake in class!) All the toys in the world won't help you if you don't know how making certain changes affects your car's handling.

Stepping Down: Not a Demotion!

I have one last suggestion for those of you who feel they are spending too much cash. Now some feel that what I'm about to suggest is as bad as having kidneys or testicles removed without anesthesia. Have you considered racing in a class that can be run with a lower operating budget? This doesn't have to be drastic. If you run modified, look at what a new hand-wound motor or armature costs compared to a new stock motor. Big difference, right? And you already have the batteries and other goodies you'll need. And since stock motors are now rebuildable, they last longer than ever before needing replaced.

Another idea to consider is running in a spec class. The competition is tight, and the equipment that you are required to use is usually much less expensive than full on racing gear. From experience, I will say that I've had a lot of fun with spec classes. And if your track doesn't offer one now, talk to other drivers who might be interested, and talk to whoever runs the show at your local track. Make the rules tight, but not so restrictive that people get discouraged. The main things to look at are batteries and motors, since in electric racing these are usually the two highest priced items after the car itself. Choose lower priced items, sport battery packs, and motors like the 5D from Trinity. Another area to look at is tires. Pick a few different tire types to decide between. But, make sure that they actually work on the track, and give decent wear. If you run pan cars, simply use the spec tires offered by TRC and BoLINK.

Dollars and Sense

Spending money doesn't always equal a trip to victory lane. Knowing how to drive and set up your car is just as important as all those nifty bolt-ons and electronic gadgets. And besides, if those expensive add-ons don't help you win, you've got one less excuse to use for why you didn't bring home the gold. So save some money and hit the track to practice whenever you can!

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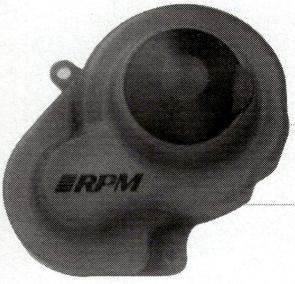

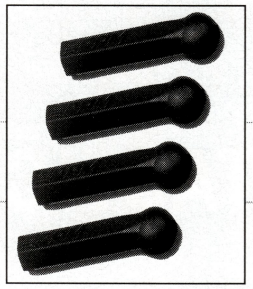

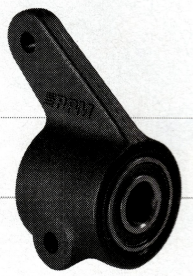



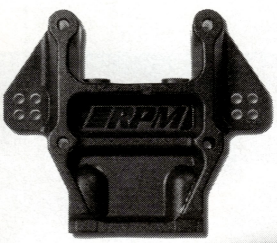

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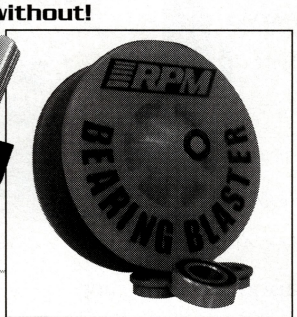

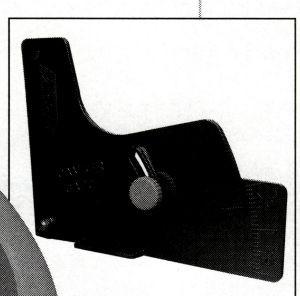

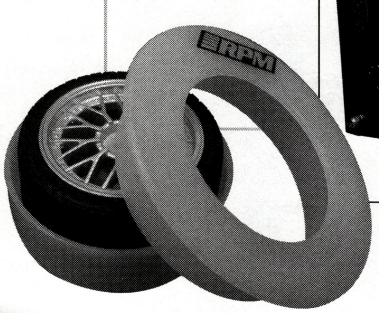

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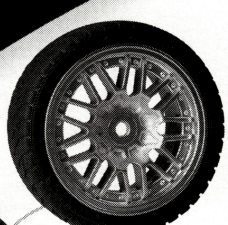

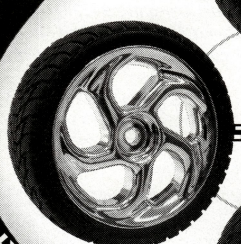



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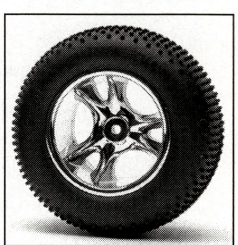

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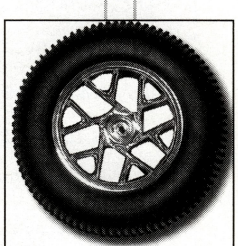

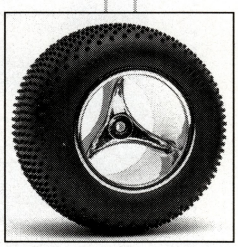

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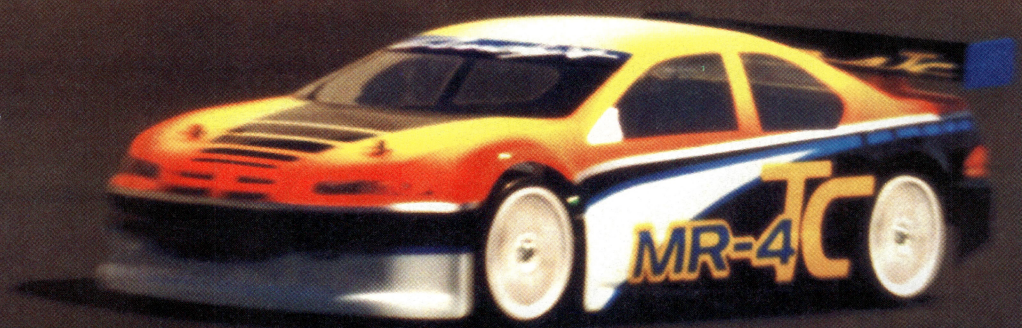

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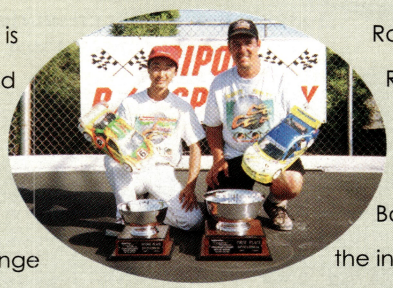
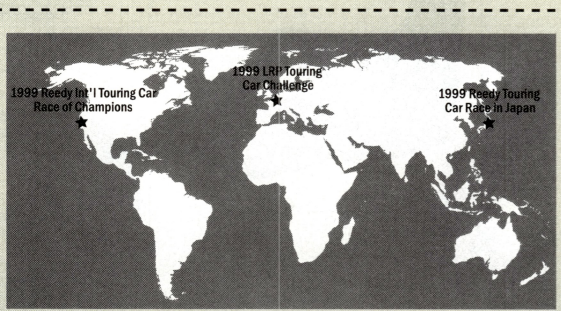


Yokomo's newest entry is revolutionizing the world of touring cars with its speed and efficiency. Since it's debut at the LRP Touring Car Challenge in Germany, the MR-4TC has proven it's awesome capabilities at race tracks around the world. And recently at the 1999 Reedy International Race of Champions at Ripon R/C Speedway in Ripon, California, Team Yokomo Driver Barry Baker dominated the invitational class with a perfect score of 6 heat wins for the overall win. Teammate Masami Hirosaka finished a close second to complete a 1-2 victory for the MR-4TC.



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BARRY 'FABULOUS' BAKER'S REEDY RACE WINNING MR-4TC

Aside from a few hop-ups, Barry's winning MR-4TC is very close to stock. Here's a list of standard equipment found on Barry's car.

Chassis: MR-4TC
Motor: Trinity D3.5 9x2
Batteries: Trinity Team Edition RC-2000
Speed Controller: LRP IPC V6
Servo: Airtronics 94258
Tires: Yokomo ZR-138M Belted Slicks
Inserts: Yokomo ZR-037F Molded Firm
Hop-ups:
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Orange Springs (YS-1450)
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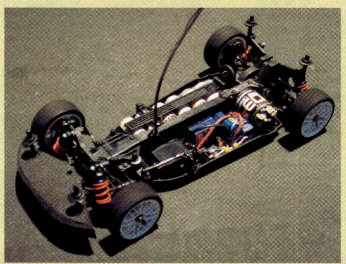
Rear Low-Friction Belt (ZS-132S)



THE ALL-NEW YOKOMO MR-4TC TOURING CAR.

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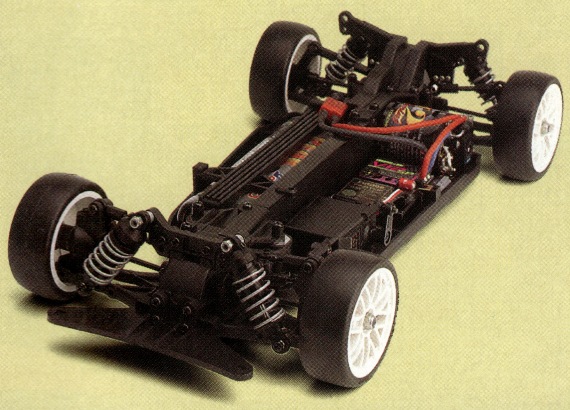

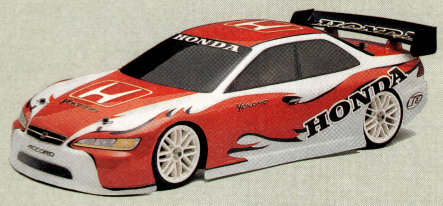

The all-new MR-4TC is available with either the Protoform Honda Accord body or the Andy's Stratus body(shown opposite left). Both kits include window masking, detailed headlight/taillight decals, and Yokomo decals.

TOP FIVE HOP-UPS RECOMMENDED BY THE FACTORY TEAM DRIVERS



YS-1355~1465
TC Tuning Springs



ZS-011E
EZ Wheel Hubs



ZS-630A
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ZS-132S
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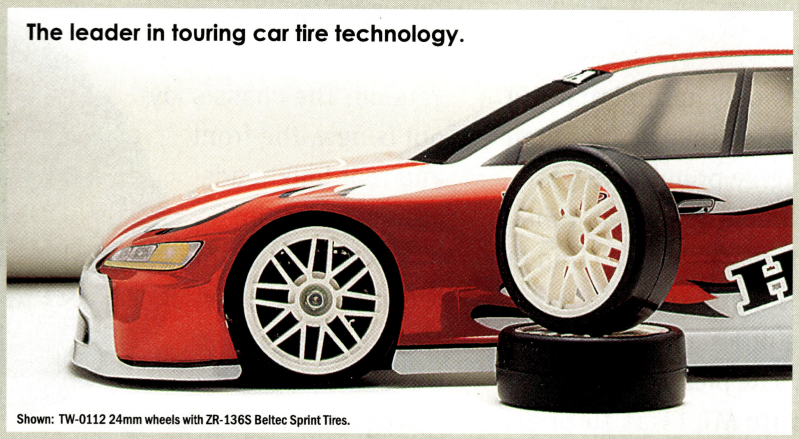

Shown: TW-0112 24mm wheels with ZR-136S Beltec Sprint Tires.



Hate the hassle of building side-by-side battery packs?

Yokomo knows that building side-by-side battery packs can be a hassle. That's why we've designed the battery hold-down system on the MR-4TC so you can use stick battery packs as well as side-by-side packs.



Part Number: YS-1SSS-5

OPTIONAL BLUE ANODIZED ALUMINUM THREADED SHOCKS

Yokomo's new shocks for the MR-4TC have been designed to help control the viscosity of the oil inside the shock, allowing the shock to provide better dampening. A bleeder screw on the shock cap makes building these beauties a breeze. Collars allow fine adjustments to ride height without the use of shock spacers. So you can adjust your ride height away from the pits. And yes, they're blue.

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PART NO.	NAME
ZR-206S	Sprint Slick, Soft (Non-Belted)
ZR-206M	Sprint Slick, Medium (Non-Belted)
ZR-206F	Sprint Slick, Firm (Non-Belted)
ZR-136S	Beltec Sprint, Soft (Belted)
ZR-137M	Beltec 4, Medium (Belted)
ZR-138M*	Beltec 5, Medium (Belted)

* Same tire used by Team Yokomo to win the 1999 Reedy Touring Car Race of Champions.

TIRE INSERTS

Having the right tire and insert combination is crucial in obtaining the maximum performance out of a tire. Yokomo inserts are available in both the sponge foam and molded foam types. The softer inserts are a good choice when running on low-grip surfaces (like dusty parking lots), while the harder inserts are better suited for high-grip surfaces (such as carpet and treated asphalt).

PART NO.	NAME
ZR-034	24mm Foam Insert, Soft
ZR-034F	24mm Foam Insert, Firm
ZR-034L	24mm Foam Insert, Non-Repulsion
ZR-037S	24mm Molded Insert, Soft
ZR-037M	24mm Molded Insert, Medium
ZR-037F	24mm Molded Insert, Firm
ZR-038M	26mm Molded Insert, Medium
ZR-038F	26mm Molded Insert, Firm

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HPI Racing Nitro MT

by James Revilla



The Nitro MT shares the same suspension components as the RS4 MT electric...

VITAL INFO

HPI Racing USA
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949.753.1099 ph. **949.753.1098** fax
www.hpiracing.com

THE HITS

- Excellent fit and finish.
- Kit engine is super-bad!
- Removable radio tray a nice convenience.
- Kit tires hook up.
- Very controllable.

THE MISSES

- Sometimes too much power.
- Bumper didn't help much.

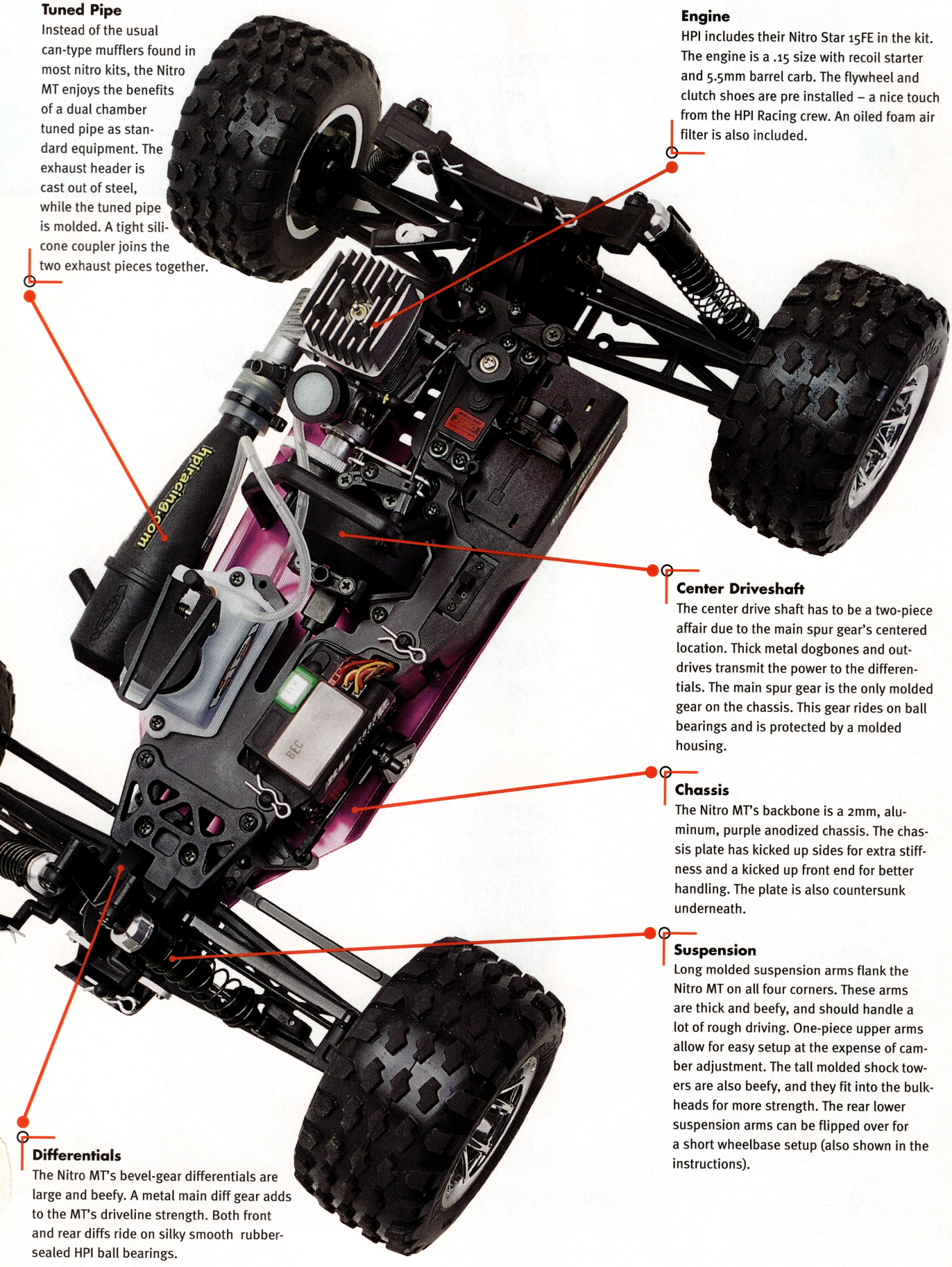
THE LAST WORD

HPI Racing's Nitro MT combines the performance of their electric MT with the horsepower of a nitro racer. On-road performance is a lot better than other trucks out on the market, and chassis accessibility is great due to the removable radio tray. Off-road handling, jumping, and turning is good but be a little careful with the trigger – the kit engine is so strong that you might not be able to handle it!

It is only natural that HPI Racing followed up their highly popular RS4 MT with a nitro version. I mean, think about it: off-road capability, fun driving, and nitro power combined into the ultimate dirt machine! However, when I first saw pictures of the prototype Nitro MT, I was surprised that the two-belt setup of the electric MT was replaced with shaft drive. Not that there is anything wrong with shaft drive. In fact, the Nitro MT's center spur and twin shaft 4WD drive system is very similar to what larger 1/8-scale buggies use, so you know the MT's shaft-drive system can handle heavy-duty off-road driving. When you look at a production Nitro MT, other than the suspension arms and shocks, there is little that relates to the electric version. The chassis layout is new, the front and rear bulkheads are new, and the overall design of the Nitro MT looks very clean and easy to work with.



The crew at HPI Racing didn't hold back on equipping the Nitro MT. Inside the box you will find HPI's Nitro Star 15FE recoil engine, a new dual chamber tuned pipe, a full set of ball bearings (Yes!), an anodized countersunk aluminum chassis, and Pro-Line Dirt Hawg M2 tires. With this feature list, the Nitro MT is no poser. Let's take a look at what its got and see how it performs.



Tuned Pipe
Instead of the usual can-type mufflers found in most nitro kits, the Nitro MT enjoys the benefits of a dual chamber tuned pipe as standard equipment. The exhaust header is cast out of steel, while the tuned pipe is molded. A tight silicone coupler joins the two exhaust pieces together.

Engine
HPI includes their Nitro Star 15FE in the kit. The engine is a .15 size with recoil starter and 5.5mm barrel carb. The flywheel and clutch shoes are pre installed – a nice touch from the HPI Racing crew. An oiled foam air filter is also included.

Center Driveshaft
The center drive shaft has to be a two-piece affair due to the main spur gear's centered location. Thick metal dogbones and outdrives transmit the power to the differentials. The main spur gear is the only molded gear on the chassis. This gear rides on ball bearings and is protected by a molded housing.

Chassis
The Nitro MT's backbone is a 2mm, aluminum, purple anodized chassis. The chassis plate has kicked up sides for extra stiffness and a kicked up front end for better handling. The plate is also countersunk underneath.

Suspension
Long molded suspension arms flank the Nitro MT on all four corners. These arms are thick and beefy, and should handle a lot of rough driving. One-piece upper arms allow for easy setup at the expense of camber adjustment. The tall molded shock towers are also beefy, and they fit into the bulkheads for more strength. The rear lower suspension arms can be flipped over for a short wheelbase setup (also shown in the instructions).

Differentials
The Nitro MT's bevel-gear differentials are large and beefy. A metal main diff gear adds to the MT's driveline strength. Both front and rear diffs ride on silky smooth rubber-sealed HPI ball bearings.

...At the test site, James almost slammed the RS4 Nitro MT into the side of a bulldozer...

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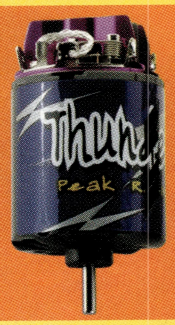

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Peak's extensive range of batteries includes racer oriented ***PowerFlo*** voltage enhanced cells as well as assembled sport packs. There is a Peak battery suitable for drivers of all skill levels and budgets.

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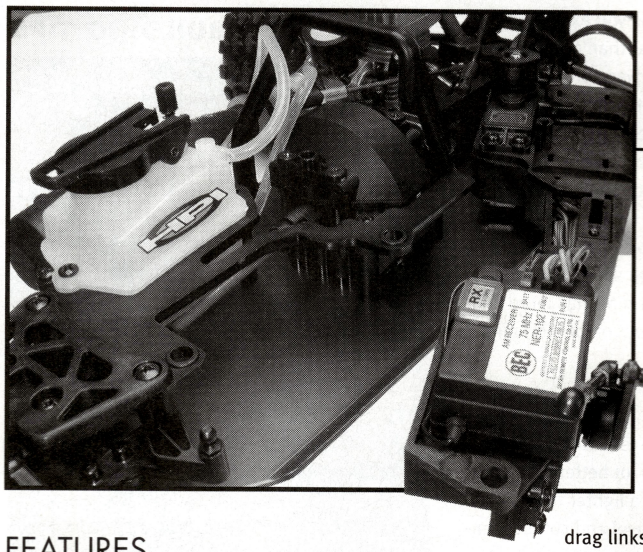


With the electronics assembly swung out, the main spur gear and drive shafts are exposed.

FEATURES

Upper Deck
A molded upper deck helps support the main chassis. There is a built-in handle to carry the chassis to help you to avoid risking burning your hands on the engine. A trick one-piece removable radio tray holds all of the Nitro MT's electronic equipment, and can be removed from the MT with just two body clips.

Drive Train/Transmission
The Nitro MT uses a shaft driven 4WD system to send power to all four wheels. All Nitro MT's are fully equipped with ball bearings for performance. Metal gears are used everywhere except for the main spur gear.

Driveshafts
A standard front and rear dogbone setup spins the metal axles. Again, ball bearings are found throughout the axle and drive system.

Suspension Braces
The Nitro MT features metal braces front and rear that support the suspension arm's inner hinge pins.

Brake System
A single disc brake handles the stopping chores. The brake system is mounted just behind the center spur housing. Although the brake disc is molded, it is very thick and has that "drilled" look to it.

Long-throw Shocks
Long molded shocks feature triple O-ring sealing, steel shafts, and nice aluminum cap collars. The rear spring perches have a built-in splash shield to keep grime off of the rear shock shafts. These long throw shocks can be limited externally for on-road driving.

Steering
Unlike the standard MT electric truck, the Nitro MT gets a lighter, easier-to build steering system. The dual bellcrank design is still used, but new one piece molded bellcranks do away with the built-in servo saver. One-piece, molded steering and drag links not only make it easier to build (no more dreaded ball ends!), but these molded pieces also ensure that Ackerman is exactly as HPI wanted it.

Tires & Wheels
Shiny, chrome-plated, one-piece HPI MT Mesh wheels are wrapped with Pro-Line Dirt Hawg M2 compound tires. These tires are used on many other MT-type vehicles from other manufacturers, and with justification – they work great!

Body
Dubbed the "Nitro MT-1," the HPI Nitro MT's body is a racing/stadium type truck molded out of Lexan. A highly-detailed decal sheet, window masking, and body painting instructions are included. The center section of the MT-1 truck bed is supposed to be cut out. This allows easy access to the starter cord and glow plug.

Documentation
The Nitro MT's instruction manual shows full-sized drawings of the hardware used in each step. The CAD illustrations are easy to follow. In the back of the manual there are pages on starting the Nitro Star 15FE for the first time, engine break-in and tuning, option parts, and exploded diagrams of both the chassis and the engine. Props to HPI!

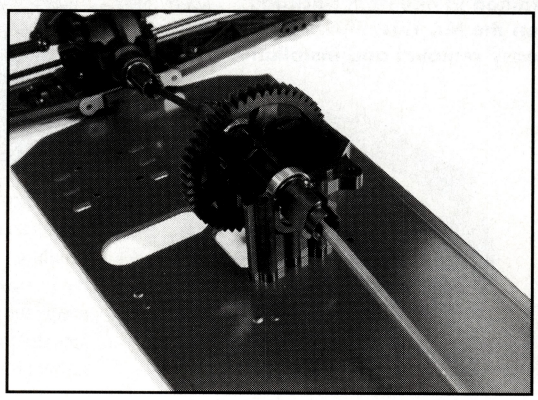
Pricing and Availability
The suggested retail price of the Nitro MT is $499, which should bring the street price to around $280-$300. This price is very good considering that you get an engine, full ball bearings, a body, and a tuned pipe as standard equipment!

TESTING AND SETUP
I equipped the HPI Nitro MT with JR radio equipment. An XR-2 radio along with Z-250 servos controlled the truck, and Traxxas Top Fuel 10% in the tank. I stuck with the already excellent Pro-Line M2 Dirt Hawgs, and I kept the stock springs and pistons in the shocks. Since the camber and toe-in are preset by the one-piece links, they stayed factory. There is a second set of rear hub carriers that give 0 degrees of rear toe-in (as opposed to the factory setting of 2 degrees toe-in), but again I stuck with the instruction manual-specified pieces. Pactra bright red and sprint white covered the inside of the body, and I used the large kit-included decal sheet to decorate the shell. HPI Racing included a large decal sheet to match all of the cool graphics found on the box photo, so that you can easily duplicate the design.

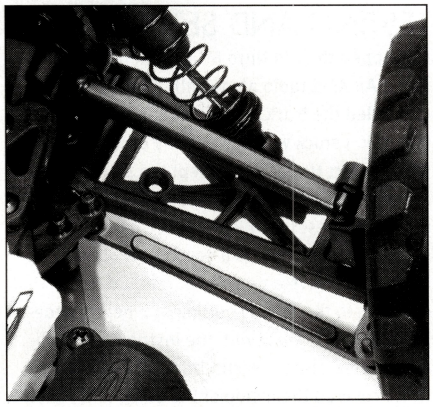
Testing took place in an open construction lot. The surface was mainly dirt and hard packed mud, with a few jumps created by the tire tracks of an 18-wheeler. It was nice and open, so I knew I could open up the Nitro Star engine for some high speed driving.

Acceleration
After tuning the Nitro Star 15 engine, acceleration was excellent. With a steady flume of smoke flowing out of the exhaust pipe, the Nitro MT had some grunt off of the starting line. On asphalt the chassis would squat down a bit under the torque of the engine, then move forward quickly. Likewise on the dirt, but instead of chassis squat you would hear the engine wind up on the rpm's before the truck would take off. Quick pulls of the trigger at mid speeds would motivate the Nitro MT forward responsively. Due to the excellent grip of the Dirt Hawgs on both asphalt and dirt surfaces, there was no wheelspin. With some harder compound tires and a competition spec engine, I'm sure rooster tails aren't too far away.

Top-End Speed
At first I thought the Nitro MT's kit engine was slightly on the average side in terms of top speed, but once the truck was out on the dirt, it seemed so much faster! At high rpm's the engine



The Nitro MT sports a beautiful anodized aluminum chassis to support the center drive and the powerful Nitro Star 15FE.



One-piece camber and steering links make it a breeze for novices, but leave no adjustments for camber or toe. HPI does offer adjustable tie-rods.

would sing as the Nitro MT would fly across the land like a charging bull. Out of the box, the top speed of the Nitro MT (with respect to the engine and the gear ratios) should be more than enough for anyone. It's fast!

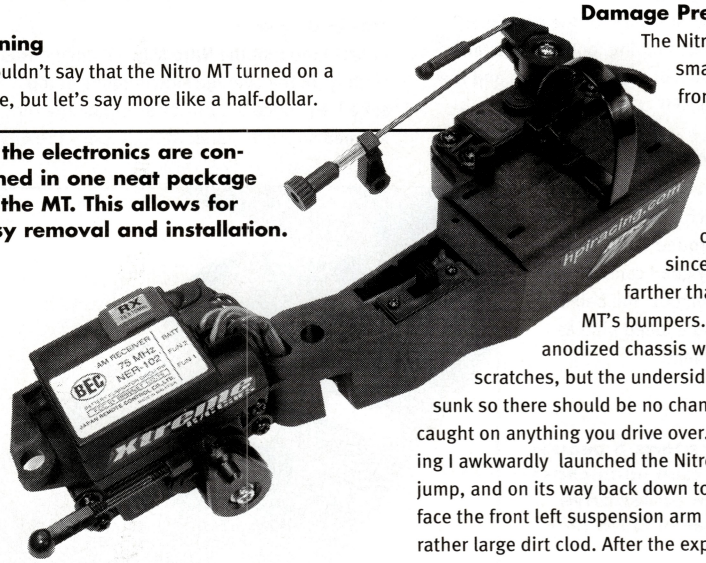
Braking

While assembling the Nitro MT, one thing I didn't like was the fact that it used a single molded brake disc. The disc itself has holes molded in for that "cross drilled" effect, and it is much thicker than other molded brake discs I've seen on other vehicles equipped with them. I would have expected a fiber unit to provide the stopping power for this 4WD .15-powered truck. However, the molded disc did a pretty good job of bringing the Nitro MT to a halt. From full throttle the truck would brake straight and controlled, the nose would diving down under heavy braking. If I slammed the brakes while turning, the Nitro MT wouldn't spin out. All four tires would maintain their traction whenever the Nitro MT would have to slow down. Even on the dirt the brakes would lock up the four tires and bring the MT to a stop quickly.

Turning

I wouldn't say that the Nitro MT turned on a dime, but let's say more like a half-dollar.

All the electronics are contained in one neat package on the MT. This allows for easy removal and installation.



It wasn't super tight (what do you expect from a truck?), but it was a lot better than other trucks I've driven. Responsiveness was very good even with a stock servo attached to the Nitro MT's bell cranks. Turning at higher speeds was also responsive to a point that I would inevitably tip the truck over in the dirt by turning too hard when compared to how fast I was going. I cut down the dual rate a little to compensate for the trucks twitchiness at high speeds. However, at mid to low speeds the Nitro MT has more than enough steering to get you out of (or into) most situations.

Uneven Terrain

This was the one part of the test drive where the Nitro MT would have done a lot better with a less powerful engine, or at least a lighter trigger finger. The long suspension travel and soft suspension worked excellently over uneven terrain at low to mid speeds. But as soon as I gave the Nitro MT full throttle, the truck's suspension gave in. Hopping like a weird rabbit, the MT would fly across the surface, the tires fighting to stay on terra firma until eventually the truck flipped end over end. I don't attribute this to a fault in the suspension – in fact, the Nitro MT's suspension is very good. However, on very rough terrain the MT has more than enough power for its own good. As long as you know when to take it easy this is a good thing.

Jumps

The same engine that gave the Nitro MT's suspension a little trouble provided ample power to jump the truck well. With about a 40-foot head start, the Nitro MT flew off of jumps in a stable, level manner. The layout of the chassis components worked well as the Nitro MT had excellent balance up in the air. A couple of times I would tap the brake in mid air to see if the nose would respond, and every single time I tapped the trigger the Nitro MT would bow in response to my radio input.

Damage Prevention

The Nitro MT has small bumpers front and rear. Even so, the tires themselves will take the brunt of the crash since they stick out farther than the Nitro MT's bumpers. The purple anodized chassis will take scratches, but the underside is countersunk so there should be no chance of getting caught on anything you drive over. During testing I awkwardly launched the Nitro MT off a jump, and on its way back down to the dirt surface the front left suspension arm intersected a rather large dirt clod. After the explosion of dust

BUILDING TIPS

I have built many HPI vehicles over the years and for some reason building the Nitro MT felt like a different experience. It seems as if HPI has streamlined the assembly process because I had the chassis ready to roll in less time than I had expected! The manual is great, the parts fit is spot-on, and the assembly organization shone brightly when compared to the other less-organized vehicles I've worked with. Anyhow, here are a few tips I came across during assembly:

Before starting: There are no special tools you need to assemble the Nitro MT other than a common screwdriver, needle-nose pliers, hobby knife, and CA glue (for the tires). Since this is a nitro vehicle, we strongly suggest using some liquid thread-lock on any assembly where metal goes into metal. For the locknuts and Allen screws, HPI includes their well-received box wrench and a couple of L-shaped Allen wrenches in the kit.

Step 1 page 7: Since the Nitro MT uses many metal gears in its drive system, make sure you compare the gear to the actual size drawing on the instruction manual to avoid any confusion. Also, the E-clips that hold the A855a bevel gears onto the output shafts may seem impossible to attach. They will snap on fine, but you have to make sure that you push the output shaft into the bulkhead all the way so that the tip of the shaft protrudes out of the bevel gear. There will then be enough space to pry the E-clip onto the output shaft.

Step 16 page 14: Instead of trying to pull the shock body end (#A473-3) into the aluminum shock cap (#72100), thread it through. It is much easier this way and you won't risk ruining the shock cap threads.

Step 24, page 19: This may not happen to other brands of servos, but in this case the servo wire for the throttle side was almost too short to reach the receiver, which is mounted at the opposite end of the throttle servo. Before servo-taping the receiver to the radio tray, run the servo wires through the hole (specified in the photo) and plug everything into the receiver first. Then you should be able to mount your receiver without stretching (or worse, breaking) your servo wires.

Step 29, page 22: It's much easier to remove the chrome finish from the wheel BEFORE applying glue to the wheel and tire. (the manual says to do this in reverse.)

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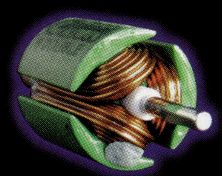

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and small dirt "pebbles," the truck kept rolling forward. When I turned the wheel to bring the MT back to me for damage inspection, I noticed that the left side front wheel was a lot closer to the left rear wheel than before! Upon further inspection, I found out that I had pulled the front suspension arm off of the front hinge pin. The whole arm didn't shear off- one end of the arm was still attached to the hinge pin! Let's see: a two foot jump, about 12 feet of air time (distance-wise) and a landing after hitting a big dirt boulder, and all that happened was one broken front arm. When you think about it, that's not bad considering that this truck goes faster and weighs more than some other "less manly" trucks.

THE SPECIFICS

ITEM INFO
Part #551 (Nitro MT) MSRP $499. Street estimate $280-$300. Manufactured in Japan.

CHASSIS TYPE
Double-deck design with aluminum anodized 2mm lower chassis and molded upper deck.

WHEELS AND TIRES
HPI Racing one-piece MT mesh wheels with Pro-Line Dirt Hawg M2s and Pro-Line foam inserts.

TRANSMISSION TYPE
Center shaft-driven 4WD, with front and rear metal gear differentials, steel dog bones and full ball bearings.

SUSPENSION DESIGN
Independent, molded nylon lower arms, one-piece molded upper links, molded shock towers, 2-degree rear toe.

SUSPENSION DAMPENING
Coil-over, oil-filled shocks, molded pistons, molded shock bodies, aluminum shock caps, steel shafts, O-ring seals.

VEHICLE TYPE
Nitro engine-powered, 4WD monster truck.

OTHER ITEMS YOU NEED
2-Channel radio system with 2 servos, nitro fuel, glow plug igniter, Lexan paint and CA glue.

OUR TEST GEAR
JR Racing XR-2 Radio system, JR Racing Z250 servos, Traxxas Top Fuel 10%, Pactra paints.

MAIN COMPETITION
Tamiya Mad Bison, Duratrax Maximum MT, Traxxas Nitro Stampede, Associated RC10 GT RTR

Like many R/C companies, HPI Racing USA is located in Southern California (Irvine, to be exact) and parts availability is excellent. Many hobby shops stock HPI's vehicles, so a spare or hop-up part is easy to come by. In fact, on one of the pages near the back of the instruction manual there already are hop-ups for the Nitro MT . Heavy duty chassis, aluminum shocks, graphite- the usual affair is available for HPI's Nitro MT.

Trackside Tuning

The shocks are held in place by two screws each – nothing fancy, and they should be really easy to remove for spring or oil changes. If you opt for the hop-up ball diffs, you will have some wrenching to do to get to them but nothing out of the ordinary. Engine access is good, with everything in easily accessible places.

If you change or have to reinstall fuel lines, you'll have to remove the fuel tank to get to the lower fitting. The pressure fitting on the tuned pipe is located in between the fuel tank and pipe, so either way removal of the tank is suggested for quick adjustments. Since the steering and upper arm links are all molded, there's no way to adjust front toe or camber settings. However, in kit form the suspension setup works great. Only die-hard racers might want to replace these links with adjustable turnbuckles.

Maintenance

The removable radio try is a plus. Simply remove two body clips, unhook the throttle and steering linkages and the entire electronic system can be removed from the chassis. From here you can dust (or spray if it really dirty) the chassis with ease. The front and rear diffs are enclosed in sealed bulkheads so you shouldn't have to disassemble them that often. Part of the main spur gear in the center of the vehicle is exposed to the open air, so after some dirty running you might want to remove the center spur cover just to make sure the spur gear is grit-free.

Overall Driveability

The first testing was immediately after my engine break-in session, and on the smooth asphalt surface outside *Xtreme R/C Cars* headquarters the truck was fun to drive. The surprisingly strong Nitro Star 15 FE engine moved the Nitro MT at high speeds. Acceleration, turning, and braking were all good. The molded brake pad that I was nitpicking over earlier did its job well, with no signs of brake fade. (Our staff photographer tested out the brakes well by doing his "Knight Rider brake and turn" imitation over and over and over...) Even if the Dirt Hawg tires were meant for the rough stuff, they gripped the asphalt a lot better than you'd think.

Speaking of dirt, my dirt testing had me a little undecided. That same engine that was a blast to drive on the smooth surfaces was very difficult to drive on the rough terrain. It had decent response but I would hesitate to go full throttle



The Nitro Star 15FE provided a lot more power than I thought it would!

due to the Nitro MT's willingness to pop up and over onto its lid. The Nitro MT would jump well, accelerate well, turn well – it would just have to be at low to mid-speeds.

I don't think the problem has anything to do with the suspension. After all, the Nitro MT's suspension is based on the RS4 MT, and that truck was working very good on the off-road. If anything, the problem is too much power. What? A kit engine with too much power? Yes, the HPI Nitro Star 15 FE is very impressive for being a single needle kit engine, and I think the Nitro MT would be easier to drive with their 12 sized version instead. When equipped with the 15, the MT gets propelled to speeds so high that the suspension would reach its limits over rough terrain. Maybe running the engine a little richer would calm it down a little, but that would go through glow plugs quicker and I wouldn't be able to do those high-speed blasts everywhere else (err, everywhere else that is smooth).

CONCLUSION

The Nitro MT is well suited to fit into HPI's lineup. It's easy to build, it's a blast to drive, and it performs well. You won't go wrong if you decide to add the Nitro MT to your stable of R/C vehicles. The broken front arm I had during testing didn't make me think at any point in time that the Nitro MT's suspension was weak. In fact, you had to be there to see how hard a hit the Nitro MT took! Any other trucks would have lost more than a front arm, but the Nitro MT held up pretty well. I even like the fact that the body gives easy access to the recoil starter and the glow plug while the body is clipped onto the chassis. If you can keep your trigger finger in check over the rough stuff, the Nitro MT will excel everywhere you drive it. Then again, you know how we all like going very fast...

For video of the HPI Nitro MT in action check out www.xtremerc.com

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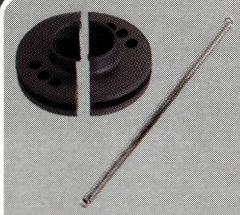
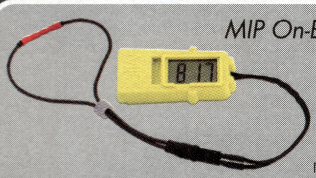


MIP Clutch Systems for Associated, Losi, HPI, and Kyosho vehicles:

MIP Clutch Systems are specially designed with our custom extension spring and can be run in various settings for precision tuning. They are manufactured of extremely high grade composite material which allows for the smoothest and most consistent transfer of power. MIP Clutch Systems are stock replacements.



MIP On-Board Temp Gauge™:

Knowing the temperature of a gas engine is vitally important to a well running, long living engine. The MIP On-Board Temp Gauge™ probe fastens directly to the gas engine head and delivers accurate temp readings. For use on most model engine applications.

MIP Boost Bottle and Rear Boost Chamber Kits:

MIP Boost Bottle and Rear Boost Chamber kits increase your .12 gas engine's bottom end acceleration while making the power band more consistent than ever before. Fits O.S., HPI, Dynamite, and Thunder Tiger engines.

MIP 360 Stinger Kit for Associated, HPI, Losi, and Traxxas:

The only exhaust system that sounds like a real two stroke pipe. For use with or without pull start engines, the MIP 360 Stinger maintains substantial top end speed while creating the bottom end torque and punch needed for off-road racing. All 360 Stinger kits now come with a shiny coated pipe and black anodized header.



MIP Headsink and Buttsink for O.S. .12 engines:

MIP Headsinks were specifically designed for 1/10th scale racing. They come predecked from the factory, and include a top of the line #8 McCoy plug. MIP's ultra light weight aluminum Buttsink can be used to eliminate the pull starter, or just simply to replace the standard engine back plate. Both the Headsink and Buttsink are designed with large spacious cooling fins to dissipate the tremendous heat created from gas engines.

MIP's 21 years of racing experience has lead to the hottest race proven upgrades for 1/10th scale off-road vehicles and touring cars.

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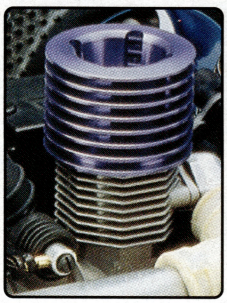
With a powerful .21 engine pre-installed!

WHERE PERFORMANCE MEETS CONVENIENCE

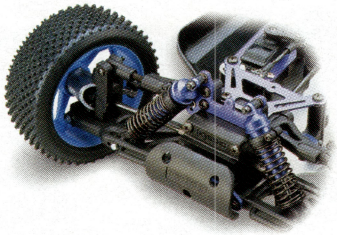
It's based on the same high-performance buggy that has won four consecutive IFMAR World Championships. But the MP-6 Sports boasts one big difference: a GS-21R engine that's not only included, but pre-installed as well. That's one less decision to have to make when choosing your competition-level off-roader, and it's the right one for ensuring that your racing experience will be enjoyable — and successful — right from the start.

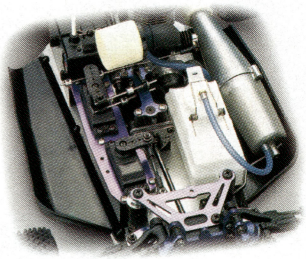


This awesome power plant is the perfect complement to the MP-6 Sports' long list of race-winning features. It features easy recoil starting, a newly designed KG2C carburetor and a high-performance muffler.

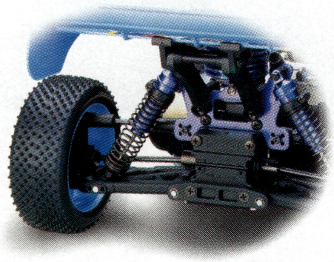
Features race-winning Inferno technology:

The Inferno MP-6 Sports masters off-road tracks with full-time 4WD and three diffs. The slightly longer chassis adds stability, and 8° of front kick-up reduce "digging in" on landings. Wrap-around side guards keep dirt and debris away from the chassis, and the waterproof radio box protects the receiver and NiCd from the elements.





The single front and rear stainless brake disk delivers durability and super stopping power, and features an adjustable linkage system that you can fine-tune to meet track conditions. For added reliablility, the MP-6 comes with single-length "I" suspension arms that are bolted to the wheel hubs, and the rear shock stays have been re-engineered for better geometry.



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Mugen Nitro MTX-2

by Mike Velez



VITAL INFO

Mugen Seiki Racing Ltd.
17971 Sky Park Circle, Suite G
Irvine, CA 92614
949-475-9505
www.mugenseiki.com

THE HITS

- MT12 engine is a rocket.
- Precise handling, like a race car should.
- Top-notch materials and build quality.
- 2-speed and threaded shocks standard.

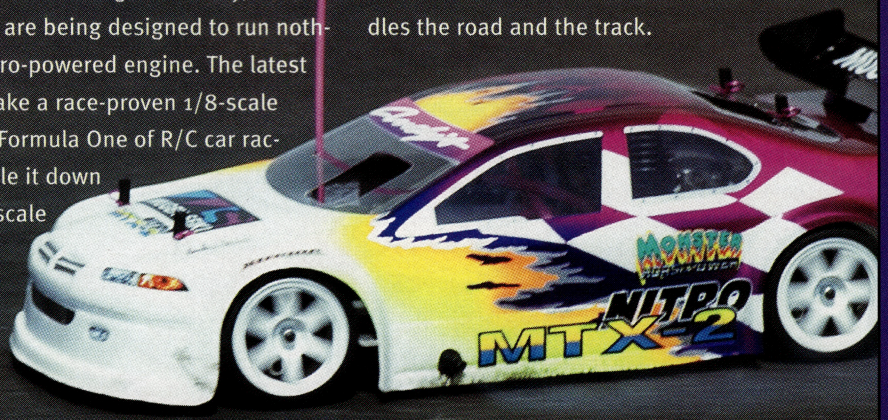
THE MISSES

- No pipe.
- Kit tires suck.

THE LAST WORD

If you're going to race, the MTX-2 should be at the top of your list. Unlike other lower priced sedans in its class, nothing is needed to make this car competitive. It's got it all, well except a pipe. This car performs like a race car should. It's durable and reasonably priced considering all that you get.

Recently the nitro touring car market has become hotter than ever. The class was invented with electric sedans that were adapted to run nitro engines. Today, nitro touring cars are being designed to run nothing but a nitro-powered engine. The latest trend is to take a race-proven 1/8-scale design (the Formula One of R/C car racing) and scale it down to the 1/10-scale touring car specs. The new Mugen MTX-2 is the latest example of that new philosophy in practice. And what better car to base this new design on but Mugen's IFMAR World Championship-wining MRX-2 design. As you'll soon see, the MTX-2 is packed with features including the much talked-about MT12 rear exhaust .12 engine. Let's find out how well the new MTX-2 handles the road and the track.



This month's color scheme is our Purple Rain/LA Lakers special.

Features

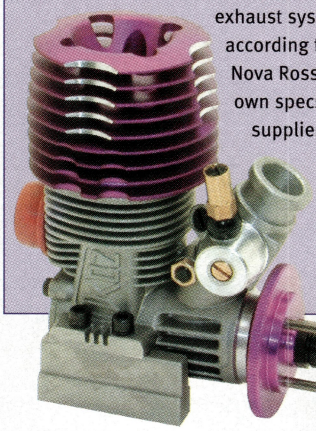
Chassis

The MTX-2 is based on a design layout very similar to Mugen's World championship winning MRX-2 1/8-scale racer. The entire car is built on top of a 3mm thick 7075 aircraft-grade aluminum chassis. The chassis has a slender shape with cutouts and is completely countersunk. A molded top deck connects the rear to the front and keeps the car solid. The top deck houses just about everything but the diffs and the engines. The 75cc fuel tank, two servos, receiver, and battery pack all mount to the top deck. A small roll bar-type brace is mounted to the top deck . This brace acts as a handle, allowing the car to be picked up safely.



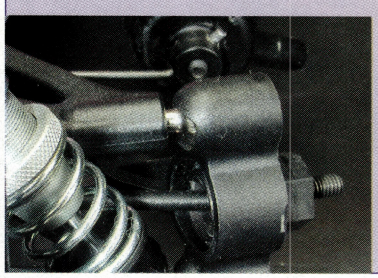
Engine

The MTX-2 comes with a very NICE engine. It's the MT12. It's made for Mugen by Nova Rossi and is one of the newest .12 size engines to offer rear exhaust. The rear exhaust system, according to Nova Rossi's own specs, supplies more horsepower and RPM than the same side exhaust engine. The engine also comes with a slide carb for quick throttle response. The kit comes with an aluminum exhaust header and mounting spring. Missing from the kit is a tuned pipe. When I found this out I was a little disappointed since There's a photo of a real nice Nova Rossi Pipe on the kit instruction manual.



Steering

The steering system on the MTX-2 is very simple. The steering servo mounts to the top deck upside down so that the servo horn side is pointed toward the ground. A large Kimbrough-type servo saver mounts to the servo and to two adjustable tie-rods. Those two tie-rods then connect to the steering hub carriers. Like many gas on-road cars, the MTX-2 uses one-piece steering hub carriers that pivot on captured ball-ends. There are no outer hinge pins or actual king-pins on this type of car.



Availability

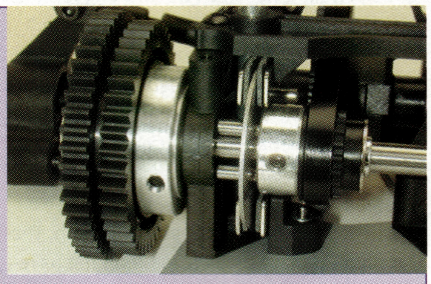
The MTX-2 is available with or without engine. The without-engine kit sells for about $330, and the with-engine kit sells for about $450. Hobby shops should have access to all of the car's parts through Horizon Hobby and HRP Distributors.

The round port, rear exhaust MT12 engine is legal for ROAR racing.



Drive Train

The MTX-2's power plant is a fire-breathing MT12 rear exhaust .12 size engine made for Mugen by Nova Rossi. The engine bolts to the back half of the car and is positioned so that the engine's weight isn't too far from the centerline of the chassis. On the engine is a spring-loaded three-shoe clutch. The clutch is contained by a 2-speed, close-ratio clutch bell. Two color-coded pinion gears screw onto the clutch bell. The pinions counter two 32-pitch spur gears mounted onto the 2-speed clutch. The 2-speed clutch mounts to a steel shaft located behind the engine. From the clutch power is transferred to the rear diff via a belt and pulley. On the same clutch shaft is another pulley that uses a belt to transfer power to another layshaft



located in front of the engine. From there a long belt completes the drive system by turning the front diff.

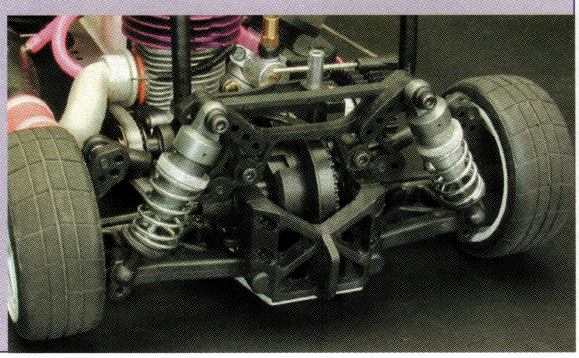
The front and rear diffs are both bevel geared and sealed to keep diff oil inside and not out. The kit comes with 5000 centistoke oil. Diff action can be adjusted by replacing the 5000 with either lighter or thicker oil. In both the front and the rear standard dog bones are responsible fore getting all that power to the wheels.

Suspension

The MTX-2's suspension system is state-of-the-art. Up front the arms have a swept forward design. At the ends of the arms are captured ball ends that the steering hub carriers mount onto. Front caster is completely and easily adjustable by simply removing and replacing small shims located either in front of or behind the upper control arms. Camber is adjusted by either screwing the top captured ball end further into the top control arm, or screwing it further out. Track width is also adjustable at this point. In stock configuration, the kit measures in at 199mm wide. Like the front, the rear end of the car also uses a captured ball end-type design on the bottom of the rear hub carriers. The top of the hub carriers are connected to the bulkhead with simple tie-rods. I would have liked to have seen adjustable tie-rods here. Rear camber mounting locations are adjustable both on the carriers and on the bulkhead.

To keep the suspension suspended, Mugen includes aluminum shocks with threaded bodies. The shocks are a very nice design. The shocks uses bladders to partially compensate volume. The shock caps features bleeding holes that make shock building very easy. In both the front and the rear, there are a number of possible mounting positions on the shock towers.

All around the car there are travel stops on the suspension arms. Suspension arm travel is adjusted with some small setscrews that are either raised or lowered depending on how you want to limit the car.



Wheels, Tires, and Body

The MTX-2 comes with simple six-spoke wheels, treaded tires, and foam inserts. The tires are your basic kit compound, i.e., not too sticky, meant for wear more than traction. The MTX-2 doesn't come with a body, but Mugen was kind enough to send us an Andy's Stratus. To make sure our car was first in the looks department we had Andy at Andy's paint the body for us. Thanks, Andy.

BUILDING TIPS

The MTX-2 is a precision kit that requires precision building. Unlike off-road cars that are somewhat forgiving, a 1/10-scale nitro touring car like this demands that things be build absolutely correctly. Before you start building, give the instructions the once over. The manual uses accurate line drawings with a minimal amount of text. Overall the instructions are very good and easy to follow. When building make sure that you have all the right tools for building and have some measuring instruments like a ruler and a pair of calipers handy for frequent measurement and comparison. Here are some specific steps to look out for:

Step 1
The diff gaskets are located in the same bag as the belts.

Steps 1 & 2
Be sure to install the diff bearings as instructed. They may not go over the outdrives if you do it later.

Step 9
Note that you're using the shorter setscrews in this step; the longer setscrews are used in the next step.

Step 11
Use liquid thread-lock on the two screws that hold the steering rods to the servo saver.

Step 14
The outer pulley gear that needs to be installed on the steel shaft is the smaller diameter one. It doesn't have holes molded on the outside.

Step 36
When building the shocks use the short springs in the front and the long springs in the rear. Also, pay attention when building. The single-hole pistons are used in the front and the two-hole pistons are used in the rear.

Build time is about 6 hours for the builder with average experience.

TESTING

To test the the MTX-2, I installed all my gear and broke in the engine. After engine break in, I set out to a near by parking lot that had just been resurfaced and sealed.

Acceleration

After breaking in the engine, I leaned it down a bit and changed the glow plug. After doing this I was set to test. Off the line I was amazed how I was able to break the tires loose from a standstill when I stabbed the throttle. This says a lot for the engine and not much for the tires. Actually it really did say a lot for the engine. The MTX-2 accelerated as quick as a modified electric sedan. On acceleration, the car was stable and controllable when the tires didn't break loose. It was at this point I went ahead and swapped the stock tires for a pair of Pro-Line's new H13 24mm sedan slicks along with another pair of stock Mugen tires. After changing tires, the car accelerated quicker than ever.

Top-End Speed

At top speed the MTX-2 is scary fast. When the throttle was pegged, my teeth were clinched and my shoulders curled upward in anticipation. It was like I was waiting for it to travel into time like in "Back to the Future." The 2-speed shift point is completely adjustable. I had the 2-speed shifting after about fifty feet. Considering the testing conditions, this seemed to be perfect. The ratios of the two-speed are fairly close. I did know when the car was shifting and I could see it happen. But the shift was pretty smooth. The car didn't want to break loose from the pavement upon shifting.

Braking

When the brakes were needed, they thankfully showed up. The car brakes hard when needed. The steel brake disk didn't seem to fade much even during a long thirty-minute run. The brake linkage and assembly is pretty much text book and does a sufficient job of keeping the car's powerful engine in check. During breaking the car consistently tracked straight.

Low-Speed Turns

At low speeds the car had a tendency to

THE SPECIFICS

ITEM INFO
Part #T0002, MSRP $699.99. Street estimate $450.
Manufactured in Japan.

VEHICLE TYPE
Nitro-powered 1/10-scale touring car. Rear-mounted .12 engine 4WD.

CHASSIS TYPE
3mm thick aluminum chassis with molded top deck.

WHEELS AND TIRES
One-Piece six-spoke wheels with treaded tires and foam inserts.

TRANSMISSION TYPE
Dual bevel gear differentials with three transfer belts.

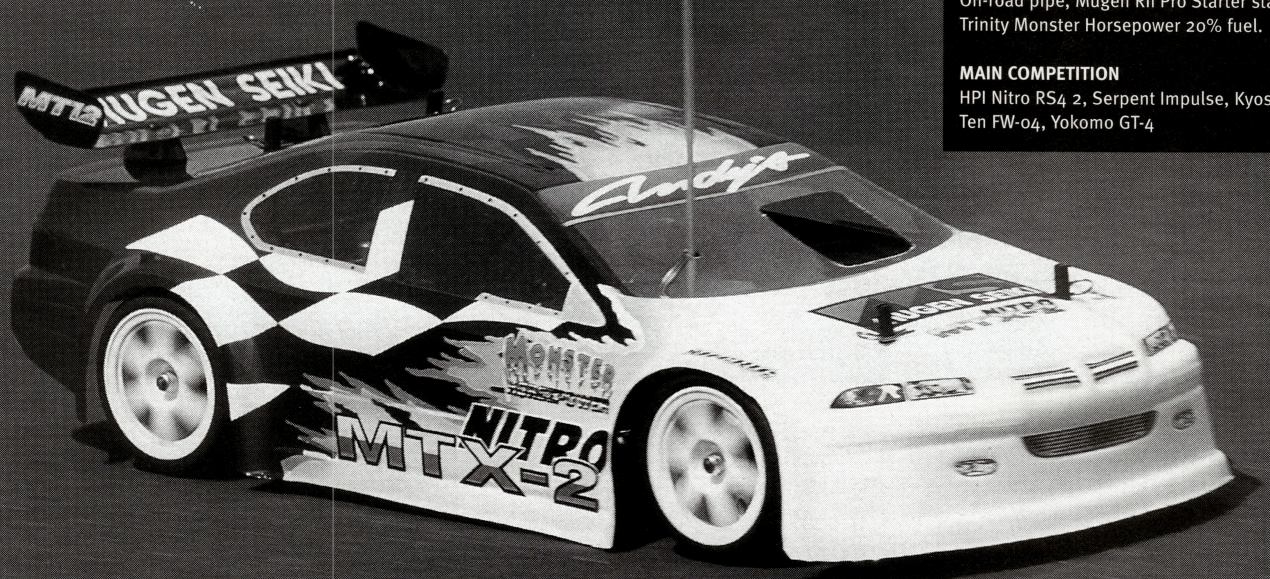
SUSPENSION DESIGN
Independent, molded lower arms, adjustable upper control links in the rear with complete captured ball system in the front. Molded shock towers

SUSPENSION DAMPENING
Coil-over, oil-filled shocks, molded pistons, aluminum threaded shock bodies, molded shock caps with bleed holes, steel shafts, O-ring seals.

OTHER ITEMS YOU NEED
2-Channel radio system with 2 servos, .12 size tuned pipe, 200mm body, starting box, glow starter, fuel. receiver battery, CA glue, and paint.

OUR TEST GEAR
Futaba 3PJS radio system with receiver, Hitec HS525 steering servo, Futaba S9450 Digital throttle servo, Orion Pro 1000 receiver battery, Andy's 200mm Stratus body, Integy Tuned .12 On-road pipe, Mugen RII Pro Starter starter box, Trinity Monster Horsepower 20% fuel.

MAIN COMPETITION
HPI Nitro RS4 2, Serpent Impulse, Kyosho Super Ten FW-04, Yokomo GT-4



Mugen also has a new 1/8-scale off-road buggy in the works.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#7435 Porsche 911 Turbo Body (200mm)



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#7427 Nissan Skyline R34 GT-R (200mm)



Audi TT
#7423 Audi TT Body (200mm)









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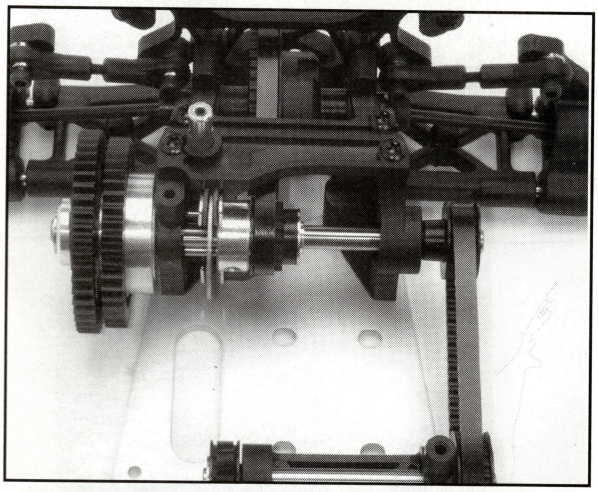
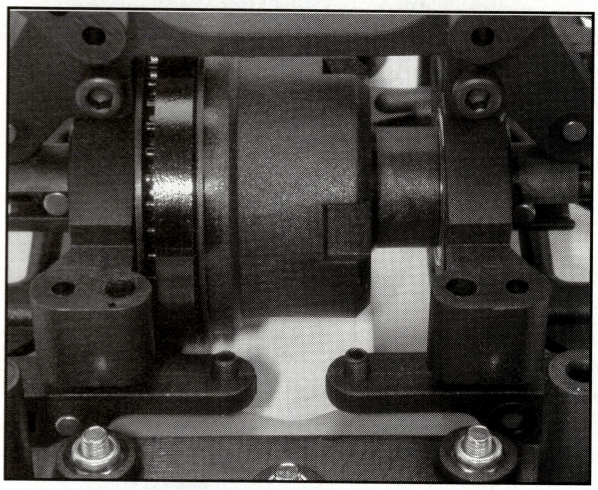
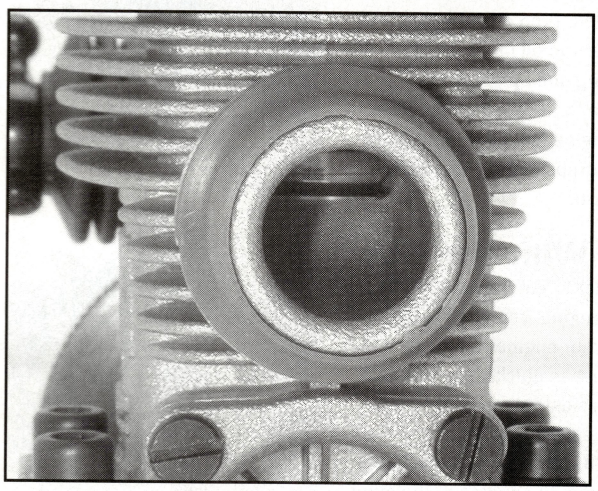






TOP: A short transfer belt moves power from the rear layshaft to another shaft located just in front of the engine.
MIDDLE: Two sealed gear diffs house bevel gears and diff grease to provide differential action for cornering.
BOTTOM: The MT12 features a round rear exhaust port that promotes free flowing exhaust. This translates into more horsepower and RPM than a comparable side exhaust engine.

push, especially on-power at low speeds. Off-power, low-speed steering was fine. With the stock setup, the car didn't break loose once. At low speeds the steering seemed very quick to respond to my input.

High-Speed Turns

At high speed, the car had a very neutral feel considering the speeds I was driving at. The car was pretty stable. I did some hit a couple of rough spots on the ground during testing and the car remained planted, well all except for once, but you'll read about that later. On a large sweeping kind of oval type turn I was able to stay on the power and keep a respectably tight line all the way around.

Tight Turns

During testing I wanted to change the stock setup a bit. Rather than go off in my own direction I made some shock mounting changes according to the setup sheet that comes with the kit. The changes were simple and easy to do. After making the changes, I noticed the car had a lot more steering, especially at mid-range speeds through tight turns.

Damage Control

The MTX-2 comes with a very large foam front bumper that covers almost the entire front end. Although it pained me to do it, I had to see how well the bumper protected the front of the car. To test this I drove my beautiful car into a concrete wall at kind of a low/mid-range speed. After a couple of hard hits I figured my poor car had had enough. (Don't intentionally do this at home. You run the risk of damaging your car and radio equipment. It's our job to break things.) Thankfully the bumper did its job and there were no visible signs of damage. At the end of the day on one of my high-speed passes, I happened to hit some loose pavement or something. My car broke loose from the ground and slid sideways into a concrete parking block. My heart stopped. This was a very hard hit and I was expecting to find my car in more than one piece. I'm happy to report the only thing that broke from this hard hit was the radio top tray. Considering how hard this hit was I'd say the car is very durable.

Trackside Tuning

The kit itself is fairly easy to tune. Rear camber adjustment could use some adjustable tie-rods, but other than that it's pretty standard. Adjusting the diffs requires a bit of work, but the only way to fix that problem would be to put ball diffs in instead of geared diffs. There is the ability to mount sway-bars later down the road. Every major adjustment that you'd expect from this type of car is possible.

Maintenance

Since the geared diffs are O-ring sealed, rebuilds should be kept to a minimum. Routine maintenance should include regular cleaning and checking to make sure that nothing is out of whack.

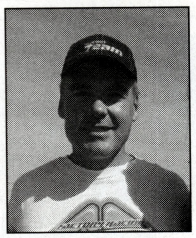
CONCLUSION

The Mugen MTX-2 is part of a new breed of nitro touring that uses a platform based on a successful 1/8-scale design. Although the price is steep initially, when you consider all that you get and how well this kit performs, you realize that this kit's actually a good value. The alternative is buying a car that requires you to purchase a couple of hundred dollars worth of options to become competitive. Before I go any further, let me just clarify something. This car is a race car and although it will really impress the neighbors with its high-speed capabilities, it's designed to see competition. I personally can't wait to hit the track with this monster. Like any car, it does have its faults; I would have liked to see an included pipe and maybe some belt tensioners. But, aside from that it's really a nice package. The engine is magnificent. And like I said, when you consider all you get and factor in its performance, this is a very good value if competitive racing is in the cards. Mugen has done a very good job of offering a kit that's well-rounded, excels in performance, conforms to existing rules, and allows for growth in the way of tuning and optional pieces. Mugen's World Champion ways carry through to the MTX-2.

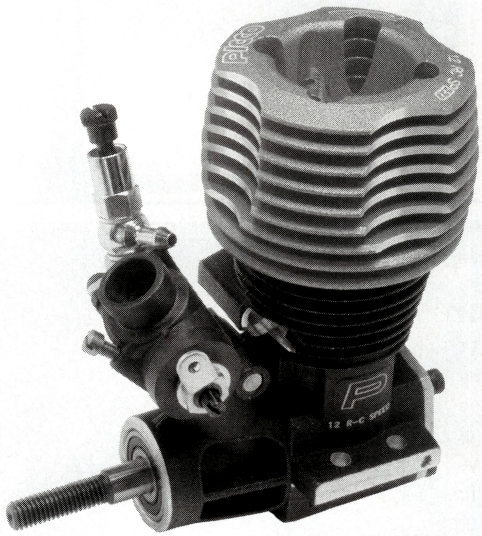
Achieve New Engine Nirvana

by Regan LeBlanc

Xtreme R/C Cars is proud to welcome Regan LeBlanc on board as our new Nitro Editor. Regan has been tuning gas engines for years and is the pit/engine man behind the scenes for National Champion, Richard Saxton. Look for nitro articles from Regan every month — only in the pages of *Xtreme R/C Cars*.



What do you do with a new gas engine? Take it out of the box, slap it into your car, and then go straight to break-in. WRONG! Before you break-in your engine, there's a lot you have to do. Even though engine quality has made tremendous strides in the last few years, special steps and care must be taken with any new engine. In my first nitro article for *Xtreme R/C Cars* I figured I'd go into he first things you should do with any new engine or new gas RTR car. Along with these first steps I've added some more nitro tips that you can use to make sure you're getting the maximum performance from your new nitro engine.

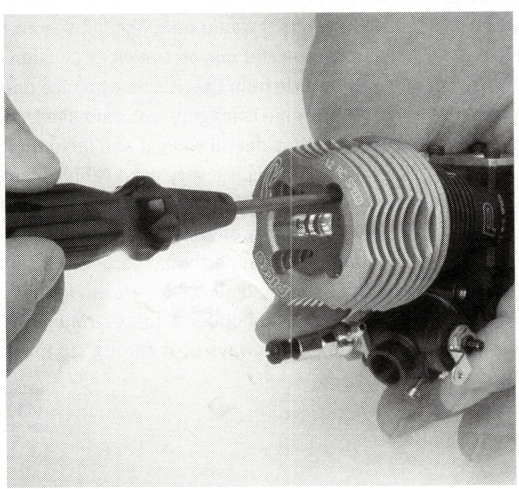


First Things First

With any engine the first thing you should do once it's out of the box is go over all of the engine's screws. Check to make sure that none of the head screws or back plate screws are loose. You don't need to tighten the screws; just make sure that none are loose. The next thing to do is to place the engine in the car it will be running in to check the carb angle. If you need to loosen the carb and readjust the angle, now is the time to do that.

Some racers feel that it's necessary to disassemble the engine's carb and seal everything up from the start. This is really unnecessary, especially with the quality controls of today's engines. If after using the engine you find sings of air leakage you can seal things up, I'll show you how to do that a little later in this article.

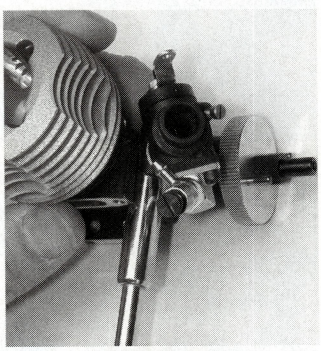
Once you've checked the screws and adjusted the carb angle, install the flywheel. Refer to your car's instruction manual on how to tighten the flywheel. I typically use large pliers to hold onto the flywheel while tightening the clutch nut with a nut driver. After the flywheel is installed, drop a couple of drops of after-run oil into the carb opening and hand turn the engine for a couple of minutes. If the engine feels tight, put a few more drops of after-run oil into the carb.

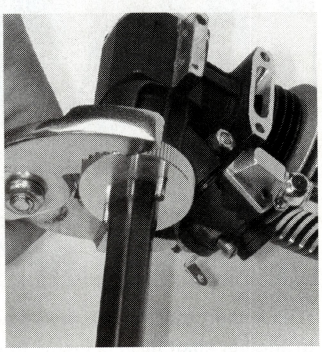


The first thing to do with any new engine is to check all of the screws. Don't tighten or loosen, simply make sure that no screws are loose out of the box.

Go With The Flow

In order to get the most from your engine, you need to make sure your engine can expel exhaust as quickly as possible. The easiest way to do this is to make sure that the exhaust manifold doesn't restrict the exhaust flow from the engine to the manifold pipe itself. On certain manifolds, like the one from Associated, the manifold opening is much smaller than the engine opening on most side-exhaust engines. Using either a Dremel tool with a bit used for grinding aluminum or a file, grind down the insides of the manifold. Smooth the manifold down so

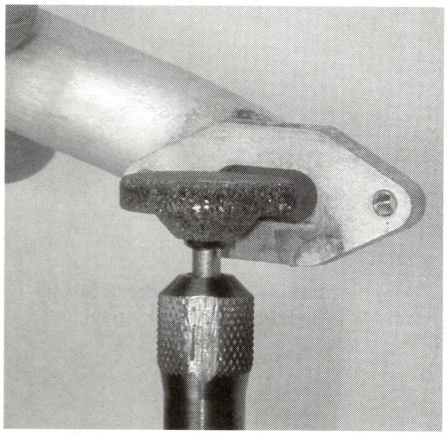




Top: Be sure to use the proper size driver when adjusting the carb angle.

Above: Again, be sure to use the correct size driver when tightening the flywheel. Don't overtighten. You can break the threads if the crank shaft is over hardened.

Richard gets all the credit, but we all know it's Regan who does all the work.

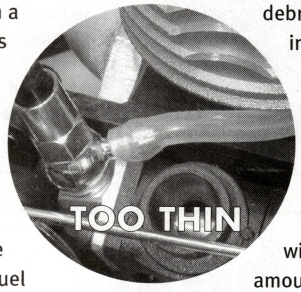


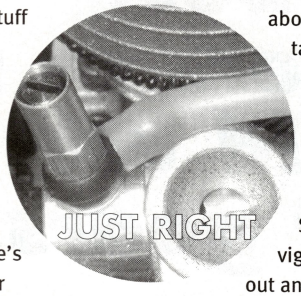
If you don't have the steadiest hand, use just a regular aluminum file to widen the manifold opening.

that it tapers towards the actual pipe itself. By allowing the engine to breath better, it will run cooler and give you more RPM.

Before You Run

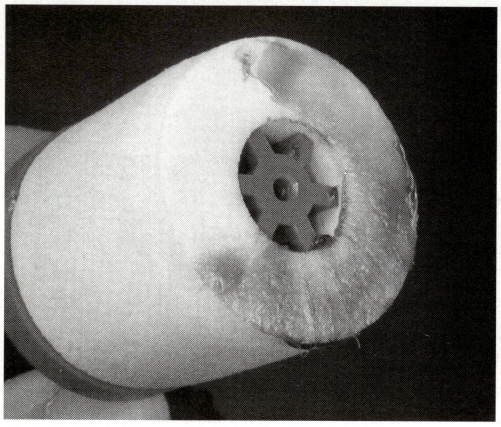
When it comes time to install your new engine into the car, you need to perform a couple of extra steps before you fire it up for the first time. Make sure that the fuel tubing you're using isn't anemic. Some car kits come with some thin, clear, crappy fuel tubing. Throw this stuff out and get some thick fuel tubing. The thin stuff can crimp, be cut easily, and can expand under pressure. Next, take a look at your engine's air filter. If you're car comes with a rebuildable filter, like those from Kyosho, make sure to seal the ends of the filter element with grease (as shown).





This will ensure that air flows through the filter and not around it. Also when you do install the engine's air filter make sure that it's tie-strapped onto the carb.

Inspect your car's fuel tank before firing it up. Look inside for any plastic pieces or debris that might be in the tank. Make sure that the cap seals tightly on the opening when closed. Wash the tank before running with a small amount of fuel. Put about a tenth of a tank of fuel into the tank, close the tank and plug the two outlets with your fingers. Shake the tank vigorously to wash out any mold release lubrication or plastic flashing that might be in the tank. Then, dump the contaminated fuel.



Left: Just a thin layer of grease around the top and bottom of the filter itself is all you need. This will make sure that air travels through the filter and not between the filter and the holder.

Before Break-In

Engine break-in has recently been covered in *Xtreme* (Issue 5.0), so I won't go too far into break-in in this article. But before you actually go through any break-in procedure, there are some things you should do first:

Don't change the stock engine settings. Out of the box, most engines should start up from the start. Try starting the engine with the stock needle settings. If after a minute the engine doesn't fire on the starting box try leaning the top end a bit until it fires. Don't mess with the bottom end adjustment until you're actually tuning the engine.

In order to run your engine as rich as possible during break-in, set the idle stop so that the idle is on the high side. Typically, if your engine is too rich it will stall when you come down to idle. With the idle set high you'll be able to keep the engine rich through break-in with out constantly stalling.

After Break-In

After you've finished breaking-in your engine be sure to replace the glow plug you used during break in. While breaking-in your engine small metal particles are floating around in your engine. These particles are drawn to the element in your glow plug. Avoid problems down the road by simply replacing the break-in plug before your next tank.

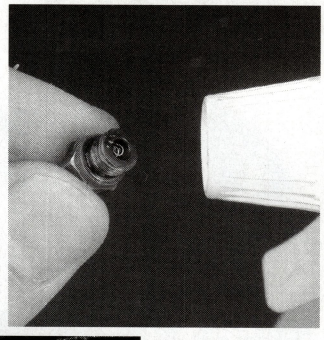
Right: If you don't have a new glow plug handy, GENTLY wash the break-in plug with denatured alcohol before using again.

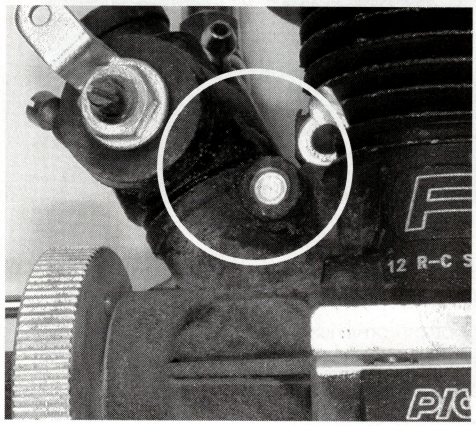
When should you seal things?

Like I mentioned earlier some guys like to seal their engine's carb right from the start. If there are no signs of leakage then sealing things up is really unnecessary. How do you spot signs of leakage? If the engine's temperature changes a lot without adjustment, that's a tell-tale sign. Lets say you bring your car in and get a reading of 200º F and a couple laps later it measures 230º F you've probably got a leak somewhere. Also, look for signs of erratic tuning. If small adjustments make a huge difference, you might have a leak. If you observe any of these symptoms look for the leak. Inspect everything especially around the carb. Look for dirt or oil around any of the joints or connections.

Sealing The Carb

Sealing the carb mount is easy. Remove the carb, inspect the O-ring if you've got one. If it's rotted or cut simply replace it and try the engine again. If the O-ring appears be fine run a thin bead of sealant around the base of the carb. You'll only need a small amount of sealant, don't go over-





Left: If you see an accumulation of oil near the base of the carb, back plate, or engine head you may have an air leak. The ONLY time you should seal the carb is if you see physical evidence or if the engine acts as if it has a leak

board. Once you've applied the sealant go ahead and replace the carb. After you've angled the carb correctly and tightened the carb fastener apply a small amount of sealant to the ends of the carb fastener (as shown below).

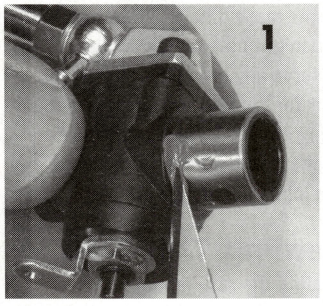
The other spot on a carb where a leak may occur is around the fuel inlet. To seal this item disassemble the inlet from the carb. Carefully place a small amount of sealant between each of the components. Avoid getting any sealant into the inlet or the carb at all costs (see photos).

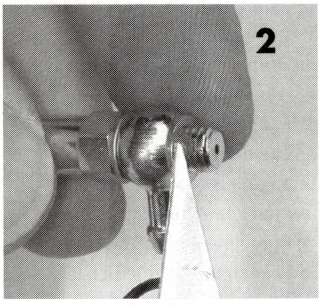
Time to Race

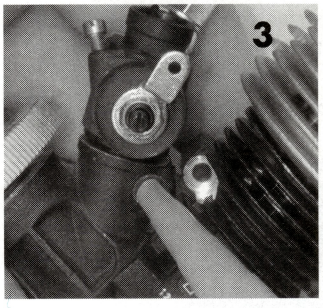
Now you're all set. Follow the instructions I've laid out here and you'll have your engine set for success right from the start. In years of working with gas cars and gas engines, both big and small, one thing always rings true:Take care of your engine and it will take care of you.



Be sure to use the right sealant. High Temp RTV works great.







1: Use an X-acto knife of something similar to precisely apply the sealant to the base of the carb.
2: If you must seal the needle valve be very, very careful to only use a small amount as far from any openings as possible. Be sure to align the fuel inlet to the needle before tightening.
3: Put a dab of sealant on the carb tightening screws when you're done.

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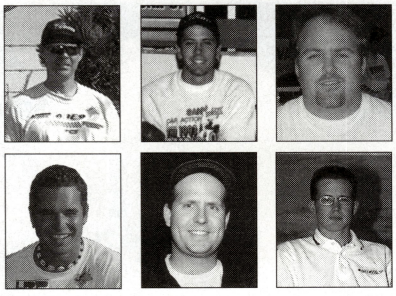

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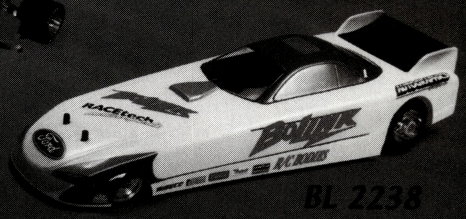

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Kyosho EP ULTIMA Type-R

by Mike Henry



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THE MISSES

- Kits lacks a few vital pieces and setup tips.
- Looks a lot like a T3.

THE LAST WORD

Kyosho examined the best of the current crop of stadium trucks, and came up with their own winning formula. While you might have to make a few changes to get your Ultima "dialed," you won't be chasing a good setup for long. The truck flat out works in stock form, and it responds well to tweaking.

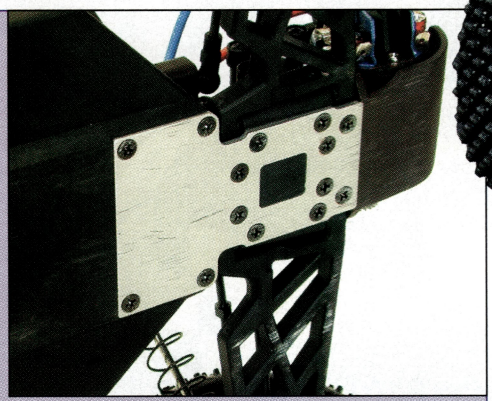
The 1/10-scale stadium truck class is serious business, and one that has been dominated by Losi and Associated for as long as most of us can remember. If you showed up to race with anything else, you might as well plan on being a back-marker for the afternoon. Kyosho is out to change that with the brand new Ultima ST Type R, the first serious contender in the class in a very long time. In recent years, Kyosho has been busy winning world titles with their 1/8-scale nitro buggy program, along with their successful "TF" touring cars. Kyosho's bread and butter, however, has been entry level cars. The Ultima truck line will flesh out the Kyosho line-up, and provide a much-needed presence in the high profile world of electric 1/10-scale racing. It sure sounds good, yeah? How will the Ultima stand up to the real-world testing and abuse you've come to expect from *Xtreme*?

In '87 Joel Johnson won the IFMAR 2WD Worlds with the original Kyosho Ultima.

Features:

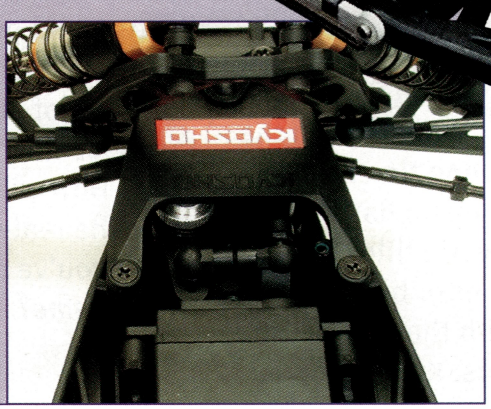
Chassis

The Ultima's plastic tub chassis is standard fare for 1/10-scale trucks. The underside is smoothly contoured and all of the holes are countersunk. Two foam battery spacers are included to aid in tuning and the cells are about 1/8 inch lower than the rest of the chassis, resulting in a lower CG. The hinged battery strap is a nice touch, and one less part to lose at the track. A transponder mount located on the rear shock tower is unique to the class, and reinforces Kyosho's commitment to racing. The metal rear chassis plate attaches to the tub via four screws and terminates in a sturdy plastic bumper. Up front, a plastic kickup plate ties the front end together and houses the steering bellcranks. A small plastic bumper covers a metal brace to help minimize crash damage.



Steering

The Ultima utilizes the standard dual bellcrank and draglink setup for steering. The assemblies rotate on four plastic bushings but the result is much tighter than expected. A servo saver is included and can be adjusted by turning a knurled alloy knob. There are no extra Ackerman mounting holes on the servo saver or the bellcranks, but the extra holes on the steering knuckles could prove a useful tuning aid.



Greg Degani got his EP Ultima Type R into the Stock A-Main at the Winter Champs.

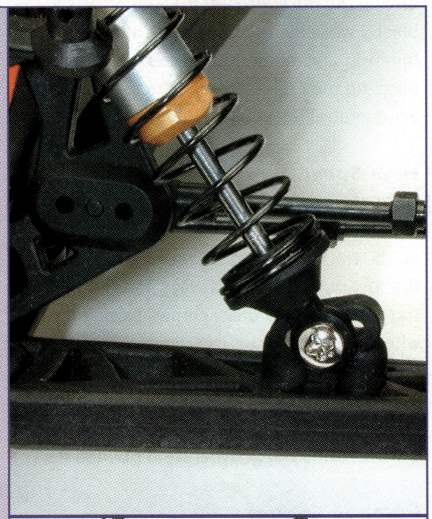


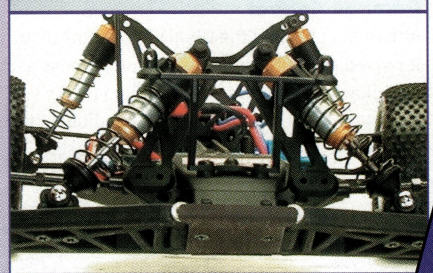
Drive Train

No surprises here, as the Ultima uses a 3-gear stand up transmission and a spring-loaded slipper clutch. The internal tranny ratio finds itself slightly higher (numerically) than its contemporaries at 2.50:1. This should allow the truck to accelerate a little quicker and take advantage of its copious amount of rear traction. Kyosho includes a bulletproof ball differential that uses industry-standard 3/32" diff balls. A 48-pitch 86-tooth spur gear rides on the single disk slipper clutch that can be adjusted without removing the gear cover. Ball bearings are utilized on every rotating part on the Ultima. The assembly is attached to a thick metal motor plate. Kyosho's universal swing shafts deliver the power to the rear wheels. Although not authentic CVDs, they are efficient and strong, but not rebuildable. The rear suspension mounts provide 3 degrees of toe in at each side for a total of 6 degrees.

Suspension

Kyosho's newly designed "twin cap" shocks provide damping at all four corners. The shocks can be built as low-pressure bottom loading units, or high-pressure dampers using bladders to regulate pressure and minimize leakage at the seals. These shocks are the smoothest, most consistent dampers going. The shock bodies are hard anodized and Teflon coated to ensure durability and longevity. The molded suspension arms are relieved to help keep the truck's sprung weight to a minimum. Molded shock towers complete the suspension. There are a myriad of mounting holes on the shock towers and suspension arms to help you tune your truck for virtually any racing condition. Up front, plastic steering knuckles pivot on the kingpins and actually include a second set of mounting holes for the steering links. The camber links mount to the top of the kingpins connecting to the back of the front shock tower. Rearward, the camber links mount to the top of each rear hub. Steel turnbuckles make adjustments easy, but where's the wrench?





Wheels, Tires, and Body

Genuine Pro-Line wheels and tires are included in the kit. The Ultima comes shod with "The Edge" front tires and "Bowtie" rears, both in M2 compound. If you have a collection of wheels and tires from your other stadium trucks, they should fit the Ultima. Props to Kyosho! The Lexan body is also made by Pro-Line, and is a direct replacement for the Associated T3. One of my T3 bodies fit the Ultima with a little coaxing.

BUILDING TIPS

The Ultima went together quickly and without a hitch. There are only 6 E-clips on the whole truck! Most of the fasteners are Phillips head screws, so you will need a high quality No. 2 screwdriver. You will be wrenching on the truck at the racetrack, and there is nothing worse than a stripped screw head. (Phillips head fasteners are far less forgiving than hex head hardware.) Kyosho includes a little pot metal 4-way wrench in the kit. Do not lose it! There are some wacky size nuts and bolts on this vehicle, and I don't think you're going to find too many 5.5mm sockets at your local Tools R Us.

Step 4: When assembling the differential, discard the included diff lube for a tube of Stealth diff lube.

Step 10: Before attaching the rear arms to the chassis, make sure all of the flashing has been removed from the outer edges of the arms. The "webbing" on the rear wheels will hit the flashing unless the surface is perfectly smooth.

Step 26: No shock oil? I thought my kit was shorted until I found out that shock oil "must be purchased separately." To make matters even worse, Kyosho doesn't even tell you what weight oil to use. I decided 30wt front and rear would be a good starting point.

Step 32: You will need to "make" an extra battery pad to ensure the cells don't slide back and forth inside the truck. I took an extra pad and sectioned it using a rotary tool, and a very steady hand.

Set Up Tips

There are no provided setup tips in the instructions, so I applied what I knew from other stadium trucks and hoped for the best. I followed the instructions and used the following settings for baseline testing:

- 30wt shock oil front and rear.
- Ride height: Bones level rear; arms level front.
- 2 degrees negative camber front and rear.
- Zero degrees of toe front.

Unfortunately Greg didn't do a very good job soldering; he missed the start of the the A-Main.

TESTING

There are usually a few things that racers change before they will even let their new cars see the track surface; kit tires are almost always the first. I ran the Ultima once in practice and decided to stick with the meaty-looking Bowties. I wanted to give the truck a fair shake in 100-percent stock form. I entered the Stock Truck class along with nine other racers. After only two heat races, I managed to work the Ultima into the top five for the main. The Kyosho even held down 2nd place for five or six laps in the second heat! This was a pure stock truck on kit tires. With some fiddling and a few more days to test, I'm certain the Kyosho will become a winner. (And the subject of a future "Hook Up" article.)

Acceleration

With its deeper gearing, the Ultima launched a tad quicker than the other trucks on the grid. This slight advantage was also noticeable coming out of tight corners. The truck just seemed to have more punch than I was used to. This allowed me to tighten up my lines and drive with more authority through the twisty stuff.

Top-End Speed

The Ultima pulled hard on the top end of the track, and gave up nothing to its competitors. Our track features a long straight section where racers can show their horsepower, or lack of. There may have been other trucks with more motor, but the Kyosho held its own on the back straight. I equipped the Ultima with a Trinity Monster Stock Junior 4 36-degree stock motor (per NORRCA rules) and turned the spur with an 18-tooth pinion gear. The truck almost felt under-geared, but I didn't want to lose the great low-end punch. Gear for the rest of the track, not the straight.

Jumping

There were a few areas where the Ultima made a big impression on me, and this was one of them. The truck took to the air predictably and landed with no drama. When a jump wasn't launched squarely, the Ultima quickly righted itself, absorbing the impact as if nothing had happened. There were a few tricky rhythm sections that were giving racers fits. The Ultima handled them with confidence and even created a new passing zone. On the larger jumps when the truck was launched into the Stratosphere, a quick tap on the brakes would bring the nose down for a soft landing.

Braking

The kit setup made for easy, predictable braking on the track. Most modern stock motors do a lot of the braking for you, but if you're not using the binders at all, you will get passed. The Ultima actually responded well to mid-corner braking, as it helped rotate the rear of the truck on the dry track. Lapping slower traffic gave me the opportunity to experiment with my turn-in and braking points. If I drove too deeply into a corner, tapping the brakes quickly put me back on the racing line.

Low-Speed Turns

In stock racing, you are usually rewarded for being smooth and consistent. However, the Ultima really liked being thrown around in the low-speed sections. This may have been a result of the kit setup's propensity to understeer, but driving the truck through the S-turns was a blast. I was able to toss it in, turn the wheels full-lock, and motor into the next section. Not once did the rear of the truck come around. The word neutral best defines the truck's feel.

High-Speed Turns

Once again, the Ultima rewarded me with predictable performance. After the fastest section on the track, is a tight 180-degree turn. With my Brand-Y truck, I almost always had to "dirt track" around this tricky corner, sawing the wheel back and forth. The Ultima's slight tendency to push allowed me to brake late, and enter the turn carrying more speed than before. The truck would then scrub off speed in a nice 4-wheel drift, and go wherever I pointed it.

Damage Control

Although I only had the Ultima for a short time, it proved absolutely reliable and didn't miss a beat. Racing with nine other stadium trucks makes for less than ideal testing conditions, but the Kyosho truck easily handled the abuse. After one full day of testing and racing, the

Article continued on page 72

THE SPECIFICS

ITEM INFO
Part #KYOC0220, MSRP $295. Street estimate $180-$200.
Manufactured in Japan.

CHASSIS TYPE
Molded composite tub with center running battery tray, separate front and rear mounting plates and bulkheads.

WHEELS AND TIRES
Kyosho On-Piece dish wheels with Pro-Line M2 Bow Ties in the Rear and Pro-Line M2 Edge Fronts

TRANSMISSION TYPE
3-gear rear mounted transmission with adjustable ball differential. Adjustable slipper clutch

SUSPENSION DESIGN
Independent, molded lower arms, adjustable upper control links with hex adjusters, molded shock towers.

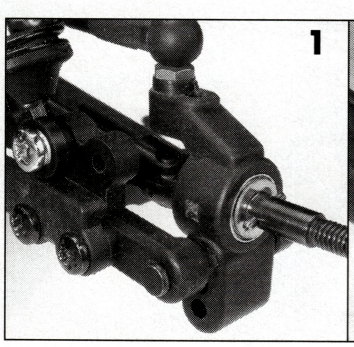
SUSPENSION DAMPENING
Coil-over, oil-filled shocks, molded pistons, aluminum shock bodies, molded shock caps with bleed holes, steel shafts, O-ring seals, can be built with or without pressure.

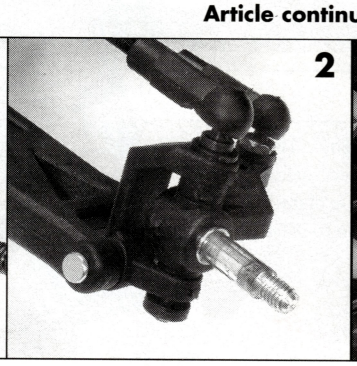
VEHICLE TYPE
Electric motor-powered, rear-engine 2WD 1/10-scale stadium truck.

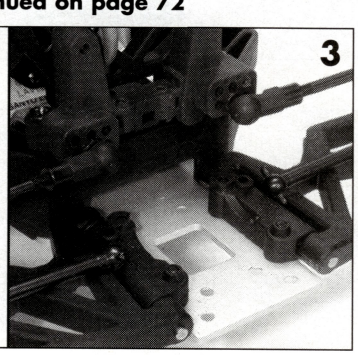
OTHER ITEMS YOU NEED
2-Channel radio system with 1 servo, electronic speed controller, motor, battery, charger, shock oil, Lexan paint and CA glue.

OUR TEST GEAR
Futaba 3PJS radio system with receiver, Hitec HS525 servo, LRP V7.1 ESC, Peak Power Flow batteries, Peak Aurora 11-triple modified motor, Trinity Monster Stock Jr. 4 36-degree stock motor, Trinity 30wt shock oil. Sweet paint job by Billy Barr (cr133r@hotmail.com)

MAIN COMPETITION
Team Associated RC10t3, Team Losi Triple-X Truck







1. The camber mounting position is unique on the Ultima as is the adjustability of the carrier/arm intersection.
2. The front carriers use s kingpin ball studs with carrier height adjustability.
3. Like most American trucks, the Ultima allows for the tranny to be removed without disrupting the suspension.

About 90% of the parts on this truck and its gas counterpart are identical.

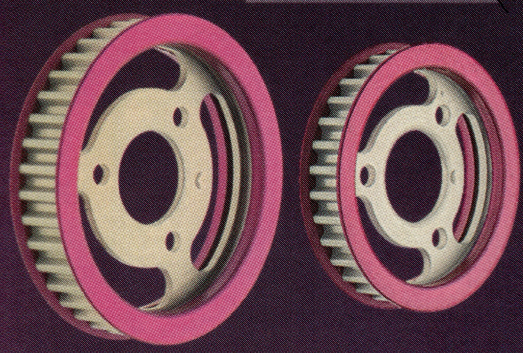
PERFORMANCE

HPI RS4 Nitro Aluminum Brake Kit



New, variable braking system. Lightweight aluminum. RRP 1575

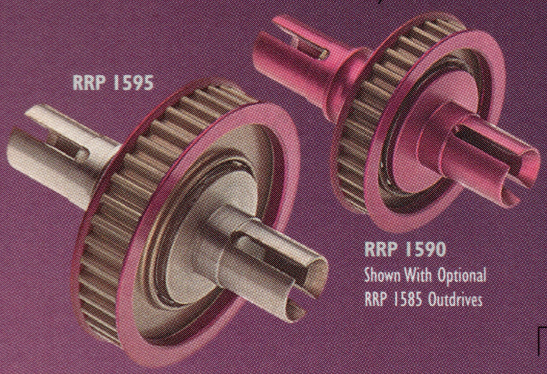
HPI RS4 Front One Way Diff Pulleys



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

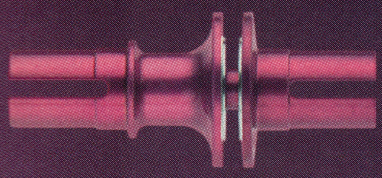
Performance from Precision

HPI RS4 Complete Ball Diff Units



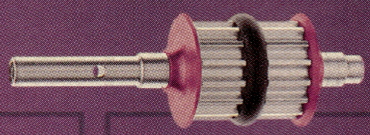
Hardened steel outdrives, ground and polished thrust washers, 2 5x8mm ball bearings, and aluminum pulley. RRP 1590 for RS4 Electric, and RRP 1595 for RS4 Nitro

HPI RS4 / Pro / Pro2 / Nitro Lite Aluminum Outdrives



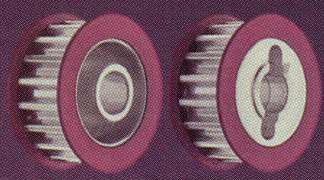
Purple anodized and 40% lighter than stock ball diff outdrives. RRP 1585

HPI RS4 Top Shaft Pulley



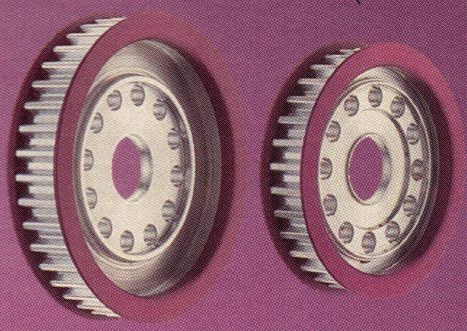
HPI RS4 Top Shaft Pulley: One piece pulley and shaft are precision cut and hard anodized. Purple anodized side flanges are pressed on. RRP 1527

HPI RS4 Nitro Small Drive Pulleys



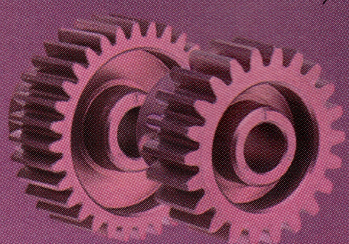
Drive pulleys sold in pairs. RRP 1538

HPI RS4 Diff Pulleys



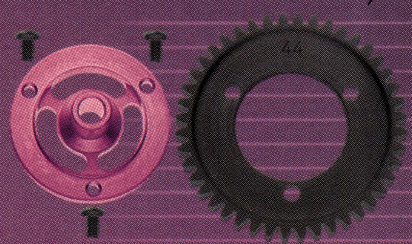
Precision machined, hard anodized aluminum diff pulleys. RRP 1539 fits HPI Nitro sedans. RRP 1528 fits HPI electric sedans.

HPI SuperLite Purple Aluminum Sedan Pinions



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

HPI RS4 Nitro Lightened Gear Adapter



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

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

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

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Team Losi

Florida WINTER Champs

Every year we make out the budget for traveling to and covering races. In some cases, we really have to think about whether it's worth it to go to a race. Will the readers benefit from in-depth coverage? How important is the race? Is it a fun race with a good atmosphere? One race that has all positive answers to these questions is the Florida Winter Championships sponsored by Team Losi. We'd eat dog food for lunch in order to make sure there is room in the budget to cover this race. The Florida Winter Champs is one of the most fun, most competitive annual races in the country. In all the years we've covered this race, we've always been treated to an exciting show. This race was the fifteenth year in a row for this classic. As always this race drew a great crowd of racers and spectators. Here's how it all went down.



Our trophy girl, Tara Wagner, was very friendly and cooperative.

Article by Mike Velez
Photos by Elliot Crabtree













Despite new laws, everybody had a good time.

1/10 SCALE
GAS POWERED 4WD TOURING CAR

NITRO MTX-2

The Fastest 1:10 Nitro Powered Touring Car!

NEW

CHASSIS KIT
CHASSIS With MT12 ENGINE KIT

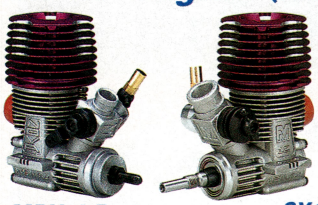
- Belt Drive 4WD・Cam Type 2-Speed Gear Housing・3PC Clutch・Disk Brake・Turn Buckle Steering Rod
- 3mm (A70-75) Chassis・Front Urethane Bumper・75c.c. Fuel Tank Filter-equipped・Resin Radio Plate
- Manifold for MT12Engine・Air Filter・Adjustable Front Bump Stop/Rebound Stop
- Adjustable Rear Bump Stop/Rebound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



■Technical Date■

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

MT12 Engine (Rear Exhaust)



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

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

MBX-4 Parts



C0179
Al.Rear Tension Rod for Long Chassis

CX12 Engine (Side Exhaust) Parts for MTX-2



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

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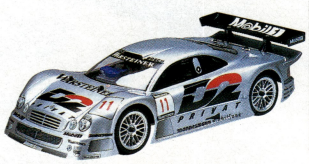
PRIME12/MTX-2 BODY 200mm


K1001 CASTROL TOYOTA TOM'S SUPRA GT BODY


K1005 MERCEDES BENZ CLK-GTR BODY


K1008 TOYOTA COROLLA WRC BODY


K1014 PEUGEOT 406 STW BODY


K1010 SUBARU IMPREZA WRC BODY


K1016 TAKATA DOME MUGEN NSX BODY


K1012 MITSUBISHI LANCER EVOLUTION V WRC BODY


K1018 DODGE RAM TRUCK BODY

Team Losi

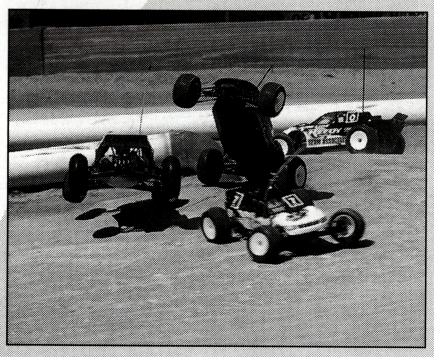
Florida WINTER Champs

The Track

As always, this year's race was sponsoered by Team Losi and hosted by the West Coast R/C Club of Florida. That club's facility is located at Lake Park just north of Tampa. The track is situated on a large park that also features a BMX bike track, horse trails, a lake, and more. The track itself is one of the nicest club tracks in the country. The track measures about 100' long by 65' deep. The dirt surface has a reddish tinge to it thanks to the coral and sand that's mixed with the dirt that makes up the track. The track surface developed a hard-pack blue groove in time for qualifying. The track has a variety of jumps with a long triple and a couple of large table tops.

The Format

The classes included 2WD Modified, 4WD Modified, Truck Modified, 2WD Stock and Truck Stock. In the stock classes, racers used handout Reedy Rage stock motors. Qualifying runs are done on Friday and Saturday. In each round of qualifying, drivers are awarded points based on their times in that round. The driver with the fastest time is given 0 pts., the second driver is given 2 pts., the third fastest is given 3 pts., and so on. The point totals for each driver's best two rounds out of the three rounds are combined to figure out the final qualifying order. The Mains are run all day Sunday. The Modified A mains ran triple A-mains, while the stock classes ran simple single race A-mains. A triple A-Main is comprised of three separate races; each race is called a leg. During the triple A-mains points are awarded for each leg as follows: first place receives 100 pts., second place receives 99 pts., third place receives 98 pts., etc. The driver with the best two-leg total is the A-Main winner.



Who would have that that pro drivers could crash and tumble like this?

Behind The Scenes

Unlike years past, the week leading up to the Winter Champs was clear and rain-free. This meant most drivers were at the track rather than messing around back at the hotel. There was a slightly different atmosphere under some of the team tents. It was strange to see Jason Rouna – previously Mr. Pro Line, Associated, Reedy – cruising around the pits in Losi gear. Likewise seeing Greg Hodapp with his purple, white, and yellow Associated T3 was a bit odd. It was good to see plenty of international representation. Both Jukka Stennari and Teemu Lieno were in town from Finland. Drivers made it in from Japan, Spain, Germany, and Portugal as well.

Something new in the pits that I've never seen before was some drivers were spraying their tires with...Wait, let me preface this by saying, "Don't do this at home. This is a blatant misuse of the products involved and could cause injury. The only reason I'm writing about this is because race coverage in *Xtreme* is the truth, the whole truth, and nothing but the truth." Okay, some drivers were spraying their tires with motor cleaner then lighting the cleaner on fire so that the cleaner would burn off. I was told that the treatment would burn off mold release and actually make the tires slightly softer. Because I think the risk outweighs the benefit, I'd say the drivers that were doing this to their tires just wanted an excuse to watch a fire burn. Can you say pyro?

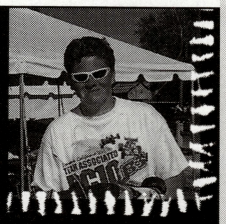
If there's one thing I've learned from traveling to big races is NEVER, EVER BUY A RENTAL CAR. For an extra $10 bucks a day, renters can buy the "walk away" insurance. With this insurance you can basically return a burnt out shell of what used to be a Plymouth Breeze and suffer no consequences. You can only imagine the kind of wear and tear the local rental cars go through when a large R/C race is in town. Not only do I know this from personal abuse, er experience, but take a look at the mystery van on the pictorial pages. (We've hidden the team's name to protect the guilty.)

Qualifying

Qualifying was conducted on Friday and Saturday. You can see how the A-main drivers qualified on the winners' charts. As qualifying wore on, the track did get a bit faster. In the modified classes the fastest times in the first round were about three to five seconds slower than the fastest times in the third round. A bout of bad luck struck Mark Pavidis. Mark won the first round of Modified Truck, but broke in the second round and had a slow run in the third. Despite winning the first round, Mark was relegated to the B-Main come Sunday.

Time Out With...

Josh Knight



What happened to you after winning last year's race?
I got picked up by Team Associated and Reedy. I've been doing very well at all the state races.

How was the week for you?
Pretty good. Although I had to run different setups between the morning and the afternoon. It was nice to practice but having to change setups made things a little difficult.

How you prepare for this year's race? I know you have your track back home.
Actually, I went on the Internet and found some pictures of the track layout. From those I made a little scaled-down version of the track and practiced on that back home for about a week.

Did that help?
Yeah. Staying on that small groove helped.

How were you during the race?
I knew Jay Robinette was faster than me. I was trying to think of where I could put my truck to keep him from passing me. I made him work really hard to try and pass me and he didn't.

What race is next?
I'm racing at the ROAR Mod Nats and then I'll probably race all the major state and regional races I can.

A-Mains

First Truck

Early in the race, Scott Hughes snuck into the lead with plenty of pressure coming from Matt Francis in second. Midway through the race, Hughes took a hard left turn wide and got a little squirrelly. This allowed Matt Francis to cleanly take over the lead. On the same lap a few turns later, Hughes took to the inside of Matt Francis and regained the lead. Three turns later, Matt Francis hit Hughes on a corner causing his car to flip over. As Hughes' truck was being turned over by a turn marshal, Matt Francis took off. After being righted by the turn marshal, Hughes stuffed a pipe just a few turns later putting himself back in the third position. From there, a four way battle for second and third between Brian Kinwald, Billy Easton, and Hughes ensued. Hughes managed to bust out

Florida is a nice state. We like Florida. We'll be back for the On-Road Nats later this year.

Team Losi Florida WINTER Champs

The Winners...



2 Wheel Modified



2 Wheel Stock



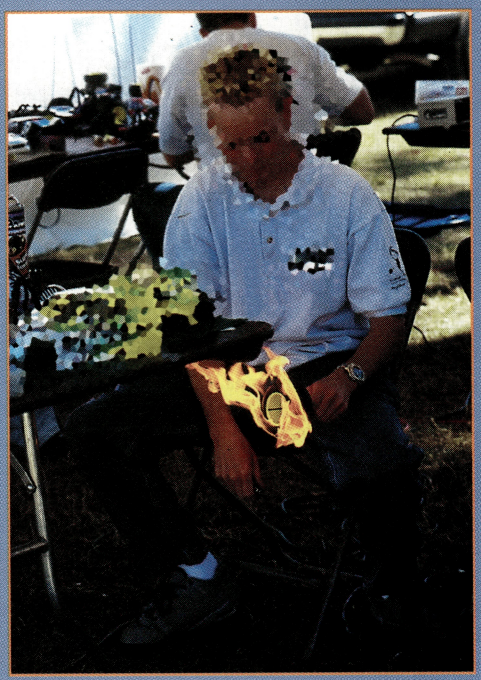
4 Wheel Modified



Truck Modified



Truck Stock



The tire, the tire, the tire's on fire we don't need no water let the ...



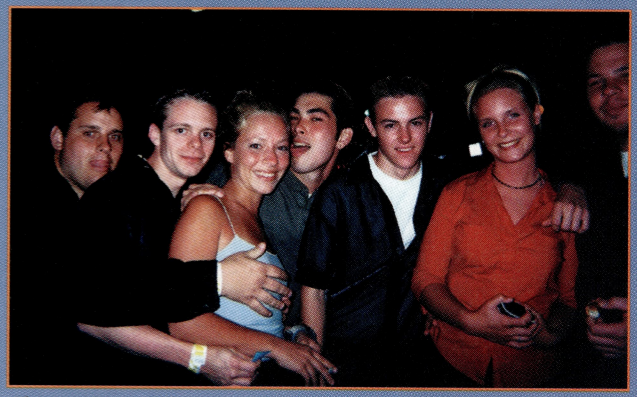
Rather than just look down her top, Matt figured he'd just give her a big wet one.

Squeegee Men watch out!



Everybody wanted to get their picture taken with Tara.

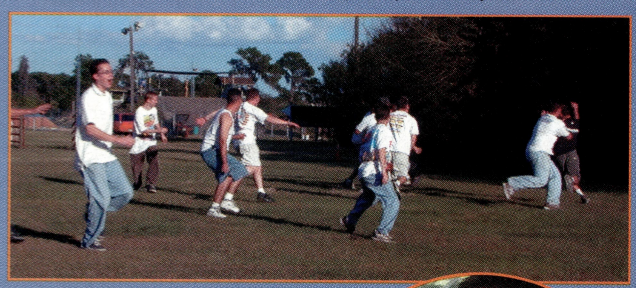
.....Around the Track

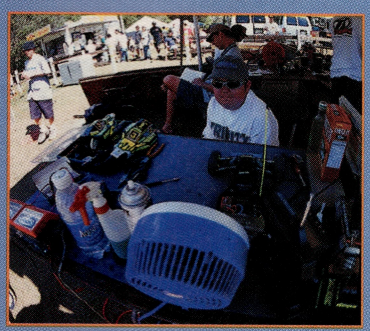


The people would like to submit in to evidence "Exhibit A."



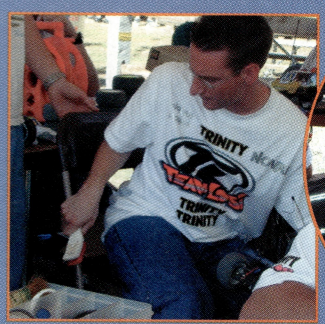
This sucks, I'm not playing with you guys any more. My foot hurts.

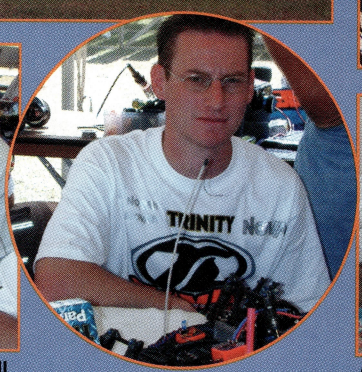




Above: The entire track crew did a great job. Especially Spot.
Left: Brian's secret to race success — his giant fan.
Right: You will use this motor, win and like it!







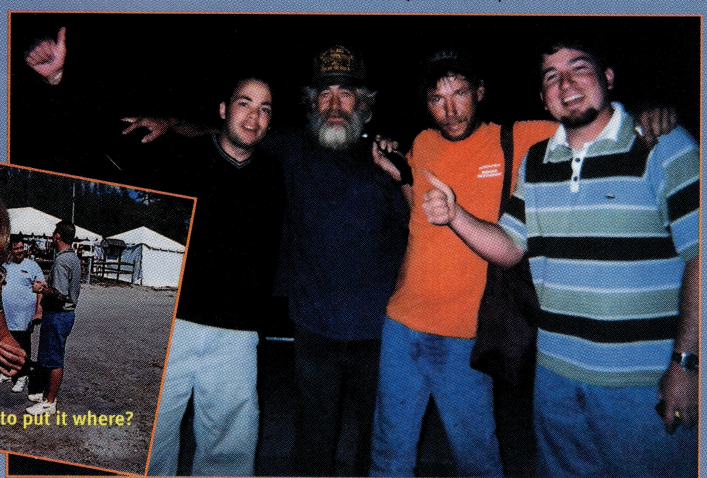
Aggggghh... Hey, do you guys smell something?



Above Left: Long days at the track meant lots of porn to catch up on at night.
Above Right: ...Hmm, I wonder who's car this is?
Below: Always looking for new drivers, Orion has two new team members. One guy was so happy when he heard the news he pissed his pants.

The people would like to enter into evidence "Exhibit B"





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Thanks to Regan LeBlanc and Mike Walker for shooting some of these candids for us.

Team Losi

Florida WINTER Champs

of the battle and finished second behind Matt Francis and in front of Easton.

Truck Second Leg

Using the TQ position to his advantage, Matt Francis took the lead early followed closely by Scott Hughes and the rest of the pack. One minute into the race Francis hit a board allowing Hughes to get by. A minute later, both drivers tangled up allowing Jimmy Jacobson to take over the second position with Francis in the lead. Hughes was relegated to the third spot. That was until he tumbled his truck across the track dropping him down to the seventh spot. Jacobson was unable to mount any sort of charge for the lead. Matt Francis handily kept the lead winning the race and the overall A-main win.

Truck Third Leg

Early in the race, there was a three way battle for the lead between Jason Ruona, Brian Kinwald, and Scott Hughes. During the race it was strange to see Hughes and Rouna battling against each other running different trucks, motors, and tires. The battling didn't last for long. Two-and-a-half minutes into the race both drivers hooked up and let Kinwald slip further into the lead. While this was going on Billy Easton passed both of them by and move into second. At the end of the race it was Kinwald taking the win, Easton in second, and Rouna in third. The overall breakdown was Matt Francis in first, Kinwald in second, and Easton in third

First Buggy

Off the line, Brian Kinwald moved into the lead early but soon after nose-dived off of the large triple in front of the drivers stand. This allowed the pack to catch up to him. From there Mark Pavidis and Rick Hohwart battled it out for the second position. After a huge pile up on the straight away Kinwald was still in the lead fowled by Pavidis and Easton. With thirty seconds left in the rac,e Kinwald had a huge lead. But, thanks to a loose pinion, Brian gave up the lead allowing Easton to take the win.

Buggy Leg Two

Before the first lap was over there was a fierce battle for the lead between Matt Francis, Brian Kinwald, and Mark Pavidis. This battled continued until Francis broke hitting a pipe at the end of the straight away. Two minutes into the race Brian was in the lead with Mark Pavidis in second and Billy Easton in third. In the final minute of the race Pavidis and Kinwald traded positions on just about every other turn. It wasn't until the second turn before the straightaway that Pavidis stuffed a pipe and allowed Easton to take over second. The race ended in the following order; Kinwald, Pavidis, Easton.

Leg Three

After some tangles and mix ups Mark Pavidis emerged in the lead followed by Rick Hohwart and Jason Rouna. Towards the end of the race the only real battle on the track was between Hohwart and Rouna. In the final seconds of the race Kinwald charged into the third position. The race finished with Pavidis taking the win followed by Hohwart and Kinwald. Since Billy Easton had a first and a second, he took the overall win with Pavidis and Kinwald finishing second and third.

First 4WD

Jukka Steenari jumped into he lead early thanks in part to his TQ position. Brian Kinwald was in second. Through the entire race Kinwald put tremendous pressure on Steenari but was never able to get past Steenari. He took the win leading pole to pole. Kinwald finished in second with Todd Hodge finishing in third.

4WD Leg Two

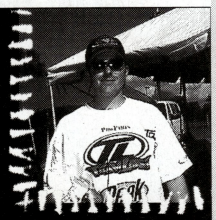
At the start of the second race Steenari held on to his TQ position. Before the end of the first lap Kinwald had possession of the lead for a brief second, but gave it back quickly to Steenari. Through the end of the race Kinwald challenged Steenari from time to time, but was never able to pass Steenari. When the fat lady sang, Steenari was the winner of the second leg and the overall main. Once again, Kinwald finished in second. Rick Hohwart managed to finish the race with a firm grasp of the third position.

4WD Leg Three

For the final 4WD race and the final race of the day, Jukka Steenari sat out since he'd already wrapped up the class the race earlier. Jimmy Jacobson was the second qualifier, but with

Time Out With...

Jay Robinette



Where's your local track?
MHOR R/C Raceway in Denver, CO.

Do you prefer the indoor or outdoor track at MHOR?
We run a lot of indoor; summer's fun for the outdoor.

Before today, what's been your best placement at this race?
Actually I won the same class back in '94. I also won the Stock Nationals that same year.

When did you start practicing for this race?
I got in Monday and started practicing on Tuesday.

Describe the race for me?
Well I was behind Jarred and he was pretty far out in front, he had at least a straight-away lead. Then I heard the announcer say that he had broke. I got pretty happy when I heard that. Brian had started to put some pressure on me toward the end.

How long have you been racing?
Fourteen years off and on. I took a break in '97 until just a couple of months ago. I have a pretty demanding full time job so it's tough to race a lot.

The Nice Side of Town

As I've told you before, Tampa is known for some great things: great people, great weather, great beaches, Busch Gardens, that pirate ship where the Bucs play, and, of course, **strip clubs**. In years past I've accompanied dozens of racers to some of the nicer establishments: Mons Venus, The Pink Pony, etc. But this year I felt a little adventurous. To keep their relationships in tact I won't name any names, but some friends and I headed over to Hard Bodies. This place was vile. When we pulled up, the police had just hauled off a couple of strippers for God-knows-what. A dancer was bawling out her old man while clutching her cigarette. This girl had a mouth that made me blush. Once inside I noticed that the usual brass pole was not brass at all. **Instead, it was a lead pipe!** Hell, it could have been part of the plumbing and they just built a runway around it. Anyway I won't go any further than to say it's amazing how much a dollar buys these days.

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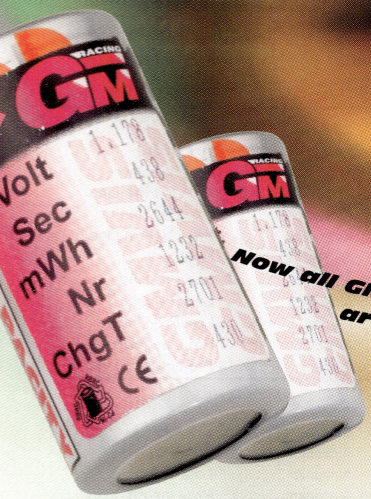

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Jukka out of the race Jacobson enjoyed the pole for the third and final race. He held onto the lead until the halfway point of the race. That's when he had to battle with Kinwald and Todd Hodge for the lead. When the dust settled, Kinwald was in the lead followed by Jacobson and Hodge. That's the same order they finished in. Kinwald ended up with second place overall and Hodge finished in the third position overall.

2WD Stock A-Main

Jarred Scott busted out of the pack and took the lead early. Before the first lap was complete a couple of pile ups sorted out the rest of the pack. One minute into the race Brian Westerman was in second with Jay Robinette in third. Two minutes into the race, Westerman stuffed a pipe on the far corner of the track. This let Robinette take second. Just seconds after moving into second, Robinette inherited the lead thanks to Scott's car breaking. Through the rest of the race, Robinette remained in the lead and took the win followed by Westerman and Robbie Boles in third.

Truck Stock A-Main

Jay Robinette used his TQ spot to its fullest and held onto the lead for more than the first half of the race. Coming off of a table top, Robinette bobled his truck allowing Josh Knight to move past. The two drivers battled for the next couple of laps. Going through a tight off-camber 180º turn Knight actually took the turn too tight. Robinette tapped Knight's truck and set him free. Knight got into the lead and held on to take the win. Robinette finished in second while Robbi Boles finished in third.

CONCLUSION

Like always, this year's Winter Champs was great. Even though two of the A-mains were decided after just two races, all of the main event races had their fair share of excitement. The track crew did a good job of keeping the track as consistent as possible. The program ran smoothly and there were no major problems all week long. This year's Winter Champs was a great race for all those that attended. If you are going to travel to one off-road race a year, this is it. There's always great racing and plenty of fun.

Mod Buggy

Finish	Qual	Name	Car	Motor	Battery	ESC	Radio	Tires(F/R)
1	5	Billy Easton	Asc RC10B3	Reedy 10x4	Reedy	LRP	Airtronics	Losi/Pro-Line
2	2	Mark Pavidis	Asc RC10B3	Reedy 10x4	Reedy	LRP	Airtronics	Pro-Line/Pro-Line
3	3	Brian Kinwald	LosiTriple-X	Trinity 11x2	Trinity	Novak	Airtronics	Losi/Pro-Line
4	8	Lloyd Dawsonville	Asc RC10B3	Reedy 10x4	Reedy	LRP	Airtronics	Pro-Line/Pro-Line
5	10	Scott Brown	Losi Triple-X	Trinity 13x3	Trinity	Novak	JR Racing	Losi/Losi
6	7	Jason Rouna	Losi Triple-X	Trinity 11x3	Trinity	Novak	Airtronics	Losi/Pro-Line
7	6	Dave Montgomery	Losi Triple-X	GM 13x2	GM Racing	GM	Airtronics	Losi/Pro-Line
8	4	Rick Hohwart	Losi Triple-X	Peak 12x4	Peak	Novak	Futaba	Losi/Pro-Line 9
9	9	J.R. Mitch	Schumacher	Reedy 10x4	Reedy	LRP	Airtronics	Pro-Line/Pro-Line
10	1	Matt Fracis	Losi Triple-X	Trinity 13x2	Trinity	LRP	Airtronis	Pro-Line/Pro-Line

Mod Truck

Finish	Qual	Name	Truck	Motor	Battery	ESC	Radio	Tires(F/R)
1	1	Matt Francis	Losi Triple-XT	Trinity 12x2	Trinity	LRP	Airtronics	Losi/Losi
2	3	Brian Kinwald	Losi Triple-XT	Trinity 11x2	Trinity	Novak	Airtronics	Losi/Losi
3	9	Billy Easton	Asc T3	Reedy 10x2	Reedy	Novak	Airtronics	Pro-Line/Pro-Line
4	6	Jimmy Jacobson	Asc T3	Orion 11x2	Orion	Novak	Airtronics	Pro-Line/Pro-Line
5	2	Scott Hughes	Asc T3	Reedy 9x2	Reedy	LRP	Airtronics	Pro-Line/Pro-Line
6	5	Adam Drake	Losi Triple-XT	Trinity 10x1	Trinity	Novak	Airtronics	Losi/Losi
7	10	Greg Hodapp	Asc T3	Reedy 9x2	Reedy	LRP	Airtronics	Pro-Line/Pro-Line
8	7	Jason Rouna	Losi Triple-XT	Trinity 10x2	Trinity	Novak	Airtronics	Losi/Losi
9	8	Mark Francis	Los iTriple-XT	Orion 10x2	Orion	Novak	Airtronics	Losi/Losi
10	4	Rick Hohwart	Losi Triple-XT	Peak 11x3	Peak	Novak	Futaba	Losi/Losi

Mod 4WD

Finish	Qual	Name	Car	Motor	Battery	ESC	Radio	Tires(F/R)
1	1	Jukka Stenari	Losi XX-4	Orion	Orion	Novak	Sanwa	Losi/Losi
2	3	Brian Kinwald	Losi XX-4	Trinity 9x2	Trinity	Novak	Airtornics	Losi/Pro-Line
3	4	Todd Hodge	Losi XX-4	Trinity 9x2	Trinity	GM Racing	Airtronics	Losi/Losi
4	10	Travis Amezacua	Losi XX-4	Orion 9x2	Orion	Novak	Airtronis	Losi/Losi
5	2	Jimmy Jacobson	Losi XX-4	Orion 10x2	Orion	Novak	Airtronics	Losi/Pro-Line
6	8	Marcus Lubke	Schumacher	Orion 10x2	Orion	CS Elect.	Airtronics	Pro-Line/Pro-Line
7	5	Matt Francis	Losi XX-4	Trinity 9x2	Trinity	LRP	Airtronics	Pro-Line/Pro-Line
8	6	Brian Dundar	Losi XX-4	GM 10x2	GM Racing	GM Racing	Airtronics	Losi/Losi
9	9	Rick Hohwart	Losi XX-4	Peak 11x2	Peak	Novak	Futaba	Losi/Losi
10	7	Chris Bing	Losi XX-4	Trinity 9x3	Trinity	Novak	Airtonics	Losi/Losi

Stock Buggy

Finish	Qual	Name	Car	Motor	Battery	ESC	Radio	Tires(F/R)
1	4	Jay Robinette	Losi Triple-X	Reedy	ProParts	Novak	JR Racing	Pro-Line/Pro-Line
2	3	Brian Westerman	Losi Triple-X	Reedy	World Class	Novak	Airtronics	Pro-Line/Pro-Line
3	2	Robbie Boles	Losi Triple-X	Reedy	Sanyo	Novak	Airtronics	Pro-Line/Pro-Line
4	6	Trey Scott	Losi Triple-X	Reedy	GM	GM	Airtronics	Pro-Line/Losi
5	9	Todd Lewis	Losi Triple-X	Reedy	Trinity	GM	Airtronics	Pro-Line/Losi
6	10	Scott Haake	Losi Triple-X	Reedy	N/A	LRP	Airtronics	Pro-Line/Pro-Line
7	8	Charlie Perez	Losi Triple-X	Reedy	World Class	Novak	Airtronics	Pro-Line/Pro-Line
8	5	Keith Manton	Losi Triple-X	Reedy	Trinity	Novak	Airtronics	Pro-Line/Losi
9	7	Jinson Collins	Losi Triple-X	Reedy	Sanyo	Novak	Airtronics	Pro-Line/Pro-Line
10	1	Jarred Scott	Schumacher	Reedy	Reedy	LRP	Airtronics	Pro-Line/Pro-Line

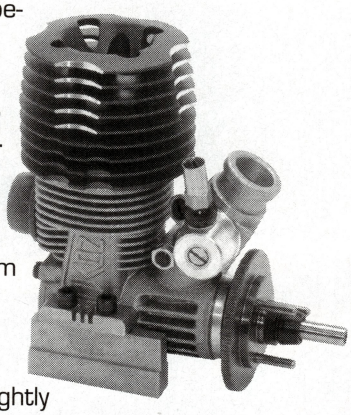
Stock Truck

Finish	Qual	Name	Car	Motor	Battery	ESC	Radio	Tires(F/R)
1	3	Josh Knight	Asc T3	Reedy	Reedy	GM Racing	Airtronics	Pro-Line/Pro-Line
2	1	Jay Robinette	Losi Triple-XT	Reedy	ProParts	Novak	JR Racing	Losi/Pro-Line
3	8	Robbie Boles	LosiTriple-XT	Reedy	N/A	Novak	Airtronics	Losi/Pro-Line
4	7	Danillo Rodriquez	Asc T3	Reedy	Orion	LRP	Airtronics	Pro-Line/Pro-Line
5	10	Brian Westerman	Losi Triple-XT	Reedy	World Class	Novak	Airtronics	Losi/Pro-Line
6	5	Todd Lewis	Losi Triple-XT	Reedy	Trinity	GM Racing	Airtronics	Losi/Pro-Line
7	6	Leon McIntosh	Asc T3	Reedy	Reedy	LRP	Futaba	Pro-Line/Pro-Line
8	9	Scott Haake	Losi Triple-XT	Reedy	N/A	LRP	Airtronics	Pro-Line/Pro-Line
9	2	Jarred Scott	Asc T3	Reedy	Reedy	LRP	Airtronics	Pro-Line/Pro-Line
10	4	Greg Degani	Kyosho Ultima	Reedy	Orion	Novak	Futaba	Pro-Line/Pro-Line

ROAR News

The ROAR Executive Committee recently held their semi-annual meeting to discuss and decide on important issues facing the world of R/C car racing. Here's some of the important news to come out of the two-day meeting:

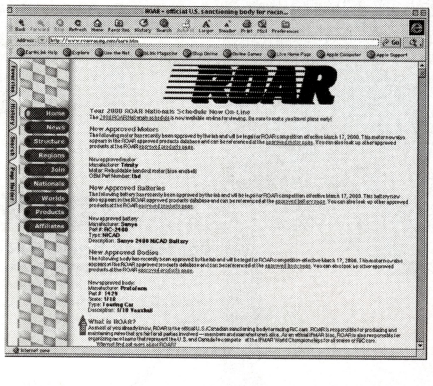
Rear Exhaust Okay



There are no existing specific rules outlawing the new rear exhaust .12 size engines from Picco, Mugen, and Nova Rossi. Because these engines are already commercially available no action will be taken to disallow them from any competition. Because of their freer-flowing exhaust, these new engines produce slightly more power than comparable side exhaust engines.

ROAR Rules - On-Line

One of the most requested and sought documents in the world of R/C racing, aside from a copy of *Xtreme*, is the official ROAR rule book. ROAR will soon be posting its 2000 rule book in PDF form on their web site. No word exactly when the rule book will be up, but we expect some time in April. If you want to look for yourself you can check out www.roar-racing.com, or go to www.xtremerc.com for a link.



20, The Magic Number

At national races, classes that draw less than twenty entries will no longer be awarded trophies for the entire A-Main. Instead, first through third in the A and B mains along with TQ will be awarded trophies. And if a class draws less than thirty entries two years in a row, it will no longer be a required class for National competition.

Tired of Tires?

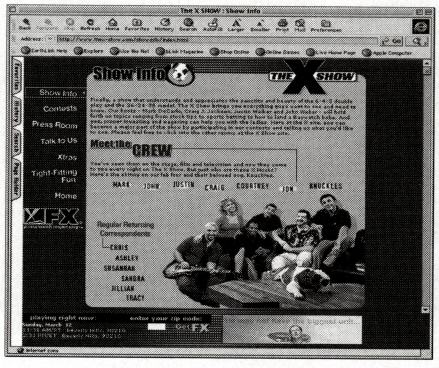
In recent years in order to compete at National and Regional races tires have become more and more of an issue. Certain members of the executive committee have begun working on a plan to implement some type of control on tire usage at National and Regional races. Look for some type of plan to be outlined before year's end to be implemented for the 2001 racing season.

Cyrul Moves To Losi

Well-known on-road racer Josh Cyrul will soon be moving to Southern California to go to work for Team Losi in their R&D department. Rumor has it that Team Losi is working on a second generation replacement for the aging Street Weapon sedan. If this rumor is true (which we believe it to be), expect to see some type of prototype at or just before the On-Road Worlds later this year. As you probably know Josh is a Team Trinity Driver; so much for the rumors of infighting between Losi and Trinity.

RC on the X-Show

In early March World Champion Mike Swauger was interviewed on the Hobby Shop segment of the *X-show* on FX. Mike answered some general questions about R/C cars and racing. Some video of actual racing was also aired during the four minute long segment. If you're not familiar with the *X-show*, it's very cool. It's kind of like half *Maxim* magazine and half Howard Stern. Come to think of it, it's kind of like *Xtreme*.



RC Races Live on the Web?

No official word yet, but eHobbies has hinted at possibly providing live race coverage via a web cast with streaming video on their web site. The possible races could include some of the ROAR National Championship races later this year. If and when a decision is made we'll be sure to fill you in on possible dates, times, and viewing schedules.

Mike did a great job on the X-Show. He was a little nervous, but did okay.

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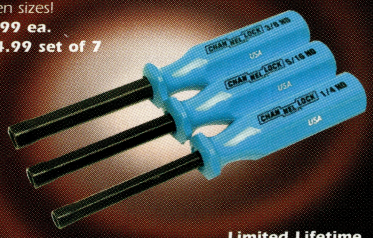

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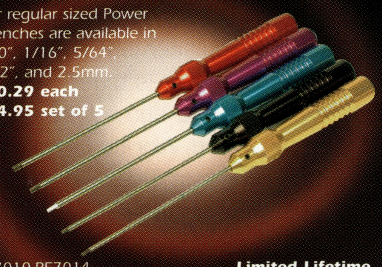

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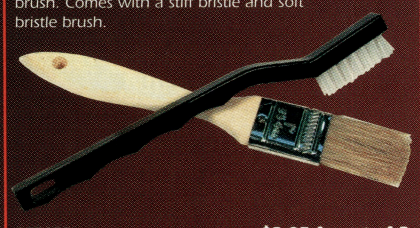

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Available from #54 to #59.



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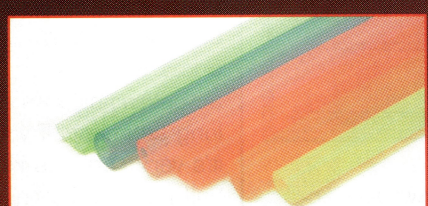

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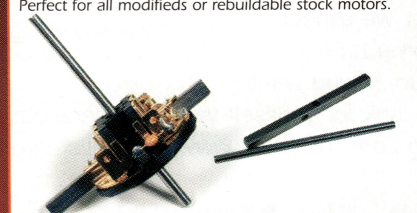

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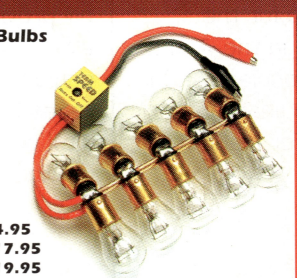

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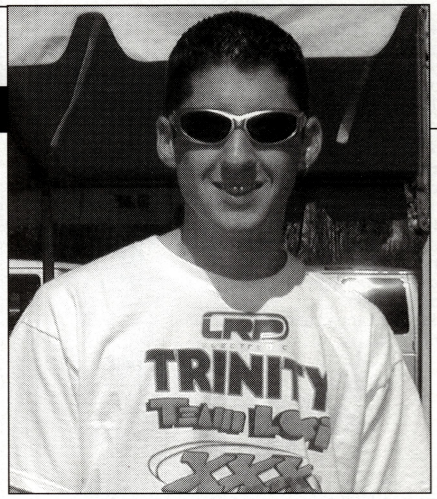

VITAL SPECS

Residence: Garden Grove, CA
Age: 20
Major Sponsors: Team Losi, Trinity, LRP
Favorite Class of Racing: Off-road buggy
Favorite Babe: Pamala Anderson

How'd you get into R/C?
About 10 years ago, my best friend got a car for Christmas. I thought it was pretty cool so I got one.

What kind of car was it?
I bought an RC10 CE with a gold chassis and a six-gear tranny. It was pretty cool.

When did you get into racing?
About four years ago. I had an RC10 Worlds car and raced it at the old SoCal Raceway. That track was really close to my house.

I always see you and Brian (Kinwald) pitting together. You guys seem to be very good friends. Brian can be difficult to get to know. How did you guys become friends?
At the old SoCal Raceway, I ordered a new receiver for my car because mine was glitching all over the place. The receiver came in and I went to pick it up and Brian said, "Sorry. I just bought the last two." So I thought to myself, "Now what? I don't have a receiver." So I guess Brian felt bad and sold one of them to me. After that, we started talking and just kind of became friends.

What's been your best racing experience?
Actually my best experiences have always been just club racing with Brian. We have a lot of fun on the track racing and also just hanging out at M-n-M. Just a couple of weeks ago, we ran stock truck and I lead most of the races. I was smiling the whole time and had a really good time.

Any embarrassing or disappointing moments?
Not any embarrassing moments, but I've had some disappointments. This race is a good example. I've been at the track everyday for the last two and a half months practicing and preparing for this and the Reedy Race. It's disappointing when I know how good of driver I am and what I'm capable of and I come out and basically blow it. I get out on the track, the pressure builds up, and I don't get it done. I know I'm still new to this level of racing. I still get plenty of jitters and nerves. Usually I go faster by the end of the race, but then it's too late.

It's basically getting over the hurdle of mental preparation?
I think once I get over that I'll be okay.

Is it intimidating or discouraging racing against Brian all the time at club races? Or do you think it helps you?
I think it's helping me more than anything. Some weeks he'll smoke me and just blow my doors off. All that does is make me want to work harder and run more that way the next time we race it will be a better battle.

Do you and Brian ever help each other out and maybe make comments about how each other's cars are running and stuff like that?
After runs on the track we'll come back into the pit and if find something significant or important I'll let him know. Even at M-n-M, we're constantly trying new things and discussing how things worked. We try to tackle things as a team. I think that will really help both of us in the long run.

Outside of racing, what are your interests?
Through a friend of my dad I used to fly full-size helicopters. I did that a couple of times and really enjoyed it.

What's the hardest part about racing at the level at which you now compete?
It's really the competition from all different directions. We work together as a team, finding setups and stuff like that. But on the track we need to break away and look out for ourselves.

Do you ever come across those difficult decisions where it's tough to choose between what's better for Jason versus what's better for the team?
I had a situation like that come up at the Reedy race. Adam Drake and I were in the last 4WD race. I was in the lead and got bobbled up. I had a chance to jump back into the top three ahead of Adam. But, I knew that if Adam finished in the top three it would mean a top three finish for the team overall.

What do you like best about racing at this level?
I love the traveling and the competition. I like how we work as a team. Like Matt (Francis), he's really nice. If you ask him something, he's always helpful. He'll also talk with Brian and they'll exchange notes. I just like being around the people that are really serious about racing. What upsets me is the people that come out here and aren't serious and don't put the time into it.

You mean the team guys that are being paid to come out here?
Yeah. That's a touchy subject right now, but yeah. I mean there are guys like Mark Pavidis that don't get to run everyday, but they take racing seriously when they're here. But then there are guys that step up to this level and start getting paid as a racer then it's like they mellow out and figure they've gotten what they wanted out of racing. They don't try to make the hobby or the sport any better; they just reap the rewards without trying to put anything back.

What motivates you the most?
Just having a good time. Like I said earlier, I love having a great race with guys like Brian. If I get better and better, I'll be able to race him hard all the time.

What do you think about guys jumping around between sponsors all the time? Is there any loyalty left?
It's like living with your parents. They take care of you and you do your chores, but there comes a time when you've got to go on your own and do what's best for you. I mean there are some guys that will switch teams or sponsors just for the money, and there are other guys that will switch because they believe they can have a better chance to win or be part of something bigger.

The readers don't know this, but you and I have a little history. Back when the Triple-X was still under wraps I snapped some pictures of your car at the track and threw them up on the web. You got in some trouble for that.
You know I didn't even know what had happen until about a day and a half later. Somebody came up to me and said, "Make sure you keep your car put away." I had no idea what had happened. Then somebody asked if I had seen the pictures of my car all over the Internet. Ernie, Richard, and Pops all came over and told me to make sure that I put my car away. After that I actually took the car to the bathroom with me. It never left my sight again.

Any hard feelings?
No.

When I was in Finland covering the Worlds I saw that photo in a Finnish hobby magazine. Somebody had pulled that picture off our web site and put it in a magazine ad.
To this day, I still haven't seen that picture.

Anybody you'd like to thank?
Everybody that's every helped me out. Brian, Ernie Provetti, Pops, Richard Trujillo, Mike Reedy, all those guys.

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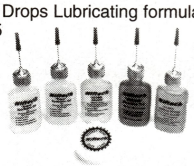
Bearing Motors New! Super-synthetic oil for bearings #4505 BE $4.95
Motor Brushes
New! Hyper Drops Lubricating formula #4510 $7.95



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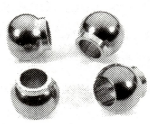

Motor Brush Drill Jig

Precision motor brush drill jig allows you to turn any standard or laydown brush into a modified "super brush:" drill a large speed cavity in the exact center of the brush face; drill an extremely small vent hole (0.042 in.) in the center of the brush face. This hole can be drilled through the whole brush to allow cooling. The jig is hardened for long wear. It also comes with two drills. With this tool and Niftech's Competition Brushes, you'll be in the winner's circle. Send for complete set of catalogues.
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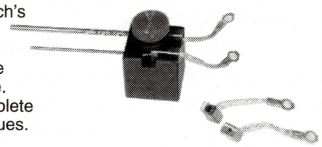

Precision Tweak Board

World famous adjusting tool. Capable of tweaking 1/12, 1/10 and 1/8 scale cars; offers 3 to 5 grams of sensitivity. The lightweight aluminum precision tweak board can be disassembled with one thumbscrew for easy storage; gives a visual method of evaluation problem areas in your suspension. Unlike other methods, it is completely visual, take the guesswork out of suspension adjustment.
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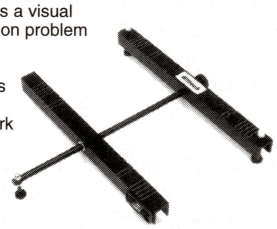

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Continued from page 58

5 Q's with Greg Degani

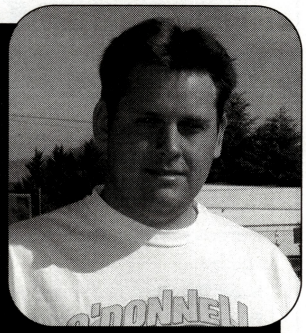
1. You've made quite an impression on the racing community with a strong showing at the Winter Champs in Florida. What are your early thoughts on the Kyosho truck?
The truck was very fast and running some great lap times down there. I came up with my own setup for the high-bite surface, forgot it was a brand new truck, and just drove it.

2. Speaking of setups, what kinds of changes did you make?
I basically softened up the front end by going to a softer spring. The truck works very well in stock form, and I just tuned mine for the conditions. It responded very well to the changes.

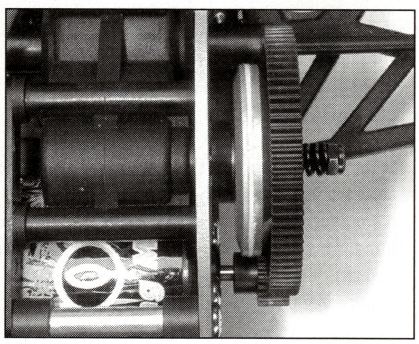
3. The Ultima allows you to build the shocks with or without the bladders. What's your take on this?
If your running on a smooth, high-bite surface, I don't think you really need the bladders. On a bumpy uneven track, they might be a good idea to help keep the shocks working their best.

4. Do you know if Kyosho will be offering any factory hop-ups for the Ultima?
I was running full graphite down in Florida; the chassis, shock towers, and control arms were all graphite. I wouldn't be surprised to see these as an option sometime soon.

5. Then there's that elusive Kyosho 2WD buggy that keeps rearing its head. We know it exists. When will the public be able to get one?
I'm being told sometime this summer.



Thanks for taking the time to give us some insider tips Greg!



One thing I wasn't too fond of was the distance between where the spur gear mounts and the last support bearing in the transmission is. This could be a problem down the line with premature bearing failure.

Ultima showed no premature wear. I took it home for cleaning expecting to find at least a missing E-clip or two. Some surface abrasions on the underside of the chassis and the motor plate were the only evidence that the truck was raced. Some racers might be shying away from the Ultima because of past experiences finding Kyosho replacement parts. The truck uses easily-found parts whenever possible, such as the 3/32" diff balls and Pro-Line rolling stock. According to the Kyosho USA website, replacement parts that are unique to the vehicle will be sold individually and they'll be in stock before you'll ever need them.

Trackside Tuning

Racers will feel right at home wrenching on the Ultima, except for the Phillips head screws that fasten almost every part on the truck. However, if you have a few nice screwdrivers and exercise common sense, it will feel just like home after a few pit stops. Kyosho went to great lengths to accommodate the American market. For example, any aftermarket 48-pitch spur gear will bolt right on the Ultima's slipper plate. Applying some tape to the underside of the chassis will help keep the fasteners clean and useable. All other facets of tuning can be done as efficiently as any other 2WD off-roader.

Maintenance

The Ultima doesn't require any more maintenance than its competition. Keep it clean, and it will reward you with hours of trouble-free racing. Parts that will wear with time are typical for the class; shock seals, shafts and pistons, differential balls and rings, and tires, of course. I always give my racecars a thorough once over after a day of racing, and you should do the same. Replace any worn-out part before it breaks on the first lap of the main.

CONCLUSION

Kyosho has done their homework. The Ultima ST Type R was built to win races, and there's no reason to think it won't. In the hands of an average driver, it made me look downright good. Greg Degani put his Ultima in the 5th qualifying spot at the Winter Champs in Florida last month. Everyone is tripping over themselves to compare the Kyosho truck to the others in the stadium truck class. While it does share many similarities and concepts, the Ultima has some trick features and accoutrement that make it a unique vehicle. As long as racers can get their replacement parts in a timely fashion, you are going to start seeing Kyosho trucks on the podium at national events.

Duratrax RealRace R/C Simulator

Virtual R/C is here Now....



Let's face it – there is technically no way you can race 365 days a year. What if it rains? How about snow?

I'm sure something will come up that will keep you away from the track (if not, lucky you!) So how do you get your R/C practice in during the off days? Wouldn't it be great if there were some kind of R/C simulator that you could use at home? Thanks to Duratrax, now you can!

Duratrax claims that their new RealRace™ Professional R/C Car Simulator, is "the most advanced car simulation available." Really now? After all, the last three R/C computer games I've played,were uninspired racing games, where the only thing related to R/C was the look of the cars. So how would this Duratrax version be any different? The game promises multiplayer capability, unparalleled authenticity, lifelike tracks, etc. "Drive, compete, tune and tweak, all on your PC," it said. Could this be for real? There was only one way to find out.

Installation

When I got home, I immediately installed the RealRace program.The RealRace simulator called for the following minimum requirements:

- Pentium 266 or equivalent processor.
- Windows® 95/98 operating system.
- 2D or 3D video card compatible with Microsoft Direct-X 6.1 or later.
- 60 MB of available (free) hard drive space.
- a 4X speed CD?ROM drive.
- a standard game port.

However, for the best performance, Duratrax recommends at least a Pen-tium III (350mHz or higher for multiplayer), 8MB 3D video card, 24MB of RAM and a 16X speed CD drive. There is only one version of Real-Race.



Windows NT, MAC, Unix, or Windows emulations aren't supported. The Real RC Simulator includes a controller that is based on an old Futaba type radio with a 5-foot cord and a serial plug at the end. The radio has your basic steering wheel and a trigger for throttle/brake. There is also a push button on the side of the controller. Actual installation was a breeze. The RealRace CD-Rom had autostart capability, so all I had to do was select the installation directory for the game and click the install button; RealRace did the rest. A restart wasn't necessary, and in case you don't have the latest Microsoft Direct-X drivers on your computer, the RealRace CD offers to install them for you. When all was said and done, I plugged the included controller into my computer's game port and launched the RealRace program.

Pricing and Availability

The estimated street price price for the Duratrax Real RC Simulator is $150. This includes the CD-Rom, radio-type controller, and some miscellaneous literature. The Real RC Simulator is available for PC CD-Rom (no Macintosh version as of yet), and should be available on the shelves of any large retail software or electronics store.

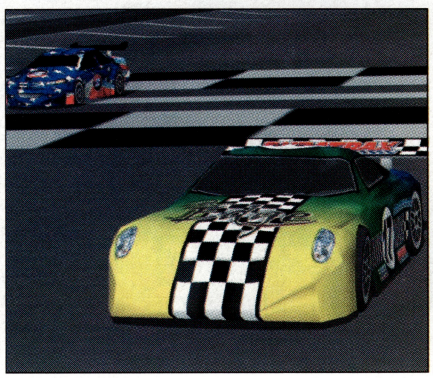
Overview

When I first started RealRace I had to calibrate the included pistol-grip controller. Afterwards, the main menu popped up. The main menu had four choices: Simulation Settings, Select Car/Race Track, Racing, and Drive Now! (see sidebars for more information). I went straight to the Drive Now! button to get right into the thick of things. Drive Now! is basically the practice mode, where you can drive unlimited laps around the track of your choice. This is a good place to get used to the feel of RealRace and the included Futaba pistol grip controller. After about 10 laps or so, I felt comfortable with the response of the simulator, so I exited the practice session and decided to try some serious electronic racing!

In Solo mode, you race against the clock on the track of your choice. You can use any vehicle preset by Duratrax, or even one of your own edited versions (see "The Full Edit" below). Practically all race parameters are available. You can set the length of the race, when you must pit stop (for nitro vehicles), the track surface conditions, the weather, warm-up laps, etc. Be your own race director or set up RealRace like your local track does for accuracy.

Multiplayer

Unfortunately, if you choose solo racing you are doing exactly that – racing by yourself, against the clock. The RealRace simulator surprisingly doesn't include any drones or "bots" (artificial competition) that you can race against. If you want door-banging action, your only choice is to race against other players over a local area network (LAN), a direct modem connection, or through the Internet. Of the three choices, the first two require at least two computers connected together in relatively the same place. Since I wasn't on a LAN and I only have one



VITAL INFO

Distributed by Great Planes
P.O. Box 9021
Champaign IL 61826-9021
www.duratrax.com

HITS

- Accurate simulation and feel.
- Over 100 vehicle adjustments/settings.
- Can accurately simulate your real R/C.
- Includes controller.

MISSES

- Multiplayer available online only.
- No "practice" competition in 1 player mode.
- Occassional glitches.

RATING

8

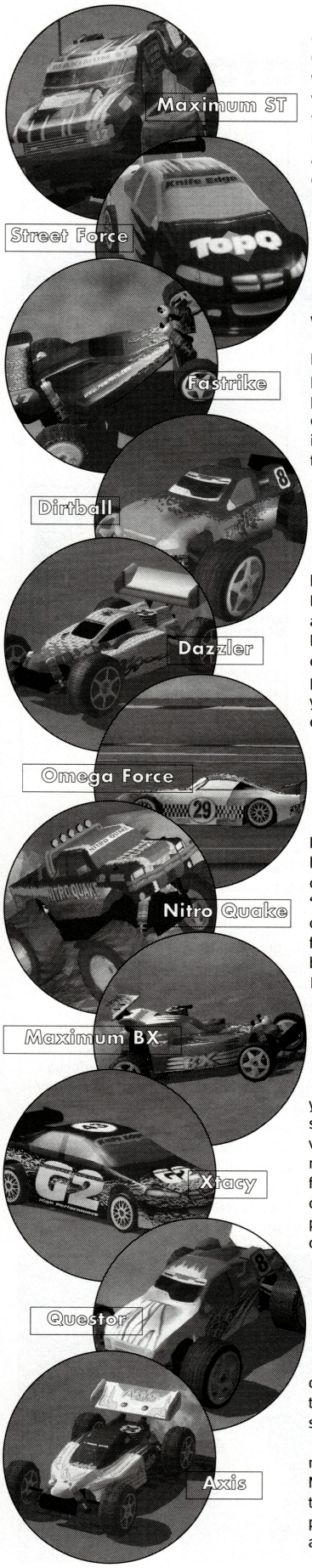
Celebrity Equivalent: Sarah Michelle Gellar



THE LAST WORD

The RealRace R/C Simulator is great for both novice and seasoned racers. It's accurate enough to simulate almost any real R/C vehicle with a simple click of a mouse. There were a few glitches, but overall RealRace is the best R/C sim I've every tried.

About the onlything Real Race is missing is trophy girls... damn!



computer and one RealRace disc (more on this later) my only choice was Internet play. To join a game, you can specify an IP address of the person with whom you would like to race. If you don't know of anyone else who has RealRace, you can have the program search for online games. However, using this function is a bit iffy. There is no progress screen or results screen showing whether or not RealRace has found any other RealRace gamer connected to the Internet who is ready to race.

Remember how I said that I only had one RealRace disc? Well, to play multiplayer races, each computer must have its own separate disc with the RealRace program on it. You can't use the same disc on two different computers when running a multiplayer game because the disc has to be in the CD-Rom drive during actual game play. This requires each individual who wants to race online to purchase his or her own separate copy of the RealRace software to get in on the action. I personally would have liked some sort of "Spawn Game" option found on many other multiplayer/Internet games. In this case you can load RealRace on as many computers as you would like, but only the computer with the CD-Rom disc can actually host a game. However, as it stands, you need one disc per computer regardless of if you are hosting the game or not.

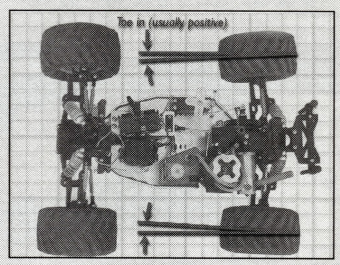
The Full Edit

I was mainly interested in the Full Edit option where you have over 120 different settings and adjustments that you can make. This attention to detail combined with the "Realphysics technology" allows the user to actually pull out a caliper, take measurements on their real R/C car, and feed those readings into the RealRace sim. The result will be a digital version of your R/C car ready to tweak on your PC. Sounds like high hopes, right? Well, they aren't. RealRace worked excellently in this section. Here's the run-down on how it is done. Say you have a 2wd electric truck that you want to add to the simulation. You select the Duratrax vehicle closest to your actual vehicle (in this case it would be the Questor) and copy it. Rename it after your real truck and choose Full Edit. Back in the main menu, select Edit and RealRace presents you with a detailed (and very dense) setup and spec sheet in which you insert the measurements of your own truck. The point-and-click interface makes it easy to work with; in fact the hardest part to cloning your actual R/C vehicle into the RealRace sim is to physically take a caliper and measure everything on the chassis.

Everything? Basically, yes. The more information RealRace has about your particular vehicle, the more it can simulate its performance using its "Realphysics technology." The setup sheet asks for very detailed measurements. How far is the distance from the outer hinge pin to the center of the chassis? How much spring rate is on each corner? How far back is the rear wing from the centerline of the rear axle? At what rpm does the 2-speed transmission shift? RealRace wants to know everything!

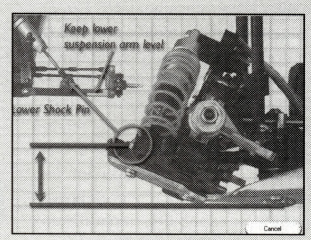
It took me almost an hour to input all of the information needed to clone my test car, a Yokomo MR-4TC Pro. I used a Niftech Precision caliper and began taking measurements to input into the RealRace program. There are "tooltips" or pop-up windows to guide you in making the measurements as you go. If you need more help, the included online manual explains the measurements even more with detailed diagrams to get you through the process. Once all of the measurements are in the RealRace program, you now have your actual R/C vehicle in digital form, ready to tweak!

Quick or Full? Editing Your Virtual R/C Ride



All of the 11 vehicles available in RealRace are non-adjustable. However, RealRace allows you to copy, or clone, any of the vehicles so that you can experiment with small adjustments. For novice and sportsman users, this is the best choice. Dubbed Quick Edit, you only get to mess with the basics: gear ratios, spring rates, shock oil viscosity, and toe and camber settings.

Full Edit is where the pros or seasoned racers should go. In Full Edit mode, RealRace allows you to specify over 100 different parameters, from arm length to roll center, shock angle, caster...you name it. With a set of calipers and some manufacturer-provided measurements, you can basically clone your R/C car or truck into the RealRace program! This is where I went when I started fiddling with the simulation, and RealRace does a great job of bringing the car or truck you see on-screen as close as possible to the real thing. (See The Full Edit in the main text.)

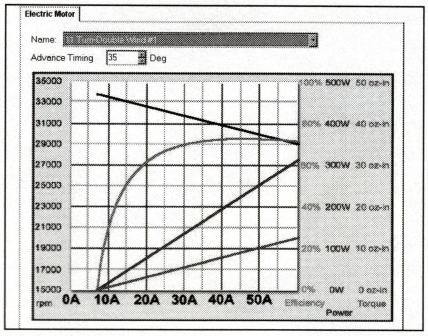


The Feel

So how does the RealRace simulator actually feel? Well, I'd definitely have to say that there is no other R/C game/simulator like it. RealRace does a pretty good job of representing the actual physics of R/C. This is thanks to what Duratrax calls "RealPhysics technology." This programming technology claims to calculate hundreds of thousands of floating point operations each second, to deliver real time driving performance and accuracy. I believe it! When you're actually behind the wheel driving in RealRace, it is almost as if you were actually standing on the virtual driver's stand.

In the Duratrax RealRace simulator you have a choice of 11 different types of vehicles. Practically all the popular classes are covered, including electric and nitro, on and off-road. Each vehicle responds similar to the real thing– nitro cars are torquey, trucks have a higher center of gravity, etc. RealRace also offers 5 different track choices: 3 off road and 2 on road. I focused testing on the two competitive on and off-road courses. The asphalt challenge course is actually a large tri-oval with a road course built inside. The surface is asphalt, and the curbs along the turns are somewhat unforgiving. Perfectly smooth and high grip; this will test your high speed control. The Dirt Bowl is pretty much your basic permanent off-road track bordered by large wooden logs. It has jumps, uneven terrain, and a banked sweeper in one corner leading to a set of multiple jumps. The dirt can be adjusted to be hard-packed, loose, or anywhere in between.

Along with the two "real" tracks, there are also three "temporary" tracks you can drive on. Sedan racers will easily call the Parking Lot track home. Wooden boards border the parking-lot track, and the look and feel of the track is so realistic, right down to the large lights and painted stripes on the asphalt surface. The Construction Site and Pig Pen tracks are both make-shift race tracks with huge jump, half-buried pallets, wooden railroad ties, and other obstacles. These are best used for fun or spec races with friends.



Even motor performance can be altered and tuned in RealRace. Brush changes, timing, etc. There's even a screen that shows dyno readouts with every change you make – all this on your PC!

The program accurately represents some aspects of actual R/C racing, but falls short on some. For example, weight transfer can be sensed when using the RealRace simulator. Fly down the back straight, lock up the brakes while turning, and the back end of the car will want to come out, just like in real life. Launch a buggy off a jump and tap the brakes and you will see the nose change altitude. Even momentum plays a factor when driving in the RealRace simulator. Come out of the straight a little too fast and you might not make that turn like you did just a lap before! On the short side, the vehicles were a little twitchy in certain situations. For example, if you cut it too tight on a hairpin turn and the nose of your vehicle hit the track barrier, you will tumble. Even at very low speeds, if you hit something your vehicle will pop up like popcorn and tumble around.

Visually, RealRace hit the nail on the head in terms of appearance. The graphics are very good and the detail is excellent. As far as actual detail goes, Duratrax did a good job. The tracks and cars don't look lifelike, but they don't look like paper cutouts either. You can actually see and sense wheel movement and rotation. When you steer with the game controller, you'll see the wheels on your vehicle respond. Scaling (where the size of objects change in relation to how far away they are to you) is good, except that sometimes the vehicles would seem smaller than you would think. For example, the Asphalt Challenge course has a very long back straight. Run a stock electric motor-powered sedan on that course and you'll have a lot of time on your hands between back straight entry and exit.

I compared the feel of actually driving my Yokomo MR-4 TC Pro to the RealRace MR-4 Pro digital version I created in the program. The RealRace did a pretty good job of simulating how my car felt, but it wasn't dead-on perfect due to the fact that there were certain variables in the Full Edit screen that I couldn't answer. RealRace even asks for frontal area drag, drivetrain resistance, etc. Most hobbyists won't know these, but for those of us who do it would just make RealRace simulate your vehicle more accurately. When it came to tweaking, I changed the spring rates in relation to the spring rate measurement taken from the actual Yokomo spring. I knew how this would affect the actual MR-4 TC Pro, and when I made those changes in the RealRace software guess what? The effects were basically the same! Oil viscosity change, camber, toe, ride height, etc. – change it in RealRace and it will make the car or truck handle just like if you made the same changes on your real R/C vehicle.

THE SPECIFICS

ITEM INFO
Part # DTXZ4000
Estimated Street Price: $150

ASSEMBLY REQUIRED:
Install software, plug in controller.

CONCLUSION

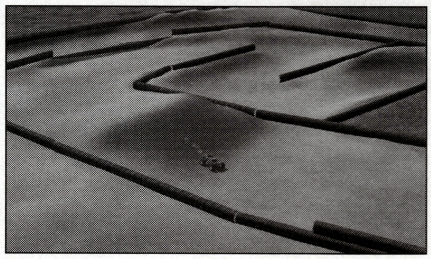
First of all, this isn't a game. Don't look for power-ups, extra lives, unrealistic obstacles, or flashy stages. Duratrax has a full blown, highly accurate R/C simulator in the RealRace software! Duratrax wanted the best R/C driving simulator available to the public, and they hit the target pretty darn close. The "Realphysics technology" does a very good job at simulating the actual physics of an R/C car, and this is evident particularly when you are tweaking your chassis and making changes.If you stiffen up the rear of the truck, it will have a push. If you add too much front camber on the sedan, it will spinout. Any changes you do will actually affect the way the vehicle responds and performs on the track.

Speaking of making changes, there is nothing like the RealRace's Full Edit option. Think about it in another perspective: You have your racing car cloned by the RealRace software. You want to try a few different suspension changes to see how it performs on the track, but you won't see any actual track action until the weekend. Solution: just make the changes in the RealRace simulator and immediately see how those changes affect your ride!

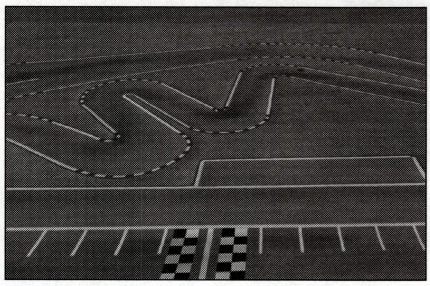
Another idea would be if you have a setup that works for you but you want to try a factory pro driver's setup. Instead of wrenching, adjusting, and maybe buying new parts for your real R/C car or truck, you can just copy the setup into the Realrace program and within minutes you will have another vehicle setup exactly like the factory pros! The possibilities with the RealRace edit option are practically endless.

There were a few hangups while I was using the RealRace software. Some features didn't work properly, but after I downloaded the patch off of the Internet (3.9MB, about 20 minutes on 56k dial-up) everything seemed to work fine. I liked the very detailed instruction manual, especially its vast content and extensive tuning suggestions and explanations, except that it was in electronic form (installed onto your hard drive). I would have liked the manual to be in printed form for easy reference instead of having to quit the game every time I wanted to look-up something in the manual. Also, radio adjustments had to be done through the keyboard. I would have liked the trims to be on the transmitter, just like in real life. (This is a simulation, right?) Speaking of the transmitter, the Futaba-based radio included with the RealRace program was okay. Not the best, but okay. The steering wheel wouldn't center exactly (under the Radio Calibration screen you could visibly see the steering position fluctuate +/- 2% from dead center even if I wasn't even touching the transmitter) and the handle wasn't that comfortable in the long run, but then again this is based on an older style Futaba Magnum radio. A quick wrap of grip tape would solve the comfort issue.

The Duratrax RealRace Professional R/C Simulator does exactly what it name says. Other than a few minor glitches, the simulator worked as it claimed. Importing and adjusting settings are as easy as point and click, and the "Realphysics technology" accurately simulates a real R/C vehicle. Both entry level and professional R/C drivers will want to look into the RealRace simulator for its attention to detail, especially in the chassis editing section. This isn't a game, pal; this is real R/C simulation!



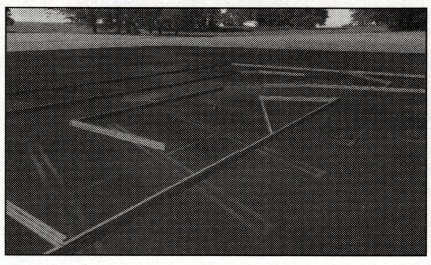
Dirt Bowl - a permanent 1/10 and 1/8 scale off-road course.



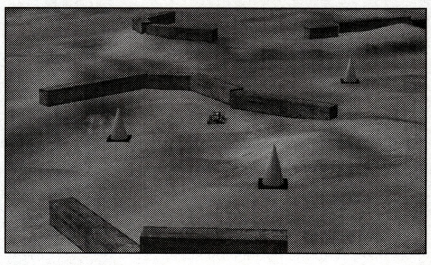
Asphalt Challenge - a permanent on-road and tri-oval road course.



Construction Lot - makeshift off road fun track with many jumps.



Parking Lot - a temporary parking lot race track for 1/10 and 1/8 scale.



Pig Pen- a makeshift course more for fun running and jumping.

Yokomo MR-4 MT

by James Revilla







VITAL INFO

Yokomo USA
17951 Skypark Circle, Suite K
Irvine CA 92614
949.252.8663 phone
949.252.8657 fax
www.yokomousa.com

THE HITS

- Speeds much faster than expected.
- Sealed drive system keeps things clean.
- Performs like its sedan brother.
- Parts readily available.

THE MISSES

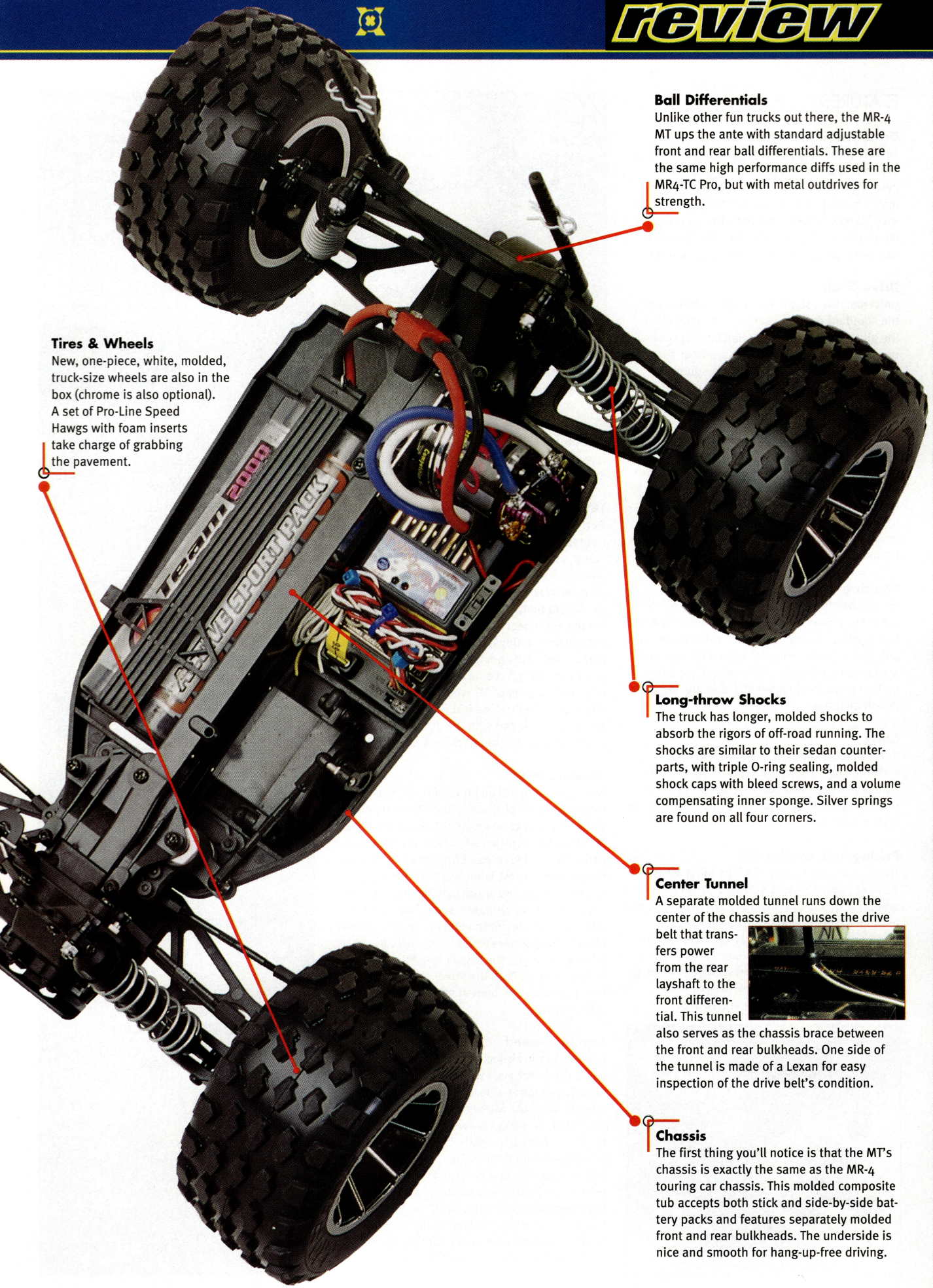
- Needs more high speed steering.
- Front bumper. What front bumper?

THE LAST WORD

The MR-4 MT brings the performance of an MR-4 TC to the dirt! Its top speeds are surprising for a truck, and stability is excellent. High-speed steering is a lacking a little, but nothing a quick spring change would fix. The proven MX-4-based suspension gives the MT good off-road capability to go practically anywhere you steer it!

The basic Yokomo MR-4 chassis has gone through a few transformations as of late. At first, it started out on dirt as a rally chassis known as the MR-4 Rally. But, with a change of location and a few part swaps, it became the MR-4 TC – you know, the current touring car ride of many Yokomo factory hot shoes like Masami Hirosaka, John Orr, and Barry Baker. Now the MR-4 goes back to the dirt and has been transformed into the new MR-4 MT 4WD monster truck. The MR4-MT was designed to tackle both dirt and street conditions – perfect for the backyard basher who isn't concerned with threaded shock bodies, tire compounds, and gear ratios. Fun is the name of the game with the MR-4 MT. However, because it is based on a proven racing chassis, the MT packs more under the body than your average fun truck.

Optional truck names: MR-4ST (stadium truck), MR-4LW (Long wheelbase)...



Ball Differentials
Unlike other fun trucks out there, the MR-4 MT ups the ante with standard adjustable front and rear ball differentials. These are the same high performance diffs used in the MR4-TC Pro, but with metal outdrives for strength.

Tires & Wheels
New, one-piece, white, molded, truck-size wheels are also in the box (chrome is also optional). A set of Pro-Line Speed Hawgs with foam inserts take charge of grabbing the pavement.

Long-throw Shocks
The truck has longer, molded shocks to absorb the rigors of off-road running. The shocks are similar to their sedan counterparts, with triple O-ring sealing, molded shock caps with bleed screws, and a volume compensating inner sponge. Silver springs are found on all four corners.

Center Tunnel
A separate molded tunnel runs down the center of the chassis and houses the drive belt that transfers power from the rear layshaft to the front differential. This tunnel also serves as the chassis brace between the front and rear bulkheads. One side of the tunnel is made of a Lexan for easy inspection of the drive belt's condition.

Chassis
The first thing you'll notice is that the MT's chassis is exactly the same as the MR-4 touring car chassis. This molded composite tub accepts both stick and side-by-side battery packs and features separately molded front and rear bulkheads. The underside is nice and smooth for hang-up-free driving.

FEATURES

Drive Train/Transmission

The MT's drive system is made from off-the-shelf MR-4 parts. The MT's drive train uses peices that are identical to the MR-4 TC. The motor mounts to an aluminum motor mount with integrated belt tensioner. The spur gear is mounted on a layshaft that transfers power to two belts running to either end of the chassis.

Drive Shafts

Universal drive shafts are found up front, and the standard dogbone setup in the rear spins the aluminum wheel hubs. Ball bearings are provided for the outdrives to save wear and tear, but the rest of the chassis is equipped with metal bushings.

Suspension

Long molded suspension arms based on the MX-4's suspension reach out from the MR-4 MT's bulkheads. Threaded upper arms with hex drives and an included turnbuckle wrench allow for easy camber adjustment. Taller shock towers compliment the longer shocks, with multiple mounting holes for both shock and camber link for tuneability.

Steering

The MT has the same steering setup as all the other MR-4 chassis. Thick molded steering arms house a built-in, spring-loaded servo saver. An adjustable center drag link allows for equal toe settings left and right. The steering arms ride on four metal bushings that are easily upgraded to ball bearings.

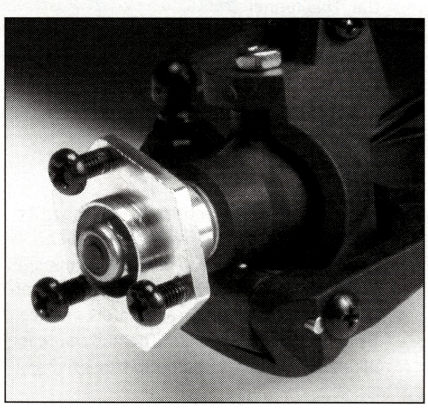
Body

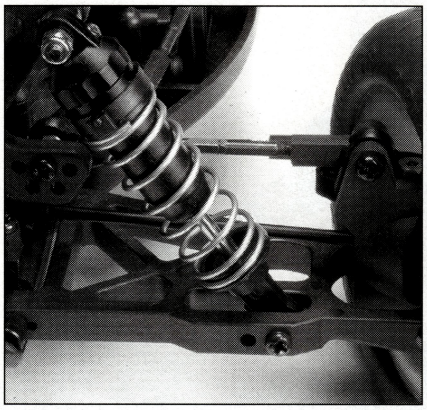
Since this is a monster truck, the MT comes with Yokomo's version of a Toyota Tundra pick-up body. A complete set of decals and pre-cut masking sheets make painting and detailing the body a breeze.

Pricing and Availability

The suggested retail price of the MR-4 MT is $295.00, which should bring the street price to around $180.00-190.00. There are two versions of the MR4-MT available: The street version (reviewed here, part #MR4MT-1S) includes the Speed Hawgs. The dirt version (part #MR4MT1D) substitutes Speed Hawgs for Pro-Line's Dirt Hawg skins. Other than the tires, both versions are identical.

Like the World Championship winning YRX-4, the MT uses the larger aluminum wheel hubs on all fours.





Long coil-over, oil-filled shocks reside on all four corners of the MR-4 MT.

TESTING AND SETUP

To test the MR-4 MT I enlisted the services of a Futaba Magnum Jr., GM Racing EVO modified motor, and an FMA Typhoon ESC. Orion 1700 mAh stick packs provided power. Paint god Thunder Wessels from Team Orion painted the Toyota body with this trick paint scheme. For the entire test session, I used the kit pinion, suspension settings, and tires. All of the performance comments are based on both asphalt and dirt testing. Yokomo also hooked us up with a second set of MT wheels (chrome versions) and the Pro-Line Dirt Hawgs tires (the same tires included with the dirt version) so that I can have fun out back as well.

Acceleration

Given the nature of an off road truck, you would expect a tad bit of wheelspin off the line, especially 2WD trucks on loose dirt. Since the MR-4 MT is a 4WD machine, wheelspin was kept in check. With all four tires gripping and grabbing the surface, the MT launched itself forward. The kit springs and shock setup contributed to a tiny amount of on-power squat from a standstill, but nothing detrimental to the MT's performance. Most drivers won't even notice it. Whenever I'd gun the trigger, the MT would go. Simple as that. Both the street and dirt tires had a generous amount of grip wherever I drove the MT.

Top-End Speed

Relative to the kit-included 20-tooth pinion, you'd think that even with a 15x2 motor the MT would have loads of torque, but medium-high speeds. Well, the MT begs to differ! The MR-4 drive system works very well. Speeds were pretty quick – not earth shattering, but much quicker than you would think. On-road stability at higher speeds was great. The MT didn't seem twitchy, no matter how much I turned the steering wheel back and forth. Also, the MT didn't sound or move like a vehicle with bushings. Now I understand the small warning Yokomo put in the instruction manual that states,

BUILDING TIPS

If you've built any version of the MR-4 touring car series, then you should have no trouble with the MR4-MT. However, if this is your first experience with the MR-4 series, here are a few building tips to make the building process a bit easier:

Step 1, page 3:
At the top of the page, there's a suggestion to shave a portion of the main chassis where the rear suspension arms might rub. My advice: do it! The rear arms will definitely rub the back edge of the MR-4 MT chassis, and it's a lot easier to shave off the chassis material right now, rather than later when the rear suspension, drive system, etc. are all bolted in place.

Step 4, page 7:
When you place the diff and belt assembly into the chassis, use a rubber band and wrap it around the rear belt and the rear lower bulkhead to hold it in place. You won't be attaching the rear bulkhead cover soon, so the rubber band will help hold the rear diff and spur assembly in place while you work on the rest of the chassis.

Step 6, page 9:
Before tightening down the chassis backbone, take the clear Lexan backbone cover in Step 7 and place it against the backbone. Then tighten the backbone down to the chassis. It's easier to put the backbone cover on now then in the next step.

Step 16, page 19:
The illustration says "flat area faces up" on the front steering block, but the illustration shows the flattest side down. Ignore the text and assemble the front hub carrier assembly as the illustration shows. If you assemble the front hub carriers with the flattest side up, the steering arm will rub against the lower arms.

Step 21, page 25:
When you snap the O-rings and sponge collar inside the shock body, don't leave part A-A inside! Pull the shock shaft out of the shock body again and remove part A-A. This part is only used to guide the shaft into the shock body; it isn't meant to stay inside the shock body!

Step 22, page 27:
The text says to use the longer shocks up front and the shorter shocks in the rear. However, the illustration shows the opposite. Follow the illustration or you will have a lowrider-looking MT.

1/10 SCALE

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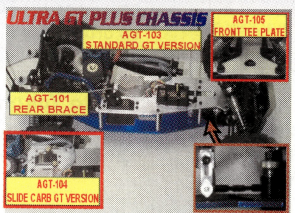

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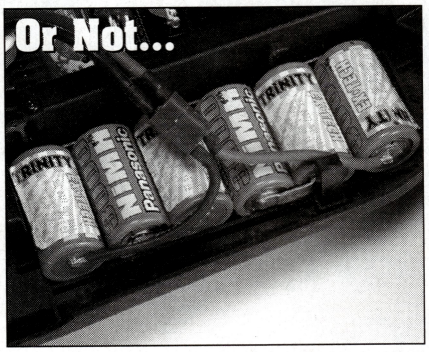


The MT's chassis design allows for either stick pack or single, side-by-side battery styles.

"Since the truck may be faster than what you are accustomed to..." I have to admit that after driving other types of R/C trucks, the MR-4 MT's high speed caught me off guard!

Braking

Four-wheel-drive usually means good four-wheel braking, and the MT was no exception. Even at top speeds braking to a full stop was straight and true. The front end of the MT dove slightly under heavy braking; but not that much when compared to other trucks I've driven out of the box.

Low-Speed Turns

The MT's turning radius at low speeds was okay for a truck. This was mainly due to the fact that the MT shares the same short wheelbase as its sedan brother. However, when I mixed in a small amount of throttle, the MT leaned itself back and tended to push. I had 0 degrees of camber all around, so I went to -1 degree up front and that gave the MT a bit more low-speed steering, but not as much as I wanted with the stock setup.

High-Speed Turns

The small hint of a push during low-speed turns mentioned above was amplified at higher speeds. The MT's turning circle was pretty big for its small wheelbase. I double-checked my servo settings and dual rate adjustment; both were at max. I think with a little bit of suspension tuning (some different springs and shock oil) I could dial-in more steering, but for testing I worked with the kit setup.

Tight Hairpin Turns

When dealing with hairpin turns, the wide turning circle of the MT called for a different driving technique. Instead of braking before the hairpin, I found that if I let the MT freewheel deep into the turn and tapped the brake very quickly right before the apex. The weight transfer to the front end then gave the front tires a lot of bite, which pulled the MT around the corner when I got back on the throttle. Note that I said tapped the brake very quickly, as too much heavy braking whipped the back end around. Again, this is with the box-stock setup. If you want to get hardcore, a set of springs would be the barest minimum item needed to dial in the MT.

S-Turns and Combination Turns

Although I have been rambling on about how the MT has a lack of steering, that same "lack" worked wonders in S-turns and through combination corners. The slight push made the MT more forgiving during quick left/right maneuvers, and the result was a machine that didn't get squirrely midway through those multiple S's. Taking into account the track, if you had to fly through combination turns at full throttle, the MT can take to them quite easily.

Damage Prevention

Unlike other trucks, the MR-4 MT doesn't have that much of a bumper up front. In fact, the front bumper looks more like the rear skid plate on 2WD off-road buggies. If you run into something, chances are that the two front Pro-Line's will hit first. In the rear, there is nothing to help control damage.

The chassis is countersunk and nice and smooth, so there should be no chance of getting the MT hung up on anything it passes over. The body mounts are a different story. In the event of a roll-over, the MR-4MT will literally be resting on the support of the body mounts only. However, the body mounts themselves seem more flexible than the MR-4 TC's, and when I rolled the thing over a few times during testing (D'OH!), they held up fine.

Yokomo has a large presence in the U.S. (they're based in Irvine, CA), so parts should be easy to come by. Also, since the MR-4 MT shares a majority of its components with its sedan brother, replacement parts and hop-ups are readily available.

Trackside Tuning

Access to the shocks and steering servo is good. If you ever need to get to the differentials, you should be prepared for some wrenching. But, with the sealed drive system you shouldn't have to mess with the diffs that often. During assembly, I noticed that the drive belts were a bit on the tight side, which is good since they will last longer before you would have to inspect and/or replace them (unlike loose belts that over time stretch too loose to mesh properly with the pulleys).

Changing motors or pinion gears calls for the removal of five screws. These five screws hold the dust cover on the drive system. I don't suggest leaving the dust cover off, as it also serves as a bracing point for parts of the rear bulkhead. Finally, the servo saver included with the MR-4 MT has a thumbwheel for adjusting the servo-saver tension. However, once assembled, you can't really get to the thumb wheel with your thumbs! If you followed the instruction manual, there should be no reason to have to get at the servo saver unless you are replacing it, as the manual's setting was perfect during our testing.

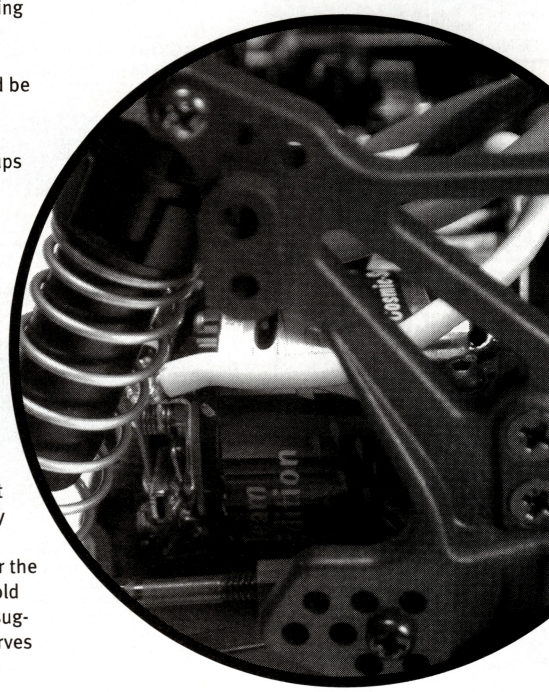
Maintenance

The MR-4 MT's enclosed drive system cuts down regular maintenance to a minimum. The only parts to look out for are the outdrive bearings, which are the only exposed drive system parts. The tub chassis can be cleaned quickly with a small burst of compressed air, and the rest of the chassis needs only to be brushed with a soft brush to remove dust.

Overall Driveability

I first tested the MR-4 MT out on a relatively smooth asphalt parking lot near my house. Coming off of a rainy day, the surface was pretty dust-free, but cold due to the cloudy weather. After the usual trim and ESC setting check, I immediately floored the throttle and let the MT fly. I noticed that with larger wheels and a dirt-oriented suspension setup the truck leaned in the turns at higher speeds. On small curb jumps and sidewalk drop-offs, the MT's suspension setup gave the chassis a super-smooth, almost pillow-like landing. Its throttle response and speeds were very reminiscent of the MR-4 TC Pro I reviewed in Issue 5.6 (March 2000), which isn't a surprise considering that the MT is based heavily on the TC. In fact, after awhile I ended up driving the MR-4 MT with the same throttle technique as I did with the MR-4 TC Pro.

True to Yokomo's competitive spirit, the MR-4 MT has multiple mounting options for the shocks.

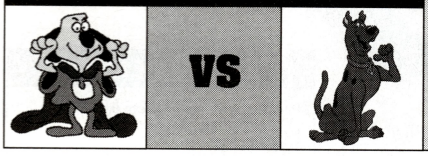


Fighting Dogs?

Super Dog Fighter 2

No, it's not a video game with Chun-Li reincarnated as a poodle. This is the name of the latest buggy from Yokomo. The "Super Dog Fighter 2" is the second name of the MR-4 BC buggy. Like the MR-4 MT, the "BC" is based heavily on the MR-4 platform, but with an off-road suspension based on the MX-4. In fact, the only difference between the BC and the MT are tires, wheels, and body. The BC trades in Pro-Line tires for Yokomo Hot Laps Mini-pins and MX-4 wheels. The Tundra truck body is tossed in favor of a sleek, low-profile buggy body with separate rear wing.

In a Death Match, who would win?





Yeah, but Hong Kong Phooey is second to none!

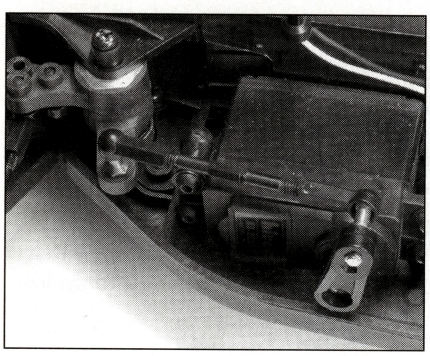
So how does the BC perform in relation to the MT? Well, in the review I stated that driving the MT "feels" like an MR-4 TC Pro. Well, this statement is even more suited to the MR-4 BC! The same high top speeds, the same stability- the BC performs just like the MT, but more responsive in the turns. This is mainly due to the smaller wheels and tires (less unsprung weight). Since both MT and BC share the same chassis, if you want to convert MT to BC (or vice versa) all you need is a different set of wheels/tires and the matching body!

Even if the MR-4 MT isn't actually a monster truck, I tried my curb hopping test just to see what would happen. Without a real front bumper, the first things to hit the curb are the front wheels. For climbing curbs with a 4WD, this is perfect as in theory the front wheels would roll up the side of the curb, leaving the rear end to push the rest of the chassis up and over the curb. However, while trying the curb-hop I realized just how much (or lack of) ground clearance the MR-4 MT has. The distance between the lowest part of the chassis and the ground is a pinch less than 1.5" – not exactly monster truck specs. This low ground clearance kept the MT from making it all the way over onto the curb. Midway up the chassis would catch the edge of the curb and the MT would teeter back and forth. Yes it is a truck, but it looks more like a 4WD racing truck than an actual monster truck. Maybe MR-4 RT (racing truck?) would be a better moniker.

After my dry land drive, the test session continued at a makeshift bike track in Pasadena, CA. I took the MR-4MT and a bag full of battery packs to the test site to see how the MR-4MT took to the dirt. During the early evening hours, the temperature was on the chilly side, and with the street tires I didn't expect the MT to grip everything I threw in its path. The MT proved me wrong as the truck climbed a steep incline laced with pebbles and rocks, albeit with a small amount of wheelspin. Even with the Speed Hawg tires, the MT had decent traction off of the pavement. The slight pushing problem in the suspension actually worked well on the dirt. I could do full speed, 4-wheel drifting turns without worrying if the rear end would come around and ruin my picture perfect carve around the big sweepers! Coming off of the jumps, the MT sailed high and flat. Even with the shorter wheelbase the MT wouldn't try to imitate a gymnast in the air. It would just fly, then land softly on the surface and keep going like the jump was never there.

The chassis layout with the batteries to one side didn't seem to affect the MT's handling on the rough stuff either. Turning was equal left and right, and over bumpy gravel the chassis would almost "float" in one position while the suspension did its work. On the dirt, the MR-4 MT was very impressive. The 4WD and capable suspension seemed at home on the dirt. I'd bet that with the off-road tires the MT would be even more fun to drive!

The MR-4 MT's steering system is the same as that found on the sedan version. Note the threaded turnbuckle steering rod.



CONCLUSION

They call it a monster truck, but it performs much more like a racing truck. The MR-4 MT basically works like an MR-4 TC Pro, but with the ability to jump and take to the dirt. Its speeds are higher than expected for a truck, and the 4WD gives it exceptional handling on any surface. I like the fact that most of the parts are interchangeable with the MT's sedan brother, as Yokomo owners like myself already have spare parts for the MT in our toolboxes. I would have liked a different spring setup for more front end bite since the MT turned pretty wide out of the box. Other than that, the MT is an easy to drive, fast and fun machine that should more than satisfy any R/C enthusiasts looking for a cool ride. Now, about that name change...

THE SPECIFICS

ITEM INFO
Part #MR4MT-1S (MR-4 MT) street version, MSRP $295.00. Street estimate $180.00-$200.00. Manufactured in Japan.

CHASSIS TYPE
Molded composite tub with battery tray, separate front and rear bulkheads, center tunnel with Lexan window, molded upper braces and dust covers.

WHEELS AND TIRES
Yokomo one-piece, multi-spoke truck wheels with Pro-Line Speed Hawgs and Pro-Line foam inserts.

TRANSMISSION TYPE
Dual belt-to-pulley drive with front and rear ball differentials, ball bearing-supported outdrives, and metal bushings.

SUSPENSION DESIGN
Independent, molded lower arms, adjustable upper control links with hex adjusters, molded shock towers. Front caster set at 15 degrees; rear toe set at 3 degrees.

SUSPENSION DAMPENING
Coil-over, oil-filled shocks, molded pistons, molded shock bodies, molded shock caps with bleed screws, steel shafts, volume compensating foam, O-ring seals.

VEHICLE TYPE
Electric motor-powered, mid-engine 4WD monster truck.

OTHER ITEMS YOU NEED
2-Channel radio system with 1 servo, electronic speed controller, motor, battery, charger, Lexan paint and CA glue.

OUR TEST GEAR
Futaba Magnum Jr. Radio system, Hitec HS525 servo, GM Racing EVO 15t modified motor, FMA Direct Typhoon ESC, and Racers Edge 1500 mAh stick packs.

MAIN COMPETITION
HPI Racing RS4 MT

RobinsonRacing TC3 Outdrives

Put your drive train on a diet.



Weight... weight... weight. These days lighter is better, especially when you are talking about the R/C world. Forget about weight requirements for a moment, because that isn't exactly what I am talking about. What I am talking about is rotating mass – or lack thereof. Less rotating mass means quicker acceleration, and for TC3 owners who want even more out of their chassis, Robinson Racing has come out with new lightweight aluminum ball diff outdrives to do the job.

FEATURES

Purpose

Right out of the package you'll notice that the Robinson outdrives are lightweight (40% lighter, claims Robinson Racing), due to their 7075 t-6 aluminum construction. The blue anodizing is meant to match the "Factory Blue" theme of the TC3, but it is a lighter shade of blue when compared to Associated factory components. After the anodizing process, the diff ring and bearing surfaces were milled for a precise fit. Two diff outdrives (for one differential) come in a package, so to fully equip your TC3 you'll need two sets. A small instruction sheet and a sticker sheet are included with each pair of diff outdrives.

Pricing and Availability

The Robinson Racing TC3 Aluminum diff outdrives have a suggested retail price of $21.95 per pair. Robinson Racing has been around the hobby for a long time now (primarily doing gears) so their products should be easily found in better hobby shops across the nation.

SETUP AND TESTING

To test the Robinson Racing TC3 aluminum diff outdrives, the plan was to time Editor James Revilla's TC3 around a makeshift local parking lot track, swap the stock outdrives for the Robinson pieces, and have him drive again to see if the Robinson pieces affected the TC3's performance. The actual test car would run the same suspension setup, gearing, motor, and ESC. Both runs (with stock and with aftermarket outdrives) would use the same battery pack, with a cool down period in between for consistency.

Times were taken for five runs each with the stock and the Robinson outdrives installed in the car. The times were then averaged to see if there was a difference. Overall the Robinson outdrives posted consistently faster times around the track, but those numbers alone couldn't actually describe how the car felt while driving. When equipped with the Robinson parts, the TC3 test car felt so much more responsive. Right off the line you could tell that the chassis was faster, as it rocketed forward quicker than when it was equipped with the kit parts. In terms of "seat of the pants" testing, just by bolting in the Robinson pieces you knew you were faster.

Back in the office, we took the Robinson outdrives and put them on the scale to compare the weight savings Robinson claimed over their stock counterparts. Whereas the kit outdrives weighed in at 0.7 ounces a pair, the Robinson Racing outdrives tipped the scales at a feathery 0.2 ounces a pair. That adds up to a total of one ounce in weight savings (when equipped with the Robinson parts both front and rear). One ounce may not seem like much until you consider that one ounce equals around 2% of the legal weight measurement for sedan chassis! Not only do you save overall weight, but these outdrives also cut down on another critical measurement – unsprung weight. This was easily evident in the quicker response that the TC3 had with the Robinson parts installed.

As for any wear and tear, after twelve hard runs with a modified motor and a lot of throttle movement (full throttle launches, hard braking, etc.) the Robinson outdrives still looked new. The fit of the kit TC3 dogbone into the outdrive slot is very close, which leaves a small amount of play for less driveline "shock."Robinson states in the package that the aluminum outdrives won't last as long as the kit steel outdrives, but their performance advantages may offset that suggestion.

CONCLUSION

I personally like spending my money on items that I know work well. The Robinson Racing TC3 aluminum diff outdrives really changed the response of my chassis. Acceleration was harder and quicker, especially off the line. Mid-speed jabs at the throttle translated into an almost instantaneous jump forward. This wasn't just "seat-of-the-pants" testing, as the stop watch backed up what we felt behind the wheel.

Granted, paying three times more than what a stock item costs might turn off some sportsman or weekend drivers; the price will definitely leave these pieces off of a budget racer's wish list. However, the outdrives do exactly what they are supposed to –improving performance while shedding some weight in one of the most critical areas on your vehicle. For the serious, die hard TC3 racers these Robinson Racing TC3 aluminum diffs are lighter, quicker , faster, and well worth every penny!

THE SPECIFICS

Part #1475 (TC3 aluminum lightweight blue diff outdrives)
MSRP $21.95
Manufactured in USA.

ASSEMBLY REQUIRED:
Transmision disassembly and reassembly.

VITAL INFO

Robinson Racing Products
4968 Meadow View Drive
Mariposa, CA 95338
209-966-2465
www.robinsonracing.com

HITS

- Give the TC3 quicker throttle response.
- Very lightweight.
- Look trick.

MISSES

- A little expensive.
- Will wear quicker than original out drives.

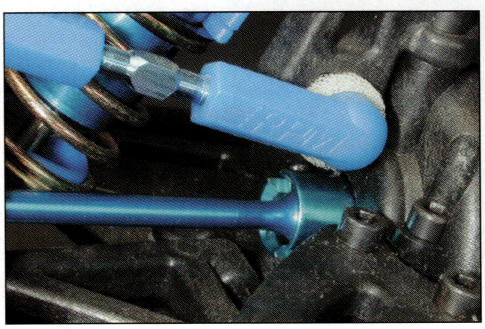
RATING

8 **Celebrity Equivalent: Xena in costume.**



THE LAST WORD

Novice racers might pass on the price, but die-hard TC3 racers want "lighter, quicker, faster," and the Robinson Racing TC3 aluminum outdrives fit the bill perfectly.



Colorwise, the outdrives are a very close match with the stock MIP CVDs that come with the Team kit.

Traxxas' David Katz

In recent years, no single person has had more of an impact on the world of R/C cars than the subject of this Industry Insider interview. David Katz is the man behind Traxxas, and the man behind the explosion of the ready-to-run (RTR) kits that have hit the market. David's an easy-going man who's managed to keep his company focused through good times and bad. We recently had the chance to sit down with David gain some insight on his view of the R/C industry.

Xtreme R/C : How did you get into the R/C industry?
David Katz: I had been in the computer industry for thirteen years. I had three different computer companies and sold one. I was working for the people I had sold it to and just kept my eyes open for any business that looked promising. I wanted out of the high-tech computer industry and wanted to do something that was fun and not as high-tech. A mutual acquaintance introduced me to a man named Jim Jenkins. Jim had had an R/C car company in the late seventies/early eighties. In fact, he was one of the pioneers of the R/C industry. He sold his company and had a five year non-compete clause that was about to expire. He needed help; he wanted to start another company in the industry. He needed expertise along with money and I was able to provide those two things. I researched the industry at that point. I visited hobby shops, asked questions, and determined whether or not there was a niche or need for another company in the industry. I determined that there was and the rest is history. Traxxas began operation in July of 1986.

X: I know that Traxxas has been very successful over the years, but take a look at the computer industry lately. The Nasdaq just hit 5,000 and it's a number of these high-tech companies that are driving that growth. Do you ever look back now and think of the potential that you might have missed out on?
DK: Sure. Had I been in the right place at the right time with the right company and the right product I'm sure would have become successful a lot more quickly than I did in the hobby industry.

X: Has any one event changed your life?
DK: The most pivotal moment for Traxxas was when I bought out my partner, Jim. When every decision needs two positive votes, it's difficult to quickly respond to market reaction and other important issues.

X: What was the first Traxxas kit?
DK: The first product was quite a fiasco. It was called the Wild Cat, and it was a 4WD electric car that we sold fully assembled. The fully assembled, or ready-to-run, product was something we started and stick with to this day. The Wild Cat was 100% defective. We sold the product, we took it back, we fixed it, sold it again, and took it back again. It was almost the demise of Traxxas. The product that really brought us to life in the marketplace was the Cat. That was really what we'd like to consider our first product. It was certainly our first successful product.



X: Traxxas used to be heavily involved in racing. What made you decide to change strategy or philosophy?
DK: The philosophy of this business has never changed. We've always been a ready-to-run company. We ventured off on the racing tangent, but there are reasons why we did that. There were egos involved. Egos that said, "If we want to race, we can race and be successful. We can build a better car." We felt we would build better products than the ones that were available at the time. Going into the racing market was also kind of an experiment in R&D.

X: What is a typical day for David Katz?
DK: My day starts at the gym usually. I work out in the mornings, and start my day at the office around 10am. At that point I read faxes, email, and catch up on what's going on. I like to say I don't have a routine. We have weekly meetings on specific days of the week. On Mondays, we have an advertising meeting, On Tuesdays, we have an engineering meeting. On Wednesday, we have a general meeting, then the rest of the week is pretty open. I really don't have a typical day. I tend to react to what's going on at the moment and to what is demanding my attention.

X: What interests you?
DK: I'm very much interested in cars in general. I read every full-size car magazine I can get my hands on. I'm interested in motorcycles, specifically dirtbikes, at the moment. I'm also very interested in golf, tennis, mountain biking – just about anything that's an outdoor activity.

X:What impact do you think RTRs have had on the market?
DK: It made sense to us fourteen years ago to make a ready-to-run product. When I decided the hobby industry was a possibility for me, I went to a hobby shop. I told them I wanted an R/C car. There was nothing there that I could take home and run that day that wasn't a toy. I realized there was niche that needed to be filled because I was pretty typical of somebody that might walk into a hobby shop. Now, everybody makes a ready-to-run, but we defined it.

X: Do you find that people buying your products and other ready-to-runs are buying ready-to-runs as their second or third vehicles?

Continued on page 94

Resistance & Drag

How to keep both from slowing down your ride.

by James Revilla

When you push a chair across the floor friction and drag between the chair legs and the floor causes resistance. This resistance feels like someone is trying to push the chair back towards you. Here's another example: Hold a simple rubber band between two fingers without stretching it; you won't feel much resistance. But, stretch the rubber band 1 foot out and you will feel the rubber band trying to pull your hands back together. The rubber band offers resistance to your stretching.

For R/C purposes, think of resistance as something that you and your R/C vehicle will be better off without. There are many types of resistance that can be found on an R/C vehicle: mechanical, electrical, rolling, etc. Everyone who races does not want anything to resist their vehicle and keep them from finishing in a good spot. Resistance and Drag comes in many forms and it can affect many parts of your R/C vehicle without you even knowing it. In fact, every single part of your R/C car can contribute to resistance in some way! Using the suggestions below can help you start cutting resistance on your R/C vehicle for more performance and longer run times. Follow along as we go over each point.

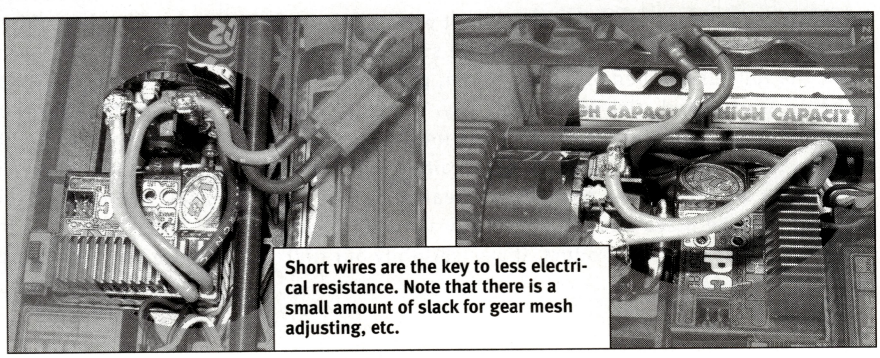
POWERPLANT

Without a powerplant, your R/C vehicle won't go anywhere. With a resistive powerplant, your R/C vehicle will go somewhere, but not as fast as it could. Here are some tips for both electric and nitro R/Cers:

1. Electronics. There isn't much you can do to reduce resistance between the battery, ESC, and motor. If you have standard battery plugs or bullet lugs, you can reduce electrical resistance by upgrading to an aftermarket plug. Changing to larger wires might help reduce resistance to a certain point, but this depends on whether or not you can replace the wires on your ESC. Besides, with today's high tech ESCs eliminating electrical resistance is a major issue and thankfully most of the electrical resistance has been taken care of by the manufacturers themselves.

Wire length is often discussed while on the subject of cutting down resistance in electric vehicles. Since the shortest distance between two objects is a straight line, the shorter the wires on your vehicle, the better. However, most likely you can't run the wires in a straight line, so remember that the shorter the wires are, the less distance your battery power has to travel to get to the motor. Keep those wires as short as possible, but make sure to leave a little slack for unplugging the battery, adjusting gear mesh, etc.

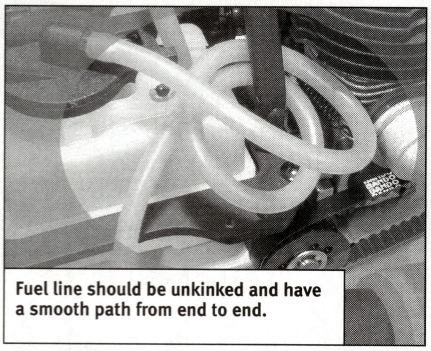
2. Nitro Engines. I know it's hard to keep a nitro engine spotless (especially if you are racing), but "a clean engine is a happy engine." Don't let grime and crud accumulate on the output bearings, engine cooling head, carb, etc. That same crud could slow the engine's moving parts down, thus slowing your vehicle down too! A cleaner engine cooling head results in a cooler running engine (this equals more power), clean bearings allow the engine to spin easier, and a clean carb will give you crisp throttle response and a consistent idle. Don't forget to inspect the air filter! Clogged up air filters block the airflow into



Short wires are the key to less electrical resistance. Note that there is a small amount of slack for gear mesh adjusting, etc.

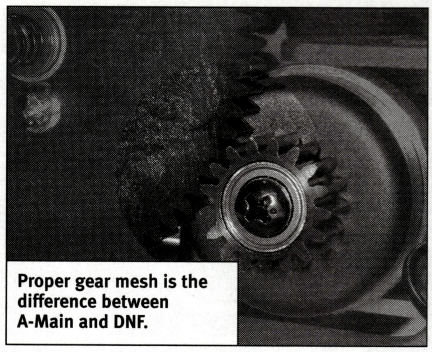
Small metal staples and stuff can't resist motor cans! Keep that can clean.

the engine, and this will definitely reduce power. You should check those air filters after every 5 tankfuls of fuel, and after every 3 if you are driving under severe duty situations (off-road, racing, etc.). Finally, check your fuel line. Kinked fuel line will not allow fuel to flow that well. In this case, more fuel line isn't a bad thing as long as the path from the tank to the carb inlet is a smooth one. Also make sure that the fuel line isn't in a position to get into or in the way of the moving parts on your chassis (like gears, servo linkages).



Fuel line should be unkinked and have a smooth path from end to end.

3. Gear Mesh. Everyone knows that a gear mesh that is too loose will eventually strip the gear teeth, but gear mesh that is too tight will cause many problems including noise, possible gear warp, and unwanted resistance. Make sure you set the gear mesh to the manufacturer's specifications. If you don't have the manual handy, a good rule of thumb when setting gear mesh is to slip a piece of paper in between the two gears to be meshed. Move the gears together until the paper is caught between them, then tighten everything up. When you remove the piece of paper, you should have perfect gear mesh.

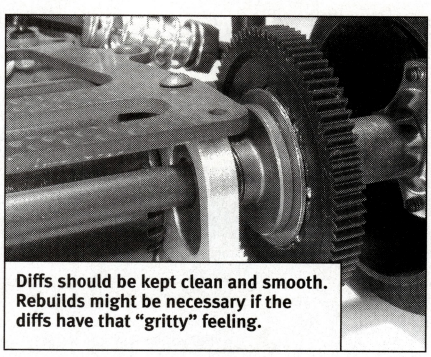


Proper gear mesh is the difference between A-Main and DNF.

DRIVE TRAIN

Most of the moving parts on your chassis can be categorized as parts of the drive system. This includes everything from the transmission to the axles. Less drive system resistance equals better performance and higher top speeds! Here are the points to check on your vehicle:

1. Transmission. It is most important to have clean transmission gears. All of the gears inside your tranny cases (including most bevel gear diffs) run more smoothly and are more reliable when they are clean. Note that I didn't say dry because dry gears will wear prematurely and will be very noisy! When I say clean, I mean the gears are free of grit and dirt. When the instruction manual tells you to put some grease on the gear surfaces, you don't have to squeeze a big gob of grease in between each gear. Too much grease will just fly all over the inside of the gear casing, and eventually into the diff ball bearings which will in turn cause resistance. A thin coating of grease is all that is needed to keep those bevel gears nice and smooth. Always refer to your instruction manual, as there are rare cases when the manufacturer either specifies a certain type of grease to use or says if you should use any at all. The manufacturers designed the tranny, so they should know what's best for your particular vehicle.

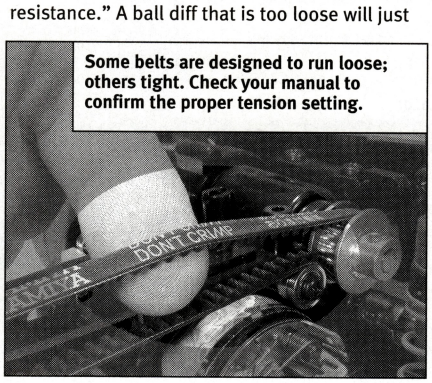


Diffs should be kept clean and smooth. Rebuilds might be necessary if the diffs have that "gritty" feeling.

2. Belts/Shafts. Drive shafts should be inspected every once in a while for wear or other possible resistance causes. First, keep the drive shafts clean. Anything clinging to the side of a drive shaft will cause the shaft to become unbalanced. An unbalanced shaft will not spin as smoothly or as fast as a clean one. Also check for any bends in the shaft. Even if you can't visibly see a bend in the shaft, try rolling it across a pane of glass. With this technique you can easily verify if the shaft is still good or if it is bent. Obviously, replace that shaft if it is bent!

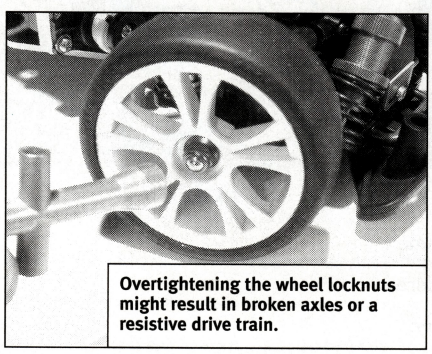
Belts are a different matter. In most cases, I suggest you run your drive belts as loose as possible (without skipping teeth) for the least amount of resistance, but certain cars were designed to run tight belts. Just to be safe, refer to your vehicle's particular instruction manual for the manufacturer's suggestions regarding belt tension.

3. Ball Differentials. Just like gear diffs, ball diffs can cause resistance – more specifically "turning resistance." A ball diff that is too loose will just waste engine or motor power and will eventually melt or get damaged. Likewise, a ball diff that is too tight will not work as quickly and as smoothly as it was designed to. Put a super-tight ball diff up front and you won't do well through tight turns due to your vehicle's inability to turn sharply. Put a super-tight ball diff in the back and your chassis will still resist going smoothly around the race track! When building (or rebuilding) your ball differentials, use a thin coating of grease on the diff washers and diff balls. Make sure you use thrust bearing grease only on the thrust bearings. (Many people just use diff grease everywhere, and this results in an inconsistent diff action.) When you put the diff together, tighten the diff screw down until it stops, then turn the screw back out 1/8 of a turn, checking the diff action after each turn. When your diff is spinning nice and smooth (but not slipping), you've got it resistance free.



Some belts are designed to run loose; others tight. Check your manual to confirm the proper tension setting.

4. Related Components. Here are a few other suggestions related to the drive system. When tightening the wheel locknuts, only tighten the nuts up to the nylon locking portion. That is enough to keep those wheels of yours on your vehicle. Many times I've seen some people torque down the wheel locknuts as hard as possible, then wonder why they'd snap an axle after a slight brush with a track board. Here's why: when you torque down the wheel locknuts, you cause undesired stress on the axle. Also, you



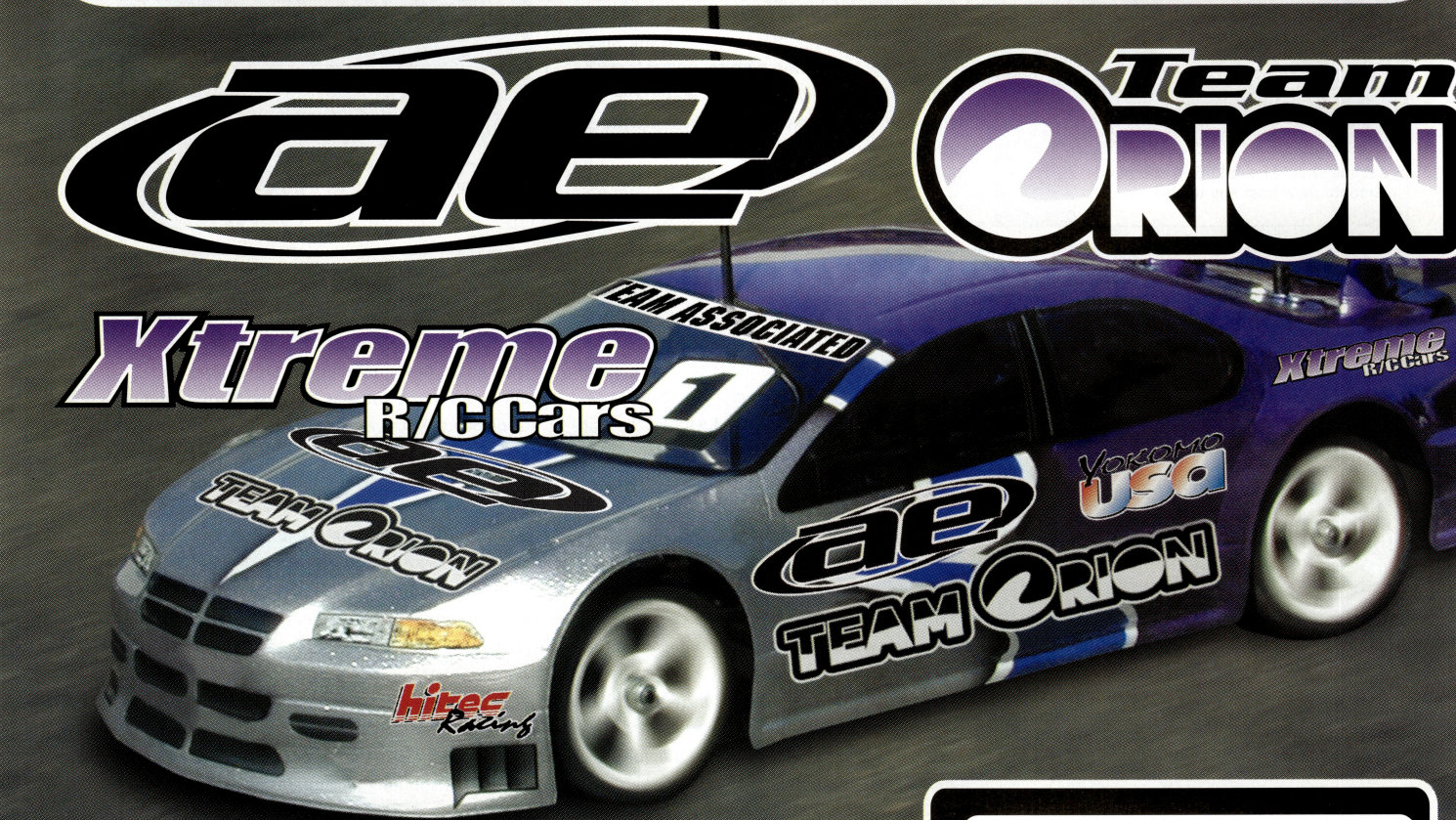
Overtightening the wheel locknuts might result in broken axles or a resistive drive train.

Dust can't resist sticking to your bearings if you use too much oil on them.

June
16th-18th

ROAR ON-ROAD NATIONALS

River City R/C Car Club,Inc.
9711 Sharing Cross Drive
Jacksonville, Florida,32257



YOKOMO USA

hitec Racing

Schedule:
June 12th: check in and open practice
June 13th: open practice
June 14th: open practice
June 15th: controlled practice
June 16th: 1st & 2nd qualifier
June 17th: 3rd & 4th qualifier+ best paint
June 18th: Main events

ROAR Sanction# RN-00-03. ROAR rules apply- ROAR membership required and available at the track

Please Print

Name:

Address:

City: State: Zip:

Phone: ( ) ROAR#: Expiration Date:

E-mail address:

(for confirmation package-if availiable)

Tee shirt size: L- XL- XXL(circle one). Extra stock motors:

Total amount enclosed: [NO Refunds]

Host Hotels:

1.The Hospitality Inn
103rd street
1(800)772-8929

2.Hampton Inn
6137 Young German circle
1(904)777-5313

Classes:	(use channel numbers only)		
1/12th Modified	1:	2:	3:
1/10th Stock	1:	2:	3:
1/10th Modified	1:	2:	3:
Touring Stock	1:	2:	3:
Touring Modified	1:	2:	3:
1/12th Stock	1:	2:	3:

Registration Deadline Date **May 16, 2000**

Stock classes- $60.00 (includes 1 free motor). Modified classes $50.00. Limited to 25 drivers. All entries registations received after May the 16th will be considered late a a fee of $20.00 must be added. Extra motors for stock class $20.00 each, with a limit of three motors per class.

Send entries to:
Bill Fraden
9711 Sharing Cross Drive
Jacksonville, Florida 32257
Phone: 904-268-1948 **Eastern Standard Time**
NO CALLS AFTER 9:00PM
E-mail:wfraden@aol.com

might put too much pressure on the sides of the axle ball bearings, and this will cause the ball bearings to spin slower (causing resistance). There is no need to torque down those wheel locknuts. If you are so paranoid that your wheels might fall off while you are driving, add a drop of liquid thread-lock on the axle. This is overkill, but if you choose to do so you can be sure that you don't bind up the axle bearings by over-tightening the wheel locknuts.

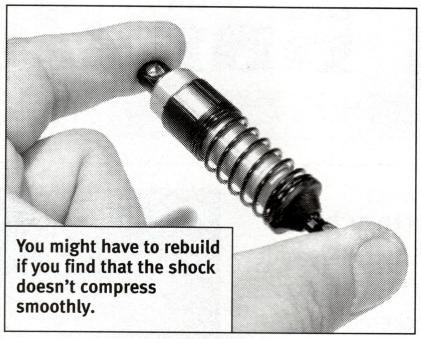
SUSPENSION

The suspension area is one of the most important sections on your R/C vehicle. Having any form of resistance in the suspension area will most likely result in poor handling and inconsistent performance, especially for off-road vehicles.

1. Shocks. Remove the shocks from your vehicle and compress them with your hand. While compressing the shock, ask yourself: does it feel like it is pushing back a little too hard? Do you find that you cannot compress the shocks completely? If you said yes to either question, your shocks might have air in them. This air caught inside will not allow the shock to perform at its best, and therefore will be detrimental to your R/C vehicle's overall performance. Bleed that air from your shocks as shown in the instruction manual.

Also, make sure to put a small amount of oil on all of the O-ring seals on the shock. Not only does this keep the O-rings from premature wear, but it also allows the shock shaft to slide through the O-rings with the least possible amount of resistance.

2. Pivot Points. Anywhere a suspension component bends or moves from can be called a pivot point. Hinge pins are the most common pivot point on an R/C suspension. You want to make



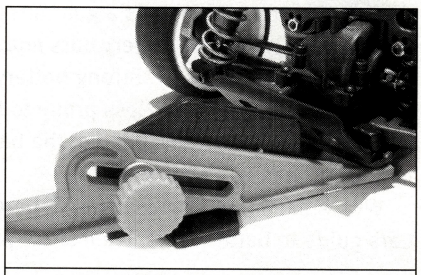
You might have to rebuild if you find that the shock doesn't compress smoothly.

sure that the hinge pins are nice and round with no bends. A smoother hinge pin will allow the suspension components to pivot more smoothly, so make sure those hinge pins are clean and shiny. Some R/C vehicles use a captured ball setup for some of the suspension components. To make sure there is no resistance here, periodically inspect the captured pivot balls. They should be nice and shiny. Any grooves or marks might indicate a foreign substance (i.e., dirt) inside the captured ball assembly. This will not only wear down the pivot balls quicker, but they also contribute to resistance by not allowing the captured ball setup to perform properly.

3. Related Components. Do your steering bellcranks and linkages rub or hit anything? They shouldn't, as this is another form of resistance. Most R/C vehicles are designed with enough clearance to keep the steering rods from hitting or rubbing any other part of the chassis, but in some cases space is an issue. Make sure that the steering components do not hit or rub on anything throughout its full range of motion. If something rubs (say a ball end rubs part of the shock tower), shave away a little bit of the material on either piece to provide more clearance. If you choose this method, make sure that you aren't compromising the strength of either part. Other options include switching to shorter or narrower ball ends, spacing out the ball end with washers to slightly alter the position of the steering rods, and such.

Ride height is important, too. However, this is more of an on-road thing. How would ride height add resistance, you ask? Simple. Whenever your chassis hits the dirt while turning or the nose scrapes the ground when braking, you are basically inducing rolling resistance into the vehicle! A slammed sedan may look sweet on your pit table, but you'll go a lot faster around the track if your chassis isn't leaving graphite scrapes on the asphalt surface.

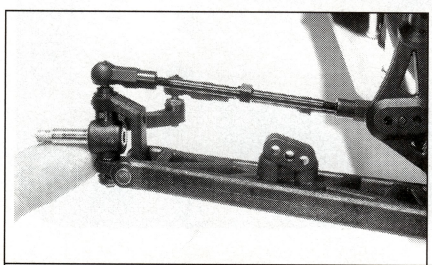
With our smaller scale vehicles, dirt, grime, and mud can become an important issue when discussing our suspension components. All of that packed in mud and dirt anywhere on your chassis add weight. It takes more energy to move a heavier object, so you end up sacrificing some run time when your vehicle is muddy. Dust or dirt can (and will, trust me!) find its way in between ball ends, on hinge pins, and wherever else it wants to cause resistance – not to mention inconsistent handling and early deterioration of some components. By keeping your R/C vehicle clean (and by dusting it off in between runs) you can preserve your R/C vehicle's performance and lengthen the time between general maintenance.

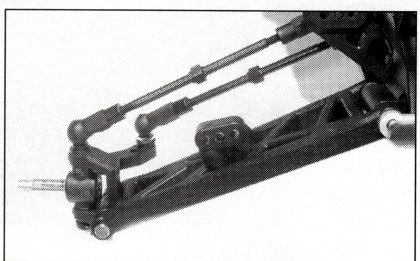


Too low of a ride height will result in a scraped up chassis and slower lap times!

CONCLUSION

Most often resistance works against you. In R/C vehicles, any form of resistance is detrimental to the performance of the vehicle (unless the part is designed to provide resistance, such as slipper clutches). By eliminating, or at the very least cutting down, resistance is all sections of your R/C vehicle, you can be certain that you will get the best handling, steering, jumping, and overall performance out of your ride. Fight the resistance!





To check for any suspension binding, remove the shock and wheel from the suspension arm and lift up the axle, then let go and it should fall freely without any binding. If it doesn't, check hinge pins or screws that are too tight.

Battery Bar Bonanza!

The "hook-up" for your battery cells

by James Revilla

Ah, those sad, unrecognized battery bars.

All they do is form a connection between two battery cells, whereas those other parts like motors and the batteries themselves get all the credit when the checkered flag waves. Well battery bars, your importance is taken for granted! Without you there would be no way to power that same motor from those same batteries that everyone pays attention to when someone wins!

Ok, so maybe battery bars aren't as celebrated as the other components on an R/C vehicle. And maybe battery bars will never read this article. However, battery bars are one of those items that everyone ends up using at one point or the other. Also, regardless of their lack of recognition, battery bars are very important! One lost or detached battery bar equals a guaranteed DNF on the track. Properly shaped battery bars equal a flatter and straighter pack assembly. Strong battery bars translate into a battery pack that is less prone to failure due to hard impacts or roll-overs. Yes people, the battery bar is more important than you may think.

With a bar's importance in mind, here's the Xtreme R/C Cars guide to battery bars. We'll show you and tell you



everything there is to know about the battery bars available on the market, like how they fared on our resistance test, how they are shaped, how easy they are to solder, etc. So before you head out to your local shop, ask for battery bars, and take whatever they give you, take a look at this guide first. Although most battery bars look pretty much alike, there are slight differences. Read on and you'll see exactly what I mean!



Deans Racing Probar 2.0

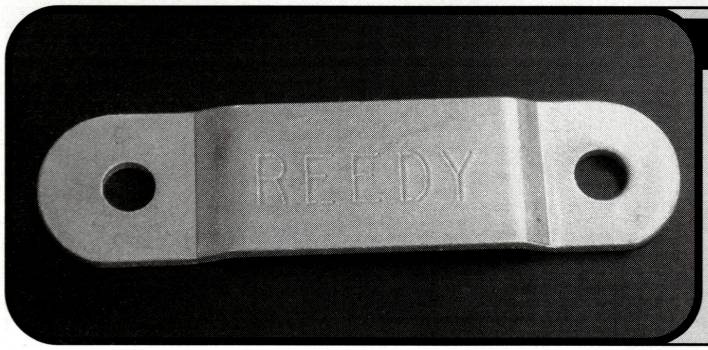
Deans battery bars are a staple of the R/C community. Everyone has either seen them or used them, and a lot of drivers swear by them. The Deans bar is made of silver plated alloy and features the Deans name stamped into the center. Each bar has a slight arch shape that helps then to clear and cell shrink wrap. The ends of the bar are marked for polarity, and the plus and minus markings double as convenient holes for solder to flow through. Deans bars are easy to solder and they stay in position while soldering.

Trinity Watt Bars

Trinity offers three versions of their Watt Bars: silver plated, platnum, and copper. Both types of battery bars are stamped with the Trinity logo on the center, and feature rounded ends. Each end is stamped by polarity (plus and minus sign) and the minus end of the bar is bent down to compensate for the higher positive side of battery cells. The ends of the bars aren't flat due to the stamped polarity markings. Soldering using the Trinity bars was okay, but to get it perfect you'd need a hotter iron to compensate for the uneven top surface of the Trinity bar.



We had enough battery bars to solder up 25 six-cell battery packs.

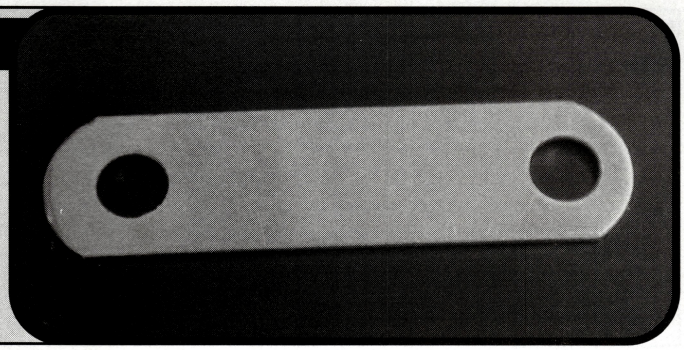


Reedy Silver Treated Bars

Reedy's silver treated battery bars are made of copper. After being treated they have a faded gray look to them. The bars have arched centers, rounded ends and a single solder hole on each end. The Reedy name is stamped on one side. The Reedy bars look similar to the Niftech pieces, but the Reedy bars are much wider for more cell contact area. If you look close enough you'll notice that although there are no plus/minus markings on the bar's face; the end tabs of the bar itself are unequal in length for polarity marking (shorter side to positive, longer side to negative). The thin bar and its flat ends make soldering easy and quick.

Racers Edge Gator Bars

Both the Sterling Silver and Super Silver battery bars from Racer's Edge feature large solder holes and rounded ends. Unlike most of the other battery bars in this guide the Racer's Edge bar is flat, with no arch shape. They are also thinner than the other bars in this guide - thin enough to bend out of shape easily. In terms of looks, these bars are just as plain as the GM Racing bars, but then again looks aren't everything. The Sterling Silver bars are pure silver, while the Super Silver battery bars are actually copper with a silver plating on them.



Battery Bars vs. Braided Wire

Just looking at all of these different brands and types of battery bars begs the question, "Why not just use small pieces of wire?" When you think about it, it's a good question. After all, we use wire to bring the voltage from the battery to the motor. Okay. There are motor plugs and speed controllers in between, but basically the battery and motor meet each other through wire. So why use battery bars? The answer lies in convenience and battery pack integrity.

First let's get to convenience. Even if wire is easier to come by, have you ever actually tried to solder a small piece of wire to the end of a battery cell? Saddle pack racers have, and they know that without patience or a third hand the wire always seems to want to roll off the end of the battery a few times before you can solder it in place. With battery bars, there's no such thing as rolling. The battery bar itself is flat, so when you lay it across two cell ends, the bar will stay there.

Next, let's talk battery pack integrity. What am I talking about? Well, if you've been in the hobby for awhile like I have, you'd know that properly soldered battery bars can hold a side-by-side pack perfectly flat, even if you don't stick the cells together beforehand with Shoe Goo or CA glue. (However, we still recommend sticking the cells together anyway for safety.) A battery bar's contact area to the cell is much larger than the contact area of a piece of wire, which has multiple strands of thin wire twisted together. The battery bars have a stronger hold on your cells, keeping your battery pack together.

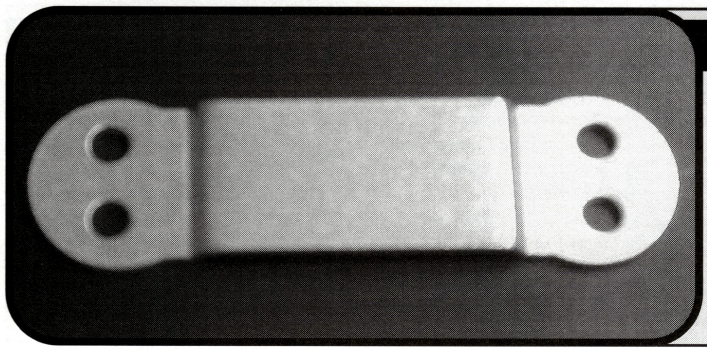
So what if you get in a big smasheroo and your battery pack breaks apart? If you used battery bars, the bar would separate from the cell in a clean break, if it separates at all (properly soldered bars are very hard to pull off of a cell). If you used wire, the separated cell would just hang off the wire, flopping around like a fish on a hook. With the loose cell moving around like that, there's a chance that the other end of the cell might create a short circuit by touching the other end of the battery, or worse, your ESC or motor. This is dangerous as it may result in fried electronics and/or maybe even a fire.

Even if wire is used for ESCs and battery plugs, we say stick with battery bars when soldering together your primo battery cells. Battery bars aren't that expensive, they are easier to work with, they have low resistance, and they are beefier than a piece of wire.

Futile Resistance?

To test the voltage drop of each battery bar, I used a Team Cobra Vari Drive power supply and a Fluke multimeter to take measurements. A specific amount of voltage was sent through the battery bar and measurements were taken at both ends of each bar. The difference of these two measurements would equal the voltage drop of each bar being tested. The results of my testing are showed that all of the bars registered 0.00 resistance when measured to the 1/1000th of an volt. This doesn't mean that the bars have absolutely zero resistance; it just states that when measured to that degree the bars are pretty much equal, so resistance shouldn't be a big factor if you are choosing between any of these bars in our battery bar guide. How easy each bar is to solder correctly should be a greater factor.

To check for plating we did an easy test: scrape the surface of the bar with an X-Acto knife



GM Racing Battery Bars

Both the copper and silver GM Racing battery bars are arched with rounded ends and two solder holes. The rounded ends cut down a little on weight. These are the same battery bars GM Racing packages with their VIS unassembled battery packs. For being as plain looking as they are, they do a pretty good job when it's time to solder. The wide footprint of the GM bars make it very easy to position the bars for soldering. The bars themselves heat up quick enough to melt the solder without damaging the cells. The silver bars are silver plated copper.

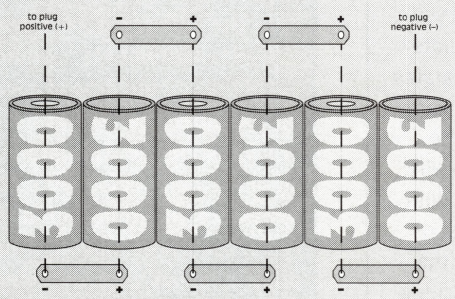
Team Orion Battery Bars

Team Orion's battery bars come in four different flavors, and are easily recognizable since the Orion logo is stamped on each battery bar. All of the bars (regardless of metal type) have an arched center to clear shrink wrap. The Orion pieces also have three solder holes per end (six holes per bar) where solder can freely flow to the cell face. The Platinum bars are on Orion's top deck, followed by the gold, silver, and copper versions. Of the manufacturers represented in this guide, Orion is the only one to offer a Platinum battery bar. The Orion bars are plated copper. Orion's bars are thin and heat up quickly when soldering.



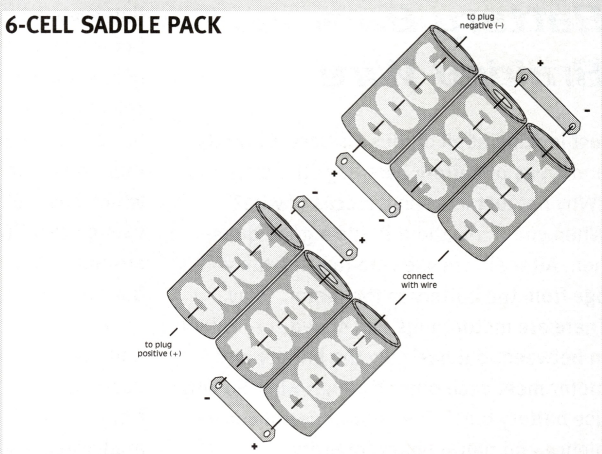
How many do YOU need?

If you've read the information chart on the battery bars we've looked at, you'll notice that they come in different numbers per pack. How do you decide how many bars you need? It depends on what kind of battery pack you are building. Is it different for each type of battery pack? Yes, see the diagrams below for the type of pack assembly your vehicle uses:

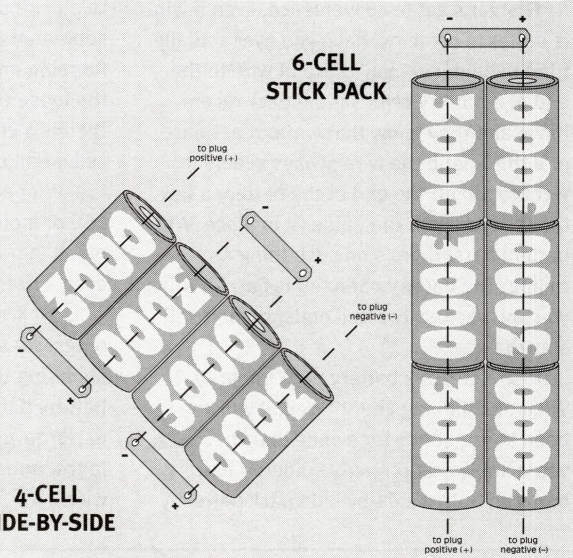


6-CELL SIDE-BY-SIDE

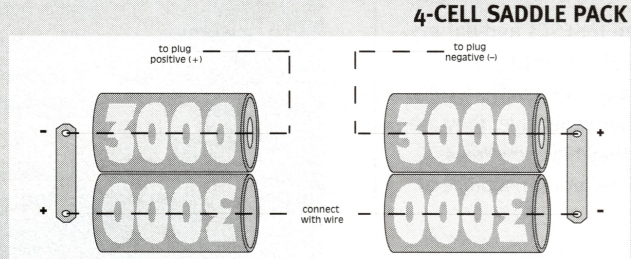
6-CELL SADDLE PACK



6-CELL STICK PACK



4-CELL SADDLE PACK



4-CELL SIDE-BY-SIDE

Other Uses for Battery Bars

Battery bars may seem like simple little things, but carry a couple in your pocket and you'll find other uses for them. Here's a few we found:

Keychain: Since Niftech's bars have two large holes on either end, you can pop a keyring on each side to combine all of those keys into one easy to hold unit. If you're really weird, you can customize your jewelry by looping your hoop earring through the Niftech bar. Just don't get pissed off at us every time you are hassled at the airport metal detectors.

Chopstick Holder: Eat Chinese food and you'll know that your plate can fill up with all kinds of stuff. When you want to reach for that drink, where do you put those chopsticks? Instead of jamming them into stir fried chicken (a la a flagpole) and risking poking your eye out when you reach for the soy sauce, use some manners and lay them on top of a GM Battery bar battery bar instead. The subtle angle in the bar will hold up the eating end of the chopsticks to keep them off of the tablecloth.

Practical Joke Aid: So you're planning the old "hot sauce in your friend's burrito" trick? Well, if you also order a burrito, you might get confused as to which one has the "secret sauce" when they are side by side on a platter. No fear. Take a Deans battery bar and position it next to the plate with the plus symbol pointing to the easy-to-eat burrito and the minus symbol pointing to the burrito from hell. Now, when you reach for the grub you'll be sure that your buddy will get the minus burrito - the one with the Devil's juice squirted in it!



Instrument of Mass Hysteria: If you turn Orion's battery bars sideways, the three holes on the ends give the bar that "surprised alien" look. Now here's the trick. Get a lot of Orion bars (I'm talking thousands) and start some story that tiny, two-headed metal aliens are secretly planning to take over the whole world. Start tossing these bars anywhere near the people who are dumb enough to believe you and watch as they run in panic yelling about "the end of the free world" and "Armageddon" is here!" and so forth. Okay, if you are successful with this idea, you're either going to be the next President of the United States or the next Television Info-mercial king raking in millions of greenbacks.

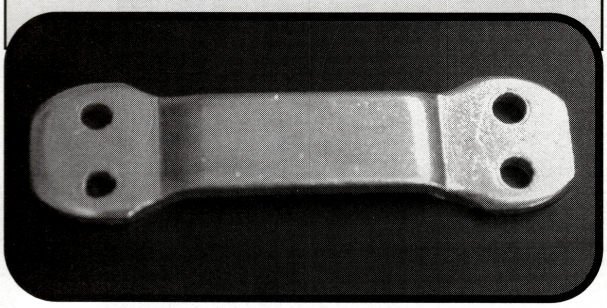
Niftech Precision Bars

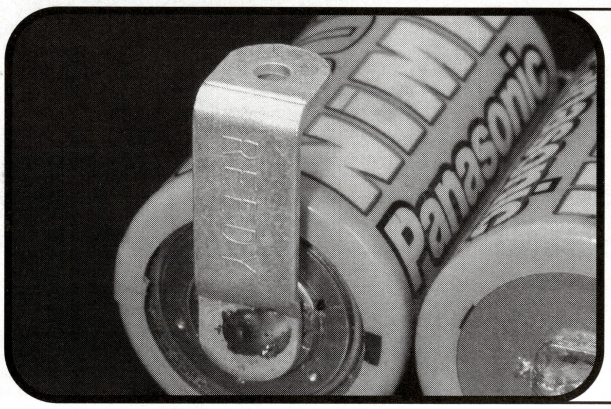
Niftech Precision has a large selection of battery bars. Their Solid Silver bars are claimed to be 99.8% silver content. The other bars they offer are based on 100% copper bars with either 24k gold, silver, or no plating. The Niftech bars are arched with rounded ends and a large solder hole on each end, which aided in getting the solder to flow to the cells quickly. All of Niftech's battery bars are available in a thicker 0.40" but there is an increase in price. Also, depending on the grade of battery bar you might have to buy 4, 8, or 21 pieces at once. Niftech bars solder quick and easy due to their flat ends.



Integy SilverMax Bars

Integy Technologies SilverMax high current battery bars are silver plated with an arch shape that is high enough to clear two layers of cell shrink wrap. Each end has a hexagon shape to them with two holes punched in for solder flow. These bars are the same SilverMax bars that Integy packs along with a set of their unassembled matched VESC battery cells. The Integy bars took a little longer to solder due to their thickness. Their hexagon shaped ends made it easier to position the battery bars across the cell terminals without worrying about the bars tilting or moving while soldering. The Integy bars are silver plated copper.





Keep Tabs on Your Soldering

Some racers like to hard-wire their batteries. However, if you constantly solder a wire on and off of the cell itself sooner or later the cell will deteriorate due to the constant exposure to high temperatures. Racers get around this by soldering an extra battery bar onto the last cell of the assembly. This extra bar is then bent to create a "solder tab" for your ESC wires. With this setup the soldering iron's heat goes more to the solder tab than the actual cell, saving the cell from heat exposure.

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T3590	Blue Front Arm for MR4TC	$25.95
T3591	Blue Castor Block for MR4TC	$25.95
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T3593	Blue Steering Block for MR4TC	$25.99
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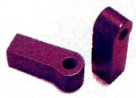
OPTION PARTS FOR YOKOMO MR4TC



STEERING BLOCK FOR HPI



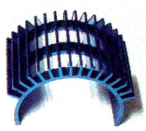
SERVO MOUNT



7 DEGREE CASTOR BLOCK FOR YOKOMO



FRONT GEAR BOX FOR HPI



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+1 TOE-IN REAR HUB CARRIER FOR YOKOMO

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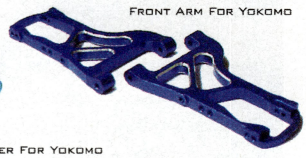

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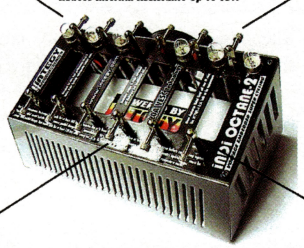

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E1334	Purple Rear Gear Box for Pro2, RTR & Nitro2	$25.99
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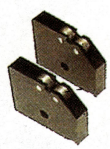

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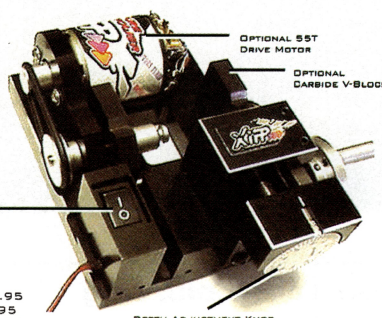

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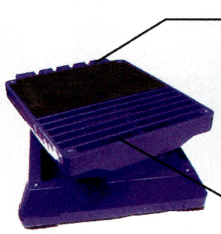

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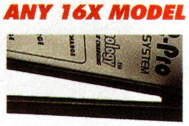

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Continued from page 83

DK: We find it to be ready-to-run all the way. We just started asking for pictures of Racers Rides for our website and we're finding people owning multiple Traxxas products. One guy bought a T-Maxx as his first car; a couple of weeks later he bought a Nitro 4-Tec. I think the industry is confirming that ready to-run is it and is the future of the business.

X: Where do you see the R/C car industry going?
DK: I think the industry has chosen its direction. It's obviously substantiated by the fact that a number of my competitors have decided to go into the ready-to-run end of things, instant gratification if you will. I see the hobby industry moving away from the "hobby" part of it where people spend hours and hours building things. I see our industry as a recreational industry where people are simply out playing and having fun. I think we'll see more of that and less of the kit building part of it.

X: Did you expect the tremendous response you've gotten from T-Maxx?
DK: We knew the product was good, but we're surprised and overwhelmed by how successful it's been. We knew we were breaking some new ground technically and providing the public with something new and exciting. But we had no idea that it would be accepted to the extent that it has so far. If you look at the chat rooms on the Net, the T-Maxx is the talk of the whole industry and our orders confirm that. It's been just unbelievably successful.

X: Who has had the most influence on you?
DK: I'd have to say my dad, simply because of his work ethic. He was in the retail business and he worked six and a half days a week, eleven or twelve hours a day. That was the model I grew up following. He's obviously been an influence.

X: Being so heavily involved in the RTR market, your company deals with thousands of newcomers. What are some of the strangest questions or problems your customer service department has had to deal with?
DK: It's unbelievable. We've had several situations where people failed to put batteries in the transmitter. We had one guy send us his car after he had jumped it off of his roof and into the swimming pool. There was one guy who wondered why his fuel tubing and fuel tank had melted. We asked him what kind of fuel he was using. He said that he didn't know it mattered and that he was using Exxon.

X: What's your company's biggest challenge in keeping pace with the growth you've seen over the years?
DK: People. We need help in every department in the company. Our growth has been so dramatic that staffing has become our biggest obstacle. We're bringing in people from every part of the country and even foreign countries to fill the needs that we have.

X: How many people does Traxxas employ?
DK: At this location we have 35 people. At the factory we have about 130 employees.

X: I heard that you once lost an entire cargo container of kits. Is this true? What happened?
DK: Yes, we did. It's happened twice if you can believe that. Once a container full of 1500 kits was thrown overboard; it's at the bottom of the Pacific Ocean as we speak. When a ship encounters rough weather, it's the Captain's discretion if he needs to toss containers in order to save the ship. No matter how many hundreds of thousands of dollars worth of product might be in those containers. Another time we had a container damaged by a storm. The entire content of the container was unrecoverable because everything was water logged.

X: What kind of car do you drive?
DK: My daily driver is a Ford F-150 4WD.

X: What's your favorite movie?
DK: I don't know if it's my favorite, but I like The Commitments. It's about the Irish rock band.

X: What's your favorite TV show?
DK: I'm an ER junky.

X: Thanks for your time, David. Good luck with your future endeavors.
DK: You're welcome. It's been my pleasure.



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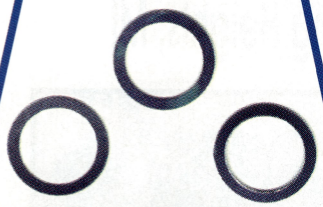

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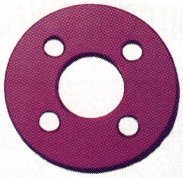

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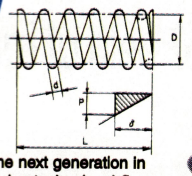

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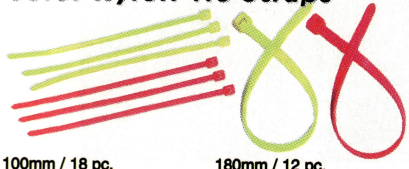

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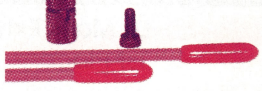

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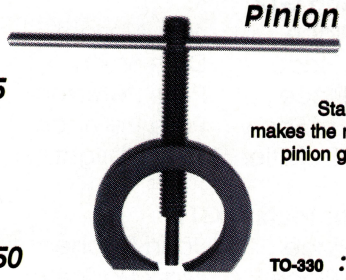
Pinion Puller



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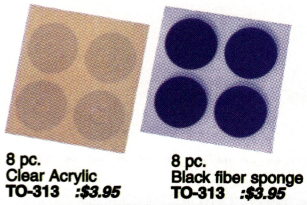

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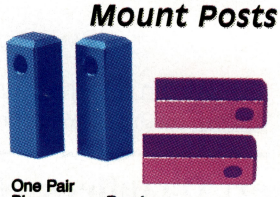

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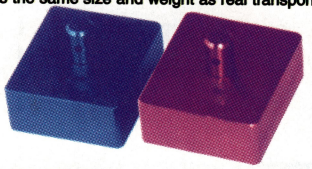

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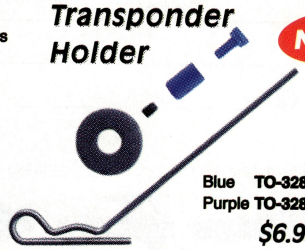

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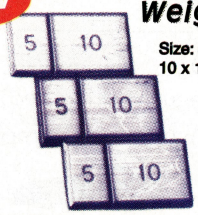

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2nd Place	Erik Wippler
3rd Place	John Woodring
Best of Show	Michael Dabia
Top Qualifier	Dale Smith

Touring GT2

1st Place	Jess Albright
2nd Place	Dale Smith
3rd Place	Pete Peterson
Best of Show	Pete Peterson
Top Qualifier	Jess Albright

Super Touring GT1

1st Place	John Discher
2nd Place	Mark Rodney
3rd Place	Dean McEwen
Best of Show	Fred Lisk
Top Qualifier	John Discher

Mini

1st Place	Ralph Duncan
2nd Place	Erik Wippler
3rd Place	Dennis Holcolmb
Best of Show	John Drazba
Top Qualifier	Erik Wippler

Le Mans Exhibition

1st Place	Mark Rodney
2nd Place	Jay Streeter
3rd Place	Terry Sykes
Best of Show	Jay Streeter
Top Qualifier	Mark Rodney

TL01 Spec Exhibition

1st Place	David Fontenetta III
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3rd Place	Robert Leppan
Best of Show	David Fontenetta III
Top Qualifier	Robert Leppan

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

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

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2	Matt Francis	XXX	Silver Wide Body	Silver Taper Pin	Trinity
3	Billy Easton	B3	Silver Wide Body	Silver Taper Pin	Reedy
4	Chad Phillips	XXX	Silver Wide Body	Silver Taper Pin	Trinity
5	Greg Hodapp	XXX	Silver Wide Body	Silver Taper Pin	Trinity
6	Rick Hohwart	XXX	Silver Wide Body	Silver Taper Pin	Peak
7	Todd Hodge	XXX	Silver Wide Body	Silver Taper Pin	GM
8	Travis Amezcua	XXX	Silver Wide Body	Silver Taper Pin	Orion
9	Jason Corl	XXX	Silver Wide Body	Silver Taper Pin	Trinity
10	Mark Francis	XXX	Silver Wide Body	Silver Taper Pin	Trinity

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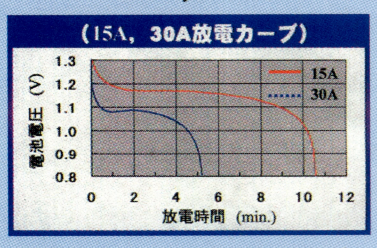

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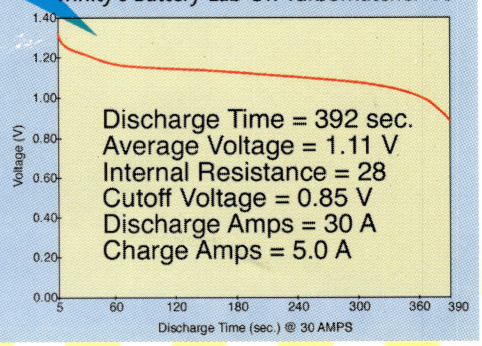

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