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Issue 3.8 MAY 1998

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TEAM ASSOCIATED'S WINNING CHOICE



IPC V6 DIGITAL

#LRP8068

FEEL THE IPC CONNECTION!

YOUR CAR FEELS MORE CONNECTED TO THE TRACK... YOU FEEL MORE CONNECTED TO YOUR CAR!

RACED. Team drivers reported that the IPC V6 Digital Speed Control with the new 6.0 software gives them greater midrange punch and ultra-smooth response with a better, more consistent feel throughout the entire throttle and braking range.
YOU CAN *FEEL* THE DIFFERENCE!

DEVELOPED. The new IPC V6 was developed by LRP engineers and field tested by Team Associated drivers Mark Pavidis and Cliff Lett. The IPC had to meet their exacting standards for performance, efficiency, and consistent operation. **THE RESULT IS A PRODUCT SATISFYING THE BEST DRIVERS IN THE WORLD.**

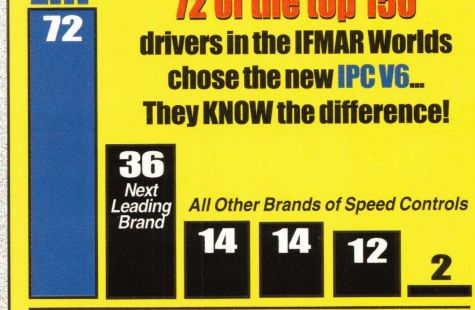
BACKED AND SERVICED. Should your speed control ever need repair, Team Associated backs LRP products with an in-house, fast-turnaround service department of trained technicians right here in the United States.

The New IPC V6 Digital Features:

* Single-button setup
* Acceleration-plus circuitry
* LRP's exclusive Digital Active Current Limter
* Interference-suppression blue metallized case
* Two different adjustable braking systems.
* No motor limit

COMPARE OUR PRICE... Against other top-line racing speed controls!

IFMAR Worlds 4WD Results:

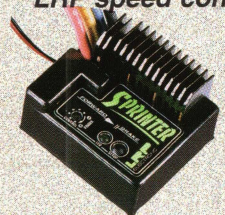


72 of the top 150 drivers in the IFMAR Worlds chose the new IPC V6... They KNOW the difference!

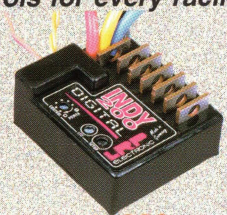
1. Masami Hirosaka, *TQ and 4WD winner*
2. Jukka Steenari — LRP IPC V6
3. Teemu Leino — LRP IPC V6
4. Craig Drescher — LRP IPC V6
5. William Mitchum — LRP IPC V6
6. Billy Easton — LRP IPC V6
7. Mark Pavidis — LRP IPC V6
8. Matt Francis — LRP IPC V6

...and 67 of the top 150 2WD Racers used LRP's IPC V6 too!

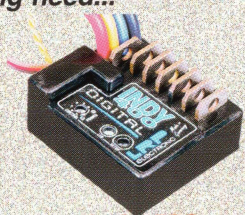
LRP speed controls for every racing need...



Sprinter
#LRP8341
•Digital operation
•Single-button setup
•Current Limiter
•16 to 36 turns



Indy 200
#LRP8346
•Digital operation
•Single-button setup
•Current Limiter
•13 to 36 turns



Indy 400
#LRP8357
•Digital operation
•Single-button setup
•Current Limiter
•11 to 36 turns



Indy 600
#LRP8361
•Digital operation
•Single-button setup
•Current Limiter
•ALL racing motors

Manufactured to the Highest Standards in Germany by

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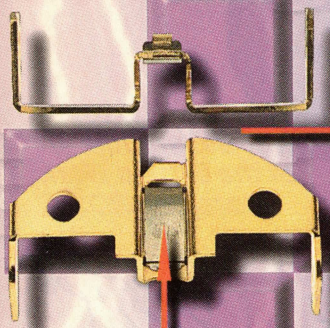
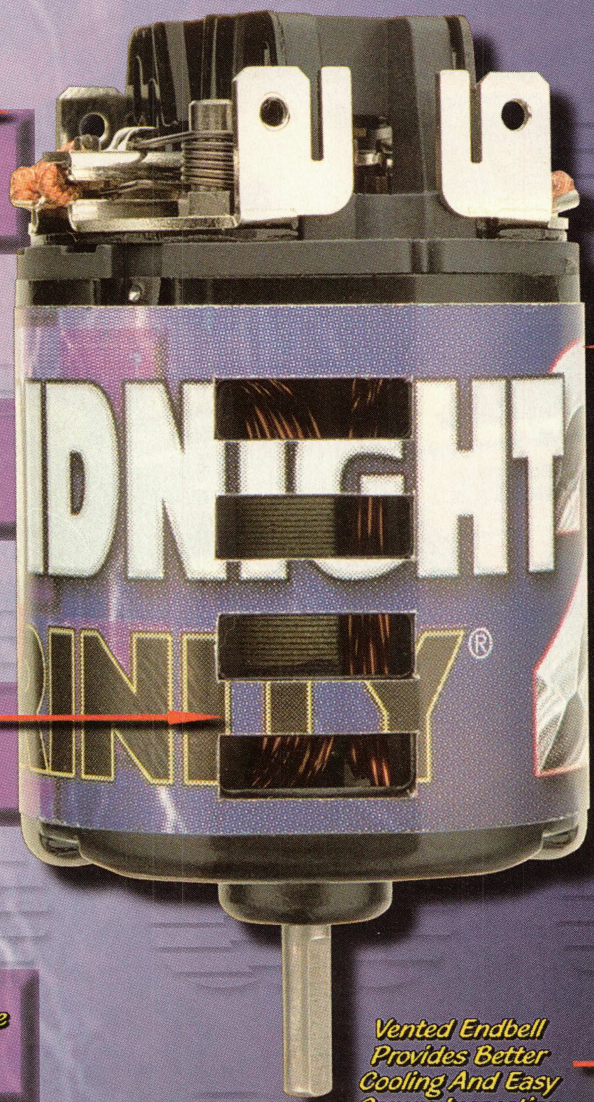


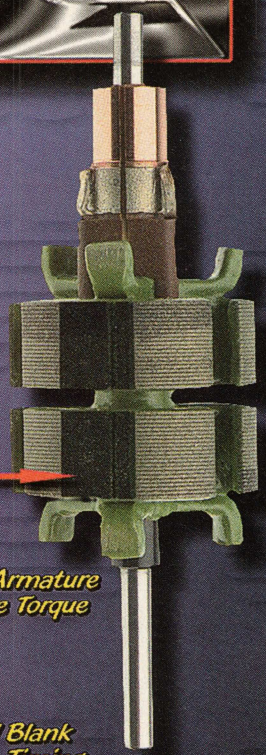
Laydown Brush Hoods Feature A Brush Stabilizing System To End Brush Bounce

More Efficient Venting For Cooler Operation



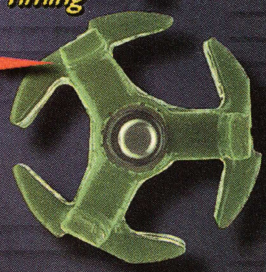
LCG Flat Can™ Moves Magnetic Field Closer To Armature For More Torque And Power





Z Speed Armature Has More Torque

Stepped Blank Increases Timing





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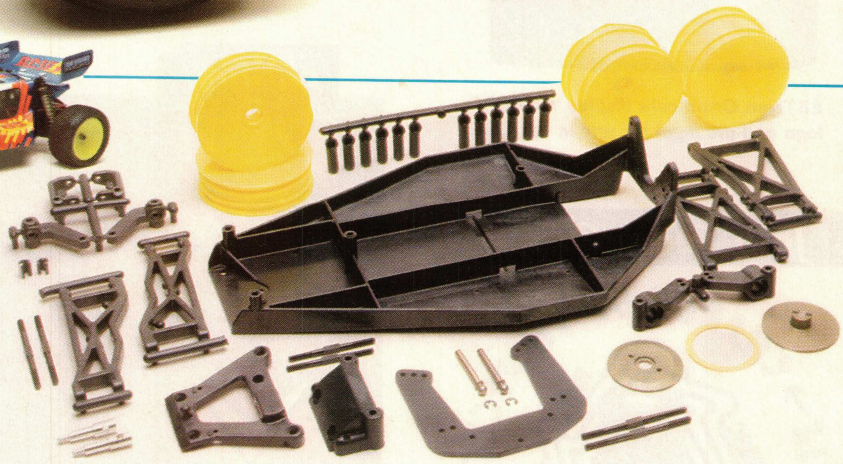
RC10B3 CONVERSION KIT





Update your RC10B2 chassis to full B3 performance for a fraction of the cost of a whole new car!

- *B2 to B3 Conversion Kit # 9022*
- *B2 to B3 Graphite Conversion Kit #9023*



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RC10L2O

RC10L2O oval #8016

Mustang TransAm #8080
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RC10DS

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Gas Parking Lot Racer

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AD #1035/133

V•MAX 2000



All Team Orion cells display the RBRC logo and are legal for sale in the USA.

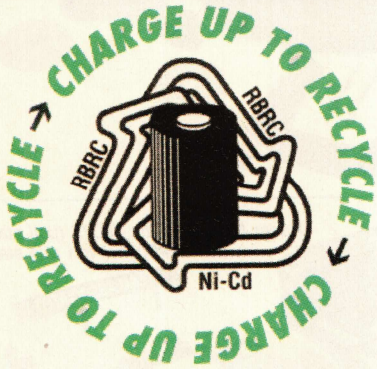
Team Orion V•Max 2000 cells are now available! These new cells deliver 10% more capacity with the same durability as the 1700-SCRC cells. Each cell is treated with the V•Max process that noticeably boosts voltage for the life of the cell without sacrificing run-time.

NEW!! Team Orion would like RC racers to get involved in a new recycling program for rechargeable batteries. Every Team Orion cell sold in America now displays the Rechargeable Battery Recycling Corporation (RBRC) logo. See the information below on how to join the program.



Join Team Orion and help support the RC industry's recycling program.

Join Team Orion!





Also Available:

Cell Type	RBRC
1400 SCR	Yes
1700 SCRC	Yes

Team Orion supports racers and racing organizations. We will continue to sell 1700 SCRC cells for a period of one year so that racers can choose if they want to switch to the new 2000 cells. All Team Orion cells meet ROAR, NORRCA and RBRC rules.

The Rechargeable Battery Recycling Corporation (RBRC) is a public service organization that was started in 1994 by Nickel-Cadmium (Ni-Cd) battery manufacturers to implement a nationwide public education and battery management program. The RBRC collection program is funded by Team Orion and more than 185 other companies who are committed to providing the most environmentally sound collection methods for used rechargeable Ni-Cd batteries. To help the RC industry and Team Orion protect the environment, phone 1-800-8-BATTERY for the RBRC recycling program near you.

On the Web??
WWW.TEAM-ORION.COM



Team™ ORION

Team Orion cells are distributed in North America by:

Peak Performance, 23352-J Madero Road
Mission Viejo, CA 92691 714-707-4683

Trade inquiries to: Neidhart Distributing, 363 Rue de Bernex CH-1233, Bernex, Switzerland FAX 4122-757-4186

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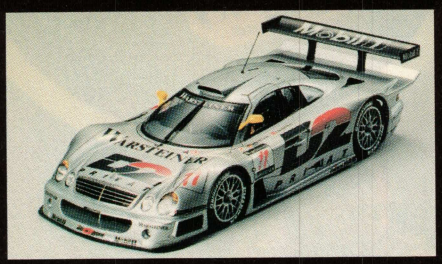
Vrroooom. Big time thrills in 1:8 scale!

The Silver Arrows



1:24 Mercedes CLK-GTR *#24195*

The CLK-GTR was created to be the ultimate Mercedes, a showcase of the finest in engineering and technological expertise.

Now the CLK-GTR has been recreated in 1:24, 1:10 and 1:8 scale.

Our meticulous mold makers have captured every sinuous line of this brutally beautiful machine. From the silver star over the grille to the rear wing and spoiler, these factory authorized kits are authentic in every way.

For the modeler our 1:24 scale static kit features a removable rear cowl to reveal its highly detailed, 6 liter 600hp V-12 engine. Inside the cockpit; the attention to minute detail includes a choice of one of two stick gear changers to match the preferences of drivers Sandro Nannini and Bernd Schneider. The double wishbone suspension, the brake calipers, discs and ducts and even the metal-etched Mercedes hood emblem are all faithfully reproduced. A decal sheet for the FIA GT champion AMG Mercedes Team is provided.

If R/C competition appeals to you then you'll want your 1:10 CLK-GTR (58214/not shown) served up on our race-winning TA03R chassis. This belt drive 4WD has already established itself on the TCS and touring car circuit and our polycarbonate CLK-GTR body with separately molded mirrors and wings, is unbeatable for scale realism.

Then, of course, is the biggest, baddest Benz you can build. Lurking under our giant 1:8 scale CLK-GTR replica is our 4WD, nitro-burning, LS15LT-powered TGX chassis. This is gas racing as it was intended, big, fast and loud.

Don't have a million dollars to buy one of the few real Mercedes CLK-GTR's? Tamiya has the next best things.

TAMIYA

First in quality around the world

1:8 Mercedes CLK-GTR TGX *#44009*

15cc glow engine propels this R/C car to speeds over 60 miles per hour.



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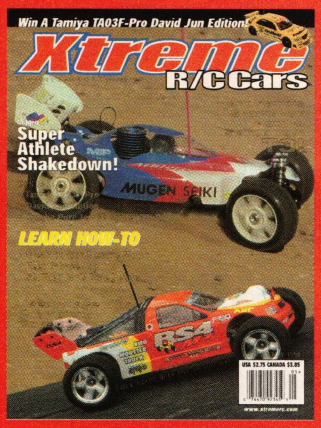

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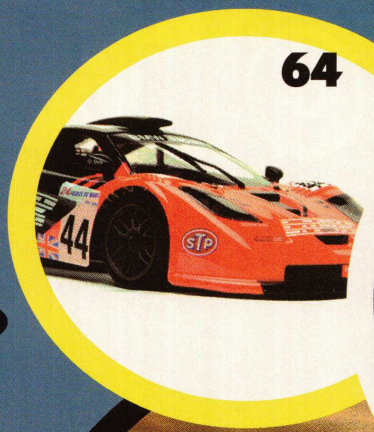



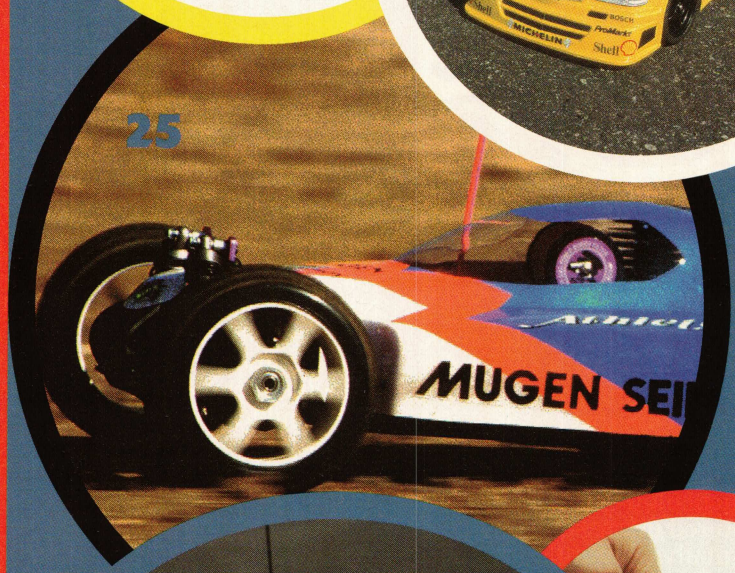

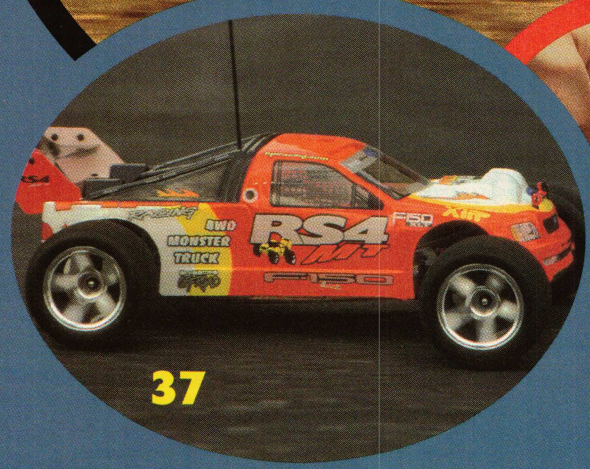



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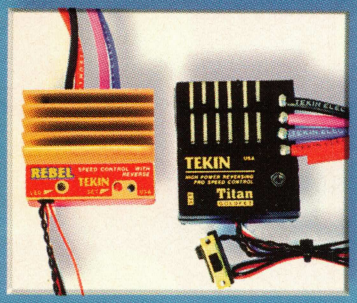
R/C PERFORMANCE GEAR

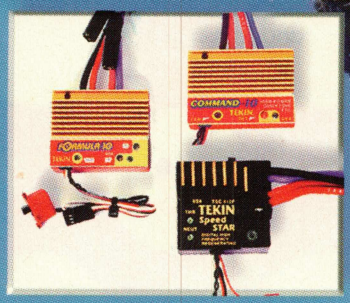




REVERSE ACTION

The REBEL, speed control reliably delivers highspeed forward/reverse/ and brake action at a low price. Unique Thermal Transfer Technology for no over-heating, even with a 10 turn motor. Easy push button setup. Now with new GoldFET III transistors increase power 40% and reduce heat.

The TITAN pumps out maximum amperage with two rows of GoldFET transistors. It can power 10-turn or even dual mild motors, with blazing speed. Built in motor and battery plugs. Adjustable reverse delay 0-5 seconds, plus lockout.



DRIVING FUN

The FORMULA-10 and 412P SPEED-STAR are both are great heavy duty electronic speed controls, at a practical price. No motor worries, the High Torque output won't overload, even with 10 turn modifieds. Smooth proportional throttle control from a slow crawl to wide open. Powerful adjustable braking. Built-in motor diode. Simple manual adjustments. Genuine high frequency operation gives 25% more run-time, plus your motors last much longer.

The COMMAND-10 includes QuickTune one-button setup, and brake light activating wire.
(Lights available separately.)

COMPETITIVE ADVANTAGE

The P-12 and G-12 are our most advanced style, and use only the best quality electrical components, along with patented circuitry, to maximize power and run time. They deliver the precise control and maximum performance top racers demand.

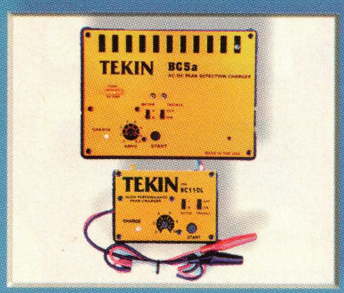
G-12c III adds new CoolSwitch circuit, TurboStart mode, more speeds for smoother operation, and PowerDrive motor interface. NEW anti-glitch software. The G-12c III is *Highest Amp-Flow* (torque) speed control made, for extra acceleration. 1997-8 World Champion.

The G-9 is the only SuperSonic bypassed speed control, for the extra regenerating power and run time to win the biggest races. 1996-7 World Champion. ROAR Champion. Fast for stock motors too.

SPEED EXTREME

The advanced generation G-10 speed control brings new levels of tuning functions, built-in.

Programmable read and set for all critical parameters, including throttle curve, drag brakes, neutral/brake, plus dual current limiters with timer. Easy operation, sets in seconds. Over 10,000 possible setups. Lights advance as throttle is applied. Back mounted CoolSwitch power MOS-FETS improve handling with low center of gravity. Replaceable power wires. Exclusive advanced internal circuitry handles the most rigorous racing and performance demands. Pat Pend.



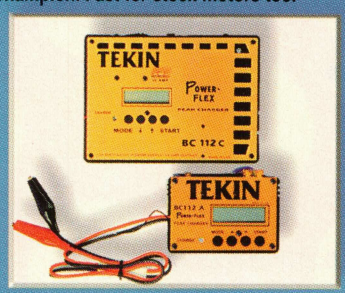
PEAK CHARGING

For basic charging with high-tech peak circuitry, it's the BC5A or BC110L. Reliable performance and rugged durability with 33Khz switching operation. Unique adaptive peak sensing design delivers better charges and longer battery life. Easy to use. Cool, safe operation and complete overload protection. The BC110L DC charger is a full 0-10 amps. The BC5A has a solid 0-6.5 amp AC/DC power supply built-in. COMING SOON, BC120L with built-in discharger.



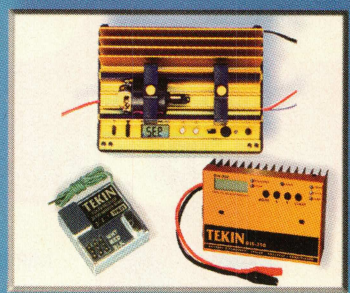
DIGITAL CHARGING

Custom LCD displays and micro-computer operation give you an inside picture to what the cells are doing. BC 48 is 0-8 Amp DC. BC 67 is AC/DC, with 5 Amp power supply built-in. Both feature 4 function LCD digital display, 3 charge profiles modes, and fully automatic operation. Reliable Adaptive Peak Sensing means your batteries are in safe hands. High performance Linear Current outputs for long, powerful runs. Gets you charged properly, reliably, and fast. 4-8 cells.



POWER-FLEX PRO CHARGING

The 112's deliver the best charge with Power-Flex circuitry that conditions the cells internally, so they produce more power with lower resistance, while also extending the battery life noticeably. Charges 1-12 cells, at up to 10 amps. LCD has 5 display modes, and 3 charge profiles with full settings. Connects to optional discharger for a complete high-end battery maintenance/test system. BC112A accepts 10-24volts DC. BC112C has a 24 volt, 10 amp AC/DC power supply built in. World Champion.



RADIO ACCESSORIES

AM and FM chrome micro receivers are super small and light, just 1.4" square, .45 ounce. Perfect for any vehicle. DYN900 motor dyno tests and tunes your motors to peak power. Works with stock or modified motors. Proprietary design has tuned World Champion motors. Digital LCD display. NEW DIS-350 battery Discharger/ Cycler to accurately rate cells. Use alone to discharge packs or cells, or with BC112 for complete cycling system. Portable. 0-30 amp output with adjustable settings and LCD display. 45 amp stress test mode.

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Championship Racing Gear

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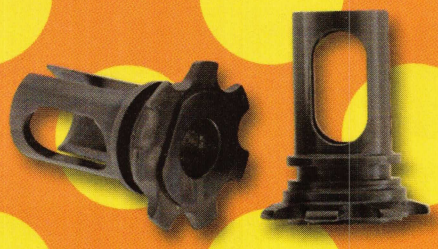
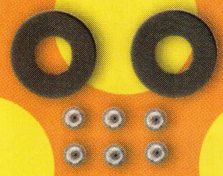
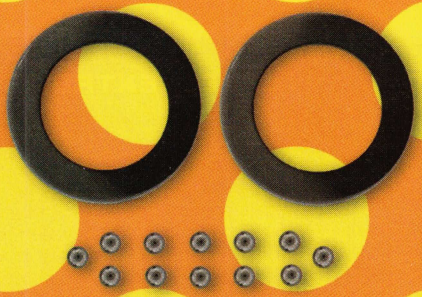
MIP Golden Shock Shafts are precision machined of stainless steel, polished to a micro finish, and coated with the best selection of titanium nitride for smoothness and durability. MIP Blue Seals reduce friction with less swelling and less wear than standard "O" rings.



MIP Lite Drives have been proven to substantially increase your car or truck's acceleration and overall top speed. They are manufactured of high grade steel and lightened in every possible place. Designed for both stock and modified racing conditions, and sold in pairs.



MIP's Thrust Rebuild kits feature two precisionly ground washers that are polished to a mirror finish, high grade thrust balls, and an all new specially formulated lube. Keep your diffs running smoother and lasting longer

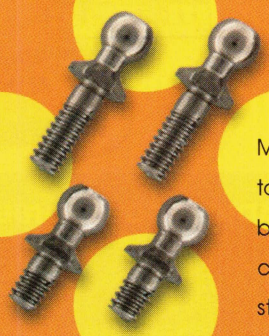


MIP Super Diff Rebuild kits feature the hardest and roundest carbide balls made, polished smooth diff rings, and longer lasting no grit diff lube. Get twice as many runs between rebuilds.

MIP
MIP
MIP
Race With Us!



MIP CVD™ coupling rebuild kits have just hit the market. They consist of two couplings, two cross pins, two set screws and our special Lube and Thread Lock. Kits are available for all 1/10th and 1/8th scale CVD™s.



MIP B.J. Ball Ends are oversized to make for a tighter fit in plastic ball cups, eliminating slop and chatter commonly found in stock linkages. B.J. Ball Ends are precisionly manufactured of high grade stainless steel and polished to a diamond finish.

MIP has the accessories you need, for the car you have!



MIP Graphix

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editorial

Just like the world of R/C cars changes, R/C car magazines do as well. If you haven't noticed or if you're new to the magazine, *Xtreme R/C Cars* has a whole new look. We first shared our new look with you last month. Well this month we're proud to introduce you to four new writers. The first is Nirvan Das. Chances are he wrote the instruction manual for your hand-held cellular phone, but don't let that scare you. Nirvan is a technical writer for one of the largest cellular phone and micro chip makers in the world. Join Nirvan this month as he shows you how to set your car's ride height. Garrett Fong also has technical writing experience and has helped design one of America's best selling full-size pick-ups. Garrett goes from full-size down to 1/10-scale in his review of HPI's new RS4 MT. Richard Dee, the name ring a bell? Richard was the '95 National Tamiya 4WD Sedan Champion. Richard and I have been racing together since '86. A couple of issues ago Richard showed you how to keep things nice and neat, and this month he reviews the Tamiya TA03F-Pro David Jun Edition. When he's not coming up with a new ad or designing a web site for a well known R/C aftermarket company, B.J. Christensen is racing 1/8-scale gas cars. B.J. is the first writer in *Xtreme R/C Cars* history to review an 1/8-scale gas car (and we've got more 1/8-scale reviews coming). And who better to give his opinion, B.J. has placed at many National and world events while racing 1/8-scale gas. I'm sure that our four new writers will provide you with great articles that are informative, interesting, and a pleasure to read. We hope that their contributions make *Xtreme R/C Cars* even better than ever

Thanks to everyone who filled out a Readers' Survey from our last issue and the issue before. As I write this our crack team of analysts is pouring over the thousands of surveys we received. They'll analyze the data and we'll give you more of what you want in the issues to come. Until then, have fun and enjoy your latest issue of *Xtreme R/C Cars* magazine.

See you at the track.

Mike Velez
Editor/Publisher/Racer

The Legal Stuff

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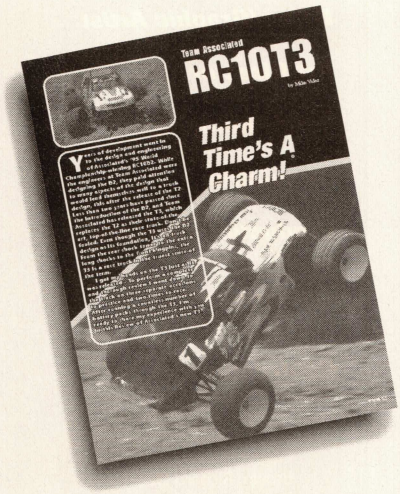
We'd love to hear from you. If you have any suggestions or comments, please feel free to contact us via the above-mentioned channels.

X-mail You Ask, We Answer



Yeah, That's The Ticket

I wonder if you can help me, I'm building a T3 and had a question about the tranny. On my B2, when I built the tranny, it seemed clicky and would lock up now and then. A friend of mine told me to use the Losi XX-T idler instead. When I did. My tranny seemed much better; it was very smooth. Now that I'm building my truck, I'm wondering if I should do the same? It seems ok with the stock idler in there now. Is this a problem only the buggies have? Will changing the idler gear affect the ratio of the buggy or truck in any way? Any other suggestions? Thanks for your help

Chris
via the Internet

I've never experienced the problem you encountered with your B2. Something was probably not seated correctly. If your T3 is not giving you this problem I would leave it alone. The tranny on my T3 is as smooth as can be just as it was designed. And as for your other question, changing the size of an idler gear will not affect the final drive ratio. –Mike

Power Picks

Can you tell me which engine would be best for a Nitro RS4? I don't care if it's a .12 or .15. Thanks.

I'd stick with a .12 size engine. You can get more than adequate power out of a .12 without overpowering as you might with a .15. The Dynamite .12PD or O.S. .12 CV are both perfect matches for this car and are available with or without a pull-start. Whichever one you decide on, be sure to read the article on engine break in last month's *Xtreme R/C Cars* (Issue 3.7). –James

Tranny Woes

I have a Losi Junior T truck that has transmission problems. I want to replace it with the XX transmission. Is this possible? Does anybody know where to get a XX? What modifications to the truck are necessary?

Thanks in advance
Frank
via the Internet

Hi Frank,
Team Losi used to make two different Retrofit XX Trannies (part # A-3050 and A-3051), but they've recently discontinued them. The A-3050 has a drive ratio of 2.19:1 and the A-3051 has a 2.61:1 ratio. The A-3051 comes with longer dog bones meaning you'll need to buy smaller dog bones separately to fit your Junior T. Call your local hobby shops. They still may have one in stock or have access to one of these transmissions for you. The Retrofit Tranny uses a transmission housing different from the one found on the Double-X cars and trucks. The Retrofit bolts right on with very little work needed. Good luck finding it. –Mike

Oil With Ease

I just read a article from your Quick Tips page on your web site that talked about using ultrasonic jewelry cleaner to clean bearings. If this works so well at cleaning the inside of the bearing, couldn't you also use the same technique to oil them after you cleaned them? Couldn't you simply get another cleaner (they are only $20) and instead of using the cleaning solution, fill it up with some nice bearing oil and let the bearings soak? I could easily see having two of these units on my bench to quickly and efficiently keep my bearings nice and smooth.

Thanks for a great mag
Larry
via the Internet

Great idea. Some readers have had problems with Castrol Super Klean that we suggested and certain bearing greases. We suggest using denatured alcohol instead Super Klean. Good luck. –Andy

Single-Cell Use?

Thanks for the review of Tekin's DIS 350. I just have a question. In the article it was not mentioned if the discharger is capable of cycling and analyzing just one cell. I would be interested in doing this so that I can rematch individual cells and be able to build new 6-cell packs from older ones.

Bob
via the Internet

Yes, the DIS 350 is capable of cycling only one cell. In order to do that you will need an apparatus to hold the single cell. To make things easy on yourself you can pick up a cell holder from Competition Electronics (815-874-8001). They just came out with a new holder that fits sub-C cells perfectly. –James

Lengthening Run Times

I'm a newbie to R/C racing and have an RS4 Pro. I went to my local track to practice for the first time and noticed that other drivers had considerably longer run times. I'm using PTI assembled 1800 sport packs. Would using higher-priced batteries such as Orion's V-max 2000 dramatically increase my run times? (p.s. I also use Talon's bulb discharger and Team Speed's Auto-cutoff unit.)

Joe
via the Internet

Since it was your first time at the track, don't feel bad about your run time. Chances are the other guys at the track have been tuning their car's gearing to fit the track to give them a good balance between performance and run time. In Issue 1.8, we did an article on finding the proper gearing. The Pinion Gear Buyers' Guide in next month's issue also touches on the subject. As for the difference between your 1800 sport pack and a pack of 2000s, you will see a difference but not a dramatic difference. Finding the right gear combination will yield the greatest improvements in time. –Mike

Tire Talk

I just wanted to write in and say that the magazine rocks. We need more non-commercialized R/C car mags out there. I totally agree with your reason not to include ads for large mail order houses. Their prices may be cheaper, but you just can't get the kind of service and camaraderie from them that you can from a nice hobby shop, which is most helpful to a beginner or even to the most pro level racer. I enjoy just going and hanging out with the many friends I have made in this hobby and bench racing. I also like to see and hold in my hand what it is that I am buying instead of just seeing a part number.

Now for the main reason I wrote in. I am an avid sedan racer (too bad there aren't many of us here in North Carolina) and I am always looking for new stuff. I found the buyers' guide for touring car tires to be very informative. I have a question. I saw a set of rims that I have never seen before and was hoping that you could help me with a part number or something. The rims in question are the ones on page 56, in the directory for GTP Tires. The rims are the white 4/8 spoke style rim on the part number ps-0067 tires. I was wondering who makes those, are they available in super narrow, and in what colors? I appreciate any help

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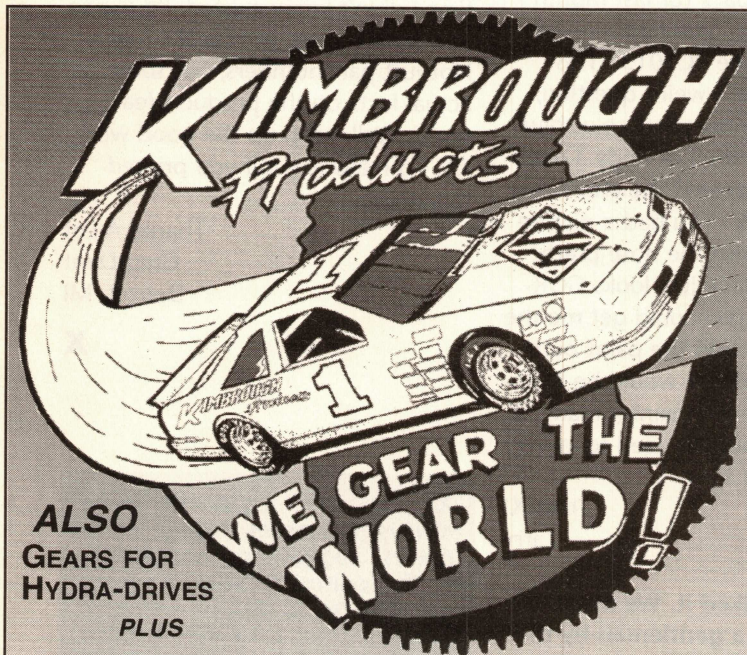

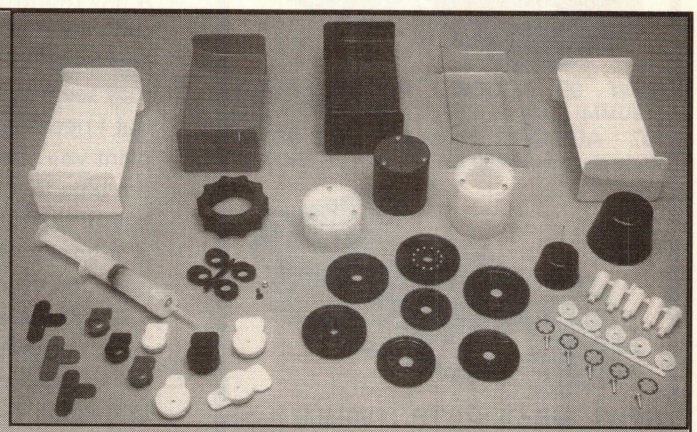

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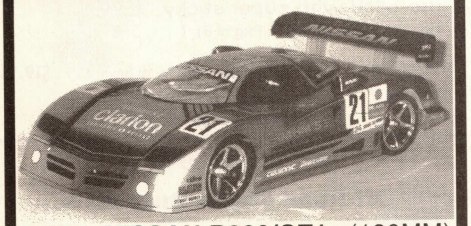

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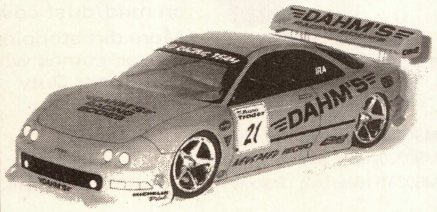

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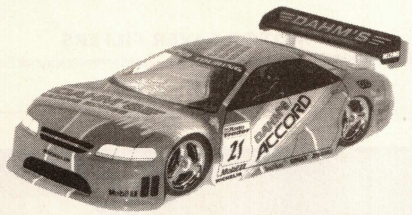

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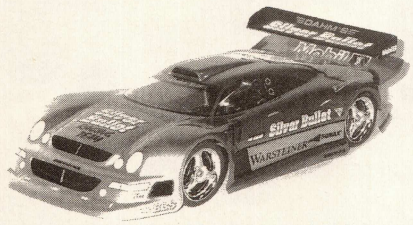

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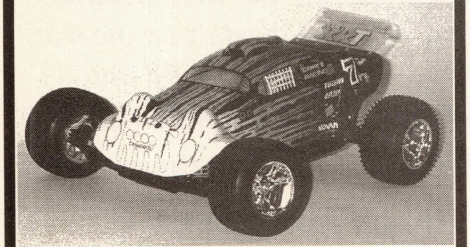

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you can give me. Keep up the great work and I plan to subscribe soon

Gray Smith
via the Internet

Thanks for all the compliments. We're glad you share our opinion on the subject. As for your wheel question, the wheel is from Pit Shimizu, part # PSW 0081. They're 24mm wide. Thanks again for writing. –Mike

Getting Blue

A few months back (or last month I can't remember) you had a review and article on the RC10T3. This may seem to be a weird question, but I need to know what color blue paint you used on that body. I need the blue that covered the entire rear half of the truck. You had a picture of it jumping with the nose pretty high and that blue just looks GORGEOUS! So if you could get me the paint company and the paint number or exact name it would be REALLY helpful. I have a painter ready to paint a body, but we need to know what color that is.

THANX!
Larry

I'm glad you liked it. We must give credit to a gentleman by the name of Thunder Wessels at Team Associated for the killer paint job. As for paint, he used a customized color but it is very similar to Pactra candy blue with an under coat of silver. The body is actually lighter than it looks in the magazine. –Mike

Are You Sure?

I've been racing gas trucks for a while now. I have one question. In Issue 3.2, in the article on setting up the RC10GT with Mark Pavidis, it stated that he uses about 6 inches of fuel tubing wound up in 2 loops to get fuel from the tank to the engine. I always thought it went from the muffler to the tank. Could you possibly clarify that for me.

Thank you,
Tank
via the Internet

Opps, you're are correct sir. That should have read that the fuel tubing is going from the exhaust pipe to the fuel take. Mark does use a longer than average piece of fuel tubing going to the engine, but it's not quite 6 inches.

Bring On The Guides

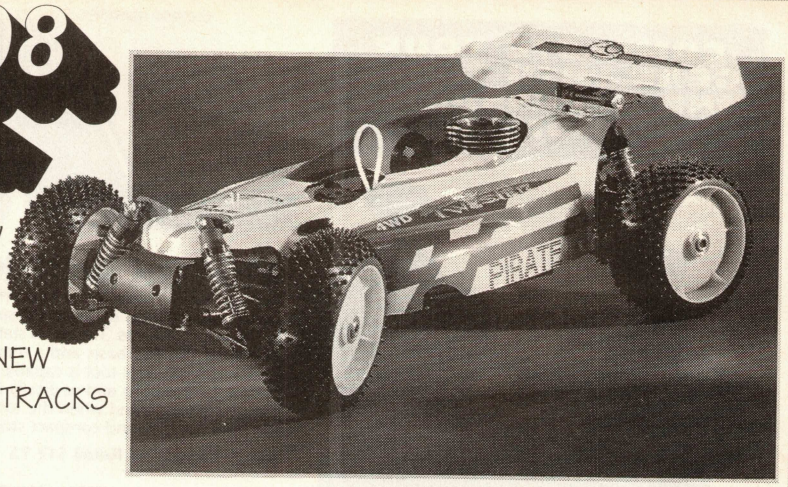
I love your magazine. Every time I check my mail I'm hoping to find a new issue inside. In Issue 3.6 your Touring Car Tire Guide was top shelf. It answered a lot of my questions and showed me some new tires I didn't know existed. I'd like to see more buyers' guides like that. Not just part numbers, but some actual facts on the products featured. Well, keep up the good work. P.S. I'd really like it if you printed this letter.

Thanks A Lot
Greg Dent
Detroit, MI

X

Xtreme R/C Cars magazine always welcomes reader comments, suggestions and letters to the editor. Send your correspondence to Editor, *Xtreme R/C Cars* magazine, 627 E. Edna Pl., Covina, CA 91723. We can also be reached via e-mail at xtremerc@xtremerc.com or FAX us at 626-331-9753. Due to the amount of letters we receive, we cannot guarantee individual response. All letters chosen for publication may be edited for clarity and space.

NEW! for 1998
1/8 Competition buggy



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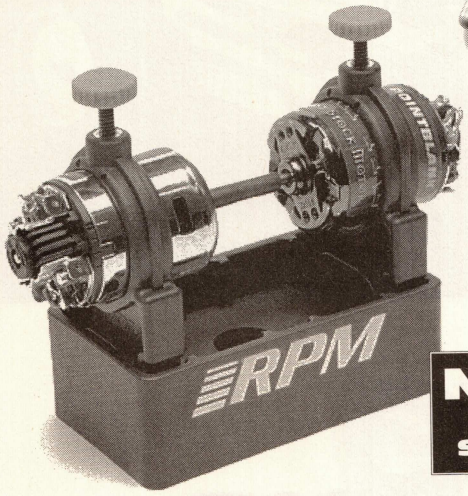

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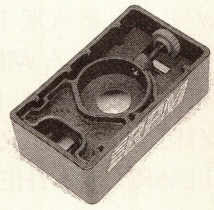

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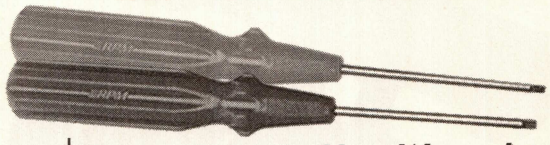
#8050	Module Removal Clip for Airtronics CS2P
#8052	Module Removal Clip for Airtronics C3PS



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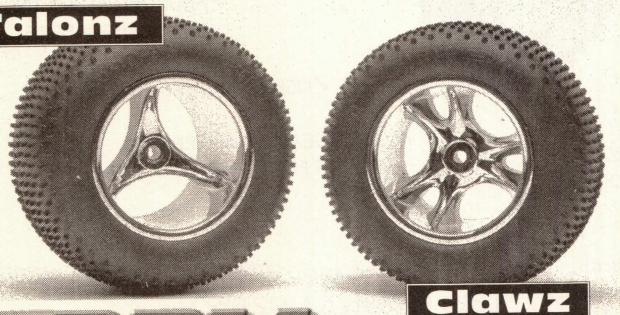
#8030	Black Snap Tite Body Savers: Assoc. (Small dia. (Two Piece design keeps body saver attached to the body with a snap together design. Increases body life by as much as six times!)
#8031	Dyeable Snap Tite Body Savers: Assoc. (Small dia.)
#8033	Black Snap Tite Body Savers: Losi (1/4" dia. posts)
#8034	Dyeable Snap Tite Body Savers: Losi (1/4" dia. posts)

Talonz



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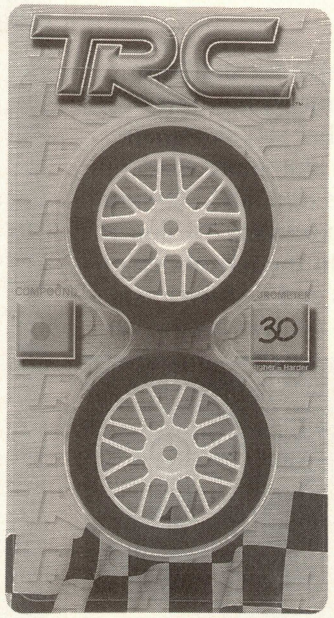
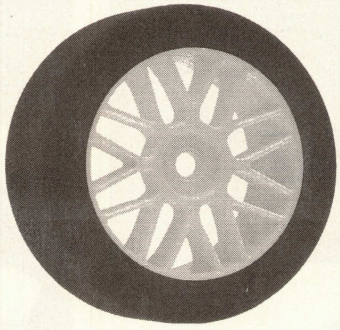
inside line

Read About It Here First!

The Ground Forces Have Landed

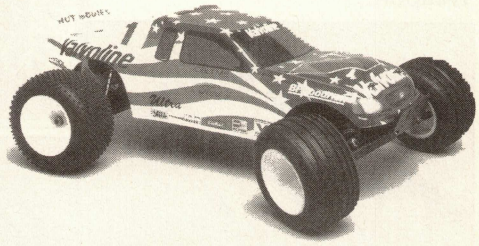
TRC is launching a full line of foam tires for sedans. The new Ground Force™ line of tires come mounted and trued on the wheel. The new tires will be available in two wheel types. The tires will be mounted on a standard hex and offset wheels for HPI, Tamiya, Yokomo, and other sedans with a standard hex and will also be available on wheels made to fit the Losi Street Weapon. The Ground Force tires will be available in standard rubber and exotic. The standard rubber provides the most traction but wear quickly. The exotic rubber doesn't quite provide as much traction, but wears much longer. TRC will provide specific durometer (a tool used to indicate tire density or hardness) readings for each tire pair right on the package. This will provide you with more specific setup information to find that perfect setup at your local track. In Europe and the rest of the world foam sedan tires are common. Here in the States most sanctioning bodies like ROAR do not allow foam tires in the sedan class. With the escalating price of traditional rubber sedan tires it will be interesting to see how the sanctioning bodies and consumers react to the new Ground Force tires.

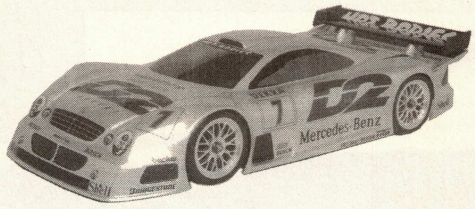




What A Cut Up

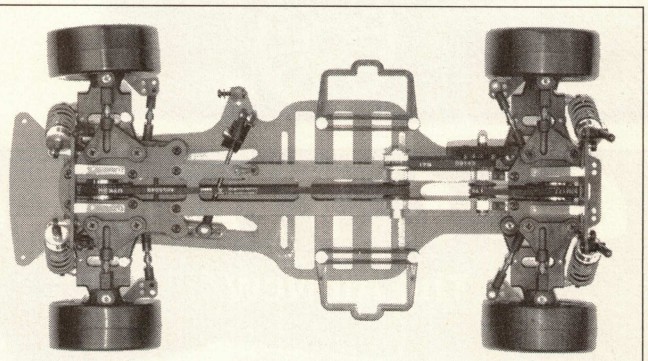
Hot Bodies will soon be including precut window mask for their entire line of bodies. Beginning with their sedan bodies, they'll also be including sponsor decal sheets in the near future. Hot Bodies also plans on providing trim decals with their off-road bodies that will include things like grills, head lights, etc. The precut mask is fit perfectly to windshields, side windows, and other areas of the body that should be masked.

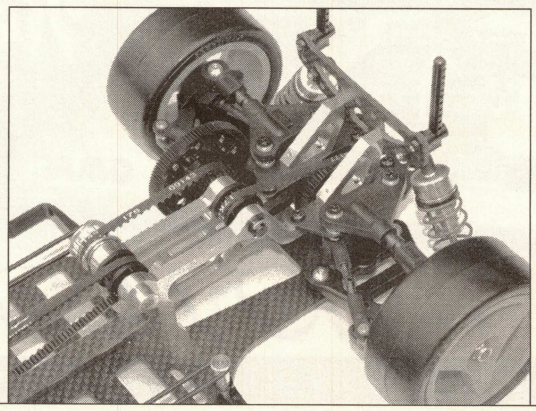


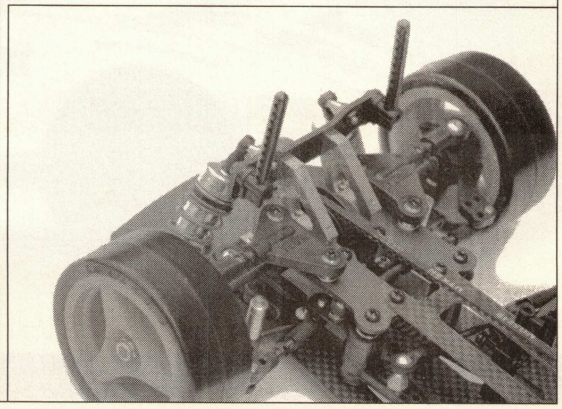


Fully Loaded

In our last issue we alluded to it. Now it's official. Tech Racing is releasing a Voggerd T-10 RS with a number of added features. Some features include a graphite chassis that gives you the option of running a stick pack or saddle; graphite upper deck; graphite shock towers, adjustable steel turnbuckles; complete ball bearings; heavy duty universal joints; light weight rear ball differential; front super active one-way diff; lightweight aluminum front gear box bulkhead; lightweight aluminum rear motor mount bulkhead, and cool-looking neon wheels. GTP California expects to begin shipping the new kit in June. No retail price is official as of yet.



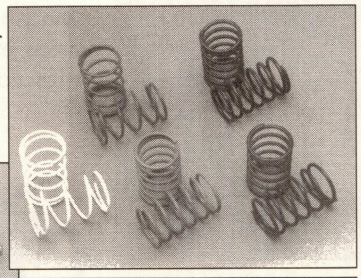


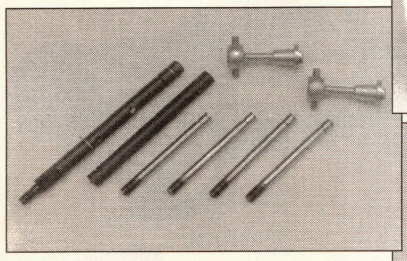


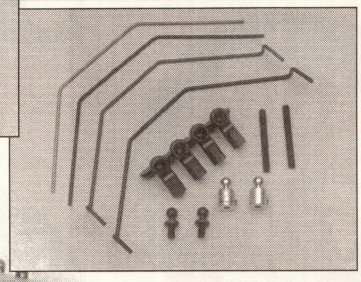
Right: A torque splitter is used on the pulley going to the front one-way. Far right: The front end along with the rear end of the RS is completely adjustable for a number if different setups.

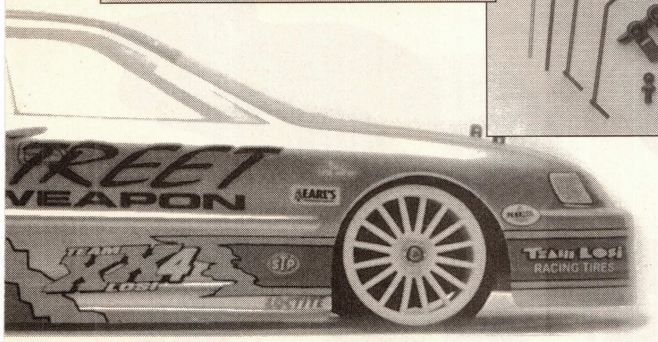
More To Come

The collection of after market parts available for the Team Losi Street Weapon continues to grow. Among the new hop-ups available from Team Losi are a sway bar set, aluminum dogbone/driveshafts, aluminum layshaft, aluminum main shaft, hardcoated suspension mount balls and .36" titanium nitride shock shafts. Team Losi has also expanded the line of available springs for the Street Weapon. In the wheel department Losi's got new 8-split spoke wheels and GM Racing is offering these cool new 16-spoke wheels (shown on the car bellow) for the Street Weapon. Word on the street is that other companies are also working on wheels to fit the Street Weapon.

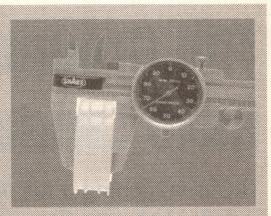


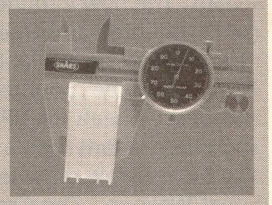




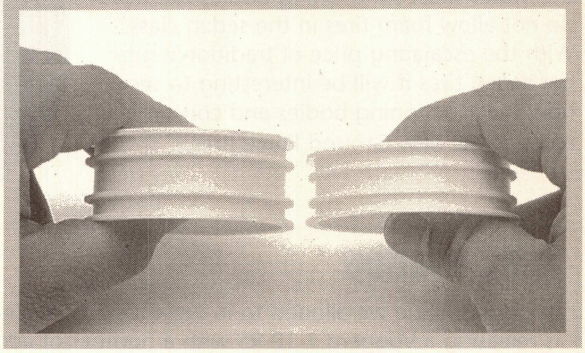


Wide Ride





Last month we showed you a Quick Tip on how to widen the track width of your buggy's front tires. Instead of going through the steps we showed you, Pro-Line will make your life a little easier with their new line of "Wide Ones" wheels for Associated B2 and B3 and Losi's Double-X and Double-X "CR." The wheels are 2.2" in diameter but are wider than standard wheels. The new wheels are designed to stretch and lower the profile of 2.2" tires, providing less sidewall flex and a larger contact patch. The wider contact patch delivers a more aggressive and more stable front end to your 2WD cars. Also from Pro-Line are wider rear wheels that provide the same advantages as the front wheels, for the rear of the car. The new wheels will be available in both white and yellow. Be on the lookout at your local hobby shop.



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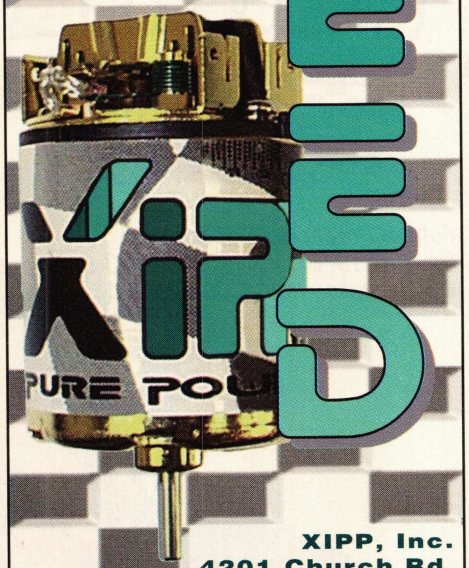

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And The Winners Are . . .

Xtreme R/C Cars would like to thank all of those who took the time to fill out the Readers' Survey in Issue 3.6. If you haven't done it already, fill out and send us the Readers' Survey form in either Issues 3.6 or 3.7. Whether you win a free subscription or not, you'll be contributing to make *Xtreme R/C Cars* better than ever. Here's a list of readers that won either a one year subscription or subscription extension: Dave Duncan of Burbank, CA; Jerrod Pickle of Visalia, CA; Austin Conley of Apple Valley, CA; Corry Passmore of Winchester, IN; Henry James of Shrewsbury, MA; Ed Ryan of Allen, TX; Tom Cheek of Troy, TX; Peter Sprag of Mt Holly, NJ; Tony Morgan of Huntsville, AL; Bob Bertotti of West Berlin, NJ; Tom Unger of Chatham, NJ; John Kaminski jr. of Eastaboga, AL; Eugene Johnson of Monroe, OR; Ryan Abel of Pensacola, FL; Brian Wright of Moreno Valley, CA; George Silliman of Auburn, NY; David Moyes of Mt. Pleasant, MI; Dave Lyons of Ft. Collins, CO; Scott Johnston of Mt. Vernon, IL; Joe Satterwhite of Del City, OK; RW Tripp of Cypress, CA; Todd Frampton of North Charleston, SC; Jim Deprez of San Jose, CA; Roy Mayes of Laguna Hills, CA; and Rodney Jacobs of Columbia, SC.

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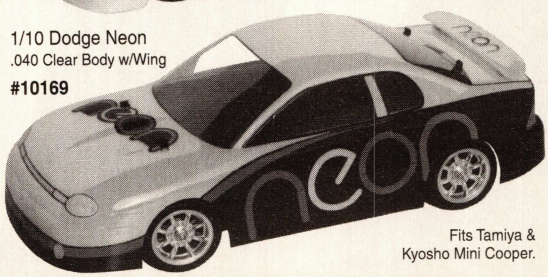

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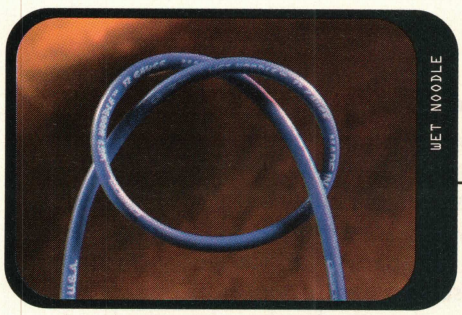

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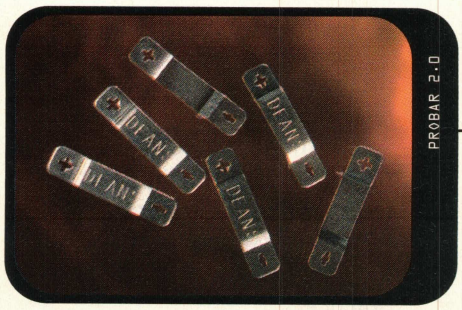

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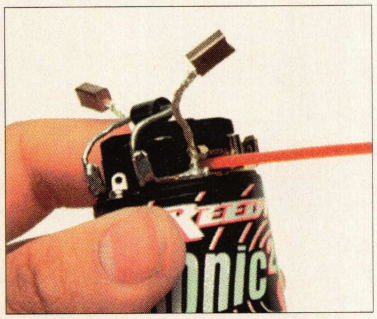
Five Steps to Clean Motors

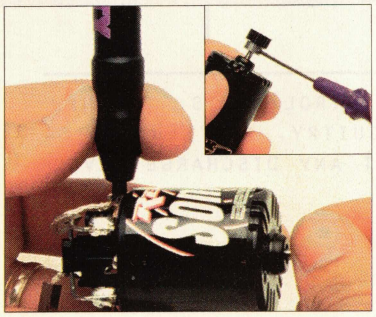
Step 1

The first thing you need to do is remove your motor from the vehicle. Now remove the brush springs and take the motor brushes out from under the brush hoods.



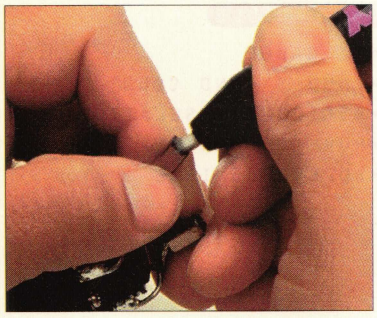
Step 2

Using a high-quality motor cleaner insert the spray tube into the endbell and spray for about 2 to 3 seconds or until the fluid coming out of the motor is clear. Be sure to spray both bushings or bearings at the ends of the motor. If the motor brushes are still attached to the motor be sure not to get any motor cleaner on the brushes.



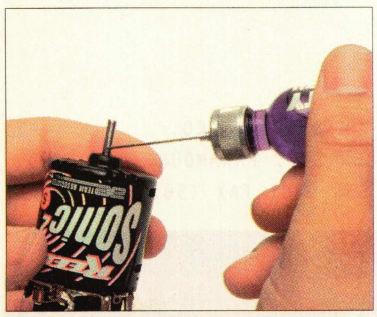
Step 3

Install a pinion gear on to the motor shaft. Insert a comm stick into one of the brush hoods and turn the motor about 10 or 20 revolutions until the comm is nice and shiny. Now spray the motor again to get rid of any comm or comm stick material that might be in the motor.



Step 4

Determine whether or not you're going to replace your brushes or motor springs. Both springs should look identical when placed side by side. The brushes should be replaced if they look damaged, worn, or show signs of bad discoloration from heat. If you decide not to replace the brushes clean the brush faces with your comm stick.



Step 5

Reinstall the brushes and springs and add one drop of oil to each bushing or bearing at the ends of the motor. Be sure to use a bearing or bushing specific oil and use one drop only. Bearing oils are thinner than bushing oils. That's it. You're all done and your motor is back in shape.

They're Not Just For Fabric Anymore

This Quick Tip comes to us from Richard Marquez in San Dimas, California. In order to cut different designs and patterns out of masking tape or masking material, you can use pinking shears (which are normally used for cutting fabric). The shears are available in different cut patterns like jagged edges, waves, etc. The designs can be used to quickly and easily customize any paint job. Use a high-quality masking tape or masking material for the best results.

Two Pro Tips

These next two tips come to us from Trinity's David Spashett. First, make a checklist of things to do between heats (e.g., apply traction compound, charge batteries, etc.) at a race and an order in which to do them. Tape the list to the inside of your pit box or to the top of your charger — somewhere you will see it often. This will help you make sure that you get everything done before each race and that you do them at the same time round after round.

Second, every time you go to the track make sure your car is ready to go before you get there. Solder motor capacitors or adjust servos the night before, not at the track. This will allow you to get as much practice as possible. And most important practice, practice, practice!

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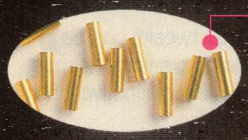

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Battery Bars

GM-Racing battery bars, lowest resistance, strong connection
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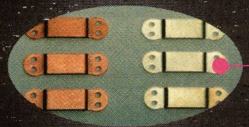

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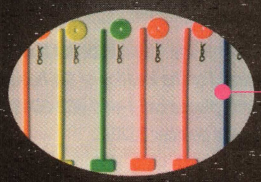

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Though most of today's bodies are molded to fit a number of chassis, Andy Jacobson still molds his to fit only one. Sure, they still work on other cars. But the way he sees it, molding a body to fit like a glove on a given chassis is the same as making sure it'll perform like a champ on track.

Though he's been doing it for years, people still try to talk him out of it. When they tell him the "one body/one chassis" design process takes too long, he smiles. And when they note that businesses "just don't do things like that anymore," he smiles again and says, "I do." And then he'll excuse himself to track-test a prototype.

MAGIC VS. ROCKET SCIENCE

Testing a body is not like rocket science; basically, it's an Art Form that depends less on molds, materials and machines than on the magic of the moldmaker.

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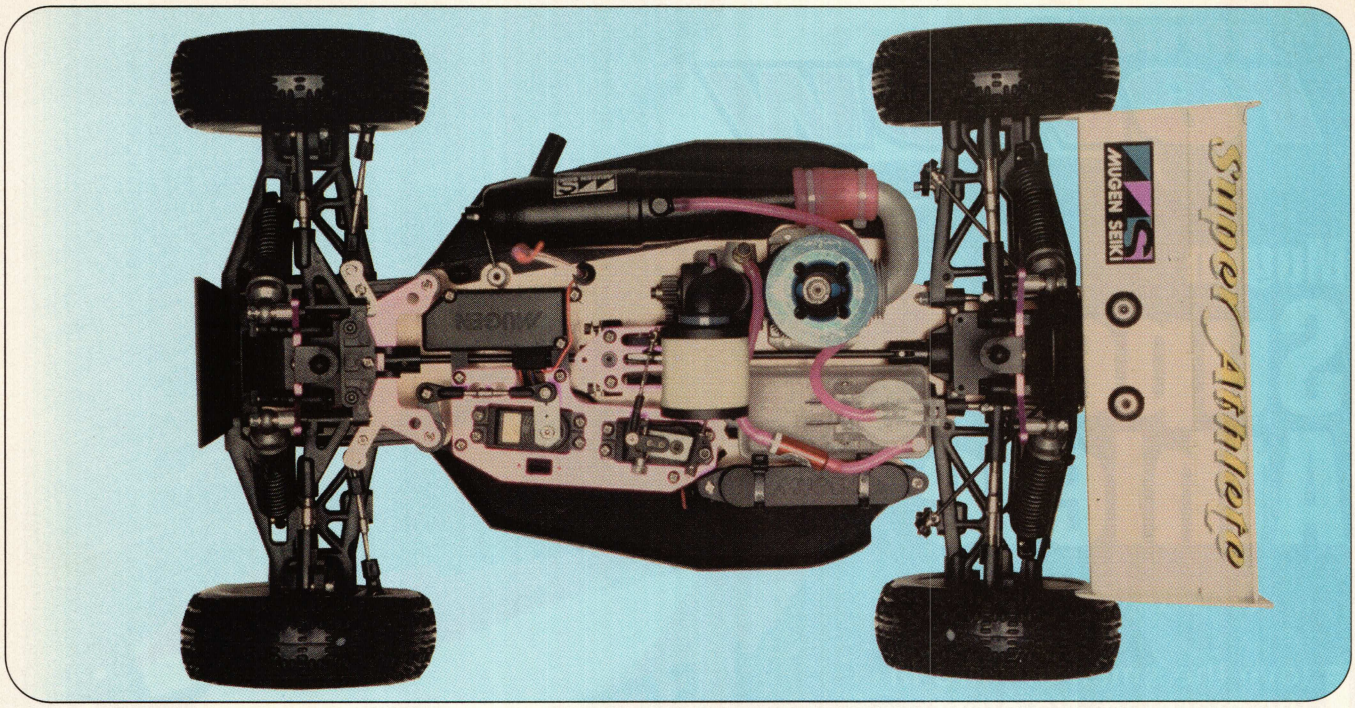
xtreme review

Mugen Super Athlete

by B. J. Christensen

I love the smell of nitro in the morning. No other classification of R/C racing gets me more excited than my gas-powered, off-road vehicles. During the past few years we have seen much progress in R/C gas racing. The introduction of 1/10-scale off-road trucks have opened the doors for the ultra high tech, and seemingly complicated 1/8-scale 4WD buggies. Already extremely popular in Europe and Japan, this class of racing is slowly but surely invading the shores of America.

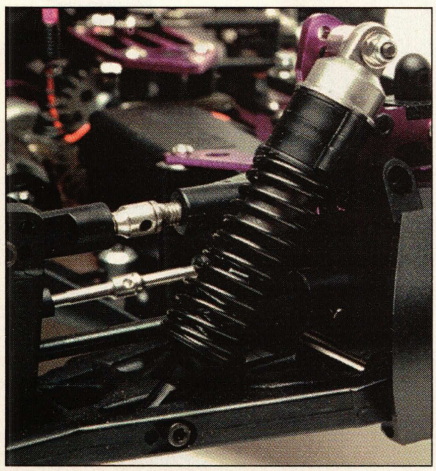


When given the opportunity to do an *Xtreme* test on one the hottest 1/8-scale off-road buggies on the market, I jumped at the chance. I have been involved with racing these cars for six years, so I am going to thoroughly enjoy putting this new Mugen Super Athlete through the ringer. Well, enough of the chit-chat; let's get straight to business.

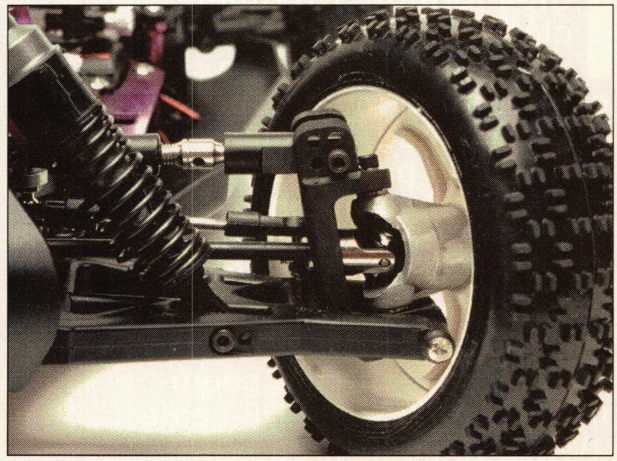
FEATURES

Chassis

The main structure of every car is its chassis. This component can make or break you. These 1/8-scale cars can encounter some pretty hairy situations, and Mugen has realized that. The 3mm-thick T6 aluminum chassis is solid. It is very stiff and has a newly developed 6° kick for the front end. This allows for much better handling when the track conditions get rough. Mugen has also added down stops for the front and rear a-arms of the car. By simply adjusting a setscrew in each arm, one can quickly increase or decrease the amount of travel in each independent wheel. The final touches on the chassis were anodizing it a light bronze color, and cleanly countersinking all screw holes so nothing protrudes from the bottom.



The car's suspension is cushioned by four very-high-volume, coil-over, oil-filled shocks. Mugen offers an entire line of different spring rates to help you tune your car to any off-road condition.



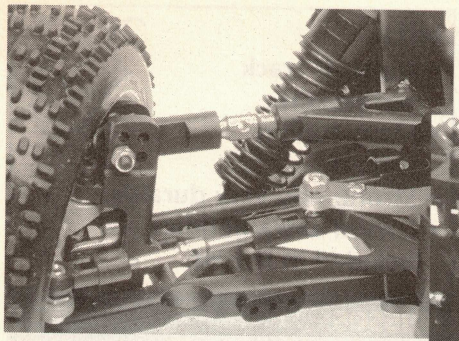
The Super Athlete uses strong, cast spindles up front.

Drive Train

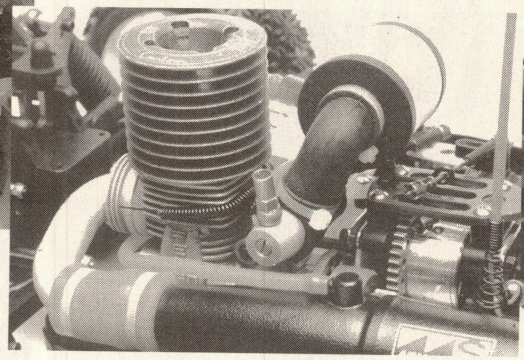
Transferring the massive power of a .21 nitro burning engine to the ground is no easy task. The Super Athlete sets out to accomplish this with gear differentials in the front, center, and rear of the car. The differentials have an all new beveled gear design which makes for a smooth and reliable conversion of power. The diffs also have a unique O-ring seal that keeps the silicone-based oils that the diffs are filled with from leaking. The power from the center differential is taken to the front and rear gear boxes via dogbones. To keep rotating mass to a minimum, the front and rear gear boxes only contain a differential and one steel conical gear. In the front end the power is transferred from the gear boxes to the wheels by a universal drive shaft, while in the rear end they opted for the standard dogbone setup. This was only part of the solution. Mugen has included a top-notch clutch and flywheel for whatever motor you decided to outfit your car with. The flywheel is lightweight and made from aluminum, while the three-shoe clutch and spring design has been a favorite amongst racers for years.

Suspension

No stopping there. This is a car kit made for racing and it shows. The



Above: The Super Athlete uses super thick, strong, adjustable tie-rods for camber and steering adjustment. Everything on this car is designed for abuse and punishment.



Below: The Super Athlete doesn't come with an engine. For testing I used a .21 Rex 4-port that produces and ungodly amount of power.

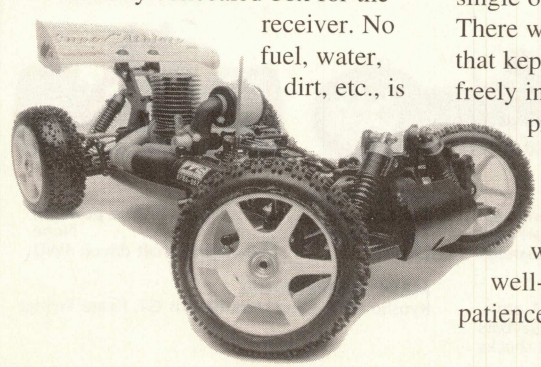


Below: This car is a mechanic's dream. Check out how many possible camber mounting locations there are on the rear hub carriers.

four-wheel, independent suspension is a fairly simple and straightforward design but, it gives you many tuning options to play with. There are several different mounting holes for the shocks and camber links. The suspension arms are now made from a much better quality plastic material than in previous Mugen kits. They are very beefy and rigid. Another nice tuning option is that of anti-squat and toe-in on the suspension arms. By simply changing a suspension block on the gearbox case, the squat and toe-in can be quickly changed in both the front and rear ends. Several different suspension blocks are included within the car kit. Next up are the shocks. These oil-filled, coil-over dampers are manufactured from aluminum and then hard anodized to control wear. These shocks include bladders and air bleeder holes in the caps to make for a very smooth and consistent action. The shocks are then connected to sturdy aluminum towers.

Other Features

The remainder of the Super Athlete is designed very nicely. There are matching purple-anodized aluminum braces and radio trays throughout. I especially liked the fully concealed box for the receiver. No fuel, water, dirt, etc., is going to get in there. Mugen has also included a fuel filter, fuel lines, and a trick flip-top fuel tank that has measurement lines. The wheels supplied in the kit are great, and the tires will get you started. However there was no foam for inside the tires. The body is attractive with sleek round lines, and the rigid highly durable plastic wing is just another added bonus.



BUILDING

Assembling this car kit is not for the novice car builder or weak at heart. This is a high performance race car so some of the assembly gets pretty complicated. The instruction booklet provided by Mugen was done very well. The 3D line drawings and parts chart are very descriptive and easy to follow. I did however run into a couple of problems with some machined parts in the kit. When assembling the three differentials be sure to take your time. I found a few burrs on the internal gears that caused my diffs to bind. The differentials are very important, so make sure they are 100% correct before attempting to run them in your car. I also had some trouble with every single outdrive included in the kit. There were some pretty severe burrs that kept the dogbones from sliding freely in the outdrive slots. These problems were annoying but they were nothing a good file couldn't cure. When it was all said and done the assembly wasn't that grueling, but bring a well-stocked toolbox and plenty of patience.

TEST GEAR

No holes barred on this ride. The motor I installed was a .21 Rex 4-port which has incredible horsepower, reliability, and run time. On the motor I used the standard exhaust header supplied in the kit and a Mugen #067 off-road pipe. My fuel of choice was the always consistent O'Donnel 30% nitro. For radio gear I installed my trusty Airtronics 3PS radio and receiver, with a 94158 steering servo, and a 94156 throttle servo.

TEST DRIVE

Time to hit the track and see what this monster can do. I headed off to a perfect testing ground in beautiful Costa Mesa, CA. Mile Square Park is a large outdoor dirt track with many serious obstacles that can challenge the Super Athlete. The dirt was dry and fairly hard-packed, while the layout offered everything from large jumps, sweeping turns, and tight turns, to an extremely long straightaway. I had previously tuned my motor at home so I could get straight to business here at the track.

On my first tank of gas I took it nice and easy in order to get used to the new car and track layout. Right off the bat, the Super Athlete felt very stabile and easy to drive. After I became more comfortable with the car, I started to lean out my fuel mixture for even more horsepower. The car seemed to be handling everything I gave it. There was a ton of acceleration and, it was very smooth and consistent. The steering balance of the car was

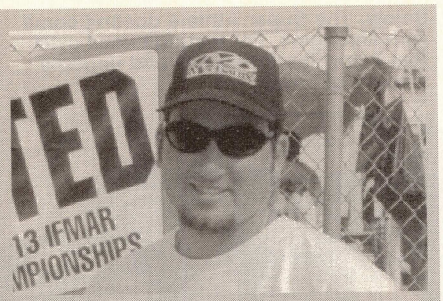
Setup Info From Richard Saxton

Front Suspension

Shock position: C-1
Upper arm position: B-4
Suspension member: 0,0
Camber angle: -1º
Damper piston: Stock
Damper oil: 40WT Associated
Spring: MIP
Spring tension: 5mm
Down stop: 41mm
Anti-swaybar: Thin
Toe: 0º

Rear Suspension

Shock position: C-2
Upper arm position: C-8
Suspension member: 1,0
Camber angle: -1º
Damper piston: Stock
Damper oil: 40WT Associated
Spring: MIP
Spring tension: 0mm
Down stop: 33mm
Anti-swaybar: stock



Richard is one of the country's top 1/8-scale drivers and Mugen Factory Pilot.

Other Areas

Diff-gear oil
Front: 3,000WT
Center: 10,000WT
Rear: 5,000WT

Engine: Picco
Fuel: O'Donnell 30%
Glow Plug: McCoy
Muffler: Mugen 670

Track Conditions: Rough
Tires (f/r) : Pro-Line XTR

Hits:

- Superior track performance.
- Many tuning options.
- Strong and very durable.
- Lots of extra goodies are included in the kit.

Misses:

- Slight manufacturing flaws on a few parts.
- Rear dogbones instead on universal drive shafts.
- No foam inserts for the tires.

also really good. I had plenty of on- and off-power steering. Through the rougher sections of the track the Super Athlete was superb. It always tended to bounce straight and work its way through the bumps with ease.

This car wasn't going to get off that easy though. I realize that overseas they race these 4WD 1/8-scale buggies on grass courses. That's right! These tracks are completely constructed on grass fields. I slightly lowered the ride height of the car and added a couple more degrees of negative camber. While I was tearing up a pretty grass field I was pleasantly surprised by how well the car was performing. With the obscene amount of traction the car remained very stable, and still had plenty of acceleration and steering.

CONCLUSION

The Mugen Super Athlete is plain and simply a killer race machine. No expenses were spared, and its suggested retail price reflects that. If you are in the market for the highest quality 1/8-scale gas buggy, you can't go wrong here. The car is designed very well from bumper-to-bumper, manufactured from quality materials, and straight out performs on the race track. I guess that is way ROAR National Champion Doug VonMosh, and seasoned pros Mark Pavidis and Richard Saxton all choose to drive one.

X

Mugen
Super Athlete

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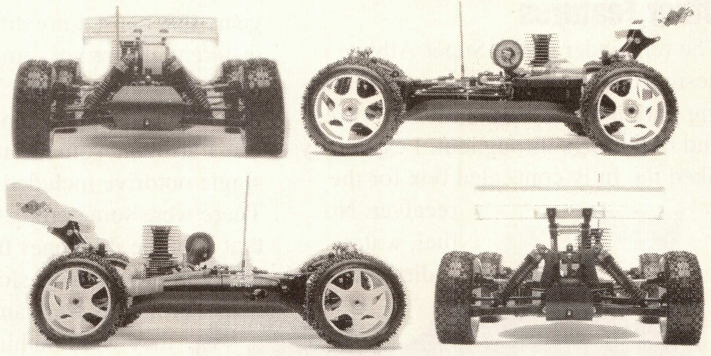
THE VITALS



SPECIFICATIONS
Country of Origin..... Japan
Scale..... 1/8
Manufacturer's List Price..... $699.99
Estimated Street Price..... $437.99
Part #..... C008
Intended Application..... Competitive racing
Approx. build time..... 10.5 hours

DIMENSIONS
Length (rolling chassis)..... 18.125 in.
Wheelbase..... 12.75 in.
Width (F)..... 11.375 in.
Width (R)..... 11.825 in.
Weight (RTR)..... 7 lbs. 3oz.

CHASSIS
Type..... Double-Deck
Material..... Aircraft aluminum

TIRES
Front..... Mugen cross pattern
Rear..... Mugen cross pattern
Wheels..... Mugen 6-spoke molded

TRANSMISSION
Type..... Shaft to conical gear, front and rear
Differential..... Metal conical gearl-type
Bearings/Bushings..... Bearings

SUSPENSION (F/R)
Type..... 4W independent w/lower A-arms, adjustable upper links and front/rear swaybars
Dampening..... Coil-over, oil-filled shocks

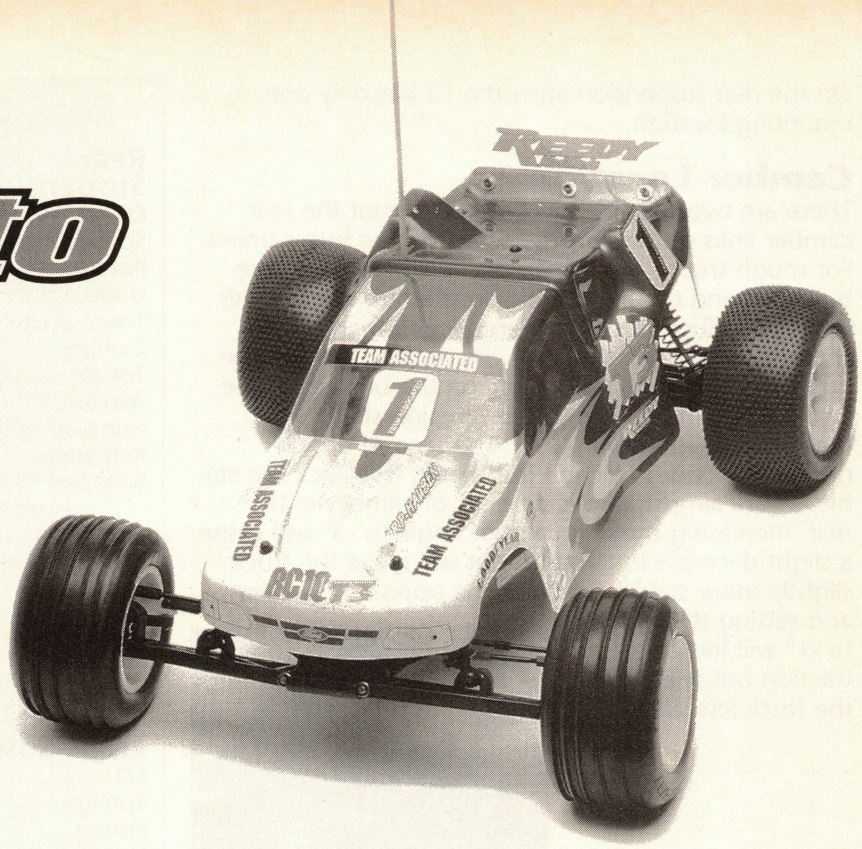
POWERTRAIN
Configuration..... Nitro engine powered
Type included..... None
Layout..... Mid-engine, shaft driven 4WD

MAIN COMPETITION
Kyosho MP5, Ofna Ultra Worlds GT, Pirate Twister

learn how-to

T3 Setup With Mark Pavidis

by Mike Velez



Almost two years ago, we sat down with Team Associated factory pilot Mark Pavidis and he showed us how to set up the popular T2. The article turned out to be very informative and one of our most popular articles ever. In the last two years a lot has changed. Team Associated's top truck is no longer the T2. The T3 has taken the top spot and we are going to sit down once again with Mark to get the factory scoop on setting up this off-road terror.

TRANSMISSION

When assembling your T3 here are few tips to perform on the transmission:

- Check to make sure there are no burrs on any of the gears, especially the top gear. If you find any, remove them with a hobby knife.
- Remove one fiber shield on the inside of the outdrive bearings. The outside shield is left to keep dirt out and removing the inside shield cuts down on drag.
- Look carefully at the rings. You'll notice that one side of a ring has the edges rounded while the other side is sharp. When rebuilding or assembling the diff be sure that the sharp sides of the diff rings are facing each other.
- Once the entire diff is assembled Mark tightens the diff until the diff gear just starts to grab the outdrives. He puts two wrenches through the outdrives and spins the diff gear a few times. He then tightens the diff slightly and repeats the process until the diff gear is hard to turn – about 1/8 of a turn out from completely tight. This gradual tightening procedure produces a better seated, smoother diff.
- To keep things running nice and quiet, place a small amount of diff lube on the face of the inside diff gears from time to time.

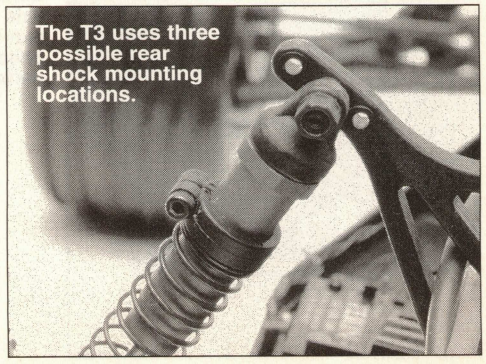
REAR SUSPENSION

Shocks

For most conditions Mark uses 30WT oil with #1 pistons and green springs. This is a good starting point for smooth and bumpy tracks. Mark doesn't limit shock up-travel or down-travel. Depending on what the conditions call for, Mark will change oil and pistons accordingly.

Shock Placement

The basic setup calls for the shocks to be mounted on the middle hole on the shock tower. Moving the shock mount to the inside hole will make the suspension feel softer and increase rear traction slightly while sacrificing some steering. Moving the shock to the outside hole will have the opposite effect. The truck will feel a bit stiffer. There will be a loss of rear traction but the truck will have slightly more steering.

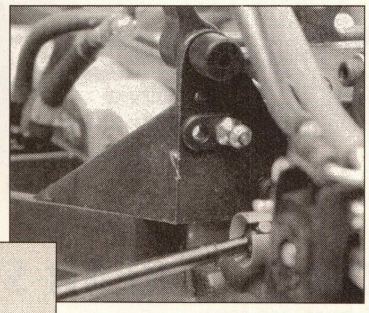


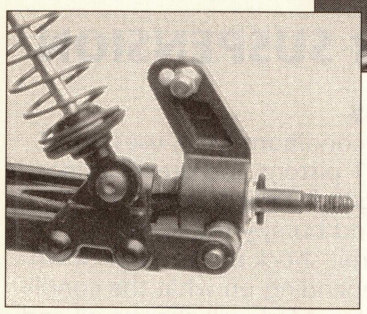
The T3 uses three possible rear shock mounting locations.

On the rear suspension arms the T3 has only one mounting location.

Camber Location

There are two possible locations to mount the rear camber links on the bulkhead and on the hub carriers. For rough tracks, Mark uses the outside hole on the bulkhead and the inside hole on the hub carrier. This setting produces a shorter camber link than the smooth track setup that uses the outside hole on the hub carrier and the inside hole on the bulkhead. The first option (shorter) decreases traction slightly but makes the truck more stable. The second option (longer) increases traction but makes the truck less stable. Mark almost always runs -2° of camber in the rear. Increasing the rear camber angle to -3° will cause a slight decrease in traction, but will make the truck slightly more stable. Going in the opposite direction and setting the camber to -1° will increase rear traction but will make the truck less stable.

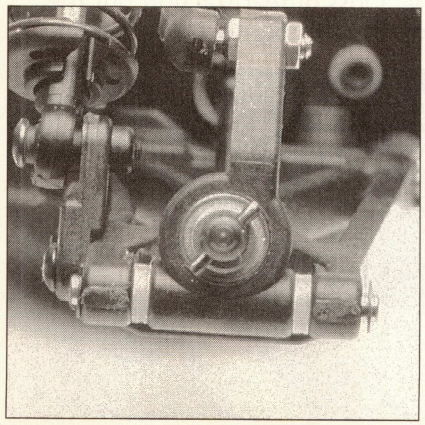




On both the bulkhead and the hub carrier there are two possible camber link mounting positions. This gives you a total of four possible mounting locations.

Axle Position

The rear hub carriers can be placed in one of three positions. By placing two spacers either in front of, behind, or one on each side of the hub carrier you can change the placement hub carrier, either further forward, rear, or in the middle. Mark usually keeps the hub carrier in the middle with one spacer in front of and one behind the carrier. Moving the carrier toward the rear of the car helps to increase steering by distributing more weight to the front wheels. Moving the axle forward will increase rear traction and deplete steering slightly.



Axle adjustment is often overlooked. Simply moving the axle forward or back can have a great effect on the T3's performance.

	Rough Track Setup	Smooth Track Setup
Rear Suspension		
Oil	30WT	30WT
Springs	Green	Green
Pistons	#1	#1
Upper Shock Mount	Middle	Middle
Travel Limiters	None	None
Camber	-2°	-2°
Toe-in	3°	3°
Anti-Squat	0°	3°
Hub Carrier Spacer	Middle	Middle
Ride Height	CVDs Level	CVDs Level
Bulkhead Camber Placement	Outside	Inside
Hub Carrier Camber Placement	Inside	Outside
Tires	M3 Holeshot	M3 Holeshot
Chassis	XL	XL
Battery Placement	Rear	Rear
	Rough Track Setup	**Smooth Track Setup**
Front Suspension		
Oil	35WT	35WT
Springs	Green	Green
Pistons	#2	#2
Upper Shock Mount	Outside	Inside
Lower Shock Mount	Middle	Middle
Travel Limiters	None	.060 Inside
Camber	-2°	-2°
Camber Placement	Middle	Middle
Toe	0°	0°
Caster	30°	30°
Ride Height	Arms Level	Arms Level
Weight In Bulkhead	7 grams	None
Tires	M3 Edge	M3 Edge



CVDs should be level for most conditions.

Ride Height

Mark almost always runs the T3 with the universals level. When more high-speed steering is needed, he recommends raising the rear ride height slightly.

Rear Suspension Mounts

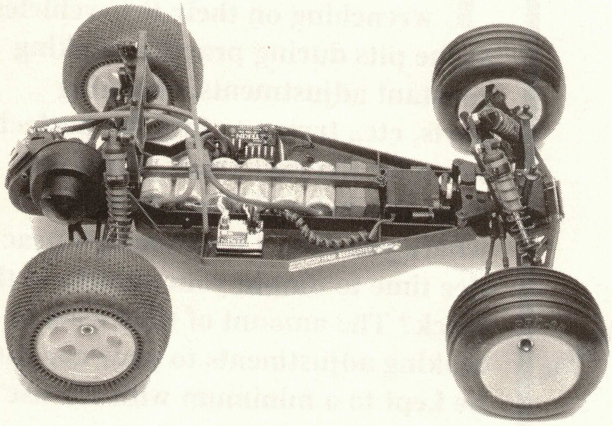
For smooth tracks, Mark uses the stock 3° toe-in suspension mounts with 3° of anti-squat. For rough tracks, Mark uses the 3° toe-in mounts with no anti-squat. The increased anti-squat on the smooth track setup helps increase traction while exiting corners. The 3° anti-squat will also help the truck to jump higher and farther.

Tires

Mark finds the Pro-Line M3 Holeshot tires with standard Pro-Line foam inserts work well on most conditions.

CHASSIS

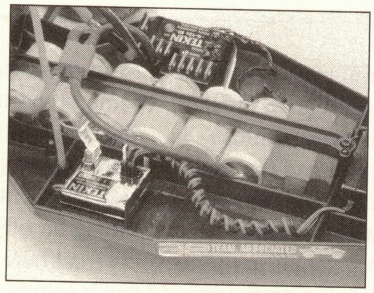
Lately Mark has been using the Extra Long (XL) chassis on smooth and rough tracks. The XL chassis gives the truck more high-speed steering and keeps the truck more stable while jumping and while on rough track sections. On small tight tracks, the standard chassis works better.



Battery Placement

For smooth and rough track's Mark places his battery pack in the rear position with three foam pads in front of the battery. If more steering is needed Mark will move the battery further forward by placing one foam pad at a time behind the battery pack.

Moving the foam battery pad either in front of or behind the battery shifts the weight of the battery to either the front or rear of the truck.



FRONT SUSPENSION

Shocks

For rough and smooth tracks, Mark uses 35WT oil with #2 pistons and green springs. For smooth tracks Mark will place a .060 limiter inside the shock. On rough tracks no limiters are used inside or out.



Shock Placement

Mark's basic setup has the shock on the outside hole on the shock tower and the middle hole on the suspension arm. This is the standard for rough and smooth tracks. On the shock tower moving the shock to the inside mounting hole will increase the truck's low-speed steering and cause the steering to react slower overall. The front suspension will make the front end feel softer as well. On the suspension arm moving the shock to the outside hole will increase high-speed steering and will quicken the steering response. Moving the shock to the inside hole will increase steering as well, but will cause the car's stability to be less consistent.

Camber Location

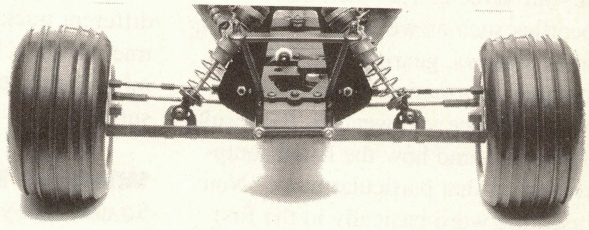
The T3 uses a kingpin ball stud that uses only one camber location on the hub carrier. This leaves us with three possible mounting locations on the shock tower. For both rough and smooth tracks, Mark uses the middle location on the shock tower. Moving the mounting location to the inside hole will increase front traction and steering but make the car less stable. Moving it outside will decrease front traction and steering but will make the truck slightly more stable. The standard amount of camber is -2°. Increasing the front camber to 3° will decrease steering but will make the truck more stable over the bumps. Decreasing camber to -1° or 0° will increase traction but will leave the truck less stable over bumps and rough spots.

Steering Blocks

Mark uses the standard 30° caster blocks for both rough and smooth tracks. Switching to the optional 25° blocks will cut down on turn-in steering will give the truck more steering in the middle and while exiting corners.

Ride Height

For both rough and smooth tracks Mark sets the front ride height so that the arms are level.



Front Toe

Mark always keeps his front toe set to 0°. This means both tires are perfectly parallel with each other. Mark very seldom uses any toe-out. If anything he will add 1° of toe-in. This will help keep the truck stable under acceleration but will sacrifice some turn-in steering.

Tires

The Pro-Line M3 Edge front tires with standard foam inserts are used for most track conditions.

Now you're set to take on the world. With this article you've got all the information you need to set your RC10T3 up to almost any condition. Experiment on your own. Use this information to get you pointed in the right direction. Don't be afraid of trying new things on your own. One of the great things about the T3 is its limitless possibilities.

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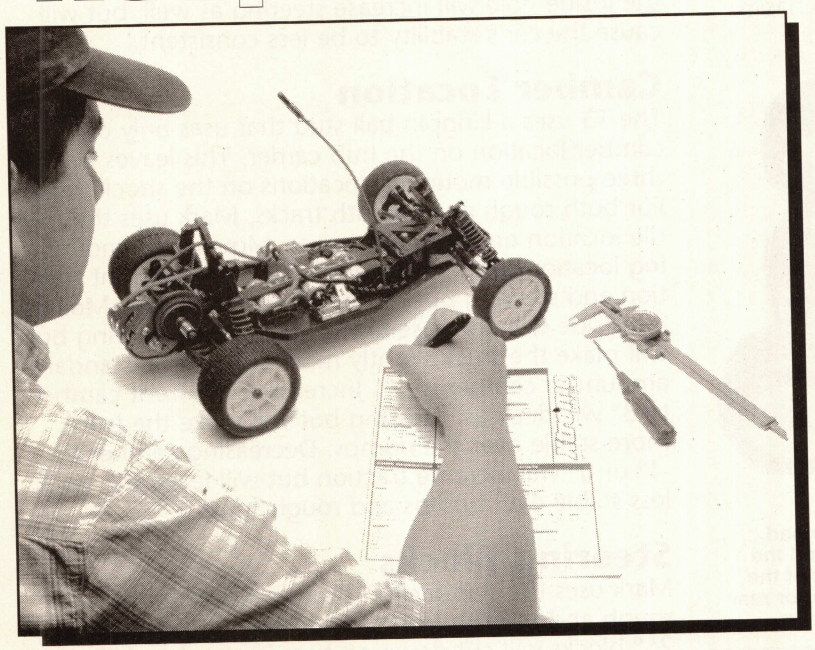
learn how-to

Keep A Race Setup Log



The picture is common — racers wrenching on their R/C vehicles in the pits during practice, making constant adjustments, changing parts, etc., trying to find the perfect setup for the race track. Have you done this before? Were there times where you didn't have enough practice time to dial-in your vehicle to the track? The amount of time used in making adjustments to your car can be kept to a minimum with the use of a setup log.

by James Revilla

What's a Setup log?

A setup log is basically a record book that lists the settings and modifications for everything you can change on your vehicle. This includes specifics such as wheel and tire types, shock settings, gearing, etc. It also contains information about the race track's surface and weather, the results of the race, and how the listed setup worked on that particular track. Note I used the word basically in the first sentence; that is because the hardcore racers write down more than just the information I listed above. The more detailed you get, the more useful the information becomes.

Why Keep a Setup Log Anyway?

Keeping a detailed setup log is very important when it comes time to dial in your vehicle for certain tracks and conditions. If you kept a separate setup sheet for each track you've raced on, you could easily refer to these "master" setups when you return to that track. This translates into less time fiddling in the pits and more time driving the course. Then, once you have a variety of setups from different race tracks, you can compare them. If you notice certain similarities between setups, one option would be to create a new setup based on those similarities. For example, if you had the same shock setup that worked well at two different tracks but with the same track surface, then that shock setup might be the ticket for that particular surface.

Where Do I Start?

So now that you have an idea of what a setup log is and why you should start keeping one, where do you actually start? Some racers I know start out their race log with their current setup. I however recommend that you start with one of following two setups: the settings as dictated by the instruction manual during assembly, or the manufacturer's recommended race setup. Even if you race for fun, the factory setup should provide you with all-around performance, and getting the specifications are as easy as a phone call to the respective manufacturer or, perhaps, visiting their website.

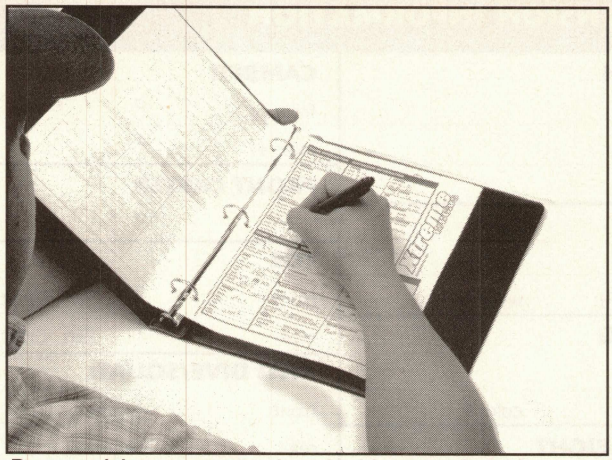
So what do you do if you race a vehicle in a class that has specific rules such as no aftermarket hop-ups? The best way to find a setup is to turn to an experienced racer that uses the same brand of vehicle that you do. The same advice would apply in situations where the vehicle is raced outside of its intended purpose, such as racing an off-road monster truck in an on-road race. Most published monster truck setups are for their home territory which is off road, but obtaining starting setups for on-road is as easy as asking others who race in that class.

How and Where Do I Make Changes?

Once you find starting setups, it's time to tweak them to your liking. A starting setup is just that, a place to start. Every driver has their own preferences about how their car turns, how it reacts, and how it responds. By making subtle changes to the starting setup, you will soon have a setup that fits your driving style and the track at the same time.

Almost every experienced or professional racer will tell you the same thing when it comes to changing setups: make one change at a time! By changing one specific setting at a time, you will know exactly what that change did and how it made your car

feel different (whether it be for better or worse). This is very important! For example, say you are having a handling problem. If you change shock oil, front wheel camber, and ride height and the end result is a better handling car, how would you know which change had the most impact on improvement? Simple. You wouldn't. By making each adjustment individually, you'll know exactly what worked and what didn't.



By organizing your setup logs inside a sturdy folder, you can always take them with you around the track just in case you find new setups.

When tuning your car, you should always start with the biggest problem first. For example, if your problem is handling over the jumps, start by making changes to the shocks. If your problem is acceleration or top speed, you would make adjustments to gear ratios before making any other adjustments.

How to Use The Setup Information

Keeping a well-organized and detailed setup log is the key for solving certain handling or gearing-related problems. If you find yourself at a track you've never been to before, which would you rather do: A) spend 1-2 hours making constant adjustments to dial-in your car, or B) refer to your setup log to find a starting setup that worked well at another track with similar conditions? I believe option B makes more sense. Granted, the setup wouldn't be perfect since it was for another track, but at least it gives you a better starting point so that setup tweaks are minimal.

Choosing a starting gear ratio isn't going to be as precise as suspension settings (unless you measured the track distance, etc.) but you could use relative size to help you decide where to start. If the new track is very small with few straights and many turns, you can refer to your setup log. Find a setup from a small track, and use the gearing specified as your starting point. From there, it's only a matter of going up one or down one tooth, as opposed to hammering a calculator and swapping spur gears all day to find a decent gear ratio that's competitive!

Conclusion

Setting up your car to work in all kinds of track conditions is valuable knowledge that any racer at any skill level could use. By keeping a setup log of all of your settings, you'll never be stuck in the pits wondering what setup to start with. Whenever you get to a new track, everything you need to know to set up your car will be in your own personal setup log. So don't hesitate. Start keeping a log today. Here's our version of a setup sheet that you can easily photocopy and get working on your log.

Accompanying this article is a generic race log created by *Xtreme R/C Cars* that should work with most any off-road or on-road vehicle. Some manufacturers offer blank setup sheets for their vehicles that are specific to a certain vehicle. When those setup sheets are used along with the "Track Information & Race Results" portion of our setup log you're ready to go.

X

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Xtreme R/C Cars

DRIVE INFORMATION

MOTOR/ ENGINE
name:
identification #:
turn/wind: turn X:

SETTINGS
Electric Motors
brush:
spring:
timing:
lubricant:

Nitro Engines
low needle: turns out
high needle: turns out
idle adjust: turns out
operating temp: ☐ °F ☐ °C

DRIVE SETTINGS
☐ slipper/2-speed turns out
☐ front one-way bearing
☐ torque limiter amps
☐ brake pot % full brake
☐ dual rate % full steer

BATTERY/FUEL
brand:
mAh/% nitro:
identification #:

SUSPENSION INFORMATION

PISTON
brand:
type (F):
type (R):

OIL
brand:
weight (F): weight (R):

SPRING
brand:
color F: color R:

RIDE HEIGHT
height (F): height (R):

SHOCK POSITION
front outside | front inside
rear outside | rear inside

SWAYBARS
☐ front: ☐ rear:

SHOCK LIMITERS

CAMBER
front: +/- °
rear: +/- °

FRONT CASTER
° ☐ ☐

TOE
front ° ☐in ☐out
rear ° ☐in ☐out

ANTI DIVE/SQUAT:
front: degrees
rear: degrees

CAMBER LINK POSITION
front outside | front inside
rear outside | rear inside

WHEELBASE
WIDTH
front: ☐inches ☐mm
rear: ☐inches ☐mm

OTHER INFORMATION

CHASSIS
brand:
type:
battery position:
modifications:

TIRES
Front
type:
compound:
insert:
Rear
type:
compound:
insert:
traction additive:

WHEELS
Front
brand:
type:
width:
Rear
brand:
type:
width:

TRACK INFORMATION & RACE RESULTS

RACE TRACK
name:
address:
phone:
type: ☐indoor ☐outdoor

CONDITIONS
estimated track length: feet
surface/traction additives:
weather conditions:

RACE QUALIFYING

HEAT 1
grid position: finishing position:
laps/time: laps in min. sec.
notes:

HEAT 2
grid position: finishing position:
laps/time: laps in min. sec.
notes:

HEAT 3
grid position: finishing position:
laps/time: laps in min. sec.
notes:

RACE INFORMATION
class:
car number:
heat #:
frequencies: a) b) c)

SURFACE TYPE
☐ concrete ☐ asphalt ☐ carpet
☐ dirt ☐ clay ☐ other

MAIN EVENT
MAIN: ☐A ☐B ☐C ☐other
grid position: finishing position:
laps/time: laps in min. sec.
notes:

SETUP COMMENTS

fold here and/or photocopy

fold here and/or photocopy

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FEATURES

NEW

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- Servo Reversing
- NEW HS-300BB Servo
- Adjustable Steering Rate Override
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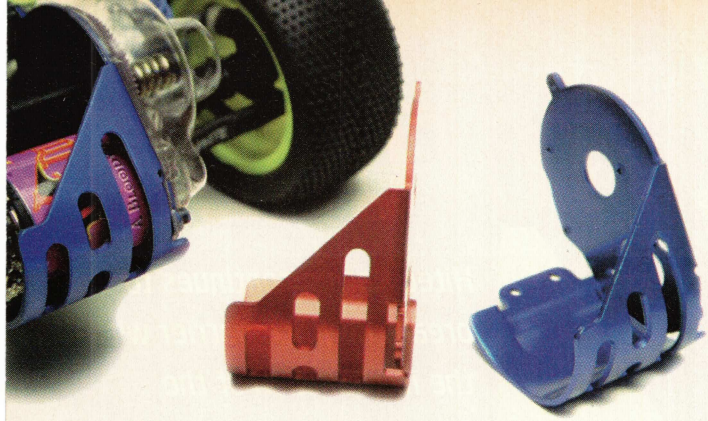



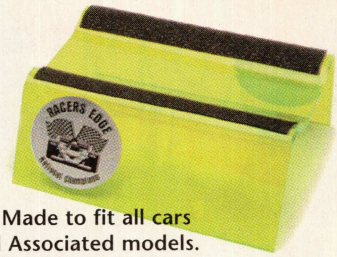

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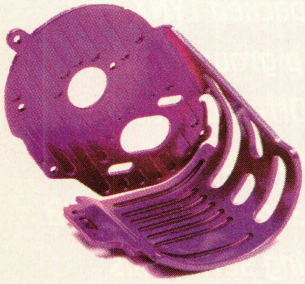
RE0037P Neon Pink
RE0037S Smoke
RE0037V Violet





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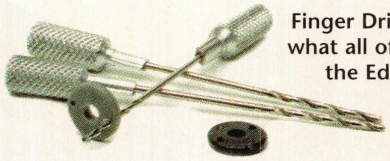

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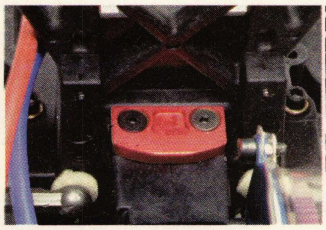

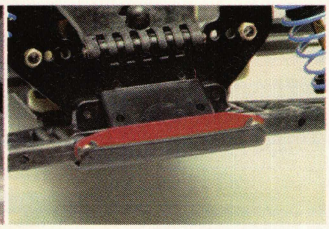

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RACER'S EDGE

xtreme review

HPI Racing RS4 MT

by Garrett Fong



Every once in a while an R/C manufacturer will release a completely new and revolutionary R/C car with a unique and revolutionary design that places the car into a class all its own. Tamiya's TA01 and Associated's RC-10 are prime examples of this. This year, we have a new class of road vehicle — 4WD off-road trucks. And who's behind the wheel this time? This time around it's HPI with their new RS4 MT.



Here's a design borrowed from the RS4 touring car – the dual belt 4WD system.

FEATURES

CHASSIS

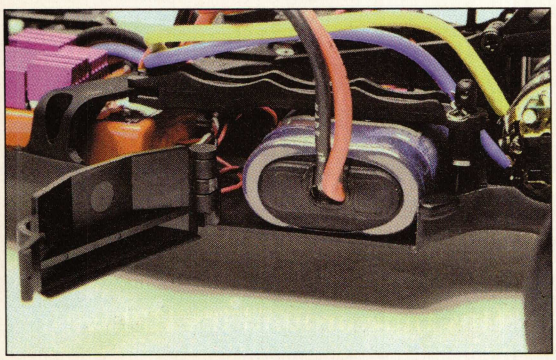
Chassis parts are molded out of two different plastic compounds. A soft, flexible, poly-plastic is used for bumpers, bulkheads, body mounts and other components that will be subjected to a high degree of impact. This material is very similar to the plastic Tamiya uses to mold the TA02 sedan body mounts, and should be very durable in a collision. The other material is a hard, lightweight composite, similar to what Associated uses to mold the B2 chassis tub. This is used for the chassis, front end brace, A-arms, and other areas where durability and rigidity are important.

One nice feature of the MT is that its chassis will accept both saddle and stick type packs. Yes, it is somewhat of a compromise between two designs, but for a new class of vehicle, flexibility is an advantage because it will attract newcomers to this class.

TRANSMISSION AND DRIVE SYSTEM

The transmission is a traditional two-belt design that uses central side-by-side drive pulleys to turn the front and rear diffs. This transmission is identical to the HPI RS4 sport. The major difference is the motor mounting plate. It's huge compared to the sedan, and is designed to completely enclose the spur gear and pinion to help keep out dirt and debris. One nice feature about the MT is that it comes with a belt tensioner for the front drive belt. Belt tension can be adjusted by sliding the pulley up or down in its mount. I chose to use the belt tensioner in its loosest position. The rear belt tension is adjusted in the rear bulkheads, with a pair of eccentric diff mounts that place the rear diff either closer to or farther away from the main drive pulley, depending on how you have it set. Rear belt tension settings are numbered from 1 to 9. I chose to use the number 5 slot as instructed in the manual.

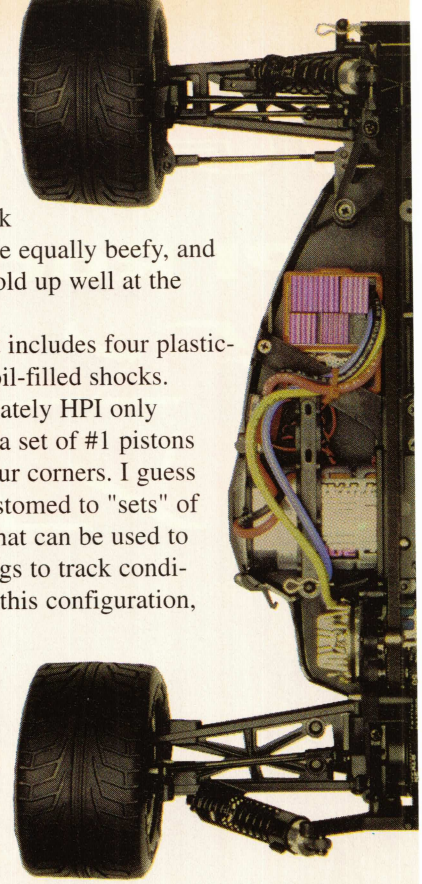
The gear diff's are identical to those found in the Nitro RS4 sedan. They use a series of steel bevel gears to convert power to all four corners. As with any other gear diff, it's important to pack the gear case with as much grease as possible. This provides some damping motion and prevents the diff from free wheeling during hard cornering, as the chassis will want to lift its inside rear tire.



The MT's universal battery holder accepts both stick and saddle pack batteries.

SUSPENSION

HPI really did their homework on all the suspension components. The suspension is a traditional design that uses standard tie rods and ball cups as camber linkages. Everything appears to be very durable, rigid and ready to take an off-road pounding. The A-arms are especially impressive. Talk about durable! I've never seen so much webbing and cross-member bracing in a set of 1/10-scale A-arms. The arms themselves are huge – 9.5 cm from pin to pin on the rear, and 8.5 cm for the fronts! Fortunately the overall width is the same as my RC10-T2, so maybe the 2WD truckers will let me run with them. The shock towers are equally beefy, and should hold up well at the track.



The kit includes four plastic-bodied, oil-filled shocks. Unfortunately HPI only includes a set of #1 pistons for all four corners. I guess I'm accustomed to "sets" of pistons that can be used to tune things to track conditions. In this configuration, the only way to change damping is by changing shock fluid. The shocks themselves are very smooth and should perform well at the track. The shock shafts are the high point of the shock assemblies. HPI treats us to a nice set of polished silver shafts. As nice as the shock shafts are, the included shock oil is awful. It's a yellow petroleum-based oil that smells terrible. I think it's actually a type of gear oil! I used some 35WT Associated silicone shock oil instead. Problem solved.

The steering mechanics (like the HPI Sedans) are smmmoootthhh, and pretty slop free. The set includes a top notch servo saver built into the bell cranks. This is the same unit that's included in the Nitro RS4. Time will tell just how well it performs in the heat of off road battle.

TIRES AND WHEELS

The kit comes with HPI V-Groove truck tires, these are primarily for on-road applications and should hook up on most paved surfaces. The stock wheels are one of the high points of the kit. HPI includes their sharp looking chrome 5-star 2.2" truck wheels with the MT. I'll use these with the V-Groove tires for one trick-looking, booty-kickin' street truck. The HPI drive axles will readily accept

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PWM Steps	512 *(256 Forward/256 Brake)*
Drive PWM Frequency††	5.86 *KHz (#1)*; 7.8 *KHz (#2)*; 15.6 *KHz (#3)*
Brake PWM Frequency	3.9 KHz *(Profiles 1, 2, 3)*
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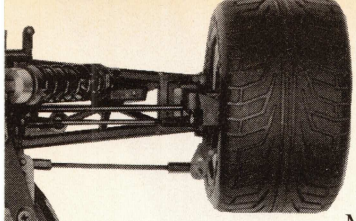
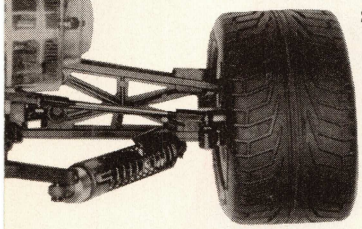


Associated T2/T3 one-piece wheels. Mine fit perfectly and were tight and very slop free. (Just make sure to tighten the wheel nut all the way.) I plan to use the Associated tires and wheels for off-road racing. My kit included HPI's new Ford F150 body, made especially for the MT chassis.

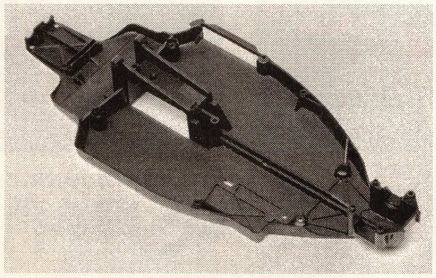
One of the nicest features of the MT is its chassis dirt shields. With all those fast turning belts and gears, rocks and debris can end a race day in a second. To help seal out disaster, HPI includes a heavy Lexan gear cover that snaps into place over the spur and pinion gears. Additionally, the entire chassis is covered by a Lexan under-body dirt shield. The shield is shaped to cover the chassis. The dirt shields will definitely receive some major attention during my performance evaluation.

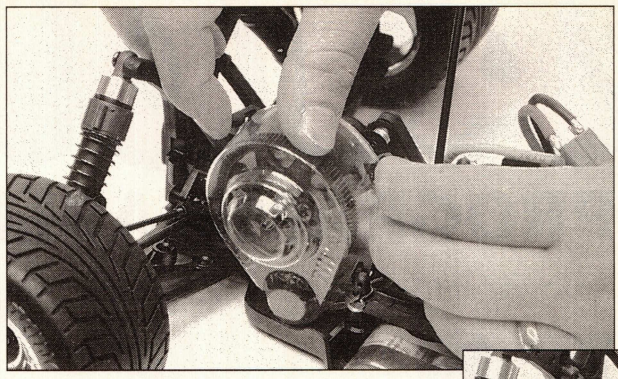


CONSTRUCTION

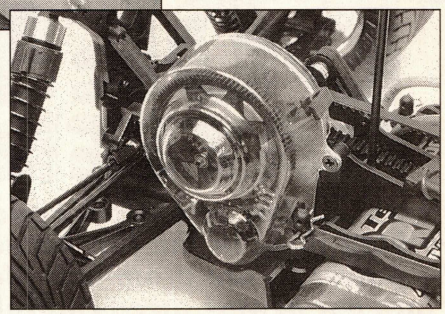
Out of the box, all parts come bagged and labeled. This little detail pays off immensely during assembly as the manual refers to lettered bags for each assembly step. Just remember to only open bags as they are needed throughout assembly and you should do fine. The manual also includes a page of "actual size" photographs of screws, E-clips, and other miscellaneous hardware for quick and easy reference.

The MT's chassis is molded from a composite plastic material. The end result is a solid chassis designed to be rigid and durable.





Left and Below: The innovative gear cover doesn't use screws or body clips to attach itself to the motor plate; instead it utilizes two plastic tabs which makes the cover easy to remove.



The chassis was very easy to put together. All parts fit perfectly; no filing or drilling was needed. Hooray for HPI's quality control department – no missing parts at all. As we all know, new kits can suffer from missing/defective parts and parts that don't fit correctly. This was not the case with the MT. There are actually a few extra screws and E-clips included in case you lose something.

The manual is very well done from an instruction standpoint. The CAD/CAM pictures are very straight forward and simple. Also the kit includes a really nice box wrench, like the one made by Tamiya except that it includes a ball end wrench to assist in turning the ball ends; no more plier-chewed-up ball ends.

The only thing missing from the manual is suspension setup suggestions. I guess I've been spoiled by other manufacturer's kits whose manuals go into detail about setup and performance tips.

TEST EQUIPMENT

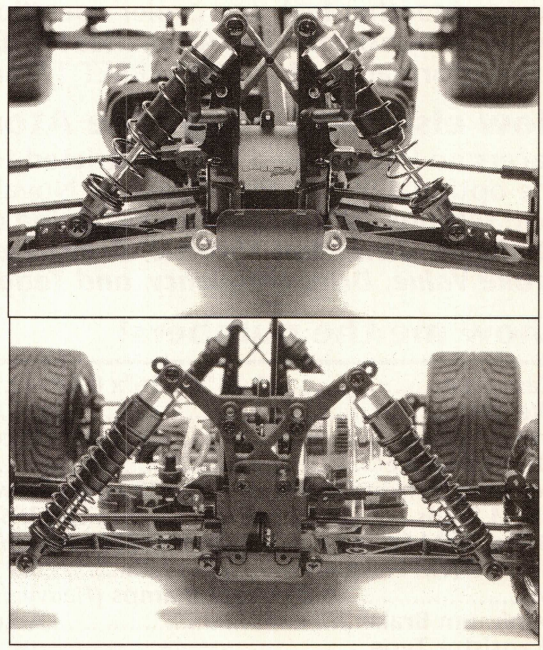
I loaded up the best I could afford. A Novak Super Rooster passes the current to a Xipp Speed 15-turn triple Mod. A Hitec HS30088 servo handles the steering, and a standard Hitec receiver tracks signals from my Lynx FM radio. As for packs, I'll be running various 6-cell sticks, anything from Trinity Zip packs to Orion matched RC1700's.

The MT comes with the best 48-pitch spur gear I've ever used. It's made by HPI and is made of a molded black compound. With the 96-tooth HPI spur and an 18-tooth Team Losi pinion (not included in the kit) I end up with a 13.87 final drive ratio, which should be nice and easy for my 15-turn Xipp.

continued on pg 44

TEST DRIVE
PART 1

My first test drive took place in the cul-de-sac in front of my house. I peak charged all my packs and headed out. It was a mild day, about 65 degrees F and the pavement was dry and dusty. The stock kit took well to the dusty surface. Acceleration was much faster than I was expecting, the steering was



Extra long shocks mounted on plastic shock towers reach out to the ends of the lower arms to keep the MT on its feet.

KYOSHO®
THE FINEST RADIO CONTROL MODELS

DODGE RAM TRUCK



Bored with forward?

Then Ram it into REVERSE!

There's nothing backward about <u>this</u> nitro 4WD. In fact, Kyosho's new Wild Dodge Ram is the most forward-looking 4WD in years, because it's the only gas truck with full, working reverse and the revolutionary Quick Reverse Clutch (QRC).

Twitch a finger, and the QRC can turn a stalled hill climb into a rapid retreat for a better run. Let you start a speed run in forward, and finish it in high-speed reverse. Charge into new territory—and back out of tight spots into the wide, open spaces.

Reverse provides the way; a nitro-breathing Kyosho GS-11X engine provides the means. Give the recoil starter a pull, and you're on your way to anywhere you want to go (or come back to) because your truck is built Ram tough.

It tackles wild country with the strength and durability provided by a 2mm aluminum chassis, fully independent, double-wishbone suspension, oil shocks, ribbed Tracker™ tires and dual gear diffs.

And it'll get you there in style, because the clear, polycarbonate Ram body comes complete with glittering chrome details and decals for the popular Viper GTS trim scheme.

Sure, you can settle for less. But if you really want to arrive in 4WD, do it with the truck that knows nitro forward and backward—Kyosho's new Wild Dodge Ram.

For the location of the dealer nearest you, please call 1-800-682-8948, and mention code number 2316H.



KYOC0426
Length: 15.7 in
Width: 11.4 in
Height: 7.8 in
Wheelbase: 10.4 in
Weight: 4.0 lb
Engine: Kyosho GS-11X w/recoil start (included)
Requires: 2-channel radio w/2 servos, glow fuel & glow starter

KYOSHO®
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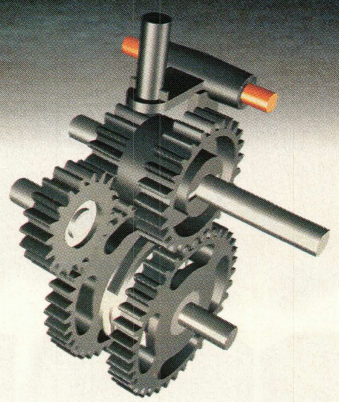
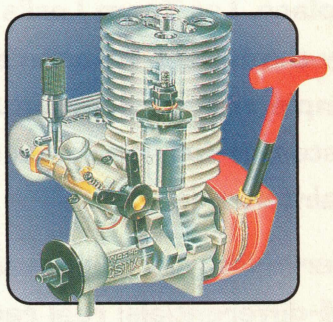


The QRC (Quick Reverse Clutch) arrives factory-assembled for easy installation and shifts from your radio! Two sets of gears (one forward, one reverse) enable the Ram to endure repeated back-and-forth shifting without gear-grinding wear.



The powerful GS-11X engine includes recoil starter, heat sink head, air cleaner and an easy-access needle valve for adjustment!

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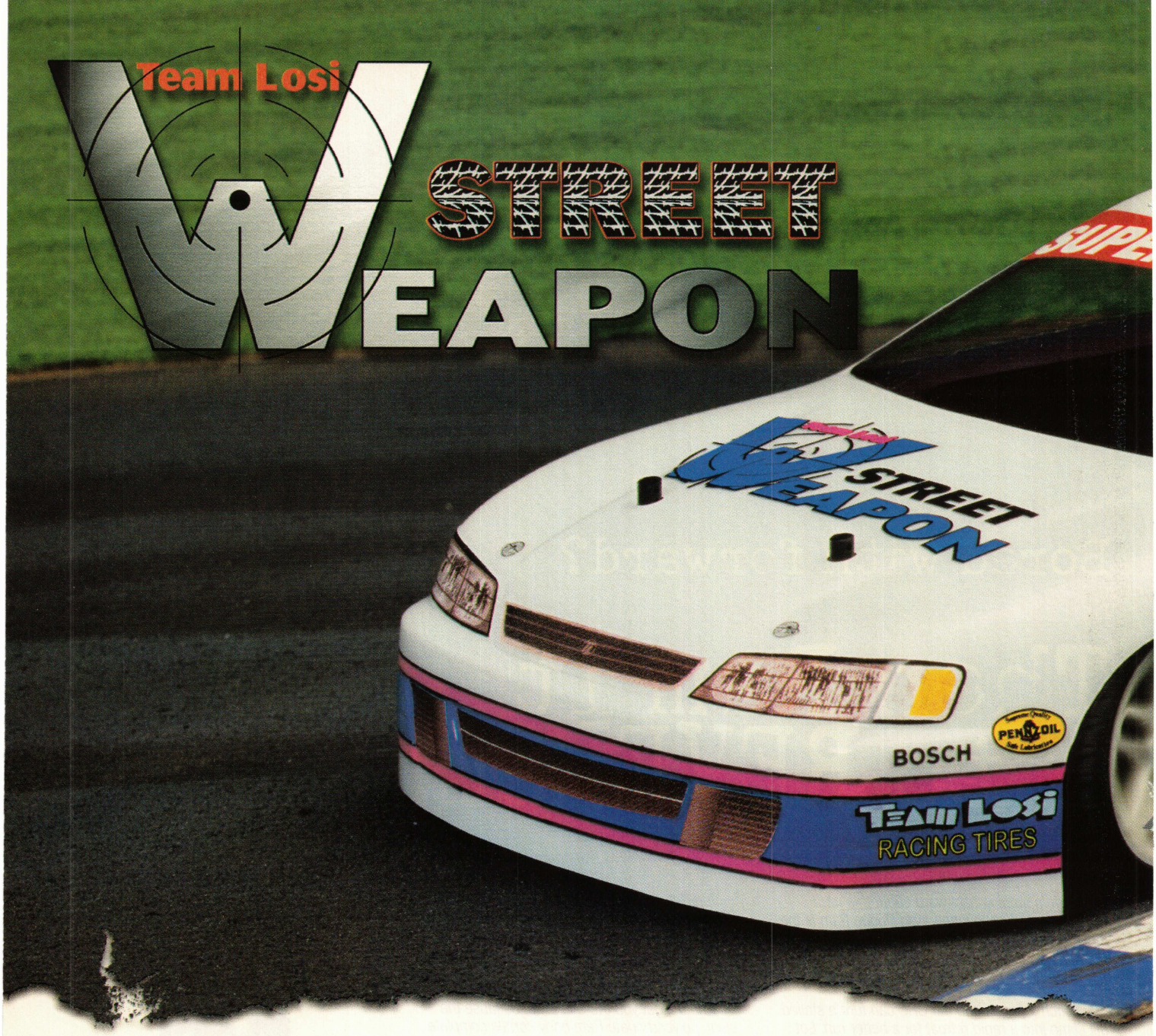


ROAD WARRIOR

It's a jungle out there – sedans with names you can't pronounce and parts you can't replace. Let Team Losi's new Street Weapon make you the baddest cat in the jungle. To say the Street Weapon's advanced design is unique would be an understatement. The simple, ultra-rigid, modular design is built like... well, like a racecar. The three-belt drive system is fully enclosed so you can rule any racetrack or parking-lot track without constant maintenance.

Everything you could want is all there in one box: Precision ball bearings; tungsten carbide ball-differentials; real racing tires; hard anodized shocks; aircraft-quality hardware; and everything you need to rule the road.

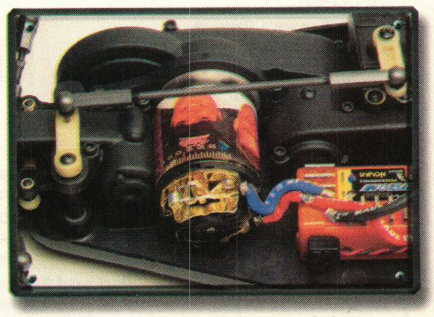




The Street Weapon chassis utilizes a saddle-pack battery configuration to distribute the weight evenly across the chassis. The quick-release battery straps hold the battery pack firmly in place. No strapping tape required!

The front end of the Street Weapon has been optimized to offer the best possible suspension geometry. One look tells you that this car means business. Fully adjustable camber and toe-in are standard features here.





The fully-sealed drive train of the Street Weapon results in more racing and less wrenching. Conquer parking-lot tracks with confidence. No need to worry about rocks or other debris getting caught in the belts and pulleys.

Team Losi, Inc. 13848 Magnolia, Ave., Chino, CA 91710 • phone: 909.465.9400 • fax: 909.590.1496 • **www.TeamLosi.com**

Building Suggestions

- Loc-tite® is needed for the slipper clutch assembly, and is not included in the kit.
- Use plumbers' Teflon™ tape around the shock threads to seal the oil inside.
- Take your time trimming the underbody dust shield. A tight fit will help eliminate belt damage from road debris.
- Take your time trimming all the excess plastic left on the parts from the parts trees. This will help ensure everything fits together correctly.
- Be sure to drill holes in the rims or poke the mounted tires with a hobby knife in order to let air out. This will help the tires conform to the track surface better.
- When installing the tires to the wheels use a small amount of soapy water on the inside mounting area of the tire. This will help them go one easier.

Recommended Hop-Ups

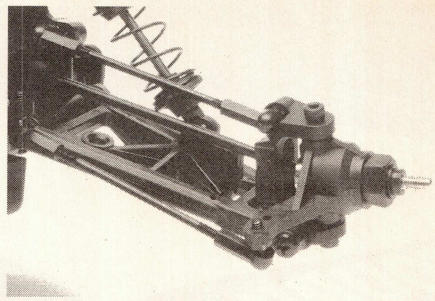
One weakness is the center drag link. It consists of a Z-Bend link. I replaced the link with a Lundsford 1" turnbuckle and a pair of "Rocket City" swivel ball joints, a simple upgrade that only set me back $8. Now the steering is very smooth and slop free, and toe-in adjustments are made easily.

The only other mod I've added (besides the turnbuckle drag link and Associated shocks) is full ball bearings. Bearing kits are available from Top Racing, HPI, Dynamite, and Duratrax. The kits include bearings for the entire truck.

HPI offers a trick set of Teflon pistons (part #6818) with varying hole sizes if you want to fine tune your shocks to track conditions.

Factory Options

- Nitro RS4 Ball Diff Set (#A905)
- 39T Front One-Way Diff (#A906)
- Sway Bar Set for Narrow RS4 (#A209)
- HPI Ball Bearing Set (#B043)
- MT Super Shocks (#A723) Front, (#A725) Rear
- Universal driveshafts (#A518) Front, (#A519) Rear
- Stainless Steel Hingepins (#A212)



The RS4 MT's front suspension carries over the same design (and most of the parts) as the RS4 Pro sedan.

my biggest surprise! WHOAA!! This thing can STEER! Credit the efficient 4WD system for pulling the MT around tight turns. After a while I noticed the chassis tended to dart left and right just a little under acceleration. I adjusted the front toe-in a little and the problem was solved.

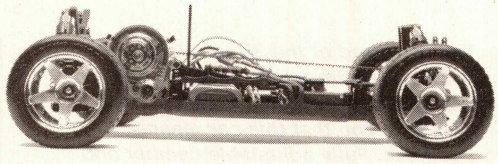
This thing's a blast!! It's like an RS4 Sport beefed up on steroids! Soon I was very comfortable power sliding left and right, taking wide sweeping turns under full throttle. Pulling full brakes on this thing is like dropping anchor!! No kidding. The MT can go from top speed to full stop in a heartbeat. The belt drive is very smooth, and silent. I credit this to that great HPI spur gear, and the Team Losi pinion gear I selected.

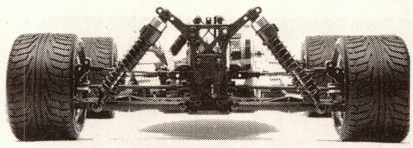
The chassis did lean quite a bit when sweeping left and right through tight turns, but it was nothing major. Maybe HPI will release a swaybar kit in the near future?

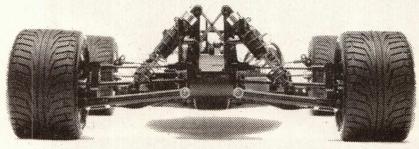
HPI Racing RS4 MT

THE VITALS

Manufacturer:
HPI Racing
15321 Barranca Parkway
Irvine CA 92618
(714) 753-1099; (714) 753-1098 fax
www.hpiracing.com







SPECIFICATIONS

Country of Origin ..... Japan
Scale 1/10
Manufacturer's List Price $219.00
Estimated Street Price $150-160
Part # 501
Intended Application ..... Backyard Bashing
Approx. build time ..... 6 hrs.

DIMENSIONS

Length (rolling chassis) ..... 14.5 in.
Wheelbase ..... 11.125 in.
Width (F) ..... 12.25 in.
Width (R) ..... 12.5 in.
Weight (RTR) ..... 3 lbs. 15oz.

CHASSIS

Type ..... Molded tub
Material ..... Fiber reinforced nylon

TIRES

Front ..... HPI V-Groove Truck radials
Rear ..... HPI V-Groove Truck radials
Wheels ..... HPI S/S chrome wheels

TRANSMISSION

Type ..... Belt-to-pulley transmission
Differential ..... Bevel gear-type
Bearings/Bushings ..... Bushings

SUSPENSION (F/R)

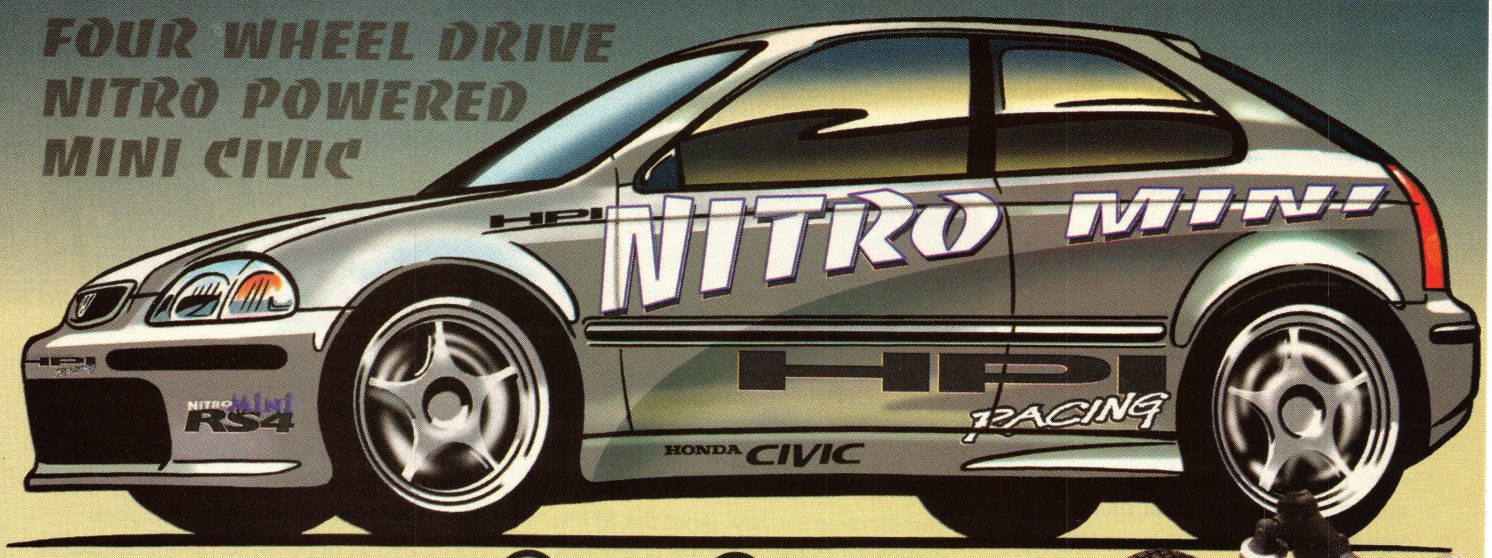
Type ..... 4W independent w/lower A-arms and adjustable upper links

Dampening ..... Coil-over, oil-filled shocks

POWERTRAIN

Configuration ..... Electric motor powered
Type included ..... None
Layout ..... Mid-motor, dual belt driven 4WD

FOUR WHEEL DRIVE NITRO POWERED MINI CIVIC

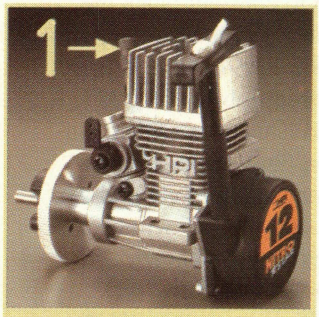


NITRO MINI RS4

Small size. Big fun.

The new Nitro Mini RS4 is here! We've revolutionized the Mini class with this new four wheel drive nitro powered car. The kit comes with our hot new Civic hatchback body, a powerful Nitro Star .12E engine, oil filled shocks, a disk brake, and an tuned muffler.

How does it run? The Nitro Mini is an absolute blast to drive! The suspension is tuned for great handling on any paved surface. And, our legendary Nitro Star engine delivers power "all day long". Just fill up the fuel tank and have fun.



Just one easy carb adjustment!

It's tough.

The Nitro Mini RS4 isn't a toy, it's built with many of the same parts as our full sized Touring Cars. Glass filled Nylon suspension arms, a thick aluminum chassis, and an aluminum front suspension brace are just a few of the standard features.



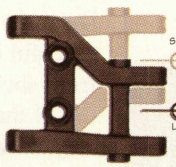
Easy to start. Easy to tune.

The Nitro Star .12E engine included inside the kit has just one carburetor adjustment. That means tuning the engine is easier than ever before. Just lean it out a few clicks after a break-in tank and start racing. Plus, the recoil pull starter makes starting the engine easy. A couple of short pulls and the engine fires right up... and idles smoothly.



HPI Hop-up wheels and tires





Adjustable Wheelbase

It's adjustable.

The Nitro Mini RS4 has adjustments for long or short wheelbase, so most of the popular Mini sized bodies will fit. A huge selection of wheels, tires and bodies are already available. And, many of our Nitro RS4 option parts fit, like the 2 speed transmission... *Get a Nitro Mini!*

Nitro Mini RS4 with Honda Civic body #451
Suggested Retail Price $299.00

HPI™ RACING

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IRVINE, CA 92618
714-753-1099 714-753-1098 FAX

The stock shock setup is way soft though, even with the Associated 35WT oil. Nothing major if you stick to the pavement. Just stay away from large jumps and you'll do fine.

PART 2

My next thrash session took place at my local dirt track. Here I met up with a few friends, two of which have 4WD buggies. The track was damp and it ranged from loose dirt to hard-packed clay. Our main jump is pretty big and can launch you up about four feet if you hit it correctly. Immediately I knew the stock setup would be too soft for this monster. So I bummed the team shocks off my RC10-T2 and filled them up with 60WT oil. I used #2 pistons in front and #1 pistons in the rear. I also used the stock HPI springs and pre-load spacers. I'll probably reserve the stock shocks for pavement pounding and the Associated shocks will be taking the off road punishment. This way all I have to do is switch the shocks when I go from on- to off-road. I also dialed in 1 degree of negative camber at all four corners.

On the dirt my impressions were identical to those on the pavement. This thing can steer!! I guess I'm used to my 2WD electric and nitro trucks that tend to push a little more. Those huge A-arms and big truck tires really soaked up the bumps. The MT really seemed to glide across rough segments of the track.



The dual belt drive is extremely smooth, too. Other racers were commenting on how quiet the MT is compared to the other 4WD buggies out there. Speaking of belts, the dirt shields protected them perfectly. I ran all day and did not have any problems with rock-damaged belts or gears.

This little truck can really fly. It handles just as well airborne as it does on the ground. While in flight, hit the throttle to lift the front end or hit the brakes to drop the nose. As for crash landings – this thing is rock solid!! Several times I'd drop the nose a little too much and send it into a barrel roll across the track. It tumbled for what seemed like forever; I felt every bump, ding, and scratch. Within the first 5 minutes, the rear wing was totally gone, so I ran without it for the remainder of the day. After several "lawn darts", tumbles, barrel rolls, and "star fish" landings (Kinwald I'm NOT!!) not one broken part! Well, except the rear wing. Killer!!

One time I misjudged a turn and thump! I tagged the large orange pylon. It looked pretty bad. Without reverse my truck was stuck there with the front tires totally skewed at a sharp right turn. I ran over to inspect the damage, But wait! Nothing was broken!! The HPI servo saver had broken free and relieved any stress from the steering servo.

The only trouble I had was with the front left Associated shock. During one of my not-so-graceful cartwheels the front shock cap ripped out of the shock body. It was nothing major really. I just refilled the shock and tightened the cap back on again. Problem solved. This particular shock is one of the newer Associated shocks that uses the composite cap as opposed to the machined aluminum one, so I simply replaced it with an aluminum cap.

I've heard rumors that RS4 MT owners are breaking their drive axles. In a day of thrashing, I was not able to break an axle. Kent Clausen (of HPI) also e-mailed that anyone who breaks an RS4 MT axle can simply return it to HPI for a free replacement. Talk about factory support. Right on!

What else can I say about the RS4 MT? Its durable, inexpensive, a complete blast to drive, easy to assemble and it comes with great factory support. Its two weaknesses are its bushings and the steering Z-bend drag link. These are nothing major really, but something to consider when the hop-up bug bites. Speaking of hop-ups, many of the Nitro RS4 and RS4 Sport hop-ups will drop right into the MT. I already have images of machined aluminum, carbon fiber graphite, and a two speed tranny spinning around in my head! I'm sure my MT will be seeing a lot of action this summer, and hopefully a racing class for 4WD off road trucks will open up soon. In the meantime I'm perfectly happy bashing about with my friends' 4WD buggies, knowing they're in for a battle.

X

Hits:

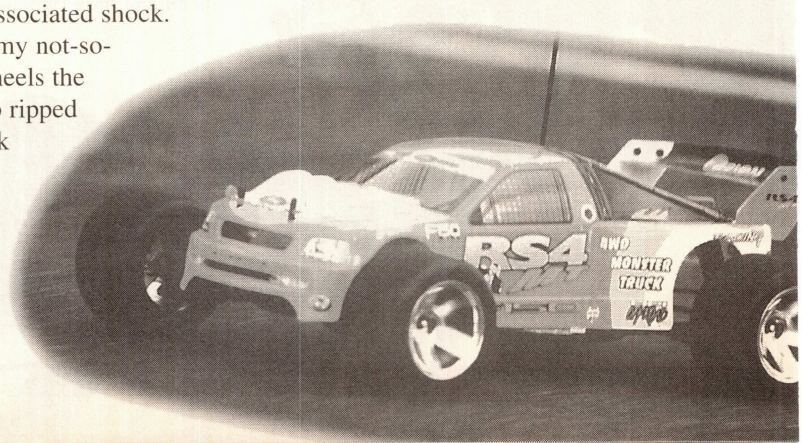


- Handles great out of the box and is durable.
- Drive system is ssmooooth.
- Will accept many current HPI hop-ups.
- Excellent factory support.
- Associated truck wheels fit without a problem (just don't use the sedan-type hex wheel adapters)
- Dust shields work perfectly.

Misses:



- Bushings throughout.
- No suspension base-line settings included in the manual.
- Z-Bend drag linkage in the steering.
- No off-road racing class exists for this chassis, not yet anyway.



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Raven

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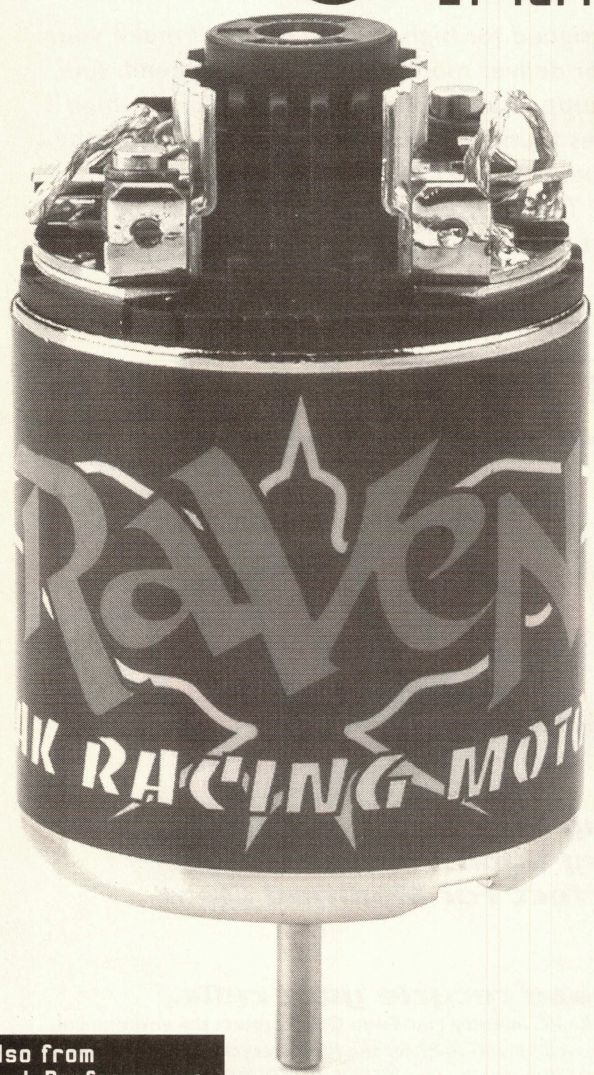



Ready to fly.

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All you need to do is bolt in a Peak Raven... and FLY!

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Rick's Pick 2



30 degree NORRCA legal Stock Motor. Dyno-tuned.

Nightmare



24 degree ROAR legal Stock Motor. Dyno-tuned.

EBX Modified



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Peak

Peak Performance . 23352-J Madero Road . Mission Viejo, CA 92691 USA Phone 714.707.4683 FAX 714.707.4684

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Team Orion V•Max 2000 cells have been dominating modified races around the world. The RC-2000 cells are designed for high capacity and deliver 10% more run time with the same durability as 1700-SCRC cells. Each cell is treated with the V•Max process that noticeably boosts voltage for the life of the cell without sacrificing run-time. For modified racing, Team Orion V•Max 2000 cells are clearly the choice of champions.



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Perfect For Modified Class

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xtreme review

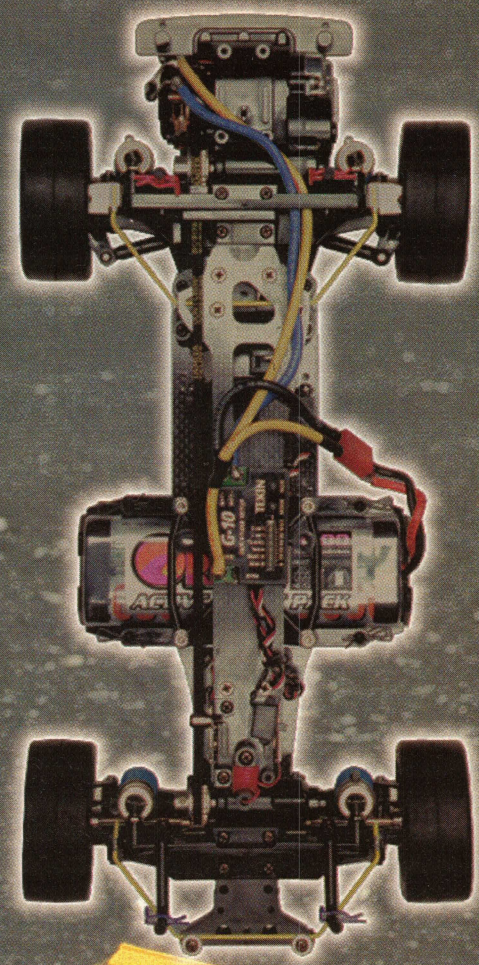
Tamiya

TAO3-F Pro David Jun Edition

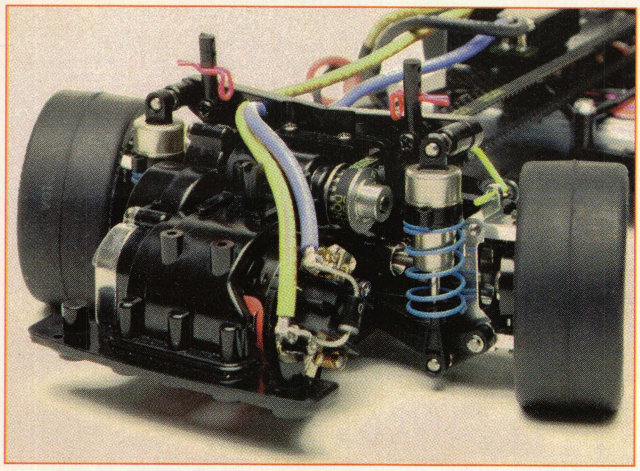
by Richard Dee

What would you do if you were a huge R\C car manufacturer and just won the Tamiya, NORRCA, and ROAR National Championships? You would probably make a big production out of it just like Tamiya did with the David Jun TAO3F-Pro Limited Edition. This kit is based on the TAO3F-Pro chassis. The car appears to be modest at first glance, but a closer look and a test drive would show a rigid, lighter, and faster TAO3F-Pro. The TAO3F-Pro features the unparalleled belt driven front motor technology. The David Jun Limited Edition is a TAO3F-Pro that has been modified to provide what it takes to win championship caliber races. The changes are subtle, but nonetheless, crucial to the car's performance and durability.

Like I said before, the Limited Edition is lighter and stronger than the original TAO3F-Pro. These facts are made possible by the contributions of aluminum hop-up parts like the hub carrier uprights, the counter shafts, and the kingpins that are included in the David Jun kit. The plastic shocks are gone and super low friction aluminum shocks are in. The increased rigidity gives the driver







ABOVE: This front view shows the various aluminum parts used on the TA03F-Pro LE, such as the front hub carriers, kingpins, belt pulleys, and motor cover.

confidence to bang doors with the best and the lighter weight will give him/her the speed to pull it off.

I'll be the first to admit that the car is only one part of racing success. Driving skill is also a big part of winning championships. But just like Tamiya's ad says, they can't mass produce David Jun to drive big races, but at least they could recreate his car.

Features

CHASSIS

The fiberglass chassis and upper brace of the TAO3F-Pro have been replaced with a carbon fiber set that is lighter and stronger. There's plenty of room for your electronic components. It's possible to mount the ESC on top of the steering servo which is located just behind the front gearbox for lower center of gravity. The receiver can be mounted towards that rear of the car, on the rear gearbox to be exact. It is also possible to hollow out the front of the rear gearbox so that the receiver is set lower and towards the middle of the chassis (see sidebar). This is great location for the receiver because it sets it away from the any components that might create interference like the servo and motor. The battery is placed in a housing that can be placed forward or backward relative to the chassis for different weight distributions.

DRIVETRAIN

The motor is mounted up front for more steering and added acceleration through turns. Both front and rear gearboxes house a ball diff with aluminum pressure plates. The front gearbox is comprised of a diff gear, a counter gear, and the spur gear. The David Jun Limited Edition is supplied with a torque splitter, or a one-way bearing, which is placed on the counter gear which rotates around an aluminum counter shaft rather than the steel shaft that originally came with the Pro. The torque splitter allows the front wheels to freewheel so that the car is able to carry more speed in and out of the corners. The spur gear is held in place with a carbon shaft instead of the steel shaft to save some weight. The motor is put into place with an aluminum motor plate and is covered with an aluminum motor heat sink that doubles as a dust cover. The rear gearbox is less complex than most because it houses only the diff and a counter shaft.

The power generated by the lightened front gearbox is shared with the rear gearbox by an Aramid fiber belt. To prevent the belt from skipping, tension on the belt may be adjusted by the tension pulley equipped with two sealed ball bearings for efficiency. The front gearbox transfers its power to the front wheels by using universal shafts which helps to smoothly deliver power to the wheels.

SUSPENSION

One of the most noticeable changes in the David Jun Limited Edition is the presence of aluminum rear uprights, hub carriers, and kingpins mainly to reduce wear and tear. These aluminum parts act together with the A-arms to provide a fully-independent suspension system. To absorb the bumps, Tamiya has included the Gold Super Low Friction Shocks and blue tuned springs on all four corners to provide the smoothest damping possible. Both front and rear suspension groups can be linked together to increase control and to prevent traction rolls by the included yellow swaybars.

STEERING

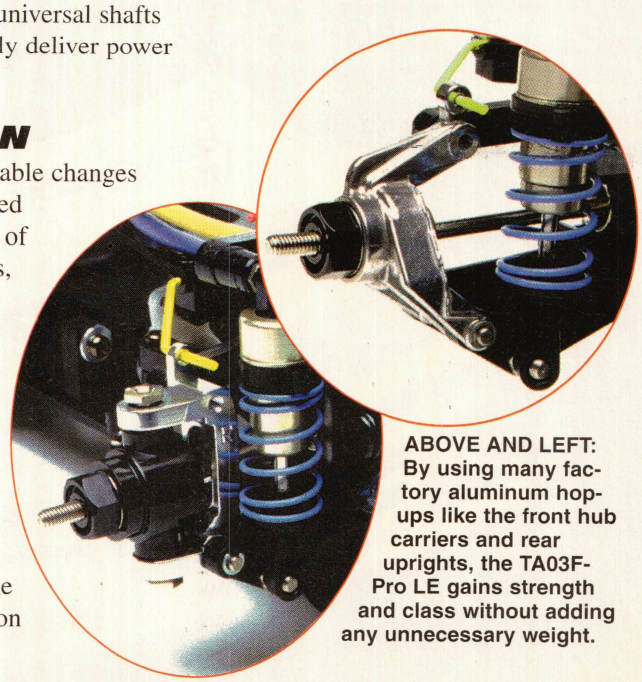
The steering was kept the same as the original TAO3F-Pro. The steering system is comprised of the dual bell crank system. One difference in the steering system is the servo saver. Instead of the three-piece plastic servo saver, this kit has an adjustable metal "saver" which is placed between two plastic housings.

TIRES

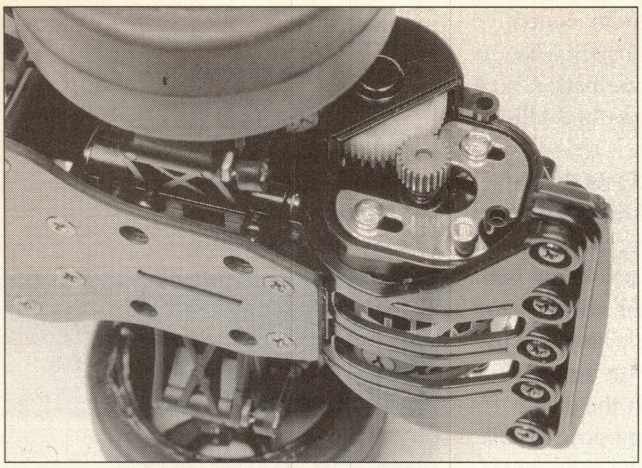
This kit includes the same type of five-spoke wheel that David Jun used during his many wins. The included wheels come in black. As soon as I unwrapped the "Reinforced Slick" belted tires I noticed that they were very soft and sticky. Inside the tires were inner foams that I thought were firmer than the previous inner foam supplied with the standard TA03F-Pro.

Testing

With all the trim adjustments done, it was time to see what was so special about this car. I chose the lot behind Massies Hobbies where they hold their parking-lot races. The surface was smooth blacktop. I built myself a small road course with the dots that Massies



ABOVE AND LEFT: By using many factory aluminum hop-ups like the front hub carriers and rear uprights, the TA03F-Pro LE gains strength and class without adding any unnecessary weight.



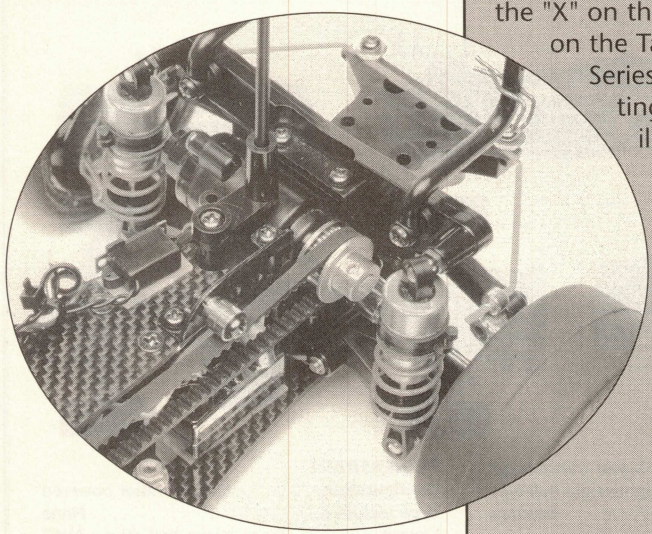
ABOVE: The TA03F-Pro LE's graphite chassis is stiffer than the standard piece. Also, the included metal motor plate combines with the aluminum motor cover to draw heat away from the motor.

TEST GEAR

- Airtronics Caliber CX2P with S9404 Steering servo.
- Tekin G-10 ESC
- Orion V-Max RC 2000 cells
- Peak Raven and 12-turn Xipp XS

uses for its races. I used the factory's setup for my first run and took a couple laps to familiarize myself with the track layout. After the third lap, I thought it was time to turn some hot laps. I was really amazed at how the car handled especially when exiting corners. The Limited Edition was quicker through the corners than I thought it would be. I liked how the rear end remained glued to the surface even when I was on the power exiting a relatively tight turn. I was really surprised because most cars have to have their rear end set a little loose to be able to go around a tight turn. In addition, I was happy to see how much speed the car had entering and exiting the corner. This had a lot to do with the torque splitter that had the front tires freewheel in the turns. I was quite impressed by how well the stock setup worked.

But, being a racer, there were adjustments to be made to tune the car to my liking. When I do adjustments, I usually do one at a time so that I can pinpoint which change worked and which didn't. I noticed that the car pushed a little entering a high speed corner. I took the car back in and added 1 degree of toe out just like on David Jun's car and ran the car again. This was definitely an adjustment that worked. I was able to cut into the corner a bit tighter as well as maintaining the high speed I carried into the corner. Exiting the

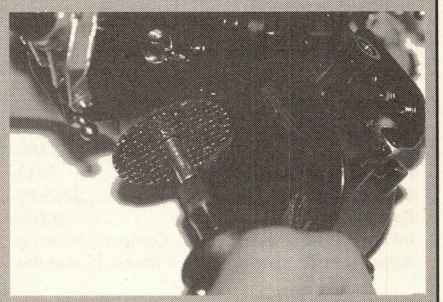


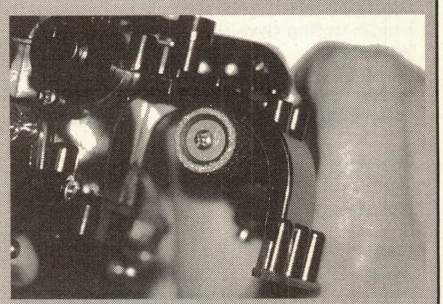
ABOVE: The rear end of the TA03F-Pro LE is also treated to the aluminum diet with lightweight rear knuckle arms, shocks, and pulleys. Note the ball-bearing belt tensioner.

BUILDING TIPS

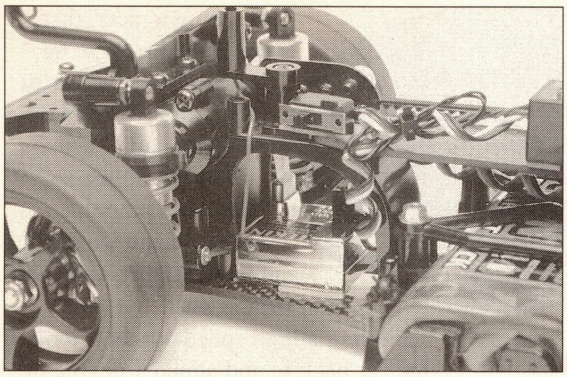
In typical Tamiya building fashion, construction was a breeze. The parts for each section of the car kit had their own bag. This made it very easy to identify parts quickly without any confusion.

This Limited Edition car is light, but it could be even lighter according to David Jun. As you put the car together find areas where plastic material can be eliminated. In front of the rear gearbox, remove the two plastic "walls" so that you create room to mount your receiver. Be careful to leave the arch on the housing, however, so that the top graphite brace will have something to bolt on to. As for the front gearbox, you could shave the posts just above where the motor is set. It's your option if you want to shave the small bumper right in front of the motor. Leaving it on will protect the motor, but I would go ahead and shave that too because most of the motor is protected by the gearbox anyway. There is also excess plastic around the rear swaybar area and the "X" on the battery support. Keep in mind that if you plan to race on the Tamiya Championship Series (TCS), plastic cutting here and there is illegal.





TOP: Using your Dremel Moto-Tool™ and a cutting wheel, carefully remove the side walls of the rear gear box just in front of the suspension mounts. Be sure not to remove any portions of the case that will be mounting to the chassis by a screw.
BOTTOM: Once you've cut the two walls off you can go over the area with a drum sanding bit to smooth things out.



Here's a look at the modification to the rear gearbox assembly. This change cuts down on weight and brings the receiver down low, but is illegal for Tamiya TCS racing.

corners felt a little different now. The front end seem to be more sensitive to steering corrections. Although the car was agile, the rear end never broke loose. I started to wonder what factor would make the car wash out.

I removed the yellow swaybars from the front and rear suspension and ran it again. Ah Ha! The car still ran fine but it wasn't as "square." Entering the turn was about the same, but exiting was different. I noticed that the car was a little more lively. It wasn't as poised as it was when the swaybars were on, but as I finished off the battery I began to like having the swaybars off. Without the swaybars, the car responded to my commands a lot better. I had to charge another battery so I had some time to fiddle with the car.

I noticed that the car could sit a little lower. David Jun recommends adding a spacer about half the size of the white piston between the piston and the shock body on the shock shaft to limit the down travel. The purpose of this is to lower the car's center of gravity and to increase traction under deceleration or braking. Lowering the car will also decrease the body roll which might result in the tires breaking loose. While overhauling the shocks, I replaced the stock oil with Associated's 30WT silicone oil. With having a lower chassis and a charged battery, I ran the car again. The car was even more sensitive to my commands.

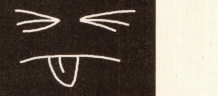
I knew that I was getting close to my ideal setup. I decided to slap on a set of super-narrow HPI belted slicks. The car was noticeably quicker mainly do to the fact that super-narrow wheels and tires have less rotating mass. The Limited Edition seemed to have almost

Hits:



- The instructions are easy to follow and understand.
- Key hop-up options are included in the kit.
- Good price for what you get.
- Extremely rigid chassis.
- Easy to tune and drive.

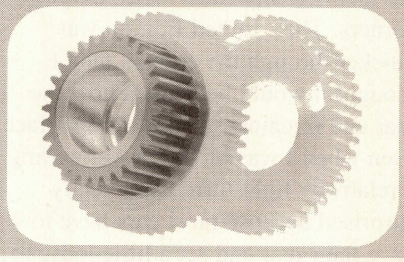
Misses:



- Doesn't accept saddle or side-by-side battery configuration.

Quick Gear Fix

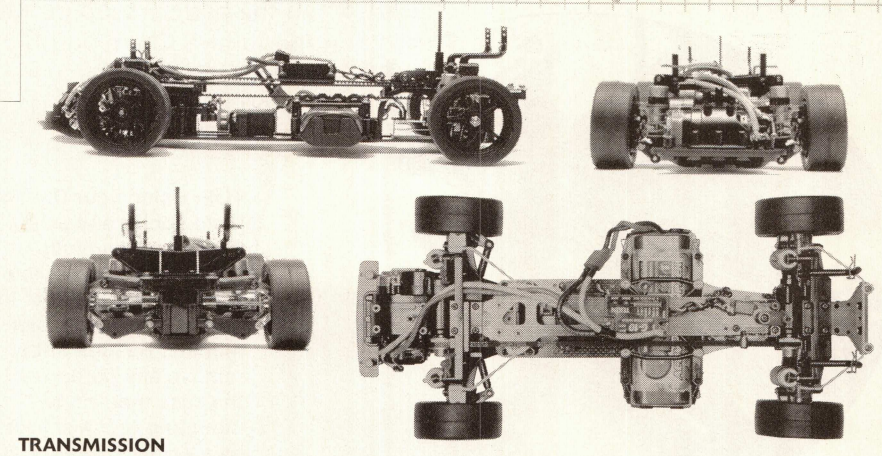
The spur and pinion that come with the TA03F-Pro LE are unique to Tamiya and are metric pitch. If you've got a bundle invested in 48-pitch gears and don't want to invest in Tamiya only gears you can pick up the cluster/spur gear set from Robinson Racing. The Cluster comes with both 48- and 50-tooth spurs and will allow the use of standard 48-pitch pinions.



TAMIYA David Jun TA03F-Pro Limited Edition

Manufacturer:
Tamiya America Inc.
2 Orion, Aliso Viejo CA 92656
(800) TAMIYA-A; (714) 362-2250 fax

THE VITALS



SPECIFICATIONS

Country of Origin	Japan
Scale	1/10
Manufacturer's List Price	$443
Estimated Street Price	$255.00
Part #	58200
Intended Application	Competitive racing
Approx. build time	4 hours, 15 minutes

DIMENSIONS

Length (rolling chassis)	15.3 in.
Wheelbase	10.1875 in.
Width (F)	7.2 in.
Width (R)	7.2 in.
Weight (RTR)	3 lbs. 2oz.

CHASSIS

Type	Double-deck
Material	Carbon fiber

TIRES

Front	Tamiya Reinforced Slicks
Rear	Tamiya Reinforced Slicks
Wheels	Tamiya 5-spoke one-piece plastic

TRANSMISSION

Type	Belt to 3-gear transmission
Differential	Lightweight ball-type
Bearings/Bushings	Bearings

SUSPENSION (F/R)

Type	4W independent w/lower A-arms and molded upper links
Dampening	Coil-over, oil-filled shocks

POWERTRAIN

Configuration	Electric motor powered
Type included	None
Layout	Front motor, belt driven AWD

MAIN COMPETITION

Kyosho TF2-R, HPI RS4 Pro, Yokomo YR4-M, Losi Street Weapon, Schumacher SST 2000

the same traction as before, but now with added agility and quickness.

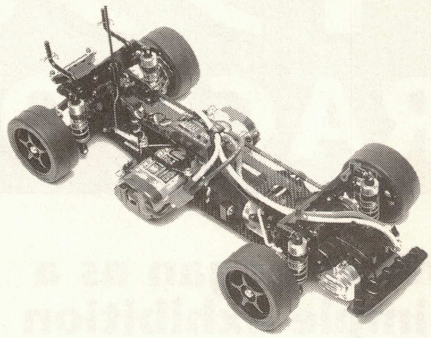
My next test was with a Xipp 12 Double Modified Motor and used the same 23-tooth pinion I used before. I squeezed the trigger and the car was long gone. As fast as it was, the car started to drift a little more and seemed to be on the verge of washing out, but never did. I removed the super-narrow tires and put the stock tires back on. The stock tires surprisingly held on to the blacktop as I burned through the road course I created. Not to detract from David's accomplishments, I could see part of the reason why he has been so successful.

Setup Tips from Dave Jun

Rear Suspension
Oil: 30WT
Springs: Blue
Pistons: Two hole Teflon
Ride Height: Chassis is 6mm from track surface

Front Suspension
Oil: 30WT
Springs: Blue
Pistons: Two hole Teflon
Ride Height: Chassis is 7mm from track surface
Toe: 0° to 1° out

Other Details
- Front Gear Pulley: 16 tooth
- Mount the battery forward for increased steering.
- Always try the car with and without swaybars.



Conclusion

I've driven many sedans in the past including the TAO3F-Pro, the original car that the David Jun Limited Edition has been derived from. The Limited Edition does everything the Pro did, but does it better. This car is faster thanks to the amount of rotating weight that has been shed. The high-quality shocks along with a more rigid chassis and suspension system help the car corner with higher speeds and the traction to pull it off.

Like I said before, this car is really sensitive to changes, and I like that. There aren't really a lot of options as far as adjusting the suspension geometry, but nonetheless, the car is responsive to subtle changes that were done. It doesn't take much to get this car dialed in to different track conditions.

Honestly, I was skeptical about this car. I didn't think that it would be any different than the Pro. I was wrong. The David Jun TAO3F Pro Limited Edition is virtually a different car from its predecessor.

X

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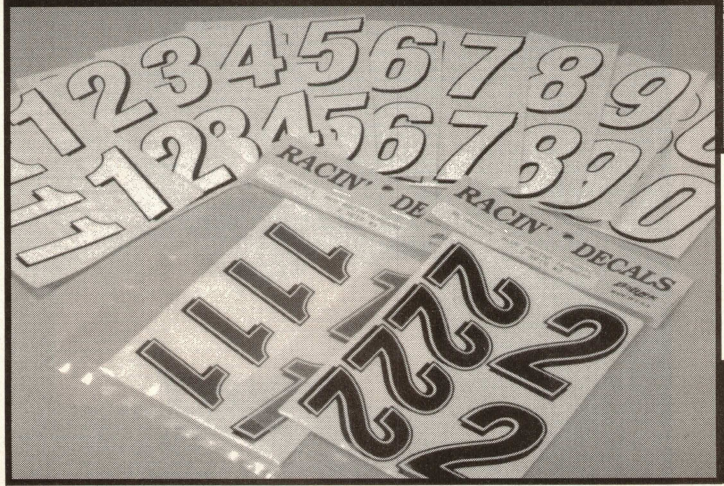



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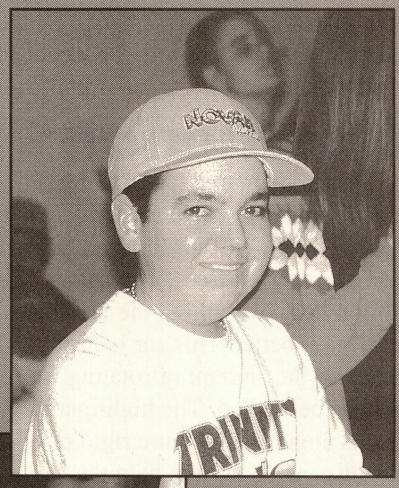
1998 REEDY RACE OF CHAMPIONS

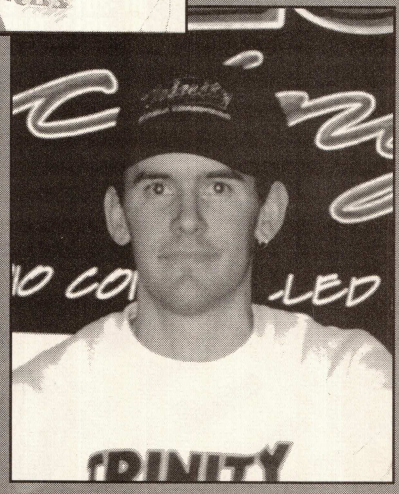
What began as a simple exhibition race has turned itself into a gathering of the greatest 1/10-scale off-road racers in the world.

By Mike Velez





Top to bottom: Losi's Brian Kinwald, Associated's Mark Pavidis and Open class winner Chad Phillips show their skills at the 1998 Reedy Race of Champions.

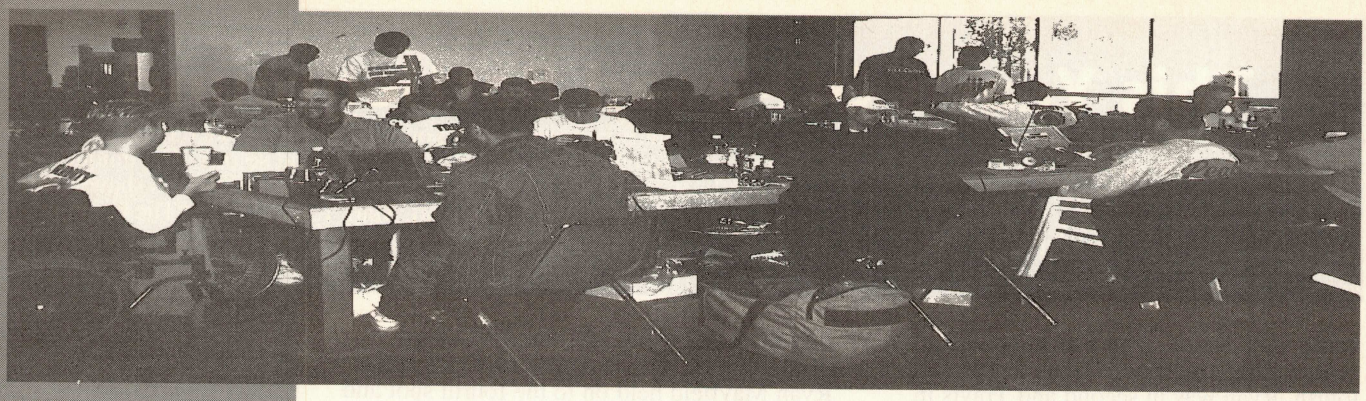


The off-road racing season kicks off every January with a race steeped in tradition, the Reedy Race of Champions. This year's running is the race's 12th annual. The Reedy Race of Champions is held every year as a great big birthday party to honor one of the pioneers of our sport, Mike Reedy. This year's race supplied plenty of tight racing and nail biting suspense This year's race was held at MnM Hobbies Raceway in Corona, California. The same track that has hosted the event for the two previous years. Would this year's event live up to races past? We'll soon find out.

Racing Classes

The Reedy Race of Champions is not your normal race. There are three classes — 2WD Open, 4WD Open and Invitational. The 2WD and 4WD are your standard modified classes following ROAR rules. Each open class had three rounds of qualifying on Saturday and one final qualifying round along with the mains on Sunday. The Open class is open to anyone who wishes to enter. A win in the Open event will result in an invitation to race in the following year's Invitational class.

The Invitational class consists of 25 racers who are invited to race in the class. Each driver must compete in both 2WD and 4WD modified classes. Conventional qualifying is thrown out the window in favor of a points system covering six races in both 2WD and 4WD. Points are distributed depending on a racer's finish in each race. One point goes to the winner, two to second, three to third, and



so on. After the end of six races, each racer is allowed to throw out their worst race and points are calculated. The racer with the lowest point total is in the lead. When the 2WD and 4WD point totals are combined the racer with the lowest point total is crowned the winner. In the event of a tie, the "throw out points" are factored in.

Open Class

2WD Qualifying

The stage for the 2WD A-Main was set early. Chad Phillips eeked out a top qualifying position with a time only four tenths of a second ahead of second qualifier, Austin Dvorak. Three seconds would separate the top seven qualifiers in the A-Main.

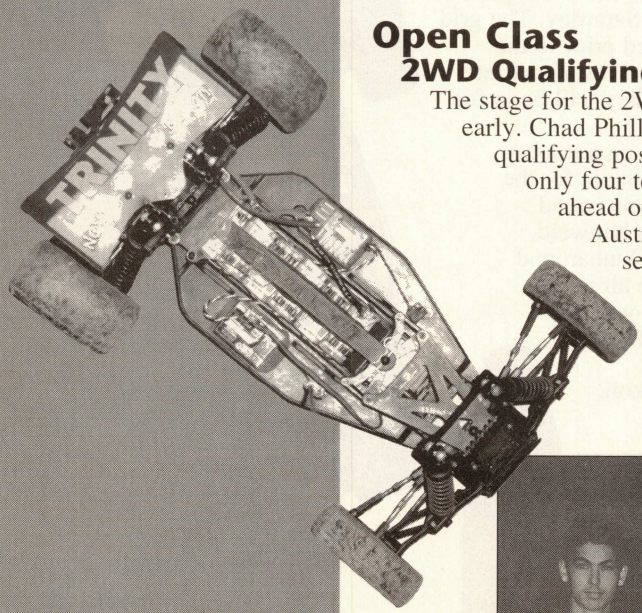
4WD Qualifying

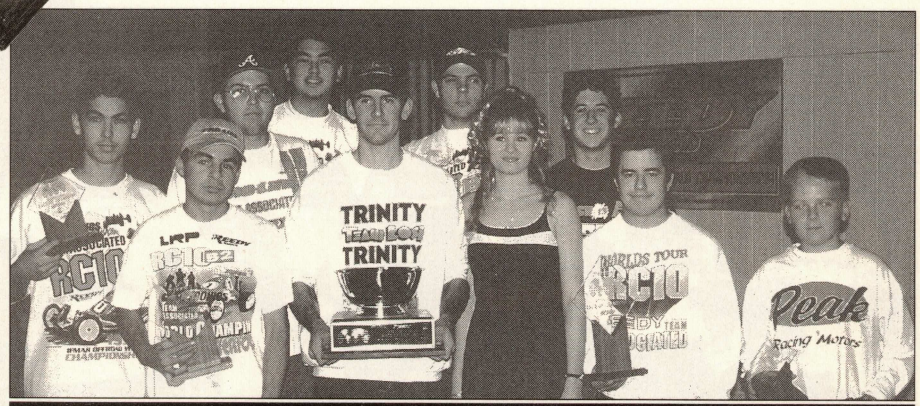
Again, Chad Phillips came through with a strong showing to take the TQ position in the 4WD class. Shawn Dassonville and Travis Amezcua rounded out the top three qualifying spots. The rest of the A-Main consisted of Mike Walker, Patrick McCarson, Gene Hickerson, Lloyd Dasonville, Ryan Mayfield, Jeff Wittman, and Derek Pocoroba.

Mains

2WD

Early in the race a four-way battle for the lead began to brew between Chad Phillips, Austin Dvorak, Travis Amezcua, and Ryan Mayfield. By the two minute mark Chad was in the lead, Austin in second, and Ryan, who had started in 9th position, in third. Toward the end of the race Chad had carved out a commanding lead, but a battle was being raged not far behind. It was a three-way





ABOVE: Chad Phillips' top qualifying and 2WD Open Main winning Losi XX 'CR'.

RIGHT: Chad shows his new trophy – not just a symbol of being #1, but also a starting position in next year's Reedy Invitational race!

2WD Open Results

Fin	Qual	Driver	Chassis	Battery	Motor	ESC	Tires(F/R)
1	1	Chad Phillips	Losi XX 'CR'	Trinity	Trinity 12x2	Novak	Losi/Pro-Line
2	2	Austin Dvorak	Assoc. B3	Reedy	Reedy 12x2	LRP	Pro-Line/Pro-Line
3	7	Travis Amezcua	Assoc. B3	Reedy	Reedy 12x2	LRP	Pro-Line/Pro-Line
4	9	Ryan Maifield	Losi XX 'CR'	Orion	Peak 12x6	Tekin	Losi/Pro-Line
5	8	Lloyd Dassonville	Assoc. B3	Reedy	Reedy 11x2	LRP	Pro-Line/Pro-Line
6	3	Shawn Dassonville	Assoc. B3	Reedy	Reedy 12x2	LRP	Pro-Line/Pro-Line
7	10	Bryce Beaver	Assoc. B3	Reedy	Reedy 12x2	LRP	Pro-Line/Pro-Line
8	5	Steve Chamberlin	Losi XX 'CR'	Orion	Peak 13x6	Novak	Losi/Pro-Line
9	6	Jason Corl	Assoc. B3	Reedy	Reedy 12x5	LRP	Losi/Pro-Line
10	4	Chad Bradley	Assoc. B3	Reedy	Reedy 12x2	LRP	Pro-Line/Pro-Line

This Year's Off-Road Battleground

The track at MnM is unique to say the least. As far as the layout is concerned, it's your basic well-rounded track with a long straightaway, some sweeping turns, some hairpins, table top jumps, doubles, triples, ruts, and so one. The uniqueness comes from the dirt. It's kind of a damp clay that delivers more traction than anywhere I've seen. Racers shave their tires bald (see Quick Tips Issue 3.6) then sauce them up with traction compound. Mark Pavidis said, "The track is difficult to race on. The dirt is very high traction. It's like driving your off-road car on carpet with jumps."

battle with Austin, who was in second at the time, hitting a pipe and bumped down into fourth. Ryan was in second and Travis in third. By the time it was all over, Austin worked his way back into the second spot. Chad, the TQ, took the win with Travis Amezcua in third and ninth qualifier Ryan Mayfield in fourth. Rounding out the rest was father and son team Lloyd and Shawn Dassonville in fifth and sixth, Bryce Beaver, Steve Chamberlin and Jason Corl. Chad Bradly had problems on the 5th lap and was forced to take a DNF.

For Chad Phillips, this win would mean an invite for next year's race. With the thrill of victory still fresh, Chad would try to repeat his TQ/win in the 4WD Open class.

4WD

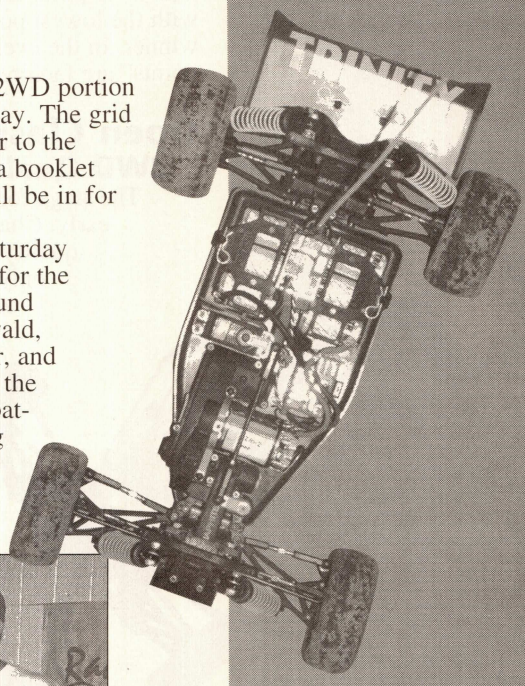
Chad Phillips separated himself from the rest of the pack early in the 4WD Main. Chad jumped out into an early lead and managed to take the win with14 laps while the rest of the filled finished with 13. Ninth place qualifier Jeff Wittman missed going 14 laps as well by just a second and a half. Three and a half seconds behind Jeff was 2WD third place finisher, Travis Amezcua. Once again Ryan Mayfield held on to the fourth spot and Shawn Dassonville in fifth. Rounding out the rest of the Main was Mike Walker, Lloyd Dassonville and Gene Hickerson. Patrick McCarson, and Derek Pocoroba.

Invitational

2WD

Six races were held for the 2WD portion of the Invitational on Saturday. The grid for each race is juggled prior to the event. Each driver receives a booklet detailing which race they will be in for each round.

After three rounds on Saturday there was a four-way battle for the lead when one throw out round was factored in. Brian Kinwald, Greg Hodapp, Brian Dunbar, and Jimmy Jacobson were all in the hunt for first. A three-way battle for second was unfolding as well between Mark Pavidis, Sohrab Tavakoli,



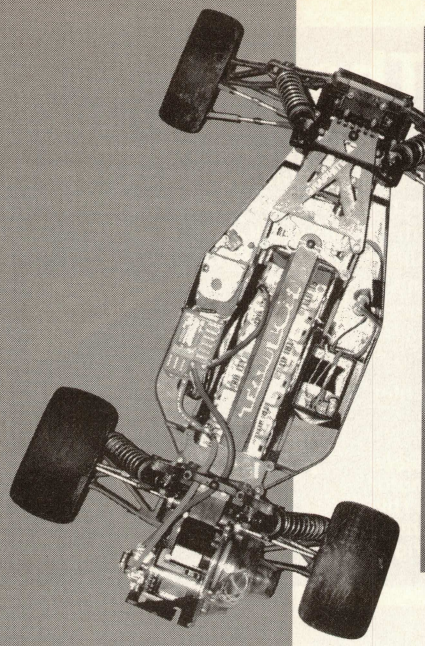


LEFT: Not only did he take 2WD top honors, but the win in the 4WD Open class was also taken by Chad Phillips. Congratulations to Chad for sweeping the 1998 RROC Open Classes!

TOP: The 4WD Open's winning weapon of choice, Chad Phillips' Losi XX-4.

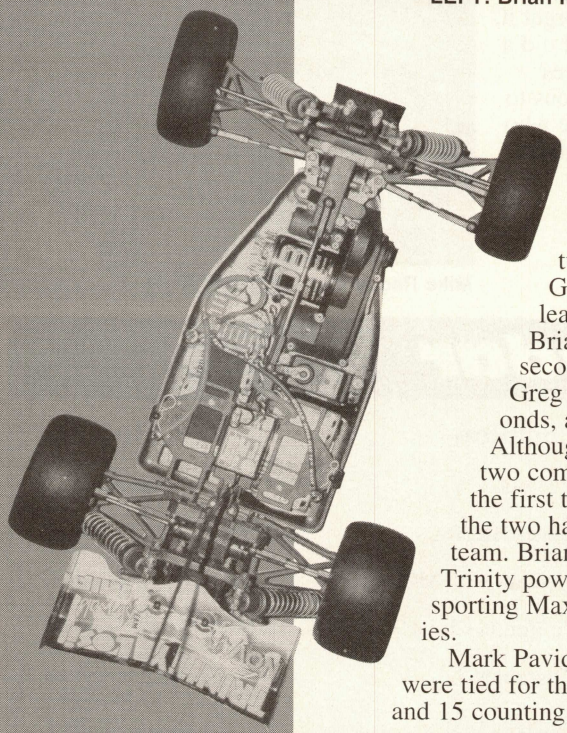
4WD Open Results

Fin	Qual	Driver	Chassis	Battery	Motor	ESC	Tires(F/R)
1	1	Chad Phillips	Losi XX-4	Trinity	Trinity 10x3	Novak	Losi/Losi
2	9	Jeff Wittman	Sch. Cat 2000	Promatch	Maxtec 11x1	Tekin	Pro-Line/Pro-Line
3	3	Travis Amezcua	Yokomo MX-4	Reedy	Reedy 10x2	LRP	Pro-Line/Pro-Line
4	8	Ryan Maifield	Losi XX-4	Orion	Peak 11x2	Tekin	Pro-Line/Pro-Line
5	2	Shawn Dassonville	Yokomo MX-4	Reedy	Reedy 11x2	LRP	Pro-Line/Pro-Line
6	4	Mike Walker	Yokomo MX-4	Reedy	Reedy 10x2	LRP	Pro-Line/Pro-Line
7	7	Lloyd Dassonville	Yokomo MX-4	Reedy	Reedy 11x2	LRP	Pro-Line/Pro-Line
8	6	Gene Hickerson	Losi XX-4	Orion	Peak 11x2	Tekin	Losi/Losi
9	5	Patrick McCarson	Sch. Cat 2000	Orion	Peak 11x3	Tekin	Pro-Line/Pro-Line
10	10	Derek Pocoroba	Losi XX-4	Maxtec	Trinity 12x2	Novak	Losi/Pro-Line





ABOVE: BK does it again! Losi's Brian Kinwald handled the pressure and took the overall win in the final main event. Mark Pavidis and Masami Hirosaka, both running for Associated and Yokomo, rounded out the top three overall finishers.
LEFT: Brian Kinwald's RROC winning XX- 'CR' *Kinwald Edition* and XX-4.



and Matt Francis who were all looking for another win. At the end of the day it was the old gold dust twins Brian Kinwald and Greg Hodapp tied for the lead, each with 10 points. Brian had two firsts, one second, and three thirds. Greg had two firsts, two seconds, and two fourths. Although we've seen this one-two combination before, it was the first time in a long time that the two had not been on the same team. Brian dawned his usual Trinity power while Greg was sporting Maxtec motors and batteries.

Mark Pavidis and Brian Dunbar were tied for third each with 11 points and 15 counting the throw outs. Sohrab Tavakoli also had 11 points, but with 16 including the throw out.

4WD

Despite being Super Bowl Sunday, the house was packed for the 4WD round on Sunday. After three rounds, Mark Pavidis and Brian Kinwald had set themselves apart from the pack by winning each of their three rounds. Both Mark and Brian were in the same race for the fourth round of the day. Neither one was very impressive. Greg Hodapp moved into the lead early and went on to win the race with Sohrab Tavakoli in second. Brian Kinwald finished in the fourth sport while Mark Pavidis was confined to the sixth spot. This gave Brian some breathing room in case of a tie. Once again in the fifth round it was both Mark and Brian taking a first place finish. What did this mean for the last round? Mark would need to finish two places better than Brian and with nothing less than a third place finish.

Invitational Final Results

Fin	Driver	Chassis' (2W/4W)	Battery	Motor	ESC	Radio
1	Brian Kinwald	Losi/Losi	Trinity	Trinity	Novak	Airtronics
2	Mark Pavidis	Assoc./Yokomo	Reedy/Orion	Reedy	LRP	Airtronics
3	Masami Hirosaka	Assoc./Yokomo	Yokomo	Reedy	Tekin	KO Propo
4	Greg Hodapp	Losi/Yokomo	Maxtec	Maxtec	Novak	Airtronics
5	Sohrab Tavakoli	Losi/Losi	Maxtec	Maxtec	Novak	Airtronics
6	Mark Francis	Losi/Losi	Trinity	Trinity	Novak	Airtronics
7	Brian Dunbar	Losi/Losi	GM	GM	GM	Airtronics
8	Todd Hodge	Losi/Losi	GM	GM	GM	Airtronics
9	Craig Drescher	Assoc./Yokomo	Orion	Reedy	LRP	Ko Propo
10	Jimmy Jacobson	Assoc./Yokomo	Reedy/Orion	Reedy	LRP	KO Propo
11	Rick Hohwart	Losi/Losi	Orion	Peak	Novak	Futaba
12	Matt Francis	Losi/Losi	Trinity	Trinity	LRP	Airtronics
13	Chris Bing	Losi/Losi	Trinity	Trinity	Novak	Airtronics
14	Scott Brown	Losi/Losi	Trinity	Trinity	Novak	JR Propo
15	Alex Gurrero	Losi/Losi	Orion	Peak	Novak	Airtronics

In the sixth and final round Mark Pavidis was in the second round while Brian was in the third. Early in the race Mark was in third trying to hunt down the leader, Sohrab. At one minute, thirty seconds into the race Mark had moved in to second. For the next few minutes Mark would put all kinds of pressure on Sohrab. On the final lap and a few turns from the finish Mark punched it on triple jump and passed Sohrab in the air. The crowd was in chaos. Unfortunately for Mark, the landing wasn't as sweat as the pass. Mark's car tumbled in for the landing allowing Sohrab to regain the lead and take the win. Mark finished with second.

With Mark's second place finish in the race before, Brian needed to pull off a third or better to take the championship. High pressure is nothing new to Brian. His high pressure/killer instincts came through when he needed it by taking the win in the sixth and final round. Masami Hirosaka put lots of pressure on Brian throughout the race, but that would not be enough rob Brian of the Championship.

Conclusion

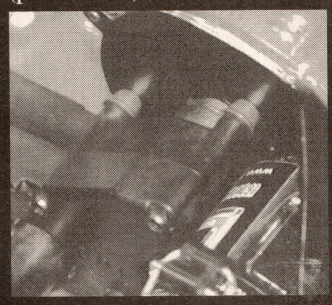
This year's Reedy race was one to remember — great, clean racing with lots of suspense. Chad Phillips' impressive performance will bring him back here next year, but I wouldn't be surprised if you see his name pop up sooner than that. Mark Pavidis and Brian Kinwald put on a great show, as always. Their rivalry is one legends are made from. All of those who participated in the race will not soon forget it. The entire crew at MnM did a great job and ran the races flawlessly. Congratulations to the winners and all those who participated. Happy Birthday Mike!

X

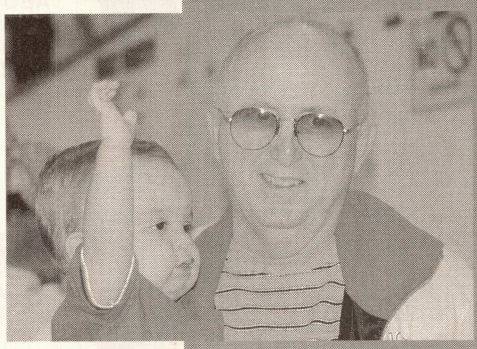
New In The Pits

While most racers were cutting down their nobbed tires, Pro-Line came prepared with slick off-road tires. These tires were already trimmed to prevent cutting too much off the carcass of the tire and being left with thin spots. At the event the word was that Pro-Line would not be marketing these tires and only made them for this event. But since then they've announced they will be available (part #8188).

Team Losi drivers were seen using Factory Works "Cool Things" as spacers to move the motor plates of their buggies away from the gear box. This places the motor more toward the center line of the chassis for better balance.



Factory Works is working on pieces made especially to move the motor plate away from the gear box. This will make the car more balanced from left to right.



Mike Reedy and Grandson Cody.

Xtreme Race Calendar

Race	Date	Location	Contact
NORRCA Calif. Elec. Sedan St. Champs	April 4	Ventura, CA	Venture Road Runners 805-656-7223
Trinity Street Spec #9 Finale and Pizza Party	April 5	Honesdale, PA	Marshall's Hilltop Hobbies Bill 717-729-7458
Missouri Off Road State Championships	May 1	Pleasant Hill, MO	Real R/C 411
5th Annual Tortoise Classic (off-road)	May 1-3	California City, CA	Greg's Hobbies 619-373-3765
IEDA Southern Nationals	May 1-3	Clinton, NC	Corbitt Marshburn 910-592-9489
NORRCA Reedy Truck Race Of Champions	May 9-10	Pomona, CA	Ranch Pit Shop 909-623-1506
Oregon Off Road State Summer Kick Off	May 16-17	Williamette, OR	Race Club 503-364-9188
Tamiya TCS Race #46	May 31	Salt Lake City, UT	West Valley Hobbies 801-964-1700
ROAR 1/8 & 1/10 Off-road Fuel Nationals	June 5-7	Warren MI	Top of the Hill Club 810-268-4870
ROAR 1/12 & 1/10 Electric On-road Nationals	June 19-21	Houston, TX	Performance Raceway 713-975-7658
NORRCA Texas Off-road St Champs	June 19-21	Harlingen, TX	Gears R/C 411
IEDA Gold Coast Nationals	June 12-14	Miami, FL	Mike Blair 305-948-3451
ROAR Region 2 Off-road Buggy Champs	June 12-14	Warminster, PA	D.C. Ultra Trax 215-672-5200
NORRCA Off-road Nationals	June 26-28	New Caney, TX	K &M Racing 411
Tamiya TCS Race #49	June 28	Overland Park, KS	Hobbytown, USA 411

Race Coordinators! Get your race events listed here free in a future issue. Send or fax us a race entry sheet. Send them in at least 3 months in advance. Send them to: *Xtreme R/C Cars*, 627 E. Edna PL., Covina CA 91723 or fax to 626-331-9753.

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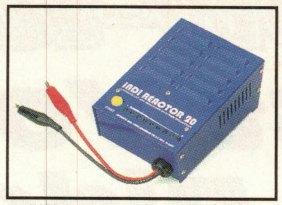
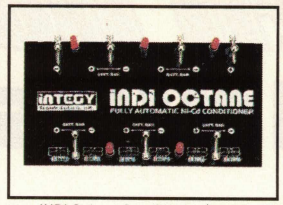
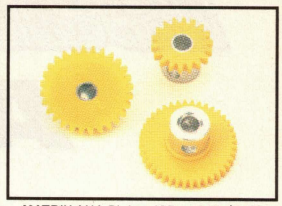
INDI 16X-Pro AC/DC Charger, $119.99



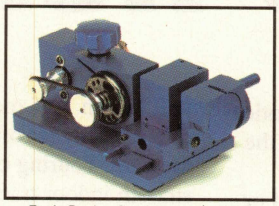
INDI Reactor 20 Discharger, $49.99

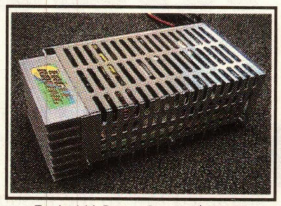


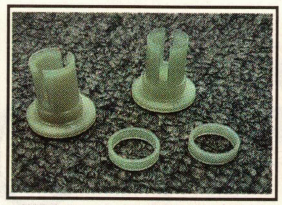
INDI Octane Conditioner, $39.99

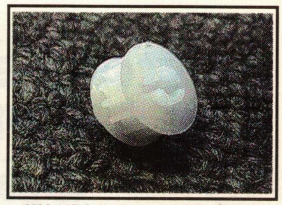

MATRIX AKA Pinion 48P or 64P, $3.75


Eagle Racing MOD Lathe, $189.99

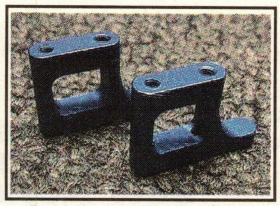

Eagle Racing Stock Lathe, $189.99


Eagle 14A Power Supply, $149.99


M60 C-Drive for XX, XXT & XX4, $19.99


M60 15T Solid Pulley for RS4, $15.99

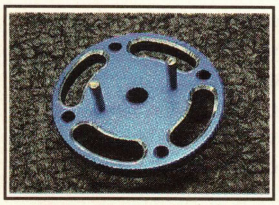

Steering Block for RS4(New), $19.95

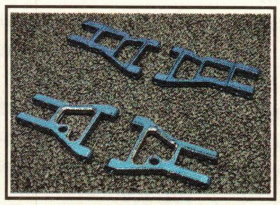

Engine Mount for Nitro RS4, $17.99


Rear Hub Carrier for RS4(New), $19.95


Rear Block for Nitro RS4, $19.95


Center Block for Nitro RS4, $19.95

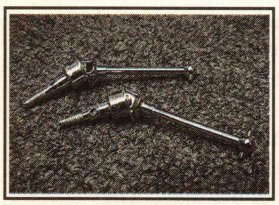

Fly Wheel for Nitro RS4, $13.50

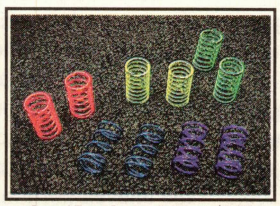

Arms for RS4(Sports/Pro/Nitro), $19.95/pr.

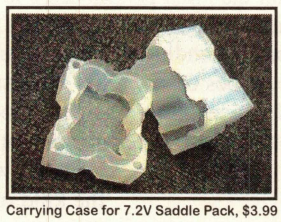

Castor Block for RS4(New), $19.95

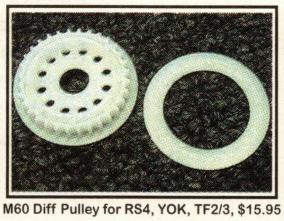

4mm Chassis for Nitro RS4, $70.00

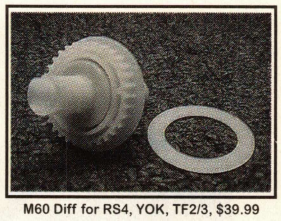

Tune Pipe Set for Nitro RS4, $70.00

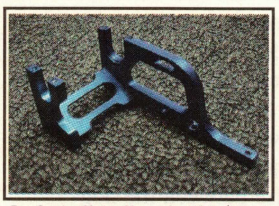

Universals for HPI, TAM, YOK, KYO, $16.99

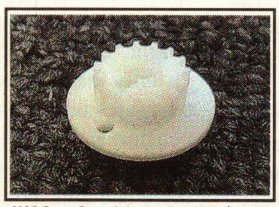

Speed Tune Spring Set(5pr), $9.99


Carrying Case for 7.2V Saddle Pack, $3.99

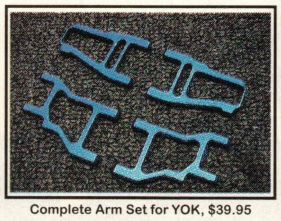

M60 Diff Pulley for RS4, YOK, TF2/3, $15.95


M60 Diff for RS4, YOK, TF2/3, $39.99


Pro Center Motor Mount for YOK, $49.99


M60 Spur Gear Adaptor for YOK, $19.95


3 Degree Castor Block for YOK, $39.95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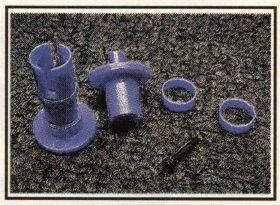
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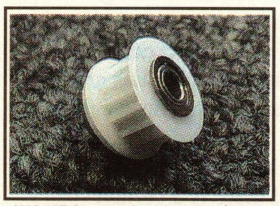
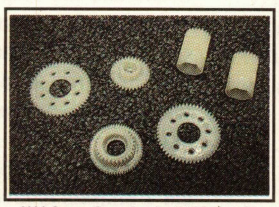
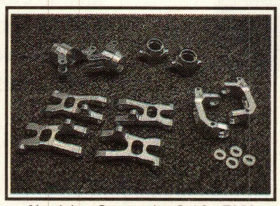
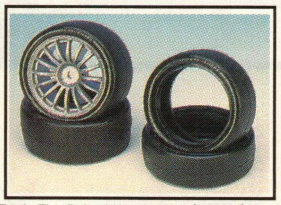
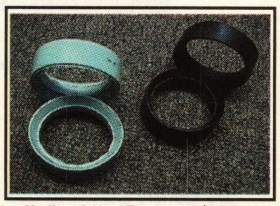
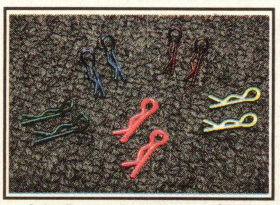

M60 15T One-way for RS4, YOK, $32.00

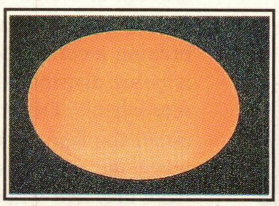

M60 Super Gear Set for TA03, $18.99


Aluminium Suspension Set for TA03


Eagle Tire Belted/Non-belted, $13.00/$12.00


Medium & Hard Tire Insert, $3.99/pr.


Color Bent-up Body Clips (5), $2.00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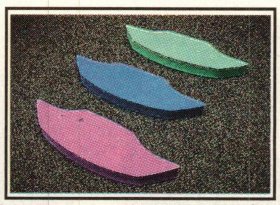
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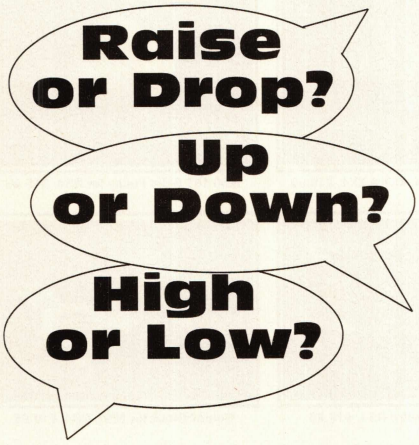
learn how-to Adjust Your Car's Ride Height

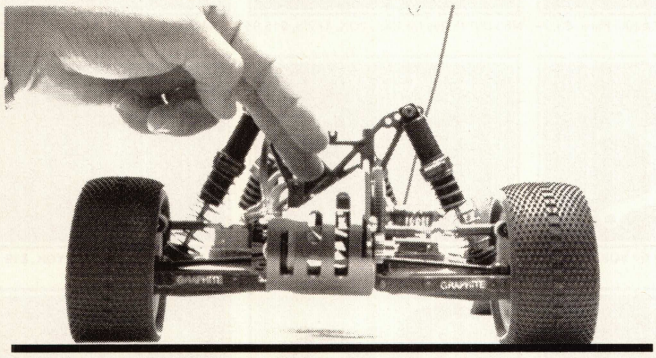
by Nirvan Das

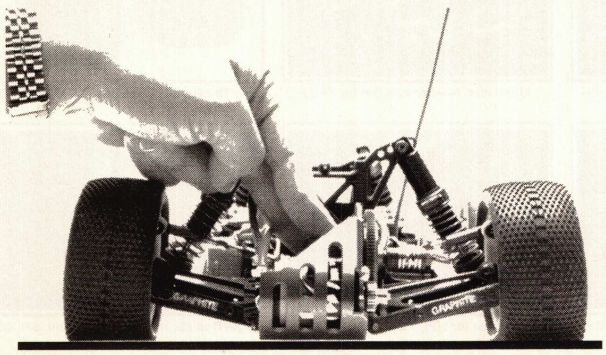


One of the first things you notice when looking at any car is the ride height. Whether it's slammed low to the ground or so high it's ready roll over a row of parked cars, you generally take note. However, ride height plays a far more important role than just simple appearance. It has a huge effect on the way a car handles. Setting proper ride height is critical in order to attain the best possible performance. Furthermore, once you understand the effect ride height has on handling, you can use the ride height as another method of fine tuning.

Some things about ride height are fairly obvious . Certain vehicles, like monster trucks, have a lot of it; and others, like Formula 1 cars, seem to have virtually none. Somewhere in between you will find regular cars that people drive to work. Each is exposed to drastically different running conditions, and that is why these three types of machines have such broad differences in ride height. In other words, setting the correct ride height has a lot to do with the kind of conditions and type of use the vehicle will encounter.

In the same manner, the ride height of radio-controlled cars also is closely linked with conditions in which each car will be run. Off-road buggies and trucks ride a lot higher off the ground than touring cars. Touring cars that run on super-smooth indoor tracks usually run less ride height than those on rougher, temporary, parking-lot tracks. A smoother track means you can run the car closer to the ground.





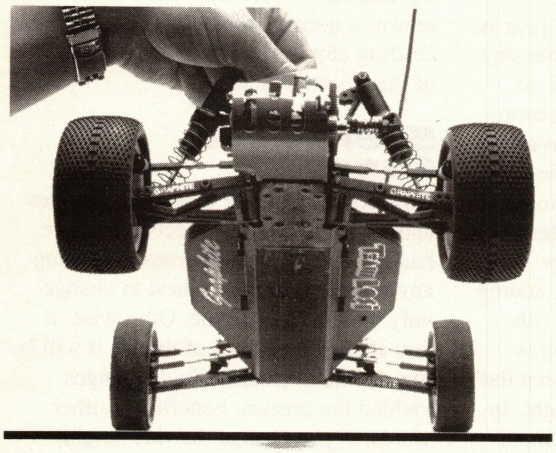
One way to check your car's ride height is to manually compress the suspension by gently pushing the car until the chassis bottoms out. Then let go and allow it to return to normal ride height. Take a note of this height, as this will be your starting measurement. Be sure that the car is fully loaded and ready to go.

The Difference Between High and Low Running

A car closer to the ground means the chassis will lean less in corners or has at least has less room to travel before it bottoms out. Cars designed specifically for on-road only use will benefit from being run as low as possible, provided that the car isn't so low that it drags or scrapes the track surface.

However, when running a car off-road, there are other variables which must be factored into the ride height equation. Uneven track surfaces combined with various types of jumps and obstacles require that the car be much higher off the ground simply to avoid dragging the chassis along the uneven portions of the track. The instruction manual of most off-road cars will make a recommendation about ride height. This is a good starting point. Usually the suggested stock ride height translates into a car that has the front suspension arms level with the ground. The rear suspension is usually set up so that there is a compromise between the dogbones and the suspension arms being level. In other words, the rear ride height can be set up so the suspension arms are level with the ground, the dogbones are level with the ground, or at some point in between.

All other things being equal, when a car's chassis is level there is a certain amount of weight being distributed to all four wheels. During acceleration and braking a certain percentage of the weight is being distributed between the front and rear wheels. Depending on the height of either the front or rear relative to each other, the ratio of weight distributed to the front and rear wheels will change.



Another method to use when determining the ride height of your car is the drop method. Simply raise the end of the car you want to measure about 6 inches (about 1-2 inches for sedans; use the first method for pan cars.) then let go so that the car falls to the surface. Take note of the ride height on the end of the car you dropped, then do the same procedure for the opposite end.

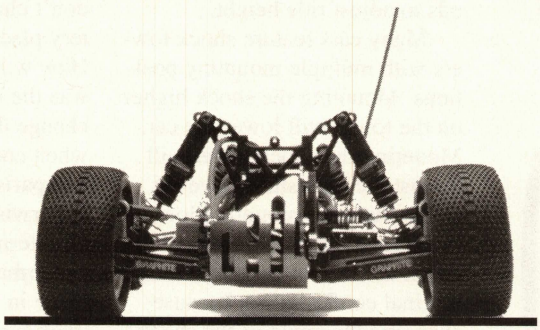
Generally when the ride height of either the front or rear is lower than the other, more weight will be distributed to lower portion of the vehicle while braking or accelerating. This means more traction to that portion of the car.

Tuning With Ride Height

Adjusting ride height is a very useful way of tuning your car. If you want more steering, this can be achieved by lowering the front end of the car. In other words, by lowering the front of the car relative to the rear of the car, you will gain more front traction, resulting in more steering. Conversely, to gain more rear traction, do just the opposite. Lowering the rear end, raising the front end, or both, will result in more rear traction, and consequently less steering. The reason for this decrease or increase in traction is due to the fact that changing ride height transfers weight around the car. It doesn't physically put the battery up front or toward the rear, but the end result is similar.

Everything that has been mentioned up to this point about the effects that changing ride height will have assumes that all other things are equal. In other words, assuming you change nothing on the car except the ride height, the aforementioned changes in handling will follow.

Adjusting ride height can be used to counteract other modifications as well. For example, suppose you are very happy with the way you car handles. Then you get a pair of new front tires that make the car steer so aggressively it becomes hard to control. Combining the new front tires with the proper increase in front ride height can yield a car that handles



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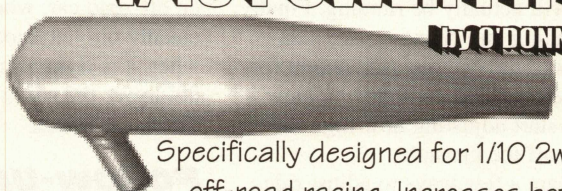

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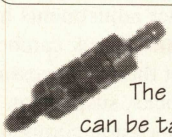

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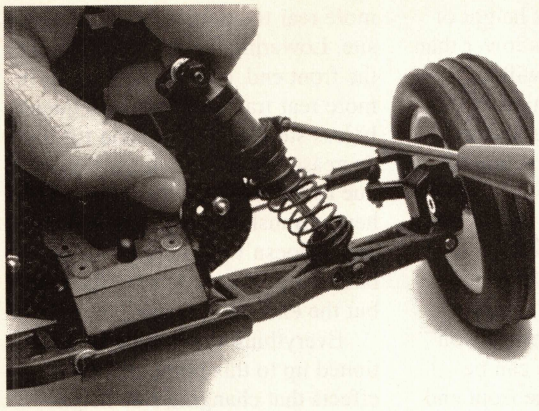
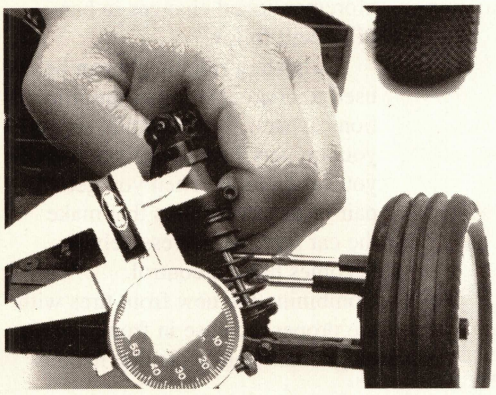


Adjusting the preload on your shocks is one of the easiest ways to alter the ride height of your car. Lower the shock retainer to increase preload. Increasing the preload on the spring will raise the car's ride height at this end of the car.



When making ride height adjustments with the shocks, always measure them in their respective pairs (left/right) for accuracy. For example, if you have four shocks with different preloads, it's a sure bet that your car will have inconsistent handling.

exactly the way it did previous to the new tires.

The Right Way To Go Up or Down

There are a few things to remember when adjusting ride height. First of all, make sure all the running gear is in the car before making any adjustments. This includes the battery, motor, ESC, and radio gear. Second, with everything in the car compress the suspension and let the chassis rebound back to the height at which it will actually be running. Finally, before making any changes take measurements of the original ride height for future reference and comparison. Now it is time to start adjusting how high the chassis is off the ground.

There are a few ways to adjust ride height. The simplest method is to change the amount of preload on the springs. Preload refers to how much the spring is compressed, or preloaded, when the shock is fully extended. The more the spring is compressed, the more preload it has. Increasing preload increases ride height. Conversely, reducing preload reduces ride height. This method of regulating ride height works quite well with off-road vehicles.

However, sometimes a car is sprung so stiffly, that increasing or decreasing preload has no effect on ride height. For example, some touring cars have springs that are so stiff they force the car to rebound to maximum ride height even after the suspension has been fully compressed. In this case, adding preload will not increase ride height, because the spring is already stiff enough to keep the car at maximum ride height. In this case, there are other methods to adjust ride height.

Many cars feature shock towers with multiple mounting positions. Mounting the shock higher on the tower will lower the car. Mounting the shock lower will do just the opposite. However, when changing mounting locations, try to keep the angle of the shock as close as possible to the original configuration because changing the angle of the shock itself will effect the way the car handles. This is an effective way of changing the ride height on any car, provided that additional holes in the shock tower are present.

Yet another method of adjusting ride height involves the installing shock limiters (spacers) inside the shock bodies. The spacers fit over the shock shaft, and sit just underneath the piston, inside the body of the shock. They limit how far the shock shaft can extend. This will only lower the ride height of cars that are sprung so stiffly they are always at maximum ride height. In their case, maximum ride height has just been decreased by the thickness of the spacer. In the case of an off-road car, where the suspension is usually only at maximum extension when it is flying through the air, this will not lower the car at all. It will only limit the shock travel.

Follow-Up Tuning

Once the ride height adjustments have made, it is time to check that all the other adjustments have remained the same. Check camber and toe, and readjust them if necessary. Make sure the shocks, suspension arms, and other suspension components still move freely without any binding. If the suspension still operates smoothly, place the car on a flat surface. Manually compress the suspension by gently pushing the car until the chassis bottoms out, then allow it to return to normal ride height. Before proceeding any further, take measurements of the new ride height.

Seeing the Changes

Now comes the time to test the changes and see what kind of effects they have had on the car. When comes to making any setup changes, it is best to change only one thing at a time. Otherwise, if you change a number of things, it will be impossible to isolate which changes yielded the greatest benefits. In other words, if you change the ride height, don't change the tires, the body, and battery placement at the same time as well. How will you determine which change was the most effective, and which change did the least? By the same token, when conducting "before and after" comparisons, use the same track. Otherwise, there is no conclusive means of determining whether the differences in performance result from the changes you made in the car, or from the different track surfaces or conditions.

Knowing Your Height

As you become more experienced with suspension tuning, you will learn exactly what to expect from making certain changes. In the same manner, the more experienced you become with making adjustments on a particular car, the better you will be able to predict the results. This will make it easier to dial your car in to any track, any surface, and any conditions.

There are a lot of things to remember about ride height. First of all, recall that ride height depends on what kind of surface conditions encounter. The car should never be so low that the chassis drags or scrapes the ground. Second, remember that when adjusting ride height make sure everything needed to run the car is already in place before changing anything. Finally, experiment with using ride height as a tuning tool. The adjustments you make can have a profound effect on the way your car handles.

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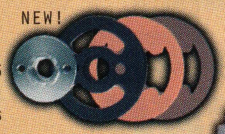

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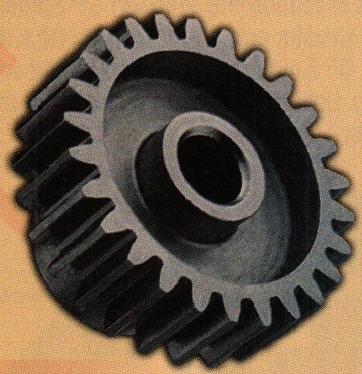

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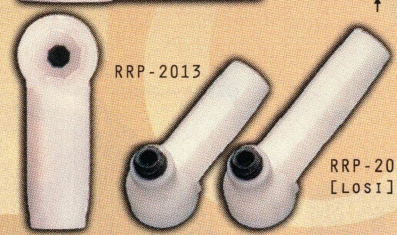

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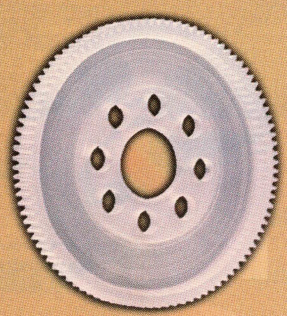

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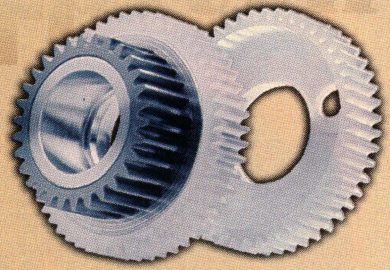

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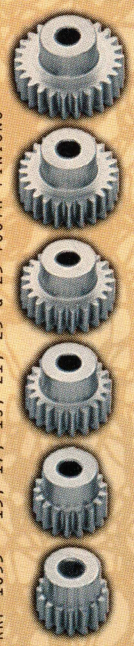

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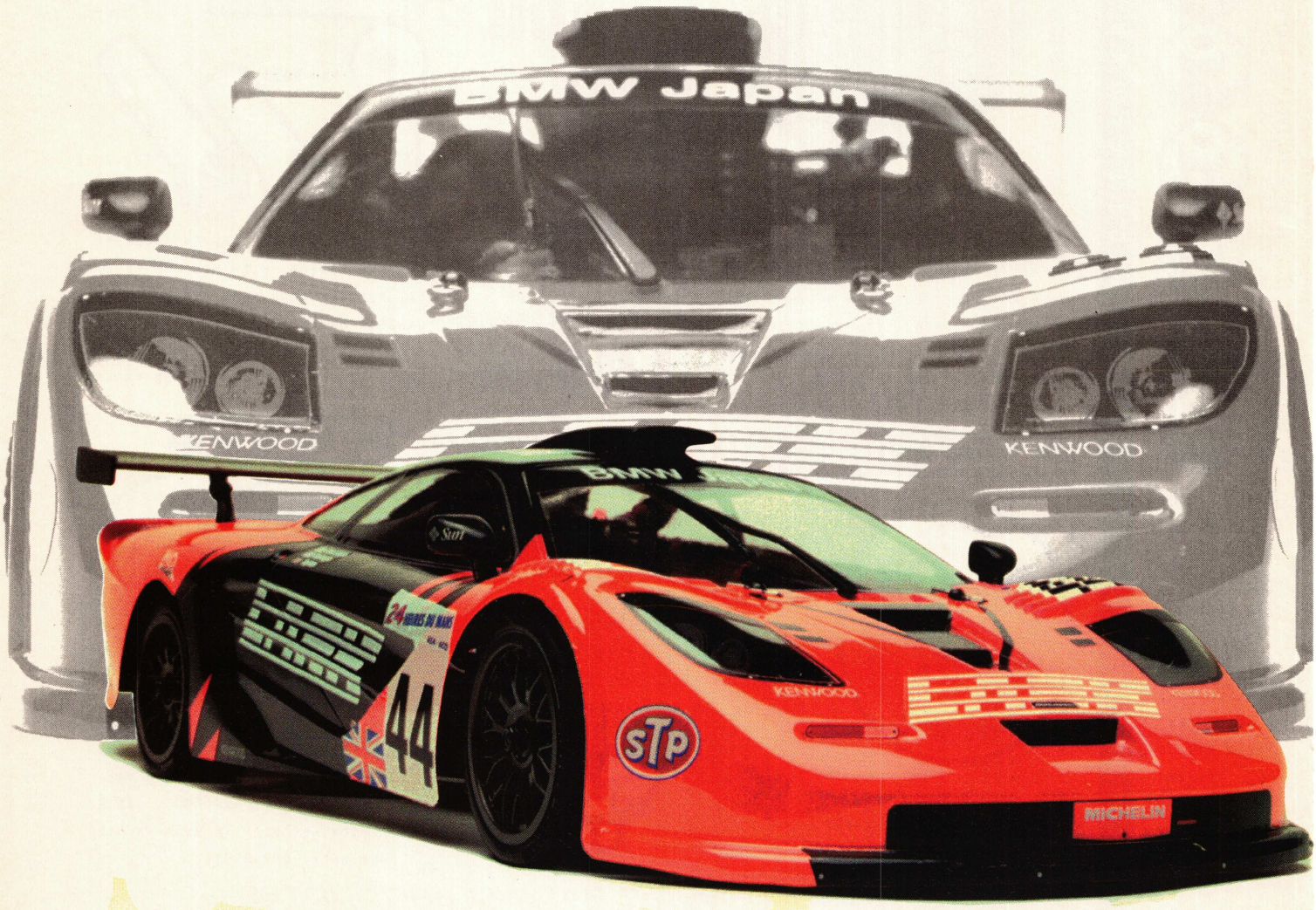
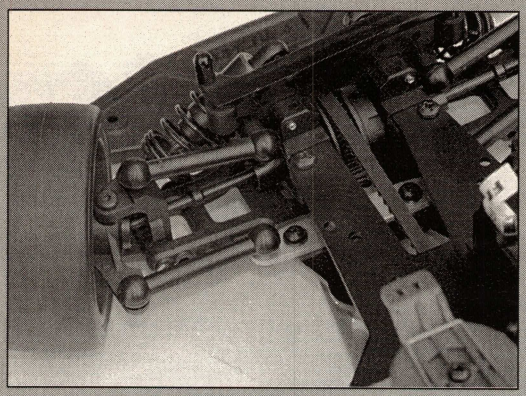
Lark Mclaren

Kyosho Pure Ten GP Spider MKII

by Mike Velez

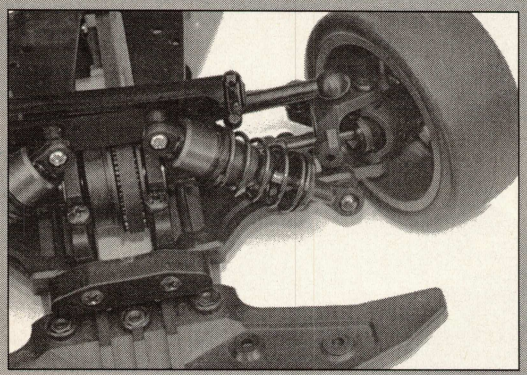
Ever since I can remember, Kyosho has been a company known for building and designing high performance vehicles topped off with a beautifully detailed piece of Lexan art work. Kyosho kept with tradition when they introduced the Nostalgic line of nitro cars based on the PureTen GP Spider chassis. Since its inception the PureTen GP Spider platform has had some minor tweaks and changes. Kyosho's most recent offering is the PureTen GP Spider Mk II 4WD outfitted with a Lark McLaren F1 GTR body. Let's take a good close up at this pure bred, PureTen racer.





ABOVE: The PureTen GP's front suspension features one-piece molded steering and suspension links which, although non-adjustable, are a time saver to novices.

BELOW: Another shot of the front suspension. Note the exposed front gear differential.



FEATURES

Chassis

The Lark McLaren features similar physical dimensions to other nitro sedans. The entire kit is built on a 2mm-thick hardened aluminum chassis. A black anodized aluminum top piece runs across the top of the car to complete the chassis and provide a stiff and solid platform on which to build.

Drive Train

The Lark McLaren is powered by a Kyosho GS11R internal combustion engine. The engine comes with a recoil pull-starter and also flywheel for use with a starting box. A centrifical clutch and clutch bell move the power from the engine to the spur gear which directs power via a belt to the rear differential, and through a short series of belts and pulleys, to the front diff as well. Both the front and rear differentials are beveled gear diffs. Stopping power is provided by a molded disk brake mounted on the same shaft as the spur gear.

The GS11R engine is unique in that the engine mounts are cast into the engine block and extend down to the mounting plate. This means that engine mounts must be purchased separately should you wish to change motors in the future. To cut down on adjustment confusion, the carburetor on the GS11R features only a simple high-speed needle adjustment. The down side is a loss in tunability for those skilled in engine tuning. The heat sink head is a nice addition and should provide plenty of cooling. A 75cc fuel tank equipped with a spring-loaded cap and primer pump is located just in front of the engine. The fuel tank is floated off the chassis and mounts to the chassis top deck.

Suspension

The suspension system on the Lark McLaren is similar to that found on the successful TF-2 chassis. There are lower A-arms with upper camber links. The A-arms allow for the hub carriers to be set inward or outward to adjust the track width of the car. But, the dogbones and camber links included in the kit only allow the car to be built in the wide track variation.

The rear suspension is also very similar to the TF-2's. Coil-over, oil-filled shocks dampen the front and rear arms' movement. Don't let the plastic shock bodies fool you; once assembled correctly they're very smooth. Like the front, the rear camber is non-adjustable and it is set to between 0 to -1 degrees.

Steering

The steering on the Lark McLaren is your basic two bellcrank setup. One bellcrank features a servo saver to prevent servo damage during a collision. The steering servo mounts behind both bellcranks.

TEST GEAR

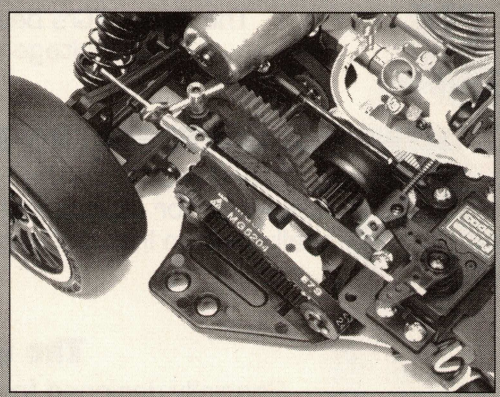
- Futaba 3PDF FM radio.
- Futaba S3003 servos.
- Red Alert Fuel, 10%.
- Hobbico Hot-Shot Glo-Starter.

Tires, Wheels, and Body

The kit comes with medium compound, narrow width Kyosho Racing Slick tires with foam inserts. The tires mount to grey, metallic, BBS-style wheels. The body is a highly-detailed replica of the Lark sponsored McLaren F1 GTR that ran at the 24 Hours of Le Mans.

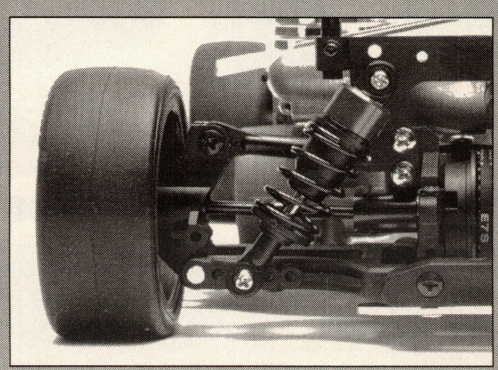
TESTING

To test the Lark McLaren I handed the reigns over to James Revilla, our resi-



ABOVE: Here's a look at Kyosho's three-belt drive system. The brake disk is made of plastic, but held up well during testing.

BELOW: The rear suspension uses the similar molded links and shocks. Like the front, the rear gear differential is also exposed.



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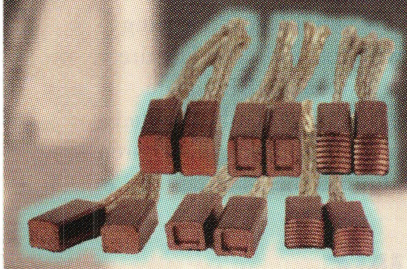

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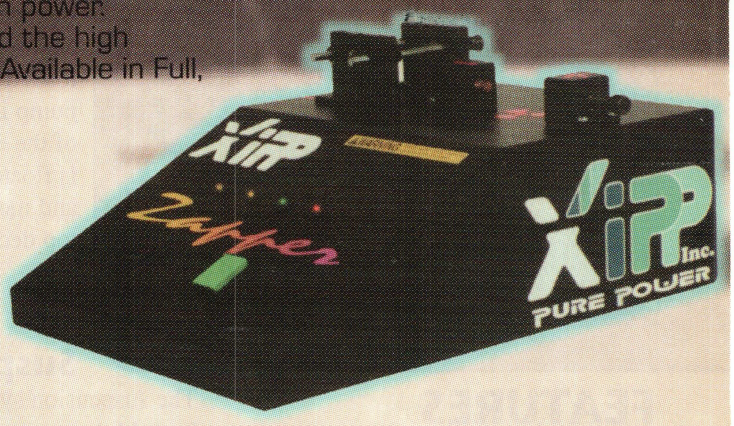

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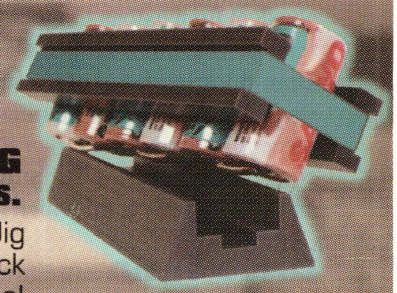

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dent gas racer. The test area was a long stretch of asphalt with a semi-rough surface, but no bumps or dips. With a tank full of Red Alert fuel and the glow plug heated up, I pulled the recoil starting cord. Within three tugs, the engine fired up and settled into a steady idle. I broke the engine in using many of the steps Dean Brown went over last month in Issue 3.7. After the break-in, I set out to take note of the car's handling. I took a few warm up laps to get used to the car's handling dynamics. Initially, the car felt a little soft from a standing start. I brought the car in, leaned out the main needle one half turn, and took another lap. By the way, adjusting the kit engine is easy. The needle has a plastic thumb screw which is large enough to turn with little effort. Also, the top of the needle adjustment knob is slotted for a Phillips screwdriver.

The Lark McLaren handled pretty well out of the box, but the power curve was bland. After a couple more turns of the mixture adjustment needle, I had the car running at solid speeds. The large heat sink managed to keep the engine running at decent temperature. Through my test, the McLaren held onto the corners well considering it was still a stock setup. The car exhibited a slight hint of twitchiness in the rear end when pushed to the limits. I brought the car in to make a few changes to the suspension.

To keep things simple for the first timer the McLaren uses one-piece camber links and a one-piece steering link. The downside to one-piece links is the fact that there is little I could do in terms of adjusting camber or toe. My only option is to play with the shocks. Staying with the basics and not getting into changing oils and pistons, I swapped the stock springs for a couple sets I had lying in my toolbox. I installed Tamiya blue springs up front and Tamiya reds in the rear. With a

BUILDING TIPS

The instruction manual that comes with the Lark McLaren is very simple. It uses line drawings and simple text in English, French, German, and Japanese.

- Read through the manual before you begin building the kit.
- Use liquid thread-lock on places where you are threading a screw into metal. This is especially important on the diff outdrives in Step 2.
- In Step 14, pay close attention that the front diff is offset correctly.
- In Step 18, be careful not to overtighten the kingpin screws.
- Pay close attention to the text and drawings in Step 36. Test that the linkage works properly according to the instructions before you start the engine.

Hits:



- Easy to build and maintain.
- Good performance.
- Excellent looking body.
- Great hop-up potential.

Misses:



- Optional engine mounts are necessary if you change the engine.

THE VITALS

KYOSHO Lark McLaren PureTen GP MKII

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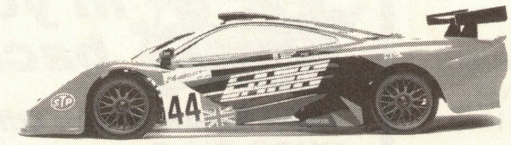
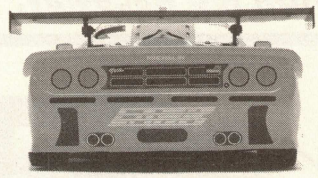
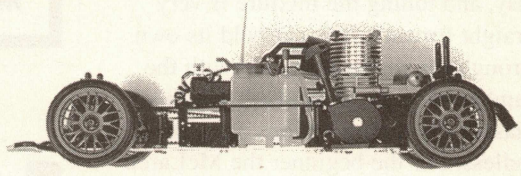








SPECIFICATIONS

Country of Origin	Japan
Scale	1/10
Manufacturer's List Price	$339.99
Estimated Street Price	$240-250
Part #	31713
Intended Application	Sport Racing
Approx. build time	5 hours, 15 minutes

DIMENSIONS

Length (rolling chassis)	15.5 in.
Wheelbase	10.5 in.
Width (F)	7.75 in.
Width (R)	7.75 in.
Weight (RTR)	3 lbs. 4.5oz.

CHASSIS

Type	Double-deck
Material	2mm aluminum

TIRES

Front	Kyosho Racing Slicks
Rear	Kyosho Racing Slicks
Wheels	Kyosho mesh one-piece plastic

TRANSMISSION

Type	Clutch to Spur
Differential	Bevel-gear type
Bearings/Bushings	Bearings

SUSPENSION (F/R)

Type	4W independent w/lower A-arms and one-piece molded upper links
Dampening	Coil-over, oil-filled shocks

POWERTRAIN

Configuration	Nitro engine powered
Type included	GS11X recoil started
Layout	Mid engine, belt driven AWD

MAIN COMPETITION
Mugen Prime 12, HPI Nitro RS4, OFNA Nitro Z-10

softer rear suspension setup, this should eliminate the slight twitchiness of the rear end that I mentioned earlier. If you don't have softer springs you can achieve almost the same effect by lowering the rear ride height.

With the stock tires and a full tank of fuel, I started the car up for another driving session. Then I ran into a slight snag; it wouldn't start. I checked everything over to make sure nothing was out of place. The fuel lines were clear of any obstructions and the glow plug was good, too. I turned the needle a couple of clicks toward the rich side and tried again. Nothing. In fact, it took 1-1/2 turns of the needle to the rich side to get the engine to turn over. Basically I had leaned it out too much to begin with. As I recall, this was about the same mixture setting as I started with out of the box. I ran a few laps to warm up the engine, then turned the mixture lean again and everything was perfect.

With the spring changes I had made to the McLaren the handling characteristics were much more predictable. Top speeds were strong for a stock engine, but not so overpowering that it would upset the car's balance through both fast and slow-speed turns. The plastic brake disk faded slightly after a series of full trigger braking tests, but the braking distance only rose a few inches. If you plan on doing some serious racing I'd look into replacing the stock brake disk with an aftermarket one.

CONCLUSION

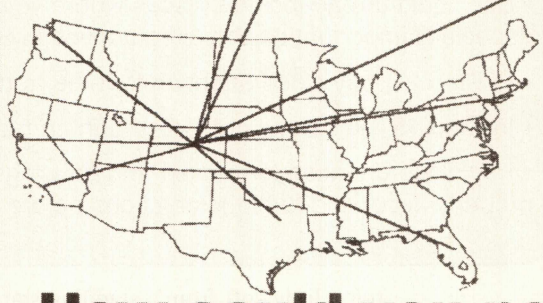
If you've never driven a nitro powered sedan before, the McLaren is a great starting point. Starting the engine is easy, and tuning the mixture is very straight forward. The car held its own through the roadcourse, and with the number of hop-ups available for this chassis, the tuning options are almost endless. For the beginner the McLaren is simple, reliable, good-looking, and easy to run. The McLaren platform has potential for serious racers because it can be easily upgraded to match the driving skills of the owner at any time.

X

With These Airfare Prices,

ROAR

DENVER, COLORADO
MHOR R/C Raceway
Site of the 1998 ROAR
Stock Off-Road Nationals



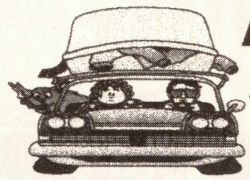
Los Angeles - $203
Chicago - $215
Orlando - $325
Dallas - $187
Seattle - $207
San Francisco - $207
New York - $275
*Track is 20 min from airport
*Round Trip Prices Subject to Change

How could you not attend?

1998 ROAR Stock Off-Road Nationals - July 9-12
MHOR R/C Raceway, Aurora, CO - (303)343-0151

With Stock Off-Road Nationals So Close To Home,

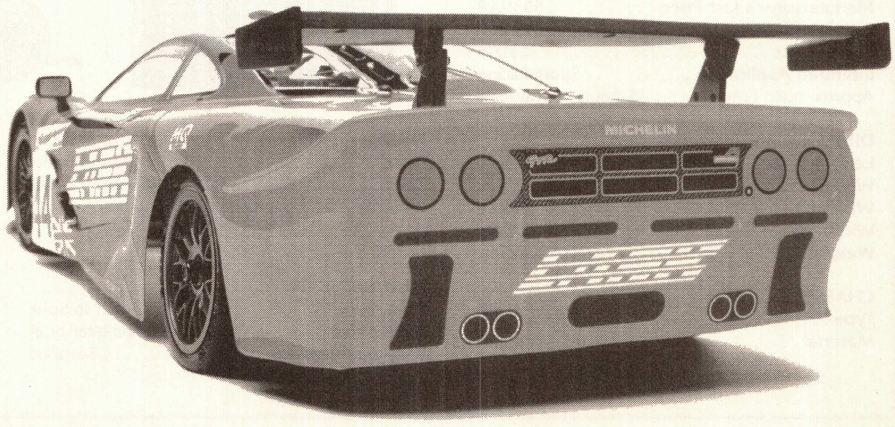
LOCATION	MILES	DRIVE TIME
Salt Lake City, UT	*534 miles*	*8 ¼ hours*
Santa Fe, NM	*437 miles*	*6 ¾ hours*
Cheyenne, WY	*101 miles*	*1 ½ hours*
Wichita, KS	*520 miles*	*8 hours*
Oklahoma City, OK	*625 miles*	*9 ½ hours*



It's like racing in your own backyard.

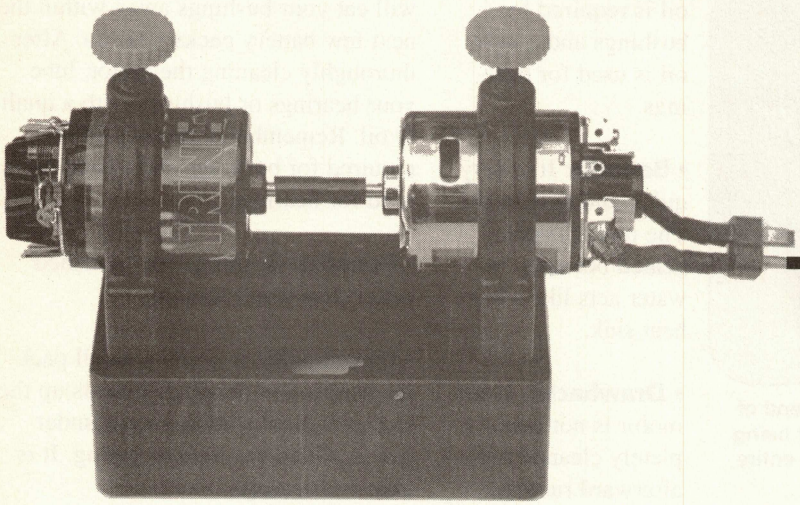
ROAR

1998 ROAR Stock Off-Road Nationals - July 9-12
MHOR R/C Raceway, Aurora, CO - (303)343-0151



learn how-to

3 GREAT MOTOR BREAK-IN TECHNIQUES



by Dominic Tuso

In life we often find there is too little time to go around. Unfortunately for the R/C car hobbyist, there are many things we must spend many careful hours doing or else we'll end up spending a lot of our hard-earned money on new equipment. Motor care is one area in which we must spend a portion of our time.

There are many areas of motor care that could be covered in this article, but, alas, the editor is not going to devote an entire magazine issue to it. So to make things smooth between me and Mike, I will just cover the why's and how's of proper motor break-in.

With motor costs ranging from $20.00 to well over $70.00 each, proper attention to detail is critical for today's racer. But, hey, what about those of us who don't race? For the hobbyist, motor break-in is still very important to get the most bang for your buck.

THEORY

Proper motor break-in on a new motor is going to do three things for you. It will give you a more efficient motor leading to longer run times. It will give you a faster motor leading to more speed. It will also give you a cooler running motor leading to the longevity of your motor as well as better run time since a hot motor will draw more current than a cool motor. All three of these things are are a result of the brushes and bushings (if your motor has them) getting properly seated during the break-in process. Seated merely means that the outside shapes of the two parts that rub on each other match identically. Think of the seating process like how the tip of a pencil will eventually wear flat as you use it on paper.

On some modified motors and on all stock motors, bushings play the critical role of holding the armature as it spins inside the motor can. The bushings need to be as smooth and true as possible. If a bushing has too small of an inner diameter or if it has too coarse of a surface, it will act like a disc brake slowing the armatures rotational speed. This also generate a lot of heat from friction. As we discussed before, heat is bad for a motor. Bushings also need to be round to hold the armature in place as it spins. Without a true spinning armature the bushings and the brushes will wear out quicker.

THE PRACTICAL STUFF

Now that you are all hyped about getting your motor broken-in correctly, let me first warn you that there are a few ways to do it. After doing some intensive research I have found that no one can agree as to the best method, but I will let you know which process is my favorite later in this article. There are three basic methods: 1) Water dipping, 2) Low voltage run-in, and 3) Master/slave.

Before we begin, let's talk about a couple of items specific to methods #2 and #3. On bushing motors, you should lube the bushings with a bushing break-in product available from various R/C companies or with your own homemade cocktail of chemicals. My cocktail of chemicals consists of one part bushing oil and two parts MOTHERS® Mag and aluminum polish. If you don't want to go through the trouble and mess of mixing your own, Trinity's Bushing Buster works especially well. Secondly, on all motors, you should lube the brushes with a brush break-in product available from various R/C companies. Remember, bushing break-in products are only for bushing motors, not bearing motors.

METHOD 1 (Water Dipping)

The water dipping method has been around for many years. This technique, I've heard, was first used on slot car motors. Some people will only water dip bushing motors since they are afraid that the water will hurt their bearings. The best way to make sure the bearings are not hurt by the water is to thoroughly clean them with motor spray and lube them with a quality oil. It only takes about eight minutes to run through the complete process of



Note that the brush end of the motor is the part being dipped., and not the entire can.

"setup", "water dipping", and "recovery".

• **Setup:** Prepare your motor as you normally would with capacitors, motor leads, and Schottky diode (if necessary). Charge a battery. Fill a tub, jar, or other container like a sink with enough water to be able to submerge your motor.

• **Water-dip:** Hook up the battery to the motor then dip the motor into the water. The motor will start with a jerk, so hold onto it securely. Sometimes I feel I need extra hands with this part. Also be careful that the battery does not get wet. Watch for the motor to start spewing grayish colored debris. This will be your cue to start timing the process. The grayish colored debris are particles being rubbed off of your brushes and bushings as they are being seated. Dip the motor for 10 seconds, replace the water and proceed dipping the motor two more times for 10 seconds each time. Remove the motor from the water and unplug the battery. Remove the brushes and take a look. There should be a nice smooth arc on the face of the brush from end to end. If that has happen keep dipping until your brushes have this arc. Be careful not to hold it under too long as this process quickly wears down your brushes.

• **Recovery:** Shake the motor dry and then flush the water out with motor cleaner. Lube your bearings or bushings with a quality oil. Remember, a heavier oil is required for bushings and a light oil is used for bearings.

• **Benefits:** It is very quick and easy to do. The motor is not heated because the water acts like a big heat sink.

• **Drawbacks:** If the motor is not completely cleaned out afterward rusting may occur. Use only a DC battery with voltage no greater than 7.2V. Using a battery with higher voltage or the use of a AC/DC power supply may be hazardous. Racers with pacemakers should not perform this procedure.

METHOD 2
(Low Voltage Break-in)

Low voltage break-in has many variations. After many hours of research I couldn't find any consensus as to the particulars. What I have described below is a compromise among the variations. It will take about 20 minutes to complete the process of "setup", "running", and "recovery".

• **Setup:** Prepare your motor as you normally would with capacitors, motor leads, and Schottky diode (if necessary). Purchase two D-size Alkaline batteries, charge a 4-cell pack, or power-up a constant 5-volt power source (capable of at least 5 amps). Build or purchase a motor jig to hold the motor during this process. Install a motor cooling fan onto the output shaft or set up an external fan to cool the motor. Mount the motor onto the jig. Apply bushing and brush break-in products.

• **Running:** Connect the battery pack to your motor and let it run for seven (7) minutes. If you're using D cells, run them until they are completely drained.

• **Recovery:** Clean your motor with motor spray. Use a generous amount on the bushings to get all of the bushing break-in sauce off. If any is left, it will eat your bushings away within the next few battery packs you run. After thoroughly cleaning the motor, lube your bearings or bushings with a quality oil. Remember, a heavier oil is required for bushings and a light oil is used for bearings.

• **Benefits:** Bushings are "polished" better than water dipping.

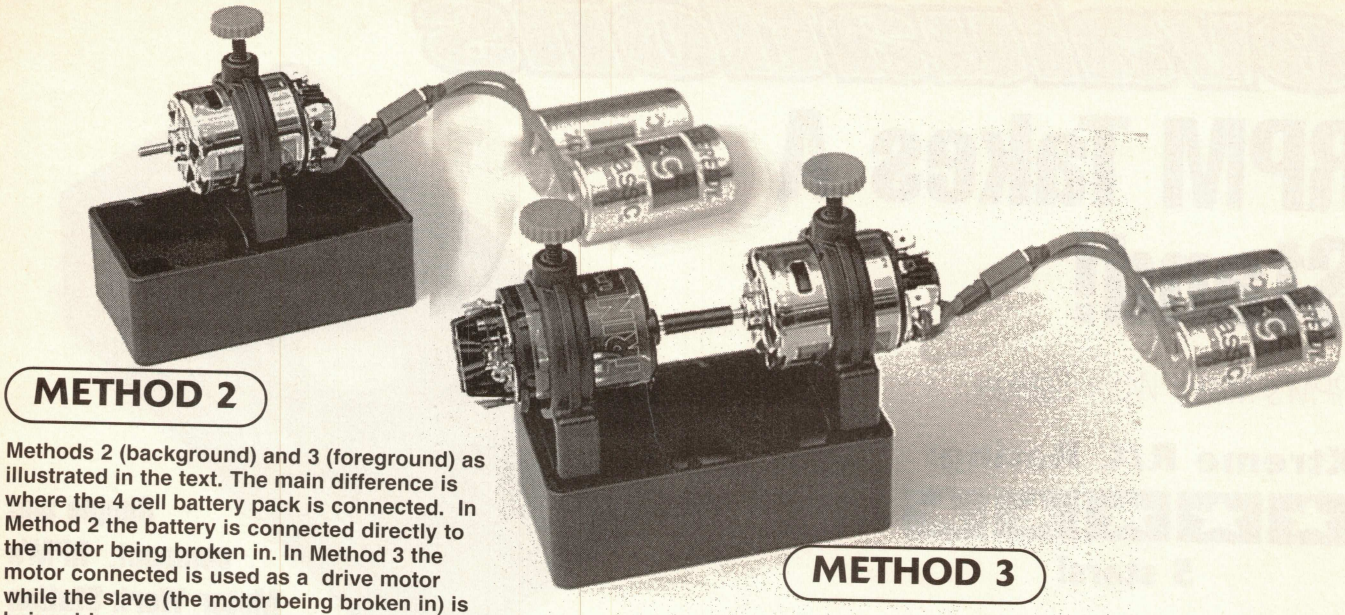
• **Drawbacks:** It needs a 4-cell pack (or wastes two D cells). It heats up the motor. It breaks in the motor under power which can lead to pitting. It is time consuming.

METHOD 3
(MASTER/SLAVE)

The Master/slave technique uses a separate motor ("master") to spin your new one ("slave"), so there is no possibility to pit the brushes or the commutator. I learned a new variation of this method during the past year (see variation #3). This process takes about 20 to 30 minutes.

• **Setup:** Prepare your motor as you normally would with capacitors and motor leads; do not install the diode yet. Purchase two D-size Alkaline batteries, charge a 4-cell pack, or power-up a constant 5-volt power source (capable of at least 5 amps). Prepare a cooling fan. Variations #2 & #3 require you to build or purchase a dual motor jig to hold the master and slave motors with their output shafts lined up and facing each other. Apply the bushing break-in product to the slave motor. Variation #1 requires you to use a drill motor or a Dremel tool. For variations #1 & #2, apply the brush break-in product to the slave motor now.

•**Slave: (Variation 1)** Connect your motor onto the end of the drill motor or Dremel tool. Wearing leather gloves hold the slave motor in your hand firmly. This will drive the armature while the can is held firmly. Start with a slow speed at first and gradually increase the drive tool's RPMs. Don't run it too fast! Make sure that you hold the



Methods 2 (background) and 3 (foreground) as illustrated in the text. The main difference is where the 4 cell battery pack is connected. In Method 2 the battery is connected directly to the motor being broken in. In Method 3 the motor connected is used as a drive motor while the slave (the motor being broken in) is being driven.

motor straight so that you don't put any unnecessary side load on the motor bushings. Run it for seven (7) minutes.

• **Slave: (Variation 2)** Install the master and slave onto the jig and connect them together. Run the master motor for seven (7) minutes.

• **Slave: (Variation 3)** Use this method on bushing motors only. Remove the new motor's brushes. Install the master and slave onto the jig and connect them together. Run the master motor for seven (7) minutes. Then install the brushes and lube them with a brush break-in product. Run the master motor for two minutes to seat the brushes.

• **Recovery:** Clean your motor with motor spray. Use a generous amount on the bushings to get all of the bushing break-in sauce off. If any is left, it will eat your bushings away within the next few battery packs you run. After thoroughly cleaning the motor, lube your bearings or bushings with a quality oil. Remember, a heavier oil is required for bushings and a light oil is used for bearings. Install a Schottky diode (if necessary). The reason we wait to install the diode now is because the master/slave method will cause the slave (new) motor to generate electricity. If the motor is run backwards, it will cause the diode to burn up. Trust me. I've accidentally done this before and that diode gets very hot.

• **Benefits:** Excellent seating of brushes and bushings. No pitting of the new motor's brushes and commutator due to arcing.

• **Drawbacks:** Time consuming. Heat can be a problem without adequate fan cooling.

Anytime you can seat your brushes without current going through them the better. While the brush faces are flat current will arc between them and the commutator. Arcing will pit the comm and the brush faces. This will give you a motor that may never completely "break-in". It also gives you a less efficient motor leading to lower RPMs, a motor that runs hot, and less run-time.

Check the motor shaft for end-to-end movement of the armature by pulling and pushing on the motor output shaft. If there is none, there can be too much friction causing the motor will run hot and slow. Check to be sure the bearings/bushings are installed completely into the recessed areas of the motor can. They should have been install correctly at the factory, but if they aren't you'll need to do a little tweaking to fix the situation. For motors that have the endbell screwed on, remove it so you can replace a thick armature washer with a thinner one. You may have to remove a washer. Only remove one if there will be at least one left on that end. For motors with fixed endbells (lock tabs), the best way to give you the clearance will be to lightly tap each end of the armature to shove the bearing/bushing completely into the recessed area of the motor can.

FINAL THOUGHTS

As I promised, I will reveal to you my preferred motor break-in method. But first let me tell you that you can use a very similar method to break-in newly installed brushes. Just disregard any of the parts about bushing break-in. Breaking in your bushings more than one is not necessary. As a matter of fact, it will harm your motor to do so.

My favorite method is variation #3 of the Master/slave technique because it seats the bushings separately from the brushes. This method really saves lot of wear and tear on the brushes during the break-in process. But running a close second is water dipping. I'll use this when I don't have my jigs with me at the track.

As with all chemicals, be safe! Read their warning labels and instructions to be sure you're using the product correctly.

Now go out and be fast with your properly broken-in new motor!

X

evaluations

RPM Takes A Stand!

RPM's Motor Work Station

Xtreme R/C Rating:

★★★★★

5 stars!



Simple and compact, RPM's Motor Work Station can be very versatile.

Retail Price: $12.95

Part #: 8129

Weight: 3.5 ounces

Dimensions:
3.94 x 2.187 x 1.375"
(L x W x H)

Applications:
For use while working on R/C electric motors.

Manufacturer:
RPM
14978 Sierra Bonita Ln
Chino, CA 91710
Phone: (909) 393-0366
Fax: (909) 393-0465
(Available at better hobby shops)

After 3 years in the hobby, I've noticed that motor stands are one of those items that you should have in your pit box. A motor stand serves as an extra hand when you need one while working on motors. It is very difficult to work on a motor while it's rolling back and forth on your pit table!

True, motor stands have been around for awhile. Now they have designs ranging from a simple looking block of milled out wood to a complicated metal contraption with a motor fan, clamps, magnetized base, etc. Not one to fall behind the times, RPM has added their own motor stand design to the market — the new Motor Work Station.

The Motor Work Station consists of two molded motor clamps, each with an integrated hold-down thumb screw, and a compact, symmetrical molded base. When you want to store the stand inside your pit box, the two motor clamps fit into the recesses on each side (top and bottom) of the base to shrink the whole thing down to about the size of a 4-cell battery pack. Also, at 3.5 ounces the RPM stand is light enough to carry around in your pocket. As with all of their other products, the Motor Work Station is molded out of a sturdy black plastic that RPM says is impervious to all kinds of motor sprays.

Using The Stand

The entire unit is easy to work with. The clamps slide into their respective channels easily, but the fit is tight enough to keep your motors positioned correctly. The balance of the motor stand is perfect. Some other motor stands may hold the motor up for maintenance, but you have to be easy with the pressure applied when you solder because you might knock the whole thing over. This is not the case with the RPM motor stand. The base of the Motor Work Station is beefy enough to hold its position. The motor clamps are thick and sturdy as well. The thumb screws on the motor clamps thread into a metal insert on the clamp which provides smooth movement and solid motor clamping (others use a screw threaded into plastic, which over time strips out). Each part – the motor clamps, base, thumb screws – do not look cheap. The entire unit exhibits a quality feel to it, something that we all look for in a good product.

RATING SCALE

★★★★★ **5 STARS- Excellent! a "Must Have" in our book; worth every penny.**

★★★★ **4 STARS- Very Good. Definitely worth taking a look at.**

★★★ **3 STARS- Good. Although it could be improved, it gets the job done.**

★★ **2 STARS- Fair. It's Okay for some racers, but not for everyone.**

★ **1 STAR- Poor. Don't say we didn't warn you.**

Estimated Street prices shown are an average of 10 hobby shops and race tacks chosen at random. Actual selling price may vary depending on location and availability. All tests are representative of the actual unit we received. Your results may vary.

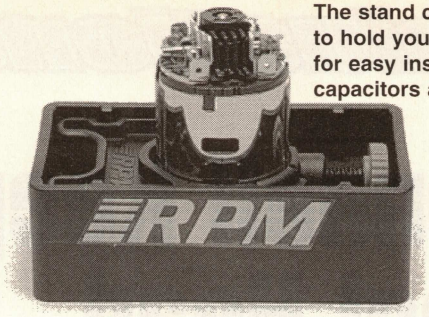
The motor stand's base has three molded channels on both sides which hold the motor clamps in position. For most jobs, one clamp is inserted into the center position. The clamp holds the motor horizontally for jobs such as brush soldering, wire installation, etc. Also, the motor itself sits about two inches above the table or surface you are working on, which keeps the motor magnets away from screws, washers, staples, or any other debris that want to sneak into your motor can.

If you want to position the motor vertically, the motor clamp can be placed into the base as if you were storing the entire unit inside your toolbox. In this position, the motor can be cleaned with motor spray, as the liquid will carry dirt and other debris down through a hole in the bottom of the base. Sitting vertically, the motor is still about a half inch above the table. Again, you'll have no worries about getting any foreign material inside your motor while you are working on it!

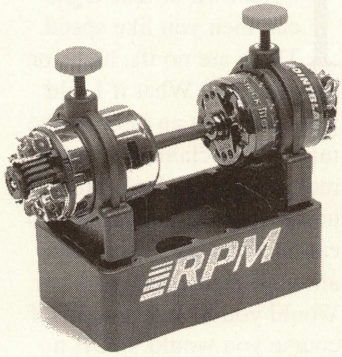
The second motor clamp comes into play when you want to break in a new motor with a slave motor. To perform this procedure, the two motor clamps mount into the base on each end. This positions both the new slave motor and the main motor shaft-to-shaft. RPM includes a coupling tube with the Motor Work Station which serves as the connection between the two motor shafts. This practically eliminates setup time; just clamp the two motors into the Motor Work Station, plug in a battery, and your new motor should be ready to run in no time.

Stand Up To The Task

So what else is left to say about the RPM Motor Work Station? Simply put, it does its job, and it does its job very well. At its $12.95 retail price, it's also a bargain considering that some basic (and cheap looking) motor stands cost around $9.00 for one. I find no fault with the quality of the parts, the fit and finish, or using the product itself. It also doesn't take that much space, whether it's actually in use or when it's time to put it away. If I had to come up with one complaint, I'd be hard pressed to find one other than the fact that it only comes in one color! Personal preferences aside, RPM has made R/C life easier for me once again.



The stand can be positioned to hold you motor and allow for easy installation of capacitors and brushes.



When completely assembled, the stand is perfect for breaking or testing motors.

Who's It For:

Anyone who wants to make motor maintenance an easy task

Good News:

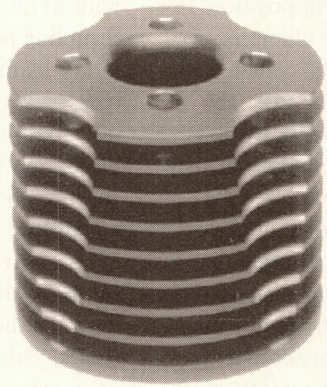
- Highly useful.
- Easy to use.
- Quality fit and finish.
- Worth more than the price.

Bad News:

- Only comes in one color.



O'Donnell Keeps A Cool Head



O'Donnell's Motor Cooling Head

Xtreme R/C Rating:



4 stars

Retail Price:
$29.95

Part #: 150001

Weight:
1.5 ounces

Applications:
Replacement head for O.S. CV and CZ nitro motors.

Manufacturer:
MDP Inc.
22600 Lambert #D1010
Lake Forest CA 92630
Phone:
(714) 830-0304

Who's It For:
Owners of O.S. CV and CZ motors.

Good News:
- Lightweight.
- Increased performance.
- Allows for more efficient engine operation.
- Worth its price.

Bad News:
- In cold climates, the head doesn't allow the engine to run hot enough.

If you own or race a gas car, then you like speed. There are no ifs, ands, or buts about it. What if I told you there was an item on the market that claimed it could reduce your engine's running temperature by up to 60° and can increase power by 15% all while lightening your car. Would you be interested? Of course you would. MDP, a company located in Lake Forest, California is marketing a lightweight, heat sink head for the O.S.12 CV engine. The head itself is made by O'Donnell, the same company known super high-quality fuel.

Features

At first glance the head looks just like any other. Nine fins makeup the entire aluminum head with a smooth cylinder running down the middle for easy access to the glow plug. The basic four-bolt pattern allows it to mount easily to the O.S. .12 CV engine or older O.S. .12 CZ-R engine The O'Donnell head is available in four colors: purple, red, blue and silver. The one we'll be testing today is blue. The color of which one we're testing would normally not make a difference, but MDP says that the silver one actually runs a bit cooler than colored ones. (This is because there is no anodizing on the aluminum.) The O'Donnell head weighs almost half as much as the stock O.S. CV head. The O'Donnell head weighs in at a slim 1.6 oz. while the stock head tips the scales at almost 2.9 oz.

Testing

On a 76-degree afternoon, we put the O'Donnell head to the test. We first tested our HPI RS4 Nitro sedan with the engine box stock. Then, we installed the O'Donnell head on the O.S. .12 CZ R engine in our HPI. We ran the car with the engine in box stock form to retrieve some data with which to compare are new findings. After running the engine (in stock form) for five minutes we brought the car in and took a reading from the MIP On-Board Temp-Gauge. With the stock head, an McCoy MC59 glow plug and Dynamite Blue Thunder 10% fuel we got a reading of 220° F. With no adjustments to the carburetor, we replaced the stock head with the new O'Donnell head and allowed the engine to come back down to the same base temperature as before. We ran the car again for five minutes straight and brought the car in. With all other factors being the same, the O'Donnell head only reached a temperature of 191° F. Even with the much lower temperature the car with the O'Donnell was faster at all different speeds. To bring the engine temperature back up, we leaned the carburetor down to bring the running temperature up to 215°. Once we did that we noticed great increases in take-off and top speed. We also noticed a much longer run time. Before we would get five minutes and 30 seconds out of a tank and now we were able to run for seven minutes.

Unfortunately at the time of testing we did not have access to an O.S. .12 CV engine (the engine that will benefit most from this head). But, having much experience with that particular engine I can confidently predict that the benefits of the O'Donnell head would only be more drastic. The CV runs hotter than the CZ-R with the main

difference between the two being the large square head, the primary reason for the increased heat. [Note: Our chief gas writer, Dean Brown, witnessed the O'Donnell head running too cool. In very cold climates, 50° F and under, the O'Donnell head runs so cool that the engine never reaches an optimal operating temperature.]

Conclusion

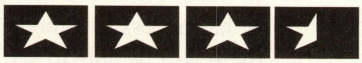
After running the O'Donnell head and seeing the significant improvement in performance gained I would recommend it to anyone. For less than $30 you can greatly improve your engine's performance and fuel efficiency and reduce critical weight above the car's center of gravity.

Spring Ahead

Niftech's Motor Spring Bending Tool



Xtreme R/C Rating:



3 1/2 stars

There are various methods for breaking in, maintaining, and setting up an electric motor. Although there is no one correct method for getting the most out of an electric motor, adjusting your motor springs (i.e., tension) is a good place to start. Most racers use a pair of pliers to bend or re-bend their motor springs to a desired shape. But, now they can use Niftech's new Motor Spring Bending Tool to make the job even easier.

The Product

Niftech's Motor Spring Bending Tool consists of two solid aluminum "wheels" which assemble together on a common shaft. The main wheel has reference markings in 10-degree increments and metal roll pins to hold the spring in place. The thumb wheel sits above the spring and is used to change the angle of the spring by twisting the wheel left or right, depending on how you want to alter the spring itself. By changing the angle, or tension angle, you can change the amount of pressure the spring will exhibit on the motor brush. Changing the tension angle changes the amount of preload on the spring and the amount of pressure on the brush.

The reference markings on the tool are set 10 degrees apart. Niftech says that you could use this tool to accurately increase or decrease spring tension by 5-100 grams of variance. The only way to accurately measure this is to use their Spring Tension Measuring Tool (#4725). The markings on the tool are used to compare and match springs when bending.

What Does Spring Tension Do?

Spring tension affects the way a motor performs. For example, hard-tension springs are good for off-road or touring car motors because the motor is subject to heavy loads and/or physical jolts. A hard spring will keep the brush in contact with the comm, reducing arcing and brush bounce while at the same time providing more torque power. On the other hand, light springs place less of a load on the comm. Less load means less resistance, and less motor resistance equals higher rpm and top speeds. For lightweight cars where rpm is more important than bottom end torque (pan cars, Formula 1) light springs can make the difference. In applications such as oval racing where the cars are travelling around the course at an almost constant speed with little, if any, braking, high rpm lighter springs are better. However, if the springs are too light the brush will bounce off of the comm surface and arc – or worse, burn up – and performance will be lost.

Retail Price: $34.95

Part #: 4722

Dimensions (overall):
1.25"x 1.25" x 1.20"

Weight: 1.5 ounces

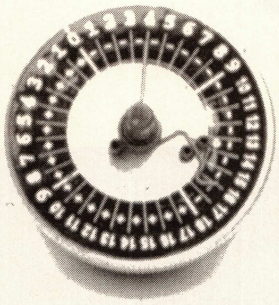
Applications:
For any electric motor spring, both lay-down and stand-up to a desired tension angle.

Manufacturer:
Niftech Precision Racing Products
5565 Wilson Dr.
Mentor, OH 44060
Phone: (440) 257-6018
Fax: (440) 257-4281
Website:
www.niftech.com
email: niftech@juno.com

Who's It For:
Racers looking to tune their electric motors using various spring tensions.

Good News:
- Small size is easy to fit in any toolbox.
- Quick and easy to adjust spring tension angles.
- Results are professional.
- Well-made, high-quality feel.

Bad News:
- A motor dyno is almost necessary to see accurate results.
- High price for a seemingly simple tool.



Another use for the tool is to compensate for lost brush length. As a motor brush wears and shrinks in length. That means a brush that's shorter will not have as much tension placed on it as a longer brush would. The spring bending tool will allow you to increase the tension angle to compensate for the lost brush length. This could save you money by allowing you to continue using the same pair of springs by bending them to match from time to time.

To The Testing Room

With a pair of motor springs and the Niftech tool in hand I headed for the work bench. I tested the tool with standard tension, stand up style springs. I installed the first spring on the tool's post and the roll pins that hold the spring in place on the bottom. The top portion of the spring, the part that clips above the motor brush hood when installed, pointed at the -4.5 mark on the tool. I put the thumb wheel into place and proceeded to add tension to the spring by rotating the thumb wheel counterclockwise. I bent the spring so that the top portion was set to the -2 mark on the tool. I took the spring off then placed the other spring on the tool. Using the same amount of pressure on the top piece of the tool I was easily able to get the top portion of the spring set to the -2 mark on the tool. I removed the spring and compared it side-by-side with the other spring I had already bent. Perfect. Both springs were bent to exactly the same angle. The bend was neat and professional looking.

To test things further I put both springs back on the tool one at a time and bent them to the 0 mark and compared the two. I then decreased spring tension down to the -9 mark by rotating the thumb wheel clockwise. Each and every time I compared the springs they were both perfect in their tension angle and looked very professional. [Note: Niftech sells springs in three different thickness for different spring rates. Each spring will fit onto the tool and measurer at zero degrees on the tool. Along with a chart soon to be available from Niftech you will be able to see how much pressure in grams a spring will exhibit by its wire thickness and the degree reading on the tool.]

Conclusion

All in all, the Niftech motor spring bending tool is a valuable tool in the art of motor tuning. It's easy to use and it does its job very well. With the reference markings, it's easy to get two individual springs to have the same tension angle in them. Someone who owns or has access to a motor dyno will be able to see results most accurately. I think with a dyno you will easily and immediately be able to see the results that spring tuning makes. With just track testing it will be harder to see the most accurate results from making spring adjustments. The $34.95 price may seem high to many, but I think once you use the tool and see measurable results you'll forget about the price. If you do purchase this tool I would also suggest picking up Niftech's Spring Tension Measuring Tool (#4725), which will give you exact spring tension figures to keep track of when experimenting.

X

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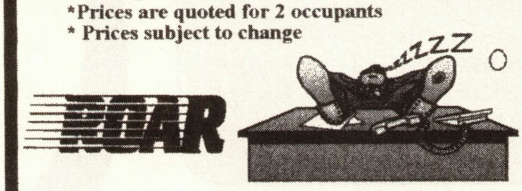

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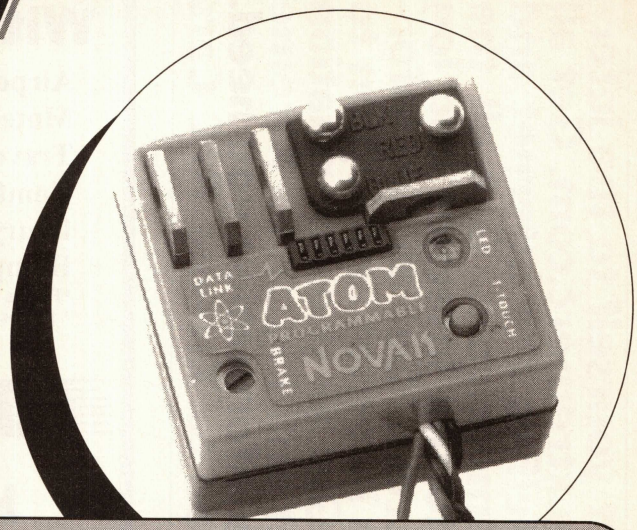
Xipp Power Jig

The new Power Jig from Xipp was designed from the ground up for the new, larger RC1700 and RC2000 cells. With the Power Jig you can build 4-, 6-, or 7-cell battery packs easily. The Power Jig is made of injection molded ABS plastic, and it holds your cells straight and still with a hook and loop fastening system. The lightweight Power Jig breaks down to a compact size in seconds for easy storage.

Part #: 60003; price: $9.99.





Novak Atom Electronic Speed Controller

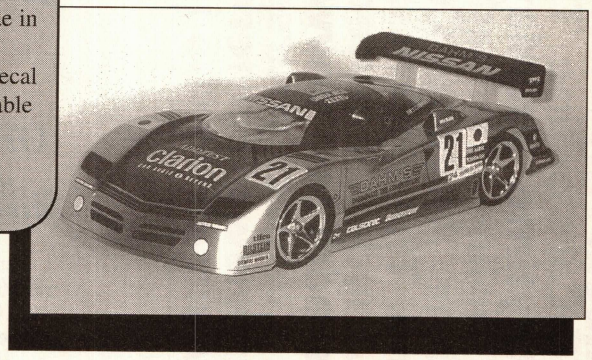
At 1.23" x 1.16" x 0.69," Novak's new Atom ESC is one small wonder. Weighing a mere 1 ounce, the Atom sports all of the features of the Cyclone ESC but in a package 25% smaller. Like the Cyclone, the Atom can be user programmed with the optional ESC Profile Software or the Pit Wizard. Some of the Atoms features include Polar Drive Technology, HYPERFET III transistors (3 forward, 1 brake), 14-gauge wire, and Novak's One-Touch Set-up.

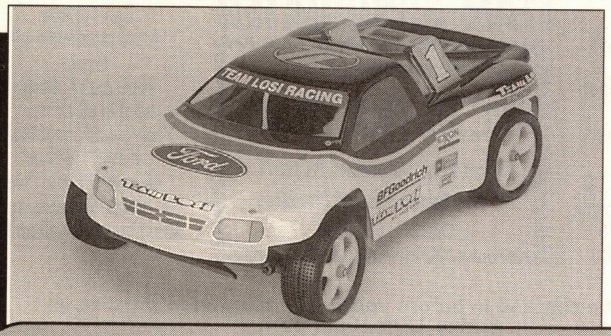
Part #:1770; price: $249.00.

Dahm's Nissan R390/GT1

The new R390/GT1 from Dahm's is patterned after Nissan's factory ride in the 24 Hours of Le Mans race. Dahm's version features their extreme wing, aerodynamic wing mounting system, 3D side panels, and a full decal sheet. The R390/GT1 fits most 190mm wide sedan chassis and is available in two different thicknesses.

Part # and prices: D272 (.030 inch lightweight), $20.98; D273 (.040 inch strong), $21.98.





Team Losi S.O.D.A. Class 8 Ford Truck Body for XX-4

Team Losi changes the look of off-road racing with the introduction of their Class 8 Ford truck body designed for the XX-4. With the Class 8 conversion kit you get the new Ford truck body, longer new front and rear body mounts, pre-cut window masking, and a full decal sheet to simulate the look of the full-sized Scott Taylor S.O.D.A. Series championship truck. Each item in the kit is also available separately.

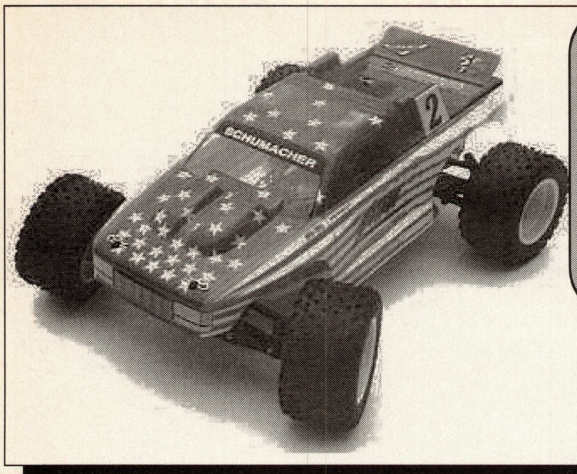
Part # and prices: A-8019 (Full Conversion Kit), $29.95; A-8020 (Class 8 Ford Truck Body w/decals), $22.00; A-4227 (Truck Body Mount Set), $7.50; A-8343 (Class 8 Ford Truck Sticker Sheet), $4.00.



GM Racing Super Glue

GM Racing claims that their new Super Glue is the fastest sticking stuff you've ever seen! The new glue was designed for gluing everything from tires, plastic parts, and metal as quickly as possible. It's perfect for quick fixes at the race track. Use the glue that the pros use! Available in three thicknesses, depending on application.

Part #: GM8000 (Thin), GM8001 (Medium), GM8002 (Thick); price: $5.99 each.



Schumacher Nitro 21 Xtreme

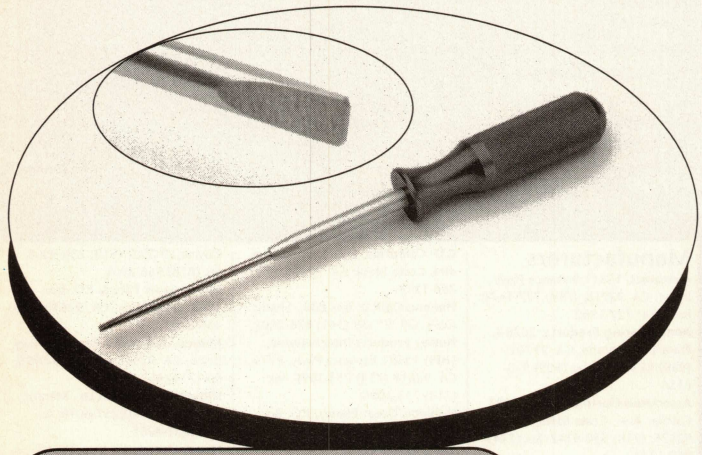
Schumacher's new Nitro 21 Xtreme (no affilation with this fine mag.) series packs a 2.1 bhp 21XT rear exhaust recoil started engine, and is claimed to be the "most powerful 1/10-scale car in the world." The chassis itself features a yellow steel chassis, CNC tuned pipe, oil-filled shocks, ball differentials, and the best part — the Nitro 21 Xtreme is almost completely assembled! Available in both off-road truck and on-road touring car versions.

Part #: U400 (Storm racing truck), U409 (Opel Calibra), U410 (Mercedes C Class); price: $539.00.

New Era 1/4-scale Monster Truck

At 48" long, 33" wide, and 28" high, New Era's Monster Truck is one huge monster. The truck features a 4130 tubular Chrome Moly steel frame with a design exactly like the real thing. The chassis itself is Heli-Arc welded and comes powder coated black. Other features include full ball bearings, a triple-disc camlock braking system, 4-wheel drive, 2- or 4-wheel steering, and New Era's own quick-change rear ends.

Part #: n/a; price: $3,150.00 (truck only); $3,575.00 (truck with engine).





Dynamite Engine Tuning Screwdriver

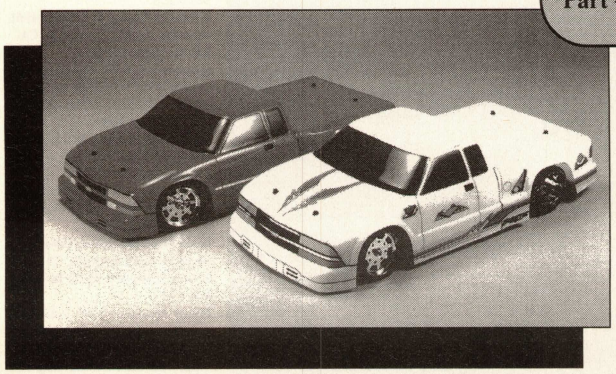
Dynamite's latest tool is their engine tuning screwdriver. The hardened steel shaft is extended to reach the carb on almost all engines. The extra length protects the tuners hands by keeping them at a distance from the head and exhaust. The Dynamite Engine Tuning Screwdriver features the same red-anodized knurled handles as their Hex Wrenches, including the flat spot to prevent it from rolling off of your pit table.

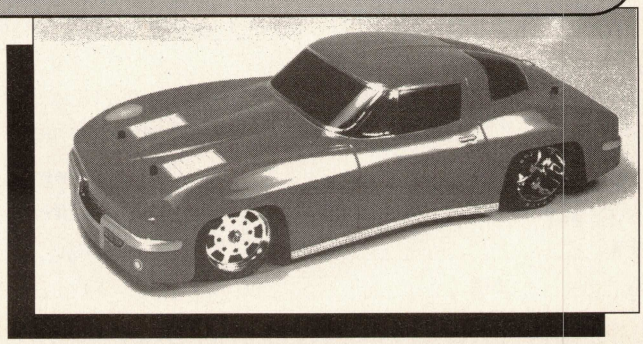
Part#: DYN-2775; price: $14.95.

BoLink '98 Chevy S-10 and '63 Corvette Bodies

The latest releases from BoLink give you a choice of modern aerodynamics or classic curves. BoLink's S-10 pick-up is an extended cab version of the full sized cruising truck, whereas the '63 Corvette Coupe emulates the lines of the classic muscle car, right down to the split rear window. Both bodies are 200mm sized to fit narrow pan cars, 200mm sedans, and more.

Part #: BL-2254 ('63 Corvette), BL-2255 ('98 S-10); price: $19.95 each.





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profile

Name: David Spashett
Age: 21
Residence: East Bourne, United Kingdom

What was your first R/C car and how old were you when you got it? My first car was a Tamiya Fast Attack Vehicle. I was 10 years old when I got it.

How did you get into racing? There was a club in my local village so my father and I started racing together. To start with, it was just for fun. But soon it became very competitive.

What has been your best racing experience? Winning the 1/12-Scale IFMAR World Championships in Paris was definitely the best. Everything was just perfect all week long.

Why did you switch to Trinity? Their desire to be the best is amazing and addictive. I wanted to be part of their plans. They give me the best chance to win every time I place my car on the track. That is a nice feeling.

Was making the switch a hard decision to make? I had driven for Corally for 8 years and I had to leave some good friends. The decision was not easy, but the correct one!

Does racing still excite you? Racing still gives me that all important buzz! The bigger and more important the race, the more fun it is.

What are your aspirations for the future for racing and personally? I'd like to win the Worlds this year for the second time and simply to live life to the fullest.

Who is/are the racer(s) you like to race against the most and why? Joel Johnson, Brian Kinwald, Mike Blackstock, and Mark Pavidis. I know when I race against these guys it is going to be very fast and very fair.

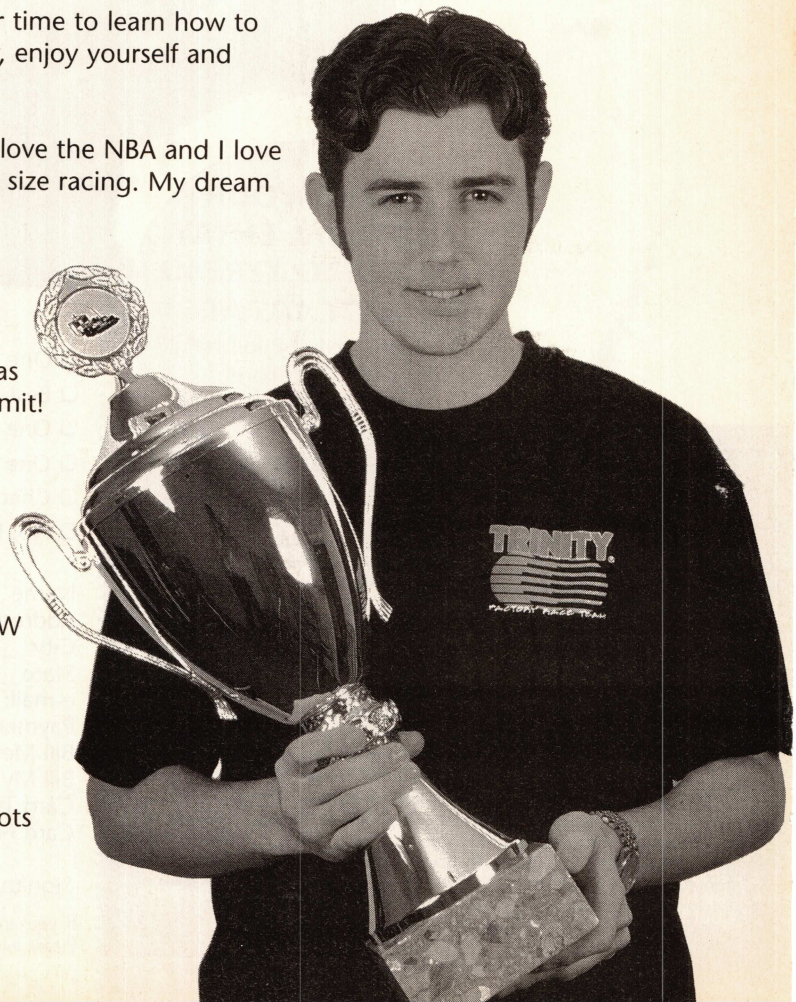
What's your best advice to a beginner? Take your time to learn how to drive and prep your car correctly. Most importantly, enjoy yourself and have fun.

What do you do when you're not at the track? I love the NBA and I love to play basketball. I also have a great interest in full size racing. My dream would be to drive an F-1 car.

Being a former World Champ, do you feel more pressure at big races than before your big win? There is more pressure due to the expectations for me to do well. Most of the pressure is from myself as I know what I can do and I'm always pushing the limit!

Do you have any racing superstitions, rituals, or good luck charms? Just my body's design. Whatever car I drive, it must be the same color scheme.

What's your favorite full size car? Ferrari 550 or VW Concept W12
Coke or Pepsi? Pepsi
What's your favorite movie? Austin Powers "International Man of Mystery"
What's your favorite band? All Saints
What's your favorite thing to eat? Chinese food, lots of soy sauce.



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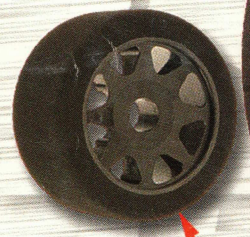

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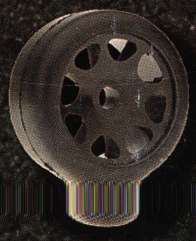

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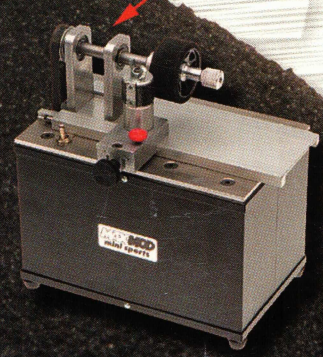

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