4 SUMMER HOW-TOs

Rebuild Mod Motors
Clean Between Races
Take Jumps
Paint And Cut Bodies



IFMAR World Warm-Up Coverage! p.22



TESTED

TAMIYA MARTINI ALFA

FUTABA 3PDF

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ISSUE 3.1
USA $2.75 CANADA $3.50

main 2WD were Associated RC10B2's, including the overall winner, Masami Hirosaka. Eight out of the ten were powered by Reedy Modifieds. These World-Class offroad racers have what it takes to win...or, at least nine out of ten do!





The Yokomo Team from Japan with Mike Reedy: Masami Hirosaka, Atushi Hara, Hiroshi Suzuki, Akira Suzuki, Shinnosuki Adachi, and Tomohira Hirai. All used Reedy Modifieds, as did Mark Francis, Mark Pavidis, and Jimmy Jacobson.





Masami's winning and Top Qualifying RC10B2 uses Reedy Modifieds, Pro-Line Tires and a KO Radio.

4TH RC10B2 *Hiroshi Suzuki*

5TH RC10B2 *Mark Pavidis*

6TH RC10B2 *Akira Suzuki*

7TH ***(Hint... this racer previously won a World Championship with an Associated RC10!)***

8TH RC10B2 *Barry Baker*

9TH RC10B2 *Jimmy Jacobson*

10TH RC10B2 *Shinnosuki Adachi*

RC10B2

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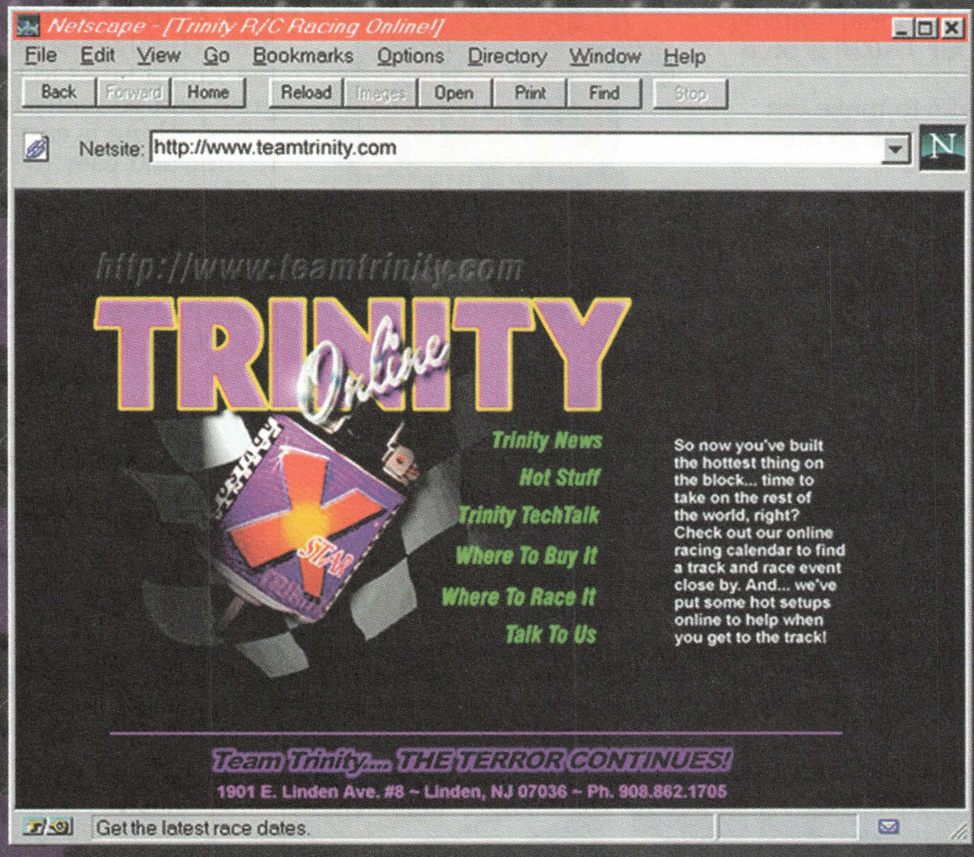

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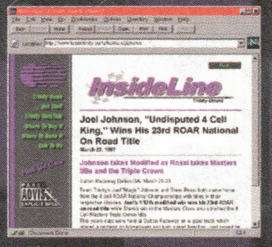

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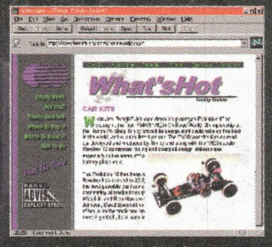

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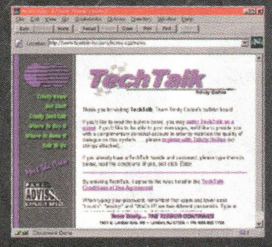

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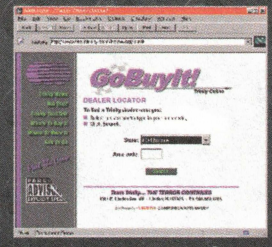

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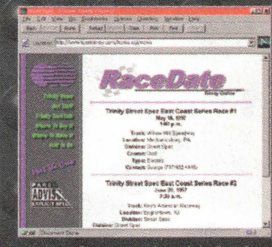

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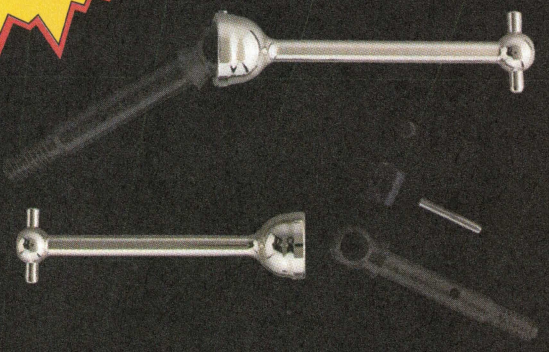

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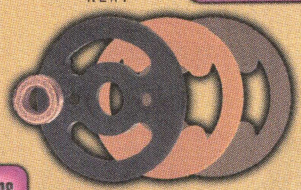
B2/T2/Stealth Improved Gear Adapter

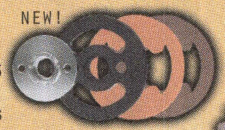
NEW!



The NEW Lightened gear adapter replaces the stock unit and allows the spur to ride on the bearing, vastly reducing gear run-out! Accepts a standard ball bearing. Units supplied with 2 fixed slipper pads, Standard and "Extreme Traction" for loose tracks. "Absolute" adapter is for Losi Hydra Drive.

RRP-1505 For Stealth Trans

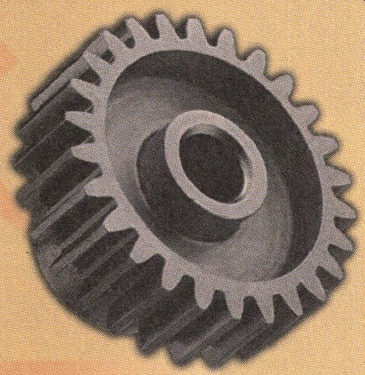
NEW!



RRP-7805 For Losi Trans

RRP-1506 NEW! Fixed Slipper Pads Set of 2 Pads (1 of each type)

48P/64P "Absolute" Machined Pinion Gears

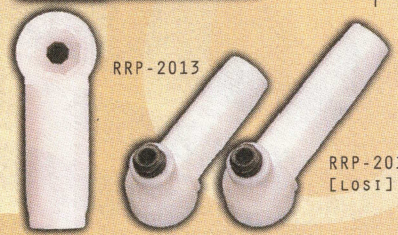


The NEW "Absolute" represents the leading edge in pinion design. It's super hard, lightened and is cut to unmatched concentricity. It runs great with any spur, but when matched with an absolute spur, even throttle on/off noise is gone. 48P RRP-1416 thru RRP-1428, and 64P RRP-4520 thru RRP-4538. Plus NEW, BIGGER 5-40 set screw.

"Sure-Fit" Ball Cups™



8-Point Contact



RRP-2013

RRP-2012 [Losi]

The "Octa-Pocket"™ design assures maximum control with minimum friction. Set screw allows more precise camber/toe-in adjustments, and cup removal without damage. In standard and long shank (Losi). 8 per package.

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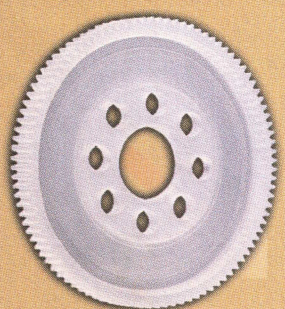
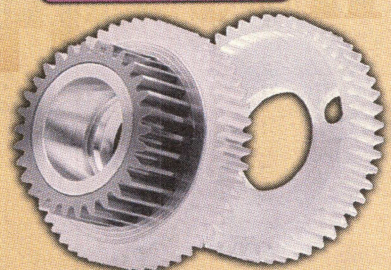
64P "Pro Series" Machined Spur Gears



The new "Pro Series" spur is machined from a new material that provides unequaled stability, light weight and minimal friction. Available in 96, 99, 100, 101 tooth for Stealth diff, and 99, 100, 101, 119, 120 and 121 tooth for standard diff.

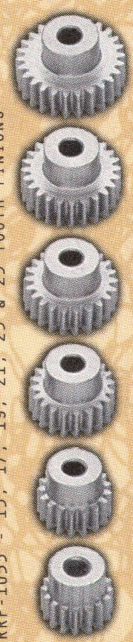
Each "Pro Series" spur includes gear ratio chart.

TAO-3 Cluster/Spur Gear Set



Convert your TAO-3 to standard 48 pitch with RRP's new Cluster/Spur gear set. 48T and 50T spurs are supplied in set, RRP-8800. Add a Six-Pack and dial in your machine. Spurs only, RRP-8801.

SIX PACK



RRP-1050 - 16, 18, 20, 22, 24 & 26 Tooth Pinions
RRP-1055 - 15, 17, 19, 21, 23 & 25 Tooth Pinions

The SIX-PACK Starter Set is a set of precision cut pinions that are an economical way to try different gear ratios before investing in premium racing gears.

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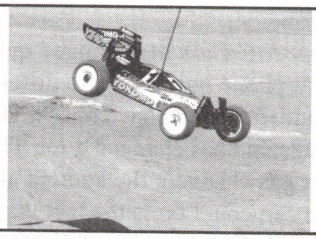

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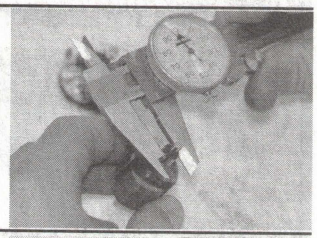

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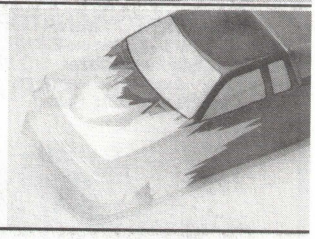

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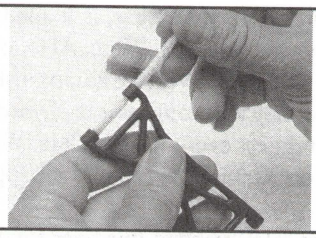

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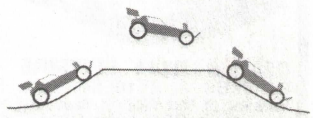

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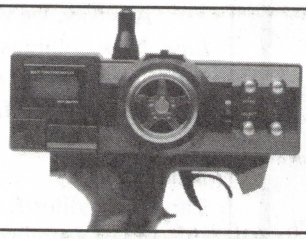

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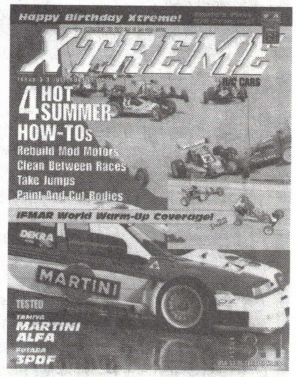

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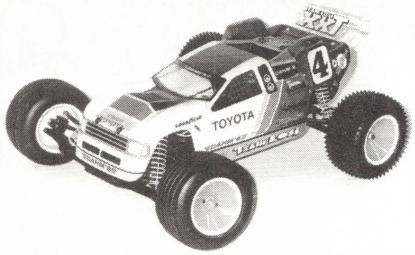

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EDITORIAL

This issue, this shiny new issue you're holding in your hands signifies two full years of *Xtreme R/C Cars* magazine on the books. A lot has changed in two years. Our first issue, Issue 1.1, was printed on 40 pages of newsprint and it was offered free as a promotion. Back then, our official name was *Xtreme R/C*. It wasn't until a few issues later that we added the "cars" to the end of our name to make it *Xtreme R/C Cars* magazine.



In two years *Xtreme R/C Cars* has changed quite a bit. We've had three different phone numbers, two different addresses, three email addresses, and have reviewed 27 car kits. The look of the magazine has changed a lot. The covers have changed; the paper has changed; the authors have changed. One thing you can count on is the fact that *Xtreme* is always changing. With each issue we try to improve on as many aspects of the magazine as possible. *Xtreme* is constantly evolving. And things don't just change for the heck of it. All the letters, emails, faxes, and phone calls we receive go into shaping each issue of *Xtreme R/C Cars*. Keep that input coming, we appreciate it. And we especially appreciate your support as we celebrate our second birthday and start our third year.

This issue, the start of our third year, is loaded with four great Learn How-To's which any racer can use and appreciate. Also, check out the coverage from the IFMAR 1/10-Scale Off-Road World Championship Warm-up race. The Worlds are coming up soon and they're in our own backyard. That will mean lots of coverage in *Xtreme* of the biggest event in R/C Cars. We'll even be web casting daily updates from the track on *Xtreme On-Line*. If it happens this summer in Pomona, you'll know about it.

Anyway, we've got a lot planned this year for *Xtreme* and for *Xtreme On-Line*. New columns, more color, more pages, more race coverage, more of the stuff you want. So with that in mind, I hope you enjoy this issue, and thanks again for getting us this far. We look forward to the years ahead.

Mike Velez
Publisher/Editor/Racer

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X-MAIL

Dim All The Lights

How's it going? I love the mag; keep up the good work. Recently I bought a Deans 20 amp light bulb discharger and I'm a little confused about something. After my packs dump, they sit at about 7.6 volts. I know that you should discharge them to about 5.4 volts. However, when I plug a pack into the discharger the lights come on and dim immediately until they go out in about 2 seconds. When I check my battery voltage right after it's at about 6.4 volts, but very rapidly climbs back up to the original 7.6 voltage. What gives? You are supposed to unplug the batteries when the lights dim and that happens immediately. Am I doing something wrong or am I not getting the concept? Your help is greatly appreciated.
Brad
Via the internet

Hi Brad,
When you see the figure 5.4v as a cut-off voltage, that is with a load applied to the battery. When a load is applied to a Ni-Cd battery there is always a voltage drop. When the load is taken away from the battery the voltage will rise to the rated voltage of the cell. So a 6-cell battery with 1.2v cells should reach 7.2v, in your case it reaches 7.6v. But that voltage is very misleading. Think of your battery as a tank of water. The voltage is like the water pressure, the amperage is like the rate of water flow. After you've discharged your battery, the voltage rises to its unloaded voltage (or pressure level). As soon as you open up the faucet (apply the discharge lights) you get a short spurt of water (energy), but the tank is still empty. That's what's happening. Once you've discharged your batteries once, there is no need to do it again, unless you will be storing your batteries for a extended period. If you'll be storing your batteries for a few months it's a good idea to apply the discharge lights once every couple of weeks.
Mike

Gear Dilemma

I have a Kyosho TF-2. Which are better for on-road racing, 48- or 64-pitch gears? What are the advantages or disadvantages of each? Thanks in advance for the help.
Gary Pugsley
Via the internet

Both have their advantages and disadvantages. For smoother movement and less mechanical resistance, you'll always want the finest gear pitch possible. Of the two, 64-pitch is the finer pitch. You can also be more precise on getting an exact ratio with 64-pitch gears. But other things must be taken into account as well. 64-pitch gears aren't as strong as 48-pitch gears because of their size. With a high-torque motor, you may find it much easier to strip 64-pitch gears compared to 48-pitch. 48-pitch gears are much easier to adjust; the space between your pinion and spur isn't as critical. Also you must keep in mind the amount of debris on the track. The smaller the tooth size the more susceptible the gear is to a small pebble or similar debris.
Andy

Radio Woes

My brother has a subscription to your magazine and I read it religiously, which is how I found out that you guys have a great web page. Anyway, I'm wondering if you can help me with a problem that I'm having with my radio equipment. My range has gone downhill. I can't even run a large roadcourse without my equipment glitching. Once I hit a certain point, the motor seems as if it is being turned on and off rapidly and my steering doesn't respond. This really hurts me when I'm racing with friends cause they make distance on me whenever this happens. I'm running a Futaba Magnum Junior with a receiver which is only about four months old. I also have a Novak Duster II which is almost new. Like I said, the problem occurs when the car gets further from the transmitter; the transmitters battery meter is barely within the safe zone but nonetheless it is in the zone. Please help me, I just got a Kure Nismo TA03 and I'm very anxious to drive it.
Mike Zegarra
Poolesville, MD

Basically you have to go back to the basics. Check all of these things: Radio battery strength, receiver placement, battery and motor connections, damaged or missing motor capacitors, damaged crystals, incorrect wire routing, bad motor, and servo or battery pack. In X-mail I really don't have room to go over each one individually, but your instruction manuals should help you. We covered many of the basics in Issue 1.9. We've got a few articles planed on similar subjects in up coming issues; keep an eye out. I hope this helps you.
Dave

Swaybar Advantages?

I have got a question for you. What does a swaybar do for me? What does it do if I put in the front and/or back? By the way, great magazine. As a subscriber I love it.
Dirk
Via the Internet

Hi Dirk,
Once again, I don't have enough room here to go into detail, but that is a great idea for an upcoming article. Thanks. Basically a swaybar transfers load from one side of a car to the other side. When a vehicle goes into a turn the chassis typically rolls to the direction away from the turn. The wheels on this side of the car become the laden wheels. The swaybar transfers the load from the laden side to the unladen side. The result is less chassis roll, or sway. The car can respond to direction changes quicker. Those are the basics. Other variables, such as bar thickness, mounting points, and the type of chassis the bar is being used on produce different results. on. Off-road cars react a bit different than sedans and other on-road cars to swaybars. Keep an eye out for Issue 3.2 where we'll address this subject in more detail. And thanks for the kind words.
Mike

America's Choice! Since 1964
PARMA PSE

1/10 Volvo S-40 Body
#10189 .040 Clear Body w/Wing
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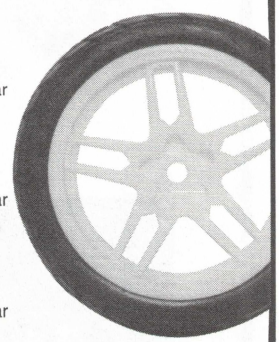
Fits Narrow 4WD Tamiya/Yokomo Kyosho/HPI Cars



7.5"/190mm Wide

1/10 Touring Car Tires
#87001 Touring Car Tires, Wheels & Liners for Tamiya, Kyosho & HPI - *Set of Four*
#87002 Touring Car Tires, Wheels & Liners - Fronts for Tamiya, Kyosho & HPI - *Pair*
#87003 Touring Car Tires, Wheels & Liners - Rears for Tamiya, Kyosho & HPI - *Pair*
#87004 Touring Car Slicks, Wheels & Liners for Tamiya, Kyosho & HPI - *Set of Four*
#87005 Touring Car Slicks, Wheels & Liners - Fronts for Tamiya, Kyosho & HPI - *Pair*
#87006 Touring Car Slicks, Wheels & Liners - Rears for Tamiya, Kyosho & HPI - *Pair*
PSE has the latest in treaded and slick radial molded tires for parking lot pro's everywhere. Tires, wheels & liners are now available in complete sets of four or pairs - narrow fronts and mid narrow rears.



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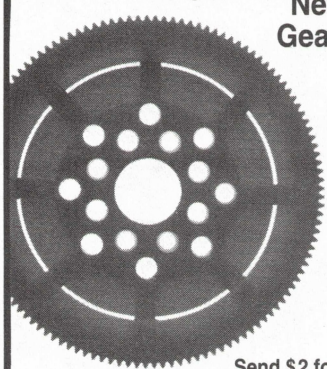

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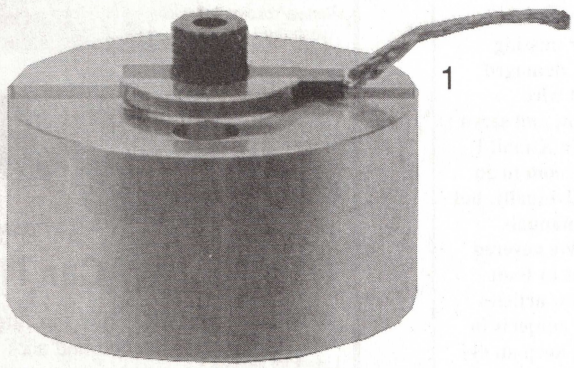

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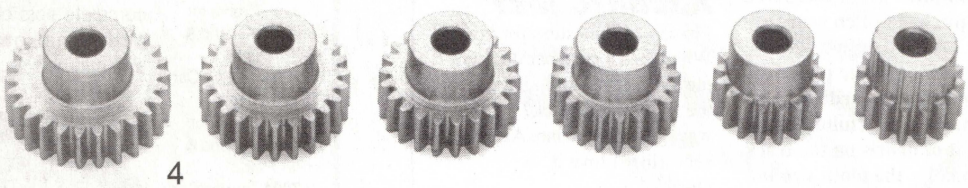

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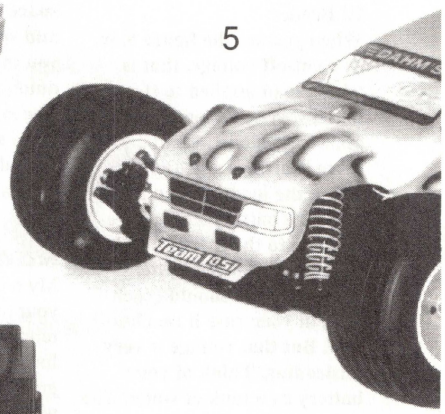

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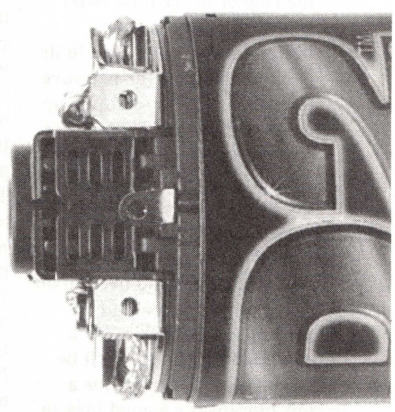
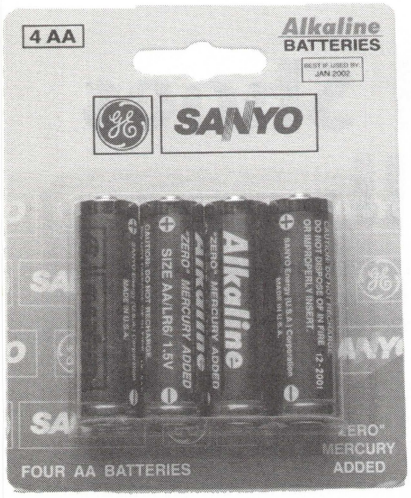


New Stuff



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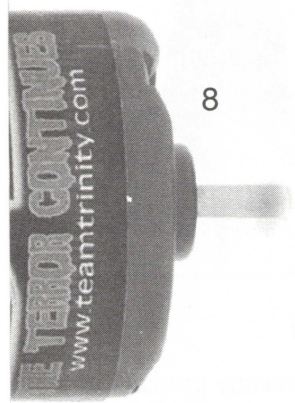

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New Stuff is made up of information furnished by manufacturer press releases. The items mentioned in the department have not been reviewed or endorsed by *Xtreme R/C Cars* magazine. Contact information is furnished at the back of the issue. Be sure to mention *Xtreme* when giving them a call.

1. Race Prep Clyde Brush Grinder

This new tool grinds the brush face to fit the commutator diameter perfectly which will decrease motor break-in time. The Clyde Brush Grinder mounts to any modified or stock motor. Then mount one of the three supplied grinding bits to the output shaft of your motor. With a 4-cell battery (not included) or variable voltage power supply, you can begin grinding brushes to match your commutator's diameter. The tool works on either standup or laydown brushes.
Part#: RP-60; price: $59.95.

2. Hobbico Socket Sets

No racer's toolbox is complete without a socket set, and Hobbico's new sets are the most affordable ones around. Modelers can choose from the 12-piece standard or metric sets, or the 41-piece Socket & Bit Set that includes a one-way ratchet wrench, a 1/4" holder, and a variety of sockets and bits. Each piece is durably constructed to last for years. All sets come in a sturdy plastic case that keeps tools organized and protected.
Part#'s: HCAR0511 (12-pc. Standard); HCAR0512 (12-pc. Metric); HCAR0513
(41-pc. Socket and Bit Set); prices: $11.99, $11.99, $9.99.

3. Sanyo Alkaline batteries

You've been running Sanyo cells in your cars for years. Now you can run Sanyo cells in your transmitter, cassette player, TV remote, pager, you name it. Sanyo's alkaline cells are now being marketed through hobby stores around the country. Cell sizes include AA, AAA, C, D and 9v. Each package has a freshness date. Don't pay too much for batteries at the supermarket; stock up at the hobby shop. Hobby shops, these cells are being distributed through Dealer Works, Trinity's hobby shop distribution arm.
Part#'s: various; Price: various.

4. Robinson Racing Six-Pack

Experience a variety of 48-pitch gear ratios economically with Robinson's new Six-Pack. Each Six-Pack comes with, you guessed it, six precision-cut pinions. There are two different packs available – even-sized gears from 16 to 26 teeth and odd sized gears from 15 to 25 teeth. The Six-Pack is great economical way to experiment with different ratios before investing in a top-of-the-line premium gear.
Part#:RRP-1050 (even) RRP-1055 (odd); price:$12.99.

5. Dahm's Slammer XCR

Dahm's Slammer XCR body is designed to be a great-looking, highly aerodynamic, extremely lightweight, and low-riding off-road truck body for the Team Losi Double-XT 'CR' and Double-XT race trucks. This high-performance racing body is designed for superior handling at high speeds! The Slammer XCR is made of high quality .030 GE Lexan® for light weight and strength. The Slammer XCR uses the stock Team Losi body mounts, and can be attached to the frame sides with Velcro™. The Slammer XCR comes with an optional rear spoiler along with molded in front and rear spoilers. Decals included.
Part #: D241; price: $19.98.

6. DuraTrax Car Bearing Sets

High-quality DuraTrax car bearings are now available in prepackaged sets for highly popular R/C cars from Tamiya, Team Losi, and Team Associated. These long-lasting bearings provide impressive performance improvements by dramatically reducing power-robbing friction. All of the bearings included in these new sets meet MIL-QW-990B and MIL-QW-4458B military standards for minimum noise output and tolerances. So if you're ever in Iraq, you can strap some chemical weapons to your R/Ccar while still meeting military standards. That's good to know.
Part#'s: various; price: various.

7. Futaba Magnum Junior 2PCKA

Futaba's Magnum Junior 2PCKA is a versatile, high-performance 2-channel system for all types and scales of R/C cars and boats. The system features all the necessary functions to provide better control and easier operation. The new 2PCKA transmitter has been completely redesigned, and features the comfortable grip and balance of the 3PJ pro model. Features of the Junior include dual rate, ATV, servo reverse, trim adjusters and battery level LED's. 2PCKA systems are available with R122JE receiver and either two S3003 servos or one S3003 servo and one MC210CB speed controller. Available in either 27 or 75 MHz.
Part#:2PCKA; price:$179.95

8. Trinity D2 Modified Motors For The Team Losi XX-4

Trinity's new modified motors are especially for the Team Losi XX-4. These are the same "Big Wire" winds used by Brian Kinwald to win the Motor Man Challenge. Special endbell heatsinks keep motor brushes running cooler and extend motor life. Dyno-tuned and set up for maximum performance in 4WD cars.
Part#'s: D4X212 (12 turn double); D4X210 (10 turn double); price: $95.

INSIDE LINE

STUFF YOU HAVEN'T SEEN YET!

Novak's Own Brand of Magic

You'll soon be able to unlock the hidden powers of Novak's Cyclone ESC without the need of a computer. Forget bringing a laptop to the track. Novak's Pit Wizard will be a reality some time this summer. The hand-held micro-computer-based tool will allow users to adjust the same operating parameters as the Novak ESC Profile Software we reviewed at last month. The Pit Wizard's small size will allow you lug it in your toolbox with no problem. The Pit Wizard will feature a 16-character by 2-line LCD screen along with a simple control pad. Ten separate operating parameters can be adjusted to create a Racing Profile. Simply connect the Pit Wizard's harness to the Data Link socket on the Cyclone and the new Racing Profile can be downloaded into the Cyclone. The Racing Profile you created can also be saved into one of the Pit Wizard's 10 memory locations. Throttle trigger response can also be monitored using the Pit Wizard. Suggested retail will be $139.



Illustration not actual size.

Hard Shoes to Fill



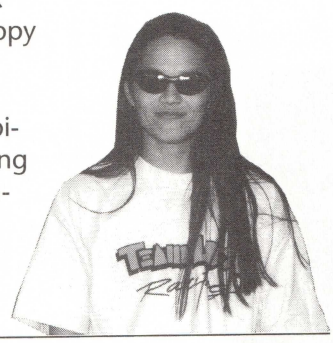
Sanyo has announced the release of a long-awaited mid-priced cell to replace the discontinued N-1400SCR cell. This new cell is the RC-1700. The RC-1700 will be a high-voltage cell aimed at the upper end of the entry-level R/C market. Its high-voltage should make the new cell perfect for stock racing. No photos or pricing were available at the time of printing.

WWW. RC10. COM!

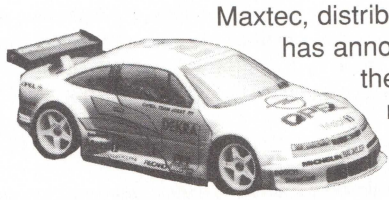
Team Associated's got a web site; it had to happen. If you've already checked out www.rc10.com you'll notice it isn't up and running yet. Team Associated hopes to have their site up and running soon, but doesn't expect things to be happening when this issue hits the stands. You'll get all the tips and tricks for your Associated ride soon. Check the *links* page on *Xtreme On-Line* often.

Derek Makes a Switch

Maxtec Team driver Derek Furutani was recently seen at the IFMAR World Warm-Up race in Pomona running an Associated B2. You'll remember at the '95-'96 IFMAR Worlds in Japan, Derrick was the highest finishing Losi driver in the 2WD class with a third place position overall. The reasons behind the switch are unknown. Despite qualifying in the C-Main, Derek was said to be happy with the performance of his B2/Pro-Line tire combination. Derek, along with Maxtec teammate Barry Baker, were also running Maxtec's new Shock Wave modified motor. The Shock Wave will feature American made components.

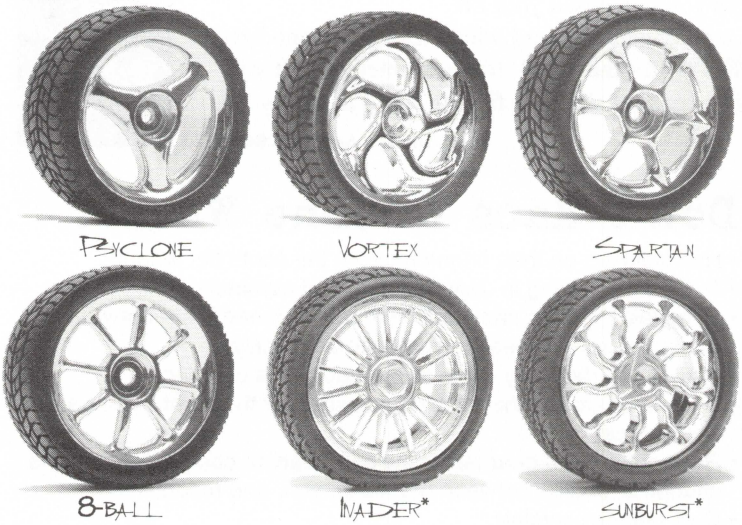


Predator Price Drop



Maxtec, distributors of Tenth Technology products, has announced a huge drop in retail price for the Predator DTM. The new price will make this marvel of engineering more affordable to more racers. Call your local hobby shop for details.

GET YOUR SEDAN ON TRACK WITH RPM



	Standard Width	Super Narrow	Sug. Retail
"Psyclone" Chrome 3 Spoke	#8073	#8083	$8.95
"Psyclone" White 3 Spoke	#8073-W	#8083-W	$6.50
"8-Ball" Chrome 8 Spoke	#8078	#8088	$8.95
"8-Ball" White 8 Spoke	#8078-W	#8088-W	$6.50
"Spartan" Chrome 6 Spoke	#8076	#8086	$8.95
"Spartan" White 6 Spoke	#8076-W	#8086-W	$6.50
"Vortex" Chrome 5 Spoke	#8095	#8085	$8.95
"Vortex" White 5 Spoke	#8095-W	#8085-W	$6.50
"Invader" Chrome 15 Spoke	#8084	#8094	$8.95
"Invader" White 15 Spoke	#8084-W	#8094-W	$6.50
"Sunburst" Chrome 9 Spoke	#8079	#8089	$8.95
"Sunburst" White 9 Spoke	#8079-W	#8089-W	$6.50

* Shown with Dress-up knock-offs

EXTREMELY ATTRACTIVE, STIFF, DURABLE, AND HIGH QUALITY SEDAN WHEELS

These wheels have a Real California Style sedan look, with a high luster chrome finish, not silver! They have an eye catching reflective "flash" while spinning and will stand out beautifully for concourse winning looks. RPM has combined quality, strength, durability, & great looks into a wheel that is as light as stock and completely race ready! The tire bonding area has been completely striped of chrome for easy, dependable bonding of the tire to the wheel! Sold in pairs for Tamiya, HPI & Kyosho sedans. Our white wheels are just waiting to be dyed in your favorite color. Our "Vortex" wheel is even directional!

RS4 Nitro & Pro Front & Rear Arms

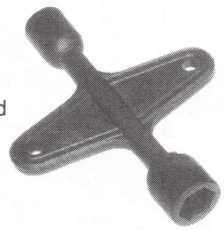
NEW!



These arms are designed and injection molded as tough and durable as it gets. We omitted all unneeded holes and went for maximum strength!

#8113 RS4-Nitro Rears	**$9.95**
#8114 RS4-Nitro Fronts	**$9.95**
#8123 RS4-Pro Rears	**$9.95**
#8124 RS4-Pro Fronts	**$9.95**

Metric Wheel Nut Wrench (5.5mm & 7mm)



The RPM double end spanner type wrench is a handy little tool with both sizes in one easy to use handle.

#7091 $4.95

Snap-Tite Body Savers

RPM washers snap through the body post hole in the body and protect it from splitting. They also make sloppy or oval cut holes look great and hold down better. Come as a set of 5, 1 extra for the antenna hole!

#8030 for 3/16 dia. posts (blk)	**$2.95**
#8031 for 3/16 dia. posts (wht)	**$2.95**
#8033 for 1/4 dia. posts (blk)	**$2.95**
#8034 for 1/4 dia. posts (wht)	**$2.95**

Module Clips

RPM clips attach to your FM radio module to ease removal when changing crystals. They stay in place and blend with the looks of the radio.

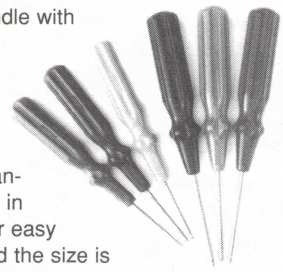
#8046 Futaba 3PB & T3PJ	**$2.95**
#8048 JR 756	**$2.95**
#8050 Airtronics CS2P	**$2.95**
#8052 Airtronics C3PS	**$2.95**

Pinion & Crystal Cases

These molded cases hold and protect your crystals from damage while your pinions will be organized and protected from tiny nicks that can eventually weaken or destroy your spur gear.

#8039 Crystal Case	**$7.95**
#8041 Pinion Case	**$8.95**

Hex Handles



High quality handle with a heat treated tool steel hex tip molded right in. No assembly required. The handles are molded in bright colors for easy identification and the size is engraved at the front of each handle.

#8061 .050" Hex Driver	**$8.95**
#8062 1.5mm Hex Driver	**$8.95**
#8063 1/16" Hex Driver	**$8.95**
#8064 2mm-5/64 Hex Driver	**$8.95**
#8065 3/32" Ball Hex Driver	**$8.95**
#8066 2.5mm Ball Hex Driver	**$8.95**
#8069 4 Piece Set W/stand	**$34.95**

Includes: 2.5mm, 3/32", 1/16", .050" Drivers

Toe-In Gauge

This and our #7099 Camber gauge are a must for ANY racer! We have simplified the instructions and added illustrations plus we added a feature to allow its use on the narrow wheel base sedans and on-road cars as well as off-road trucks & buggies.

#7049	**$9.95**
#7099	**$9.95**

Special Dress-up Wheel Nuts & Knock-offs



Each Knock-off or nut has a "blind" hole so the axle is not visible! RPM molded nylon is lightweight, tough and self locking. This twelve piece set includes 4 hex nuts, 4 directional three spoke KO's and 4 directional two spoke KO's. They will fit HPI, Tamiya & Kyosho sedans and most cars or trucks with 8-32 or 4mm threaded axles.

#8081 Gold Set	**$5.95**
#8082 Chrome Set	**$5.95**

RPM USES ONLY THE HIGHEST QUALITY MATERIALS IN ALL OF OUR PRODUCTS!

Send $3 for a complete catalog and decals.

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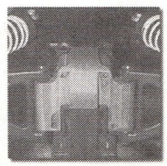
Chino, CA 91710

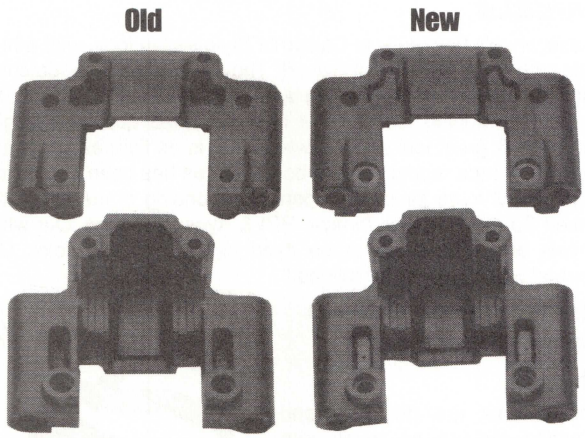
XX-4 Updates

The eagerly awaited XX-4 has hit the market and apparently has been hitting some walls. Seems some racers have had problems with the front bulkhead breaking. Team Losi says that a majority of the breaks have been occurring in colder climates where some materials become more brittle. To fix the problem, Team Losi has used a more durable material on that particular part and changed the mold slightly. Although the dimensions of the bulkhead are the same, certain areas may appear slightly different because of the increased amount of shrink that occurs when molding the new parts. Team Losi has sent replacement bulkheads to hobby shops around the country to replace those from the original kits. The bulkheads are being replaced free of charge, one per kit purchased, at the hobby shop where you purchased your kit.

Seeing the potential for a new item, the boys at Trinity have jumped on board with a trick, blue-anodized, high-grade aluminum replacement bulkhead (part number TK3014)for the XX-4. If you're interested, it will set you back $36.99. Trinity is also making a Team Kinwald motor heat sink that fits the XX-4 perfectly.



Trinity's Anodized Bulkhead



The bulkheads on the left are the originals. You can see the deeper channels to reduce weight. The new bulkheads on the right have those channels filled with material and are molded out of a more durable material.

Don't Race Anyone Who...

- Has calluses on their fingertips from the controller wheel.
- Talks about racing in Japan a couple of summers ago.
- Complains that he shouldn't have added those foam body pads because his car doesn't accelerate as quickly.
- Brings a TurboThirty Dyno to the track for a club race.
- Does laps around the lot in his full-size car the night before a park ing-lot race.
- Recalculates his gear ratio between heats to compensate for the change in angles between the earth, sun, and moon.
- Cuts his own crystals.
- Designed his own speed control.
- Wears a "Team NASA Racing" T-Shirt.
- Can drive one handed while thumb wrestling at the same time.

XPRESS WINS 4 '96 NATIONAL CHAMPIONSHIPS!



MINI-SEDAN OR M-CHASSIS



FEATURING: Full Carbon Fiber Chassis, Shock Towers & Top Plate • 4-Wheel Independent Suspension with Oil-Filled Shocks • Belt Drive • Full (14) Ball Bearings • U-joints • Front & Rear Ball Diffs, and more!

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1, 2, 3, 4, 5... X-Press SWEEP!
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Including Tim Bump, A-Main Winner



FEATURING: 4WD, Fully-Independent Suspension • Full Carbon-Fiber Chassis, Top Plate & Shock Towers • Oil-Filled Shocks • Universal Joints • Front & Rear Ball Diffs • Adjustable Front Caster • Aluminum Motor Mount • Full Ball Bearings and MORE!

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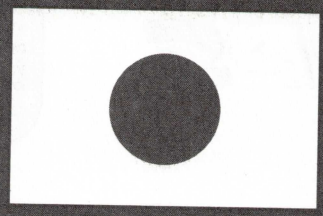
Late Breaking News From Japan!

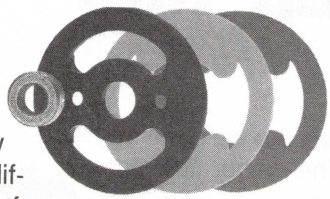


Our spies in the land of the rising sun just got back from the Shizuoka Hobby Show in Japan. Unfortunately the Japanese Minister of National Security confiscated all of the film in our spies' cameras. But they did come out alive with this tale of new items. We don't know when or if any of these items will actually be imported into the States. This is simply a report on the new items on display for the Japanese market.

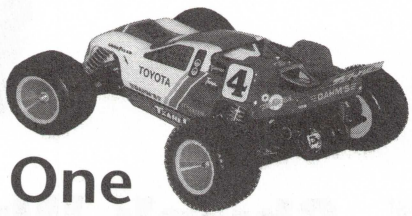
First, Kyosho is working on a new TF3 sedan. The kit features a chassis narrower than the TF2 and only uses stick pack batteries. Sanwa,which is imported into the states under the Airtronics banner, is working on a new radio with eight model memory, code named the M8. Also working on new radios are JR and KO. HPI showed off a new nitro burner the size of a Mini Cooper. The Mini is said to be able to handle .12 or .15 size engines. Also from HPI was a new body of the '98 Corvette.

UPDATES!

Team Associated will no longer manufacturer universal swing shafts for their team trucks which include the T2 and RC10GT. Instead they will be supplying MIP CVDs. This is a great addition to the kits at no extra charge.



Robinson Racing now offers two differnt types of slipper pads for their Absolute gear adapters. One is made of standard slipper material while the second is made for loose tracks. We've run the new pad and found that it works better in almost all situations. It's much more consitent. Also new for the Associated tranny is the fact that the new adapter has the slipper pad fixed. This also help make the slipping action more consistent.

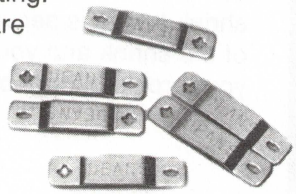


One Size Fits Most!

Dahm's new Toyminator XXT2™ body will fit, get this, the Losi Double-XT, Double-XT 'CR', Associated RC10T, RC10T2, and Tamiya Stadium Blitzer. The Toyminator is molded after a Toyota Stadium Racer. If you want to get someone a birthday present and you're not sure what kind of truck they have, you'll be safe with this one.

Battery Bar Update

If you haven't noticed, the new Sanyo RC-2000 cells don't have as much as a raise on the positive terminal. To better deal with the new cells, Dean's is updating their line of battery bars to include their new Probar 2.0. The updated bars are pure copper with silver plating. The new bars have a raised center section and are stamped with both the positive and negative signs instead of the simple holes in earlier versions. Dean's is pretty confident that they've found the perfect design; so confident they've got a patent pending on the new bar.



HOT BODIES



NEW! 97' Dodge Dakota Gas Truck (All RC10GT's & GTX) #10409



NEW! 97' Ford F-150 Gas Truck (All RC10GT's & Losi GTX) #10403



NEW! 97' Chevy Gas Truck (All RC10GT's & Losi GTX) #10405



NEW! 97' GMC T2 (RC10T & T2) #10408



NEW! 97' Grand Prix SS #10109 & 10109L



NEW! 97' Ford F-150 SuperTruck #10112 & 10112L



New! 97' Taurus SHO (RC10DS & Others) #10701

Available Now!
#10702 97' Corvette GT Touring Sedan
#10704 97' Acura NSX Touring Sedan
Coming Soon!
#10703 97' McLaren GTR Touring Sedan
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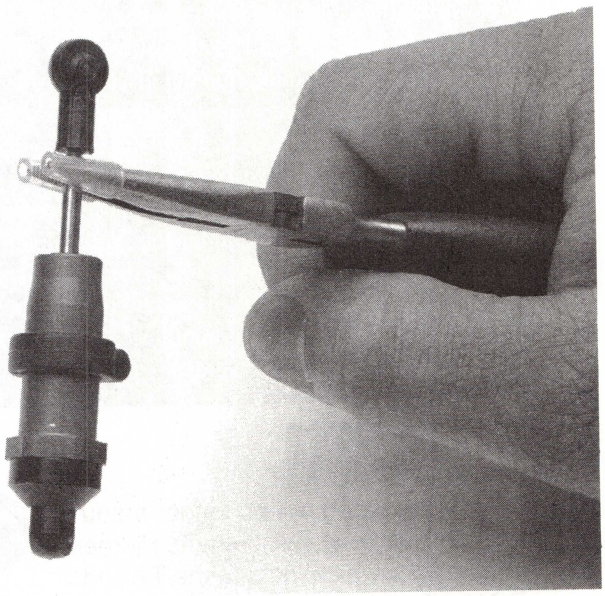
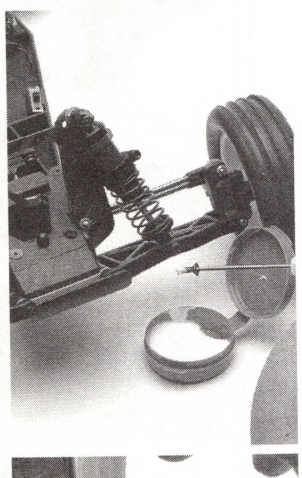
Hold The Shaft Gently

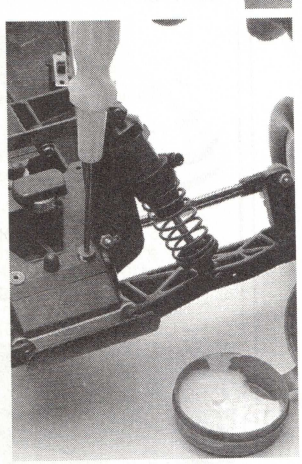
You've seen different methods of holding shock shafts while attaching rod ends. We've got a great method for you that's better than any you've ever seen. Place a small piece – about half an inch is all you need – of silicone fuel tubing over both noses of your needle-nose pliers. Once the tubing is in place, use the pliers to hold the shock shaft firmly while screwing on the rod end.



Hard Driving Screws

Machine screws and cap screws that must be threaded into reinforced plastic or graphite are sometimes difficult to drive-in completely without stripping the head. Use a little diff lube on the screw threads before you start threading them into the plastic or graphite parts. The threads will cut cleaner and the grease will prevent the screw from sticking as the screw is removed and reinstalled the next time. Trinity now makes Assembly lube designed for just this purpose (#TK3070). This method is a must when using lightweight aluminum screws.

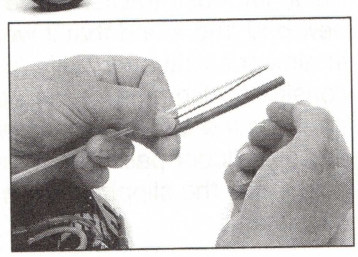


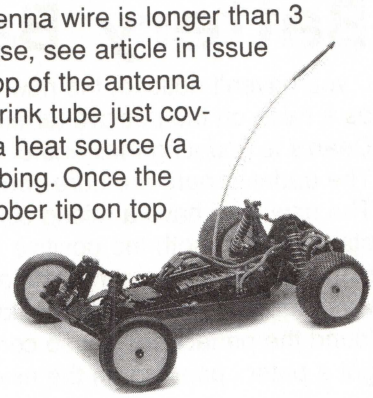


Shrink-Wrap Your Antenna



It seems as though the antenna tube included in most kits is always too short. The rubber tip helps keep the tube in place, but there is a length of antenna wire that hangs down about three inches below the rubber tip. This excess wire catches on the body every time you try to remove it. The solution is to shrink-wrap the wire to the antenna tube. Small diameter shrink tubing – about 1/8"-1/4" depending on the shrink rate – is readily available at most hobby shops or electronics supply stores. Cut a length of shrink tubing equal to the length of the antenna that extends past the tube. (If the extra antenna wire is longer than 3 inches, use an antenna wrap at the base, see article in Issue 1.9.) Slide the shrink tubing over the top of the antenna tube (minus the rubber tip) until the shrink tube just covers the end of the excess wire. Apply a heat source (a hair dryer or heat gun) to the shrink tubing. Once the shrink tubing is secure, replace the rubber tip on top of the shrink and you have solved your problem for good.



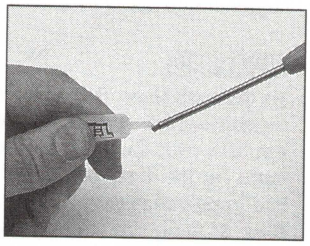


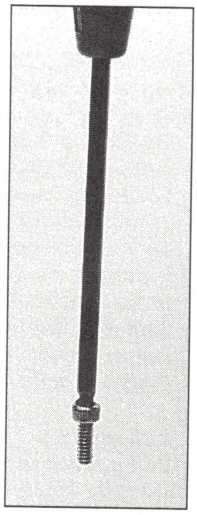
Receiver Pack Problems

Nitro burners, like the Associated RC10GT, the Losi GTX, and several other models, have receiver pack locations on the rear of the lower chassis plate. The recommended system for securing the pack to the chassis is to use pull ties. With time and the steady trauma of engine vibrations and fuel residue, even the best pull tie will loosen up and allow the battery pack to slip from its position, sometimes with disastrous results. To secure the battery pack, try shrink-wrapping your AA receiver packs with shrink-wrap designed for covering a seven cell battery pack or six cell shrink for smaller cells. Set the receiver pack in the proper place. Cut a length of battery-pack shrink-wrap to cover the receiver battery with about 1/2" or so overlapping both sides of the pack, and slip the shrink over the pack and chassis. Make sure that there are no sharp corners on the chassis where the shrink-wrap comes in contact with the chassis. Apply a heat source like a hair dryer to shrink the material around the chassis and receiver pack. If you like even more security, use a second piece of shrink-wrap over the first. You can even put your pull ties around the whole assembly if you feel compelled to use the manufacturer's recommended method.

Sticky Screws

From time to time, every R/Cer has to install a screw that must be inserted horizontally or straight down. In these situations, more often than not, the place where the screw must go is in a nearly inaccessible spot. You can't even hold the screw in place with tweezers or pliers while trying to screw in the screw. To hold the screws on the screwdriver or hex-head wrench tip, apply a little diff grease, or any grease that is thick and sticky, to the end of the tool. Place the screw on the tool and carefully insert the tool and the screw into that hard-to-reach spot.





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EVALUATIONS

Torture Tests By The Xtreme Team

Motor Saver Filter
for .10, .12, .15 engines
By: Motor Saver
Retail Price: $14.95

FUNCTION

The Motor Saver gas engine filter is designed to filter the air being brought into a .10, .12, or .15 gas engine through the carburetor. Gas filters used for radio controlled cars have traditionally been made of paper and foam or strictly foam. The Motor Saver filter uses a slightly different approach – a micro mesh screen. This screen, unlike conventional filtration devices, does not need filter oil to help trap debris and let air pass through the filter. Motor Saver makes numerous claims in their advertisements regarding the performance of the filter. They claim that it is easy to clean. They also claim that the filter allows more air flow which results in quicker throttle response and smoother idle meanwhile still providing a high level of filtration.

FEATURES

The filter is made of two basic pieces. The main body includes the rubber base that attaches to the engine and the area that creates the sides of the filter. The second piece is a screen top that snaps into place to complete the filter. Air flows into the filter either through the synthetic fiber screen on the sides of the filter chamber or through the top screen. Once in the chamber, the air must pass through another synthetic screen before finally being allowed into the engine. For damp and drizzly conditions, Motor Saver offers an optional top screen with two prefilters(#MS0203) which can be inserted into the filter chamber. The reason for this option is that in these damp conditions, the moisture in the air creates a watery film over the filter and does not allow air to pass through. One prefilter can be used in extremely dusty conditions. As you'll see, we'll test the filter by itself and using the optional items.

TESTING

To test the Motor Saver filter we headed out to Revelation Raceway in Montclair, CA. We used an HPI Nitro RS4 equipped with an O.S. CZ-R .12 size engine and 10% O'Donnell fuel. The air temperature was 86°F, sunny, and slightly humid. The track conditions were moderately dusty. The car was equipped with an Associated header, Paris small pipe, and the stock cooling head that comes with the CZ-R. Engine temperature was measured using an MIP On-Board Temp Gauge. Between each testing period the engine was give adequate time to cool to a base temperature. With the tank filled to the same point each run, we ran for 5 minutes at a time at consistent speeds. Before the first run, the car was fired up for a couple of minutes. Then, we allowed the engine to cool down the base temperature.

After each run we removed the filter looking for any signs of contamination. After all four runs there were no signs of contamination entering the engine. Between each run we cleaned the filter and prefilters using a Pro Shot motor cleaner. This test was conducted between 11:30 am and 1:30 pm with negligible changes in the environment.

Run One

On our first run, we used the stock filter that comes with the engine. Running the engine slightly on the rich side, we were left with 1/4 tank of fuel after five minutes. Throttle response and engine idle was smooth. After the run, the engine temperature was at 220° F.

Run Two

After allowing the engine time to cool we filled the tank back up and installed the Motor Saver filter in its stock configuration. Without changing any carb settings, we fired the engine up. Off the bat, we did notice a "torqueyer" throttle response. The car responded quicker than before. The car did also run faster overall, including top speed. The engine felt as if it was running leaner. This can be attributed to the increase in airflow. When the ratio of air to fuel increases, the effect is a leaner running, faster engine. After five minutes we were left with a bit less than a 1/2 tank of fuel and an engine temperature of 226° F. One thing we did notice during the run was that less fuel/lubricant was being expelled from the engine. This led us to believe that the increase in fuel economy was partially due to the engine burning more fuel and expelling less exhaust.

Run Three

For the third run we installed one pre-filter into the filter chamber. This is the recommended setup for extremely dusty conditions. Performance felt more the like the stock O.S. filter than anything new. We did notice the idle to be a bit smoother and the acceleration slightly quicker than the original filter. After 5 minutes, we were left with 1/4 tank and a engine temperature of 231° F.



Run Four

On the forth run, we used 2 prefilters and the wider mesh screen. This is the setup for damp conditions. Performance was exactly like it was in Run 2 with the stock Motor Saver filter. After 5 minutes, we were left with a bit more than 1/2 tank of fuel and an engine temperature of 225° F.

CONCLUSION

As the tests show, the stock Motor Saver filter improved overall engine performance and run time over the original filter. The optional items for the dusty and damp conditions both had improved performance over the original filter, as well. The Motor Saver filter lived up to all of its claims. Under not-so-scientific conditions, all of us here have been racing with the stock Motor Saver filters on our gas cars and trucks. We've seen improvements in all areas of performance and run time. In one instance we were getting 5 minutes of run time on one tank, we changed to the Motor Saver filter and our run time jumped up to 7.5 minutes. All of us here can confidently say you'll be very happy with this product. It's a must for anyone looking to improve performance in their gas vehicle. The only fault we could find with the filter is the fact that an optional kit is needed for extremely dusty and damp conditions.

Rating:(☆☆☆☆)
Performance improved across the board using the Motor Saver filter over the stock Filter.

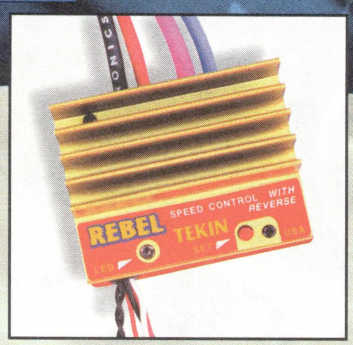


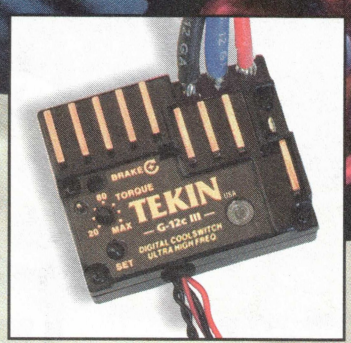
HIGH PERFORMANCE

SPEED CONTROLS

New GoldFET III Transistors lead the way with a large density silicon die that packs 40% more power in the same size. The result is breakthrough World Record Low Resistance, just .0007 ohm.









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COMMAND-10 (not shown) specifies convenient QuickTune setup, brake lights, and 3500 Hz operation for pro-type racing speed.

REVERSE ACTION FUN

The REBEL with reliably delivers high performance Forward and Reverse-Brake fun, even with modified motors down to 10 turn. Exclusive Thermal Transfer Technology makes it possible- at a practical price, while new GoldFET III transistors boost power beyond the past. Let the Rebel take you where others dare not!

For those special projects, try the Titan. It's the fastest, high power reversing R/C speed control made. Features 12 new GoldFET III transistors to move single hot or even dual mild modified motors, with blazing speed. It's even as quick as some forward-only controls.

Both units adjust to your radio in less than 10 seconds with Quicktune electronic setup. Features include factory installed motor and battery plugs, and adjustable reverse delay 0-5 seconds, plus reverse lockout.

COMPETITIVE ADVANTAGE

The P-12c and G-12c are high value racing style speed controls, with replaceable power wires, exclusive built-in "quad" motor diodes for .2 volts more power, our exclusive log-antilog throttle mapping gives precise, smooth, control on all types of racing surfaces.

Turbo Start mode gives maximum power off the line. 4200 Hz switching provides optimum motor cooling, for more power and 25-40 seconds longer run time.

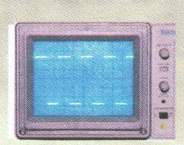
The new G-12c III features stunning new GoldFET III transistors for the lowest resistance and highest power ever in a speed control, .0007 Ohm. Adjustable brakes for better setup and control. Available now.

BOOSTER TECHNOLOGY

Tekin's new Pro speed control technology G-9 combines SuperSonic switching, and breakthrough new *Battery Boost* storage capacitors that provide extra speed and zip out of the corners, while extending run time too. Its exclusive high tech racing power, for the highest racing power on maximum traction surfaces. The full set of other performance features include integrated motor diodes, adjustable torque control, new lowered resistance. (.0007) and brake pot. Try one today!

The 420-G speed control handles up to 20 cells. For drag racing, insane speed runs, sustained high amperage, etc. 105 MPH speed record holder.

HIGH SPEED SWITCHING



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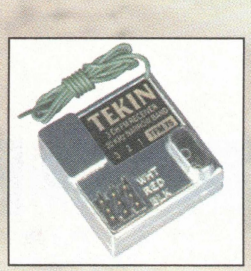

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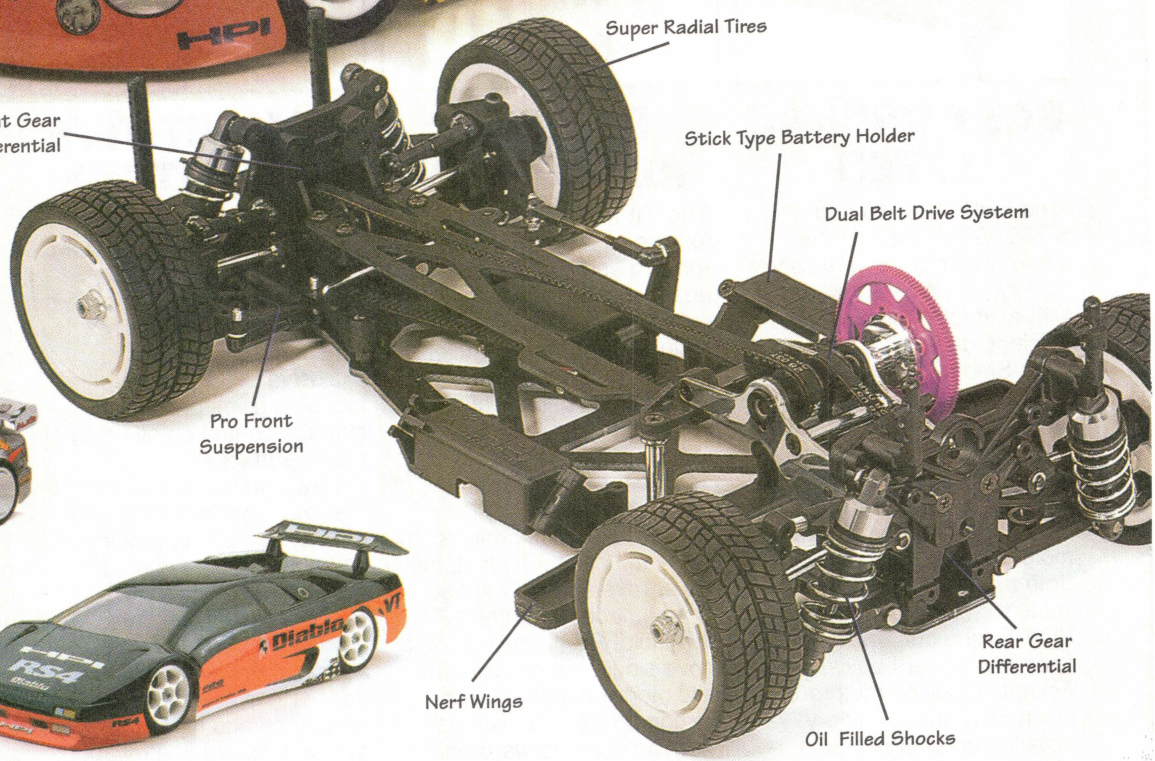
#255 RS4 Sport Kit
w/Dodge body (200mm)
Retail Price $219.00



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CYCLONE

FULLY PROGRAMMABLE ESC

WITH THREE USER-SELECTABLE RACING PROFILES, IT'S LIKE THREE SPEED CONTROLS IN ONE!

WHAT IS IT?

The *Novak Cyclone ESC* is a fully programmable, microprocessor controlled speed control using state of the art components to deliver the best possible performance with the *smallest size* (1.73"x 1.10"x 0.79") and *lightest weight* (1.44 oz.). The Cyclone boasts having the *lowest on-resistance* (0.001167Ω), *highest frequency* (up to 23,400 Hz), and *three times as many discrete steps as the competition* (256 discrete steps for forward and brakes) for the smoothest trigger response (0.39% per step).



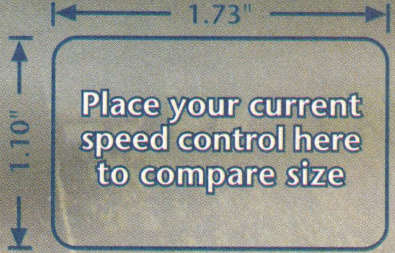
Create your own Custom Racing Profile with the optional ESC Profile Software or Pit Wizard!

POLAR DRIVE

ONE TOUCH SET-UP

CUSTOMIZE YOUR OWN RACER PROFILE!

Since all drivers have their own racing preferences, the Cyclone comes factory set to *three different user-selectable profiles* (accessed with the One-Touch Set-Up button) to suit the desired application (off-road, touring sedan, 1/12 scale, etc.). The *minimum brake* can be set from 0 to 75% with the use of a simple adjustment pot. For those who want even more out of their Cyclone, all the operating parameters can be customized with the *optional ESC Profile Software/#1030* (connects via the Data Link to your PC or laptop), including adjustable deadband, minimum drive, forward operating frequency, brake operating frequency...and much more. For racers without access to a computer, Novak also offers the *optional Pit Wizard/#1035* to customize the Cyclone to your racing style.



WHAT ELSE?

The Cyclone also includes low resistance *Solder Posts* for quick installation and clean replacement of power wires. Novak exclusive features include Polar Drive Technology, HYPERFET II transistors, One-Touch Set-Up, Radio Priority Circuitry, Brake Light LED Circuitry, and Novak's *Brake Light LED Accessory Kit*.

NOVAK ELECTRONICS, INC. RACING TEAM

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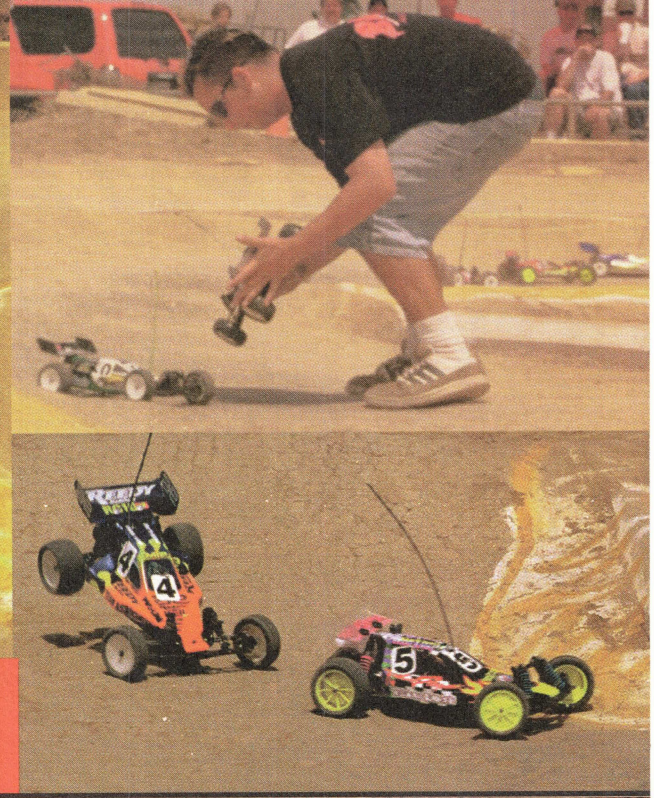
IFMAR 1/10-Scale Off-Road Warm-Up Race

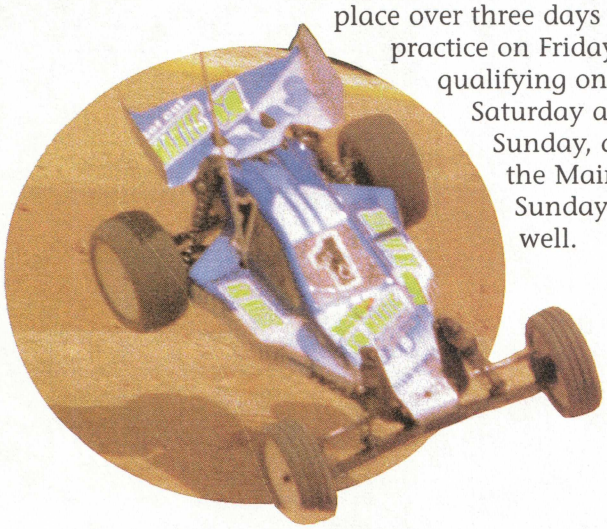
Masami Shows No Mercy!





by Mike Velez

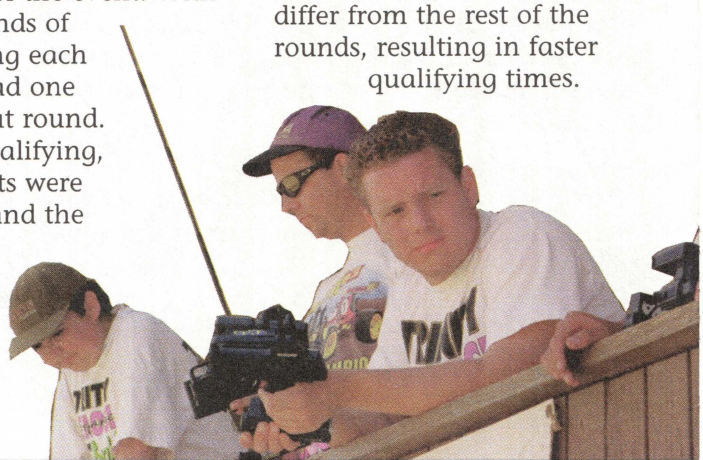
In preparation for the upcoming IFMAR 1/10-Scale Off-road World Championships in August, the top drivers in the world gathered at the Ranch Pit Shop in Pomona, CA to size up the competition. Drivers from countries as far away as England, Finland, Spain, and Japan were there to duke it out. The warm-up race is sanctioned to give the drivers qualified for the Worlds a chance to compete against the racers that they'll be competing against at the World Championships in August. The event took place over three days with practice on Friday, qualifying on Saturday and Sunday, and the Mains on Sunday as well.



Format

IFMAR used a relatively new format to qualify for the Main events. Within each round of qualifying, points were awarded based on the qualifying time within the round. Once a qualifying round was complete and points were awarded, the times for each round were irrelevant for the rest of the event. With four rounds of qualifying each driver had one throw-out round. After Qualifying, the points were totaled and the Mains were set up.

This qualifying format has been used in other classes, but it is new to this event. The intention is to eliminate the bearing track condition changes have on qualifying. Often times an entire A-Main may be made up of qualifying times from one particular "Rocket Round" –a round of qualifying during which the track conditions greatly differ from the rest of the rounds, resulting in faster qualifying times.

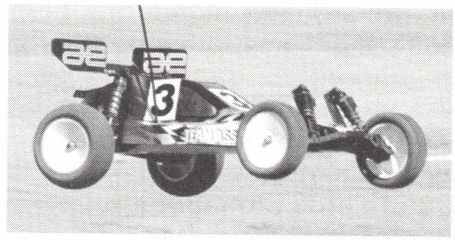


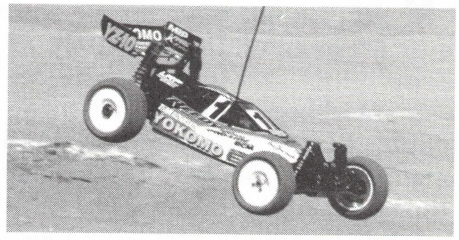
The Winners

Fin.	Qual	Driver	Country	Chassis	Motor	Battery	ESC	Radio	Tires(F/R)
1	1	Masami Hirosaka	Japan	Associated RC10B2	Reedy	Yokomo	Tekin	KO	Losi/Pro-Line
2	2	Mark Francis	USA	RC10B2	Reedy 10x4	Reedy	LRP	Airtronics	Pro-Line/Pro-Line
3	4	Atsushi Hara	Japan	RC10B2	Reedy	Yokomo	LRP	KO	Losi/Pro-Line
4	3	Hiroshi Suzuki	Japan	RC10B2	Reedy	Yokomo	Tekin	Futaba	Losi/Pro-Line
5	7	Mark Pavidis	USA	RC10B2	Reedy 11	Reedy	LRP	Airtronics	Losi/Pro-Line
6	5	Akira Suzuki	Japan	RC10B2	Reedy	Yokomo	Novak	Sanwa	Losi/Pro-Line
7	10	Brian Kinwald	USA	Losi Double-X 'CR'	Trinity 12	Trinity	Novak	Airtronics	Losi/Losi
8	9	Barry Baker	USA	RC10B2	Maxtec	Orion/Reedy	LRP	Airtronics	Pro-Line/Pro-Line
9	6	Jimmy Jacobson	USA	RC10B2	Reedy 11x5	Orion/Reedy	LRP	Airtronics	Pro-Line/Pro-Line
10	8	Shinnosuki Adachi	Japan	RC10B2	Reedy	Yokomo	Sanwa	Sanwa	Losi/Pro-Line

Fin.	Qual	Driver	Country	Chassis	Motor	Battery	ESC	Radio	Tires(F/R)
1	1	Masami Hirosaka	Japan	Yokomo YZ10W	Reedy	Yokomo	Tekin	KO	Pro-Line/Pro-Line
2	2	Atsushi Hara	Japan	YZ10W	Reedy	Yokomo	LRP	KO	Pro-Line/Pro-Line
3	9	Matt Francis	USA	Losi XX-4	Peak 10x2	Orion/Reedy	LRP	Airtronics	Losi/Losi
4	7	Brian Kinwald	USA	XX-4	Trinity 10	Trinity	Novak	Airtronics	Losi/Losi
5	3	Mark Pavidas	USA	YZ10W	Reedy 10x2	Reedy	LRP	Airtronics	Pro-Line/Pro-Line
6	4	Jukka Steenari	Finland	ShumacherCat 2000	Corally 11x3	Orion	LRP	Sanwa	Pro-Line/Pro-Line
7	10	Toshihiro Hirai	Japan	YZ10W	Reedy	Yokomo	Tekin	Sanwa	Pro-Line/Pro-Line
8	5	Greg Hodapp	USA	XX-4	Trinity	Trinity	Novak	Airtronics	Pro-Line/Pro-Line
9	8	Shinnosuke Adachi	Japan	YZ10W	Reedy	Yokomo	Sanwa	Sanwa	Pro-Line/Pro-Line
10	6	Akira Suzuki	Japan	YZ10W	Reedy	Yokomo	Novak	Sanwa	Pro-Line/Pro-Line

Kinwald, who both had a third and fourth place finish in two of the three mains, were tied for third place. The 195-point tie was broken by Matt's 5th place finish over Brian's 7th place in the throw-out main.







Learn How To

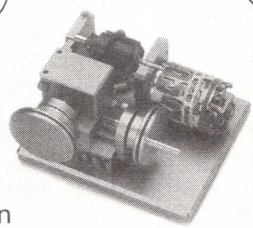
Rebuild Your Modified Motors

by Joe Malone

We R/C addicts love speed. Nothing epitomizes speed quite like a modified motor. These beasts of speed put out more torque and rpm than any stock motor ever dreamed of. Unfortunately, all good things come with a price.

Modified motors aren't cheap. With prices almost double that of a stock motor, it is no surprise there are so many tools available to take care of our mod motors. With the necessary tools, good instructions, and a little extra time you will be able to keep your modified motor running as fast as the day you bought through weeks or even months of racing.

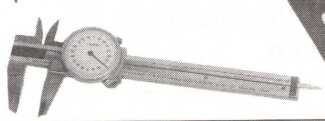
The Tools

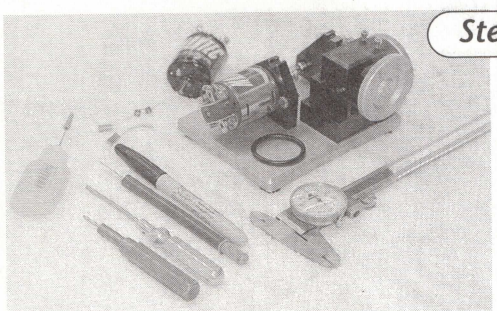


- Clean towel or work mat.
- Modified motor lathe in good condition (a poor working lathe will do you more harm than good!).
- Small Phillips- or Allen-head screwdriver to fit the timing ring adjustment screws.
- A hobby knife.
- High-quality motor bearing oil.
- One pair of replacement brushes and springs.
- Motor cleaning spray.
- 4-cell battery pack or other 4-5 volt power supply.
- Soldering iron.
- Calipers.
- A felt-tip marker.



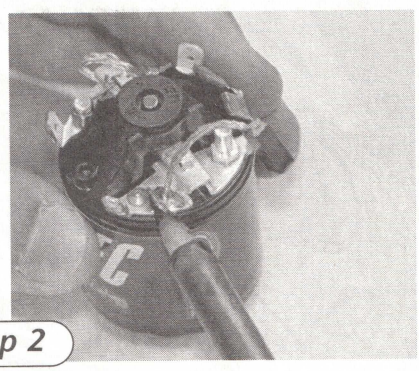






Step 1

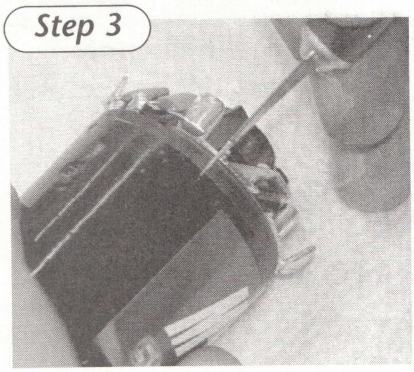
Before you begin, it is best to gather all the tools and set them up in a well-lit and ventilated space. You will want to follow the example shown and arrange the tools in an organized fashion.

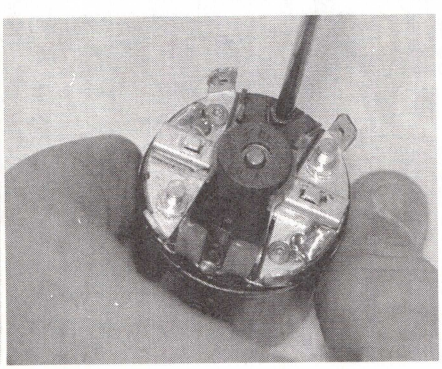


Step 2

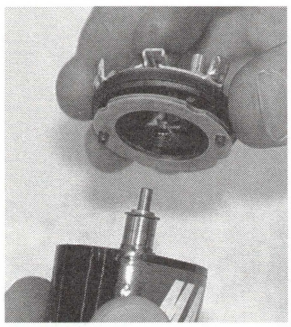
You will want to begin by removing the springs and unsoldering the brushes. Springs will lose tension over time, and brushes are designed to wear so that your commutator does not. You can throw both of these items into the trash.

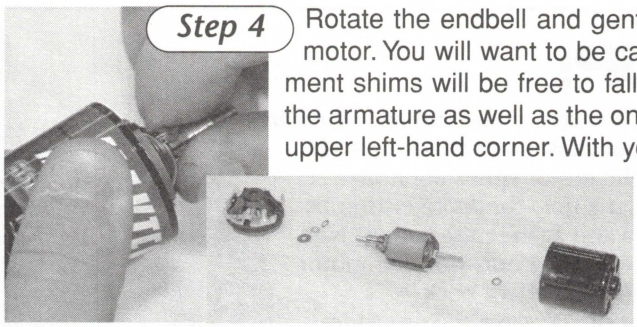
Step 3





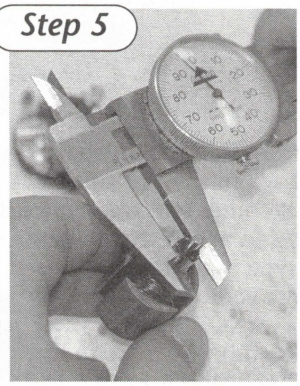
Using the hobby knife, make a clean straight mark from the endbell to the can. If the color of the motor is not black, you can use a permanent marker for this step. This will make sure that you do not alter the motor's timing when you put things back together. Next, loosen the timing ring screws. Be careful so that you don't damage your capacitor joint.



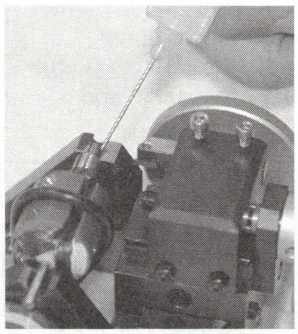


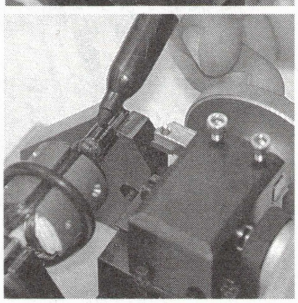
Step 4 Rotate the endbell and gently pull the endbell away to open up the motor. You will want to be careful not to do pull too fast as the alignment shims will be free to fall out. Place all the shims from the top of the armature as well as the ones still in the endbell on your towel in the upper left-hand corner. With your fingers, not a wrench, gently remove the armature and place it in the center of the towel. Take all the shims left in the can as well as on the bottom of the armature shaft and place them on your towel next to the motor can.

Step 5 The next step is to measure your commutator's diameter at the center of the brush travel. If you have run your motor many times without servicing the commutator, the commutator will develop an hourglass shape. Your commutator must have a minimum diameter of at least 0.279 inches before cutting. If you comm is smaller, it's time to pick up a new one. Otherwise continue.

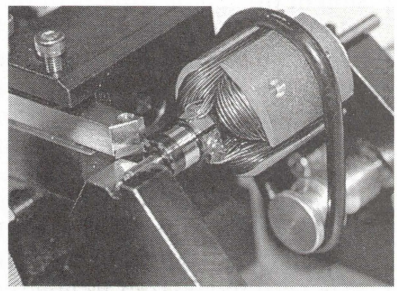


Step 6 It is now time to cut the commutator. Use a high quality lathe that is in good condition. Companies like Trinity and Reedy both make excellent lathes. Set up the armature in the lathe according to the manufacturer's recommendations; you'll be using your 4-cell or 4-5 volt power supply at this time. I recommend using bearing oil, WD-40, or a application-specific commutator cutting fluid on the commutator when cutting. One unconventional way to lubricate the commutator is using a felt-tip marker (not a dry erase marker). Once the comm is spinning on the lathe you can run the felt marker over the comm. This will work as a lubricant as well a good indicator of where the comm has been cut. Using any of these lubricants will not only leave a better finish on the comm, but will also preserve the life of your cutting bit.

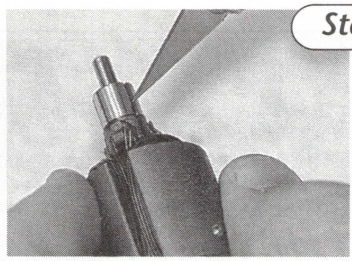




Step 7 With the armature spinning, run the bit of the lathe across the face of the comm slowly. You only need to remove a small fraction of the comm's surface. When cutting be conservative on your lathe's settings. Refer to the lathe's instruction manual, keeping in mind you don't want to remove more than is needed

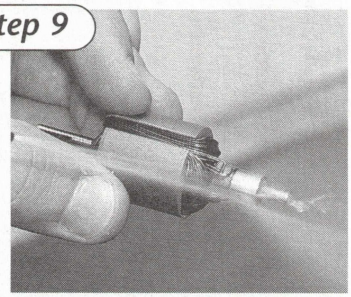


Once you see that comm's face is a nice, shiny copper color, you're done cutting. This is also where the marker tip comes in handy. Once you see that the marker ink is gone off the face of the comm, you're done cutting.

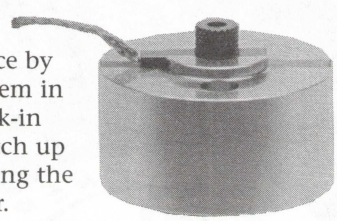


Step 8 Using a hobby knife, clean the excess copper flashing from the commutator segments. Do not scrape against the side walls of the comm. All you need to do is clear the gap between the segments.

Step 9 Now thoroughly flush excess carbon and dirt deposits from the armature, motor can, and endbell with a high-quality motor cleaner. After the residue has evaporated, re-oil the bearings in the can and endbell.

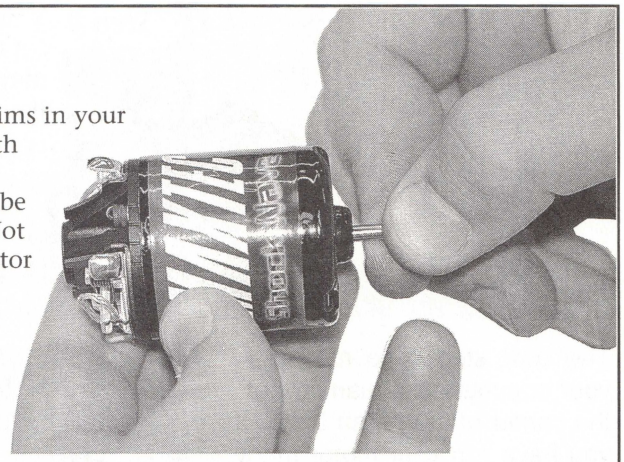


Brush Break-in



Although it's not necessary, you can gain performance by breaking in your motor brushes before you install them in your motor. Race Prep offers a new Clyde brush break-in tool (#RP60) that actually breaks in the brush to match up with your motor's comm diameter. Before reassembling the motor measure your comm's diameter using a caliper. Match it up against one of the three bits that comes with the break-in tool and follow the instructions. The result will be a brush that is already conformed perfectly to your commutator without wearing the comm or heating up the brush.

SHIMMY IT UP!



You're probably wondering why I made it such a point that the shims in your motor be separated on your towel. In your motor you will find both metal and phenolic shims. These phenolic motor shims are non-conductive. It is extremely important that a non-conductive shim be placed on the motor shaft directly above and against the comm. Not using the correct shim at this point will lead to a non-working motor and possibly a damaged speed control and/or battery pack.

Shims are used to reduce any amount of excessive slide-to-slide slop in the motor. After performing Step Ten grab the motor shaft where the pinion attaches to it. Is there more than 1/32" to 1/16" of back-and-forth slop? If so, you will need to add more shims to either the top or bottom of the armature. To determine which side needs the shims and how many you'll need, remove the armature from the motor and also remove all but one shim from the bottom shaft, the bottom shaft is the shaft that the pinion gear will later be attached to. Place the armature back in the can and place the endbell in position. Holding the motor together spin the armature with your finger until it comes to a stop. Once it stops, pull the shaft away from the can. That amount of space that the shaft moves from the can will determine how many shims will be needed on that end. Generally only one shim is needed, depending on type of motor you may need more. After adding the appropriate amount of shims you can re-shim the top end.



Making sure that the phenolic shim is directly above the comm, place the endbell into position. Holding the motor together feel how much slop is in the motor. Add one metal shim at a time until you feel only between 1/32- and 1/16-inch of slop in the movement of the armature. Be sure that there is some slop in the movement of the armature, otherwise you'll slow the motor down.

Trinity offers Phenolic and brass motor shims (Trinity #RC4027 for 10 brass and #RC4029 for 12 Phenolic). Reedy sells a shim kit with five .010", five .005" and .003"shims.

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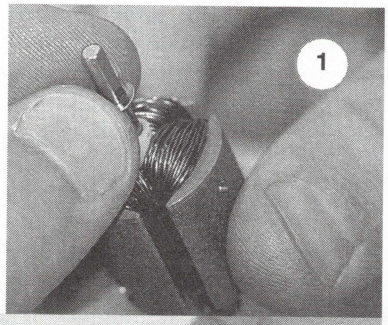
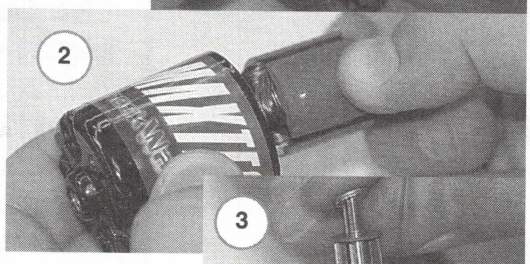
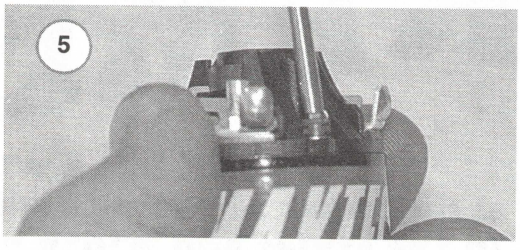
Step 10 Holding the armature with the commutator end down, place the shims from the front of your towel on the shaft. Carefully slide the armature back into the can holding the armature from underneath the commutator. Next, place the shims from the upper left-hand corner of your work area on the top of the shaft. Now place the endbell back on the can and rotate the endbell to align with the marks you made earlier. Note: You may need to loosen the screws securing the timing ring to allow the endbell to rotate easily. Finally, after aligning the endbell, firmly tighten the two timing ring screws to secure the endbell.

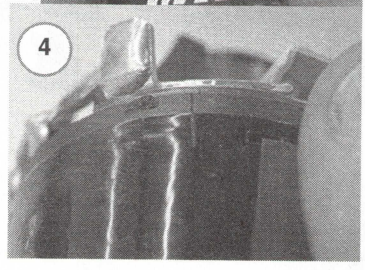




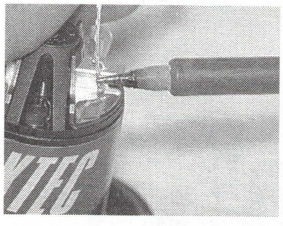


1. Place a single shim on the output shaft. 2. Insert the armature into the can without holding on to the newly cut comm. 3. Replace the shims above the comm, phenolic on first. 4. Align the marks you made earlier. 5. After you've aligned the endbell you can tighten the endbell.







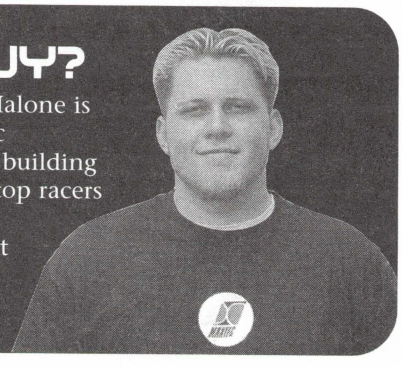


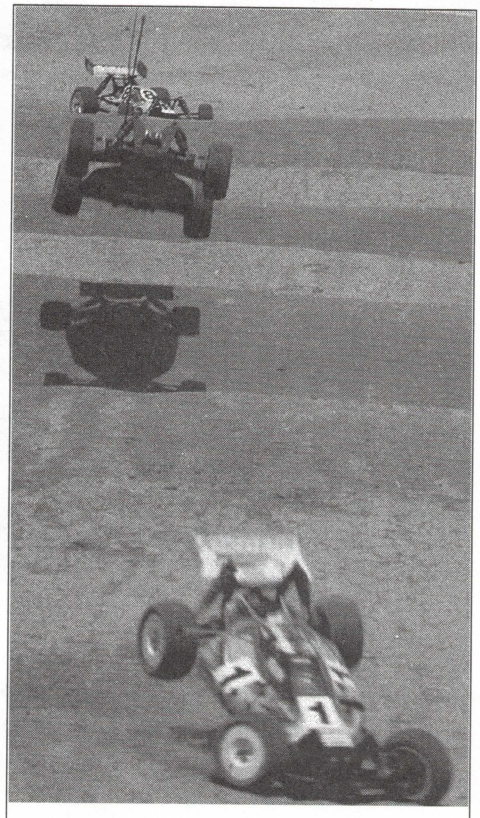
Step 11 Solder on replacement brushes recommended by the motor manufacturer and secure them with the appropriate springs. At this stage, I suggest in placing a few drops of "Comm Drops" on the commutator and running the motor under no load for a minute to break the brushes and comm back in.

Congratulations! You're ready to bolt your motor back in the car. Not only will it be as fast as the day you bought it, but you also just extended the life of your motor.

WHO IS THIS GUY?

For those of you who don't know, Joe Malone is one of the head honchos over at Maxtec Development. Over the years Joe's been building and rebuilding motors for many of the top racers in the world including Barry Baker and Derek Furutani. Joe also had major input on the development of Maxtec's new Shock Wave line of motors.





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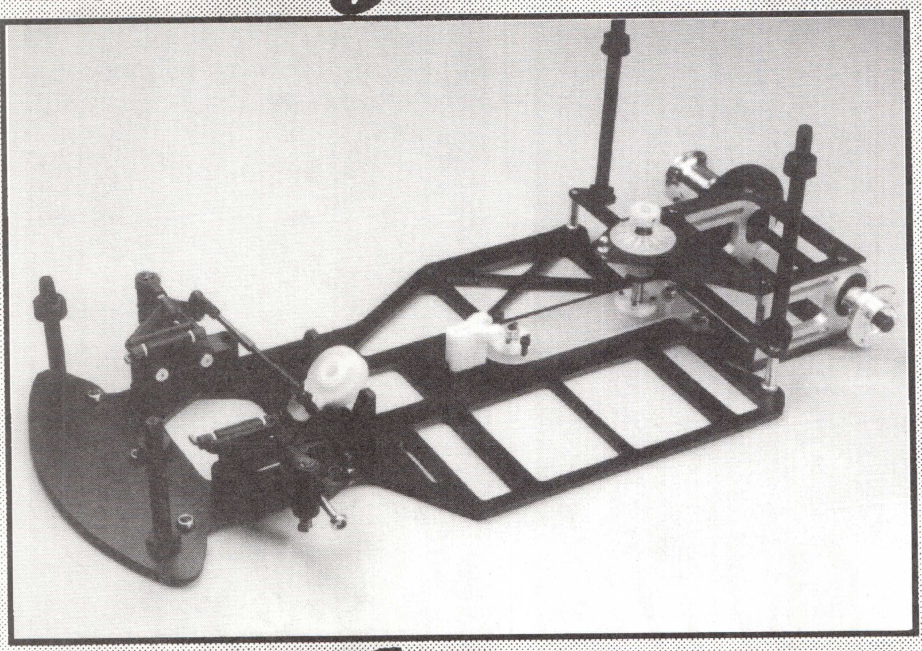

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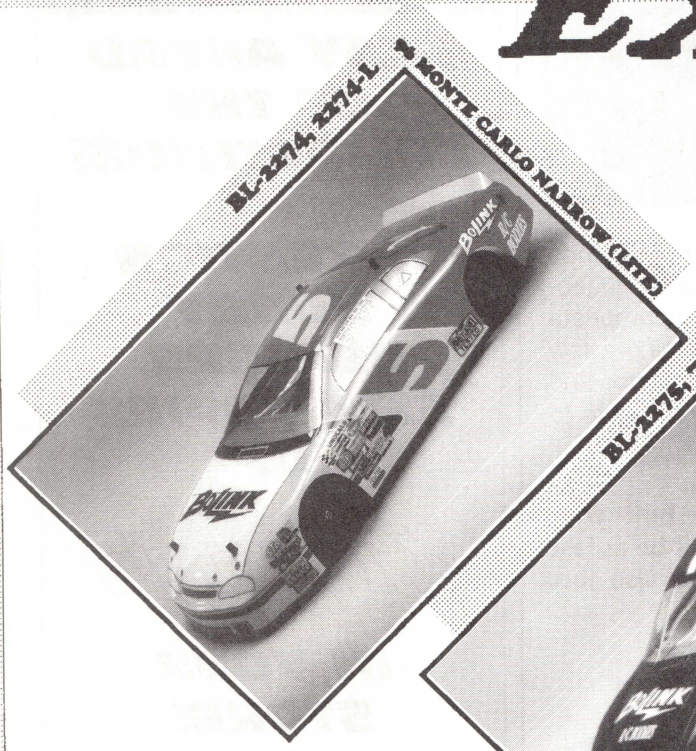

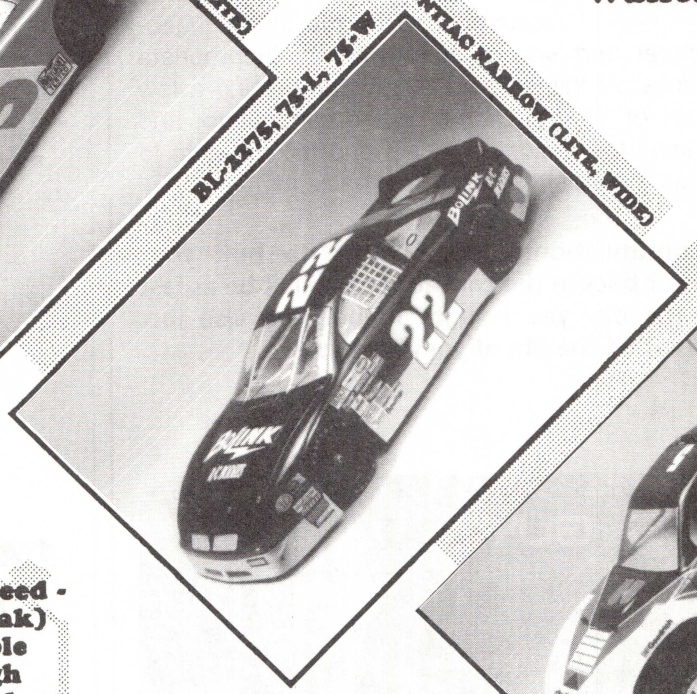

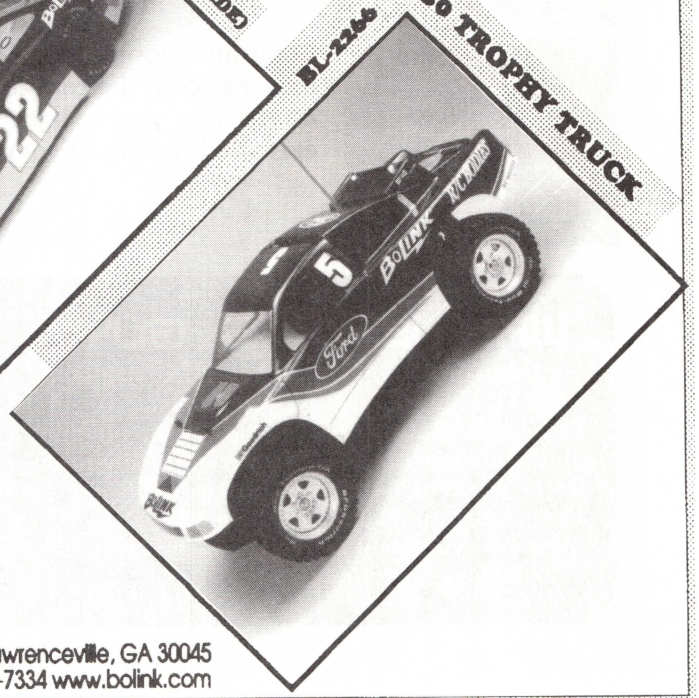

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• Kris Moore	MP-5
• Greg Dennett	MP-5
• Eustace Moore	MP-5



Alex Laffranchi

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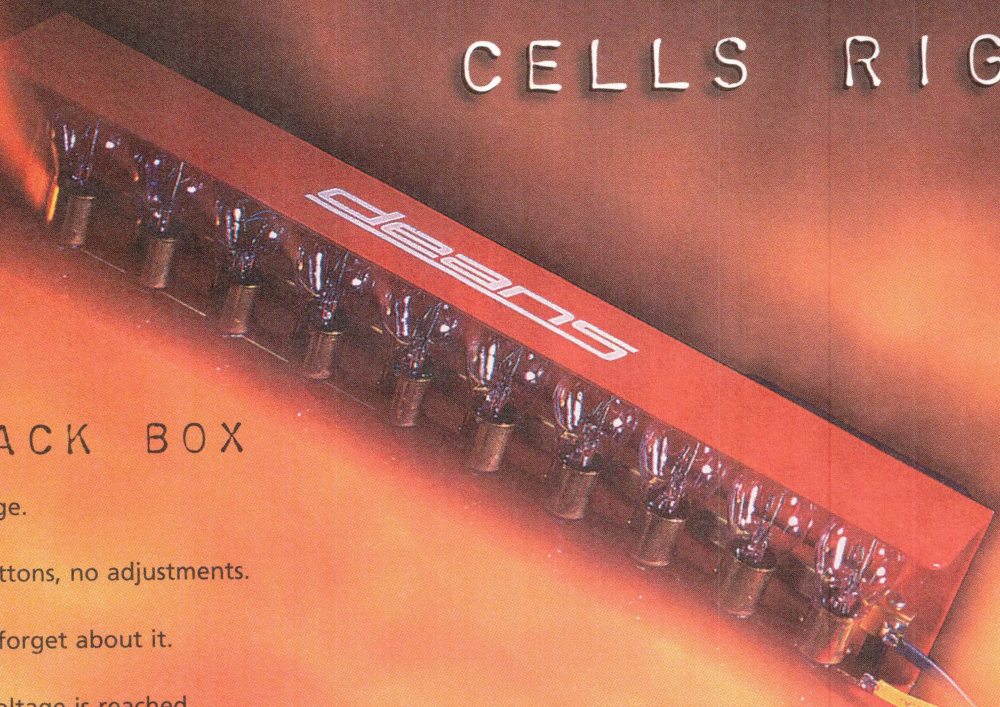

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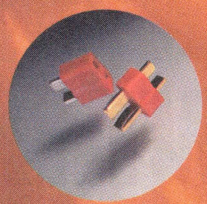

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Our first wheel transmitter, the 2F, controlled the first R/C car World Champion in 1977. Our Magnum 2PC is the big winner for most comfortable grip.

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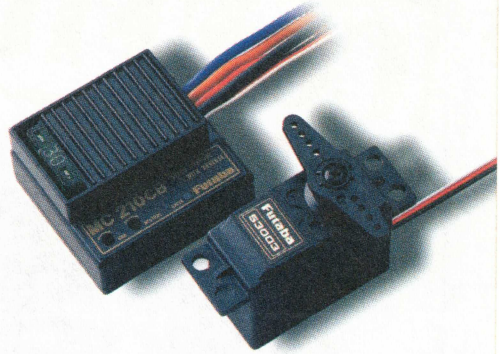
Our first car system, the 2F, won R/C racing's first World Championship twenty years ago.

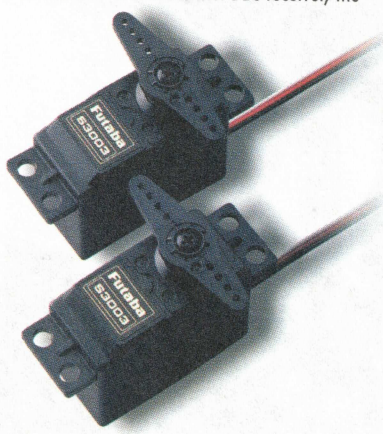
Now our newest Magnum Sport 2PC and Magnum Junior 2PCKA systems are the fourth generation of radio control's most popular series.

The Magnum 2PC Sport has everything you need to get started at a very affordable price. Our new pistolgrip case design has balance and comfort you won't find in its class. Servo reverse and trims are provided for easy set-up and LED's help alert you to low battery levels.

A new narrow band 2 channel BEC receiver, the R122JE is included. Just 0.6 of an ounce, the very compact R122JE is SMT-robotically assembled for extra vibration resistence. Choose either a pair of S3003 servos or one S3003 and an MC210CB electronic speed control and your Sport system is complete (we also include a battery case, switch harness and frequency flag, too).



The MC210CB electronic speed control has fuse protection, reverse and comes wired ready to plug into Tamiya and other popular R/C models.



With 42 oz./in. of torque, S3003 servos are a perfect fit for entry level, resistor speed control-equipped R/C models.

For the more advanced car or boat fan our Magnum Junior, the 2PCKA, has all the attributes that made its predecessor such a success with the club racing crowd. Steering dual rate control, built right into that comfortable new grip, allows instant response adjustments. Steering ATV, a new feature, further simplifies set-up and installation of linkages. Get a grip on a new Magnum. Your hands will thank you.

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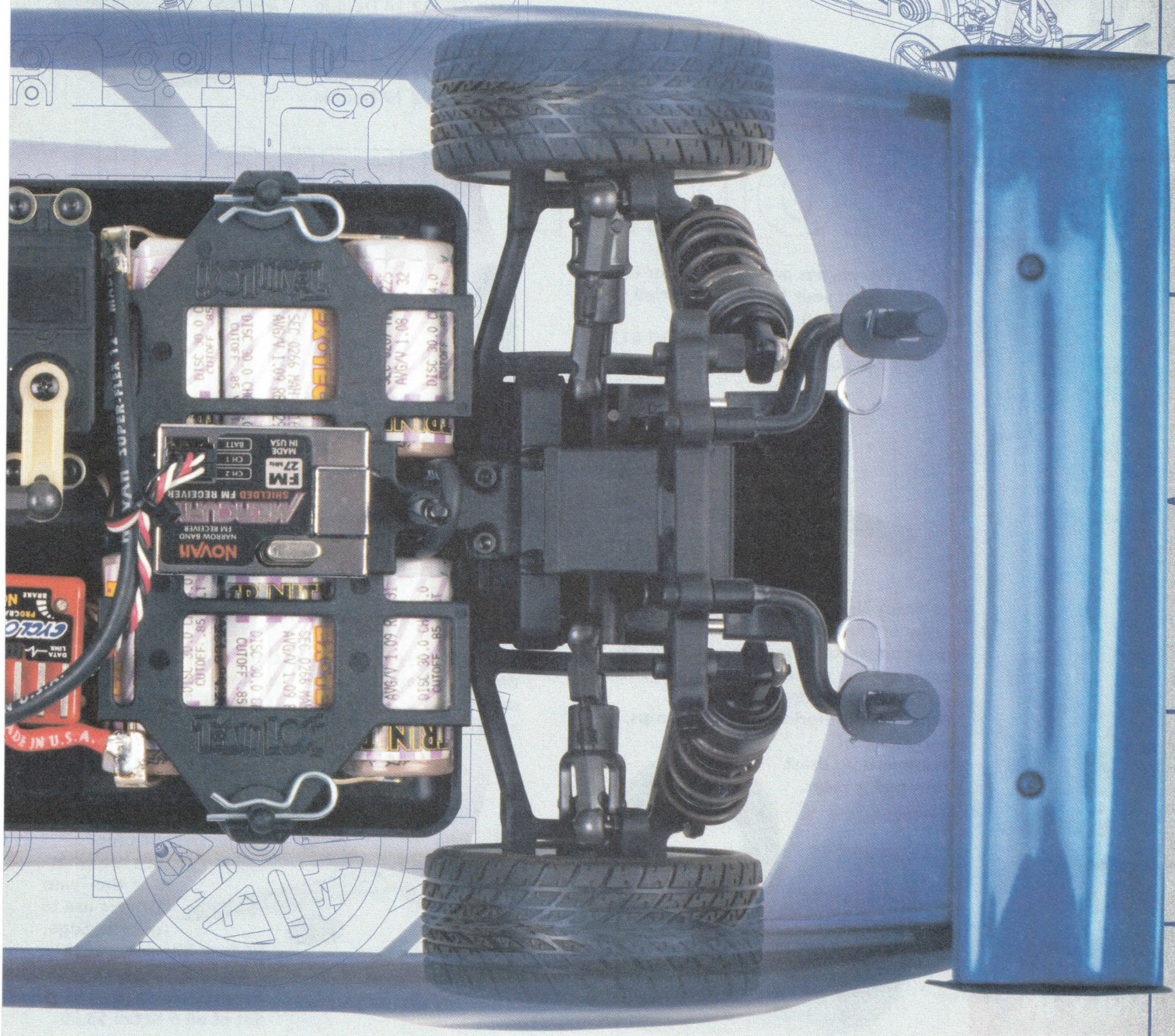
Team Losi

CODE NAME STREET WEAPON



TEAM LOSI Racing

DRAWN BY: VANCE STRADER	DATE: 4/4/97
DESIGN: GIL LOSI JR.	DATE: 4/4/97
CHECKED: JACK JOHNSON / RON ROSSETTI	DATE: 4/4/97

DRAWING TITLE: XX-4/TOURING CAR CODE NAME: STREET WEAPON

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WL SD154 15 Quad
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WL SD171 17 Single
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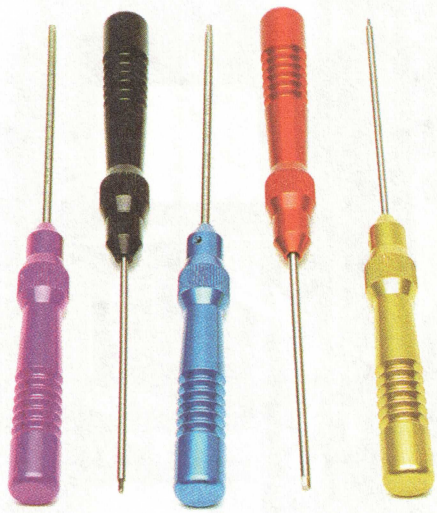

Pro Foam Tire Inserts are available in buggy or truck in three different compounds; soft, medium and firm. RE Foams are the perfect choice for the new soft racing tire compounds.
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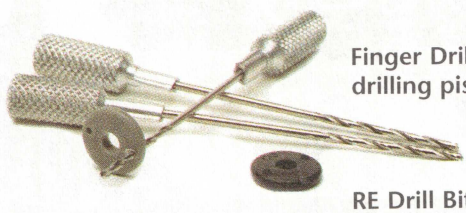

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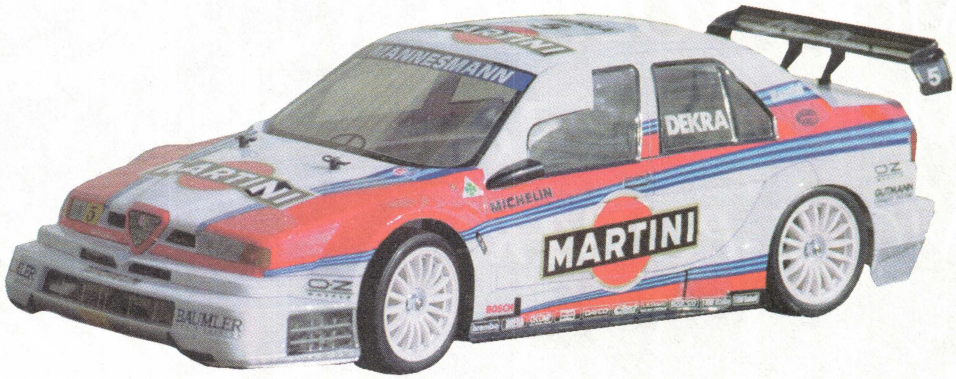
XTREME REVIEW



TAMIYA

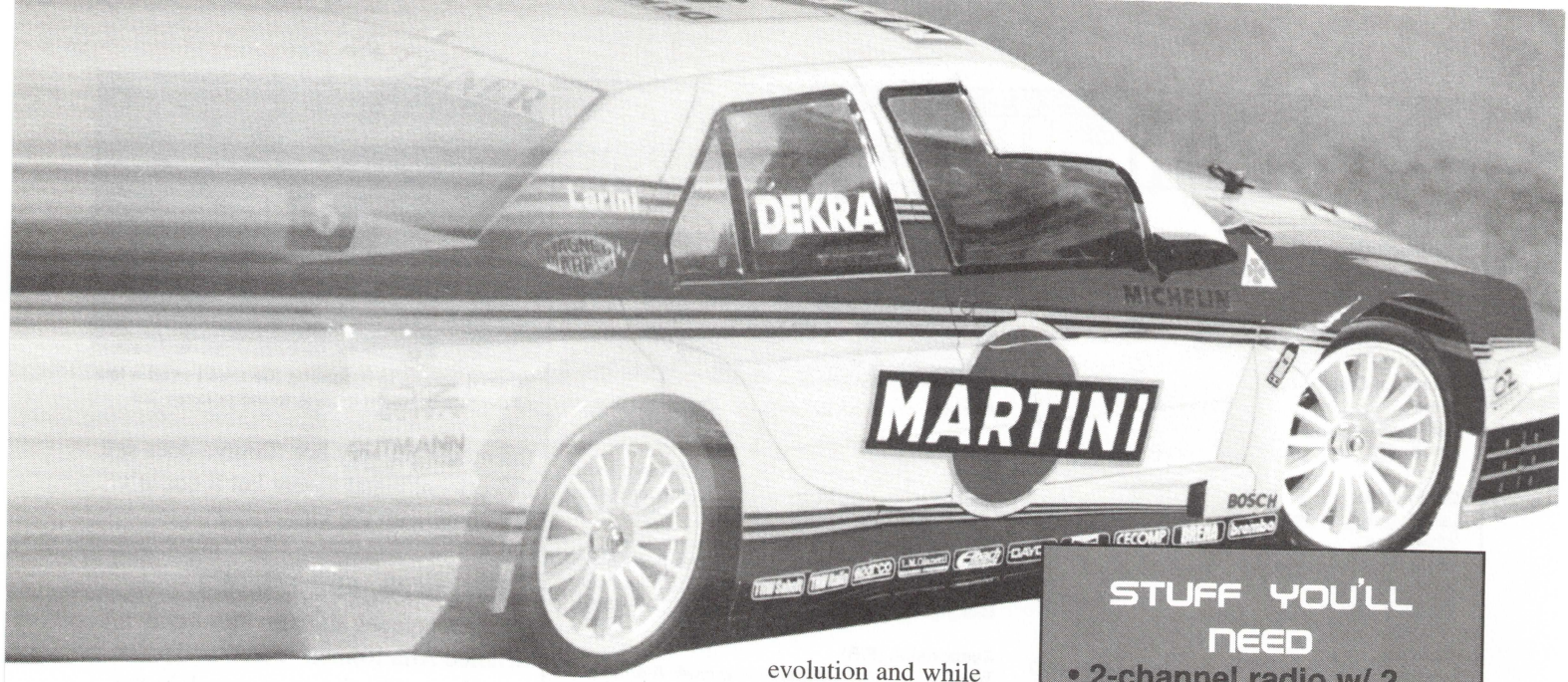
TA03F Martini Alfa 155 V6

by Jim Shepka

As a parking-lot racer from way back, I've been itching to get my hands on Tamiya's hot new TA03 chassis since it hit our shores. I've been campaigning a competitor's chassis for the past couple of months and to be quite honest, I was tired of getting my butt kicked by these Banzai bombers. When the call finally came to review the Alfa Romeo version on of this world-class kit, I jumped at the opportunity to pilot one of them.

Shaken or Stirred?





STUFF YOU'LL NEED

- 2-channel radio w/ 2 servos
- 6-cell stick pack battery
- Paint
- Battery charger

Features

Chassis

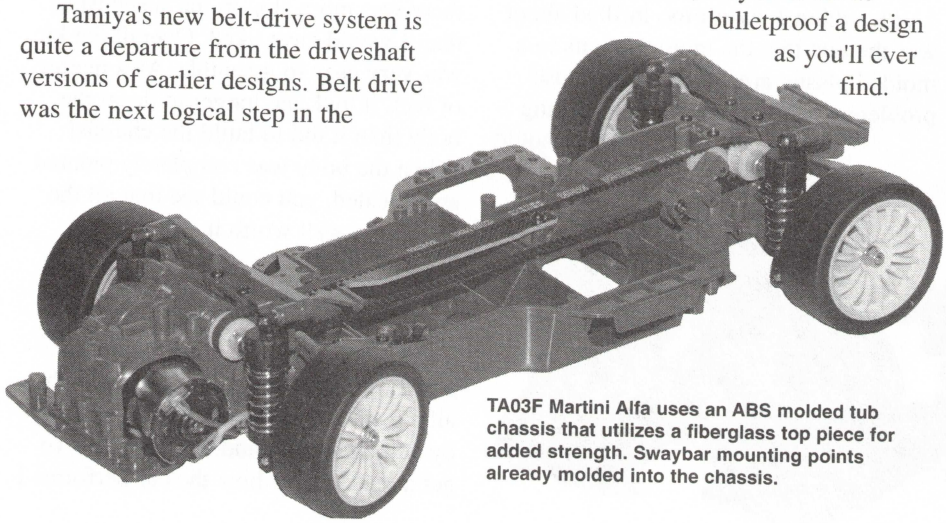
Tamiya's tried-and-true, ABS-molded plastic-tub chassis is the foundation for this beast. You'll find a version of this tub design and material on 99% of Tamiya's kits. Since the front motor setup is modular in design, both front and rear gear boxes are an integral part of the overall stiffness of the tub chassis. In addition, a fiberglass upper brace is added to help reduce any unwanted longitudinal flex.

Although the tub is a proven design winner, I'm still a little bit surprised that it offers only one battery location (and only a stick pack at that)! It sure would be nice if Tamiya gave you the option of relocating the battery (fore/aft) for various track conditions. But I must remember that this is Tamiya's basic bushing version.

Tamiya's new belt-drive system is quite a departure from the driveshaft versions of earlier designs. Belt drive was the next logical step in the evolution and while they were at it, their engineers kept it clean and simple by incorporating just two diffs into the equation. The most obvious advantage with the belt system over a shaft driven 4WD is that considerably less drag is placed on the motor, resulting in some serious acceleration gains. The bottom line is less moving parts is a good thing! Since the belt drive takes up most of the left side of the tub, there's very little room for mounting the electronics package. It's a little tight, but with some creativity you should get it all in.

Suspension

Since both ends of the kit are nearly identical in design, you'll find pretty much the same hardware at either end. The suspension arms are a solid piece of material molded into a unique, angular design. Even though they seem to have some flex to them, they're about as bulletproof a design as you'll ever find.



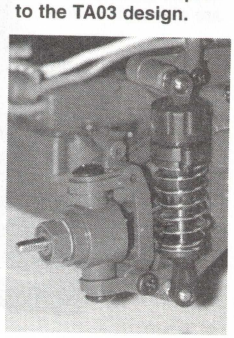
TA03F Martini Alfa uses an ABS molded tub chassis that utilizes a fiberglass top piece for added strength. Swaybar mounting points already molded into the chassis.



The TA03F Martini uses a new easily-adjustable belt tensioner that places tension on the belt near the rear pulley.

One of the most noticeable differences of the TA03 layout (aside from the front motor location) is the upright shock setup. Because of the shock mounting location relative to the pivot points on the A-arms, suspension travel becomes linear (more consistent) with respect to the compression* and rebound*. Aside from all the technical mumbo-jumbo, it's a pretty cool approach to keeping the tires planted terra firma.

Solid camber links and plastic shock bodies round out the corners.



The shock absorbers stand at almost a 90° angle to the ground. This feature is unique to the TA03 design.

THE VITALS

Manufacturer
Tamiya America
2 Orion
Aliso Viejo, CA 92656
1-800-TAMIYA-A

Country of Origin	Japan
Scale	1/10
List Price	$312
Part #	58189

Dimensions

Length (rolling chassis)	18in.
Wheelbase	10.1in.
Width (F)	7.1in.
Width (R)	7.1in.
Weight (ready to run)	3 lbs. 9 oz.

Chassis

Layout	Front Motor 4WD
Type	Molded Tub
Material	ABS plastic



Wheels	One-piece plastic

Tires

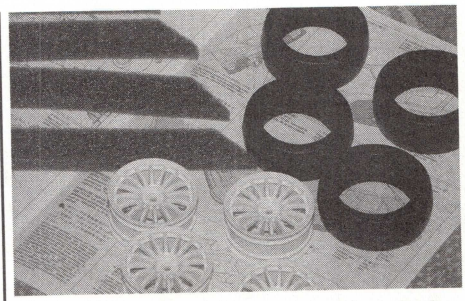
Front	Standard slicks
Rear	Standard slicks

Transmission

Type	Sealed gear/belt transfer
Differential	Bevel gear
Bearings/Bushings	Bushings

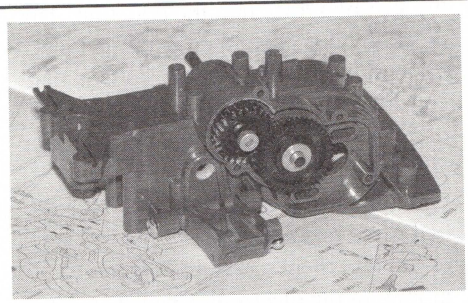
Suspension (F/R)

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


When it comes to mounting the tires I used a few of the tips on foam inserts found in Issue 2.8

The plastic shocks seem to be of good, consistent quality and come with a variety of pistons and ride-height spacers.

Up front, the hub carriers have an ungodly amount of caster* built in (that would help explain its understeer tendencies), while the rear units are slightly toed-in for rear tracking stability.


Although some areas of the car may seem complex, it all goes together quite nicely.

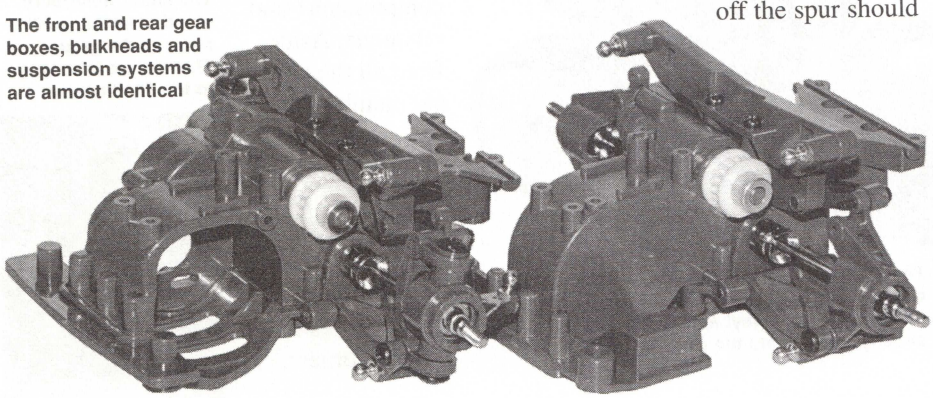
Transmission

The well-documented belt-drive system is an exercise in simplicity requiring zippo maintenance with easy accessibility to the belt and drive gear components. All drive gears are of the 0.6 metric variety, great for durability, but a little rough on the ears. Tamiya 4WD kits have always been on the high side of the decibel meter, and the Alfa is no exception. The front mounted engine drives both bevel-geared differentials. I would have really liked to see ball diffs, but keeping in mind this a kit geared more towards beginners, it's a good thing ball diffs were absent. As we all know, they can get a little tricky.

With a little bit of effort you could turn this into a rear-steer, rear-drive or mid-engine, front-steer or...I think you get the idea! Aside from being a bushing kit, this is one trick driveline.

One thing I wasn't too thrilled about was the fact that the motor mounts to a molded plastic area. This could cause problems with the pinion gear backing off the spur should the motor get very hot. Tamiya does sell an optional metal mount but it doesn't not come with the kit.

The front and rear gear boxes, bulkheads and suspension systems are almost identical



Body, Tires, and Wheels

The kit includes an incredibly well detailed Alfa Romeo 155V6 body complete with stickers to match in the Martini paint scheme. The tires are high grip slicks with foam liners. The tires and liners are mounted with some awesome looking 16-spoke white wheels.

Building

As with all Tamiya kits, the instructions are first rate, making for an easy build. With each phase of the construction laid out, simply find the corresponding parts bags and have at it. Common tools are all that are required to get started. Although building the diff is pretty straight forward, take your time and make sure to lube anything that moves! Also pay attention when mounting the counter shafts to the differential housings. It will take a little dexterity to get the bushing mounted rear counter shaft to seat properly (step #4). After I had built the suspension completely, there was more slop in the suspension than I would have liked. Overall the kit was very easy to assemble. As a matter of fact, it took me longer to decal the body than it did to build the chassis! When the body was completely painted and decaled, you could see that all the effort was well worth it.

Test Equipment

The kit comes with a stock 05 motor and a mechanical speed control which allows the kit to be ready-to-run simply by adding a radio and battery pack. To get a real feel for how the car performs I

Hits:

- Easy to build.
- Great instruction manual.
- Awesome body.
- Belt Drive.



Misses:

- Plastic motor mount
- Suspension was a bit sloppy.



Factory Hop-Ups

- **#50473 – High-torque servo-saver**
- **#53155 – Aluminum damper set**
- **#53163 – Tuned spring set**
- **#53172 – Universal shaft set**
- **#53260 – Hollow carbon gear shafts**
- **#53265 – Ball bearing set**
- **#53268 – Foam bumper set**

replaced the mechanical speed controller with a Explorer Sport from Novak and equipped the car with a JR Python radio, receiver, and servo package.

Road Test

My hometown was kind enough to build a brand new school around the corner form my house, which just happened to come with one of the smoothest parking lots on the planet! With a half-dozen stick packs in tow, I wasted no time in bringing the Alfa up to speed. A few minor radio adjustments were all that was needed before hammering on the throttle.

Having tested a number of Tamiya kits in the past, I was relatively confident I had a handle on the suspension setup. I was little more than surprised with what the Alfa had to offer. The front motor design puts a ton of weight in a very strange place. Although the battery location does a good job of balancing things out, there is still a significant weight bias toward the front of the chassis. What does this weight bias mean? For one, it creates great turn-in* steering (especially under braking) but the car suffers from understeer (push) when exiting the corners on power. Being somewhat limited as to suspension mods with the stock kit, I opted for heavier weight oil in the rear shocks as well as lowering the ride height on all corners as much as possible, without bottoming out.

In the long run, I'd opt for different tires and, possibly, swaybars. When editor Mike Velez reviewed the TA03F-Pro back in Issue 2.4, he replaced the front hub carriers with those from a TA02 to solve the annoying push when the car exits the corners. Despite these minor annoyances, the Alfa's still a blast. Hurling it sideways through the sandy parts of the parking lot is incomparable.

In the End

Keeping in perspective that this is Tamiya's bushing kit version of a true racer – the TA03F-Pro – the Alfa is one trick four-wheel-drive kit. It's well suited for anyone looking to get in on the ground floor of four-wheel-drive technology.



Tuning Tips From Tamiya's David Jun



Suspension

80WT oil is a good alternative to the original oil when rebuilding the shocks. The blue springs from the "Tuned Spring Set" (#53163), should be used in front and in the rear. This combination provides a perfect match between the spring rate and oil. If the shocks are too firm, the car will be unforgiving on curbs or corner dots, drift excessively and may even chatter in the corners. If the dampers are too soft the car would have excessive roll and react very slow. Once the dampers are on the car your ride height should be 4 to 5mm and level on the surface.

Tires

When choosing tires, start with the tire that provides the most grip, such as Tamiya's "Super Slick" tires (#53220). Use the same compound tire in front and in the rear, otherwise the overall balance of the car's handling will be compromised. Inserts are equally important. Tamiya's "Hard Inner Sponge Set" (#53156) works very well as do the "Soft Shaped Inserts" (#53250). The Hard Inner Sponge will usually provide the most traction, but due to the amount of traction the TA03 tends to understeer a bit. The Soft Shaped Inserts, however, have less grip and slide more but because the TA03 is so stable both types of inserts work well.

Belt Tension

Run the belt tensioner as loose as possible. When the belt gets older and begins to stretch adjust the belt tensioner as per the instructions.

Novice Dictionary

Compression: In this case, the actual movement of a shock absorber where both ends are being forced together compressing the shock.
Rebound: In this case, the opposite of compression. The extension of a shock absorber.
Caster: The angle, from vertical, of the kingpin in relation to the ground. Caster can have a great effect on how a vehicle enters and exits turns and corners. Increasing positive caster, so that the kingpin is angled back, will generally increase steering going into a corner and a slight decrease in steering coming out. Less positive camber will decrease the amount of steering going into a corner, but will increase the amount of steering in the middle and while exiting that corner.
Turn-in Steering: The steering characteristics that a vehicle exhibits entering a turn.

Learn How To

PAINTING AND TRIMMING YOUR LEXAN BODY

by Mike Velez

Part 2 of a 3 part series.

After reading last month's article on Masking and Prepping your Lexan™ body, you're now ready to put down some paint. This is the step that most people fear. One mistake can ruin a great body. After going over this article, hopefully you won't make any of those mistakes. To paint your body there are three basic methods to apply paint to the body: With a brush, aka the old-fashioned way. Soft-bristled brushes can be found at most hobby shops or art stores; with an airbrush, also available at most hobby shops or art stores. An airbrush applies a smooth sprayed finish. Certain paint jobs involving smooth color changes or thin feathered lines can only be painted using an airbrush; with spray cans, the most popular way to paint a body. A spray can supplies a smooth light coat of paint. Spray cans offer the least amount of necessary clean up. In this article we're going to focus in on the most common method of painting – using spray cans.

TOOLS OF THE TRADE

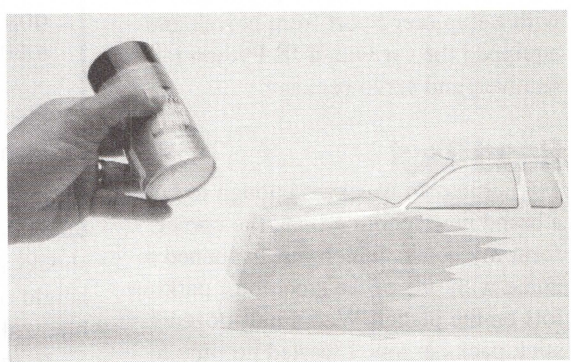
The following items are the necessary to paint your body and cut it out.

Paint: **You'll want a polycarbonate-safe paint that will still adhere to the body when it flexes during impact. Pactra R/C Finish is probably the most popular and can be found at most hobby stores. Avoid automotive paints and other harsh lacquers. These paints can cause melting of cracking of the Lexan™.**

Body Cleaner: **I recommend either Trinity Body Blast or BoLink Body Wash. Both of these will remove paint overspray, masking residue, and permanent marker.**

Lexan Scissors: **High quality, curved-tip Lexan scissors are a must when it comes to cutting your new body.**

TAKING IT STEP-BY-STEP

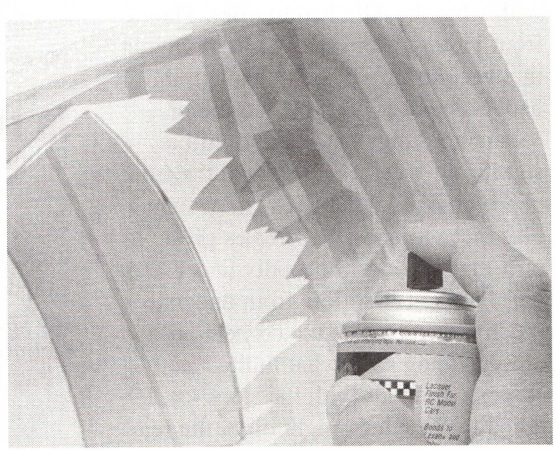


Step 1

Prepare your paint. Shake the spray can vigorously for about 30 seconds to a minute. For best results, try warming your paint before spraying. To do this, place the can in some warm water for a few minutes. Warming the can thins the paint, allowing a finer spray. The paint will then spread thinner once on the body.

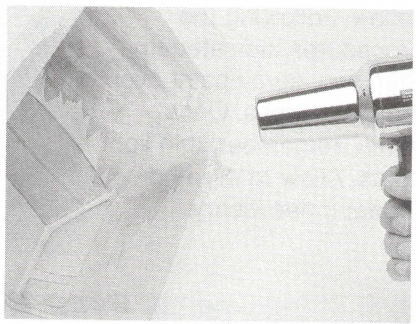
Step 2

Hold the body in one hand, and hold the can about 8 to 10 inches away from the surface you intend to paint. With the can pointed off to the side of the body begin spraying. Move the spray over and across the body. Move the can across quickly and stop spraying. Repeat until the intended area is covered. You only need to cover the body with a thin coat of paint. Too much paint will cause runs in the paint and ruin the body.



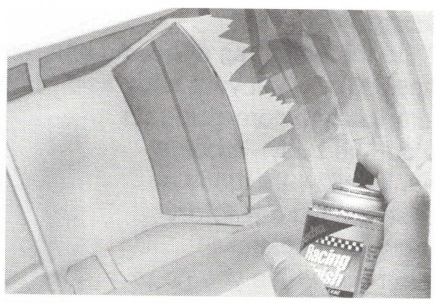
Step 3

In a well ventilated area, set the body down paint side up and allow the paint to dry. If it's a sunny day, set it out in the sun. On windy or humid days, keep the body shielded from the elements. If you're in a hurry, you can use a heat gun or blow dryer and at the lowest setting apply a small amount of heat to the painted side of the body. Keep the blow dryer or heat gun at least 10 to 12 inches from the body's surface and move the blow dryer or heat gun quickly. Don't let the heat concentrate on any one spot. After 2 to 3 minutes you should be done. Note: I advise using the heat gun method only if you're in a hurry. Sometimes certain masking tapes or materials will get gooey and make a mess when you try to remove them. Also, you run the risk of damaging the paint job or even the body if you're not careful. Allowing the body adequate time to dry in its own is your best bet. Drying times will depend on weather conditions. The colder or more humid the climate, the longer the paint will take to dry properly.



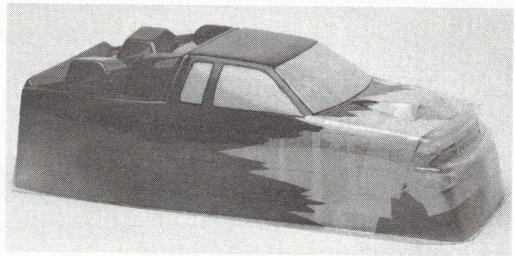
Step 4

It's time to apply another coat of paint to the body. Repeat Step 2, only this time pay more attention to the areas that you can clearly still see through the body. Remember to use light thin coats of paint. If possible, without applying a thick coat, try to cover all the clear portions of the body on this second coat.



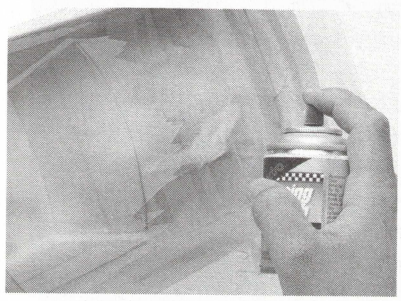
Step 5

Repeat Step 3. If necessary, you may repeat Steps 2 and 3 to add a third coat of paint only hitting the areas that are still translucent. When determining whether or not you need to cover areas do not hold the body up to the light. Instead place the body towards the ground and then look over the body. That is where the body will hopefully spend most of it's life and not up in the air. The more paint you add to the body, necessary or not, the more weight you are adding to your car.



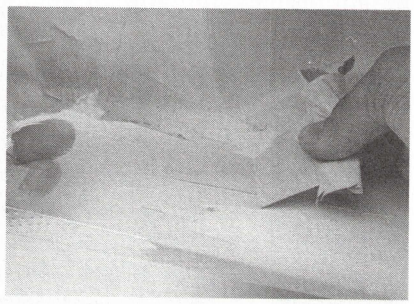
Step 6

If you're painting a fluorescent, light, or candy color you may need to back it up. The backup color is like a primer in reverse. It's not prepping the paint to adhere to the surface, but it is helping to make the true color of the paint appear when finished. In our example, we've put down two thin coats of fluorescent blue. We'll use a thin, light coat of white to back up the blue, just dusting the body.



Step 7

Once the thin backup coat has dried, it's time to remove the masking the from the areas that will be covered in our second color. Slowly pull the masking away from the body. If you see



(Step 7 continued on the next page.)

LAST MINUTE PREP

Before we begin painting let's plan things out. When painting multi-color paint jobs you'll want to always put your darker colors down first. Otherwise you'll see the darker colors through the lighter colors once your paint job is finished. When masking pay attention so that you mask out areas where the lighter colors will be painted, first.

Before you go any further inspect the following items:

- Make sure you've pressed down all of the masking tape or masking film, especially around the edges.
- If there is any sticky stuff left over from masking tape that was removed you can spray a small amount of Trinity Body Blast on a towel rub off the residue.
- Take a look around for any finger smudges. If you find any, wipe them off.
- Take a look for any dust that has collected inside the body. Using either a can of compressed air or a soft paper towel remove any dust you find.

PAINTING POINTERS

• When working with spray cans, apply very thin coats of paint. You'll want to spray the coats evenly and thinly. Don't start spraying with the can pointing at the body. Start with the can facing away from the body and run the stream of the spray across the body. This will keep you from getting any thick blotches of paint on the body that sometimes come out on the initial pressing of the nozzle.

• It is very important that you don't apply a coat of paint that is too thick because the paint will run and make a mess, not to mention the excess paint will add more weight than necessary.

• If you are working with more than one color be sure that you start with the dark colors first.

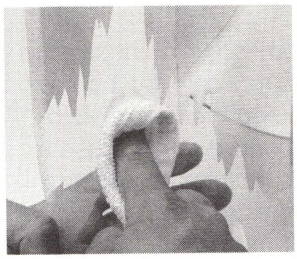
• If you're using fluorescent colors, candy colors, or light colors be sure to back them up with white, silver, or gold. White will brighten fluorescents and give a deep look to candy paints. Silver or gold will give a metallic look when backing up a candy color. After your first color has dried completely you can remove the masking for the next color. It's important that your paint has dried completely before removing any mask. If you don't allow the paint to dry completely, you may accidentally remove or flake off some paint or smudge the paint when trying to remove the mask.

• If you are going to back up the first color with a color like white or a metallic be sure to do that before removing any mask.

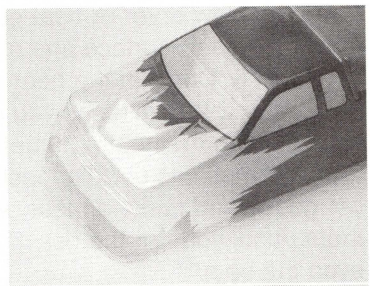
• Remember that clear Lexan™ bodies are always painted on the inside.

• Avoid extremely bright colors. Although this helps you to see your vehicle more easily, it also draws attention to your car. Other drivers will be drawn to your car out of the corner of their eyes. Just like a drunk driver is drawn to headlights and taillights, bright colors will make your car seem like a magnet for other drivers. I know this one sounds a little far out, but trust me; it's the truth.

• When using spray cans clean the nozzle completely before putting your paint away. To do this simply spray the can upside down, with the nozzle pointing to the ground but with the spray coming out parallel to the ground and not toward it. Spray the paint onto a piece of cardboard or into a trash can. You will see a short burst of paint come out then the paint will clear up and only air will be coming from the can. Once you see this you're done. You can put your paint away until next time.



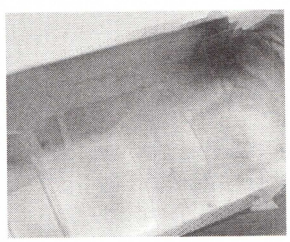
any paint that bled through or masking glue left over, remove it using your body cleaner and a cloth towel.



Step 8

Now that the previously masked area is clear we can put down our second color. In this case our first color was a blue, our second color is fluorescent yellow. Following the procedures indicated in Step two, spray paint over the clear areas. Once again, remember, thin light coats. Allow to dry and repeat if necessary.



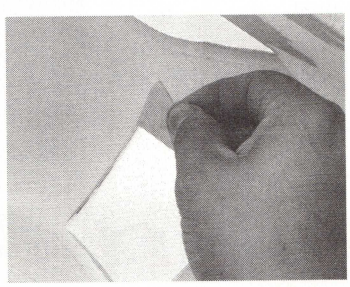


Step 9

Now back up your second color. In our case, we'll use white to back up fluorescent yellow.

Step 10

Once the paint has dried you can remove your window masking and set your body aside to allow it to dry completely before going on to cut the body. For best results allow the body at least one full day to dry through completely. Otherwise when you go to cut out the body you'll find yourself accidentally scraping paint off the body.



Cleaning Things Up

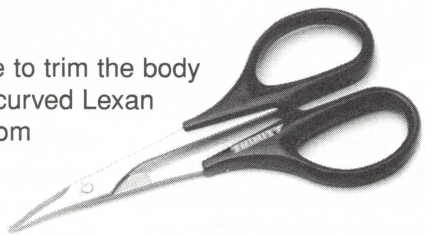
Even with a great amount of care, you can't help to but have some paint either bleed under your mask or overspray onto the outside of the body. When this happens, use a small amount of Trinity Body Blast or BoLink Body Wash on a towel and rub off the overspray. You can also use a mixture of 50% rubbing alcohol and 50% lacquer



thinner, but the strength isn't as strong as Body Blast. Whatever you do, don't use straight paint thinner. This will remove the paint but will also dull and cloud the Lexan. If you haven't already drilled your mounting holes, be sure not to remove the X's that you made to indicate where to cut.

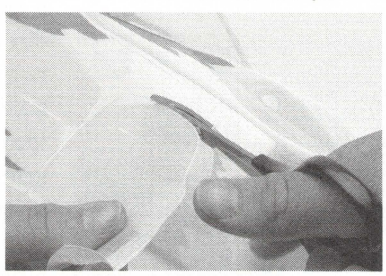
If you've cut the holes out for mounting, you can then go ahead and remove any leftover masking lines. Give the body a complete rub down with the body cleaner of your choice. If you plan on applying some decals, which you probably will, be sure not to use any body polishing compounds. Those compounds will make it harder for decals to stick properly.

Cut It Up



• When it comes time to trim the body you'll need a pair of curved Lexan scissors like those from Tamiya, Trinity, Dynamite, Hobbico, etc. You'll quickly find these scissors invaluable when it comes to cutting any portion of a body. Using straight-edged scissors will only lead to frustration, bad cut lines, and plenty of scraped off paint.

• When cutting, be sure to use caution and take your time. If the body has molded cut lines, be sure that you are following the correct lines. To assure your self that you are cutting the correct lines, place the body over the top of the vehicle and see that things line up.

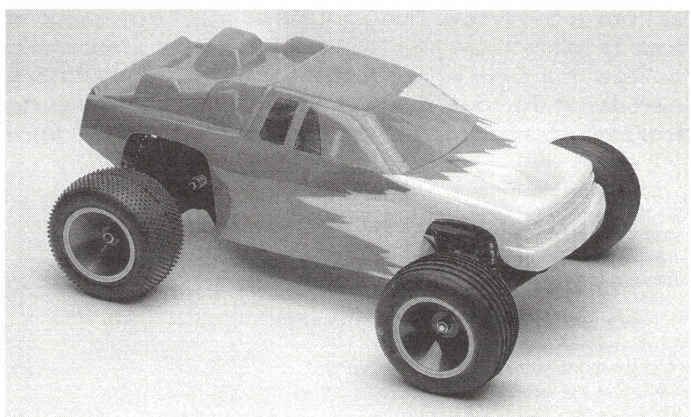


• Be a little conservative when it comes to cutting. You can always take a little more off, but you can't put the Lexan back once it's been cut. You may want to leave the trimming of wheel wells and other rounded areas for last.

• When you are finished cutting wheel wells or curves, you can go over the edges with a Dremel tool using a drum sanding bit to smooth things over. You can also use fine sandpaper to smooth edges when finished.

• Drill out the mounting holes that you marked earlier in the process. I use a ridge reamer like the one from Dynamite. The reamer is tapered and allows you to cut out a hole in any diameter up to a 1/2". You can also use a Dremel tool or electric drill along with the appropriate drill bit to drill out the holes. For most mounting holes, you'll want a hole at least 3/16" in diameter although that will vary depending on the chassis.

That's it for now, next time we'll finish this body deal up by showing you how-to detail and mount your bodies.



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Learn How To

Between Race Cleaning



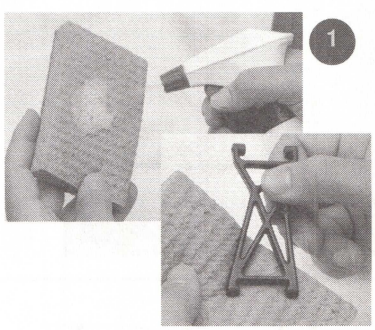
by Jack Johnson

Did you ever wonder what all the factory drivers do at night after they leave the track for the day when they're out of town for a major race? If you think they go sightseeing and generally play tourist, you're wrong. I'm sure you've overheard a racer or two mention that they were going to go back to the room to rebuild their car. Well, that's exactly what 90% of the factory drivers do every night that they're at a big race.

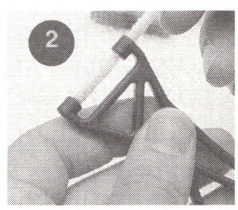
What exactly do these drivers do to their car? Well, I'll try to cover as much of that as I can in this article. Don't get me wrong! I'm not suggesting that all of you out there have to follow these procedures religiously for every race, every weekend. I'm just going to point out what it is that the factory racers do to prepare their cars for the next day at the track. Some of this preparation includes routine maintenance; some freshening up parts of the car; and just some plain ol' preventive maintenance.

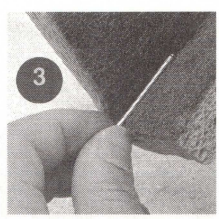
CLEANER IS BETTER

I bet most of you see pictures of factory racers' cars, or see these cars at the track and think that they always have new parts on their cars. Well, you're wrong! These racers realize that in order for their cars to perform the most consistently, they need to be clean. If the suspension parts get dirty, they can start to bind and cause the suspension to stick. A sticky suspension will result in either a change in stiffness, a tweaked suspension setting, or both. By making it a habit to disassemble and clean your suspension parts, you will not only keep your suspension operating at its best, but you will also discover that when the parts are clean it is much easier to spot problem areas such as cracked parts, missing E-clips, etc.



The easiest way to keep the suspension components clean is to disassemble them. Remove all the hinge pins from the suspension arms, hubs, spindles, etc. Once all of the parts are disassembled, find some all-purpose cleaner such as Simple Green™, 409™, or similar. Clean all of the plastic suspension parts thoroughly with the cleaner. Once the suspension parts are dry, use a 1/8" pipe cleaner (you can find these at most supermarkets in the tobacco accessory section) to clean the hinge-pin holes in the plastic parts. Clean all of the hinge-pin holes in the plastic parts by simply sliding the pipe cleaner back-and-forth through the holes. The small bristles on the pipe cleaner do a great job of removing any dirt from the inside of the holes. Now that the hinge pin holes are clean, it's a good idea to remove any dirt and grime that may have built up on the hinge pins themselves. The easiest way to clean the hinge pins is with a Scotch-Brite™ pad. These pads are sort of like abrasive sponges and they work great for cleaning hinge pins. Simply wrap the pad around the hinge pin and work the pin around as if you were sanding it with sand paper. The Scotch-Brite pad won't leave a mirror-like finish on the hinge pin, but it will definitely leave the pin clean and help the suspension operate more freely.





1. Using your cleaner and a sponge, wipe off all of your car's suspension components to reveal a like-new look.

2. A pipe cleaner is a very hand tool that allows you to clean items you might otherwise not be able to clean thoroughly.

3. Cleaning your hinge pins with a Scotch-Brite™ pad will leave the pin clean and allow your suspension to work more freely.

Continued on page 48



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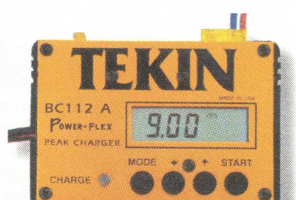

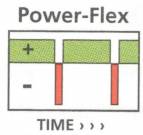

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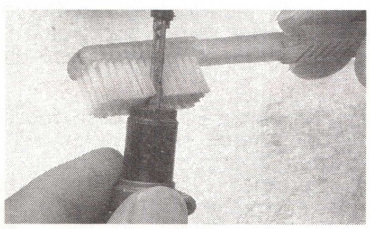
Before reassembling the suspension onto the chassis, use some of the cleaner on the chassis itself. Remember how psyched-out you were when you thought the factory drivers had new parts on their cars every day? Now it's your turn to psyche out other drivers. The cleaner you make your car, the better the effect.

Now that the chassis and suspension parts are spotless, reassemble the front and rear suspension. As you replace the hinge pins, check to be sure that all of the E-clips are in place. Replace any missing E-clips with new ones. A simple, little E-clip could save you from embarrassment while on a TQ run. You wouldn't want your suspension arm to fall off when you land on the back side of the big jump, would you? Check for free operation. If any of the suspension components don't move very easily, ream the holes in the arms, file away a little material, do whatever it takes to make the suspension parts move as free as possible. On the other hand, if there is excessive play, or slop, in the suspension parts, use some motor shims (or other 1/8" shim) to take the end-play out of the suspension components.

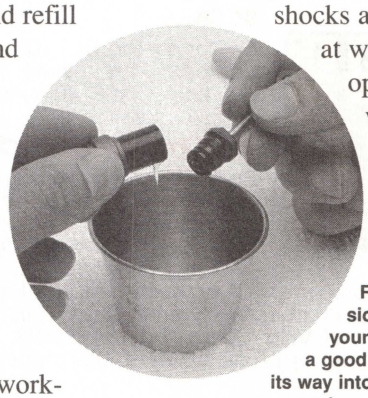
HOW SHOCKING

Now that the suspension is freshly rebuilt, let's work on the shocks. Start by removing the springs and cleaning them with the all-purpose cleaner. Next, take an old toothbrush to the outside of the shock and get all of the built-up dirt off of the shock from around the seals. Actually, it's a good idea to use the toothbrush to clean around the shock seals after every run, especially on dusty tracks. Keeping dirt away from the shock seals will help the seals to last much longer and help keep your shocks from leaking, too.



Brushing dirt from around your car's shocks should be done between every run. Use a soft-bristled brush and avoid pushing the bristles down into the seal. That will only shove dirt into the shock and possibly damage the O-rings.

I'll bet you think I'm going to tell you to dump the oil out of your shocks and refill them? Well, you're right. You do need to do this. After several runs the oil cannot only break down, but dust can actually pass through the shock seals and contaminate the shock fluid. Have you ever wondered why your shock oil always looks brown or gray when you empty your shock? The oil turns these colors when the dust mixes with the fluid. But, back to refilling your shocks. Yes, you should refill your shocks and clean out the inside of the shock bodies, but you should do that at the track. If the shocks are rebuilt in your hotel room or workshop, chances are pretty good that the temperature is quite a bit different than it is at the track. If you rebuild your shocks in a colder temperature than the temperature at the track, the shocks will be overfilled when you get to the track. The extra oil will not allow the shocks to compress all the way. If you rebuild your shocks at night in a warmer temperature than at the track, the shocks will not have enough oil in them when you get to the track. This will cause the shocks to feel like there is air in them. If you build the shocks at the temperature at which they will be operating, the result will be a much better handling car.



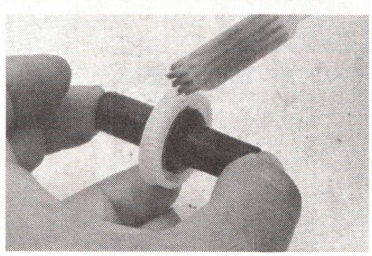
Replacing the suspension fluid (shock oil) in your car's shocks often is a good idea. Dust does work its way into your shock's oil reserve and accelerates the wear of the shock shafts and the O-ring seals.

TRANNY ANYONE?

Of equal importance to the suspension is the transmission. Believe it or not, a smooth-operating transmission can make a car much easier to drive — especially a smooth differential. A smooth-operating diff will make the car have more off-power steering and can make the car have more traction out of the corners. If there is one area where factory drivers do replace a lot of parts it is in the differential. It's a good idea to have some spare drive rings and fresh diff grease in your toolbox at all times.

Continued on page 50

Brush off any dust that may be on the diff gears so that you can actually get a better look at each individual tooth.



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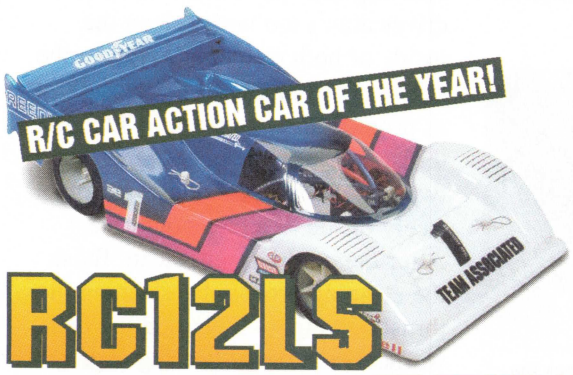

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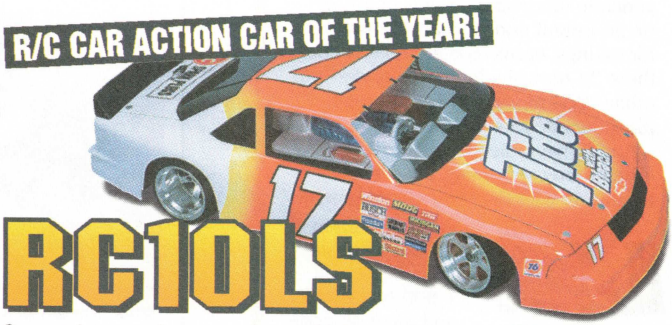

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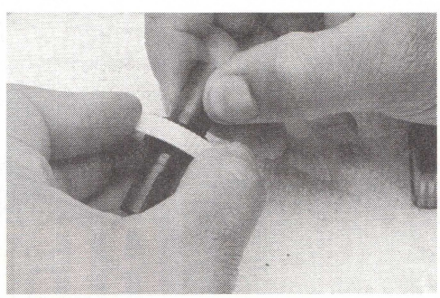
Start by disassembling the transmission and removing the differential and all remaining gears. Inspect all of the gears for wear, and clean any debris from the teeth of all the gears with an old toothbrush. If there are signs of wear on any of the gears, don't hesitate to replace them. Once the gears start to show signs of wear, they don't have much life left in them. If you do replace a gear, it's a good idea to also replace the gear that it runs next to. Chances are pretty good that if a gear is worn, the gear that it runs against is also getting worn-out. Even if you don't see any signs of wear on the second gear, I recommend it be replaced or it will just wear out the new gear faster.

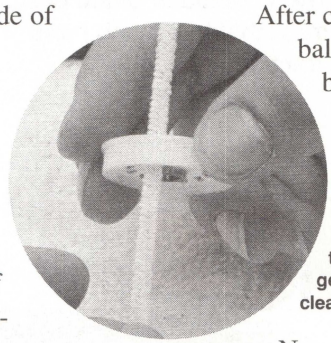
After you've cleaned the inside of the gearbox and inspected the gears, feel the differential. Hold on to either side of the diff by the outdrives and operate the diff in your hands. If the diff feels gritty, rebuilding it can improve the handling. If you are fortunate enough to have the diff feel smooth, then inspect the outdrives for any sign of wear. You should check the slots in the outdrive where the pin in the dogbone or swingshaft rubs. If there is an indent in the outdrive, it should be replaced. These indents will keep the suspension from operating smoothly while accelerating. The pin in the dogbone will get stuck in the indent and bind the suspension.



While the diff is still out of the car, check the diff to see if it is working smooth and that the diff halves are free from any damage.

If your diff needs to be rebuilt, start by disassembling it. Once it is fully disassembled, remove the diff balls from the diff gear. Thoroughly clean the diff gear with a spray cleaner or motor spray. You should also use the pipe cleaner again to clean the diff-ball holes in the gear. Any trace of dirt or grime when the diff is rebuilt can make your efforts a waste of time. Once the diff gear is clean, the diff balls should be cleaned. Again, use a spray cleaner or motor spray. Most of the race-level kits on the market today include carbide diff balls which last a very long time — allowing them to be used over and over again. Most of the time the drive rings wear out before the diff balls.

After cleaning the diff balls, place them back into the holes in the diff gear.

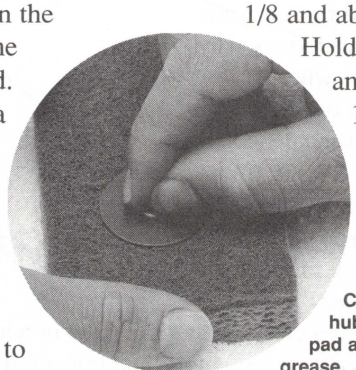


Clean any old grease or dust from the holes in your diff gear using a pipe cleaner.

Now that the gear and diff balls are clean, take a look at the drive rings. The nice thing about drive rings is that they can be used as new twice — once on each side. If the drive rings have only been used on one side, you should flip them over and use the other side. After cleaning them, of course. If the outdrives aren't too worn, clean the inside of both of them. You want the inside of the outdrives to be as clean as possible for two reasons: One, the thrust bearing will stay cleaner; and two, the dogbones will move more freely inside of a clean outdrive. After the outdrives are clean, finish the cleaning process by cleaning the thrust bearing — including the balls, washers, and thrust bearing cage (if one is used).

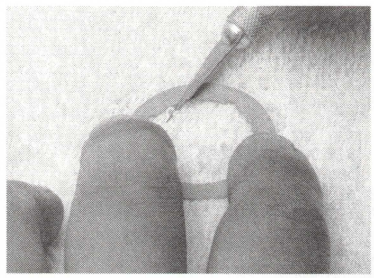
Reassemble the diff per your car's instructions. One thing I have found that works really well with all diffs is to apply the grease to the drive rings instead of the diff balls as recommended in some cars. Applying the grease to the drive rings seems to make the diffs last a little longer. Give it a try.

Before reassembling the transmission, clean the outside of the bearings that are exposed to the outside of the transmission, such as the outdrive bearings and top shaft bearings. Once all the dirt has been removed from the bearings, finish assembling the transmission. Before assembling the slipper clutch, the backplate and slipper pad should be cleaned. To clean the backplate, use the Scotch-Brite pad. Lay the pad on a flat surface and rub the face of the slipper backplate against it in a circular motion. The easiest way to clean the surface of the slipper pad is to gently scrape it with a hobby knife. This will remove any corrosion as well as the shiny surface of the slipper pad. If the slipper pad is deformed or egg-shaped, it should be replaced with a new pad.



Clean your car's slipper hubs using a Scotch-Brite pad and a little bit of elbow grease.

Now that your car is completely rebuilt, you're pretty much ready to go for the next day at the track. Before you pack everything up though, you should break in your rebuilt diff and slipper. To do this, you will need a charged battery. Turn your transmitter and car on, hold one rear tire and apply about 1/8 throttle. Run the car like this for about 15 seconds. Hold the opposite rear tire and repeat the same procedure. Now vary the throttle between 1/8 and about 1/2 – 3/4. Hold the first tire again and apply between 1/8 and about 1/2 – 3/4 throttle again. Your diff should now be broken in. This



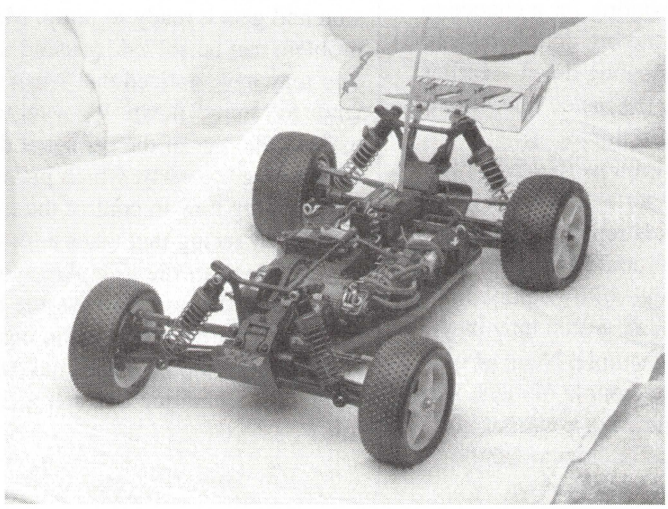
Using a hobby knife, scrap off any corrosion or glaze that has accumulated on the slipper pad. Be careful not to cut into the pad.

process will help the diff last quite a bit longer. Readjust the diff to ensure that it isn't set too loose and it won't slip. To break in the slipper pad, adjust it loose and hold both rear tires. Apply about 1/8 throttle, causing the slipper to slip for about 10 – 15 seconds. This will seat the slipper pad and make the slipper operate consistently throughout the first run on the rebuilt slipper. Readjust the slipper to your desired setting.

That's it, you're done with the car! To finish off your rebuild session, and to help your image at the track, you might as well go ahead and polish up the body and wing. You might want to clean the tires that you ran, too. You can use the spray cleaner and some water to do this. If it's not too late, and you're still feeling ambitious, glue some fresh tires to use the next day. Getting this done now will make for a much more relaxing day at the track.

SEE WHAT YOU'VE BEEN MISSING

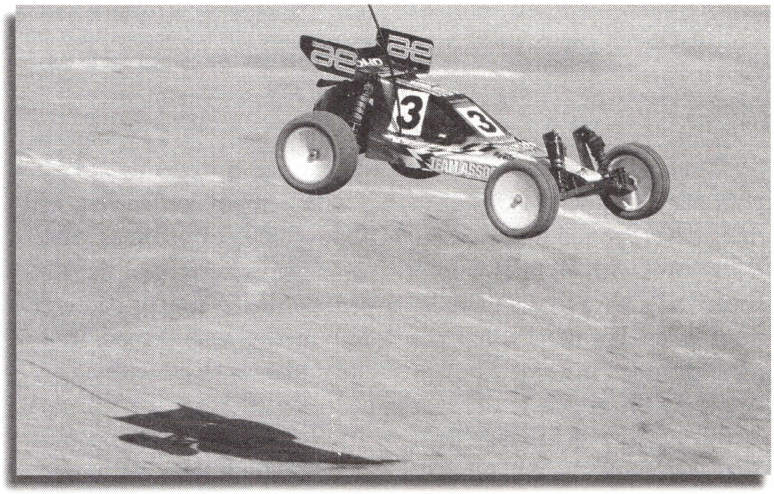
So you see, the glamorous life that you think the factory racers have is really quite a bit of work. I guarantee you that at any major race you will find all of the factory racers following a similar routine to the one I just described. And they do this every single night they are at the track for the event. Except, of course, for the night after the main events. That's when they all catch up on the sleep they've been missing the nights before.



When you're finished, your car will look as new as the first day you ran it.

Learn How To

Taking Jumps The Right Way



by Ken Marcum

One of the most interesting, challenging, and demanding things about the sport of radio controlled off-road racing (just as with its full-sized counterpart) is the terrain. The terrain changes from track-to-track, day-to-day, heat-to-heat, and even lap-to-lap. Learning how to handle these changes while driving is one of the most difficult and rewarding aspects of the sport.

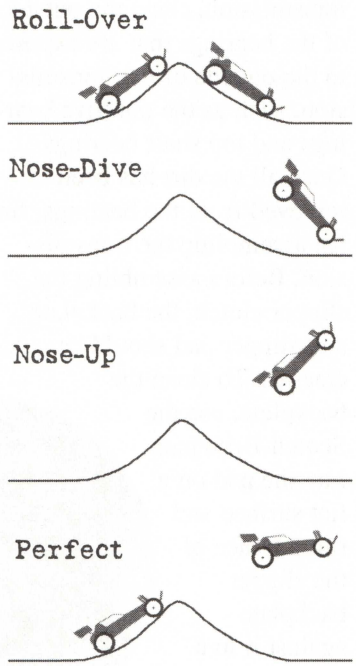
I have been racing (some of my competitors don't call it that, but oh well) for 16 years and some types of terrain still cause me grief. Just in the last year or so, I learned just how true the old saying "slow is fast" really is. By learning how and when to slow down, I was able to become a much faster racer.

The proof came at my club's big race of the summer. I decided to race four, yes four, classes. Needless to say I was a busy person the whole weekend. I relaxed as much as possible while on the drivers' stand and DROVE the car. I qualified in all four A-Mains – Gas Truck, Stock Truck, Stock Buggy, and Four Wheel Drive. I was pumped! I had never done that before. I attribute my success to driving with patience, waiting for a chance to make a move, singling the big double instead of trying to fly it, and slowing down earlier for the corners to make the inside line. It only took me 15 years to learn this.

Do not expect to learn how to drive overnight. The most important factor is practice. I know it sounds repetitive, but practice, practice, practice. I could say it 400 gazillion times and people still wouldn't listen. Talk to your local hotshots, watch how they drive, learn from their example. None of us learned how to drive in a couple of days; we had to learn the strategies. So, with that in mind, here are some tips on how to handle driving on different types of terrain.

SINGLE JUMPS

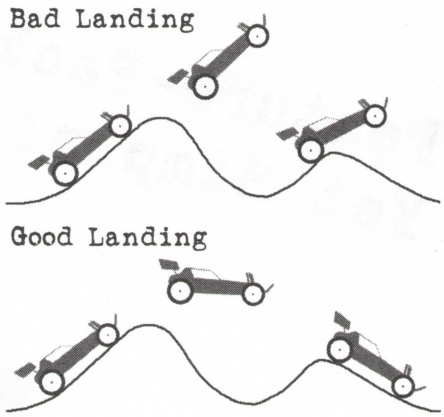
Single jumps are something we do not encounter too much any more. But, some track designers still use the single jump to throw off your timing and to possibly equalize the different lines on the track. Single jumps can be very challenging. It is best to approach the jump in as straight a line as possible. This is to ensure that your car goes over the jump level and straight. Try to spend as little time in the air as possible. Have you ever tried to steer your car while it is flying? Then you know why we want the car to stay on its wheels. Depending on the placement of the jump in question, it may be more advantageous to roll over it rather than to fly over it. If the jump were right before a corner, or worse yet, in a corner, the preferred way would be to roll over it. This allows you to maintain control and keep the tight line.



How you approach the jump can make a difference in what the car or truck does in the air. The height, shape, angle, and transition of the jump all make the car do different things. It may be necessary to let off the throttle just before a jump and accelerate up the face. What this does is "set" the suspension and gets it ready to jump. Many times, when a car is nose-diving, the problem can be solved by using this method, gassing it just before a jump. You may have noticed that when you punch the throttle, the rear of the car tends to "squat" down. We want to use this condition to our advantage. By making the rear of the car squat down, the rear suspension will be kept from rebounding too early, which prevents nose-diving.

Learning how to control the in-flight attitude of the car is another aspect of R/C car racing that takes a lot of time to learn and even longer to perfect. By applying throttle or brakes, you can control how your car flies. Brakes bring down the nose and throttle brings it up. This can come in handy when car comes off the single jump nose high. A slight tap of the brakes (or proper setup of coast brakes) will make the car level out and land flat. The place where this technique is much more useful is the dreaded Double Jump.

DOUBLE JUMPS



Doubles are much more evident in most track designs. They can range in size from a "speed bump" double to a "Prepare for liftoff chassis smasher." As with any other jump, each double has its own personality. Many of the tips and techniques for singles apply to doubles as well. The approach toward a double can be crucial. Having the car achieve the proper attitude in the air makes it much easier to clear small-to-somewhat large doubles. Watch someone at your local track that tries to clear a double jump with the nose of the car up in the air. What do you notice? Does the car smack down on the top of the landing jump? Do the rear wheels not quite make it over the landing jump causing the car to flip over onto its top? How could the driver have prevented all this mayhem? A short tap of the brakes would have brought the nose of the car down and the car would have landed on the down slope as smooth as silk.

Practicing and learning how to control the car in the air is very beneficial to success in the doubles. Landing the car on the down slope of the second of the doubles allows you to get the car back under control faster and put the power down sooner. Learning the best way over a double takes time. It may be faster to single each one than to try to clear the double. When you are practicing for a big race, try both ways and find out which way you can be successful with most often. If you can't clear the double every time, practice the single line. The more time you spend on your wheel in the middle of the track the faster you will be. I know it is fun to fly and get "big air", and we all enjoy it, but if you want to be fast, control is the name of the game.

TABLE TOPS

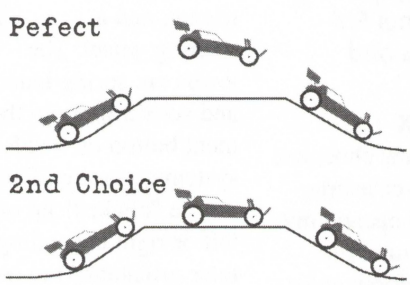


Table tops should be treated the same as double jumps. If you are able to clear the table consistently, land on the down slope of the back side of the table and get the car back under control. If you cannot clear the table top, land on the top and roll down the back. Air control (no, not air traffic controllers) is again a major part of success. Keeping the proper attitude in the air can mean the difference between success and failure.

FINAL THOUGHTS

A common misconception amongst us rookie drivers (yes, I am still a rookie even with 16 years experience) is that the more we keep our throttles pegged, the faster we will go. Nothing is further from the truth. Knowing how fast to go on different parts of the track, when to let off of the throttle, how to be patient, and when to put the hammer down are all things the experts (and even the local fast guys) have mastered. That is what separates them from us mere mortals.

I could sit here and drone on and on about how to drive, but the best advice I can really give is to learn how to consistently initiate the best driving techniques for each situation. And the only way to do that is...yes the "P" word – PRACTICE, PRACTICE, PRACTICE! We are all always in need of practice and can never get enough of it. So remember, use my little hints as a start and practice, practice, practice.

Happy racing and above all, have fun. It is not that serious.

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TEAM LOSI TECH TALK

FINALLY!

Now that the XX-4 has finally been released, it's probably a good time to go over a few quick tips for it. The most important thing to remember about the XX-4 is that the slipper shouldn't be run too tight. With the added traction of the 4WD car, it's understandable that you would want to squeeze every bit of power out of the drive train as possible. The only problem with this is that the drive train still needs to be able to absorb the jolts that it will be dealt when the car hits bumps and ruts on the track. Where the slipper is used more as a traction aid in 2WD cars, it is used more as a cushion to the drive train in 4WD cars. This is true for any 4WD car available. The bottom line is that if the slipper is too tight, parts of the drive train may be damaged or wear out faster.

Also keep in mind that new slipper pads will break in after a couple of runs. This usually causes the slipper adjustment to tighten. Be sure to re-adjust the slipper after the first couple of runs on fresh slipper pads.

EASY GEAR MESH

The gear mesh on the XX-4 is unbelievably easy to set. Simply install the motor, leaving the screws in the motor mount clamp loose. Looking at the motor from the left side (end-bell), rotate it clockwise as far as possible. With the car sitting on an object such as a car stand or something similar so that all four tires are elevated, rotate the front tires backwards. The gear mesh should sound horrible. Now, simply rotate the motor counter-clockwise slightly. Rotate the front tires backwards one more time. The gear mesh should be a little quieter. Continue this process until the gear mesh is quiet while turning the tires. Then, go ahead and tighten the screws in the motor mount clamp. As a final check, remove the gear mesh access plug and check to be sure that there is a little backlash between the spur gear and pinion gear.

A QUIETER, FREER CLICKER

You've got to admit, the one way/clicker on the XX-4 is very cool! It's nice being able to adjust how free the front tires spin while off power as well as the amount of front brake the car has. To make the one way/clicker a little quieter and even freer, apply some white assembly grease to the splined surface of both halves of the clicker assembly. Also, apply some grease to the inside of the pulley so it will rotate on the slipper shaft with less friction. Be careful not to get too much grease on the outside surface of the parts. You don't want to grease the front belt.

Let us know what's going on! Address your questions and problems to: Team Losi, "Tech Talk," Dept J, 13848 Magnolia Ave., Chino, CA 91710

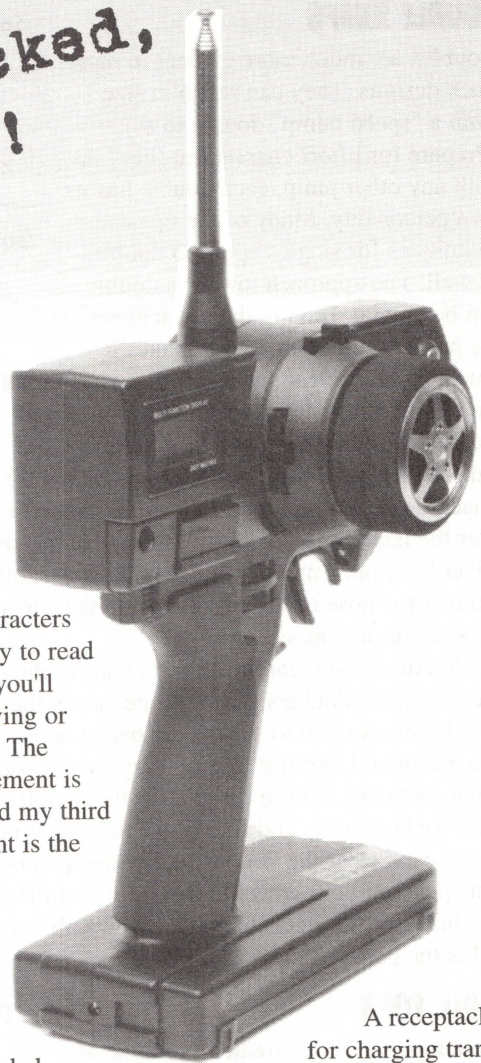
XTREME REVIEW

Feature-Packed, Yet Simple!

Futaba 3PDF

3-Channel FM Radio System

by Dominic Tuso



When it comes to driving or racing, most people first look to their vehicle to gain a performance edge – a faster motor, "grippier" tires, suspension tuning, high-voltage batteries. But, one area we seem to forget about is the radio system. Yes, a good radio system can be a performance advantage. For example, having the ability to limit the travel of servos so they don't bind and break, having the ability to adjust steering or throttle sensitivity without limiting their full throw, or having the ability to pre-program various setups can radically change the way the vehicle will respond to input. The Futaba Magnum 3PDF 3-channel FM radio system offers all of these advantages and more.

OUT OF THE BOX

I first noticed the new chocolate brown, red, and silver instruction manual when I opened my Futaba 3PDF 3-channel FM radio system. The glossy color cover is quite a change over the flimsily-covered black-and-white manuals Futaba used to include with radios like the Magnum Jr. The 37-page, well laid-out manual is cool but not the best thing about this new radio system. Read on to see what technology and features really makes this system stand out from those of the past.

FEATURES

The best improvement in Futaba's futuristic-looking radio system is the Liquid Crystal Display (LCD). The LCD displays 16 characters on a 2-line display (8 characters each line) that is easy to read in most light levels you'll encounter while driving or racing your R/C car. The second best improvement is the digital trims. And my third favorite improvement is the 3-model memory.

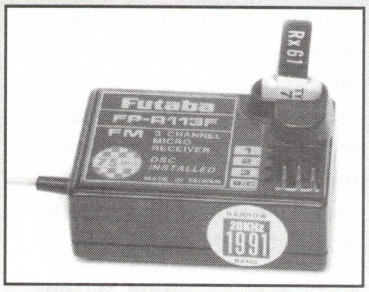
There are six levers, four buttons, a throttle trigger, and a steering wheel. The levers are spring loaded and act similarly to the movement button on a video gaming system controller. Each lever can be "clicked" up or down (or left or right depending upon their orientation) to increment and decrement its digital trim value. I like the exact feel of being able to dial in a specific amount rather than having to guess an analog dial's position.

Rather than a push button to operate the on/off switch as in past models, there is a large sliding power switch. While the power switch slides up easily, switching it off can be a small challenge. The solution I found was to press the switch inward with my thumb while sliding it down. With a little practice with this technique, switching the radio off is no longer a problem.

A receptacle for charging transmitter batteries is located just under the power switch. The charger and optional Ni-Cd battery pack are sold separately. The battery level indicator is in the form of a digital volt meter. The battery level indicator is displayed on the LCD during power up and returns about five seconds after you're done adjusting the trims.

The radio uses 8 AA batteries that fit into a removable tray. The tray is removable in case you wish to use a Ni-Cd battery pack like one from Futaba or Trinity.

The transmitter has a very comfortable and light feel. Throughout my six years of R/Cing, I have primarily used Magnum Jr. transmitters. In comparison, the 3PDF weighs less and has a more comfortable hand grip and wheel. The soft



The R113F FM receiver is the same unit that comes standard with the top-of-the-line 3PJ FM system.

foam wheel grip, although not glued in place (which can be fixed quickly with a spot of strategically placed CA or other type glue), seems to be secure. The transmitter is also small enough to accommodate smaller hands yet not too small for people with larger hands. If your hands are "smaller than small", Futaba does offer a smaller size grip as an optional part. Both the throttle and wheel have a secure and smooth feeling to them. The spring tension Futaba engineered is great.

The R113F 3-channel FM receiver is even smaller and lighter than the 2-channel AM equivalent. This makes it much easier to find a spot to mount the receiver into any vehicle. This receiver weighs only 0.72 ounces making it nice for those of us who want to save every ounce possible.Two S3003 servos (the S148 replacement) come standard with this system. Their 42 oz-inches of torque and 0.22 seconds/60 degrees travel rate is adequate for most R/C applications.

The 3PDF has three modes, or groups, of operation. They are Direct Mode, System Mode, and Function Mode. Each mode is actually a group of functions. Direct Mode functions are accessed directly on the transmitter while Function Mode and System Mode are accessed via the LCD menu system. You'll have to learn which function is assigned to which mode, but even if you forget, it doesn't take too long to scroll through each of the groups' menus. You just have to remember the way to get to each menu which isn't too hard.

• **The Function** Mode Group menu is accessed by pressing the "Mode" button. Model Select, Steering ATV, Steering Exponential, Throttle Exponential, Throttle ATV are the functions you can access. I'll describe each one below.

• **The System** Mode Group menu is accessed by pressing the "Select" button without releasing it until you have hit the "Mode" button. The functions you can access from this menu are Servo Reverse, Channel 3 Function Select, Lever Function Select, and Model Name.

• **The Direct** Mode Group is accessed via the levers located around the steering wheel on the radio transmitter. The functions accessible from the levers are Throttle Trim, Steering Dual Rate, Throttle ATL, and Channel 3 Position Setting. When you activate a lever, the name and value of that function will be displayed on the LCD where you can change its value. After about five seconds, the LCD will return to its normal display of battery level and model number.

FUNCTIONS

In fear of being redundant due to the review of Futaba 3PJ in Issue #2.8, I'll be brief in telling you about each of the functions. In the brackets you'll see how the function is named on the LCD screen. All of the abbreviations are straight forward other than "GD" which stands for "lever."

• **Steering Trim [TRIM.Pos ST]** This selects the mid point (or neutral point) of the steering servo's travel. Please note that the end points will be affected, so go back and check the steering ATV to make sure you are not "over-traveling" the servo which can lead to broken servo gears.

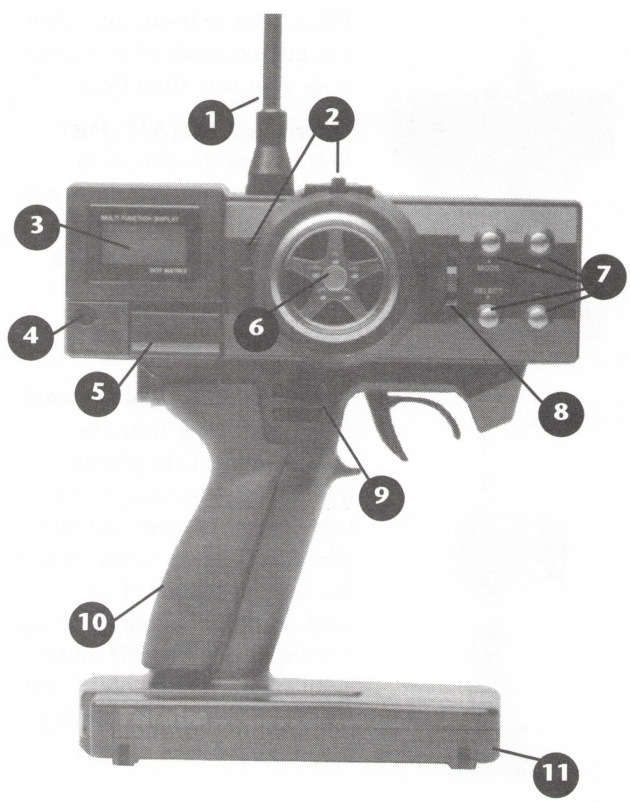
• **Throttle Trim [Trim.Pos TH]** This selects the mid point (or neutral point) of the throttle servo's travel. Again, please note that the end points will be affected, so go back and check the throttle ATV and ATL adjustments to make sure you are not "over-traveling" the servo which can lead to broken servo gears. In the case of ESCs, you may not be getting full throttle or full brakes if you make large adjustments to the neutral point.

• **Servo Reverse [REVERSE]** This allows you to reverse the travel of steering, throttle, and channel 3 servo. Select cycles through each one.

• **Steering ATV [ST.ATV]** This sets the maximum throw of the steering servo left and right independently of each other.

The Hit List

1. Collapsible Antenna
2. Steering and Throttle Trim
3. LCD Display
4. Pilot Lamp
5. On/Off Switch
6. Steering Wheel
7. Edit Keys
8. Programmable 3rd Channel
9. Programmable toggles
10. Changeable Grip Handle
11. Low Mount Battery Box

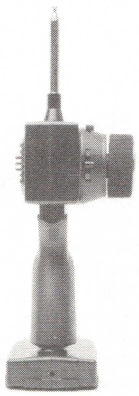


Hits:

- Lightweight transmitter and receiver.
- LCD display is easy to read.
- Comfortable feel even during those enduro races.

Misses:

- Channel 3 linear mode only steps 1 click at a time.
- Batteries die much faster than in my old Magnum Jr.







Make sure you aren't "over-traveling" your servo.

• Throttle ATV [TH.ATV]
This sets the maximum throw of the throttle servo for forward and reverse independently of each other. Once again make sure you aren't "over-traveling" your servo. If you're using an ESC, make sure you're getting the optimum amount for forward and reverse/brakes.

• Steering Dual Rate [D/R.Pos Steering]
Steering dual rate is similar to steering ATV. The difference is the this feature limits the servo travel in both directs equally. Once you have the steering ATV set, you can then decrease the amount of steering travel until the car becomes less twitchy and, therefore, easier to drive. This comes in handy for when you get too much front traction from your new front tires.

• Throttle ATL [ATL.Pos]
This adjusts the maximum amount of brakes your car will have. Make sure your throttle ATV is set correctly for this function to work right.

• Steering Exponential [ST.EXP]
This function adjusts the sensitivity of steering from the neutral point. This adjusts dynamically the relationship between the amount you turn the wheel and the actual amount the servo is thrown. That relationship is actually exponential. It is adjustable either positively or negatively. A negative value will make steering less sensitive near neutral (center) and more sensitive at the end points (far left and far right). A positive value does exactly the opposite. It makes the steering more sensitive near the neutral point and less sensitive at the end points. Negative values are great for people who have a tendency to overcorrect.

• Throttle Exponential [TH.EXP]
This function is just like steering exponential, but for the throttle servo. With reversible ESCs this only affects forward.

• Model Select [MDL.SEL]
This allows you to change between three different cars (models) or set up different profiles for the same car.

• Model Name [MDL.NAME]
This allows you to program in a 6-character name to each model. It is nice not have to memorize which model number is for which car.

• Lever Function Select [GD.SELCT]
Steering Dual Rate, Throttle ATL, and Channel 3 can be set to any of the three levers GDA, GDB, and GDC. The Throttle Trim and Steering Trim levers cannot be changed. To make the third channel easier to access I reassigned it to GDB and put the Throttle ATL onto GDC.

• Channel 3 Function Select [AUX.SEL]
This is where things can get really fun. There are five different modes of operation for channel 3 – 1P, 2P, 3P, 4P and Lin. 1P mode makes the 3rd channel lever (defaulted to GDC) act as a momentary switch. 2P mode makes the lever switch the servo between two positions. 3P mode makes the lever actuate three positions. 4P mode makes the level actuate four different positions. Lin mode is a simple linear mode actuated by the lever.

• Channel 3 Position Setting [CH3.Pos]
After you set the AUX.SEL function, exit out of the menus and actuate the Channel 3 lever. Then you can use the (+) and (-) buttons to adjust the servo into its correct position for each of the positions you are using - 1P, 2P, 3P, or 4P mode. In linear mode, each time you press the lever makes a small adjustment to Channel 3. This will take a while for large servo adjustments.

INSTALLATION TIME

The 3-model memory makes it easy to use this radio with a variety of vehicles. I use Velcro®-brand fastener to mount my receiver. This saves plenty of time switching it between vehicles, not to mention helps prevent any possible glitches. By pushing a few buttons on the 3PDF, the tens of minutes it can take to set up a vehicle's profile is now seconds away. Being able to uniquely name each model number/profile is an awesome feature. I used to lug around three transmitters in my pit box for each vehicle; I now tote only one.

The third channel offers a multitude of options for the R/C enthusiast. Hook a third servo up to activate a set of switches

Nitro Nice

Although I don't have a nitro car to test the 3PDF in, it should make an excellent radio for nitro cars. The engines in nitro cars generate a lot of vibration and noise. Often times this noise causes interference with radio systems, especially 75 band AM radios. The features of the 3PDF and the fact that it is FM (FM radios are less prone to radio interference) makes it a great choice for nitro cars and trucks.

that activate horns or lights. Hook a throttle switch (or speed controller) into channel three and the release of a button can instantly zoom a dragster down the race strip.

I programmed in the third channel to activate three positions (3P mode) for my rear wheels on my four-wheel-steering Tamiya Clodbuster. I set Position 1 to full left, position 2 to dead center, and position 3 to full right. With two flicks of the channel 3 switch, which I reprogrammed to the more accessible SWB button, I can go from a tight 4-wheel-steering turn to the cool looking crabbing action with both the front and rear tires facing the same direction. Flicking the switch back the other way locks the rear wheels dead ahead for high speed stability. Anyone running a 4WS setup knows exactly what I mean.

TESTING

Ah, the moment I have been waiting for. Time to give this system a test drive. With two flicks of the channel 3 switch, which I reprogrammed to the more accessible SWB button, my Clod had enhanced maneuverability. It went from turning tight with 4-wheel steering to a more cool-looking crabbing action steering. Flicking the switch back the other way, locked the rear wheels dead-ahead for high-speed stability.

To test the racing aspects of the radio, I removed the receiver from my Clod and installed it into my Associated RC10B2. After adjusting the radio trims, I put the buggy on to the track. The B2 was a joy to drive. I did a little fine tuning of the steering exponential to soften the B2's twitchy steering. With my old radio system I sacrificed my full steering by adjusting the dual rate. But with the 3PDFs exponential function, I was able to keep full throw on the steering while decreasing the sensitivity near dead center. I'm sure as the months pass I'll be able to play around with more of the multitude of functions the 3PDF has.

With both vehicles, the Futaba radio was easy to use and precise. I never noticed anything indicating a problem with interference or mistransmitted/misreceived signals. In other words the radio worked flawlessly.

FINAL THOUGHTS

Is the Futaba 3PDF worth twice the price of a decent AM with analog trims? Emphatically, yes. The benefits of this three-channel, three-profile memory radio system is well worth the time it takes to save away the extra pennies. In my six years of R/Cing, I have always known my trusty AM system with analog trims would be all that I ever needed, but now Futaba has proven me wrong.

OPTIONAL PARTS

- Crystal sets.
- Frequency flags.
- Transmitter Ni-Cds (Futaba part no. NT-8JY; Trinity RC5560).
- Body rest.
- Colored steering wheel and grips. Part nos. – Small Grips, fta-9r (red); fta-9b (blue); fta-9g (green); Large Grips, fta-10r (red); fta-10b (blue); fta-10g (green).

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Entries must be received by Sept. 7th 1997.
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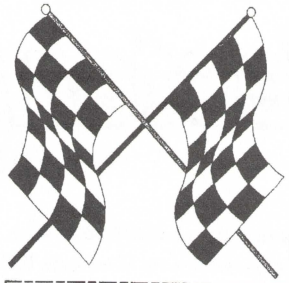

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For more information and Directions
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General Info: 6 Cell maximum all classes. 2000 mah batteries legal in all classes. Gas Truck A Main will be 20 min. with 3 mandatory pit stops. B Main will be 15 min. with 2 pit stops. All gas heats will be 5 min. IFMAR Starts in all heats Off-the Pole in mains. Step-pins and Mini-pins work well on trax.

PA Offroad State Championships
(for entry confirmation send self addressed stamped evnelope)

NAME_____ STATE _____ PHONE (_____) _____
NORRCA # _____ CAR # _____

1. Stock Truck _____ 2. Mod Truck _____ 3. Stock Buggy ____ 4. Mod Buggy ____
5. 4 WD Mod ____ 6. Gas Truck ____

Frequencies 1. _____ 2. _____ 3. _____ Amount Enclosed _____

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Western RC Raceway

July 18th and 19th, 1997

Entry Fees: $25.00 for the first class and $15.00 for each additional class. **Only pre-entries will receive a tee shirt and must be received on or before July 10th, send all pre-entries to: Western RC Raceway, 6404 Richmar, Las Vegas, NV, 89139.**

Schedule: Friday, **July 18th**, track opens at 1:00PM for open practice and controlled practice and sign-ups open at 6:00PM racing starts at 9:00PM for the first two qualifiers. Saturday, **July 19th**, track opens for open practice at 1:00PM for open practice and controlled practice opens at 6:00PM. Concurs is at 8:30PM and the third qualifier starts at 9:00PM and the mains will follow. For all **EXPERT Classes** there will be **Triple A-MAINS.** For those who cannot arrive on Friday late sign-ups will be available and are invited. ***All classes are Oval only.***

This is a ***NORRCA*** event and all rules apply. ***NORRCA*** membership required. **6 cell maximum all classes. 2000 MAH batteries are only legal in Expert classes.**

For more information please call Western RC Raceway (702) 270-8148.

There is no Host Hotel, however you can call the following, but we suggest that you hurry!

BoomTown (800) 588-7711 * Vacation Village (702) 897-1700 * Luxor (800) 288-1000 * Excalibur (800) 937-7777

1997 Kimbrough 400

To receive a tee shirt, your pre-entry must be received on or before July 10, no exceptions.

NAME_____PHONE #_____

CAR #_____ ***NORRCA#*** _____Shirt Size_____ **1 Shirt Per Driver**

(1) Sportsman Stock____ **(2)** Expert Stock ____ **(3)** Sportsman Mod ____ **(4)** Expert Mod ____

(5) Sportsman Stock NASTRUCK____ **(6)** Expert Mod NASTRUCK____ **(7)** 1/12 Expert Stock ____

Frequencies by Class

Class#____ 1 ____ 2 ____ 3 ____ Class#____ 1 ____ 2 ____ 3____ Class#____ 1 ____ 2 ____ 3____

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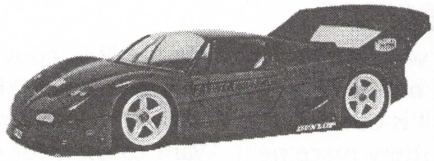

FR-4013
Ferrari F-50 body for narrow touring cars
Comes with 3 point adjustable wing & decal set



FR-4014
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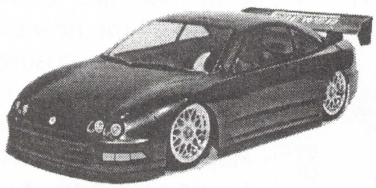

FR-4012
Acura/Honda Integra, wing & decals
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Other Very Hot Bodies!



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Mercedes C-180 & wing set
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FR-4001
BMW M3, wing & decals
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(narrow)



FR-2006
Mini Cooper body
for Tamiya "M" chassis cars



FR-4003
Porsche 911 Carrera & wing set
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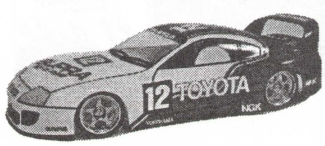

FR-4006
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FR-4007
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FR-4008
Mazda RX-7, wing & decals
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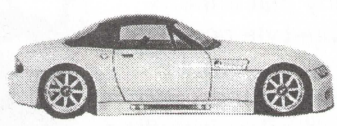
FR-4009
BMW 318i, wing & decals
(wide)



FR-4010
Renault Laguna, wing & decals
(wide or narrow)



FR-4011
BMW 23 Roadster & decals
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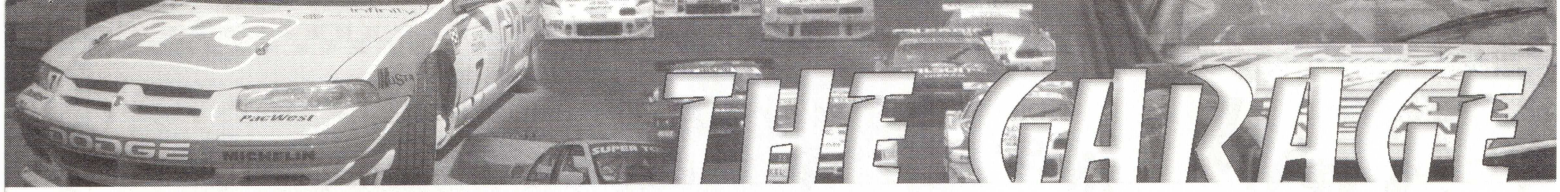
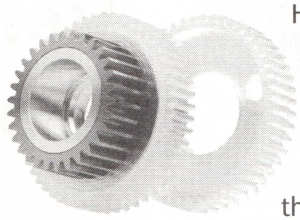
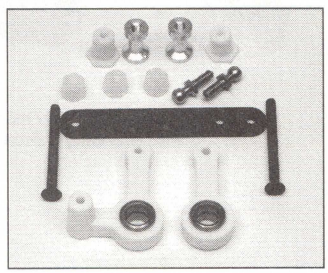


Welcome to another action-packed edition of "The Garage" – the original sedan freaks' fortress of solitude.

HARDWARE

Integy will soon be importing a YR4II conversion kit that will convert your YR-4, YR4-M or YR4-M Team Car into the new YR4II. Speaking of Yokomo, the new YR4-MII is out. It features a new, thicker graphite chassis, new gear ratios, and new battery placement. Want to use your 48-pitch pinions in your TA03? Now you can with Robinson's cluster/spur gear set available with a 48-tooth and 50-tooth spur. For HPI's stable of cars, RPM now offers super-strong and durable replacement arms for both the Nitro RS4 and the RS4 Pro. The Pro arms are in the narrow style and the Nitro arms are in the wide. I've run the wide ones on the front of my Nitro and let me just say one word – bulletproof. With all the new cars being released from HPI, you can be assured MIP is keeping an eye out and offering CVD upgrades for both the Nitro and the new Pro. Tired of sloppy steering? Factory Works' line of ball-bearing steering upgrades are now available to fit many popular sedans, including the new RS4 Pro and RS4 Sport.





TIRES

Team Losi has been working on sedan tires for some time now and believe they've hit the nail on the head. You've heard of Gold and Silver, well now there's Blue. Jack Johnson, member of Team Losi's product development team says: "...on on-road tracks, the blue compound has better traction, better wear, and handles better overall for sedans than any of the compounds used for off-road tires. We're still doing some testing and development work on foam inserts. As soon as we are happy with the combination of foam and compound, the new sedan tires will be released."



Speaking of tires, Joel Johnson's S&M Touring Car Tire Tamer is new. (Get your mind out of the gutter, S&M stands for Steve and Mike, two of Trinity's Team Drivers who happen to race sedans.) It's a two-part formula blended for cleaning and conditioning tires, and increasing traction. Part one cleans old dead rubber and dirt from tire surfaces and conditions rubber to accept tire traction. Part two softens rubber and increases the rubber's natural traction properties, or at least that what Trinity says. Each part comes in dauber-topped bottles. Look for a mini-evaluation on this stuff next month in The Garage.



Integy may soon be importing sedan slicks from Ellegi Technics.The Italian company is famous for making some of the world's best foam tires for 1/8- and 1/10-scale on-road. Ellegi makes 7 slick tires, each in a different compound. It's unknown which, if any, will be imported into the states.



HEAD TURNERS

Japan R/C Imports, the company that imports brands like Kose, Tozai, and Fibre-Lyte now has their own line of wheels. The new wheels are available in a huge variety of designs including BBS style, 5-spoke, 12-spoke and colors including bright yellow, red, blue, black, and white.The new wheels as well as other products in the future will be distributed under the Ultra label.





You'd think you were watching the movie The Saint when you see this new Volvo S-40 body from Parma. It's rounded corners are not what your are used to see when it comes to a Volvo. The body fits 190mm sedans and is available in standard thickness and .030 for those of you watching your weight.

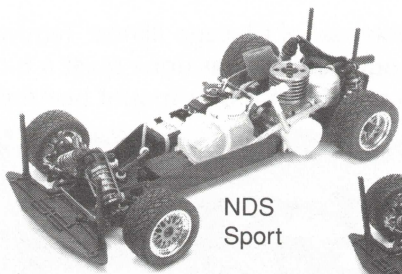


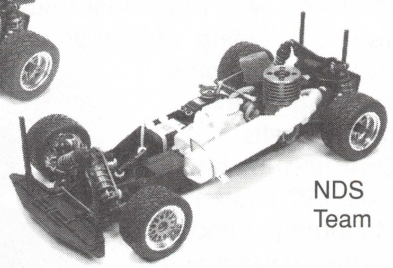
Two new sedan product lines will soon be available in the U.S. GHI will be importing Atlas, makers of bodies, tires, motors and other items. Also new will be Comet tires, be on the look out.

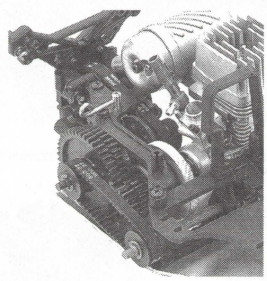
News Flash! Protoform will soon be including decal sheets with all of their Sedan bodies. The decal sheets will include trim detail like headlights, door handles, etc. and some will include sponsorship decals corresponding to a popular full size counter part.

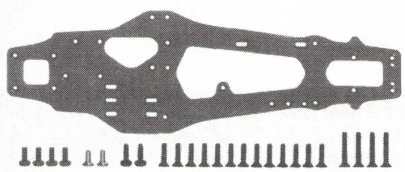
HOT PIT

Associated's long awaited Nitro Dual Sport, that we showed you first in Issue 2.8, should available by the time you read this. HPI now has a two-speed tranny for their Nitro RS4. The two-speed offers more bottom and top end and is designed to handle .12 and .15 size engines. HPI also has a new Super Chassis made from stronger and thicker 3mm T6 aircraft-quality aluminum available for the Nitro RS4. The chassis is countersunk, anodized in a gun metal color, and comes with a complete set of screws.







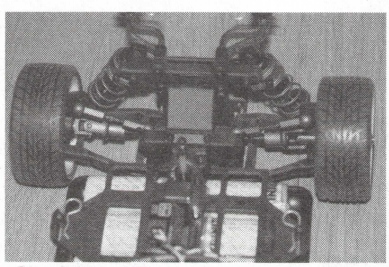


These are pics of HPI's new Nitro 2-Speed and their new Super Chassis for the Nitro RS4.

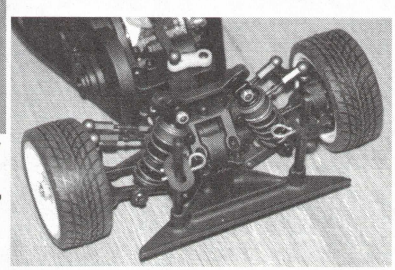
SPARE PARTS

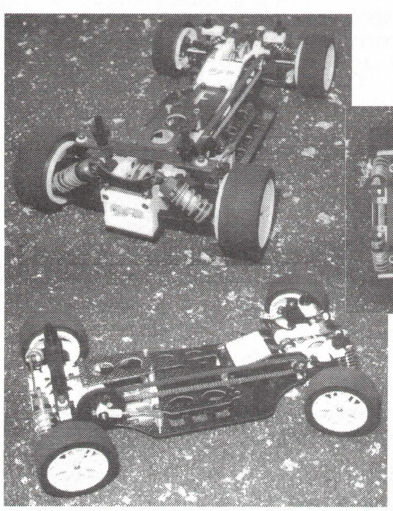
It's official, the Losi XX-4 sedan is going to happen. The Street Weapon should be available some time before September. No decision on what type of body will come with the Street Weapon, but a body will definitely be included in the kit.

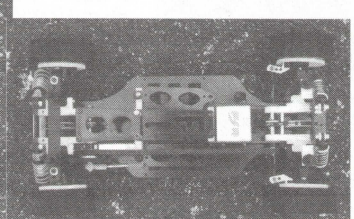
Back in Issue 2.6 we showed you FSR's then unnamed 4WD sedan. Six months later here are shots of FSR's F1. The F1 incorporates many design features found on 1/8- and 1/10-scale on-road gas cars including a 3-belt drive system. FSR is hinting that a quick gas conversion may be available. No word on when exactly the F1 will be available.



Check it out! These photos were recently taken of a Street Weapon prototype with closer-to-production arms, shock towers, body mounts and front bumper.







These three pictures are of the FSR F1. FSR says that an optional conversion kit will allow you to run with either a gas or electric powerplant.

The Roadruner Xpress car is getting a face lift; the Xpress Pro is due soon. Features will include a thicker 3mm graphite chassis, lightened machined aluminum bulk-heads, lightweight universal dogbones that incorporate aluminum and steel, and get this, graphite hinge pins. It will be interesting to see how well the hinge pins hold up to wear and impact. This definitely new in the world of R/C. GHI, the company that imports the Xpress says that the car should be available in hobby shops by this October.

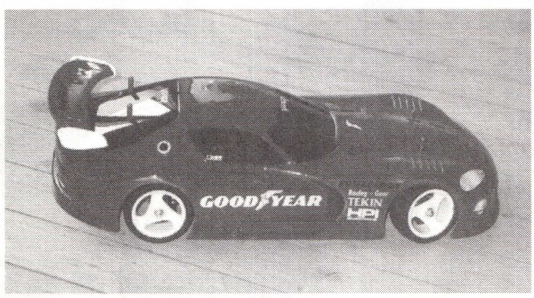


To power your new sedan, choose one of Trinity's new motors designed especially for touring cars. Four different winds are available in the GT-2 can with 5.4 wet magnets, 15 degree timing and removable endbell hardware. The best part is the price; the GT-2 line of motors retails for only $32. If you're looking for something with bearings, the GT-1 offers four different winds as well but with ball bearings.



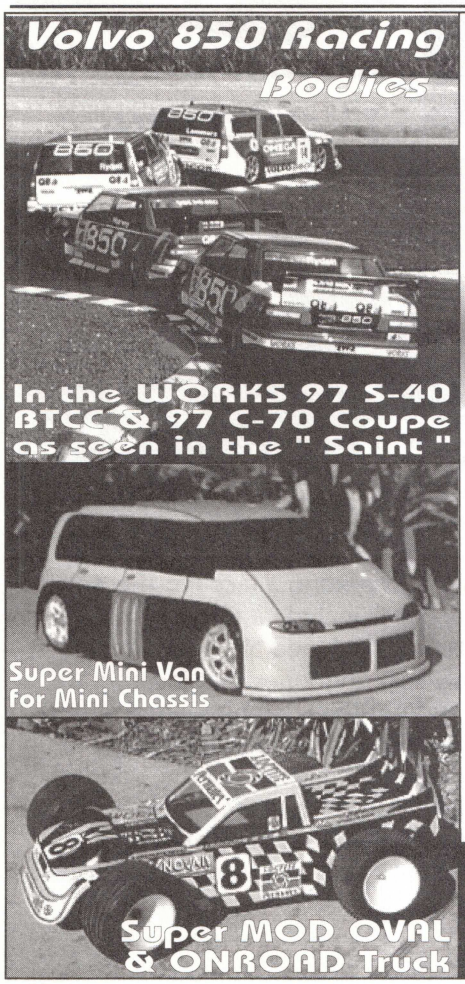
THE SEDAN SHOW

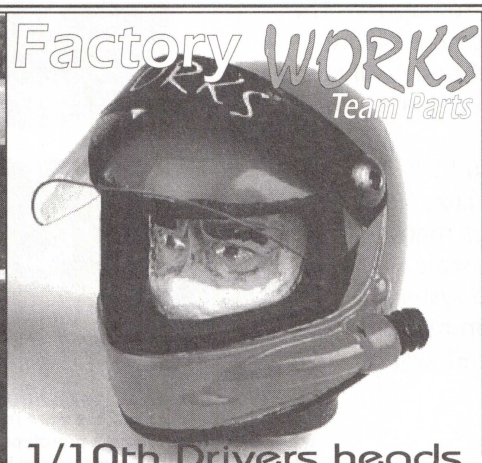
Here's a shot of Andrew Wroblewski of Chicago Illinois' Tamiya TA03F-Pro with HPI's Viper body, Andrew has done quiet a bit to his ride including adding; an aluminum motor mount heatsink, aluminum kingpins, upper arms, and carbon shafts. Controlled by his Tekin G-12 ESC and a Futaba Magnum Jr. radio, Andrew loves running his super tourer on oval race tracks.

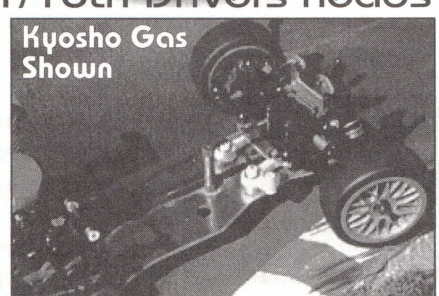


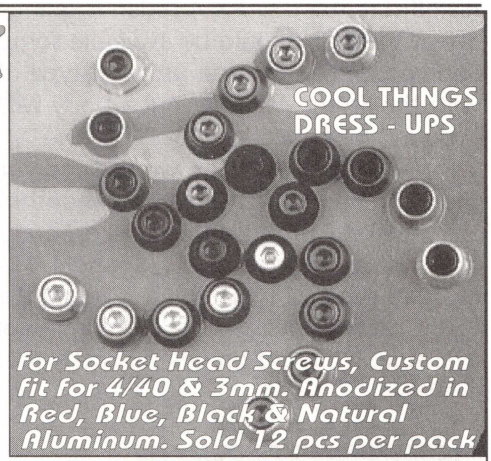
– SEDAN RACE COVERAGE–

In the next issue of *Xtreme R/C Cars*, be sure to check out the race coverage from the ROAR On-Road Nationals in Florida. We will feature coverage of the Modified and Stock Sedan Classes. For results soon after the event, check out *Xtreme On-Line* You'll see it in *Xtreme* First!









3 mm Dress UPS also sold two pcs. with two 8mm long & two 10 mm long motor screws, Available in all the same colors



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Parts for Nitro RS4

T3802	Aluminium Chassis for Nitro RS4
T3803	Manifold & Tune Pipe Set for Nitro RS4
T3804	Light Weight Engine Mount for Nitro RS4
T3805	Light Weight Fly Wheel for Nitro RS4
T3806	Aluminium Arm Set for Nitro RS4
T3807	Pro Graphite Upper Deck
T3690	Light Weight Shock Set
T3613	Universal Drive Shaft for RS4(WF)
T3614	Universal Drive Shaft for RS4(WR)

Parts for RS4 Pro

T3597	Low Profile Belt Drive Conversion: RS4
T3598	Ultra Light Weight Solid 15T Pulley: RS4
T3599	Ultra Light Weight One-way Pulley: RS4
T3600	C-Drives for RS4
T3615	Universal Drive Shaft for RS4 (NF)
T3616	Universal Drive Shaft for RS4 (NR)

Parts for TA03

TA03A	Pro Graphite Chassis Set for TA03-Saddle
TA03B	Low Profile Gear Set for TA03
TA03C	Universal Drive Shaft for TA02&03
TA03D	Aluminium Suspension Set for TA03 (10)
T3690	Light Weight Shock Set

Parts for TF2

TF2A	Pro Graphite Chassis Set for TF2 Saddle (6)
T3608	C-Drives for TF2
T3690	Light Weight Shock Set

Parts for YR4II

T3605	Ultra Light Weight One-way Pulley: Yokomo
T3606	Pro Center Motor Mount for Yokomo
T3609	Light Weight Universal Drive YR4:All(F)
T3610	Light Weight Universal Drive YR4:All(R)
T3611	Aluminium Arm Set for YR4 series
T3612	Aluminium Post for YR4II
T3601	C-Drives for Yokomo: YR4, YR4M, YR4II(F)
T3601T	C-Drives for Yokomo: YR4II(R)
T3602	Light Weight Spur Gear Adaptor
YR4IIA	Pro Graphite Chassis Set for YR4II
T3690	Light Weight Shock Set



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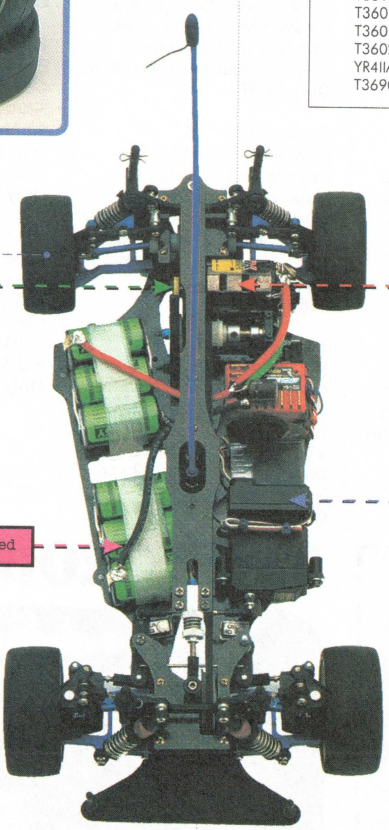



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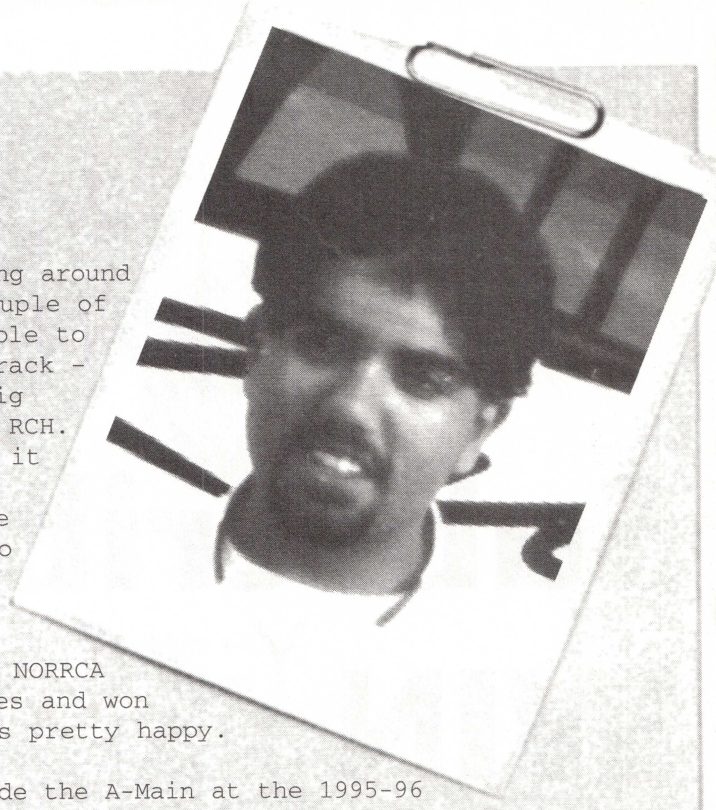

Name: Sohrab Tavakoli
Age: 18
Residence: Mission Viejo, CA

Length of racing career: I started playing around with R/C cars in 1990 just for fun. A couple of years later, I started racing and was able to compete with other drivers at my home track - RCOR in Fountain Valley, CA. My first big race was the Western Off-Road Champs at RCH. I don't remember exactly how I did, but it was pretty bad. I knew Brian (Kinwald) pretty well from racing with him all the time. He helped me out a lot. He used to give me rides to the track and introduced me to Team Losi and help me to get a sponsorship. From then on, I traveled a lot with Brian. At the '95 NORRCA Nationals, I TQ'd all four expert classes and won three out of four. Needless to say I was pretty happy.

My greatest racing experience: When I made the A-Main at the 1995-96 IFMAR 1/10-Scale Off-Road World Championships in Japan. Competing with the worlds' best drivers was a dream of mine.

Hardest part about being a pro: For me being a pro is easy because I love racing R/C cars and meeting and racing against drivers from around the world. But, there's a lot of pressure. At a big race, one mistake can cost you the difference between the A-Main and the C-Main. There's always a lot of pressure from everybody to do well at the big races. The pressure comes from every direction, manufacturers, spectators, friends. If you don't do well at one race, before you know it you're hear people talking.

My favorite race: The Winter Championships in Tampa, Florida because the weather is great, the track is fun, and all the racers just want to have fun racing.

My favorite car is: My Team Losi Double-X 'CR' buggy because if you spend enough time working on it, you will have the best-handling car you've ever driven.

The racer(s) I like to race against the most: Brian Kinwald, Greg Hodapp, Derek Furutani, Mark Pavidis, Alex Guerrero, and Matt Francis. Those guys always seem to be on top and that's where I want to be.

My best advice to a beginner: Never underestimate yourself and always take it one step at a time.

When I'm not at the track: I go to school at Corona Del Mar High; I graduate this year. I work for my dad in my spare time. He is an electronic components broker. I also like to spend time with my girlfriend.

Misc. facts:
Favorite Movie: Chech and Chong Up in Smoke
Favorite TV show: Seinfeld
Favorite Actor/Actress: Pamela Anderson
Favorite full size car: Dodge Viper GTS
Favorite band or group: Wu-Tang Clan
Big fan of F1 racing's Williams team and especially David Coultard



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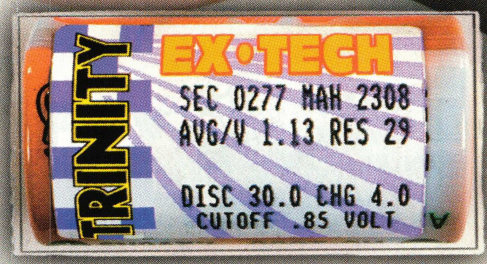

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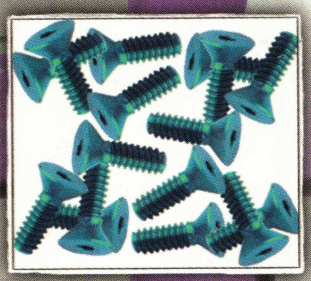

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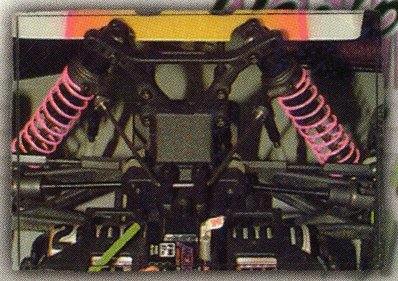

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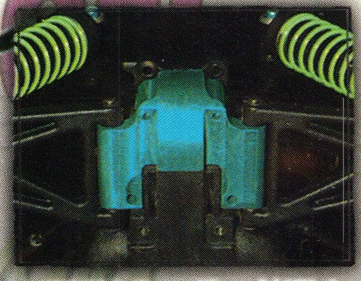

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